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# The Canadian Patent Office

## RECORD




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#### No. 11,033. Improvements on Lock Nuts.

(Perfectionnements aux arrêts-voies.)

Frederick J. Talbot, Sheffield, Eng., 16th March, 1880; for 5 years.

*Claim.*—1st. A screw fastening device, which consists of two parts, namely: a screw or bolt, and a nut or tapped hole, the formation of a position of the screw threads in the said nut or hole, of too small a diameter (or otherwise unfit) to permit the threads of the screw or bolt to enter them (and either with or without grooving them to form cutting edges), so that when the two parts of the said fastening are secured together, the smaller threads in the nut or bolt hole will have to be forced through or over the thread of the bolt, whereby the threads of the nut or bolt hole will have a close grip or hold upon the threads of the screw or bolt and will ensure the permanent security of the fastening; 2nd. a screw fastening device consisting of two parts, namely: a screw or bolt, and a nut or tapped hole, the formation of a portion of the threads of the screw or bolt of too large a diameter (or otherwise unfit) to enter the threads in the nut or bolt hole (and either with or without grooving them to form cutting edges), so that the said threads of the screw or bolt when screwed into the said nut or hole will have to be forced into, and cut their way through the threads thereof and will thereby have a close grip upon the threads of the nut or bolt hole, and will ensure the permanent security of the fastening; 3rd. a nut grooved or slotted in such a manner as to form cutting edges *f* on its screw threads; 4th. a screw or screw bolt grooved or channelled in such a manner as to form cutting edges on its screw threads.

#### No. 11,034. Improvements on Mechanical Movements.

(Perfectionnements aux mouvements mécaniques.)

Thomas W. Eaton, Chicago, Ill., U. S., 16th March, 1880; for 5 years.

*Claim.*—The combination with the disc or other device, to be intermittently operated and having appropriately spaced notches of a cam wheel alternately moving and locking said disc, or other device, by the continuous passage of its cam or cams and plain rim, through such spaces or notches.

#### No. 11,035. Improvements on Ditching Machines.

(Perfectionnements aux machines à fossayer.)

Alexander G. Peck, (Assignee of Francis Peck), Raleigh, Ont., 16th March, 1880; for 5 years.

*Claim.*—1st. The combination of beam A, elevator B, inclined plane C, cutter E, wheels F, handles H, shoe N, pulleys K, and belt R, or its equivalent; 2nd. the combination of beam A, inclined planes P, wheels F, cutters E, shoe N, handle H, supports T S and spreaders Q.

#### No. 11,036. Improvement in House Ventilators.

(Perfectionnement aux ventilateurs des maisons.)

Walter S. Sayers, Guelph, Ont., 16th March, 1880; for 5 years.

*Claim.*—1st. The combination of the storm guards B B B with the air duct A A A; 2nd. the combination of the storm guards B B B with the air duct A A A and the valve C.

#### No. 11,037. Improvements on Sash Supporters.

(Perfectionnements aux arrêts-croisés.)

William W. Sweetland, Edwardsburg, Mich., U. S., 16th March, 1880; for 5 years.

*Claim.*—1st. An articulated latch A, in combination with the spring E, lever F, rod C and case B; 2nd. the combination with one or both sashes of

the articulated latch A, spring E, lever F and rod C; 3d. the combination of the lever F with latch A, rod C and case B; 4th. the combination of the latch A with case B, recessed at a, and with rod C

#### No. 11,038. Improvements on Firearms.

(Perfectionnements aux armes à feu.)

James Lee, Bridgeport, Ct., U. S., 16th March, 1880; for 5 years.

*Claim.*—1st. In combination with a gun having its breech block or bolt arranged to reciprocate in line with the barrel, a detachable magazine in cartridge holder arranged to feed or deliver the cartridge into the receiver in such a position that when the breech bolt is moved forward to close the breech it will shove the cartridge into the chamber of the gun; 2nd. the curved sliding plate I, in combination with the receiver having an opening through its bottom, when arranged to operate as set forth; 3rd. the detachable magazine D provided with the cavity m, and the inwardly projecting shoulders o r, or their equivalents; 4th. The extractor e provided with the shoulder s, in combination with the bolt C, having a corresponding recess in its ribs, and the spring t; 5th. the firing pin P, provided with the loose sleeve or collar R having its projection p, in combination with the tubular breech bolt C, provided with the slot z having an offset for the projection p to engage in; 6th. a detachable magazine or cartridge holder D, having its front and rear ends of different lengths, with one of its sides or edges open for the insertion and removal of the cartridges and provided with a spring follower and cartridge retaining devices.

#### No. 11,039. Improvements in Fire-Escapes.

(Perfectionnements aux sautoyeurs d'incendie.)

Charles Granville and Thomas McNea, Markdale, Ont., 17th March, 1880; for 5 years.

*Claim.*—1st. The rope A, in combination with the steps B and guy ropes F; 2nd. The clips or brackets C rivetted to the ends of the steps B and provided with a hole or socket for holding the rope A, in combination with the screw stud; 3rd. The bar D and bracket E fastened outside of the window, in combination with a rope ladder; 4th. The rope A provided with steps B and supported by the bar D, in combination with the box G.

#### No. 11,040. Improvements on Sawing Machines.

(Perfectionnements aux scieries.)

W. W. Bostwick, Cincinnati, Ohio, (Assignee of Wesley S. Brewer, Richmond, Ind.), U. S., 19th March, 1880; for 5 years.

*Claim.*—1st. The combination, in a sawing machine adapted to be operated by human power of the following instrumentalities, namely: a base frame, a vertically vibrating seat lever pivoted thereto, a vertical hand lever pivoted to the seat lever and carrying the saw below, one or more foot levers pivoted directly to the base frame, with rods or pitmen connecting the foot levers with the hand lever and seat lever, and so arranged that the depression of foot levers operate to thrust the saw forward and elevate the seat lever while the depression of the seat lever operates to draw the saw backward and elevate the foot levers; 2nd. The combination of the foot levers E pivoted directly to the base frame connecting rods F G, hand lever C and pivoted seat lever B; 3rd. In combination with the seat lever of a sawing machine, a seat S mounted upon the said lever and having an horizontal adjustment thereon by mechanism; 4th. A riding saw machine, the combination of a vertically pivoted saw-lever, a weight lever, a foot lever, a cross head moving on horizontal guides to actuate a horizontal saw, and a pitman connecting the cross head with the said levers; 5th. In combination with a saw for felling timber which is standing, an adjustable frame consisting of a cross bar h, slotted arms i i through which the saw moves and is thereby guided and sheaves j j riding upon the back of the saw and holding it to its work; 6th. In combination with the horizontal saw D, cross-bar h, slotted arms i i and sheaves j j, a cord or its equivalent to connect the saw and frame with a weight or spring for imparting a pressure to the saw and holding it to its work.

#### No. 11,041. Improvements in Audiphones.

(Perfectionnements aux audiphones.)

Thomas W. Graydon, Cincinnati, Ohio, U. S., 19th March, 1880; for 5 years.

*Claim.*—1st. A homogeneous or divisible diaphragm B provided with means for placing and retaining the same in a state of tension adjustable to the needs of the user; 2nd. The diaphragm B of an auditory apparatus, composed of sections b, hinged or pivoted together so as to fold or slide

upon each other into a compact space when out of use; 3rd. In combination with the diaphragm of an auditory apparatus, an adjustable spring arranged to press upon and regulate its tension; 4th. A diaphragm for an auditory apparatus consisting of a series of segmental plates pivoted together at their common centre, arranged to slide upon each other to be expanded into a substantial unit for use, or closed together compactly when out of use, and provided with suitable guides and stops to regulate and limit the sliding movements of the segments; 5th. In combination with the diaphragm B and handle A of an auditory apparatus, the extension bar a, spring S and set screw g; 6th. In combination with the diaphragm B and handle A of an auditory apparatus, the adjustable spring S provided with fingers S'; 7th. In combination with the diaphragm B and handle A, the extension bar w, toggle l and distributing bar m; 8th. An auditory apparatus consisting essentially of a vibrating diaphragm suitably mounted, in combination with a transmitting cord h and mouth-piece t; 9th. The auditory apparatus composed of a diaphragm B, mounted in supports d attached to a frame D provided with a handle A, spring S and set screw g; 10th. In combination with the diaphragm B and tension spring S of an auditory apparatus, the fingers S' and distributing ring S.

**No. 11,042. Improvements in Cattle Cars.**

(*Perfectionnements aux chars à bestiaux.*)

William S. Hunter and William P. Niles, Belleville, Ont., 19th March, 1880; for 5 years.

**Claim.**—The trough C, rack J and the form and arrangement of the stalls H.

**No. 11,043. Composition for Painting Roofs.**

(*Composé pour peindre les toitures.*)

Patriot Butler, Aylmer, Ont., 19th March, 1880; for 5 years.

**Claim.**—1st. A compound of coal tar, gum asphaltum, brimstone, ground slate, ground iron, common salt, rubber and venetian red; 2nd. The process (but only as to this particular compound, and not any other), of putting on the paint so formed while hot.

**No. 11,044. Improvements in Printing Machines.** (*Perfectionnement aux machines à imprimer.*)

Richard M. Hoe, Robert Hoe, Peter S. Hoe, Stephen S. Hoe, Stephen D. Tucker, Robert Hoe, jr., Theodore H. Mead, New York, (Assignees of Luther C. Crowell, Boston, Mass.), U. S., 19th March, 1880; for 5 years.

**Claim.**—1st. The combination of a rotary mechanism for printing a web of paper, a web severing mechanism, for dividing into sheets, and a rotating sheet folding mechanism; 2nd. The combination of a mechanism for printing a web of paper, a mechanism for severing said web into sheets, a mechanism for controlling the severed end of the web and delivering it to the folding mechanism, and a rotating sheet folding mechanism; 3rd. A folding blade mounted in a revolving carrier, in combination with folding rollers into whose nip or bite it doubles and delivers the sheet.

**No. 11,045. Improvements on Milk Cans.**

(*Perfectionnements aux bidons à lait.*)

John G. Cherry, Cedar Rapids, Iowa, U. S., 19th March, 1880; for 5 years.

**Claim.**—1st. The body B having raised cover provided with central opening E, and float A having concave top provided with handles D and central opening C; 2nd. The combination of the float A having concave top, provided with handles D and central opening C, with the can B and raised cover having central opening E.

**No. 11,046. Pistol Clamp.** (*Crampon de pistolet.*)

Israel Kinney, Windsor, Ont., 19th March, 1880; for 5 years.

**Claim.**—The combination with the revolver A and walking stick B, of the curved plates C C and screw a.

**No. 11,047. Improvements on Gang Ploughs.**

(*Perfectionnements aux charrues-cultivateurs.*)

Jeremiah Chapman, Virginia, Nev., U. S., 19th March, 1880; for 5 years.

**Claim.**—The combination of the central beam C and double cross slats h m r, with the reversible beams A B and parallel to the beam C.

**No. 11,048. Improvements in Reed Organs.**

(*Perfectionnements aux orgues à anches.*)

William Bell, Robert W. Bell, Henry W. Metcalf, Guelph, and William James, Chinguaousy (Assignees of George W. Scribner, Chatham), Ont., 19th March, 1880; (Extension of Patent No. 323), for 5 years.

**No. 11,049. Improvements on Explosive Compounds.** (*Perfectionnements aux composés explosibles.*)

William H. Stanley, Montreal, Que., (Assignee of Carl W. Volney's estate) 19th March, 1880; (Extension of Patent No. 4,524), for 5 years.

**No. 11,050. Improvements on Hubs.** (*Perfectionnements aux moyeux des roues.*)

Alosh A. Philbrick, Coldwater, Mich., U. S., 20th March, 1880; for 5 years.

**Claim.**—1st. The combination of the shell or band F with the flanged collar I; 2nd. The flange G having its face inclined and made longer than the flange L to form a dovetail for holding the spokes; 3rd. The combination of the flanged collar I with the shell or band F, having an enlarged screw-threaded end G with an annular space K between the flanges of the collar, and the screw threaded part of the band; 4th. The combination of the hub A having stop O and band B with flanges C D, the band or shell F screw threaded upon its end and the flanged collar I.

**No. 11,051. Improvements on Means for Transmitting Rotary Motion.**

(*Perfectionnements aux appareils de transmission du mouvement rotatoire.*)

Charles L. French, Brooklyn, N. Y., U. S., 20th March, 1880; for 5 years.

**Claim.**—1st. The combination with a hub or shaft and a drum mounted loosely thereon and provided with openings or recesses having inclined or curved surfaces between it and the hub or shaft, of rollers loosely arranged in said recesses, or openings, and an oscillating disc or carrier provided with forks or pairs of projecting fingers which embrace said rollers and by which they may be moved or adjusted in the said recesses, or openings for the purpose of transmitting rotary motion in either direction or rendering them inoperative; 2nd. The combination with a hub or shaft provided with a peripheral groove, and a drum mounted loosely upon said hub or shaft, opposite to said groove, and provided with recesses or openings having surfaces inclined in opposite directions of spherical rollers loosely arranged in said recesses or openings resting in said groove between fingers; 3rd. The combination of the hub A provided with the groove D and the groove e at the bottom thereof, the drum B fitting loosely around said hub and provided with recesses or openings C and the spherical rollers D loosely arranged in said recesses or openings; 4th. The combination of the hub A provided in its end with the groove a, the drum B provided with the rib or flange b and with the recesses or openings c, and the rollers D loosely arranged between said hub and drum in said recesses or openings; 5th. The combination with the hub A, the drum B fitting loosely around the same and provided with recesses or openings C, and the rollers D, of the oscillating disc or carrier E provided with forks or pairs of fingers e which embrace said rollers, the lever or arm F extending from said disc or carrier and engaging with catches g in said drum.

**No. 11,052. Improvements on Steam Engines and Boilers.** (*Perfectionnements aux machines et aux chaudières à vapeur.*)

George B. Dixwell, Boston, Mass., U. S., 20th March, 1880; (Extension of Patent No. 4,548), for 5 years.

**No. 11,053. Improvements on Dash (splash) Boards.** (*Perfectionnements aux garde-crottes.*)

John B. Armstrong, Guelph, Ont., (Assignee of William C. Peel and Justus V. Elster, Springfield, Ohio, U. S.), 20th March, 1880; (Extension of Patent No. 5,301), for 5 years.

**No. 11,054. Machine for Grooving Sheet Metal Pipes.** (*Machine à canneler les tuyaux de tôle.*)

Charles S. Trowbridge and Garret P. Roseboom, Auburn, (Assignees of C. Letterman, Syracuse), N. Y., U. S., 20th March, 1880; for 5 years.

**Claim.**—1st. The combination of a rotating cylindrical die provided with exterior screw threads, and a roller placed on a rod or shaft parallel with the axis of the die; 2nd. The slide H, carrying the rod or shaft i with loose roller m thereon and adjusted by means of a screw I, in combination with the rotating die G.

**No. 11,055. Improvements on Pumps.** (*Perfectionnements aux pompes.*)

Martin W. McCortney, Morley, Mich., U. S., 20th March, 1880; for 10 years.

**Claim.**—1st. The rocking h h, the cap e together with the water chamber g; 2nd. The head plate l having inlet openings, the valve m, with the sustaining bar o combined together and with the barrel or cylinder A; 3rd. The inlet valve m, the sustaining bar v and spring n, in combination with the pump cylinder A formed with lugs for retaining the cap b; 4th. A piece of cast metal D with the rod e passing through it and secured to the end of the handle f, thus making it easy to remove the handle from the rod e.

**No. 11,056. Improvements on Lawn Mowers.** (*Perfectionnements aux faucheuses à bras.*)

Aaron Jones, Montreal, Que., 20th March, 1880; for 5 years.

**Claim.**—1st. The combination of the revolving cutter, the knife bar H fixed such as it stands placed and fixed in the recess h, of the frame F of the machine or otherwise; 2nd. In combination with the revolving cutter, the journals of the revolving cutter shaft consisting in two eccentric M, and hexagonal head M, or a head of any other shape, is movable by means of a wrench ad hoc, the nick n and bore m; for lubrication, all furnished complete and placed in the frame F of said machine; 3rd. In combination with the drawing wheels, the internal ratchet cast C placed over a hole inside the driving wheels, the finger I and spring J, as they stand in the hole K of the shaft D; 4th. In combination with a lawn mowing machine, the movable handle N pivoted on axis O, the bolt o, the centrifugal slot P and steadment Q.

**No. 11,057. Mechanical Movement for Bellows, Forges, &c.** (*Mouvement mécanique pour les soufflets, forges, &c.*)

Charles Hammelmann, Buffalo, N. Y., U. S., 22nd March, 1880; for 5 years.

**Claim.**—1st. The combination with the standards A, of the shaft H, carrying band wheel G having the ratchet wheel J, plate X with the pinion L, and the plate Q having the pawls P engaging said ratchet wheel, and the shaft O provided with the segment wheel N and operating lever U; 2nd. The clutch mechanism for converting the alternately changing motion of the segment wheel into an intermittently operating motion, in one direction only, consisting, in combination with the shaft H, of the ratchet wheel J fixed to the driving pulley G, the plate with its attached pinion plate L and the plate Q with its pawl, said plate Q being operated by the pinion and its ratchet; 3rd. The combination with the shaft H, of the ratchet wheel and casting J fixed to the driving pulley G, the plate X with its attached pinion

L. and rise *f* with the notches *a*, and the plate *Q* with the pivoted pawls *P*, said plate *Q* having notches *y* engaging the lugs *u* on the plate *X*, and the pawls *P* having tails *z* engaging notches *a*: 4th. In blowers, &c., the mechanism for converting the reciprocating motion of the handles into a rotary one consisting essentially of the driving pulley *G* having a ratchet fixed to it, of a plate having pivoted pawls and a further plate moveably connected with the pawl-plate and with the pawls, whereby said pawls are actuated in the manner specified; 5th. In ratchet and pawl clutches, the device for actuating the pawls, consisting of a plate carrying said pawls, and of a further plate engaging the pawl plate and the pawls, whereby the pawls are operated; 6th. The handle *a* pivoted to the retainer *T* by the bolt *K*, said retainer having the eye *i* for attachment of the shaft *O* and the segment *m* engaged by the overlapping catch *q*: 7th. The combination with the handle *U*, of the retainer *T* consisting of a plate having an eye *i*, a lug *j* and a segment *m* with a stop *l*, and the plate *e* having the overlapping catch *q*, said handle being pivoted to the retainer by the bolt *k*.

**No. 11,058. Improvements on Machines for Sharpening Mower Knives.** *(Perfectionnements aux machines à aiguiser les couteurs des faneuses.)*

Porter Williams, London, Ont., 22nd March, 1880, for 5 years.

*Claim.*—1st. The combination of wheel *H* into which the slide *J* is dovetailed, upright *K* provided with a slot and screw *L*: 2nd. The combination of arms *S S* provided with journals *T T*, knife holder *O* provided with journals *Tt*, shaft *V* and counter balance *W*.

**No. 11,059. Improvements on Milk Coolers.** *(Perfectionnements aux garde-lait.)*

Leavitt B. Austin, Holyoke, Mass., U. S., 22nd March, 1880, for 5 years.

*Claim.*—1st. In combination with milk pan *B*, the water vessel *A* provided with the outlet pipe *D*, chamber *c*, curved pipes *a*, wings *s*, gutter *d* and overflow pipe *f*: 2nd. The combination with the water vessel *A* provided with the gutter *d* and adapted to receive within it the milk pan *B*, of the perforated cover *z* provided with the screw cover *i* and strainer *c*: 3rd. The milk pan *B* adapted to be secured in vessel *A*, by the hinged clasps *l*, and provided with tube *z* extending down through the water space, between the bottom of said pan and of said vessel and through the bottom of the latter.

**No. 11,060. Improvements on Means of Transmitting Rotary Motion.** *(Perfectionnements aux moyens de transmission du mouvement rotatoire.)*

Charles L. French, Brooklyn, N. Y. U. S., 22nd March, 1880, for 5 years.

*Claim.*—1st. The combination with a hub or shaft and a drum arranged upon the same and provided with openings or recesses between its inner circumference, and the hub or shaft, of rollers arranged in said openings or recesses, and levers pivoted at one end and having axis or bearing for said rollers upon their free ends, so that said rollers may swing approximately radially to said hub or shaft: 2nd. The combination, with the hub or shaft *A* and the drum *B* having recesses or openings *C*, of the levers *E* having rollers *D* mounted at one end, and the other end pivoted to the oscillating plate or disc *F*: 3rd. The combination, with the hub or shaft *A* and the drum *B* provided with recesses or openings *C*, of the levers *E* having the rollers *D* mounted at one end and pivoted at the other end to the disk or plate *T*, and the arm or lever *G* extending from said disc or plate and engaging with the notches or catches in said drum.

**No. 11,061. Improvements on Weeding Hoes.** *(Perfectionnements aux extirpateurs.)*

Archibald Lefebvre, Robinson, Que., 22nd March, 1880, for 5 years.

*Claim.*—The blade *A*, teeth *b b b b*, cutting edges *c*, teeth *d d d*, cutting edges *e*, half teeth *f f*, cutting edges *g*, Shank *H*, handle *I*, all combined.

**No. 11,062. Improvements in Spring Mattresses.** *(Perfectionnements aux paillasses à ressorts.)*

Edwin P. Fowler, New York, U. S., 22nd March, 1880, for 5 years.

*Claim.*—1st. A roll up spring bed bottom having a laterally extendible frame and springs supported by the said frame; 2nd. A spring bed bottom having a laterally extendible frame, springs secured to said frame and flexible links connecting each spring with those adjacent; 3rd. A spring bed bottom having the laterally extendible frame, springs arranged in alternation on said frame, and flexible links connecting each spring with those adjacent; 4th. The foundation strips *A A A*, the lazy tongs jointed links *B B B*, the pivoted links *C*, the springs *S* arranged on strips *A A A*, and links or chains *a* connecting each of said springs with adjacent ones; 5th. The foundation strips *A A A*, the lazy tongs jointed links *B B B*, the pivoted end links *C*, the alternately arranged springs *S*, the links or chains *a* connecting each of said springs with those adjacent, the side strips *D* connecting the springs of the outer rows and the angular braces *G*, rivetted at their ends to strips *A A A*, and extending around strips *A A A*; 6th. The combination of the springs *S* having an eye formed at their lowest whirl, with the foundation strips *A A A*, and a headed rivet extending through the eye and clinched on the under side of the latter.

**No. 11,063. Combined Washboard and Washing Machine.** *(Planche à savonner et laveur combinés.)*

James Mason, Hamilton, Ont., 22nd March, 1880, for 5 years.

*Claim.*—1st. A corrugated washboard *C* provided with holes *F*, said washboard *C* supported by spiral springs *D*, or their equivalent, in a box *A*: 2nd. In combination with the washboard *C*, the roller *E* journaled thereto; 3rd. The combination of the large roller *B*, small roller *E*, washboard *C*, springs *D*, box *A*, journals *H*, tap *I* and handle *G*.

**No. 11,064. Improvements in Boats.** *(Perfectionnements dans les boites.)*

Edward Roos, Galt, Ont., 22nd March, 1880; (Re-issue of patent No 9,463.)

*Claim.*—1st. A boat in which the vamp, quarters and lap over instep; re made in one piece; 2nd. A boat having the vamp quarters and lap over instep in one piece, a cut *a d* distended to form the crimp, in combination with the crimp gusset piece *B*; 3rd. A boat having the vamp, quarters and lap over instep in one piece, the side gusset piece *C*.

**No. 11,065. Vessel and Machinery for Aerial Navigation.** *(Vaisseau et mécanisme pour navigation aérienne.)*

Albert L. Blackman, Nashville, Tenn., U. S., 22nd March, 1880; for 5 years.

*Claim.*—1st. A vessel for aerial navigation divided into a hull and a gasfield, constructed on one general frame work of tubing, or other light material enclosed with silk, linen, thin metal or other equally light substance, made air and gas tight and fire and water proof, by paint or other compound, the whole resembling in form the Grayling or Salmon fishes and having the gasfield divided into compartments, and subdivided into chambers, the hull divided into rooms. A vessel for aerial navigation provided with rotating shafts and revolving screws on the sides, for propelling, raising and lowering the vessel, a rotating shaft and revolving steering screw forward, and a rotating driving screw astern, for propelling the vessel forward. A vessel for aerial navigation having the propelling, raising and lowering screws on the sides, a steering screw for ward and driving screw aft, provided with internal propelling power and machinery, gas condensers and apartments for the accommodation of passengers and freights. Rotating screws having shafts provided with journals, collars and vaults or pulleys with bearings in, and carried by revolving cylindrical shafts having a lateral movement for propelling, raising and lowering, as well as steering vessels for aerial navigation. Rotating screws having shafts provided with journals and collar bearings sustained by, and operating in cylindrical revolving shafts and carried by endless belts, for propelling, raising and lowering, as well as steering vessels for aerial navigation. Combined revolving cylindrical shafts and belt sheaths, which revolve on their own axes, as well as having a lateral movement to loosen or tighten the machinery belts provided with racks *c*, idlers *s s*, a double flanged muff or collar *u*, a lever *q* for conveying the lateral movement to the shafts and journal boxings *i i* supported in journal bearings and hangers for carrying revolving screws, for raising and lowering, as well as steering vessels for aerial navigation. Rotating screws secured to a shaft extending under the gasfield to the central machinery, having bearings in the node, at the stern of the vessel, and secured to the cord *D*. Rotating screw secured to a shaft and extending under the gasfield to the central machinery, having bearings in the node at the stern of the vessel and secured to cord *D* and provided with, and operated by pulleys and idlers, for propelling vessels for aerial navigation. A vertical cone pulley, receiving a driving belt from a driving shaft connected with a motive engine and carrying three endless belts, one to the right and one to the left of the vessel, and one to the bows, for driving the screws on the sides and the steering screw forward. In combination, the cone pulley *Q*, endless belts *R R R*, idlers *s s*, cylindrical shafts *M M O*, vaults *m*, bearings *i i*, for propelling, lowering and raising as well as steering vessels for aerial navigation. In combination, driving shaft *4* and pulleys *3*, driving belt *z* with cone pulley *Q*, endless belts *R R R*, cylindrical shafts *M M O*, idlers *s s*, vaults *m*, screws *N N O*, rotating on journals *j j* in boxings *i i*. In combination, propelling engine *W*, endless belt *Z*, driving shaft *4* and pulleys *3*, driving belts *Z Z* with pulleys *Z* on shaft *T*, and the driving screw for propelling vessels for aerial navigation and with cone pulley *Q*, endless belts *R* passing through revolving cylindrical shafts *M M O*, vaults *m* and screws *N N O* for raising, propelling, steering and lowering vessels for aerial navigation. In combination, the propelling engine *W*, endless belt *Z*, driving shaft *4*, pulleys *3*, power belt *Z* with cone pulley *Q*, endless belts *R R R*, laterally moving and revolving cylindrical shafts *M M O*, vaults *m*, rotating screws *N N O*, for raising, lowering, steering and propelling vessels for aerial navigation. In combination, propelling engine *W*, endless belts *Z*, pulley *3* on driving shaft *4*, endless belt *z*, pulley wheel *z*, revolving shaft *T*, hangers *n n*, journal bearings *tr* and driving screw *P*, for aerial navigation. Corrugated pulley *o* on the revolving cylindrical shafts *M M O*, in combination with endless chain belts *p*, corrugated pulley *o*, friction clutch *x*, wheel *v*, bevel gear *u*, for revolving simultaneously the cylindrical shafts *M M O* to change the position of screws *N N O* for raising, propelling or lowering the vessel, and the steering screw *O*, for steering vessels for aerial navigation. Corrugated pulley wheel *o*, wheel *v* and friction clutch *x*, in combination with endless chain belt *p*, corrugated pulley *o*, cylindrical shafts *M M O*, screws *N N O* for handling vessels for aerial navigation, lever *q*, double flanged muff or collar *u*, in combination with and for the purpose of conveying a lateral motion to cylindrical shafts *M M O* for throwing in and out of gear endless belts *R R R* in starting, stopping, slackening and tightening the belts and conveying the screws *N N O*, used in lowering, raising, steering and propelling vessels for aerial navigation.

**No. 11,066. Improvements on Pumps.** *(Perfectionnements aux pompes.)*

John A. McMartin, Montreal, Que., 24th March, 1880; (Extension of Patent No. 4,538), for 5 years.

**No. 11,067. Improvements on Shuttle Motion.** *(Perfectionnements aux chasse-navettes.)*

The New York Silk Manufacturing Co., New York (Assignee of Alfred Faulkner, Jersey City, N.J.), U. S., 27th March, 1880; for 5 years.

*Claim.* 1st. The combination with the reciprocating shuttle driver or carrier *A*, of the vibrating and longitudinally moving lever *C* extending laterally from said driver or carrier, the rod *D*, cam *F*, lever *E* having a projecting pin engaging with the groove of said cam, and the oscillating fulcrum yoke *H*; 2nd. The combination, with shuttle driver or carrier, of the vibrating and longitudinally moving lever *C* having the slot *f*, the slide *J* arranged in said slot, the crank *N* pivoted to said slide *rod* *D* also pivoted to said slide cam *F*, and lever *F* having a projecting pin engaging with the groove of said cam; 3rd. The combination with the shuttle driver or carrier of the lever *C*, rod *D*, cam *F*, lever *E*, pivot *e*, slide *J*, crank *K* and oscillating fulcrum yoke *H*.

**No. 11,068. Improvements on Metallic Planes.***(Perfectionnements aux rabots métalliques.)*

Louis C. Rodier, Westfield, Mass., and Peter Rodier, Detroit, Mich., U. S., 27th March, 1880; for 5 years.

*Claim.*—1st. The plane stock A provided with the cam shaft support *b*, in combination with cam *a*, shaft *t*, wheel *e*, knife carriage B, trunnion bar *d* and spring *c*; 2nd. The combination, with carriage B provided with hooked arms *n* and the knife brace *h*, of the elliptically shaped trunnion bar *d*, knife K and knife clamp D provided with screw *s*; 3rd. A plane stock provided with a vibratory knife carriage, the knife K arranged to have its rear support on said carriage, substantially on the longitudinal centre line of the knife with the cutting end of the knife resting on and supported by the axial pivot of the carriage; 4th. The combination of spring *c*, carriage B and cam *a*; 5th. The plane stock A, the face of which is provided with sinuous longitudinal grooves, and the sides thereof with straight vertical grooves.

**No. 11,069. Process of Re-Pulping Paper.***(Procédé pour convertir le papier en pâte.)*

Charles Coon and Lewis B. Adams, Saugerties, and Morgan A. Dayton, jr., Milton, N.Y., U.S., 27th March, 1880; for 5 years.

*Claim.*—Causing the beater engine to operate upon the paper while suspended in a hot bath.

**No. 11,070. Improvements in Stump-Pullers.***(Perfectionnements aux arrache-souches.)*

Truman C. Naramore, Williston, Vt., U. S., 30th March, 1880; for 5 years.

*Claim.*—1st. The combination of the yoke A, gear wheel B, sprocket wheel *b*, pinion C, lever E and spring dogs *g*; 2nd. The combination of the pinion wheel C, lever socket D with its lever E, and dog *g* with its spring *g*, to form an efficient lever purchase upon the gear wheel B.

**No. 11,071. Improvements on Lock Latches.***(Perfectionnements aux loquets à panache.)*

Samuel Buschlen and Louis Sees, Port Elgin, Ont., 30th March, 1880; for 5 years.

*Claim.*—1st. The latch bar B having an internal locking bolt C operate d by a key, from either side of a door; 2nd. The plate A having key hole *a*, slot *c* and stop block *d*, in combination with a latch bar B provided with a longitudinal locking bolt C and slot *f*; 3rd. The latch bar B formed with a hub projection *e* having key hole *h* and slot *f*, and having in a longitudinal recess *a* bolt *c* shooting in the said slot *f*, in combination with plate A having stock *d* for locking the latch bar; 4th. The combination of cap D, latch bar B having a hub *e*, and plate A having key hole entering the hub; 5th. The combination of the collar D, latch bar B having shooting bolt C, and plate A having stop *d* and key hole *b*.

**No. 11,072. Improvements on Sleds.***(Perfectionnements aux traîneaux.)*

Lyman R. Dexter, Lancaster, and Beamou A. Bowker, Coos., N. H., U. S., 30th March, 1880; for 5 years.

*Claim.*—1st. The clamp E provided with a socket, and the base F of the braces G provided with a bulb, in combination with each other and the uprights I for connecting the runners and the beam of the sled; 2nd. The braces G strengthened by ribs, the tie plate H and the base F cast in one piece, the clamp E, uprights I and brace J, in combination with each other and with the runner A and the beam D.

**No. 11,073. Process for Treating Pyroxilin.***(Procédé de traitement du pyroxilin.)*

Orlan P. Whitcomb, Louisa McCaine, Maria B. McCaine and Helen J. McCaine, (Assignees of William McCaine), St. Paul, Minn., U. S., 30th March, 1880; for 5 years.

*Claim.*—1st. Treating pyroxilin or gun cotton by first reducing it to a liquid by suitable solvents, without the application of heat and pressure and then casting it into porous moulds; 2nd. Treating pyroxilin or its compounds with spirits of turpentine, or its equivalent; 3rd. Treating the compound thus formed with alcohol, and afterwards with olive oil or its equivalent.

**No. 11,074. Improvements on Car Trucks.***(Perfectionnements aux trains des chars.)*

John J. Thomas and Norman Webb, Selma, Ala., U. S., 30th March, 1880; for 5 years.

*Claim.*—1st. The combination, with the ordinary springs D and equalizing bars F, of the front and rear equalizing bars I, U, connected by hanger to the outer ends of the springs D and having elastic centre bearings; 2nd. The combination of the centre bearing J, equalizing bar I, hangers *f* and rubber cushions *h*.

**No. 11,075. Improvements in Stoves and Cooking Utensils.***(Perfectionnements aux poêles et aux ustensiles de cuisine.)*

George Robinson, Toronto, Ont., 30th March, 1880; for 5 years.

*Claim.*—1st. The fire box or chamber A, placed within an enclosing cylinder and provided with flues, for the admission of air to the fire-box and flues for the escape of the smoke and products of combustion; 2nd. The combination, with the fire-box A and enclosing cylinder B, of a cooking utensil provided with a downwardly extending bottom and adapted to be supported on and heated by the stove.

**No. 11,076. Improvements in Dies and Forms for Shaping Heel Counters.***(Perfectionnements aux matrices et aux formes à contreforts des talons.)*

Joseph Kieffer, Montreal, Que., 30th March, 1880; for 5 years.

*Claim.*—1st. The combination of a male die or former having a curved or

rounded end, and sides curved vertically and longitudinally, and a sectional female die, the entrance of which is straight or nearly so, longitudinally, and having a back or rear end surface, concave to fit the convex end of male die or former, and provided with central side sections concave upon their inner sides, to fit curved sides of the former head and adapted to be partially rotated about an axis, perpendicular to the plane of movement of the former; 2nd. The combination of the male die B, having head E provided with curved sides and convex end, and a sectional female die composed of the main side pieces A A, provided with the longitudinally straight surfaces C, the central movable side sections D D and the back piece C; 3rd. A female die, for shaping shoe counters, composed of the main side pieces A A having openings cut through their sides, and provided at or near the entrance thereof, with longitudinally straight surfaces *c*, shoulders *a* and curved recess or cut away *b*, the central movable side sections D D and separate back piece C; 4th. A die or mould for forming heel counters in which the main sides and back are stationary or yield only slightly in straight, or nearly straight lines, and the central side sections have imparted to them a reciprocating rotary or vibratory motion about independent axis; 5th. In a female die or mould, two side moulding or shaping surfaces adapted to be partially rotated about independent axes located forward of the back or rear end of mould; 6th. In apparatus for moulding boot and shoe stiffeners, the combination, with a male die or former, of a female die having a rigid heel block and hinged wings or side pieces; 7th. The combination, with the concave heel block, of wings or side pieces forming a continuation of the heel block and hinged or pivoted at points between their ends.

**No. 11,077. Improvements on Boots.***(Perfectionnements aux bottes.)*

Moses M. Clark, Highland Mills, N.Y., U.S., 30th March, 1880; for 15 years.

*Claim.*—A boot having a hole or socket *c* through its sole, in combination with the removable plug *e*.

**No. 11,078. Improvements on Sash-Holders.***(Perfectionnements aux arrêts-croisés.)*

John Payne, New Hamburg, Ont., 30th March, 1880; for 5 years.

*Claim.*—1st. The frame C, pinion D and dogs E E secured to the window frame, and the rack bar B secured to the sash; 2nd. The frame C, pinion D and dog E secured to the sash, and the rack bar B secured to the window frame.

**No. 11,079. Improvements on Barbed Wire Fences.***(Perfectionnements aux clôtures métalliques barbelées.)*

Edward M. Crandal, Chicago, Ill., U. S., 30th March, 1880; for 5 years.

*Claim.*—1st. The barbed cable composed of the wires and intertwined zig-zag sheet metal strip; 2nd. The method of forming the barbed cable by placing between the wires a zig-zag strip of sheet metal and twisting thereafter the wires, whereby said strip is bent, braced and rigidly held with the points standing in all directions; 3rd. The zig-zag sheet metal strip with sharp points at the angles.

**No. 11,080. Improvements on Drying Stands for Carriage Shafts.***(Perfectionnements aux chevalets-séchoirs pour les timonnières des voitures.)*

Charles Wright and Yeatman Bickham, Findlay, Ohio, U. S., 30th March, 1880; for 5 years.

*Claim.*—The inclined stand pipe dryer A having hollow arms or lateral extensions *a* rounded upon the upper surface.

**No. 11,081. Machine for Bending Bows.***(Machine à plier les courbes.)*

Charles Wright and Yeatman Bickham, Findlay, Ohio, U. S., 30th March, 1880; for 5 years.

*Claim.*—1st. The bending forms B having flanged edges serrated or notched at *bt*, in combination with the clamp strap *a*, bending band D and wedge *d*; 2nd. The combination of frame A with the bending forms B, adapted to be adjusted in relation to each other, by means of slots *a* and set screws passing through the flanged edge of B; 3rd. The combination of frame A having a grooved central beam L with flexible band D having central strip *g* and bending forms B; 4th. The forms B having notches or serrated edges; 5th. The forms B adjustable relatively to each other by movements of one of them.

**No. 11,082. Machine for Bending Felloes.***(Machine à plier les jointes.)*

Charles Wright and Yeatman Bickham, Findlay, Ohio, U. S., 30th March, 1880; for 5 years.

*Claim.*—1st. A felloe bending machine having form A, a movable beam L combined with grooved shaft M, ring *n* and chains or ropes *i*; 2nd. In combination with the movable beam L and means for drawing the band or flexible frame D to the form, the shaft T and ropes or chains *i*; 3rd. In combination with frame B movable beam L and form *a*, the chains or ropes *i*, operated by ring *n* and grooved shaft *m*, and shaft T, ropes or chains *i* and band D; 4th. In combination with the frame A, the flexible band D having felloes *d* and chains or ropes, and the detachable clamping tip H; 5th. In a felloe or wood bending machine, the provision of means for bending the wood upon the form, in combination with means for moving the bending band, upon the form; 6th. In combination with means to bend the wood upon the form and to move the same on the form, the means to fix the band centrally at any given point on the form.

**No. 11,083. Perpetual Calendar and Pen-Holder.***(Porte-plume-calendrier perpétuel.)*

George W. McCready, Petitoodiac, N.B., 2nd April, 1880; (Extension of Patent No. 4,370).

**No. 11,084. Improvements on Iron Skelping Machines.** (*Perfectionnements aux machines à laminer le fer.*)

James Hooven, Morristown, Pa., U. S., 3rd April, 1880; for 5 years.  
*Claim.*—1st. The series of pairs of rollers D E G H J K M N P Q, in combination with the open lipped guards F I L O; 2nd. A series of open grooved guides with lips l having their inner edges turned down, and arranged between the skelping rollers, for the purpose of guiding without compressing the skelp or modifying its form.

**No. 11,085. Improvements on Transparent Signs.** (*Perfectionnements aux enseignes transparentes.*)

Hubert Child, Wichita, Ks., U. S., 30th April, 1880; for 5 years.  
*Claim.*—1st. A sign having a transparent letter or design with a loose layer of broken glass confined in the rear of the same; 2nd. The combination, with two glass panes, of an intermediate filling of broken glass; 3rd. A sign having a transparent letter or design with a panel behind the pane, constructed of loose particles of broken glass contained between separate glass frames.

**No. 11,086. Improvements on Seed Planters.** (*Perfectionnements aux semoirs à grains.*)

Joseph Custer, Goshen, Ohio, U. S., April 3rd, 1880; for 5 years.  
*Claim.*—The circular seed hopper having a recessed bottom with central hole and side hole G, in combination with the shoulder shaft B, the wheel C to connect with the driving wheel of a planter, the upper plate E having holes H I, the plate D having holes F, the plate J, rod P, bar M, plate K, set screw L and plate Q.

**No. 11,087. Improvements on Spinning Wheels.** (*Perfectionnements aux rouets à filer.*)

Ferdinand Vezina, Verchères, Que., April 3rd, 1880; for 5 years.  
*Résumé.*—1o. Comme combinaison a un rouet quel conque, en la mobilité du rouet sur axe quelconque A mobile sur pivot B B, le support C fixé sur la table D, la lame d'acier E, son boulon E et tête en érou F et à oreillons, et la dite lame telle que fixée après ladite table ou y autrement fixée et telle que passée sur le susdit axe A ainsi que les poupées J J telles que plantées sur le dit axe ou y autrement attachées; 2o. Comme combinaison a un rouet mobile monté sur axe A en un bras quelconque G à vis H et comme équivalent de la lame d'acier E, boulon F à tête à érou F; on n'importe quel équivalent que l'on pourrait employer en vue de remplir le même but que ce dernier.

**No. 11,088. Improvements on Tread Powers.** (*Perfectionnements aux manèges.*)

Peter K. Dederick, Albany, N.Y., U.S., 3rd April, 1880; for 5 years.  
*Claim.*—1st. An endless chain horse power hung at, or near its centre upon an axle provided with suitable supporting wheels or sleigh runners, whereby the power is nearly or quite balanced and is adapted to be tilted on said axle into proper inclined position for working; also to be conveniently transported from place to place; 2nd. The combination of the endless platform with the frame and cross partitions constructed so as to work four horses, two abreast and two in the rear; 3rd. The combination of the cross partition Y with the length partitions; 4th. In an endless chain horse power, the combination of the connecting rods E and the inside and outside links secured to the logs, in close proximity to the sproket wheels; 5th. The combination of the log B, link A, dead nuts or bars L, bolts K K; 6th. The links A formed with one or more lugs D; 7th. In combination, with the band wheel of a horse power, the weighted rods N N with the springs P P and toggles M M; 8th. The brake lever S provided with a spring U and connected to the friction spool I; 9th. In combination with the power shaft F, the friction wheel Z, the iron strap or pad a, lever k; 10th. The pole e connected to, and in combination with, the frame and endless chain and axle support; 11th. In combination with band wheel or shaft of an endless chain horse power, the friction roll or spool I with the friction plate L; 12th. In combination with the band wheel and shaft of an endless chain horse power, the friction spool I, strap or cord V and brake lever S.

**No. 11,089. Improvements on Steam Boilers.** (*Perfectionnements aux chaudières à vapeur.*)

Orland D. Orvis, Chicago, Ill., U. S., 3rd April, 1880; for 5 years.  
*Claim.*—1st. In a furnace, a series of steam and air pipes arranged to inject combined steam and air from the front, so as to converge toward the centre and back of the furnace, in close proximity to the burning fuel, in combination with the pivotally adjustable and independently operating air drafts secured to the door of the furnace and intermediate the points of entrance of the jets, the said draft being an auxiliary to the combined steam and air jets, whereby combustion is facilitated and the smoke entirely consumed; 2nd. The combination, with a furnace door, of a pivotally adjustable air draft attached to said door and provided with perforations g converging near their bottom, and removable extensions g; 3rd. The combination with the door of a furnace of the pivotally adjustable air drafts G attached to said door, and provided with perforations g extending from edge to edge, whereby currents of air may be directed into the furnace, at any desired angle, or be entirely cut off.

**No. 10,990. Improvements on Smoke-Consuming Furnaces.** (*Perfectionnements aux fourneaux fumivores.*)

William Gray, Toronto, Ont., 3rd April, 1880; for 5 years.  
*Claim.*—1st. The combination of a regulating damper and a deflecting plate, by which air is admitted and directed into the upper portion of the furnace; 2nd. The regulating damper D and pawl D; in combination with the deflecting plate E provided with ratchet teeth; 3rd. The combination, with the door of a furnace, of a regulating air damper and a deflecting plate, for admitting, regulating and directing a current of air into the furnace.

**No. 11,091. Safety Block for Filling up the Space Between Wing-Rails.**

(*Bloc de sûreté pour remplir l'espace entre les rails de croisement.*)  
 Charles A. Post, Guelph, Ont., 3rd April, 1880; for 5 years.

*Claim.*—The combination of the iron plates A B, bolts C C C, rubber springs D D D, falling door E and straps F F.

**No. 11,092. Improvements on Chimney Sweeping Machines.** (*Perfectionnements aux ramoneuses.*)

Jean B. Rouillard, Montreal, Que., 3rd April, 1880; for 5 years.  
*Résumé.*—1o. Un sac ou une toille A dont l'orifice peut ajuster à l'ouverture intérieure de la cheminée et la fermer hermétiquement pour en recevoir la suie pendant l'opération du ramonage; 2o. Un cercle métallique e à charnière, recouvert d'une bande élastique f s'ajustant au tuyau et venant en contact avec la charnière; 3rd. Un support ou hamac B muni de tiges g, de cercles h et de bandes élastiques j, pour permettre de défaire les tuyaux de poêles sans répandre la suie; 4o. Un bouchon de tuyau i composé d'un cercle métallique ouvert et d'une bande élastique m; 5o. Un sac à ouverture élastique j destiné à recevoir la suie des tuyaux lorsqu'on les défait.

**No. 11,093. Improvements on Railway Signals.** (*Perfectionnements aux signaux des chemins de fer.*)

Adélard F. Martel, Montreal, Que., 3rd April, 1880; for 5 years.  
*Claim.*—The combination of the posts A placed along one side of the track at suitable intervals, each post having a movable arm B, a shaft D on the locomotive, connected and arranged with a bell E, throttle, whistle, or brake valve to operate by the extremities of the shaft, striking the arm when adjusted horizontally and, yielding, sound an alarm or stop the train automatically.

**No. 11,094. Improvements on Car Brakes.** (*Perfectionnements aux freins des brakes.*)

Peter Lord, Charles Leduc, Hull, Que., and Samuel E. St. O. Chapleau, Ottawa, Ont., 3rd April, 1880; for 5 years.  
*Claim.*—The combination of the windlass L having spools a a, chain M, lever N, friction spool Q and chain R, with the first lever G of a system of compound levers and chains for operating the brakes, by the chains and rods I winding on a shaft J at either or both ends of a train.

**No. 11,095. Improvements on Gas Regulators.** (*Perfectionnements aux régulateurs à gaz.*)

Etienne Solomon and Jules A. Goudron, Montreal, Que., 3rd April, 1880; for 5 years.  
*Résumé.*—1o. En combinaison avec un récipient A dans l'appareil, le cylindre M N N', le piston I et la garniture souple H, l'articulation O telle que reliée à la bielle P et à la tige L du dit piston, ou sans la dite articulation reliée en p au double bras de levier Q W S, ce dit double bras de levier Q W S, le chapeau N N' du susdit cylindre ou sans ce dit chapeau, le centre-récipient F, le robinet D et sa manette E et robinet X à poignée x, les tuyaux B Y, la pesée T y à demeure fixe ou non sur la tige filetéte ou non S, le support V, bielle R et arrêts C C; 2o. En combinaison avec un récipient A dans l'appareil, le cylindre M à piston plongeur et à cloche I, ce dit piston I, sa tige L à trou w et à clef l, support j; à portée j, le chapeau N, la garniture G H, le liquide p, les contre tuyaux B Y, la contre-pesée P fixe ou non, sur la tige filetéte ou non O, et le double bras de levier S W Q O, la barrette K conjointement avec les pièces D E X z B Y R T appartenant au premier appareil et y réclamées constituant un premier équivalent au sus dit premier appareil; 3o. En combinaison avec un récipient A dans l'appareil, le soufflet F M N K sans soupape, tige L, levier H, support V, tuyaux B Y tels que reliés à la base M du dit soufflet, conjointement avec les pièces D E X z R S W Q O T P C C; appartenant au premier et second appareils ci dessus mentionnés et telles qu'y réclamées, constituant un deuxième équivalent au premier appareil; 4o. En combinaison avec un récipient a dans l'appareil, le soufflet F M N K sans soupape, tuyaux B Y tels qu'y placés et levier S W Q, et conjointement avec les pièces R D E X z T P C C; appartenant au premier et second appareils et telles qu'y réclamées, constituant un troisième équivalent au premier appareil; 5o. En combinaison avec un récipient A dans l'appareil, une outre O quelconque telle que reliée en F<sub>3</sub> sur la tablette M en B<sub>2</sub> on tuyau B, la dite tablette M, la contre tablette N à tige L, tuyau souple G et conjointement avec les pièces R D E X z S W Q T P V C C; appartenant au premier et deuxième appareils, et telles qu'y réclamées, constituant un quatrième équivalent au premier appareil; 6o. En combinaison avec un récipient A dans l'appareil, un bassin F, la peau souple h, le couronnement M, les tuyaux B Y tels qu'y placés, le contre levier H et conjointement avec les pièces R D E X z N L S W Q T P V C C; appartenant au premier et deuxième appareils et telles qu'y réclamées, constituant un cinquième équivalent au premier appareil; 7o. En combinaison avec un récipient A dans l'appareil, un bassin F à peau souple h et tel que placé sur le récipient A, la soupape conique D, tige d, la rainure d', l'érou n, la rondelle n, tablette N, tige L à trou w, support j; à portée j, et couronnement m et tuyau Y tel qu'y placé, et conjointement avec les pièces S W Q O T P X z C C; appartenant au premier et deuxième appareils et tel qu'y réclamées, constituant un sixième équivalent au premier appareil; 8o. En combinaison avec un récipient A dans l'appareil, un bassin F à peau souple h tel que placé sur le récipient A, le contre tuyau B, l'orifice B<sub>2</sub>, l'embase B<sub>3</sub>, le petit ressort en spirale k, la rondelle d, l'érou d' et sous rondelle d<sub>3</sub>, le grand ressort en spirale K, la tubulure filetéte K<sub>1</sub>, le bouchon fileté R, volant V, érou w et sous-rondelle v, le doigt indicateur p et l'échelle graduée q, et conjointement avec les pièces J M Y X z et N d d; et D appartenant au sixième équivalent et telles qu'y réclamées, constituant un septième équivalent au premier appareil; 9o. Les ressorts à lame b en spirale j, tels qu'armaturés avec vice c, levier a pour le ressort b, et par barre d'appui m, manchon l, les tiges filetétes n et éroux p, et contre-éroux q g<sub>1</sub> pour le ressort j.



**No. 11,096. Improvements on Thrashing Machines.** (*Perfectionnements aux machines à battre.*)

John Golden, Amaranth, Ont., 3rd April, 1880; for 5 years.

*Claim.*—The combination of the tail screen D and the sieves C.

**No. 11,097. Improvements on Grain Separators.** (*Perfectionnements aux séparateurs des grains.*)

James W. Morrison and Nathan L. Wheeler, Clinton, Ill., U. S., 3rd April, 1880; for 5 years.

*Claim.*—1st. The combination of the vertical draft tube, the vertical gravity chamber F and a secondary gravity chamber G having a partition between them, that extends above the partition, between the first chamber and the draft tube C, the partitions being provided with openings which allow each of the gravity chambers to communicate with the fan chamber D; 2nd. The combination of the vertical draft tube C, the gravity tube F, the partition F<sub>2</sub> situated between said tubes and the fan chamber D, and having openings above and below the deflector boards F<sub>1</sub> F<sub>2</sub>; 3rd. The combination of the fan chamber D, the vertical draft tube C, the partitions C<sub>2</sub>, partition F<sub>2</sub>, having draft openings above and below, deflectors F<sub>1</sub> G<sub>1</sub> and trough G of the second gravity chamber; 4th. The combination of the hopper, the double convex distributing board, the delivery board arranged below the same, to form an air port between their contiguous edges, and the draft tube communicating with the grain bin by the enlarged flaring space opposite the distributing and delivery boards.

**No. 11,098. Improvements on Knife Grinding Machines.** (*Perfectionnements aux machines à remouler les couteaux.*)

John D. McEachren, Galt, Ont., 3rd April, 1880; for 5 years.

*Claim.*—1st. The frame D pivoted on the rod E<sub>1</sub> and carrying the shaft b with emery wheel G; 2nd. The combination of the stand A, B, drum C, frame D, shaft b and pulley F; 3rd. The pattern H, in combination with the frame D; 4th. The bevel adjuster L, in combination with the emery wheel; 5th. The pivoted plate J with adjusting screw d, in combination with the frame D; 6th. The handle K and box or bust i, in combination with the frame D, and shaft b with collar h.

**No. 11,099. Improvements on Car Brakes.** (*Perfectionnements aux freins des chars.*)

The Card Automatic Brake Co., (Assignee of William L. Card and David S. Randolph), St. Louis, Miss., U. S., 3rd April, 1880; for 5 years.

*Claim.*—1st. The pendent lever E, fulcrumed upon the car body in such a manner as to have a swinging motion imparted to it by the movement of the draw bar; 2nd. The combination of the pendent lever E with the spring J, or equivalent, and the draw-bar of a railway car; 3rd. The combination, with the draw-bar of a railway car, of a pendent lever E actuated by the draw-bar having curved bearing for the impact of the draw-bar; 4th. The pull rod K, having adjustable nut K<sub>1</sub> and double acting projection k; 5th. The combination of the draw-bar C, pendent lever E and pull rod K; 6th. The automatic lever Q, having a bracket plate L and groove pulley U, in combination with the supporting bracket R, chain T and rod V; 7th. The lugs x x cast upon, or attached to a car wheel, or a collar bolted fast upon a car axle, in combination with pivot bolts z z and centrifugal blocks Z Z with side arms or projections Y Y; 8th. The lugs x x cast upon or attached to a car wheel, or a collar bolted fast upon a car axle, in combination with pivot bolts z z, spiral springs b b and centrifugal blocks Z Z with side arms Y Y; 9th. The automatic mechanism for actuating the sliding collar c, consisting of lugs x x, pivot bolts z z, springs b b, centrifugal blocks Z Z and link or links e e, in combination with the sliding collar c; 10th. The combination of the wheel and axle of a railway car, with the lugs x x, pivot bolts z z, springs b b, centrifugal blocks Z Z, link or links e e and sliding collar c; 11th. The rock shaft j, having oscillating arm m and forked arm i, either pivoted thereto or in one piece therewith; 12th. The combination of the spider bracket q r and hanger o with the rock shaft j, for the purpose of supporting said rock shaft from the truck and car; 13th. The combination of the rock shaft j having oscillating arm m, with the pull rod k, with or without the use of the lifting rod l; 14th. The combination of the automatic device on the axle consisting of the lugs x x, pivot bolts z z, spiral springs b b, centrifugal blocks Z Z, link or links e e and sliding collar c, with the rock shaft consisting of forked arm i, stem or shaft j and oscillating arm m and pull rod k; 15th. The combination of the automatic device on the axle, with the rock shaft j, pull rod K, automatic lever Q and hand brake mechanism of a railway car.

**No. 11,100. Improvements on Revolving Driers and Roasters.** (*Perfectionnements aux séchoirs et torréfacteurs tournants.*)

Henry W. Booth, St. Thomas, Ont., 3rd April, 1880; for 5 years.

*Claim.*—1st. In a roaster or revolving pan R, the combination of the step T, bevel wheels B B, frame A A, pulleys P P, rope or chain L, weight W and agitator Q; 2nd. The revolving pan or roaster R, shaft S, bevel wheels B B, shaft M, rest D, pulleys P P, rope or chain L and weight W, all combined.

**No. 11,101. Improvements on School Slates.** (*Perfectionnements aux ardoises d'école.*)

William Bryoe, London, Ont., 3rd April, 1880; for 5 years.

*Claim.*—As a new device for rendering school slates noiseless, the projecting rubber plugs or studs C cemented or otherwise fastened in or on the frame B.

**No. 11,102. Improvements on Holders for Sickles, &c.** (*Perfectionnements aux machines pour saisir les couteaux.*)

Asa B. Dowell, Vinton, (Assignee of Hiram E. Fuller, Toledo), Iowa, U. S., 3rd April, 1880; for 5 years.

*Claim.*—The holder F with recessed shank m and arms k, in combination

with the handle E having tongue i and holding frame D with the pivot g straps d, the tongue i being held in engagement with the recess u, and the arms k being held over the frame D.

**No. 11,103. Improvements on Steam Brakes.** (*Perfectionnements aux freins à vapeur.*)

George W. Miles, Buffalo, N. Y., U. S., 3rd April, 1880; for 5 years.

*Claim.*—In combination with a steam cylinder C and piston coupler, the slotted brake bar G d having the forked heads c c, enclosing the coupler, draw heads or buffer, and with the connecting chains n n, or their equivalents, and the pivoted vertical hangers g g' attached to the brakes by the rods i i, or in any suitable manner.

**No. 11,104. Improvements on Car Brakes.** (*Perfectionnements aux freins des chars.*)

John Meissner and Henry Fleishman, New York, U. S., 3rd April, 1880; for 5 years.

*Claim.*—1st. Hangers D D, oscillating bars E F, rocking levers G G', brake rod H, arms I I provided with rollers b b, plate K with rollers d' d', collars or rims L L, brake shoes M M and lever R; 2nd. In combination with the car brake, the truck frame plates with slots g' g' i' i'; 3rd. In combination with the truck frame plates B B that have slots g' g' i' i', the rims or collars L L that are provided with lugs j' j' and side sockets k' k'; 4th. In combination with the truck frame plates and the rims or collars, the plate K provided with rollers d' d'.

**No. 11,105. Improvements in Photographic Apparatus.** (*Perfectionnements aux appareils photographiques.*)

Thomas H. Blair, Franklin, Mass., U. S., 3rd April, 1880; for 15 years.

*Claim.*—1st. The combination, with the plate carrier and lens, of a box, removable from the camera, for containing sensitized plates or negatives, adapted to operate with such camera and provided with a sliding bottom, which serves as a cover to the box when removed from the camera, and as a guard to prevent dropping of the plate when the box is attached to the camera; 2nd. The combination, with the plate carrier and lens, of a box, removable from the camera, for containing sensitized plates and provided with screws, spring latches, or other means for clamping the plates within the box, or releasing such plates; 3rd. In combination with the plate carrier and lens, a box for reception of sensitized plates and provided with screws, spring latches, or their equivalents, for clamping or releasing such plates, the combination, with such plate box and plate carrier, of cooperative means for enabling the position of each plate, with respect to the carrier, to be determined mechanically from the outside of the camera without visual inspection of the inside; 4th. In combination with the plate carrier or slide and lens, a box for reception of sensitized plates, the combination, with such box and the numerals or other characters distinguishing each groove, of an index bar connected with the plate carrier and a zero mark, or pointer, or indicator, fixed to the camera, or the equivalent of these parts for determining the position of the plates in the box with respect to the carrier from the outside of the camera, without recourse to, or inspection of its interior; 5th. In combination with the plate carrier and lens thereof, a box containing sensitized plates, removable from the camera, and provided with a spring latch, or screw, or other clamp to each plate guide or receptacle, and with a numeral, or other character, to each guide or receptacle, whereby the relative position of each plate, with respect to the plate carrier, may be determined from the outside of the camera; 6th. In combination with the plate carrier of a photographic camera, an index bar upon which is represented a series of numerals or other characters synonymous with the plate receptacles of the plate box or receiver, whereby the position of each plate, with respect to the carrier, is ascertained without visual inspection of such plate and carrier; 7th. In combination with the plate carrier or slide and the plate receptacle or box, and index for determining the position of the carrier with respect to the several plates in the receptacle, the combination, with such carrier and its index, of a system of focusing the lens, which consists in scoring or otherwise distinguishing a particular point upon the index when the focus is obtained, in order that the plate carrier after being disturbed from this focus, may be returned to it without re-adjustment or inspection of the carrier and lens; 8th. In combination, the plate box or receptacle containing numerals or other characters to distinguish its several plate guides, and the plate carrier containing an index corresponding to such guides and numerals; 9th. In combination with the plate carrier or slide, a bar or plate containing an index and operated from the outside of the camera box by a rack or pinion, or other mechanical device; 10th. In combination with a photographic camera, a removable or portable adjuster corresponding on a reduced scale to the vision outlet, or picture boundary and peep-hole of the camera; 11th. In combination with the independent front or extension of the camera, and the camera proper, the swinging brackets pivoted to such camera and adapted to hold the extension upright in an advanced position, in front of said camera; 12th. The plate carrier or slide, as adapted to slide to and fro of the camera box, and with respect to the lens; 13th. The opening a<sub>2</sub> and glove c<sub>2</sub>, or its equivalent, in combination with the camera case and plate box.

**No. 11,106. Machine for Raising Stumps, &c.** (*Machine à arracher les souches, &c.*)

Benjamin H. Davis, Foxcraft, Me., U. S., 5th April, 1880; (Extension of Patent No. 4,588), for 5 years.

**No. 11,107. Improvements in Grinding Wood.** (*Perfectionnements dans la trituration du bois.*)

Stephen M. Allen, Duxbury, Mass., U. S., 7th April, 1880; for 5 years.

*Claim.*—1st. A cylinder or grinder of artificial stone or emery for grinding and disintegrating wood or other fibre, composed of distinct sections or discs, in number to form a cylinder of the desired length confined upon a shaft; 2nd. The combination of a number of discs of artificial stone or emery, with a shaft or arbor passing through perforations in said disc and nuts for confining the latter on said shaft or arbor.

**No. 11,108. Improvements in Cultivators.***(Perfectionnement aux cultivateurs.)*

James Forbes, Mooers, N. Y., U. S., 7th April, 1880; for 5 years.

*Claim.*—The triangular cultivator frame G G G carrying the ploughs I J K and gauge cutters X, and provided with the sliding transverse bar E, in combination with the slotted bars D and rotating transverse bar F attached to the frame A, and having hand lever b and curved arms or rods C.

**No. 11,109. Improvements on Churns.** *(Perfectionnements aux barattes.)*

François D. Tessier, Rigaud, Que., 7th April, 1880; for 5 years.

*Claim.*—The bevel mouth pieces A A', bottom C combined with the gudgeon blocks H I, slide K, lock L, bearing N and shaft G.

**No. 11,110. Improvements on Iron Harrows.***(Perfectionnements aux herbes en fer.)*

Isaiah Best, Mount Pleasant, Ont., 7th April, 1880; for 5 years.

*Claim.*—1st. The method of fastening the tooth B to the bar A by means of the clip C, in combination with the staple D; 2nd. The joint bar E fastened in the same manner and having an eye at one end to receive the bar A.

**No. 11,111. Improvements on the Manufacture of Buttons.** *(Perfectionnements dans la fabrication des boutons.)*

Leonard W. Simonds, Berlin, Ont., 7th April, 1880; for 5 years.

*Claim.*—1st. The process of scouring, drumming, or washing, to produce a finish or polish ready to receive a dye, which consists in subjecting the buttons to attrition in a mixture of turpentine and chalk, within a close cylinder revolved by any suitable means.

**No. 11,112. Improvements on Mowers and Reapers.** *(Perfectionnements aux faucheuses-maisonnières.)*

Joseph Amstuty, Harlan, Ind., U. S., 7th April, 1880; for 5 years.

*Claim.*—1st. The combination of the rake heads D E, the hinging arms or straps F and the shifting bars I, with the bars C of a reel; 2nd. The combination of the clamping and hinging straps F with the rake heads D E and the reel bars C for holding the said rake heads adjustably and connecting them to the said reel bars; 3rd. The combination of the adjustable coupling straps J with the shifting bars I and the rake heads D E, to allow the said shifting bars I to be lengthened or shortened.

**No. 11,113. Improvements on Saw-Mill Dogs.***(Perfectionnements aux claqueux des scieries.)*

Hector McQuarry, Allandale, Ont., 7th April, 1880; for 5 years.

*Claim.*—1st. The lever F provided with the eccentric blade F', in combination with the main plate A provided with the rollers e, e', bar G and teeth C; 2nd. The combination, with the lever F, of the notched quadrant plate G' and spring trigger G; 3rd. The teeth provided with liners D, in combination with the main plate provided with the grooves B.

**No. 11,114. Improvements on Washboards.***(Perfectionnements aux planches à laver.)*

Edward A. Kittzmilller, Pittsburgh, Pa., U. S., 7th April, 1880; for 5 years.

*Claim.*—1st. A frame, a back and a rubbing or washing surface composed of a mesh work of wires crossing each other on the surface of the back, the wires of the crossing meshes resting on or against such back, when in use, at points distributed over its operative surface, and the ends of the wires being secured to the edges of the back, or to the bars of the frame; 2nd. The combination of crossing or intersecting wires a at forming a mesh work over the entire rubbing surface of the board, and the back board having recesses c in its face, as seats for the wires.

**No. 11,115. Improvements on Ball Targets.***(Perfectionnements aux cibles.)*

Clausius V. Boughton, Titusville, Pa., U. S., 7th April, 1880; for 5 years.

*Claim.*—1st. The combination, with the ball A, of a shell B made in two sections constructed with close fitting joints, and a layer C of fulminating or percussion powder or compound; 2nd. The combination, with a ball having its equatorial portion provided with a cylindrical surface, of a shell B having its interior surface corresponding therewith, and a layer C of fulminating or percussion powder; 3rd. A shell formed of two or more thicknesses or layers of material with a layer of laminating compound between them.

**No. 11,116. Improvements on Harvesting Machines.** *(Perfectionnements aux moissonneuses.)*

William N. Whiteley, (Assignee of Asa Hurd,) Springfield, Ohio, U. S., 7th April, 1880; for 15 years.

*Claim.*—1st. The combination of the differential oscillating gear, the vibrating arm connected thereto, the crank and fly wheel connected to the opposite corner of the driving arm and controlling the gear in mesh, and the suspension rod, one end of said rod being connected to the vibrating arm and at the opposite end to a support placed above and connected to the frame of machine; 2nd. The combination of the differential oscillating driving gear, the vibrating arm and the suspension rod, said rod being connected to the vibrating arm at one end and at the opposite end to a support placed above and connected to the frame of machine; 3rd. The combination, with the vibrating arm of the suspension rod, said rod being sustained at one end by a support connected to and placed above the frame of machine and at the opposite end to or about the front end of the vibrating arm.

**No. 11,117. Improvements on Harvesting Machines.** *(Perfectionnements aux moissonneuses.)*

William N. Whiteley, (Assignee of Asa Hurd,) Springfield, Ohio, U. S., 7th April, 1880; for 15 years.

*Claim.*—1st. The combination of the rotating gear wheel, the gear wheel oscillating upon a ball and socket joint, and the vibrating arm which drives the cutting apparatus; 2nd. The combination of the rotating gear wheel, the gear wheel working on a ball and socket joint, the vibrating arm and connections and the suspension rod, said rod being sustained at one end from a support placed above and connected to the frame of machine, and connected at the opposite end to the vibrating arm.

**No. 11,118. Sap Evaporator.** *(Appareil évaporatoire de la sève.)*

Duncan McLellan, Charlottenburg, Ont., 9th April, 1880; (Extension of Patent No. 4,596); for 5 years.

**No. 11,119. Improvements on Churns.** *(Perfectionnements aux barattes.)*

Alpheus Hamlin, Almonte, Ont., and Charles P. Holmes, Gouverneur, N. Y., U. S., 9th April, 1880; for 5 years.

*Claim.*—1st. The rectangular box H, whose ends are of square dimensions and provided with quarter round fillets b, the horizontally revolving dasher shaft H, having flat radial overlapping dashers J, and a revolving fan B discharging a blast downwardly at one corner of the box, combined to operate in the manner set forth. The combination, with the box A, of the dashers J, shaft E, driving shaft H, driving wheel D, revolving fans B and belt c; 3rd. The combination, with the box A, having fan B, of the dasher shaft H, having dashers J, shaft E, wheel D, having projection F and crank handle G, adjustable as set forth; 4th. The combination, in a box churn, of the flat dashers J arranged spirally on a shaft H and overlapping one another in the line of circumlocution, and a rotary fan B for aerating the cream.

**No. 11,120. Improvements on Car-Couplers.***(Perfectionnements aux attelages des chars.)*

George N. Challoner, Walkertown, Ont., 12th April, 1880; for 5 years.

*Claim.*—1st. The combination of the draw head B, slotted arm L and lever K; 2nd. The combination of the rod E E F F, spring block C, springs I I and draw-head B; 3rd. The combination of the roller H, lever K and draw-head B.

**No. 11,121. Improvements on Machines for Hammering Draw-Plates.** *(Perfectionnements aux machines à marteler les jilrières.)*

Charles D. Rogers, Providence, R. I., U. S., 12th April, 1880; for 15 years.

*Claim.*—1st. The combination of a revolving anvil and clamp, for confining the work thereto, and a vibratory hammer capable of movement radial to the vertical axis of the anvil; 2nd. The combination of a revolving anvil adjustable vertically, a stationary clamping plate revolving with anvil, and a centering punch or rod for fixing the position of the draw-plate upon the anvil; 3rd. The combination of a revolving anvil, a vibratory hammer and a sliding carriage with which the helve of the said hammer is connected.

**No. 11,122. Improvements on Spring Beds.***(Perfectionnements aux lits à ressorts.)*

David R. Nichols, Brockville, Ont., 12th April, 1880; for 5 years.

*Claim.*—The convex spring D and the mode by which it is attached to the end of the slat A in the transverse beam C, with the blocks D wrought on it in the solid, said blocks having a groove in the upper edge, to receive the crank axis e which is attached to the convex spring D; the combination of the crank axes e with the convex spring D and the block B.

**No. 11,123. Improvements on Boiler Cleaners.** *(Perfectionnements aux nettoyeurs des chaudières.)*

John D. McEachren, Galt, Ont., 12th April, 1880; for 5 years.

*Claim.*—1st. The pipe H, in combination with the settling chamber R and water space S; 2nd. The pipe T, in combination with the pipe and settling chamber R and water space S; 3rd. The pipe F, in combination with the pipe H, settling chamber R and water space S; 4th. The pump P, in combination with one or more of the pipes or settling chamber; 5th. In combination with the pipes or settling chamber, a cold air flue or cold water jacket; 6th. The filter K, in combination with the pipe H and pipes F or T; 7th. The siphon X Y, in combination with the pipes T F or H; 8th. The chamber W, in combination with the siphon X Y and pipe T F or H; 9th. The combination of the filter K with one or more cooling pipes carrying the filtered water into the boiler, at any convenient point for inserting it.

**No. 11,124. Process and Compound for Rendering Goods Water, Moth or Vermin Proof.** *(Procédé et composé pour rendre les marchandises imperméables et les garantir de la vermine et des mites.)*

Daniel M. Lamb, New York, U. S., 12th April, 1880; for 5 years.

*Claim.*—1st. In treating a solution of any hydro-carbon gum, or paraffine or both, dissolved in any suitable light hydro-carbon solvent and submitting the solution so formed, for about twenty-four hours more or less, to the action of a gas or gases formed by the union of chloride of sodium and sulphuric acid or an equivalent gas or gases, and then, immediately after such gaseous treatment, submitting the compound to a powerful air agita-



tion so as to drive out the remaining gas from the compound, and then washing the compound with water and caustic soda or ammonia, or both, or any other suitable alkali, for the purpose of removing any trace of gas or acid; 2nd. In dissolving either a hydro-carbon gum or paraffine, or both of them together, in any suitable light hydro-carbon, and then treating this solution for about twenty-four hours, more or less, with a gas or gases formed by the union of chloride of sodium and sulphuric acid, or any equivalent gas or gases, and then depriving the mixture of all residuum gas by means of a powerful current of air driven through the mass, which must be finally washed with water and a suitable alkali, to remove all traces of gas or acid; 3rd. As a new article of manufacture, the water, moth or vermin repelling compound, incorporated with or placed upon goods so as to render them water, moth or vermin proof or repelling.

**No. 11,125. Improvements on Revolving Broilers.** (*Perfectionnements aux grils tournants.*)

James M. Dick, Buffalo, N. Y., U. S., 12th April, 1880; for 5 years.

*Claim.*—1st. The combination, with the spindle B having the angular head D and a circular bearing C, of the notched ring A and the cover E, said angular head being of nearly the same diameter as the circular bearing and constructed to engage the notch in the ring A by moving said spindle laterally; 2nd. A double grating composed of the two circular sections G G, each consisting of a set of wires b b b and an outer ring h, one section of said wires with their ring being passed through or around the spindle B and the other section hinged and secured to the first section by the hinge g and hook e, or their equivalents; 3rd. The flanged ring A having notches in its edge and projections f on its flange, the cover E and the sectional grating G G, one member of which is fixed to a spindle B; 4th. The section G consisting of the wires b b b passed through or around the spindle B and clinched to a ring h, said ring being likewise passed through or around said spindle and having its ends united, whereby the parts are united without solder or other analogous means.

**No. 11,126. Improvement in Screw Cutting Machines.** (*Perfectionnement des machines à fileter les vis.*)

Christopher M. Spencer, Hartford, Conn. U. S., 12th April, 1880; for 5 years.

*Claim.*—1st. The combination, with the carriage and its tool carrying turret, and a shaft and cams to move the carriage, of a shaft and mechanism to automatically drive it and the cam shaft at a slow speed, while a tool of the turret is operating upon the end of a rod, and to thereafter drive it at a greater or higher rate of speed, while the carriage is being retracted or the tools of the turret are inoperative; 2nd. The cam shaft b and its disc and cams f<sub>2</sub> and g<sub>2</sub> combined with a belt slipper to shift the belt from a fast to a loose pulley, and *vice versa*, on a shaft which drives the said cam shaft; 3rd. The shaft r its loose ratchet wheel and attached gear, and a pawl to hold the ratchet, and a pulley and gear fast to the said shaft, combined with a pulley loose on the shaft, and a pinion u carried by it, the pinion u engaging both toothed gears.

**No. 11,127. Process and Compound for Rendering Goods, Water, Moth or Vermin Proof.** (*Procédé et composé pour rendre les étoffes imperméables et les garantir des mites ou de la vermine.*)

Daniel M. Lamb, New York, U. S., 12th April, 1880; for 5 years.

*Claim.*—1st. The process of preparing water, moth or vermin proofing or repelling compound, by treating a solution of any hydro-carbon gum, dissolved in any suitable light hydro-carbon solvent, and submitting the solution so formed for about twenty-four hours, more or less to the action of a gas or gases formed by the union of chloride of sodium and sulphuric acid or an equivalent gas or gases and then, immediately after such gaseous treatment, submitting the compound to a powerful air agitation so as to drive out the remaining gas from the compound, and then washing the compound with water and caustic soda, ammonia or both, or any other suitable alkali, for the purpose of removing any trace of gas or acid; 2nd. The water, moth or vermin proofing compound formed by dissolving any hydro-carbon gum in any suitable light hydro-carbon solvent and then treating this solution for about twenty-four hours more or less, with a gas or gases formed by the union of chloride of sodium and sulphuric acid, or any equivalent gas or gases, and then depriving the mixture of all residuum gas by means of a powerful current of air driven through the mass, which must finally be washed with water and a suitable alkali to remove all traces of gas or acid; 3rd. The water, moth or vermin repelling compound incorporated with or placed upon goods, so as to render them water, moth or vermin proof or repellent.

**No. 11,128. Improvements on Motors.** (*Perfectionnements aux moteurs.*)

Theophilus Mayhew, New York, U. S., 12th April, 1880; for 5 years.

*Claim.*—1st. The combination of a flexible diaphragm and chamber and a lever provided with an abutment extending to said diaphragm, the said diaphragm and chamber and the said abutment being located in planes radial to the fulcrum of the lever; 2nd. The combination of a flexible diaphragm, a lever having a rigid abutment in contact therewith and impelled by said diaphragm in one direction and an adjustable weight for impelling the lever in the opposite direction; 3rd. The combination of a flexible diaphragm, a lever impelled thereby and an extensible arm for said lever; 4th. The combination of a motor, a valve for controlling the operation of said motor, and an auxiliary spring motor for shifting said valve in both directions to subserve its purposes; 5th. The combination of a motor, a valve for controlling the operation of the same, and an auxiliary spring motor serving to shift the valve in both directions and arranged outside the apparatus of which the above elements form part where it is readily accessible; 6th. The combination of a flexible diaphragm, a valve for controlling the admission of a motive agent to act upon the same, and an auxiliary motor for shifting said valve in both directions; 7th. The combination of a flexible diaphragm, a valve for controlling the operation of the same, and an auxiliary spring motor for actuating said valve in both directions; 8th. The combination of a flexible diaphragm, a valve controlling the operation of the same and an elbow or bell crank lever impelled

by the diaphragm and actuating said valve; 9th. The combination of a motor, a valve for controlling the operation of the same, and a lever actuated by the motor serving to shift the valve and arranged outside the apparatus of which the above elements form part where it is readily accessible; 10th. The combination of a motor, a valve for controlling the operation of the same and an elbow or bell crank lever actuated by the motor, serving to shift the valve and arranged outside the apparatus of which the above elements form part where it is readily accessible; 11th. The combination of a motor, a valve for controlling the operation of the same, a lever for shifting said valve, a spring for forcing said lever to one side when swung off its central position, and an elbow or bell crank lever actuated by the diaphragm and serving to swing the valve shifting lever off its central position; 12th. The elbow or bell crank lever J made in one piece and comprising an abutment J<sub>1</sub>, journals J<sub>2</sub> and pin or stud J<sub>3</sub>; 13th. The valve shifting lever made in one piece comprising the triangular frame like body K, the fulcrum piece K<sub>1</sub> and the pins or studs K<sub>2</sub>; 14th. The combination with a valve chest, of a plate fitted to the side which communicates with the inlet and exhaust ports or pipes, a valve sliding upon the same, an elbow or bell crank lever for shifting said valve, and an adjustable end piece on the arm of said lever, which bears against the valve; 15th. The combination with the arm of a lever provided with longitudinal ribs of an extensible arm fitting upon said ribs, a slide embracing said extensible arm and engaging with the ribs on the main arm and provided with a clamping device; 16th. The combination with a motor of a valve for controlling the operation of the same, an auxiliary spring motor for shifting said valve and an adjustable hanger or support for the spring of said auxiliary spring motor; 17th. The combination of a motor, a valve for controlling the operation of the same, an auxiliary spring motor for actuating said valve and stops for the said auxiliary spring motor.

**No. 11,129. Boot and Shoe Sole Napper.** (*Râpe pour émousser les semelles des chaussures.*)

Freeman Winslow, Salem, Mass., U. S., 12th April, 1880; for 5 years.

*Claim.*—1st. A circular piece a provided with sharp teeth or projections b b b; 2nd. In combination, a circular piece a studded with teeth or sharp projections b b b, cushion d and a shank e; 3rd. A circular piece a, studded with teeth or sharp projections b b b and united to the annular piece c enclosing a cushion d; 4th. In combination, a circular piece a with its projections b b b, annular piece c and cushion d, with the screw-threaded shank e, its frustrum et, loose frustrum f and nut g.

**No. 11,130. Compound for Preserving Organic Bodies.** (*Composé pour conserver les corps organiques.*)

Jean Wickersheimer, Berlin, Germany, 12th April, 1880; for 5 years.

*Claim.*—A compound of alum, common salt, nitre, potash, arsenious acid, or their chemical equivalents, and water, mixed with glycerine and methyle-alcohol, or their chemical equivalents, combined in the proportions specified.

**No. 11,131. Improvements on Car-Couplers.** (*Perfectionnements des attelages des chars.*)

John W. Scott, sr., Yarmouth, N. S., 12th April, 1880; for 5 years.

*Claim.*—The plate S, with the solid head H and the stay F, which hold the link in position for coupling without the necessity of any person getting between the cars.

**No. 11,132. Improvements on Oil Cans.** (*Perfectionnements aux bidons à l'huile.*)

Hugh Sangster, Plano, Ill., U. S., 13th April, 1880; for 5 years.

*Claim.*—1st. In a sheet metal can, the body A provided with flanged C C in combination with a wood casing or covering B; 2nd. A can body composed of a metallic cylinder with flanges C C E and an external wood case B, held in contact with the cylinder by said flanges; 3rd. The combination, with the can body composed of the metal flanges cylinder and wood case, of the angular strip G soldered to the metal cylinder and arranged to overlap the edge of the wood body section.

**No. 11,133. Improvement in Wheel Carriages.** (*Perfectionnement dans les voitures à roues.*)

George N. French, Grafton, Vt., U. S., 13th April, 1880; for 5 years.

*Claim.*—The combination and arrangement of the side springs C C and the bow springs E E with each other and the body and perch frame of wheel carriage.

**No. 11,134. Improvements on Spring Bed Bottoms.** (*Perfectionnements aux fonds des lits à ressorts.*)

Hubert H. Hall, Montreal, Que., 13th April, 1880; for 5 years.

*Claim.*—1st. The combination of the rail B, arched strap C with spring D situated in relation to said rail B, and arched strap C with spring staples G; 2nd. The combination of the rail B, arched strap C with springs D, situated in relation to said rail B, and arched strap C with spring staples G, also in combination with springs D graduated in their length to suit the arch of the strap C.

**No. 11,135. Improvements on Steam Boilers.** (*Perfectionnements aux chaudières à vapeur.*)

George J. Scott, Calcutta, India, 13th April, 1880; for 5 years.

*Claim.*—A boiler constructed with deep vertical hollow legs or members D extending throughout its entire length, or a portion thereof, and projecting to below the level of the fire bars, and also with a combustion chamber formed of tubes x communicating above with the upper part of the water space of the boiler and below with the lower part of the water space or legs D, below the level of the fire bars essentially.

**No. 11,136. Apparatus for Raising Water.** (*Appareil pour monter l'eau.*)

George H. Bennett, Leavenworth, Kan., U. S., 13th April, 1880; for 15 years.

*Claim.*—1st. The means of raising water from the bottom or cooler por-

tion of a well or cistern and conveying the same to a place of discharge, the cylinder A having a suitable valve at its water inlet, the supply pipe *g*, plunger with rod B, plate C, weights D and a suitable means for elevating said plunger; 2nd. The well curb E, the parts thereof being secured together by suitable rods, said curb having ventilating panels F; 3rd. The combination, with a suitable device for raising water from the bottom of well or cistern, of the heating reservoir H, having a swinging pipe *m* connected to the top thereof and provided with faucet *n* and the pipe *k* having a check valve and a faucet *l*, said pipe *k* connecting a suitable water supply pipe provided with a drip opening or valve, to allow the water to escape when required to prevent the pipes from freezing; 4th. The combination, with a suitable device for raising water provided with a supply pipe *g* and faucet *h*, of the weighted lever G for operating said faucet; 5th. The cylinder A and rods *d*, in combination with the bracket *e* and the rods *f*; 6th. The means of automatically releasing the plunger, the shaft *v* and gear wheel *z*, in combination with the shaft *e*, clutch *p*, gear wheel *r* having clutch *q* and cam disc *s*, and the spring *t*.

**No. 11,137. Process of Manufacturing Articles in Imitation of Papier-Mache.** (*Procédé de fabrication des objets en imitation de papier-mâché.*)

Robert Cunningham, New York, U. S., 13th April, 1880; for 5 years.  
*Claim.*—1st. The process of manufacturing articles in imitation of papier mâché, which process consists in coating the surface of the article with transparent varnish, or other adhesive substance, then depositing thereon the ornament and allowing it to become fixed and then applying over the ornament and its support a covering of transparent varnish and allowing it to become dry; 2nd. Coating the surface of the articles with transparent varnish or other adhesive substance, then depositing thereon the ornament and allowing it to become fixed, then applying over the ornament and its support a covering of transparent varnish and allowing it to become dry, and then applying over the covering a coating of collodion; 3rd. The combination with an article of hard rubber, celluloid bone, ivory, glass polished metal, wood, porcelain and the like, of a coating consisting of particles of metallic foil, pearl, glass, granular and powdered substances, or other ornamental material fixed between coats or layers of transparent varnish; 4th. The combination, with an article of hard rubber, ivory, celluloid glass, polished metal, wood, porcelain and the like, of a covering consisting of particles of metallic foil, pearl, glass, granular and powdered substances, or other ornamental materials fixed between coats or layers of transparent varnish, over the outer of which coats or layers is a coating of collodion.

**No. 11,138. Machine for Hollowing Chair Seats.** (*Machine pour creuser les sièges des chaises.*)

Jared K. Master, Berlin, Ont., 13th April, 1880; for 5 years.  
*Claim.*—1st. The combination of the circular track B with pivot rail H on pivots *a*, secured by pivot nut J and adjustable slides, together with slots *c c* in pivot rail H, pivot frame C with adjustable cross rail E with slots *e e*, gauge block D, turn button E, circular pattern board G, serpentine pattern board L with rests M, slots *g g*, hollow pattern board K with slots *h h h h*; 2nd. The combination of the riser head N, seat head O and cutter *f f*, seat rest *i i* on frame C and hinges I I.

**No. 11,139. Process for Manufacturing Paper Pulp from Wood.** (*Procédé de fabrication de la pâte à papier de bois.*)

Charles B. Carter, Lawrence, Mass., U. S., 13th April, 1880; for 5 years.  
*Claim.*—1st. In extracting from the wood by distillation, its natural gums and acids, and in subsequently boiling it in a solution of caustic lye, in an open or covered vessel; 2nd. In extracting from the wood its natural gums and acid, previous to treating it with a caustic lye, to disintegrate its fibres; 3rd. First, extracting the natural gums and acids from the wood, second, reducing said wood to pulp by grinding, and, third, bleaching said ground pulp by the application to it of chloride of lime or other suitable bleaching materials.

**No. 11,140. Improvements on Car-Couplings.** (*Perfectionnements aux attelages des chars.*)

Henry Cooley and John C. Swait, Toronto, Ont., 13th April, 1880; for 5 years.  
*Claim.*—A coupling link provided with an outwardly extending stem or rod, in combination with draw heads provided with gaps in their faces, to permit of the passage of the stem or rod.

**No. 11,141. Improvements in Railway Switches.** (*Perfectionnements aux aiguilles des chemins de fer.*)

John B. Carey, Boston, Mass., U. S., 19th April, 1880; for 5 years.  
*Claim.*—1st. The combination with the tracks of the main line of a railway, and of a turnout and the movable tongue of a switch of a lever pivoted to the switch plate, and at one end operating the said tongue while at its other end, it is turned or operated by the car, or a device carried by the car; 2nd. In combination with tracks D E, tongue C and bed plate A, the lever J pivoted to said bed plate, said lever being partly parallel to said point and arranged to operate in contact therewith and against a spring adapted to keep the main track open, when engaged by a device carried by a car; 3rd. In combination with tongue C, plate A and lever J pivoted to said plate, the spring B inserted in a recess of said point C; 4th. The slot *g*, in combination with lever J and point C actuated by a spring, said lever being arranged for engagement with a device carried on a car; 5th. The combination, with presser foot *h*, cross bar *m* and long bar *l*, parallel to the side of the car, of treadles or foot rests *o o* at or near the ends of said bar *l*; 6th. In combination with tongue C impelled by a protected spring, the lever J and the sliding presser foot *h*, carried by the car and operated by the driver.

**No. 11,142. Improvements in Bolting Machines.** (*Perfectionnements aux bûteaux.*)

Charles J. Shuttleworth, (Co-inventor with O. M. Morse), Springville; Joseph D. Larabee, Ashford, George P. Kellogg, East Pike, Edward Wilhelm and John J. Bonner, Buffalo, N. Y., U. S., 19th April, 1880; for 5 years.

*Claim.*—1st. The combination, with an elevating mechanism, of an inclined screen facing the elevating mechanism and composed of sections having different degrees of fineness arranged side by side, whereby the material fed into the machine is separated into fine and coarse portions from the head towards the tail of the machine; 2nd. The combination, with an elevating mechanism provided with buckets or wings *f*, of the inclined screen C arranged to face the elevating mechanism; 3rd. The combination, with an elevating mechanism arranged in the meal chamber, of an inclined screen which completely separates the flour chamber from the meal chamber, and prevents the floating specks from entering the flour chamber; 4th. The combination, with the stationary case A provided with inclined ways *e* and elevating mechanism having buckets or wings *f*, of the removable screen A sliding in the ways *e*; 5th. The combination, with the case A, of the loose screen C, elastic support *n* and knockers *k*.

**No. 11,143. Improvements in Wood Turning Machines.** (*Perfectionnements aux machines à tourner le bois.*)

Freeman Hanson, Hollis, and Daniel H. Bacon, Portland, Me., U. S., 19th April, 1880; for 15 years.

*Claim.*—1st. A wood turning or hub mortising machine provided with a pawl K and an arm or lever H<sup>2</sup>, moved by an adjustable crank rod H<sup>1</sup> and acting upon a ratchet wheel M to impart, through a system of gear wheels or other suitable mechanism, an intermittent rotation to the wood to be cut; 2nd. A hub mortising machine provided with a sliding and revolving arbor *i* armed with a rotating chisel, or other suitable cutting tool, and moved upon a sliding cutter head C towards a rotating hub and along its side simultaneously with its rotation; 3rd. The combination of an adjustable crank rod H<sup>1</sup>, arm or lever H<sup>2</sup>, pawl K and ratchet wheel M, to produce a desired number of stops in one revolution of the wheels operated by them; 4th. The rocking sliding cutter head C composed of the bed plate B, set screws *e e*, posts *p p*; and a head provided with handle *h* and carrying a revolving arbor; 5th. A wood turning machine provided with a horizontal sliding bed plate B for carrying the mechanism which holds and rotates the wood, said bed plate being kept horizontal and made to slide horizontally or vertically by crank rods and guide cleats, without interfering with the rotation of the wood; 6th. The combination of the sliding cutter head C with a sliding and transversely reciprocating bed plate B; 7th. The combination of a sliding cutter head C with a vertically reciprocating bed plate B; 8th. The combination of a sliding and rocking cutter head C with a rocking bed plate.

**No. 11,144. Improvements in Paper Cabinets.** (*Perfectionnements aux buffets à papier.*)

Seth Wheeler, Albany, N. Y., U. S., 19th April, 1880; for 5 years.  
*Claim.*—A paper-holder adapted for the reception of two or more rolls of paper, such holder consisting of two or more receptacles arranged one above the other, or nearly so, and provided with openings in their sides for the passage of the paper.

**No. 11,145. Improvements in Carriage Poles.** (*Perfectionnements aux timons des voitures.*)

Thomas P. Banker, Mooretown, Ont., 19th April, 1880; for 5 years.  
*Claim.*—1st. The combination of the cross bar D constructed of bows *a b* provided with hollow flanges *e e*, braces F F, hammer strap C provided with set screw *d*, barrels E E and tongue A; 2nd. The combination of the slide G, keeper H, packing J, thumb screws I I and tongue A.

**No. 11,146. Improvements in Buckles.** (*Perfectionnements aux boucles.*)

John H. Huntress, Janesville, Wis., U. S., 19th April, 1880; for 5 years.  
*Claim.*—1st. The main frame A having irregular concave sides and notches *f f* upon the outer surfaces, and provided with cross-bar *d* and tongue projecting from the inner surface of the end bar *c*, in combination with the sliding bail B; 2nd. The sliding bail B provided with end bars *g* and I, grooved lugs *k k* and cross-bar *h*, in combination with the buckle frame A.

**No. 11,147. Improvements on Carriage Steps.** (*Perfectionnements aux marchepieds des voitures.*)

Francis A. Sawyer, 2nd, Boston, Mass., U. S., 19th April, 1880; for 5 years.  
*Claim.*—1st. The combination of the metal supporting plate having a shaft *a* and a panel *a*, with a tread B shaped to fit said panel and united to said step by cement under pressure or by metallic fastenings, or by both; 2nd. A metallic step composed of the supporting plate A and shank *a* forged from one piece of metal; 3rd. In a carriage step, a metallic plate provided with a panel *a*, and an exterior or wall *z* and a tread B cemented to said plate within the wall, whereby the cement forming the union between the plate and thread is protected on its edge by the metal wall; 4th. The combination of a metallic supporting plate, provided with a recess or panel and with an exterior wall, with a tread having a lip or extension adapted to fit upon the wall and to cover the vertical joints between said wall and the tread; 5th. The combination of a tread provided with a projection shaped to fit a recess in a metallic supporting plate, especially prepared to receive it, with said metal plate provided with said recess; 6th. In a carriage step, the combination of a metallic supporting plate having a plane surface, with a tread fastened thereon, the metal plate along the sides and at the front extending sufficiently to form a guard to protect the edge of the tread; 7th. In a carriage step, the combination of the metallic supporting plate pro-

vided with a bolt hole with a tread provided with a fastening bolt and a nut, for locking said tread to said plate; 8th. A metallic supporting plate provided with a bolt hole, a guard formed upon the under surface of the plate to surround the bolt hole; 9th. The combination, in a carriage step, of a metallic supporting plate having a plane surface with a crowned tread consisting of a crowned metal plate having a treading surface attached thereto, and fastened to said supporting plate in such a manner that its edge shall be firmly held against said supporting plate; 10th. A new article of manufacture, in a tread of India rubber or other suitable material, united by vulcanization or cement to a thin metallic plate adapted to be fastened to a metallic supporting plate by cement composed of white lead and oil, or gutta-percha and pitch, or by the metallic fastening described; 11th. The combination, in a carriage step, of a metallic supporting plate and tread, and a cement for uniting said tread to said plate, composed of white lead and oil or gutta-percha and pitch; 12th. The combination of a metallic supporting plate and tread, and an insoluble cement or pitch and gutta-percha, for packing or sealing the joints between said tread and plate.

**No. 11,148. Improvements on Heating Drums.** (*Perfectionnements aux poêles sours.*)

William C. Doddridge, Hickman, Ky., U. S., 19th April, 1880; for 5 years.

*Claim.*—The body A B C provided with the top and bottom openings, and having open ended tubes D and the deflectors arranged horizontally.

**No. 11,149. Machine for Spreading Manure.** (*Machine pour distribuer les engrais.*)

Joseph S. Kemp, Magog, Que., and William M. Burpee, Derby, Vt., U. S., 20th April, 1880; (Extension of Patent No. 4,659), for 5 years.

**No. 11,150. Improvements in Duplex Telegraphy.** (*Perfectionnements aux télégraphes à double courants.*)

Alexander Muirhead, Westminster, England, James A. Briggs, Jubblepore, and George K. Winter, Anconam, Madras, India, 21st April, 1880; (Extension of Patent No. 10,924), for 5 years.

**No. 11,151. Improvements in Duplex Telegraphy.** (*Perfectionnements aux télégraphes à double courants.*)

Alexander Muirhead, Westminster, Eng.; James A. Briggs, Jubblepore and George K. Winter, Anconam, Madras, India, 22nd April, 1880; (Extension of Patent No. 10,924), for 5 years.

**No. 11,152. Quadruple and Multiplex Telegraphs.** (*Télégraphes à quadruple et multiple courants.*)

Alexander Muirhead, Westminster, Eng.; James A. Briggs, Jubblepore and George K. Winter, Anconam, Madras, India, 22nd April, 1880; (Extension of Patent No. 10,640), for 5 years.

**No. 11,153. Quadruple and Multiplex Telegraphs.** (*Télégraphes à quadruple et multiple courants.*)

Alexander Muirhead, Westminster, Eng.; James A. Briggs, Jubblepore, and George K. Winter, Anconam, Madras, India, 23rd April, 1880; (Extension of Patent No. 10,640), for 5 years.

**No. 11,154. Improvements in Means for Effecting the Combustion of Fuel, and in Fire-places and Furnaces therefor.** (*Perfectionnements dans les moyens d'effectuer l'embrasement du combustible, et dans les foyers et fourneaux pour cet objet.*)

Rudolf Müller, Berlin, Germany, 23rd April, 1880; for 5 years.

*Claim.*—1st. The means for effecting the production and combustion of gaseous fuel, without separate gas generator, whereby an incandescent layer of fuel or an incandescent porous grate is caused by a regulated admission of air to effect, first, the distillation of the volatile constituents of a charge of solid fuel and then the conversion of the residue thereof into combustible gases, the gases so produced being directly afterwards made to enter into combustion with heated air admitted at a certain distance from the layer of solid fuel; 2nd. In combination with the means for producing and effecting the combustion of gaseous fuel referred to in the preceding claim, the carrying off the heavy gaseous products of combustion through channels having apertures situated at or near the bottom of the combustion chamber, while the light gaseous products are caused to escape from time to time at or near the top of such chamber, whereby a quiescent combustion is insured and chimney draught dispensed with; 3rd. Apparatus for effecting the production and combustion of gaseous fuel consisting of a combustion chamber wherein a restricted quantity of air is supplied to the fire grate through apertures below and at the level thereof, such apertures being provided with regulating slides or valves, while a further air supply is caused to pass through other passages, so as to issue in a heated state into the upper part of the combustion chamber for effecting the combustion of the gaseous fuel; 4th. In combination with the apparatus for effecting the production and combustion of gaseous fuel referred to in the preceding claim, flues for the escape of the heavy gaseous products of combustion arranged with their escape apertures at or near the bottom of the combustion chamber, other flues or passages being provided at the top of the combustion chamber for carrying off the light gaseous products; 5th. In apparatus for effecting the production and combustion of gaseous fuel, the combination of the combustion chamber A, fire grate a, ash pit door b with air holes i, air passages g m m' n n' p and escape flues x y.

**No. 11,155. Improvements in the Manufacture of Wood Veneer and Paste-board Boxes.** (*Perfectionnement dans la fabrication des boîtes en placage et en carton.*)

John Cross, jr., and Moses S. McCraney, Oakville, Ont., 23rd April, 1880; for 5 years.

*Claim.*—A metallic holder composed of two bars hinged together at one end, and bent to the shape of the cross section of the body of the box, for holding the box while the ends are being over-lapped and sewed, or otherwise fastened.

**No. 11,156. Improvements on Shoulder and Back Braces.** (*Perfectionnements aux bretelles-harnais.*)

Robert W. Gray, George Frost, George H. Phelps and George A. Frost, Dedham, Mass., U. S., 23rd April, 1880; for 5 years.

*Claim.*—1st. The two back pieces a b provided with curved edges 2 3, combined with the shoulder straps connected therewith, and adapted when joined with the back pieces at both ends to form arm eyes; 2nd. The back pieces a b laced together, and the shoulder straps combined with an attached umbilical supporter; 3rd. The back pieces a b, provided with gores 10 stiffened and cut away at 2 3, combined with the shoulder straps, umbilical supporter and buttons or fastenings to support, from the back pieces, other garments; 4th. The shoulder straps shaped in cross section and having the thin flexible inner edges T.

**No. 11,157. Improvements on Hafting Cutlery.** (*Perfectionnements aux manches des couteaux.*)

Edward Blaydes, John A. Blaydes and Joseph Wragg, Sheffield, England, 23rd April 1880; for 5 years.

*Claim.*—1st. The combination of the tang d arranged to interlock with the bolster m, and handle e having passage f; 2nd. Fitting the handle e provided with passage f extending completely through said handle to the mould a and with blade, &c., c having tang d passing through said handle and connecting with the bolster m and by introducing into the said mould liquified metal or compound of metals or other substances; 3rd. The combination of the tang d, handle e having passage f, and bolster m; 4th. The combination of the tang d, handle e having passage f and bolster m, and projections h; 5th. The combination of the tang d, handle e having cuts K, and cap or bolsters m having projections l; 6th. The combination of the tang d, handle e having cut k extending all round, whereby the caps or bolster m are formed into a ferrule or cup.

**No. 11,158. Combined Sewing Machine and Secretary.** (*Machine à coudre et secrétaire combinées.*)

Henry E. Cautfield and Thomas W. Jenkins, Vienna, Ont., 23rd April, 1880; for 5 years.

*Claim.*—The combination of the fall leaf A with the swing machine attached, and a writing desk C.

**No. 11,159. Improvements on Sugar Moulding Machines.** (*Perfectionnements aux machines à mouler le sucre.*)

Charles H. Hersey, Boston, Mass., U. S., 23rd April 1880; for 5 years.

*Claim.*—The rotary drum and series of moulds combined with the hopper and distributors, and the packer i inclined toward and adapted to fill the moulds; 2nd. A drum carrying a series of transverse rows of moulds open at both ends and plungers to move in said moulds, the said plungers having shanks provided with eyes or loops, combined with bars or carriages, each one to enter all the said eyes or loops of one transverse row, and with cams to operate each bar to move all the plungers of one transverse row simultaneously; 3rd. The combination with the moulds, plungers and endless apron, of the rake to move the material shaped in the moulds, into a line upon the apron, and means to automatically move it forward as each line of moulds comes in position to deposit the moulded sugar; 4th. The combination of the drum and its attached ratchet toothed adjusting devices, with the plungers and their carrying bars.

**No. 11,160. Improvements in Processes for the Treatment of Ores.** (*Perfectionnements dans les procédés de traitement des minerais.*)

George Duryee, New York, U. S., 23rd April 1880; for 5 years.

*Claim.*—1st. In combination with an adjacent furnace A for burning coke or other fuel, to form a blow pipe frame, a revolving cylinder B with gearing m, n, hopper C, condenser D, expelling basis or pot E, blower and blow pipe K and hydrocarbon feeder j; 2nd. The method of de-sulphurizing sulphuret ores by means of the combustible materials which they contain by feeding them into a furnace first brought to a white heat with the use of little or no additional fuel; 3rd. The method of heating sulphuret ores by means of the combustible material which they contain with the use of little or no additional fuel, by feeding them into a revolving furnace first brought to a white heat by the use of a blow pipe blast through the flame of an adjacent ordinary furnace or chamber directed upon the ores to be treated. 4th. The method of treating ores in an inclined revolving furnace by the application of a blow pipe blast through the flame of a common adjacent furnace or chamber, in combination with petroleum, dead oil, coal tar, or other inflammable hydro-carbon fed in with the blast; 5th. The method of reduction and partial separation of gold, silver, or other ores, by first de-sulphurizing them by means of a blow pipe blast, directed through the flame of an adjacent furnace or chamber, with or without the addition of petroleum or other hydrocarbon fed in with the blast, thus causing them to part with their sulphur instantly, then fusing the quartz or gangue with lime, soda, lead,

or other proper flux fed in with the blow pipe blast, in cases where a flux is needed; 6th. the method of reducing copper sulphide ores by submitting the copper pyrites to an intense heat in a revolving furnace by the use of a blow pipe blast fed with petroleum or other inflammable hydrocarbon and directed through the flame of an adjacent furnace or chamber upon the ores in the furnace, causing them to give off sulphur, in combination with oxygen, as sulphurous acid, then into the condenser combined with nitrate of soda, or its equivalent, and water to mingle with the sulphurous acid gas driven off from the ore in the revolving chamber forming dilute sulphuric acid which, acting on the copper ores, forms sulphate of copper in solution, then running this solution into tanks containing scrap iron, thereby reducing the solution to metallic copper; 7th. the method of treating iron ores in a furnace by means of a blow-pipe blast directed upon the ores through the flame of an adjacent furnace or chamber, with or without petroleum or other hydrocarbon fed in with the blast; 8th. the method of heating iron ores in a revolving furnace or cylinder, or chamber, by means of a blow pipe blast directed upon the ores through the flame of an adjacent furnace or chamber, heated with coke or other suitable fuel; 9th. the method of heating iron ores, either in a stationary or revolving furnace by means of a blow pipe blast directed upon the ores through the flame of an adjacent furnace or chamber heated with coke or other suitable fuel, in combination with petroleum or other hydrocarbon fed in with the blast; 10th. The method of treating iron for the purpose of converting it into steel, either in a stationary or revolving furnace by the application of a blow pipe blast directed upon the iron to be treated, through the flame of an adjacent furnace or chamber heated with coke or other suitable fuel, in combination with petroleum or other hydrocarbon and manganese oxide, or other equivalent material, fed in with the blast at the lower end, or with the ores at the upper end, of the cylinder; 11th. The method of manufacturing sulphur from sulphide ores by the use of a revolving furnace, the de-sulphurizing cylinder of which is kept at a white heat by the use of a blow pipe blast directed upon the ores, through the flame of an adjacent furnace or chamber, heated with coke or other suitable fuel, in combination with petroleum or other hydrocarbon fed in with the blast, while the condensing cylinder or chamber is partially filled with coke kept at a red heat, the ore being fed into the upper end of the desulphurizing chamber, and the sulphurous acid gas evolved therefrom by the intense heat being driven through and over the incandescent coke, and there condensed, causing the sulphur to be deposited in the form of a powder in the condensing chamber; 12th. The method of manufacturing sulphuric acid from sulphide ores, in either a stationary or revolving furnace, by the sulphurous acid gas being driven through a condensing chamber filled with coke, or other suitable material of a porous nature, by means of a blow pipe blast passing through the flame of an adjacent furnace or chamber, in combination with spray from a solution of nitrate of soda, or nitrate of soda in lump, and with steam or water entering with the sulphurous acid gas; 13th. The method of manufacturing oxide of zinc from ore or metallic zinc in a revolving furnace, by the application of a blow pipe blast directed through the flame of an adjacent furnace or chamber, upon the ore or metal in the revolving cylinder, with steam and either with or without petroleum or other hydrocarbon fed in with the blast; 14th. The method of treating ores by use of a blow pipe blast directed through the flame of an adjacent furnace or chamber upon the ores to be treated, in combination with filings of iron and steam fed in with the blast or in the pipe through which the steam passes, either with or without petroleum or other hydrocarbon; 15th. The method of treating ores in a furnace by means of a blow pipe blast, directed through the flame of an adjacent furnace or chamber upon the ores to be treated, in combination with oxide of manganese and metallic iron and steam fed in together, either with or without petroleum or other hydrocarbon; 16th. The puddling of iron by adding iron scrap to ore fed into the upper end of a revolving cylinder or furnace, the same being provided with proper dumping doors and the heat produced by a blow-pipe flame fed with hydrocarbon ore or gas, said flame directed into furnace from an adjacent fuel furnace, across the flame of the fuel furnace in such a manner as to produce a heat of three to four thousand degrees Fahrenheit; 17th. The elimination of phosphorus from iron ores or metallic iron, by feeding chloride of sodium (salt) in with the blow pipe flame, into a revolving furnace at a heat of three to four thousand degrees Fahrenheit, converting the phosphorus into a chloride and blowing it out in a gaseous form, said blow-pipe flame intensified by hydrocarbon oil fed in with the blast across the flame of an adjacent fuel furnace; 18th. The method of cupelling ore and amalgam in a detachable basin or pot lined with bone ash or other suitable cupelling mixture, at the lower end of a revolving furnace or cylinder in which the ore is reduced by means of a blow-pipe blast; 19th. The treatment of ores in either a revolving or stationary furnace by means of a blow-pipe flame, combined with gas or liquid fuel acting on the flame of an adjacent furnace in the manner described.

### No. 11,161. Improvements in Sewing Machines. (*Perfectionnements aux machines à coudre.*)

Charles F. Bosworth, Milford, Ct., U. S., 23rd April, 1880; for 5 years.

*Claim.*—1st. The combination of a reciprocating thread carrying needle, and mechanism working with it to form a stitch, a wax pan and means for heating the wax in the pan; 2nd. The combination of a reciprocating thread carrying needle, and mechanism working with it to form a stitch, a heated wax pan, and a reciprocating hook, which advances to take the needle thread and carry it to the wax pan; 3rd. The combination of a reciprocating thread carrying needle, and mechanism working with it to form a stitch, a heated wax pan and a reciprocating hook which advances to take the needle thread and carry it to the wax pan with a pair of nippers, to raise the needle thread to facilitate engagement of the said hook; 4th. The combination of a reciprocating thread carrying needle and mechanism working with it to form a stitch, a heated wax pan and a reciprocating hook, which advances to take the needle thread and carry it to the wax pan, with a lifter to take the wax from the pan to the thread; 5th. The combination of a reciprocating thread carrying needle and mechanism working with it to form a stitch, a heated wax pan, and a reciprocating hook, which advances to take the needle thread and carry it to the wax pan, with a cast off moving with the shuttle carrier, to take the thread from the hook after a waxing; 6th. The combination of a reciprocating thread carrying needle, and mechanism working with it to form a stitch, a heated wax pan and a reciprocating hook, which advances to take the needle thread and carry it to the wax pan, with a pair of nippers arranged to take the needle thread forward of the needle, when drawn taut and raise it from the path of the needle as the needle advances; 7th. The combination of a stitch forming mechanism with a feed

bar carrying a feed dog on the same side of the work at which the needle enters the said puncturing, the leather in advance of the needle mechanism for imparting a longitudinal movement to the said feed bar, and a vibrating lever in connection with said feed bar, the fulcrum of which is adjustable in a slot in said lever and also in a stationary slot parallel with the slot in said lever, when the feed bar is at its most advanced position, that is when the point of the dog is in the path of the needle; 8th. The combination of a stitch forming mechanism, a carriage to support the foot or shoeing sliding longitudinally on an adjustable guide, an adjustable head to support said guide, its surface rounded transversely, to allow the rocking movement of the carriage and a support for said head; 9th. The combination of the sliding carriage, which supports the work, and adjustable support therefor, with a clamping device operating automatically to firmly hold the support at each stitch.

### No. 11,162. Improvements on Grain Binders. (*Perfectionnements aux lieuses à grain.*)

Blanchard Chamberlain, Bellefontaine, Ohio, U. S., 23rd April, 1880; for 5 years.

*Claim.*—1st. A grain binder having a rake hinged to chains moved intermittently in opposite directions by a pair of segment gears engaging alternately with a pinion on a shaft by which said chains are driven; 2nd. A grain binder constructed with two pairs of segment gears for imparting reciprocating motion to the raking and gaveling mechanism and to the binding mechanism alternately, each while the other is at rest; 3rd. A cord carrying hoop or segment constructed with sprocket teeth on its back, in combination with a driving chain and oscillating shaft, to impart reciprocating motion thereto; 4th. A cord carrying hoop or segment 30, provided with a hinged arm 36, pressed outward by a spring for the purpose of taking up the slack of the driven chain; 5th. The combination of the grain throat 49 and compressor 43 constructed and operating as set forth; 6th. A cord carrying hoop or segment, provided with a cord holder 66 with a toothed wheel 33, in combination with a tappet for imparting a partial rotation to the same at each motion of the carrier in one direction; 7th. The combination of a rotary tyer or catch for holding the same, and a cord carrying hoop or segment provided with a tappet for releasing the tyer, and a rack for rotating the same; 8th. A rotary knot tyer 58 provided with a cap 56, to constitute a guide for directing the cord beneath the hook; 9th. The rotary knot tyer 58, with a flange 59, for discharging the knot; 10th. A rotary knot tyer 58 constructed in two parts constituting a nipper, in combination with the angular grooved cam or guide 65, to impart motion to the inner member of the tyer relatively to the outer; 11th. The sheaf discharger 73, rock shaft 72, slide 70 and spring tooth 69; 12th. A grain throat or receiver 49, adjustable in position to suit long or short grain; 13th. The knife 67 constructed and applied for the purpose of severing the cord, on the return movement of the cord carrier; 14th. The tappet switch 61, in combination with the tyer lock 60; 15th. The spool 88 having notched ends and provided at each end with fitted collars and springs 98, for applying tension to the said spool alternately.

### No. 11,163. Improvements on Children's Clothing. (*Perfectionnements dans les hardes d'enfants.*)

Henry C. Elliot, New York, U. S., 23rd April, 1880; for 5 years.

*Claim.*—1st. Cutting out, fitting, connecting together and finishing, by means of skilled labour, one each of such of the component parts of a jacket or other garment of a suit, as are essentially duplicated in the completed article, and cutting, fitting and otherwise preparing the remaining parts for connection, by unskilled labour, with each other and with the already finished half of the garment; 2nd. As a new article of manufacture, an incomplete jacket or other garment composed of separately formed component parts which are, in the main, duplicates cut, fitted and adapted for connection, and one of each of the same finished and connected to form half of the garment for guides, whereby the other cut and fitted parts, forming the remainder of the garment, may be finished and connected and the whole completed by unskilled labour.

### No. 11,164. Improvements on Telegraph Cables. (*Perfectionnements des câbles télégraphiques.*)

Marons M. Manly, Robert P. Manly and William J. Phillips, Philadelphia, Pa., U. S., 23rd April, 1880; for 15 years.

*Claim.*—1st. Keeping a metallic tube and enclosed wire, or wires, under upward longitudinal tensile strain, and at the same time introducing a molten insulating material into the lower end of said tube and causing it to gradually rise and fill the same and surround the enclosed wire or wires, the tube and contained insulating material being then cooled and prepared for use in any desired manner; 2nd. Keeping a metallic tube and an enclosed wire, or wires, under yielding upward tensile strain, and at the same time introducing a molten insulating material into the lower end of said tube and causing it to gradually rise therein and fill the same, and subsequently keeping the insulating material within the tube under pressure while cooling, by means of columns of similar molten insulating material bearing against the opposite end of the columns within the tube; 3rd. The improved method of introducing a series of wires into the tube, the same consisting in threading the ends of the wires through the two perforated or template plugs, securing them to the plug adapted to pass through the tube, and then forcing said plug through the tube; 4th. Filling the tube with molten insulating material while said tube and its enclosed wire, or wires, are under a yielding upward tensile strain, and then cooling said tube and its contents gradually from their lower ends upward; 5th. The combination of the elevated reservoir, the supply pipe leading downward therefrom, the stationary lower head B connected with said pipe and adapted to receive and retain the lower end of the tube, the upper vertically movable head adapted to receive and retain the upper end of the tube, and a suitable mechanism for moving said head upward; 6th. The combination of the elevated reservoir, its supply pipe leading downward, the stationary lower head connected with said pipe, the upper movable head and mechanism for moving it upward, and devices for supporting a wire or wires under tensile strain through a tube supported by said heads; 7th. The combination of the upper head E, the lower head B, the plugs N N', the tube A, and means for forcing the plug N' through said tube; 8th. The combination of the upper

and lower heads for holding the ends of the tube, means for forcing molten insulating material into the lower end of the tube, and a device for cooling the tube gradually from its lower end upward; 9th. Twisting the tube and enclosed wire and column of insulating material after the section of the cable has cooled; 10th. The mode of joining two sections of telegraph cable composed of tubes enclosing wires surrounded by an insulating material which fills the said tube, the said mode consisting in locating the ends of the tubes at a suitable distance apart, spreading the projecting wires slightly and supporting them by templates of insulating material, then forming joints between the wires, next surrounding the wire joints with insulating material by means of a suitable mould, and then slipping a sleeve with flared ends from one of the tube sections upon which it has been previously placed, so that it will overlap the adjacent ends of both tube sections, and finally securing said sleeve to both said tube sections by solder wire joints surrounding and entering the flared ends of said sleeve; 11th. The combination of the two tube sections, the sleeve V having flared ends, the wire joints V securing said ends, the wires connected by suitable joints, the templates V of insulating material supporting said wires, and the insulating material in the tube sections connected by similar insulating material in the sleeve; 12th. A telegraphic cable comprising two or more conducting wires proper or for direct current, and an independent wire adapted for connection with the ground at points intermediate of the length of the cable.

### No. 11,165. Improvements in Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

John Nelson, Ralph Emerson and William A. Talcott, Rockford, Ill., U. S., 23rd April, 1880; for 15 years.

*Claim.*—1st. In combination with the needle beds and the guide pieces mounted thereon, the needles and the yarn carrier provided with the presser shoe and latch opener, whereby the needles are properly guided and are pressed down and held upon the said guide pieces in the path of the latch opener; 2nd. The combination, with the yarn carrier provided with a spring hook, the guide pieces for supporting the same, the saddle and mechanism for imparting thereto a reciprocating movement, of a pattern cam, a tripping lever actuated thereby and a detachable mechanism by means of which the yarn carrier is connected to the saddle; 3rd. The combination with the needle beds and the guide pieces mounted thereon, of the yarn carrier guides between the latter and over the opening between the beds, the needles arranged to work across said opening, the presser hooks interposed between the needles and mechanism for imparting to said yarn carrier, needles and presser hooks their appropriate movements; 4th. The combination, with the yarn carrier, the needles, the presser hooks and the needle and presser hook operating cams, of the crank wheel, its pitman and the necessary connecting mechanism, whereby the proper movements are communicated to the several parts mentioned from a single crank; 5th. The combination with the yarn carrier and the needle and presser hook operating cams, of the saddle which connects the two needle operating cams, the levers for operating the yarn carrier and presser hook cams, the top cam plate for actuating said levers and the necessary supporting, connecting and operating mechanisms, whereby the proper reciprocating movement is communicated to the saddle and the yarn carrier, the presser hook and needle and needle operating cams are caused successively to follow each other to the end of the stroke, to reverse their relative positions and again to follow each other on the back stroke; 6th. The combination with the needle bed, the needles and their jacks, of the rocking levers in which the jacks traverse, and mechanism for controlling such rocking levers; 7th. The combination, with the needle bed, the needles and the needle jacks interlocking therewith, of the rocking levers in which the needle jacks slide, provided with the notches *a* in the guide ways thereof, the swinging support for the needles and mechanism for raising and lowering the same; 8th. The combination with the needle bed, the needles and the needle jacks of the rocking levers for carrying the said needle jacks provided with the notches in the guide ways thereof, the pattern drum and the mechanism for rotating the same, whereby any desired needle may be thrown out of operation while at the upper end of its stroke and be positively locked in that position; 9th. The combination, with the needle bed, the needles and the needle jacks, of the rocking levers for carrying the jacks, the pattern drum provided with independent cam grooves for each of the said rocking levers and mechanism for rotating said pattern drum, whereby in the operation of narrowing, the proper needles are successively thrown out of action and are positively locked while at the upper end of the stroke; 10th. The combination, with the guide pieces U U, the presser hooks working there through, and the cams and slides for operating the same, of the frames for supporting and guiding the said cams and slides, and mechanism for adjusting such frames, whereby the said presser hooks may be raised or lowered; 11th. The combination, with the guide pieces U U, the presser hooks working there through, and the cams and slides for operating the same, of the frames for supporting and guiding the said cams and slides pivoted to the guide pieces U U, and the eccentrics for adjusting the said frames, whereby the presser hooks may be raised and lowered to adjust them to tight or loose knitting; 12th. The combination, with the needle depressing cam E, the front set of needles and the pattern drum, of the shifter bar F<sub>1</sub>, the rocking frame for supporting the same, and the adjustable lever connection between said rocking frame and the pattern drum, whereby the said depressing cam is automatically shifted, and the machine thereby caused to knit a tight or loose fabric; 13th. The combination, with the needle bed A, the back set of needles, their operating jacks and the pattern drum, of the cam slide D provided with the fixed cam D, the movable cam D<sub>3</sub>, shifter bar F<sub>2</sub> and connecting mechanism intermediate the pattern drum and said shifter bar; 14th. The combination with the cam slide E, the flexible or spring cam E<sub>1</sub> mounted thereon and the pattern drum, of a pivoting lifting wedge interposed between such cam and the cam slide, and connecting mechanism intermediate the pattern drum and the lifting wedge, whereby the said cam is adjusted toward or from its carrying slide, and the needles are automatically thrown into and out of operation at the proper time; 15th. The combination, with the pattern drum, its operat-

ing pawl and cams for actuating the same, of a right and left screw and mechanism for rotating the same, and intermediate devices between said screw and operating pawl, whereby said pawl is removed from engagement with the pattern drum, and is caused to engage therewith at pre-determined periods according to pattern; 16th. The combination, with the pawl for operating the pattern drum, the right and left screw and mechanism for rotating the same, of the rocking frame provided with a projecting arm for engagement with the said pawl, and intermediate devices between said rocking frame and the right and left screw.

### No. 11,166. Improvements on Safety Valves. (*Perfectionnements aux soupapes de sûreté.*)

Frank B. Scovell, Waterford, Ont., 24th April, 1880; for 5 years.

*Claim.*—In a safety valve, an auxiliary valve chamber B having a perforated cap K, and provided with a passage E leading from a point between the steam tight valve seat *g*, and snugly fitting piston end *f* of the auxiliary valve G to the chamber A, above the main valve C; 2nd. In a safety valve, an auxiliary valve G having a steam tight seat *g* and snugly fitting piston end *f* contained within the chamber B, in combination with the passage E arranged in combination with the chamber A; 3rd. The elbow-shaped escape pipe D entering the chamber A and forming a seat for the main piston valve C; 4th. The pipe F carried through a hole connecting the boiler with the chamber A, in combination with the passage E, valve G and chamber B; 5th. In a safety valve, a chamber A recessed and provided with a piston valve G, in combination with the elbow-shaped escape pipe D; 6th. In a safety valve, a chain M connected to the regulating cap K screwed on to the auxiliary valve chamber B, in combination with the regulating set screw L passing through the top cap of the chamber A.

### No. 11,167. Improvements on Brush Handles. (*Perfectionnements aux manches des pinceaux.*)

Percival Platt, Adolphustown, Ont., 24th April, 1880; for 5 years.

*Claim.*—1st. A method of manufacturing brushes with handles H formed by a single stick, and having a swell S of equal diameter with the base of said handle G and the recesses *a a* to receive and hold the backing; 2nd. The method of finishing the handle H, after the bristles are affixed, by placing it in a lathe, drawing the band C over the bristles F, to confine them, and turning the handle H to form the swell S of equal size with the base of the handle G; 3rd. The combination of the handle H with the recesses *a a*, the swell S, the bristles F and the band C.

### No. 11,168. Improvements on Water Closets. (*Perfectionnements aux lieux d'aisance.*)

William B. Malcolm, Toronto, Ont., 24th April, 1880; for 5 years.

*Claim.*—1st. A basin A in combination with the metal supporting base provided with the extension B, and trap passages D D; 2nd. The combination of the operating handle F, shaft E, valve C, with balance weight and water valve H; 3rd. The valve C hinged at its centre to an arm of the operating shaft, in combination with the rubber valve seat of the basin; 4th. The tapered spindle I, in combination with the valve J<sub>2</sub> of the water supply pipe; 5th. The water passage L connecting the two water chambers of valve, for the purpose of admitting a limited stream of water under the piston, when the valve spindle is relieved of pressure.

### No. 11,169. Improvements on Step Ladders. (*Perfectionnements aux échelles à queue.*)

John N. Valley, Jersey City, N. J., U. S., 24th April, 1880; for 5 years.

*Claim.*—1st. A step ladder having two round uprights or side posts A bolted in correspondingly curved recesses *b*, in the opposite vertical edges of each end of the steps B; 2nd. The angular cast metal bracket D provided with tubular lugs *d*, in combination with the round side posts A, and the top board E secured by screws *e* to the ends of the posts A; 3rd. The swinging support formed of the round legs F (with or without the longitudinal strengthening braces *f*<sub>2</sub>) united by horizontal rounds *f*<sub>1</sub> and bolts *f*<sub>1</sub>, and hinged to the bracket D by the lugged cast metal socket G; 4th. The longitudinal strengthening braces *f*<sub>2</sub>, in combination with the swinging legs F and their cross round *f*; 5th. The combination of the notched brace H hinged, at one end, to the swinging support F and working, with its other end in, the guide staple I arranged diagonally across the bars A, with the headed spiral spring J arranged to slide upon the guide staple I, and to press upon the said brace H.

### No. 11,170. Improvements on Sand Paper Holders. (*Perfectionnements aux porte-papier de verre.*)

Chancey M. Lothrop, Norwood, Mass., U. S., 24th April, 1880; for 5 years.

*Claim.*—The body A, pivoted clamps B B, levers C C provided with the curved ends *a a*, and the knob D.

### No. 11,171. Improvements on Cooking Stoves. (*Perfectionnements aux poêles de cuisine.*)

Charles Carpenter and John Milne, Hamilton, Ont., 24th April, 1880; for 5 years.

*Claim.*—1st. In combination with an elevated oven cooking stove, the opening *g* G in the top of stove, and the passage H in the bottom of the stove plate I, and damper J, whereby the products of combustion pass entirely around the oven to the exit pipe, heating all parts of the oven at a uniform temperature; 2nd. In combination with an elevated oven cook stove, the passage H, whereby the smoke current is reversed around the oven; 3rd. In combination with an elevated oven cook stove, the opening *a* and damper *b*, whereby the smoke current is also reversed around the oven.



## List of Patents issued up to 19th June, 1880, but not yet Officially published in the Patent Office Record.

- No. 11,172. A. McDonald, Windsor Mills, Que., "Wood Pulp," 24th April, 1880.
- No. 11,173. D. C. Baker, Buffalo, N. Y., U. S., "Horses' Hoofs," 24th April, 1880.
- No. 11,174. J. H. Edward, Stillwater, Minn., U. S., "Horse Power," 24th April, 1880.
- No. 11,175. P. Barclay, East Boston, Mass., U. S., "Lubricator," 24th April, 1880.
- No. 11,176. D. M. Lester, Norwich, Conn., U. S., "Envelope Machine," 24th April, 1880.
- No. 11,177. J. H. Whitney, New York, N. Y., U. S., "Rolling Machine," 24th April, 1880.
- No. 11,178. J. Nelson, R. Emerson and W. A. Talcott, Rockford, Ill., U. S., "Knitting Machine," 24th April, 1880.
- No. 11,179. T. P. Hardy, New York, N. Y., U. S., "Steam Radiator," 24th April, 1880.
- No. 11,180. R. C. Barrie, jr., and J. H. W. Chesnut, Philadelphia, Pa., U. S., "Mechanical Movement," 24th April, 1880.
- No. 11,181. J. Bates, Thornbury, Ont., "Manual Power," 24th April, 1880.
- No. 11,182. L. Darozir and L. Dion, Natick, Mass., U. S., "Heel Rand Slabs," 24th April, 1880.
- No. 11,183. R. Stone, New York, N. Y., U. S., "Stone Excavator," 24th April, 1880.
- No. 11,184. A. Cummings, New York, N. Y., U. S., "Improved Screw," (Extension of Patent No. 4,602), 27th April, 1880.
- No. 11,185. A. S. Walbridge, Mystic, Que., "Horse Rake," (Extension of Patent No. 4,874), 29th April, 1880.
- No. 11,186. H. A. Carson, Boston, Mass., U. S., "Earth Excavator," 29th April, 1880.
- No. 11,187. B. B. Small, North Lubeck, Me., U. S., "Horse Hoe and Cultivator," 29th April, 1880.
- No. 11,188. J. M. Lewin, Lockport, N. Y., U. S., "Bottle Stopper," 29th April, 1880.
- No. 11,189. P. W. Nelson, Moline, Ill., U. S., "Barrel Swing," 29th April, 1880.
- No. 11,190. W. N. Whiteley, Springfield, Ohio, U. S., "Gathering and Binding Machine," 29th April, 1880.
- No. 11,191. W. L. Earing, Brookville, Ont., "Saws," 29th April, 1880.
- No. 11,192. D. Halpin, Thornfield, Eng., "Lock Nuts," 29th April, 1880.
- No. 11,193. J. Pattison, Nevada City, Cal., U. S., "Blasting Powder," 24th April, 1880.
- No. 11,194. W. H. Storey, Acton, Ont., "Glove Fastener," (Re-issue of Patent No. 9,779), 29th April, 1880.
- No. 11,195. E. R. Whitney and A. McKay, Montreal, Que., "Evaporator," 29th April, 1880.
- No. 11,196. H. H. Miller, Lyndonville, Vt., U. S., "Dressing Staves," 29th April, 1880.
- No. 11,197. J. B. Robertson, Toronto, Ont., "Nut Lock," 29th April, 1880.
- No. 11,198. J. F. Mahon, London, Ont., "Reaping Machine," 29th April, 1880.
- No. 11,199. T. Dewees, San Antonio, Texas, U. S., "Windmill," 29th April, 1880.
- No. 11,200. G. E. Facto and H. McRae, Ottawa, Ont., "Railway Rail Splice Fastening," 29th April, 1880.
- No. 11,201. J. Clancey, Wallaceburg, Ont., (Assignee of C. M. Glancy), "Machine for Bevelling the ends of Hoop Staves," 29th April, 1880.
- No. 11,202. J. Nesbitt, Toronto, Ont., "Electric Signal," 29th April, 1880.
- No. 11,203. W. H. Abel, Bridgewater, N. H., U. S., and H. W. Boardman, Lowell, Mass., U. S., "Knitting Machine," 29th April, 1880.
- No. 11,204. W. Brown, Easton's Corners, Ont., "Gate Hanger," (Extension of Patent No. 4,716), 29th April, 1880.
- No. 11,205. The MacKinnon Pen Co., Stratford, Ont., "MacKinnon Pen," (Extension of Patent No. 4,809), 3rd May, 1880.
- No. 11,206. The MacKinnon Pen Co., Stratford, Ont., "MacKinnon Pen," (Extension of Patent No. 4,809), 4th May, 1880.
- No. 11,207. C. G. Cooper, Mount Vernon, Ohio, U. S., "Traction Engine," 7th May, 1880.
- No. 11,208. M. Schmidt, Hanover, and C. Wiser, Walkerton, Ont., "Vehicles," 7th May, 1880.
- No. 11,209. D. W. Lapham, Washington, D. C., "Paper Files," 7th May, 1880.
- No. 11,210. E. Parent and M. C. Mullarky, Montreal, Que., "Boots," 7th May, 1880.
- No. 11,211. G. K. Reber, Pittsburg, Pa., U. S., "Water Conductor," 7th May, 1880.
- No. 11,212. C. Raymond, Guelph, Ont., "Bobbin Winder," 7th May, 1880.
- No. 11,213. M. W. Patten, Somerville, Mass., U. S., "Bottle Stopper," 7th May, 1880.
- No. 11,214. C. H. Dunn and J. F. Jones, Hillsburgh, N. S., "Vehicle Hubs," 7th May, 1880.
- No. 11,215. A. B. Harmon, Traer, Iowa, U. S., "Swings," 7th May, 1880.
- No. 11,216. H. Large, Strathroy, (Assignee of F. C. S. Ridgway, Ottawa), Ont., "Chloric Generator," 7th May, 1880.
- No. 11,217. L. J. Baker, Boston, Mass., U. S., "Rotary Engine," 7th May, 1880.
- No. 11,218. W. W. Lake and M. E. Weller, Fort Plain, N. Y., U. S., "Grinding and Polishing Hollow Ware," 7th May, 1880.
- No. 11,219. G. H. Chincock, Brooklyn, N. Y., and W. W. Bennet, Jersey City, N. J., U. S., "Musical Instruments," 7th May, 1880.
- No. 11,220. L. T. J. Lubin, Boston, Mass., U. S., "Spring Truss," 7th May, 1880.
- No. 11,221. E. Caswell, Lyons, N. Y., U. S., "Hub Borer and Box Setter," 7th May, 1880.
- No. 11,222. A. Forsy, Ottawa, Ont., "Oil Cabinet," 7th May, 1880.
- No. 11,223. F. W. Andrews, St. Stephen, N. B., (Assignee of C. W. Rodgers, Boston, Mass.), "Clothes Dryer," 7th May, 1880.
- No. 11,224. W. Orr, Millgrove, and J. W. Cummins, Waterdown, Ont., "Carpet Sweeper," 7th May, 1880.
- No. 11,225. J. F. Sharpe, London, Ont., and J. Hogue, St. Jean, Que., "Boots," 10th May, 1880.
- No. 11,226. S. H. Stepp, Johnson, City, Tenn., U. S., "Saw Gummer," 10th May, 1880.
- No. 11,227. F. A. Wiswell and W. H. Gilman, Stanstead, Que., "Curtain Fixture," 10th May, 1880.
- No. 11,228. J. Wavish, Leytonstone, Eng., "Steam Boilers," 10th May, 1880.
- No. 11,229. J. Popham and J. Linton, Montreal, Que., "Riveted Seam for Boots," (Extension of Patent No. 10,780), 10th May, 1880.
- No. 11,230. G. L. Anders, Boston, Mass., U. S., "Signalling Apparatus," 10th May, 1880.
- No. 11,231. E. Miller, Meriden, (Assignee of R. B. Perkins, Meriden, Conn., and L. Henkle, Rochester, N. Y., U. S.), "Lanterns," 10th May, 1880.
- No. 11,232. T. Mitchell, Hamilton, Ont., "Table Mat," 10th May, 1880.
- No. 11,233. B. Holly, Lockport, N. Y., U. S., "Radiator," 10th May, 1880.
- No. 11,234. F. A. Klemm, J. Kaiser, E. Marx, New York, N. Y., and L. Davis, Montreal, Que., "Telephone and Switch," 10th May, 1880.
- No. 11,235. T. Rogers, Springfield, Ohio, R. S. Dorsey and M. E. Bunger, Indianapolis, Ind., U. S., "Harrows," 10th May, 1880.
- No. 11,236. P. Birch, Stratford, Ont., "Gas Governor," 10th May, 1880.
- No. 11,237. G. A. and B. Crites, Hamilton, Ont., (Assignees of R. B. Palmer, Chicago, Ill., U. S.), "Augers," (Extension of Patent No. 4,719), 13th May, 1880.
- No. 11,238. G. M. Mowbray, North Adams, Mass., U. S., "Mica Blasting Powder," (Extension of Patent No. 4,769), 13th May, 1880.
- No. 11,239. G. M. Mowbray, North Adams, Mass., U. S., "Frictional Electric Battery," (Extension of Patent No. 4,875), 13th May, 1880.
- No. 11,240. J. H. Smythe and D. Cameron, Chatham, Ont., "Gate Hanger," 13th May, 1880.
- No. 11,241. D. C. Sumner, Millbury, Mass., U. S., "Textile Fabrics," 13th May, 1880.
- No. 11,242. P. Herdic, Williamsport, Pa., U. S., "Vehicles," 13th May, 1880.
- No. 11,243. W. C. Bramwell, Hyde Park, Mass., U. S., "Feeding Textile Materials for Carding," 13th May, 1880.
- No. 11,244. D. A. McDonald and C. F. Kittridge, Rockland, Me., U. S., "Boots and Shoes," 13th May, 1880.
- No. 11,245. J. Ford, Portneuf, Que., "Nut Locks," 13th May, 1880.
- No. 11,246. J. Elliott, Goderich, Ont., "Fences," 13th May, 1880.
- No. 11,247. H. Sanford and H. R. A. Boys, Barrie, Ont., "Ploughs," 13th May, 1880.
- No. 11,248. J. T. Barnard, Hamilton, Ont., (Assignee of G. Hart, Detroit, Mich., U. S.), "Emery Wheels," 13th May, 1880.
- No. 11,249. M. C. Stone, Baltimore, Md., U. S., "Pencil Sharpener and Point Protector," 13th May, 1880.
- No. 11,250. W. Claypool, North Buffalo, Pa., U. S., "Farm Gate," 13th May, 1880.
- No. 11,251. I. H. Roberts, Cadillac, Mich., U. S., "Tool Handle Fastener," 13th May, 1880.
- No. 11,252. D. Foley, Bridgeport, Conn., U. S., "Whiffletrees," 13th May, 1880.
- No. 11,253. G. H. Bliss, Pittsfield, Mass., U. S., "Telephone Calls," 13th May, 1880.
- No. 11,254. C. Williams, jr., Somerville, (Assignee of G. L. Anders, Boston, Mass., U. S.), "Signalling Apparatus for District Telephones," 13th May, 1880.
- No. 11,255. A. W. Greene, Elizabethport, N. J., U. S., "Boiler Furnace," 13th May, 1880.
- No. 11,256. J. Williams, Sharpsburgh, E. Smith, Pittsburg and J. R. Miligan, Wilkins Township, Pa., U. S., "Motors for Machinery," 13th May, 1880.
- No. 11,257. B. and A. Folton, Eramosa, Ont., "Reversible Pea Harvesting Attachment," (Extension of Patent No. 4,727), 15th May, 1880.
- No. 11,258. H. A. Holt, F. A. McKean, M. Davis and J. H. Tolles, Nashua, N. H., U. S., "Mortising Machine," 15th May, 1880.
- No. 11,259. G. H. Moore, Norwich, Conn., U. S. A., "Filtering Machine," 20th May, 1880.



- No. 11,260. J. B. Newman, Wallaceburgh, Ont., "Vehicle Hubs," 20th May, 1880.
- No. 11,261. D. MacKinnon, Adrian, Mich., U. S., "Pens," 20th May, 1880.
- No. 11,262. N. D. Morey, Saratoga Springs, N. Y., U. S., "Stove-pipe Thimbles," 20th May, 1880.
- No. 11,263. D. R. Proctor, Gloucester, Mass., U. S., "Lumber Slicer," 20th May, 1880.
- No. 11,264. J. B. Stoner, Toledo, Ohio, U. S., "Weighing Machine," 20th May, 1880.
- No. 11,265. J. D. Billings, New York, N. Y., U. S., "Horse shoes," 20th May, 1880.
- No. 11,266. C. W. Lanpher, Norwick, N. Y., U. S., "Locomotive Brake," 20th May, 1880.
- No. 11,267. J. Fleming Toronto, Ont., "Manufacturing Leads and Slugs for Printing," 20th May, 1880.
- No. 11,268. T. G. F. Dolly, Dulwich, Eng., "Exhausting Air from Cans," 20th May, 1880.
- No. 11,269. A. North, Champlain, N. Y., U. S., "Refrigerator Cover," 20th May, 1880.
- No. 11,270. J. Johnson, Milton, Ont., "Reaping Machine," 20th May, 1880.
- No. 11,271. W. H. Rogers, Amherst, N. S., "Fish Ladder," 20th May, 1880.
- No. 11,272. J. Berthiaume, sr., and jr., Boucherville, Que., "Hay Presses," 20th May, 1880.
- No. 11,273. François Berthiaume, St. Roch, Que., "Hay Press," 21st May, 1880.
- No. 11,274. J. B. Adams, Oakland, Cal., U. S., "Pillow Sham Frame and Holder," 26th May, 1880.
- No. 11,275. E. Roos, Galt, Ont., "Books," 26th May, 1880.
- No. 11,276. C. C. Redmond and A. W. White, San José, Cal., U. S., "Beer Faucets," 26th May, 1880.
- No. 11,277. G. L. Anders and T. A. Watson, Everett, Mass., U. S., "Signalling Apparatus for District Telephones," 26th May, 1880.
- No. 11,278. D. S. Van Wyck, Fishkill Plains, N. Y., U. S., "Sewing Machine Attachment," 26th May, 1880.
- No. 11,279. C. Robinson, Eau Claire, Wis., U. S., "Carriage Seat Locks," 26th May, 1880.
- No. 11,280. W. Johnstone, Ottawa, Ont., "Steam or Water Boiler," 26th May, 1880.
- No. 11,281. G. S. Ward, Hamilton, Ont., "Churns," 26th May, 1880.
- No. 11,282. G. Culham, Beverley, Ont., "Thrashing Machine," 26th May, 1880.
- No. 11,283. W. M. Dight, Mercer, Pa., U. S., (Assignee of H. M. Dvrgert), "Grain Measure," 26th May, 1880.
- No. 11,284. C. Kinney, Windsor, and A. Neville, Hamilton, Ont., "Carpenters' Bench Hooks," 26th May, 1880.
- No. 11,285. C. Kinney, Windsor, and A. Neville, Hamilton, Ont., "Rotary Marking Gauge," 26th May, 1880.
- No. 11,286. C. Kinney, Windsor, and A. Neville, Hamilton, Ont., "Rotary Slitting Gauge," 26th May, 1880.
- No. 11,287. W. Rushmer, Aylmer West, Ont., "Stamp and Label Affixer," 26th May, 1880.
- No. 11,288. C. C. Fairlamb, Chicago, Ill., U. S., "Milk Pans," 26th May, 1880.
- No. 11,289. J. McMaster, Bridgetown, Ont., "Metallic Coffin Bottoms," 26th May, 1880.
- No. 11,290. E. N. Heney, (Assignee of W. Davis), Montreal, Que., "Shifting Rails for Buggy Tops," 26th May, 1880.
- No. 11,291. C. G. Grier, (Assignee of E. W. Lincoln), Richmond, Ind., U. S., "Fluid Soaps," 26th May, 1880.
- No. 11,292. J. Warren, Toronto, Ont., "Sash Fastener," 26th May, 1880.
- No. 11,293. J. W. Hill, Cincinnati, O., U. S., "Grain Weigher," 26th May, 1880.
- No. 11,294. L. Goddu, Winchester, Mass., U. S., "Boot Nailing Machine," 29th May, 1880.
- No. 11,295. W. Armstrong, De Pere, Wis., U. S., "Stump Extractor," 29th May, 1880.
- No. 11,296. W. Heston, Ravenna, (Co-inventor with C. Purdy, Cleveland), Ohio, U. S., "Grain Cutting Machine," 29th May, 1880.
- No. 11,297. A. Wright, Prince Arthur's Landing, Ont., "Self-Acting Grate and Door Shutter," 29th May, 1880.
- No. 11,298. F. A. Klemm, E. Marx, J. Kaiser, New York, N. Y., U. S., and L. Davis, Montreal, Que., "Telephone," 29th May, 1880.
- No. 11,299. M. Alisoff, St. Petersburg, Russia, "Polygraph," 29th May, 1880.
- No. 11,300. J. Carpenter, Moravia, N. Y., U. S., "Waggon Brake," 29th May, 1880.
- No. 11,301. T. A. Trudelle and E. Maheux, Quebec, Que., "Railway Car Coupler," 29th May, 1880.
- No. 11,302. A. Barron, Warsham, [Ont., (Assignee of C. E. Newman, Cedarville, Ka., N. S.), "Pump," 29th May, 1880.
- No. 11,303. G. Brake, Lansing, Mich., U. S., "Baker's Oven," 1st June, 1880.
- No. 11,304. A. Wilkins, Cincinnati, O., U. S., "Cross Cut Saw," 1st June, 1880.
- No. 11,305. S. Buschlen, Port Elgin, Ont., "Pump," 1st June, 1880.
- No. 11,306. G. W. Tucker, Waterbury, Ct., U. S., "Tubular Rivet," 1st June, 1880.
- No. 11,307. E. W. Bigelow, Boston, Mass., U. S., "Corset," 1st June, 1880.
- No. 11,308. J. Woodrum, Poages Mills, Va., U. S., "Process of Separating Potash from Ashes," 1st June, 1880.
- No. 11,309. W. Dalrymple, Corinth, Ont., "Medical Compound," 1st June, 1880.
- No. 11,310. T. O. Memery, Key West, Fla., "Blind Hinge," 1st June, 1880.
- No. 11,311. N. Jenkins, New Haven, Ct., U. S., "Braided Spring," 1st June, 1880.
- No. 11,312. G. Milbank, Chillicothe, Mo., U. S., "Method and Apparatus for Purifying Grain," 1st June, 1880.
- No. 11,313. C. W. Levalley, St. Paul, Minn., U. S., "Machine for Binding Grain," 1st June, 1880.
- No. 11,314. G. Smith, Stratford, Ont., "Safety Brake," (Extension of 10,852,) 1st June, 1880.
- No. 11,315. G. Smith, Stratford, Ont., "Safety Brake," (Extension of 10,852,) 1st June, 1880.
- No. 11,316. W. Buck and J. W. Buck, Brantford, Ont., "Wood Heater," (Extension of 4,810,) 2nd June, 1880.
- No. 11,317. J. Maltus, Hamilton, Ont., "Street Car Fare Box," (Extension of 4,814,) 3rd June 1880.
- No. 11,318. J. Mills, Hamilton, Ont., "Bed Bottom," 5th June, 1880.
- No. 11,319. N. Vallye, jr., (Assignee of A. Lajeunesse,) San Francisco, Cal., U. S., "Harrow," 5th June, 1880.
- No. 11,320. J. L. Sprague, Minneapolis, Minn., U. S., "Churn," 5th June, 1880.
- No. 11,321. A. H. Seaton, Weston, Super Mare, R. W. Hart, Wakefield, and E. B. B. George, Notting hill, Eng., "Composition for Protecting Ships' Bottoms," 5th June, 1880.
- 11,322. W. Tully, London Eng., "Tube Fastener," 5th June, 1880.
- No. 11,323. C. Cross, Manchester, Eng., "Fancy Weaving Loom," 5th June, 1880.
- No. 11,324. M. Gaudy, Liverpool, Eng., "Non-elastic Canvas Belting," 5th June, 1880.
- No. 11,325. F. B. Batchelder, East Boston, Mass., U. S., "Leather Finishing Machine," 5th June, 1880.
- No. 11,326. C. Robinson and S. W. Downey, Toronto, Ont., "Safety Shirt Stud," 5th June, 1880.
- No. 11,327. C. M. Lee, Athol, Mass., U. S., "Shoes," 5th June, 1880.
- No. 11,328. J. Haggart and R. Cochrane, Brampton, Ont., (Assignees of J. E. Sweet, Syracuse, N. Y., U. S.), "Piston Valve," 5th June, 1880.
- No. 11,329. H. G. Farr, Brandon, Vt., and H. C. Copeland, New York, U. S., "Heel Stiffener," 5th June, 1880.
- No. 11,330. T. A. Watson, Everett, and C. Williams, jr., Boston, Mass., U. S., "Switch Board," 5th June, 1880.
- No. 11,331. E. A. Wible, Folsom, Cal., U. S., "Vehicle Axle," 5th June, 1880.
- No. 11,332. W. P. Cutter, Everett, Mass., U. S., "Car Coupling," 5th June, 1880.
- No. 11,333. H. B. Clark, Toronto, Ont., "Spring Bed," 5th June, 1880.
- No. 11,334. J. W. Brooks, Boston, (Assignee of G. McKay, Cambridge, and H. P. Fairfield, Boston,) Mass., U. S., "Heel Attaching and Trimming Machine," (Extension of Patent No. 5,360,) 5th June, 1880.
- No. 11,335. J. W. Brooks, Boston, (Assignee of G. McKay, Cambridge, and H. P. Fairfield, Boston,) Mass., U. S., "Heel Attaching and Trimming Machine," (Extension of Patent No. 5,360,) 6th June, 1880.
- No. 11,336. J. W. Brooks, Boston, (Assignee of C. W. Glidden, Lynn, and S. A. Simmons, Lawrence,) Mass., U. S., "Heel Trimming Machine," (Extension of Patent No. 5,358,) 6th June, 1880.
- No. 11,337. J. W. Brooks, Boston, (Assignee of A. D. Elliott, et al., Lawrence,) Mass., U. S., "Heeling Machine," (Extension of Patent No. 5,359,) 6th June, 1880.
- No. 11,338. J. W. Brooks, Boston, (Assignee of C. W. Glidden, Lynn, and S. A. Simmons, Lawrence,) Mass., U. S., "Heel Trimming Machine," (Extension of Patent No. 5,358,) 7th June, 1880.
- No. 11,339. J. W. Brooks, Boston, (Assignee of A. D. Elliott, G. E. Fellows and S. A. Simmons, Lawrence,) Mass., U. S., "Heeling Machine," (Extension of Patent No. 5,359,) 7th June, 1880.
- No. 11,340. S. W. Baldwin, Yonkers, N. Y., U. S., "Apparatus for Working Railroads," 9th June, 1880.
- No. 11,341. D. C. Prescott, Marinette, Wis., U. S., "Direct Acting Steam Feed Works for Saw Mills," 9th June, 1880.
- No. 11,342. W. K. Crofford and J. W. Van Dyke, Grimsby, Ont., "Shawl Strap and Valise," 9th June, 1880.
- No. 11,343. J. C. Daggert, Neponset, Mass., U. S., "Boots and Shoes," 9th June, 1880.
- No. 11,344. J. Bennett, Lucknow, Ont., "Grain Separator," 9th June, 1880.
- No. 11,345. J. E. Thomas, West Bay City, Mich., U. S., "Mowing Machine," 9th June, 1880.
- No. 11,346. J. H. Redfield, Salem, Ind., U. S., "Middlings Purifier," 9th June, 1880.
- No. 11,347. J. T. Waring, Boston, Mass., U. S., "Hat Felting Machine," 8th June, 1880.
- No. 11,348. W. Steers and W. Long, Sherbrooke, Que., "Metallic Plane," 9th June, 1880.
- No. 11,349. A. Cowley, West Missouri, Ont., "Churn," 9th April, 1880.
- No. 11,350. J. P. Ellacott, Chicago, Ill., U. S., "Door Guard," 9th June, 1880.
- No. 11,351. J. L. Clark and J. Stadfield, London, Eng., "Floating Dock," 9th June, 1880.
- No. 11,352. A. M. Béchard, R. D. Morkill, jr., and J. R. Woodward, Sherbrooke, Que., "Freight Car Coupler," 11th June, 1880.

- No. 11,353. C. E. Johnson and A. H. Graftay, Indianapolis, Ind., U. S., "Suspender Clasp," 11th June, 1880.
- No. 11,354. W. White, London, Eng., "Valveless Water Waste Preventer and Closet," 11th June, 1880.
- No. 11,355. R. W. Gates, Bloomingdale, A. Dunning and L. B. Coupland, Chicago, Ill., U. S., "Potato Digger," 11th June, 1880.
- No. 11,356. F. Winters, jr., New York, U. S., "Cylindrical Valve," 11th June, 1880.
- No. 11,357. C. A. Blessing, Philadelphia, Pa., U. S., "Faucet or Cock," 11th June, 1880.
- No. 11,158. G. McKinlay and J. McKinlay, (Assignees of J. H. Reiner), Line Lexington, Pa., U. S., "Harrow," 11th June, 1880.
- No. 11,359. R. Sample, Truro, and M. McFarlane, Sheet Harbour, N. S., "Liniment for Wounds, &c.," 11th June, 1880.
- No. 11,360. J. Paradis and N. A. Birs, Longueuil, Que., "Thrashing Machine," 11th June, 1880.
- No. 11,361. N. Pyles and J. H. Lasley, jr., West Point, Mo., "Dust Receiver," 11th June, 1880.
- No. 11,362. W. H. Cloud, Otsego, Mich., J. W. Parsons and T. C. Harris, Tremont, Ohio, U. S., "Pump Brake," 11th June, 1880.
- No. 11,363. H. Baldwin, New Haven, Ct., U. S., "Fly Wheel," 11th June, 1880.
- No. 11,364. S. W. Ludlow, Cincinnati, Ohio, U. S., "Vehicle Spring," 11th June, 1880.
- No. 11,365. S. P. Fraley, Columbus, Ohio, U. S., "Broom Brushes," 11th June, 1880.
- No. 11,366. C. N. White, Kingsville, Ont., "Washing Machine," 11th June, 1880.
- No. 11,367. J. B. Carey, Boston, Mass., U. S., "Railway Switch," 11th June, 1880.
- No. 11,368. J. A. Osgood, Granville, Mass., and E. P. Monroe, New York, U. S., "Valve Rod Support," 11th June, 1880.
- No. 11,369. F. G. Homber, Moncton, N. B., "Cord Holder," 11th June, 1880.
- No. 11,370. S. R. Holt, Worthington, Ohio, U. S., "Bridge Truss," 11th June, 1880.
- No. 11,371. J. T. Waring, Boston, Mass., U. S., "Hat Felting Apparatus," 11th June, 1880.
- No. 11,372. N. Hébert, sr., Ste. Rosalie, and A. Lapointe, jr., St. Hyacinthe, Que., "Separator for Peas," 11th June, 1880.
- No. 11,373. W. G. Rawbone and J. L. Rawbone, Toronto, Ohio, "Sash Fastener," 11th June, 1880.
- No. 11,374. W. C. Fitch and C. Day, Sacramento, Cal., U. S., "News-Paper Holder," 14th June, 1880.
- No. 11,375. R. P. Wilson, New York, U. S., "Smelting Oven," 14th June, 1880.
- No. 11,376. J. T. Waring, Boston, Mass., U. S., "Hat Felting Apparatus," 14th June, 1880.
- No. 11,377. J. Russell, Napawee, Ont., "Paint Brush Handle," 14th June, 1880.
- No. 11,378. J. T. Rice and F. J. Hubbard, Grand Rapids, Mich., U. S., 14th June, 1880.
- No. 11,379. A. Fickett and A. M. Hastings, Rochester, N. Y., "Wood Pulping Engine," 14th June, 1880.
- No. 11,380. H. Couillard and R. McKeown, Montreal, Que., "Concrete Paving," 14th June, 1880.
- No. 11,381. J. G. Walker, Oataraqui, Ont., "Washing Machine," 14th June, 1880.
- No. 11,382. T. W. Stanford and S. Mulligan, Melbourne, Australia, "Railway Brake," 14th June, 1880.
- No. 11,383. C. Taylor and G. W. Kendall, Montreal, Que., "Reaping Machine," 15th June, 1880.
- No. 11,384. E. Robinson, et al., Columbus, Ohio, U. S., "Balanced Slide Valve," 15th June, 1880.
- No. 11,385. H. C. Bradley (Assignee of J. D. Pierce, Milwaukee Wis., U. S., "Oil Can," 15th June, 1880.
- No. 11,386. J. Mills, Chicago, Ill., U. S., "Bran Cleaning Machine," 15th June, 1880.
- No. 11,387. J. Mills, Chicago, Ill., U. S., "Wheat Degerminating and Reducing Machine," 15th June, 1880.
- No. 11,388. S. J. Smith, Montreal, Que., "Device for Measuring Garments," 15th June, 1880.
- No. 11,389. G. Boivin, Montreal, Que., "Lacrosse Shoe," 15th June, 1880.
- No. 11,390. J. B. Parent, Quebec, Que., "Double Spring Hinge," 15th June, 1880.
- No. 11,391. A. C. Scarr, Maryborough, Ont., "Reaping Machine," 15th June, 1880.
- No. 11,392. M. B. Mills and C. B. Rice, Chicago, Ill., U. S., "Feed Steamer," 15th June, 1880.
- No. 11,393. S. Keeler, Saginaw, Mich., and W. J. Watson, Chicago, Ill., U. S., "Car Truck," 15th June, 1880.
- No. 11,394. S. S. Fuller, (Assignee of W. Keane) Stratford, Ont., "Tow Cleaner, (Re-issue of Patent 9,464), 15th June, 1880.
- No. 11,395. G. H. Longmore, Portland, N. B., "Matting Roller," (Extension of Patent No. 4,866), 16th June, 1880.
- No. 11,396. H. D. Stover, New York, U. S., "Grain Conveyor," 19th June, 1880.
- No. 11,397. A. Hunter, Carleton Place, Ont., "Cant Hand Spike," 19th June, 1880.
- No. 11,398. J. Moody, Terrebonne, Que., "Hay Rake," 19th June, 1880.
- No. 11,399. A. Bridgewater et al., Berlin, Wis., U. S., "Wood Polishing Machine," 19th June, 1880.
- No. 11,400. J. H. Watson et al., Tawas City, Mich., U. S., "Feed and Gig Works for Saw Mills," 19th June, 1880.
- No. 11,401. W. M. Gartshore, London, Ont., "Stone Damper," 19th June, 1880.
- No. 11,402. Z. M. Gélinas, Ste. Anne d'Yamachiche, Que., "Milk Cooler," 19th June, 1880.
- No. 11,403. A. O. Ross, Cincinnati, Ohio, U. S., "Gas Retort Discharging Apparatus," 19th June, 1880.
- No. 11,404. E. S. Glover, Portland, Oregon, U. S., "Art Album," 19th June, 1880.
- No. 11,405. J. Harley and J. B. Newman, Wallaceburgh, Ont., "Sash Fastener," 19th June, 1880.
- No. 11,406. M. E. Mornington and J. W. Roberts, Arkona, Ont., "Car Coupler," 19th June, 1880.
- No. 11,407. J. L. DeWolfe, Windsor, N. S., "Nut Lock," 19th June, 1880.
- No. 11,408. C. W. Glidden, Lynn, Mass., U. S., "Heel Trimming Machine," 19th June, 1880.
- No. 11,409. G. C. Phillips, Silver City, Nev., U. S., "Piston Packing," 19th June, 1880.
- No. 11,410. C. E. Burns, Lancaster, N. H., U. S., "Cylindrical Block Making Machine," 19th June, 1880.
- No. 11,411. J. T. Waring, Boston, Mass., U. S., "Hat Felting Machine," 19th June, 1880.
- No. 11,412. S. Crawford, London, Ont., "Reaping Machine," 19th June, 1880.
- No. 11,413. J. H. Bloomfield, Concordia, Arg. Rep., "Rigging and Sails," 19th June, 1880.
- No. 11,414. J. Heberling, Mount Pleasant, Ohio, and J. B. Long, Chicago, Ill., U. S., "Sewing Machine," 19th June, 1880.
- No. 11,415. R. B. Ashley and A. J. Pengelly, Walkerton, Ont., "Grinder," 19th June, 1880.
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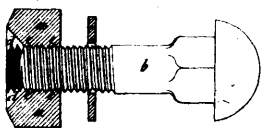
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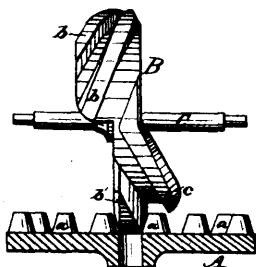
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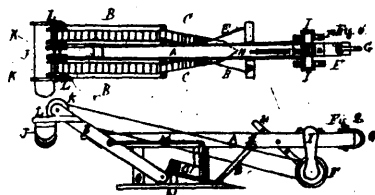
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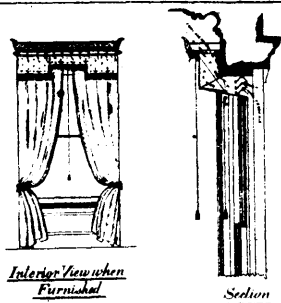
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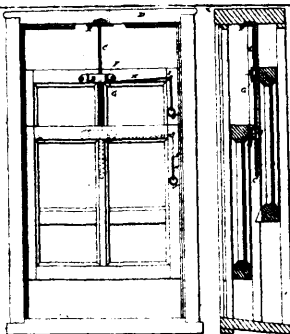
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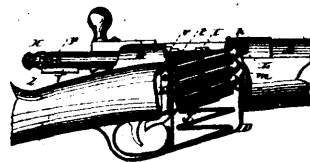
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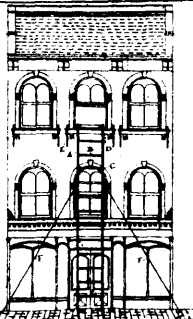
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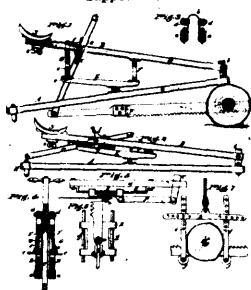
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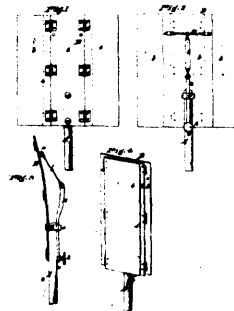
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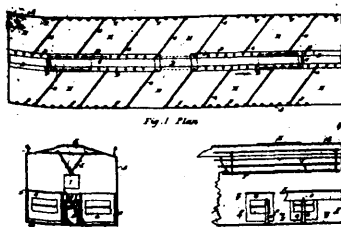
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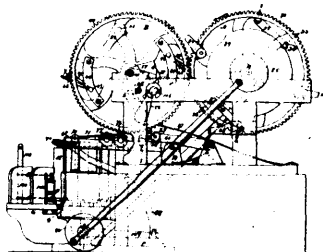
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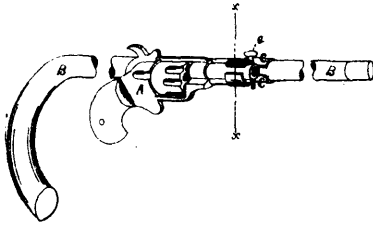


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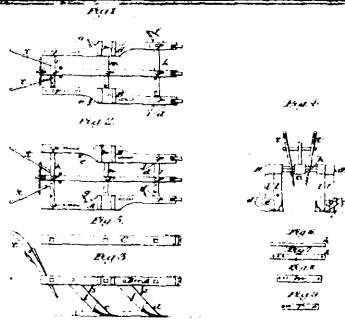


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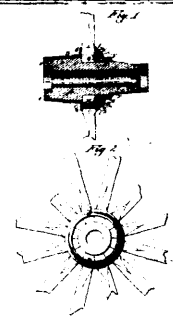




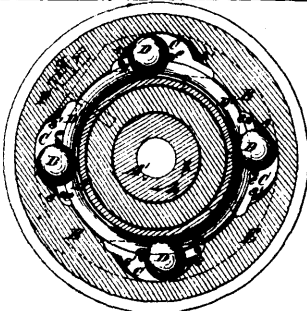
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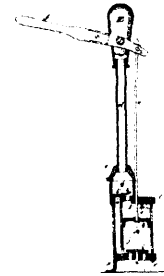
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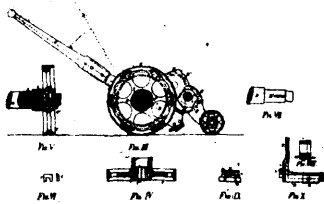
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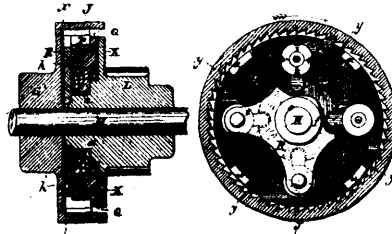
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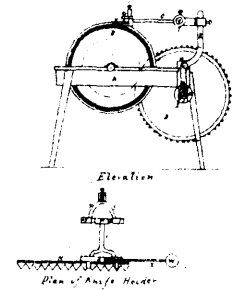
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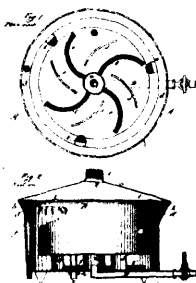
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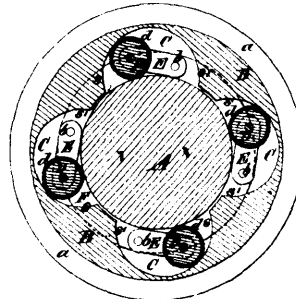
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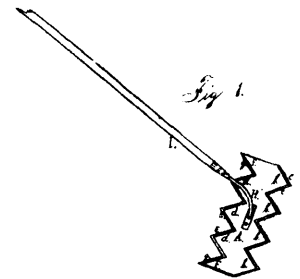
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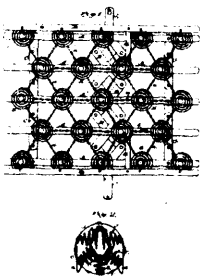
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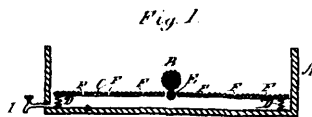
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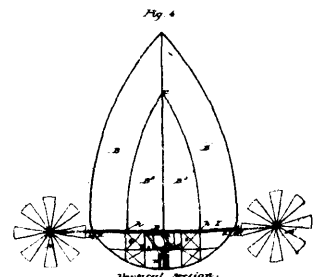
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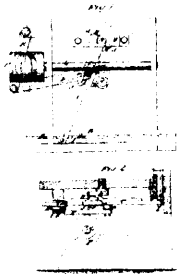
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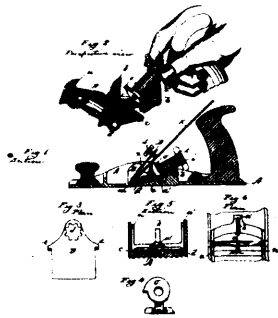
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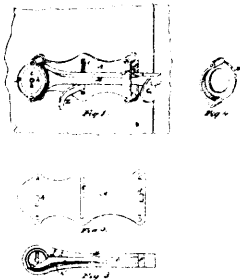
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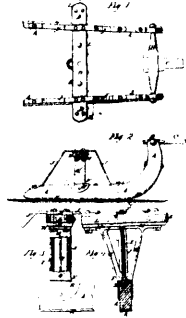
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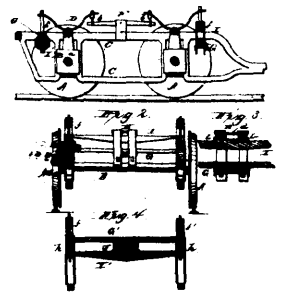
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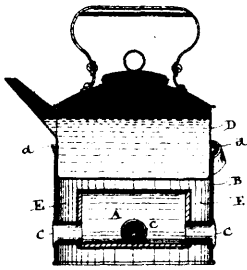
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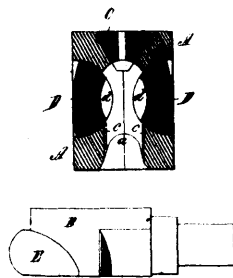
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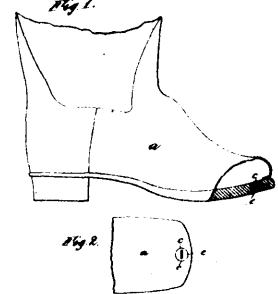
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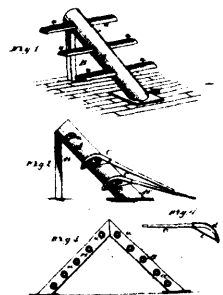
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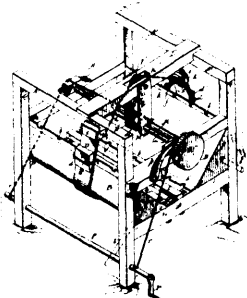
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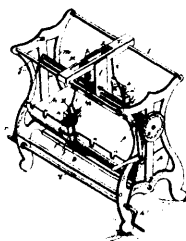
11079 Crandal's Improvements on Barbed Wire Fences.



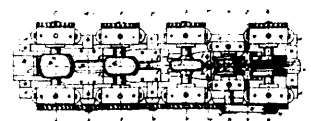
11080 Wright's Improvements on Drying Stands for Carriage Shafts.



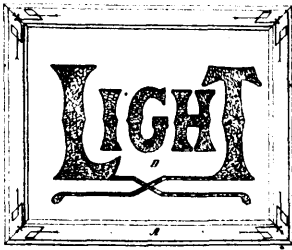
11081 Wright's Machine for Bending Bows.



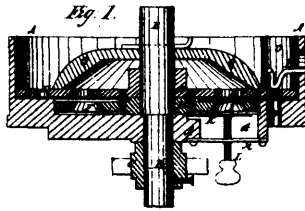
11082 Wright's Machine for Bending Fellos.



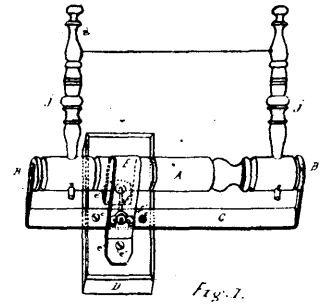
11084 Hooven's Improvements on Iron Skeeping Machines.



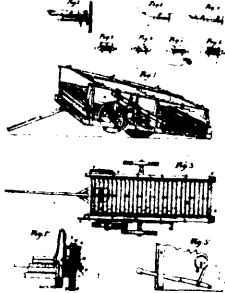
11085 Child's Improvement on Transparent Signs.



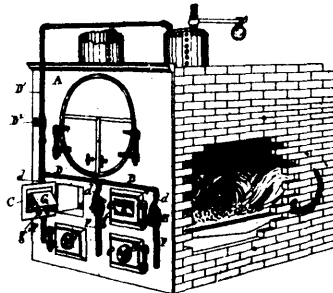
11086 Custer's Improvements on Seed Planters.



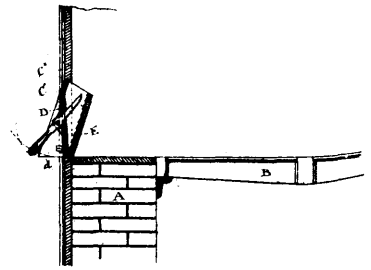
11087 Vézina's Improvements on Spinning Wheels



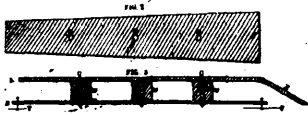
11088 Dederick's Improvements on Thread Powers.



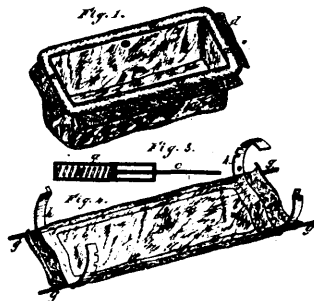
11089 Orvis' Improvements on Steam Boilers.



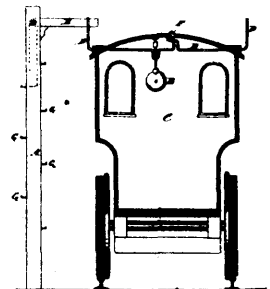
11090 Gray's Improvements on Smoke Consuming Furnaces.



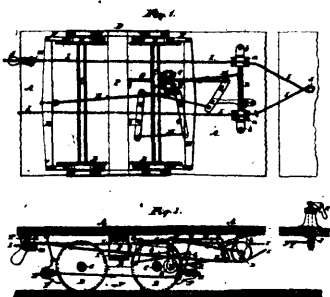
11091 Post's Safety Block for Filling up the Space between Wing-rails.



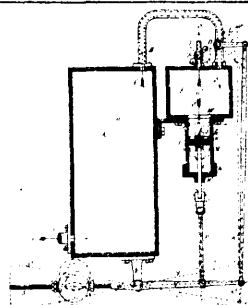
11092 Rouillard's Improvements on Chimney Sweeping Machines.



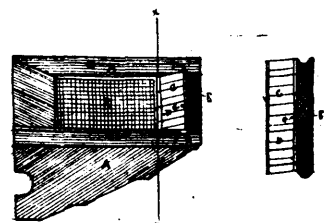
11093 Martel's Improvements on Railway Signals.



11094 Lord's Improvements on Car Brakes.



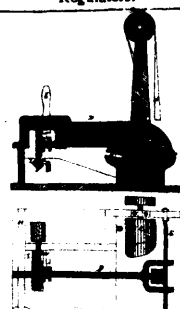
11095 Salomon & Goudron's Improvements on Gas Regulators.



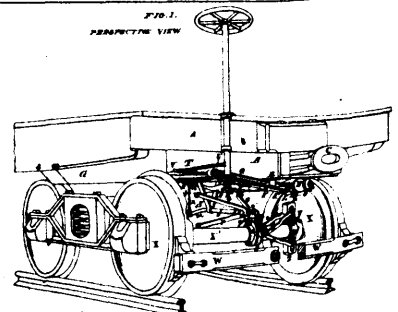
11096 Golden's Improvements on Thrashing Machines.



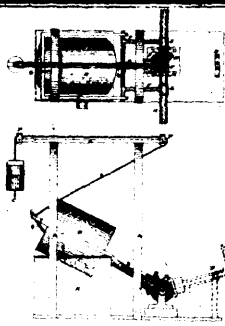
11097 Morrison's Improvements on Grain Separators.



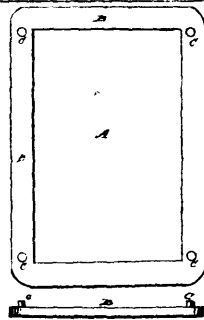
11098 McEachren's Improvements on Knife Grinding Machines.



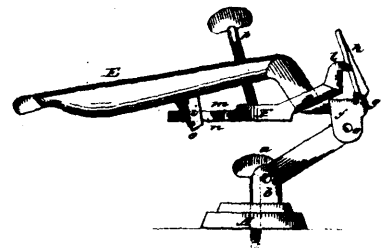
11099 Card's Improvements on Car Brakes.



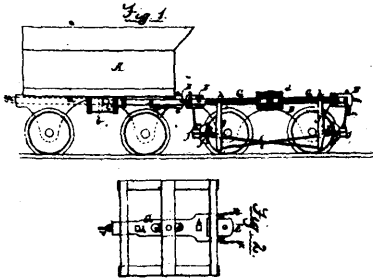
11100 Booth's Improvements on Revolving Driers and Roasters.



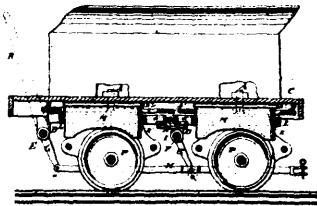
11101 Bryce's Improvements on School Slates.



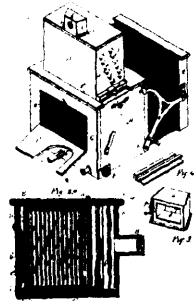
11102 Fuller's Improvements on Holders for Sickles, &c.



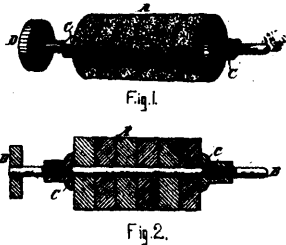
11103 Miles' Improvements on Steam Brakes.



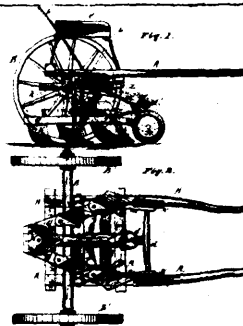
11104 Meissner's Improvements on Car Brakes.



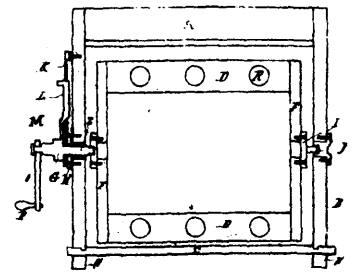
11105 Blair's Improvements in Photographic Apparatus.



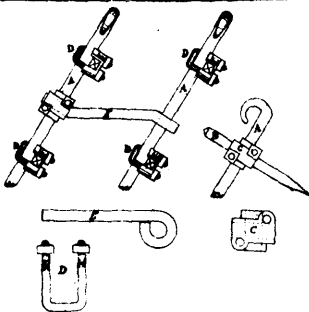
11107 Allen's Improvement in Grinding Wood.



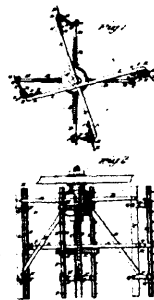
11108 Forbes' Improvements in Cultivators.



11109 Tessier's Improvements on Churns.



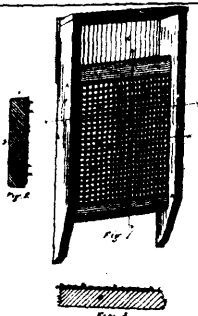
11110 Best's Improvements on Iron Harrows.



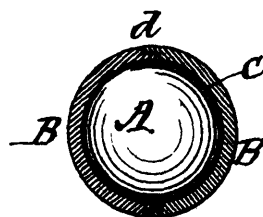
11112 Amstutz's Improvements on Mowers and Reapers.



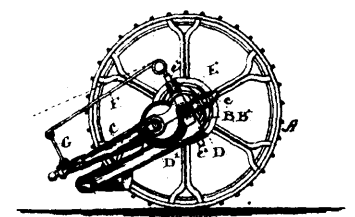
11113 McQuarry's Improvements on Saw Mill Dogs.



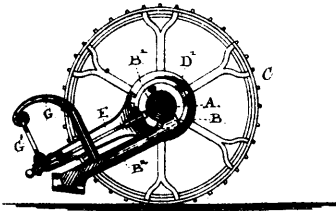
11114 Kitzmiller's Improvements on Washboards.



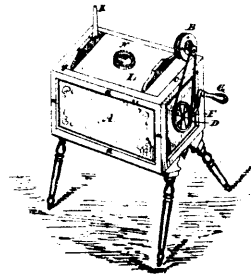
11115 Boughton's Improvements on Ball Targets.



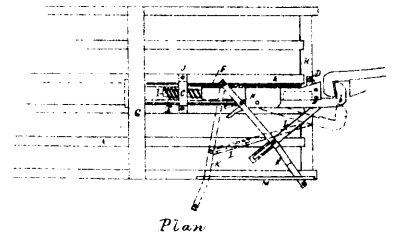
11118 Hurd's Improvements on Harvesting Machines.



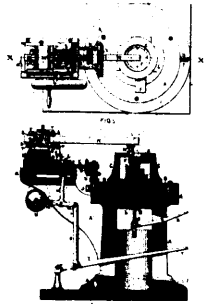
11117 Hurd's Improvements on Harvesting Machines.



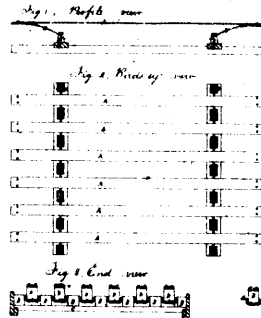
11119 Hamlin & Holmes' Improvements on Churns.



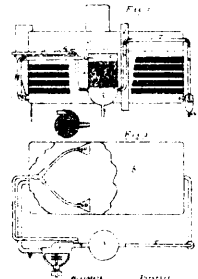
11120 Challoner's Improvement on Car-couplers.



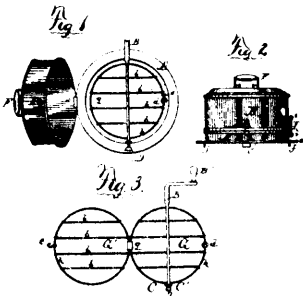
11121 Rogers' Improvements on Machines for Hammering Draw-plates.



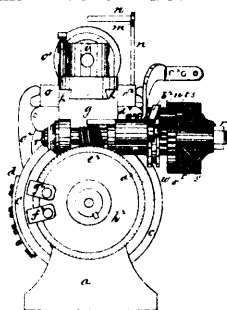
11122 Nichols' Improvements on Spring Beds.



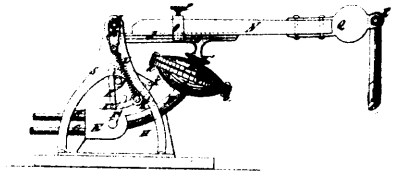
11123 McEachree's Improvements on Boiler Cleaners.



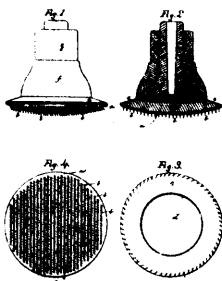
11125 Dick's Improvements on Revolving Broilers.



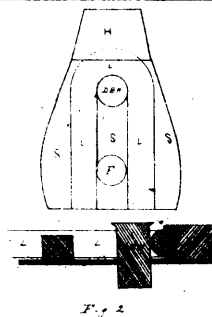
11126 Spencer's Improvement in Screw Cutting Machines.



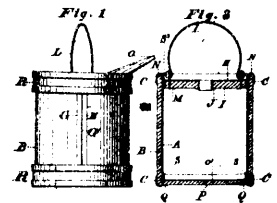
11128 Mayhew's Improvements on Motors.



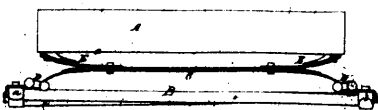
11129 Winslow's Boot and Shoe Sole Napper.



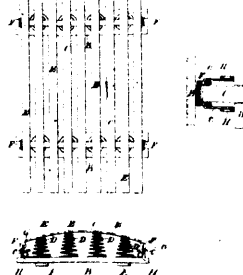
11131 Scott's Improvement on Car-couplers.



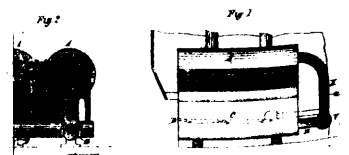
11132 Sangster's Improvements on Oil Cans.



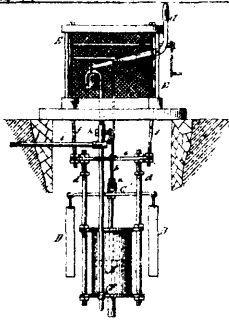
11133 French's Improvement in Wheel Carriages.



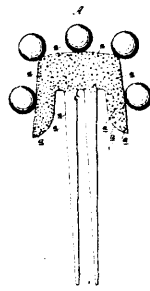
11134 Hull's Improvements on Spring Bed Bottoms.



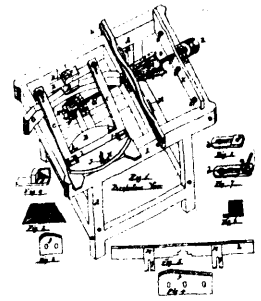
11135 Scott's Improvements on Steam Boilers



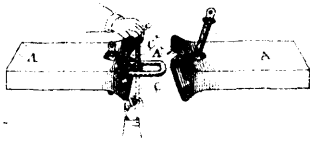
11136 Bennett's Apparatus for Raising Water.



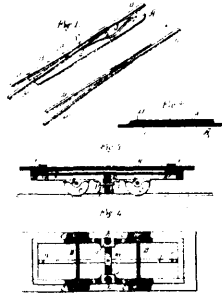
11137 Cunningham's Process of Manufacturing Articles in Imitation of Papier-mâché.



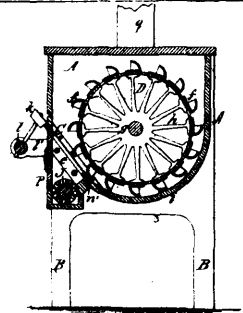
11138 Master's Machine for Hollowing Chair Seats.



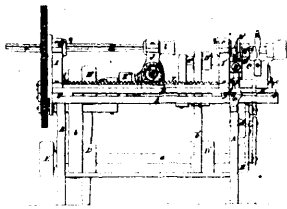
11140 Cooley's Improvements on Car-couplings.



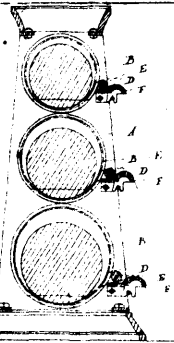
11141 Carey's Improvements in Railway Switches.



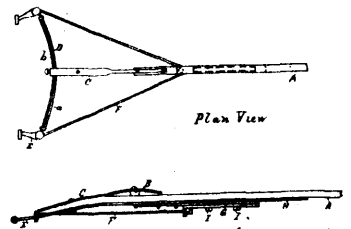
11142 Shuttleworth & Morse's Improvements in Bolting Machines.



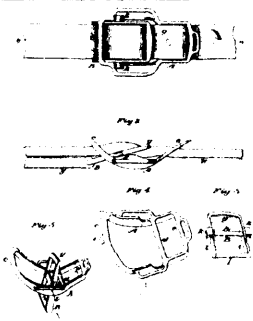
11143 Hanson's Improvements on Turning Machines.



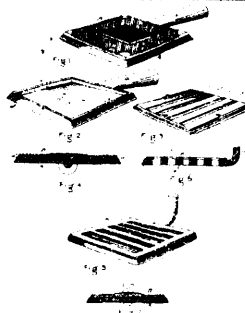
11144 Wheeler's Improvements in Paper Cabinets.



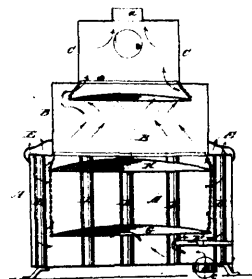
11145 Banker's Improvements in Carriage Poles.



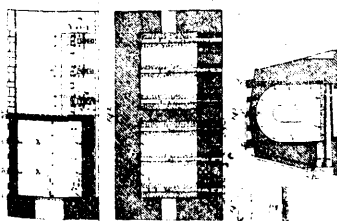
11146 Huntress' Improvements on Buckles.



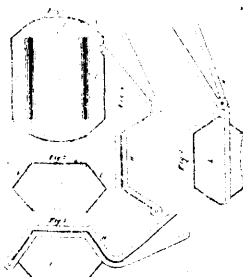
11147 Sawyer's Improvements on Carriage Steps.



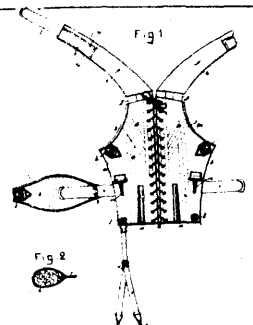
11148 Doddridge's Improvements on Heating Drums.



11154 Muller's Improvements in Means for Effecting the Combustion of Fuel, and in Fire Places and Furnaces therefor.

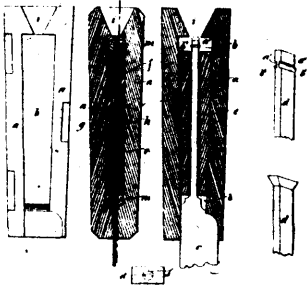


11155 Cross & McCraney's Improvements in the Manufacture of Wood Veneer and Pasteboard Boxes.

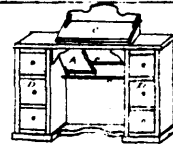


11156 Gray's Improvements on Shoulder and Back Braces.

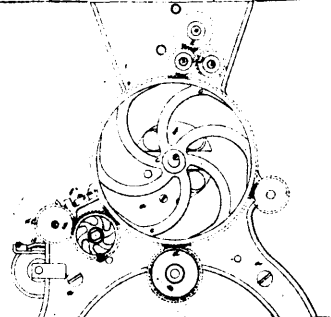




11157 Blaydes' Improvements on Hafting Cuttings.



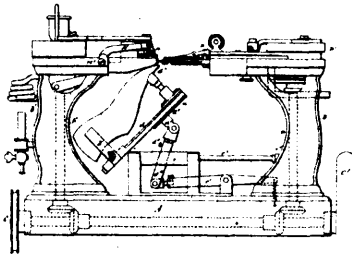
11158 Caulfield's Combined Sewing Machine and Secretary.



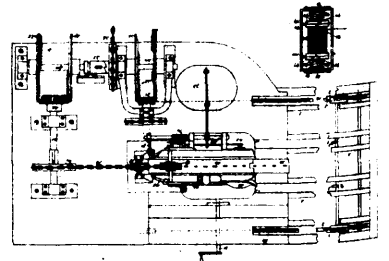
11159 Hersey's Improvements on Sugar Moulding Machines.



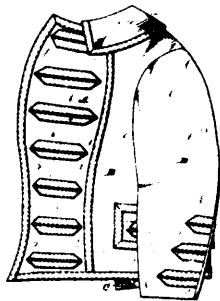
11160 Duryee's Improvements in Processes for the Treatment of Ores.



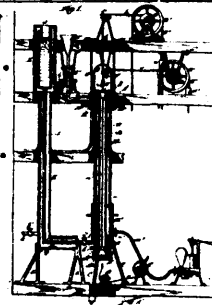
11161 Bosworth's Improvements on Sewing Machines.



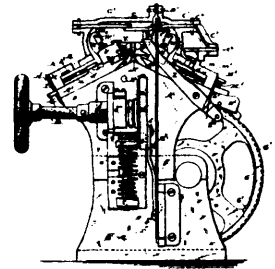
11162 Chamberlain's Improvements on Grain Binders.



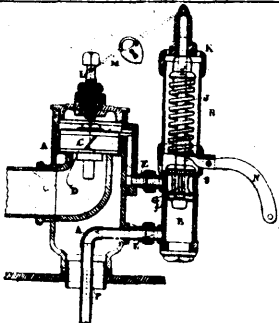
11163 Elliott's Improvements on Children's Clothing.



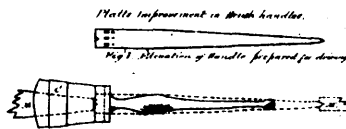
11164 Manly & Phillips' Improvements on Telegraph Cables.



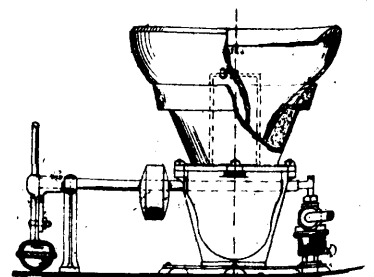
11165 Nelson's Improvements on Knitting Machines.



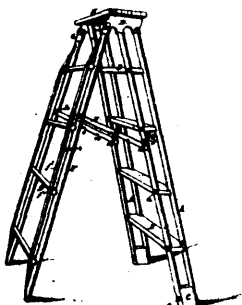
11166 Scovell's Improvements on Safety Valves.



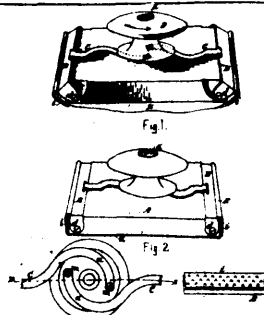
11167 Platts' Improvements on Brush Handles.



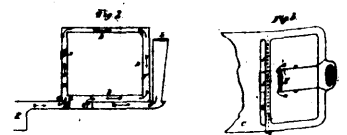
11168 Malcolm's Improvements on Water Closet.



11169 Valley's Improvements on Step Ladders.



11170 Lothrop's Improvements on Sand Paper Holders.



11171 Carpenter's Improvements on Cooking Stoves.