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INVENTIONS PATENTED.

No. 7040. Improvements on Drawing Instruments. (*Perfectionnements aux instruments de dessin.*)

John R. Peel, London, Ont., 2nd February, 1877, for 5 years.

Claim.—1st. A series of bars of hollow metal *a b c d* connected by joints of fluted steel *B B* and corresponding sockets *E*, 2nd. The screw pencil point *D* in combination with a pair of compasses; 3rd. The hollow bars *a b c d*, fluted steel joints *B B* and sockets *E*, in combination with a pen *C*, pencil *D* and points *A A*.

No. 7041. Set Gear for Circular Saw Mills.

(*Engrenage de moulins à scies circulaires*)

Hector Gawley, Midstone, Ont., 2nd February, 1877, for 5 years.

Claim.—The friction wheel *A*, levers *D E* and *f*, spring *G* or, in its stead, a weight, the whole forming a correct and simple set gear for saw mills.

No. 7042. Improvements on Bale Ties.

(*Perfectionnements aux cales de ballots*)

Edwin S. Lenox, New York, U. S. (Assignee of David H. Mathews), 9th February, 1877, for 5 years.

Claim.—1st. A double strand hook *C* having a substantial continuity with the metal strip or strand forming the body *a* said tie, and capable of engaging with a loop on the opposite end of the same, and brace *D* intercutting with said hook at a point above the base *X* of the same, 2nd. A hook *C* having a substantial continuity with the metal strip or strand forming the body of tie, and a brace *D* continuous with said hook with its termination *z* extended forward of the same when combined to operate with the connecting and opposite end of the tie; 3rd. A tie having at one end a loop *E* and at the opposite end a hook *C* and brace *D* made continuous with said hook with its rear end connecting with said hook above the base *X* of the same, and its forward end *z* extended from said hook.

No. 7043. Improvements in the Application of Pedal Power.

(*Perfectionnements dans l'application de la force du pied.*)

James Dyer, Norwood, Ont., 9th February, 1877, for 5 years.

Claim.—The combination of the levers *H C D E* so as to exert upon the double axle a reciprocating motion in which the horizontal pressure of the foot, as well as its vertical pressure, is utilized.

No. 7044. Improvements in the Construction of Chairs.

(*Perfectionnements dans la fabrication des chaises.*)

Joseph Tees, Montreal, Que., (Assignee of Jacob Hess), 9th February, 1877, for 5 years.

Claim.—1st. A slat of wood, metal, &c., bent so as to form a continuous section of the seat and back of a chair. 2nd. A chair having its seat and back formed in one of slats bent to the proper curves and secured at both ends.

No. 7045. Improvements in Blinds and Double Windows.

(*Perfectionnements dans les persiennes et les double-croisées.*)

Hiram P. Smith, St. Catharines, Ont., 9th February, 1877, for 5 years.

Claim.—The frames *D* and *E* and the frame *A* constructed so as to receive the window frame *D* for winter use as a double window or the frame *C* for summer use as a blind containing slats, &c.

No. 7046. Improvements on Toe Protectors.

(*Perfectionnements aux carres de chaussures.*)

Thomas Bell and Samuel Bell, (Assignees of John Stephens), Montreal, Que., 9th February, 1877, for 5 years.

Claim.—1st. The narrow slip of solid leather *D*, grooved or cut out to about half its thickness, more or less, and having the outer edge intact and of full thickness hereafter moulded to fit the upper at the toe which lies embedded in and protected by the piece *D*; 2nd. The combination of the piece *D* made in form and manner described with the half slip sole *C* (in the case of a double soled boot or shoe) and with the outer sole *B* and upper *A*.

No. 7047. Improvements in Lumber Dryers.

(*Perfectionnements dans les sécheuses à bois.*)

George W. Read (Assignee of Philipp Pfeffer), New York, U. S., 9th February, 1877, for 5 years.

Claim.—1st. The press plates adapted to be heated and having vents opening upon their opposing faces for the escape of the vaporized moisture of the wood. 2nd. The hollow press plates adapted to be heated by steam, and having vents opening upon their opposing faces for the escape of the vaporized moisture of the wood. 3rd. The combination of the heated press plates with face or lining plates having perforations and connecting channels for the escape of the vaporized moisture of the wood. 4th. The combination of hollow steam heated press plates *A* and face or lining plates *B*, having perforations and connecting channels between press plate and lining for the escape of the vaporized moisture of the wood.

No. 7048. Improvements on Road Scrapers.

(*Perfectionnements aux charrues de chemins.*)

Jesse Stubbs, Mount Pleasant, Iowa, U. S., 9th February, 1877, for 15 years.

Claim.—1st. A road scraper hinged to levers mounted on axle and wheels connecting the draft pole to the forward of the scraper box by a changeable bearing or connection. 2nd. The segment slotted plates *G*, box *D*, levers *C*, bar *H*, catch *E*, axle *A* and wheels *B* arranged to operate with the bifurcated draft bar *F* having studs *g*.

No. 7049. Improvements in Writing Tablets.

(*Perfectionnements aux livres de factures.*)

John H. Hodder, Aurora, Ill., U. S., 9th February, 1877, for 5 years.

Claim.—A writing tablet or memorandum block provided with a cover or outer leaf composed of absorbent or blotting paper.

No. 7050. Improvements on Harvesting Machines.

(*Perfectionnements aux machines à moissonner.*)

George Sweet, Dansville, N. Y. U. S. and John Watson, Ayr, Ont., 9th February, 1877, for 5 years.

Claim.—The combination with the latch or projection *K* on the inner ends of the turning rake heads of the rear treading dog *S* arranged in relation with the delivery end or edge of the platform *A* of the machine.

No. 7051. Improvements on Scale Tang Cutlery.

(*Perfectionnements dans la coutellerie à soie plate.*)

William Eccleston, New York, U. S., 9th February, 1877, for 5 years.

Claim.—Constructing the blade with the tang narrower than the scales and with a cavity formed on the inner surface of one or both, the scales to correspond to the said tang.

No. 7052. Process for Making Iron and Steel.

(*Procédé pour faire le fer et l'acier.*)

Jarvis J. Green, Pontiac, Mich., U. S., 9th February, 1877, for 5 years.

Claim.—1st. Fusing pig iron of specified brands with flux and amalgamating therewith magnetic iron ore black oxide of manganese, carbonate of soda, chalk, chlorine and sodium. 2nd. The employment of the foregoing named chemical ingredients in the proportions set forth.

No. 7053. Improvements on Horse Collars.*(Perfectionnements aux colliers de cheval.)*

Ezra Stroud, Riceford, Min., U. S., 9th February, 1877, for 5 years.

Claim.—1st. The combination of adjustable clasps, at the upper part of the hame, with a lateral connecting link swinging forward and backward in a seat or eye of the pad; 2nd. The combination of the adjustable hame clasps passing through slits of the upper ends of the collar with a swinging jointing link to form flexible connection of collar and hame section with pad; 3rd. The combination of the hame section with a compound draft eye formed of outer stay bolts, secured through the hame and intermediate stay bolts attached to the face of the hame, said stay bolts supporting in eyes a detachable closing rod; 4th. The combination of a flexible jointed and perforated hame strap of one hame section with the guide loops and locking spring pin and socket of the other hame section.

No. 7054. Pocket Match Safe, Pin Cushion and Receptacle for Postage Stamps.*(Porte-allumettes, palette à épingles et porte-timbre-poste de poche.)*

Irving C. Cowles, Syracuse, N. Y., U. S., 9th February, 1877, for 5 years.

Claim.—Match safe A B C having on half of one of its sides a pin cushion D, and on the other half of the same side a receptacle for postage stamps F.

No. 7055. Art and Process of Finishing and Mounting Photographic Portraits.*(Art de finir et monter les portraits photographiques et procédé pour cet objet.)*

Frank N. Forster, Hamilton, Ont., 9th February, 1877, for 5 years.

Claim.—1st. The paste or composition used to attach the photograph to the convex glass consisting of a mixture of starch and nitrate of strontia; 2nd. The entire removal of the paper backing, leaving only the albumen and silver attached to the glass; 3rd. The immersion of the picture thus attached and treated in a bath of melted paraffine.

No. 7056. Improvements on Ozone Machines.*(Perfectionnements aux machines à ozone.)*

Hannah Milson, Buffalo, N. Y., U. S., 9th February, 1877, for 5 years.

Claim.—1st. The ozone machine constructed with the base B, with the tube opening or openings *a* at therein, the tube or tubes A with phosphorous holder *b* thereon, or other tubes wherever placed, the separating ozone chamber C and with or without a cap D; 2nd. The process of making ozone which consists in passing the ozonized fumes involved (by partly submerging the phosphorans in water) through the unglazed or porous earthenware walls of the enclosing chamber A C E, whereby the ingress of air by diffusion and the separation of the acid fumes is effected; 3rd. In an ozone machine any of the parts constructed of glazed or unglazed porous earthenware or other porous pottery or graphite, so that a free ingress of air and egress of ozone may be had through the same.

No. 7057. Tree and Post Hole Digger.*(Appareil à percer les trous pour les arbres et pieux.)*

William H. Rhodes, Elyria, Ohio, U. S., 9th February, 1877, for 5 years.

Claim.—A tree and post hole digger composed of two parts or levers pivoted together and constructed with metal foot pieces B B formed with curves *f f*, supported and stiffened by one or more braces, and having the blades C C secured to them.

No. 7058. Improvements on Stove Pipe Collars.*(Perfectionnements aux douilles de tuyaux de poêles.)*

Henry Wandby, Toronto, Ont., 9th February, 1877, for 5 years.

Claim.—1st. The metallic casing E rivetted to the cast iron top A and tapered therefrom, in combination with the non-conducting material C; 2nd. The circular rib d, moulded near the bottom of the pipe hole, in combination with the stopper D.

No. 7059. Machine for Thinning Turnips, Carrots, &c.*(Machine à éclaircir les navets, carottes, &c.)*

Joshua Carlton, Greenock, Ont., 9th February, 1877, for 5 years.

Claim.—The adjustable runners R adjusting lever D D, hasp E E and cutters B, in combination with the frame J, driving wheels O O, spur wheel *g g*, pinion *f f*, shafts C and *h* and thills *k k*.

No. 7060. Apparatus for Drying or Moistening Wheat by Steam.*(Appareil à sécher ou humecter le blé par la vapeur.)*

James W. Price, Michigantown, Ind., U. S., 9th February, 1877, for 5 years.

Claim.—1st. An apparatus for drying or dampening grain combining in its construction heated plates D F over which the wheat flows exposed to the heat of steam in chambers I and K and adjustable openings between such steam chambers for drying the wheat without moistening it, or first drying and then moistening it at the will of the operator; 2nd. In combination with the steam and wheat chambers the adjustable hoods and angles N and P for holding water and admitting or shutting off steam to or from the wheat; 3rd. In combination with the steam and wheat chambers and water angles N and P, the rod E, hoods M and O and telescope joint F F O for controlling the communication between the steam and wheat chambers.

No. 7061. Improvements in Lightning Rods.*(Perfectionnements aux paratonnerres.)*

John C. Schoonmaker, Hamilton, Ont., 9th February, 1877, for 5 years.

Claim.—Forming a lightning conductor by drawing a continuous ribbed tube A over a continuous plain tube B.

No. 7062. Improvement in Ash Sifters.*(Perfectionnement dans les cribles à cendres.)*

Peter W. Peckham, New York, U. S., 9th February 1877 for 5 years.

Claim.—The open cylinder K in combination with cross piece F with rods J perforated disk C with rod d and handle *e* and casing A with fret on rollers B.

No. 7063. Machine for Washing and Wringing Clothes.*(Machine à laver et essorer le linge.)*

Mary A. Caldwell, North East, Pa., U. S., 9th February 1877, for 5 years.

Claim.—1st. In combination with a box or vat A in which operates a rubbing device, a lever wringer composed of the rollers O O, stirrup irons P P bar Q, levers R S and links *q r* when the same has for its frame work the upwardly extended legs B; 2nd. In combination with a tub or vat A or equivalent, the curved wash board C, swing D with rock bar K and spring L, operating in the slot M in the standard E. Said swing being provided with a rubbing device composed of the rollers F F and brush G (or either of them) 3rd. In combination with the legs B or other standards a lever wringer composed of the rollers O O, stirrup irons P P bar Q levers R S and links *q r*.

No. 7064. Manufacture of Service Boxes.*(Fabrication des boîtes de lieu d'aisance.)*

Robert Mitchell, Montreal, Que., 9th February, 1877, for 5 years.

Claim.—The art or process of manufacturing service boxes by first forming in one casing the body of the box with a rim to form the edge of the top plate, and in another casing a plate or cover exactly fitting the opening in the box and having round its edge an upwardly projecting flange and then fusing the metal in this flange so as to joint the parts together and complete the article.

No. 7065. Machines for Finishing Horse Shoe Nails.*(Machines pour finir le clou de cheval.)*

Charles W. Woodford, Montreal, Que., 9th February, 1877, for 5 years.

Claim.—1st. The segmental dies *m* having acute angles space *n*; 2nd. The combination of the wheel *p* with hooks *r* having slits *o*; 3rd. The hooks *r* in combination with the cup *e*; 4th. The segmental dies *m* having bevels forming acute angle recess *u*, in combination with the punch *o*; 5th. The combination of the vibrating rest *g*, with dies *m*; 6th. The combination of the dies *m*, punch *o*, spring *d* and spring *b* having pawl *e* pivoted thereto.

No. 7066. Improvement in Lightning Rods.*(Perfectionnement dans les paratonnerres.)*

James M. Davies, Hamilton, Ont., 9th February, 1877, for 5 years.

Claim.—A lightning conductor constructed in star-shaped points *a a a a* a form a continuous sheet of metal A.

No. 7067. Improvements on Grain Drills.*(Perfectionnements aux traicurs à grains.)*

William H. Nauman, Dayton, Ohio, U. S., 9th February, 1877, for 5 years.

Claim.—1st. In combination with the rocking bars C the end plates D d E e D' e' and connecting rod F, whereby said bars C C are caused to oscillate simultaneously but in opposite directions; 2nd. The clip O made either in one or in more pieces and provided with a channel P and groove R r, which latter receives the staple S S that couples said clips to the rocking bar C, and also serves as a bearing for the perforated head of the drag bar M or its equivalent device; 3rd. The longitudinally shiftable but non-rotatable cylinder G₂ in conjunction with a fixed seed cup C, and a rotating feed wheel; 4th. The combination of cup C, feed wheel L, *c*, non-rotatable and adjustable sleeve F₂ F₂, the latter being made either in one piece or in sections and longitudinally shiftable but non-rotatable cylinder G₂; 5th. The combination of cup C, feeding device L, rotary sleeve F₂ F₂, non-rotatable cylinder G₂ and the adjusting appliances I, *r*, L, L', 6th. In combination with a series of fixed cups C, feed wheel E, *e*, non-rotatable cylinders G₂ L, L', J' and shaft D₂, the bar *k* passing through the cups C' to serve as a bridge at the top of the same, and for the simultaneous and uniform adjustment of said cylinder.

No. 7068. Improvements on Holdbacks for Carriages.*(Perfectionnements aux rayots de carrosses.)*

Chamberlayne Phelps, Hensselaer Falls, N. Y., U. S., 9th February, 1877, for 5 years.

Claim.—1st. A wedge-shaped plate in combination with a collar adjusted to slide on the plate; 2nd. The plates A and collars D D, the diagonal bearings *d d* for the holdback strap; 3rd. The plate A having concave bearings *b b* and loops C, in combination with the wedge-shaped collars D D having left and right diagonal strap bearings *d d*.

No. 7069. Improvements on Desks.*(Perfectionnements aux pupitres.)*

Robert W. Simpson, Montreal, Que., 9th February 1877 for 5 years.

Claim.—The desk A B in combination with the blotting pad F F.

No. 7070. Improvements on Spring Bed Bottoms.*(Perfectionnements aux fonds de lits à ressorts.)*

Horace J. Beemer, Montreal, Que., 9th February 1877, for 5 years.

Claim.—1st. In combination with a spring bed bottom formed of a warp and a roof of spiral springs, the fastenings D for securing the ends of the warp to the cross pieces of the frame; 2nd. The fastener D with hollow *d* groove *e* and curled end *f*.

No. 7071. Improvements on Re-sawing Machines. (*Perfectionnements aux machines à refendre.*)

John Lamb, Ottawa, Ont., 9th February, 1877, for 5 years

Claim.—The arrangement and combination of a lever for operating the sliding frame which carries the binding rollers, and which has its fulcrum in the bed frame which carries the back or stationary rollers

No. 7072. Apparatus for Cleaning and Polishing Boots and Shoes.

(*Appareil à nettoyer et cirer les chaussures.*)

David H. Laurie and John Laurie, Montreal, Que., 13th February, 1877, for 5 years.

Claim.—1st. A rotary brush or brushes mounted on a spindle driven by any motive power for the purpose of cleaning blackening, brushing and polishing boots, shoes &c. 2nd. The rotary brush D made concave so as to accommodate itself to the shape of the boot. 3rd. The combination of one or more rotary brushes mounted on a spindle, carried in proper bearings, with a shelf formed on the frame to receive the boots to be polished. 4th. In combination with a rotary brush a stand or fast carrying the boot or shoe and presenting it to the action of the brush.

No. 7073. Improvements on Pumps.

(*Perfectionnements aux pompes.*)

George Lander, (Assignee of Francis T. Forbes) Chicago, Ill., U. S., 13th February, 1877, for 5 years.

Claim.—1st. The combination of the cylinder A and valve F removably lugged and held in position by means of a removable lug b. 2nd. The valve F provided with the forked or slotted arm C in combination with the rod G. 3rd. The scraper H and its operating rods I in combination with the cylinder A and valve F. 4th. The valve K provided with a slotted curved bar e in combination with the operating rod l and cylinder A. 5th. The piston J formed of two parts with a curved interior in combination with the cylinder A. 6th. The cylinder A having its outlet E straight or nearly straight in the bottom and curved upon the sides and top.

No. 7074. Tobacco Cutter. (*Hache-tobac.*)

John Farrar, and Henry Earle, jr., Montreal, Que., 13th February, 1877, for 5 years.

Claim.—1st. The combination, in a tobacco cutter, of a cylinder containing chambers the tobacco to be cut and placed in a loose ring carrying knives and secured to a screwed shaft upon which work arms for pushing the tobacco forward; 2nd. In combination with a cylindrical tobacco cutter the match boxes H and compartment I or either of them.

No. 7075. Improvements in Can Making Machines.

(*Perfectionnements aux machines à faire les boîtes métalliques.*)

Peter Dillon and George H. Bradford, Sherbrooke, Que., and John Cleary, Great Falls, N. H., U. S., 13th February, 1877, for 5 years.

Claim.—1st. In combination with the bath B for the purpose of holding molten solder, a soldering bolt I consisting of a copper point E in communication with the bath B by means of a tube L, said communication being regulated by the valve to constitute a soldering apparatus. 2nd. In combination with the soldering apparatus B I described above, the sliding mould M, dog ee and clips K K with their operating mechanism. 3rd. In combination with the soldering apparatus B, L, the rotary holder h with its springs pp and operating mechanism; 4th. In combination with the furnace F, F a perforated guard f for the purpose of allowing the point of the soldering bolt to be heated without being clogged with ashes or dust.

No. 7076. Improvements in Saddle-trees.

(*Perfectionnements aux bâtis des sellettes.*)

William H. Taylor, Baldwinville, N. Y., U. S. and Samuel Taylor, Hamlet, Ont., Ont., 13th February, 1877, for 5 years.

Claim.—1st. The cantle B and centre yoke L, formed all in one piece the copper loop C formed in a separate piece from either and grooved to receive the check hook D in connection with the projections f on the cantle B. 2nd. The stops G on the hinge K, the pad screw sockets I.

No. 7077. Spring Bed Bottom.

(*Fond de lit à ressorts.*)

Thomas DeWitt, Chatham, Ont., 13th February, 1877, (extension of Patent No. 6760), for 5 years.

No. 7078. Process and Apparatus for Treating the Ores of Gold and Silver.

(*Processé et appareil pour le traitement des minerais d'or et d'argent.*)

Augustine B. Crosby, Greene M. Francis Amory Beverly, Mass., Edward W. Hamon Haverhill, John Wetherbee, Boston, Mass., Joseph G. Mitchell Germantown, Pa., Charles H. Crosby, Lisbon, N. H., John W. Beals, Boston, Mass., U. S., 13th February, 1877 for 15 years

Claim.—1st. The successive and continuous subjection of the ore to the drying, roasting, grinding, washing and amalgamating processes by feeding the ore continuously and at a uniform rate through the apparatus used in said processes so that every portion of the ore is subjected to practically the same conditions, and the novel mechanical devices and arrangement of apparatus necessary for accomplishing this result. 2nd. Drying the ore after it is taken from the concentrating apparatus by feeding the same on and over a series of pipes heated by being used to convey the product of combustion from the furnace used for heating the roasting cylinders, and also to convey the heated vapors escaping from these said cylinders. 3rd. In combination with the said drying apparatus the settling chambers and wash down apparatus used for collecting the arsenical or other similar products from the ores. 4th. The method of collecting the arsenical or other similar products

obtained from the ores heated by this process by subjecting the condensed vapors which pass off from the roasting cylinders to the action of a current of hot water and causing the deposition of the arsenical or other similar products obtained by reducing the temperature of the resulting solutions. 5th. The combination of the drying receptacle and drying tubes. 6th. The wash down or condensing apparatus composed of a series of shelves. 7th. The combination with the wash down or condensing apparatus of the tanks and pump or its equivalent. 8th. The combination with the drying apparatus of elevator roasting cylinders and feeding apparatus connected therewith. 9th. The combination with the roasting cylinders, the heating furnace connecting the said drying apparatus and its adjuncts of the suction blower. 10th. The combination with the roasting cylinders of the self regulating feed apparatus. 11th. The combination with the supply pipe G of the valve. 12th. The combination with the roasting cylinders of the bands and rollers supporting and rotating the cylinders. 13th. The combination with the roasting cylinder of the flange and flange cover. 14th. The combination with the rollers the wells containing the same. 15th. In combination with the rollers the well and plate. 16th. Heating the water used in the washing apparatus by first using the same to cool the ore in the cooling apparatus. 17th. The combination with the cooling apparatus of the elevator or its equivalent grinding mills and washing apparatus. 18th. Excavating or washing the ore pulp by subjecting it to the action of a suitable stirring apparatus and the action of a current of water introduced into the bottom of the washing tub. 19th. The combination with the washing tub having a conical bottom and provided with suitable discharge pipes of the partition rotating stirrer, hollow shaft gearing and hollow wooden cylinder. 20th. The combination of the washing tub settling tank and amalgamator. 21st. The combination of the collecting tank, strainer and sleeve tubes Et Et'. 22nd. The combination with the collecting tanks and amalgamators of the clearer H. 23rd. The dolly tub in combination with the hollow stirrer connected with the amalgamator. 24th. The collecting plate in combination with the reciprocating stirrer. 25th. The combination with the amalgamator of the dolly tub and stirrer. 26th. The combination of the drying apparatus settling chamber, wash down or condensing apparatus roasting cylinder self-regulating feed attached to the same cooling chamber grinding apparatus elevator washing vat, settling tank, amalgamator, circulating apparatus and its attachments for treating the quick silver dolly tub and cooling plate and their respective stirrers.

No. 7079. Composition of Matter for Deodorizing Night Soil.

(*Composé pour désinfecter les matières excrémentielles.*)

Walter H. Barren, Toronto, Ont., 16th February, 1877 for 5 years.

Claim.—A composition of matter composed of nitrate of lead, chloride of ammonium and water, and mixed.

No. 7080. Apparatus for Discoungaging Ship's Boats from their Lowering Tackles.

(*Appareil à dégager les canots de navires de leurs aubes de descente.*)

Arthur B. Cruickshank Dundee, Scotland 16th February 1877 for 5 years

Claim.—Constructing and operating the hook C C and shackles B B in combination with the ordinary tackle employed to lower boats into the water.

No. 7081. Railway Alarm. (*Alarme de chemins de fer.*)

John M. Livingston, Merritt, Ont., 16th February, 1877 for 5 years

Claim.—1st. The spring d, rod e and h and curved rod f. 2nd. The shaft g, arm j, joint k and springs l and m.

No. 7082. Improvement on Axle Trees.

(*Perfectionnement des essieux.*)

William Herlihey and Henry Dennis, Lindsay, Ont., 16th February, 1877, for 5 years.

Claim.—The raised projections C C upon which the bolster or sand board rests and the lower raised part of the collar D D and the braces F F G.

No. 7083. Composition for Kindling Fires.

(*Composé pour allumer le feu.*)

Charles D. Bradley, Quebec, Que., 16th February, 1877, for 5 years.

Claim.—Wood, paper or bags soaked in an inflammable fluid or fluids, as coal, oil tar and turpentine and covered with a wrapper capable of preventing evaporation, wholly or in great part, and at the same time not interfering with the ignition of the inflammable fluids within, as resin and gum arabic, or their equivalent.

No. 7084. Machine for Making Bobbins.

(*Machine à faire des bobines.*)

George W. Glazier, Salem, Mass., U. S. and Oscar E. Wait, Lynn, Mass., U. S., 16th February, 1877, for 5 years.

Claim.—1st. The intermittently revolving head E provided with sockets, in combination with an automatic clamping mechanism i l. 2nd. The combination of the head E clamping devices i l and the opener F. 3rd. The combination of the hollow auger D, slide g and its operating mechanism with the roller h. 4th. The combination of the head E, automatic clamping mechanism i l and the hollow auger D. 5th. The combination of the head E, clamping mechanism i l hollow auger D and the two series of revolving spindles. 6th. The combination of the head L clamping device i l hollow auger D series of tool carrying spindles the saw H and their operating mechanism. 7th. The combination with the head E carrying socket, and clamping devices of the head I carrying spindles n and their operating mechanism; 8th. The combination of the head I provided with spindles n the lathe head N T. 9th. The head I and its hollow spindles n provided with wicking leading to a central cup or reservoir within the head. 10th. The combination of the lathe head N, carriage Q, adjustable way u. 11th. The combination of the lathe head N, tool carriage Q, adjustable way u, lever v, and cam M. 12th. The combination of the head I, provided with spindles n, carriage R and take off U; 13th. The combination of the rotating head L, carrying spindles n, tool carriage Q, carriage bed Qz, lever 11 and cam M having the deeper depression for dropping the bed. 14th. The ad-

adjustable clamping box C composed of two V shaped halves 12 one of which is provided with a spring 13; 15th. The conductor 7 provided with the step 10 in combination with the plunger rod, moving upon said step; 16th. The vertically sliding tool carriage K supported by a bed having a curved slot through which an adjusting screw passes for setting the smoothing tool at different tapers; 17th. The combination of the head L carrying spindles n with the stop 12, dropping carriage bed Q and its operating mechanism.

No. 7085. Appliance for the Extraction of Solid Alimentary Preparations from their Packages.

(Appareil à tracer les préparations alimentaires solides de leurs enveloppes.)

John L. Johnston, Sherbrooke, Que., 16th February, 1877, for 5 years.

Claim.—The use of wire or wires, or tinned iron and wire, or other suitable material or materials placed around or through or attached otherwise to the contents of air tight cans or packages, as an appliance for the purpose of removing or drawing out said contents from said cans.

No. 7086. Improvements on Lubricators.

(Perfectionnements aux graisseurs.)

Francis W. Carpenter Harrison N. Y. U. S., 16th February, 1877 for 5 years.

Claim.—1st. The piston G with stem H, head J and point I, in combination with the tube A having enlarged chamber b at its lower end; 2nd. The tube A containing a piston G having the point I and a device for retaining the said piston within the tube; 3rd. The cover I, having a suitable fastener, and the plate K in combination with a lubricator placed in the wheel hub.

No. 7087. Improvement in Envelopes.

(Perfectionnement dans les enveloppes.)

Joseph H. Valpey, St. John, N. B., 16th February, 1877, for 5 years.

Claim.—An envelope provided with a tongue a, slot B and inner fold c; piece C in such a manner that it will be sealed inside.

No. 7088. Oven for Tempering and Forming Articles of Steel.

(Fourneau pour recuire et former les objets en acier.)

George I. Simonds, Fitchburg, Mass., U. S., 16th February, 1877, for 5 years.

Claim.—1st. The process of adjusting the fast and the loose in a saw by throwing the heat in the centre or the outer edge, or on any desired part of the saw the same being held to the required position; 2nd. Formers for tempering and forming articles of steel, in combination with a fan or blower to equalize the heat; 3rd. Formers for tempering and forming articles of steel enclosed in a heating oven, in combination with a fan or blower; 4th. The distributor in combination with a tempering oven; 5th. The distributor a provided with the flues a and dampers; 6th. The perforated formers c e; 7th. Saws tempered and left by the tempering heat in their ultimate form and in a condition free from the irregular strain or buckle of hammered saws.

No. 7089. Improvements on Pulverizing Machines. (Perfectionnements aux machines à t. luer.)

Andrew B. Lipsey, West Hoboken, N. Y., U. S., 16th February, 1877, for 5 years.

Claim.—1st. The combination of a series of chambers of successively larger diameters arranged one outside or beyond the periphery of another, and series of beaters for revolving therein, whereby a very simple, exceedingly compact and serviceable pulverizing or disintegrating machine is produced; 2nd. The combination with a chamber provided with a series of beaters for revolving therein of a chamber of larger diameter communicating with the former and provided with a series of beaters for revolving in the same length of time as those in the smaller chamber, and consequently moving at a greater speed and producing a partial vacuum of the exit of such smaller chamber; 3rd. The combination with a chamber provided with a series of beaters for revolving therein, of a chamber of larger diameter communicating directly with the smaller chamber and provided with a series of beaters supported on the same shaft as those of said smaller chamber and revolving in the same length of time as the latter; 4th. The combination of two or more chambers communicating one with another and provided each with a series of beaters for revolving therein, and with lips overlapping the beaters of each chamber which communicates with another chamber whereby the material to be pulverized or disintegrated therein is prevented from passing out except at the proper place; 5th. The combination of a series of chambers successively of larger diameters provided with beaters for revolving therein, with lips overlapping the beaters of each chamber which communicates with another and with offsets arranged at the inner ends of the beaters for deflecting material escaping from one chamber into the middle of the next; 6th. The combination with a chamber and beaters or their equivalents for effecting the pulverization or disintegration of material therein, of a long hub for supporting such beaters or their equivalents extending out beyond the chamber; 7th. The combination with a pulverizing or disintegrating machine and an inlet for supplying material to be pulverized or disintegrated, and air or its equivalent thereto, of a throttle for the inlet providing for simultaneously regulating or entirely shutting off by the same means both the supply of the material to be pulverized or disintegrated and air or its equivalent; 8th. The combination with a pulverizing or disintegrating machine, of a laterally oscillable feed shoe or trough preferably capable of adjustment at different angles to the horizontal, and deriving motion from the driving or other shaft of the machine whereby the feed of material to be pulverized or disintegrated may be automatically regulated to suit the speed at which the machine may be working; 9th. The combination with the supply passage of a pulverizing or disintegrating machine, of means for feeding or supplying the same, and a governor or its equivalent for actuating the feeding or supplying device, so that the feed of the material to be pulverized or disintegrated will always be commensurate to the speed at which the machine works and will be automatically stopped when the machine is running so slowly as to be incapable of working effectively; 10th. The combination with a pulverizing or disintegrating

machine, of an outlet provided preferably at the lower part with an opening or openings and capable of being adjusted axially by swinging at different angles; 11th. The combination with a pulverizing or disintegrating machine and an outlet capable of being adjusted at different angles, of an adjustable top portion; 12th. The combination with a pulverizing or disintegrating machine and an outlet therefore capable of being adjusted axially by swinging at different angles, of a clamping device for securing it in different positions; 13th. The combination with a beater extending longitudinally outward from the side of a disk or spider of a removable shoe lapping over the face and edge and outer end of such beater, a dove-tail or projection on the outer end of said beater fitting a cavity in the shoe and a rivet or bolt in inner end of the shoe securing it to the said disk; 14th. The beater or equivalent part of a pulverizing or disintegrating machine provided with knives or cutters; 15th. A beater or equivalent part of a pulverizing or disintegrating machine provided with knives or cutters formed in pairs extending from single shanks; 16th. The combination of a beater, an independent face therefor, knives or cutters having shanks provided with collars fitting between such face and the beater, and other knives or cutters provided with collars adapted to fit against the front of such face and having long shanks which extend through such face and beater; 17th. The combination of the series of chambers A A', A'', series of beaters B B', B'', spiders S S', S'', supporting the latter shaft K, an inlet and an outlet whereby an improved pulverizing or disintegrating machine is produced.

No. 7090. Improvements on Horse Powers.

(Perfectionnements aux manèges.)

Frederick Trulender, Harnersville, and John Warburton, Jr., Gloucester City, N. J., U. S., 16th February, 1877, for 5 years.

Claim.—1st. The combination of the platform planks Q, slotted links N, two sets of cross rods O I, connecting bars P, toothed links H and wheels or rollers J with the inclined and curved tracks D E F G and gear wheels K attached to the driving shaft L; 2nd. The combination of the second shaft R and its gear wheels S with shaft and gear wheels L K connected with toothed links H.

No. 7091. Improvements on Nut Locks.

(Perfectionnements aux noix de sûreté.)

Francis W. Carpenter, Harrison, N. Y., U. S., 16th February, 1877 for 5 years.

Claim.—1st. In combination with a bolt and nut a removable cap arranged to close over but disconnected from the nut and end of the bolt; 2nd. The combination with a bolt B and nut C of the washer D, tapering cap and holding device J.

No. 7092. Improvement on a Gauge Cock.

(Perfectionnement d'un robinet-jauge.)

William Andrews, Lisbon, and Henry J. Hutchinson, Fayette, Me., U. S., 16th February, 1877, for 5 years.

Claim.—1st. The combination of the parts a b, the vertically moving piston C having the apertures d and the tubular parts e, the screw caps j, packings u and the levers g h; 2nd. The combination of the parts a b the part b having the chamber k, the vertically moving piston C having the apertures d and the tubular part e, the screw caps j and levers g and H; 3rd. The screw cap o, the projecting part p and the bore of the part p.

No. 7093. Improvements in Skates.

(Perfectionnements aux patins.)

Henry Grist, Ottawa, Ont., (Assignee of "The Starr Manufacturing Company"), 16th February, 1877, (Extension of Patent No. 1344) for 5 years.

Claim.—1st. Forming the drops a and f on the toe and heel plates respectively by punching and bending so that they are parts of the said plates; 2nd. The manner of securing the heel and toe plates to the posts on the runner by means of slot headed buttons c and g fitting into T shaped slots a the said posts; 3rd. The arrangement and combination of a lever plate G, slotted fixed heel plate F and foot plate I for clamping the skate to the heel of the boot simultaneously with the jaws D clamping the sides of the sole of the boot.

No. 7094. A Skate. (Un patin.)

Henry Grist, Ottawa, Ont., (Assignee of "The Starr Manufacturing Company"), 16th February, 1877, (Extension of Patent No. 1342) for 5 years 3 months and 25 days.

Claim.—1st. The main lever I or its equivalent working upon a centre in sole or heel, rest of skate and communicating a parallel motion to a heel clamping device by means of a shorter or toggle lever, and also provided with diverging or eccentric slotted holes for drawing together lugs upon the sides of sole of the boot; 2nd. The means of adjusting the skate to suit boots of different sizes by means of sets of bolts or their equivalent working in slots on the side lugs and in the centre of a main lever and also thus allowing the skate to be secured either in the centre or a little on one side to suit the last; 3rd. The padding of the body or foot rest skate of sheet or plate steel for avoiding weight and securing the necessary stiffness of the several parts.

No. 7095. Mode of Attaching Skates.

(Mode d'ajustage des patins.)

Henry Grist, Ottawa, Ont., (Assignee of "The Starr Manufacturing Company"), 16th February, 1877, (Extension of Patent No. 1425) for 6 months and 5 days.

Claim.—The mode of securing the runner to the body or foot rest viz. by a hinge either at the heel or toe or under the ball of the foot, and also the use of a link or toggle connecting the runner with a sliding plate for communicating motion to the clips before mentioned, the runner acting as a lever for moving the said sliding plate through the medium of the toggle or link before mentioned, the whole constituting a simple, efficient and extremely convenient arrangement for securing the skates to the feet without the use of straps or screws to be manipulated when on the ice also being so arranged as to admit of adjusting to various sizes of boots and requiring no previous preparation of the boots with plates or other fittings.

No. 7096. Lifting Jack for Railroad Tracks.
(*Crie pour les voies de railroads.*)

George W Hunter, Philadelphia, Pa, U. S., 21st February, 1877, for 5 years.

Claim.—1st. A standard whose front face is made on the arc of a circle, having combined therewith a hook adapted to move in the curve of such arc. 2nd. The combination of an upright an extending lateral arm and a hook or means of connection with the rail farthest from the pedestal. 3rd. The combination with the movable hook or elevating device, of an adjustable clamp or stay. 4th. A clamp or stay consisting of the combination of the lever F and movable strut h. 5th. The combination with the movable hook or elevating mechanism of an adjustable grappling device secured to the rack bar D.

No. 7097. Improvements in Oil Stoves.

(*Perfectionnements aux poêles à huile.*)

Oliver Edwards, Florence, Mass., U. S., 21st February, 1877, for 5 years.

Claim.—1st. The combination of the reflecting and radiating plate g. 2nd. The combination of the plate C interposed between the top of the tubes and the oil reservoir and in combination with the pillars C. 3rd. The pillars C standing upon the oil reservoir and supporting the superstructure. 4th. The combination of the oil reservoir A, supporting pillars C, plate C, air space C', wick tubes b for a minus plate D and base E. 5th. The combination of a hollow projecting top having two or more openings to receive cooking utensils supported from the base or oil reservoir, 6th. The combination of a hollow top containing two or more openings for cooking utensils, of lids to cover the same; 7th. In combination with the heating drum E a hollow projecting top with opening on either under or upper side, on outer circumference for the passage of heated air; 8th. A metallic chimney with perforations near the base of chimney, to admit oxygen to the flame as it enters the chimney; 9th. The combination of cooking utensils M provided with hot air jackets around them.

No. 7098. Improvements on Nut Locks.

(*Perfectionnements aux noix de sûreté.*)

Obadiah B. Latham, Seneca Falls, N. Y., U. S., 21st February, 1877, for 5 years.

Claim.—1st. The washer E with gravitating extension A and recess or seat G, in combination with the nut D and bolt C. 2nd. The washer having the shoulder disk J and annular groove c for containing a lubricant, in combination with the gravitating extension A.

No. 7099. Improvements on Horse Powers.

(*Perfectionnements aux manèges.*)

Thomas Moore, Eber Cutler, Peter W. Anthony, Benjamin M. Disher, and Lorenz Nagel, Ridgeway, Ont., 21st February, 1877, for 5 years.

Claim.—1st. The combination and arrangement of the main driving wheel C C with the shaft I, sleeve H H, pinions D E, bevel wheels F G with pinion L, shafts M N and spur wheel 7 and pinion 8 8, the journals K O with the iron frame B B; 2nd. The combination of the main centre pin P with the driving wheel C and base R, the caps S S, bolts U and bolts V V, slots 9 9, spaces J J and set screws 2 2.

No. 7100. Improvements on Milk Coolers.

(*Perfectionnements aux réfrigérateurs à lait.*)

George R. Ingalls, Abercorn, Que., 21st February, 1877, for 5 years.

Claim.—1st. The cooler D of serpentine construction having a return don D₁ in combination with a milk pan I; 2nd. The truck G provided with wheels H travelling on the longitudinal edges of the pan I.

No. 7101. Improvements in Gas Retorts.

(*Perfectionnements dans les cornues à gaz.*)

Thomas H. Hicks and Thomas H. Tracy, London Ont., 21st February, 1877, for 5 years.

Claim.—The combination of a perpendicular with a horizontal retort containing a grate and fragments of fire brick, or other suitable substance, for the evaporation of any hydrocarbon in a liquid state, the generation of gases and vapours from wood or coal, and the decomposition and chemical union of the products to form an illuminating gas.

No. 7102. Improvements on Grinding Mills.

(*Perfectionnements aux moulins à blé.*)

Ransom P. Gillett and Samuel Coughran Sparta, Wis., U. S., 21st February, 1877, for 5 years.

Claim.—1st. The means employed for combining the stone F with the shaft E, and for securing the relative radial and peripheral positions of said parts, consisting of the disks G G, which are secured upon said shaft, made convex upon their inner faces, provided with studs g g, and fit into the concave ends of said stone, provided with the recesses f f; 2nd. In combination with the concave H the frame or bridle I pivoted near its centre to said concave and at its rear end to the main frame, and moved vertically at its front end by means of the rod N, provided with the nut n, and the set screw O passing through the rear end of said main frame, and impinging upon the rear upper portion of said concave.

No. 7103. Improvements on Smoke Consumers.
(*Perfectionnements aux appareils fumivores.*)

John Fee, George Stacy and Caroline C. Cable, Montreal, Que., 21st February, 1877, for 5 years.

Claim.—1st. The combination of the smoke arch e with injecting apparatus, whereby the products of combustion are returned from the said smoke arch to the fire box b and the rein distributed. 2nd. The combination of the pipes l m and jet n. 3rd. The pipe l in combination with the pipe p; 4th. The combination of the fan S pipes l m and jet n, with or without pipe p.

No. 7104. Improvements on Stone Dressing Machines.

(*Perfectionnements aux machines à rhabiller les meules.*)

Thomas Woods, Nicholasville, Ky. U. S., 21st February, 1877, for 5 years.

Claim.—1st. The cylinder B constructed with alternating recesses G in combination with the cushioned cutters H and their braces I. 2nd. The edger R in combination with the set screws U whereby said edges are adjustable, in the main frame relatively to the stone to be dressed. 3rd. The stone bed or platform Q mounted on the carriage V and adjustable thereon at any height and angle by set screws W.

No. 7105. Improvements on Ordnance, &c.

(*Perfectionnements aux bouches à feu, &c.*)

Alfred Krupp, Essen, Prussia, 21st February, 1877, for 5 years.

Claim.—1st. The spherical formation B at or near the muzzle end of a cannon A and held by and fitting and working in a corresponding socket formed in a shield armour or other protecting fixed or movable structure C, said cannon being sighted and trained. 2nd. The cannon A with spherical formation B, at or near its muzzle end held and fulcrumed in a corresponding socket, in combination with the end hand with turn table E, or equivalent device, and with hydraulic or other cylinder G and elevating screw F or other known elevating appliance. 3rd. The sphere B in combination with a protecting cap therefor.

No. 7106. Process for Producing Metals or Metallic Alloys.

(*Process pour produire des métaux ou alliages métalliques.*)

John Holloway, London, Eng., 21st February, 1877, for 5 years.

Claim.—1st. The manufacture of compound metallic coke from the admixture of ferro-manganiferous manganese and iron ores, or any thereof, with coal or other carbonaceous materials, and the fluxes and bitumen that may be considered advisable, such mixture to be baked in the ordinary manner, which compound metallic coke so produced shall be capable of yielding, when smelted, in a blast furnace, or by other means of reduction, spiegel-eisen or ferro-manganese containing larger percentages of manganese than can be produced by the reduction of natural manganese ores, by similar means of reduction and which compound metallic coke shall be capable, when smelted with manganese ores, of increasing the proportion of manganese in the spiegel-eisen or ferro-manganese produced from such ores; 2nd. Mixing ores carbonaceous matters and other substances of lesser and producing by coking a compound metallic coke therefrom which, when subsequently smelted by the application of heat, will produce a metallic pig from the constituents and materials coked.

No. 7107. Manufacture of Articles of Wrought Iron and Steel.

(*Fabrication d'objets en fer et en acier forgés.*)

Charles P. Haughian, Brooklyn, N. Y., U. S., 21st February, 1877, for 5 years.

Claim.—The employment of chrome steel in the manufacture of rods, bars, plates, beams, girders and other articles and forms of high or hard steel, and low or mild steel, or iron compounded together by welding.

No. 7108. Improvements on Steam Lubricators.

(*Perfectionnements aux graisseurs de machines à vapeur.*)

William Gowenlock, Susquehanna Depot, Pa., U. S., and Charles Mannerling, Stratford, Ont., 21st February, 1877, for 5 years.

Claim.—The combination with the gauge or measure cup B and the valve stem D, of two or more hollow branches C C attached to the valve stem D.

No. 7109. Improvement on Steam Boilers.

(*Perfectionnement des chaudières à vapeur.*)

George H. Millen, and William Feely, Hull, Que., 21st February, 1877, for 5 years.

Claim.—1st. The upright, conical, or otherwise shaped tub made of sheet or cast iron or fire clay and the steam and water jackets B B. 2nd. The steam circulator pipes C C in combination with the steam boiler or shell O O. 3rd. The worm circulators E E, in drop tubs G G. 4th. The smoke and gas chambers D D, in combination with the plate L L, and flues P P. 5th. The combination of the upright, conical or otherwise shaped tub A and steam and water jacket B B, the steam circulator pipes C C, and steam and water jacket B B, the steam boiler or shell O O, the circulators E E, drop tubs G G, the smoke and gas chambers D D, the perforated plates L L, and flues P P.

No. 7110. Improvements on Milk Cans.

(*Perfectionnements aux bidons à lait.*)

Abraham Huff, Latham, Ont., 21st February, 1877, for 5 years.

Claim.—1st. A can having in its interior a square or round tube for the purpose of holding ice to keep the contents of can cool in summer and warm water to prevent freezing in winter. 2nd. The follower D to prevent the contents of the can from splashing. 3rd. The tube and follower, combined.

No. 7111. Improvements on Skate Sharpeners.

(*Perfectionnements aux remouleurs des patins.*)

William H. Fisher, Seim's Grove, Pa., U. S., 21st February 1877, for 5 years.

Claim.—The body A provided with curved handles B, file recess b, guide flange C and adjustable gauge E.

No. 7112. Machine for Reducing Railroad Rails to the Form of Plates.

(Machine à réduire les rails de railrotes à l'état de plaques.)

James N. Whitman, Pembroke, Me., U. S., 21st February, 1877, for 5 years.
Claim.—1st. The method of rolling a railroad rail to the form of a plate of homogeneous texture by first, passing the web portion of rail between collars *a* and *a'*, and reducing the head and flange by adjacent portions of the rolls which spread the metal into the open spaces on each side, then reducing to uniform thickness by passing them between plain portions *a₂* of the rolls, then passing them transversely between two plain portions *a₃*, and finally edge-wise through the ring ground portions *a₄*. 2nd. The combination of two rolls *A* having the collars *a*, *a'*, *a₂*, and the reducing surfaces forming open spaces on each side of said collars.

No. 7113. Improvements on Cigars and Cigarettes.

(Perfectionnements aux cigars et cigarettes.)

Adolph Pearl, Brooklyn, N. Y., U. S., 21st February, 1877, for 5 years.
Claim.—A cigar or cigarette having its filler *a* made from plug tobacco, cut in the plug lengthwise of the leaf, and held together and covered by a tobacco leaf wrapper *b*.

No. 7114. Improvements on Broom Stands.

(Perfectionnements aux porte-balais.)

William Reardon, Ottawa, Ont., 21st February, 1877, for 5 years.
Claim.—The revolving broom holder composed of the base *A* and axial post *B* on which turn the disks *C* *D* connected by the rods *E*, the upper disk having spring holders *d* and the lower disk having retaining receptacles *c*, for the ends of the broom handles with or without the provision of a disk *F*.

No. 7115. Improvements on Trace Carriers.

(Perfectionnements aux porte-trains.)

William Fitch and Eleazar T. Fitch, (Assignees of Charles B. Bristol) New Haven, Ct., U. S., 21st February, 1877, for 15 years.
Claim.—1st. A frame constructed with central bearing or support and with the side bearings or posts combined with a bar or arms *e* *e'* lying at the centre, so that turning the one end turns the other and a spring for holding the said arms in their normal condition; 2nd. The bar or arms *e* *e'* formed in one and the same piece with the pivot *g*, with which they turn and by which they are secured to the frame, combined with a spring for automatically closing said arms. 3rd. The bar or arms *e* *e'* formed in one and the same piece with the pivot *g*, with which they turn and by which they are secured to the frame, combined with a spring for automatically closing said arms and a lug or stop *n* on the support for the arms, and *n* corresponding recess or shoulder *p* to form a stop for the turning of the arms.

No. 7116. Improvements in Churns.

(Perfectionnements dans les barattes.)

Richard P. Liston Selma, Ill., U. S., 21st February 1877, for 5 years.
Claim.—1st. The post *a* having a socket in its end to receive the tenon *c* on the spider *d*, in combination with the bolt *b*. 2nd. The combination of the post *a* and detachable two armed guide or support *e*. 3rd. The combination of the cover *v*, rods or plates *n*, and ring *l* with dash rod *s*.

No. 7117. Improvements in Preparing Cereals for Food.

(Perfectionnements dans la preparation des cereales pour aliments.)

John J. Tyler, Brooklyn, N. Y. U. S., (Assignee of Lewis S. Chester), 21st February, 1877, for 5 yrs.
Claim.—1st. The vessel *f*, having a perforated platform *k* and steam inlet valve *h*, in combination with the surrounding vessel *a* forming a steam jacket and the supporting trunnions *b* *b'*; 2nd. The drying vessel composed of the cylinder *m*, sustained upon hollow trunnions and provided with a flap, in combination with the interior drum *s* and perforated heads *l* *l'*; 3rd. The method of preparing cereals by, first, passing steam through the mass, while in a quiescent condition, second: cooking the same by a continuance of the steam heat after the steam has been cut off from the mass itself, third, removing the mass from the cooking vessel and drying the same by heated air while the mass is being agitated; 4th. The food consisting of the crushed or ground cereals in a cooked, dried and unscorched condition.

No. 7118. Machine for Cutting, Cleaning and Finishing Oatmeal.

(Machine à couper, nettoyer et finir les gruaux d'avoine.)

William Scott and William Hutchinson, Ottawa, Ont., 21st February, 1877, for 5 years.
Claim.—1st. The combination of either the hopper *D*, or of the shoe *H* (or both) valve *E*, guard bar *G*, feed roller *S*, corrugated plate *H* and *I* with knife *R*, face roller *J* and their gearings, and the brush *L* to cut groat into oatmeal. 2nd. The combination of the fan blower *M* with incline *N* to fan the oatmeal and to clean it from fuzz and other dirt. 3rd. The combination of the set of sieves *O* and box *P* with a machine to cut oatmeal and for assorting and finishing the oatmeal. 4th. The combination of the driving pulley *B*, main shaft *C* cone pulley *C*, belts, large and small pulleys, hopper *D*, or shoe *H* (or both), feed plate *H*, feed bar *I*, feed roller *S*, face roller *J*, brush *L* with fan blower *M*, incline *N*, set off sieves *O*, box *P* and frame *A*.

No. 7119. Improvements on Flexible Tubing.

(Perfectionnements aux tuyaux élastiques.)
Harwood Wakeman New York, U. S., 21st February, 1877 for 5 years.
Claim.—1st. The elastic or flexible hose or tube surrounded by a flexible metallic wire armor. 2nd. The flexible or elastic tubing and metallic wire

armor protected by a coating of tar; 3rd. The leather hose provided with the interlocking tongues, standing in opposite directions upon the surfaces of the lap which come in contact.

No. 7120. Improvements on Manufacture of Steel.

(Perfectionnements dans la fabrication de l'acier.)
Alfred B. Mullett Washington D. C. U. S. (Assignee of Julius Baur) 21st February, 1877, for 5 years

Claim.—1st. The use of compound, composed of chrome ore, graphite and borax, (or a flux containing borax) in the production of an alloy suitable for the manufacture of chrome steel. 2nd. The combination of the said alloy in about the proportions indicated, with steel making iron and the manufacture thereby of chrome steel. 3rd. The manufacture of chrome steel in one process by mixing in the crucible or furnace graphite and borax, (or a flux containing borax), and chrome ore with the steel making iron to be converted into chrome.

No. 7121. Buggy Shaft Guard.

(Garde-élinguère de voiture.)

William Hewitt, Hamilton, Ont., 21st February, 1877, for 5 years.
Claim.—In combination with shafts of vehicles of a guard *C*, of any shape adjustably attached to their ends and secured by thumb screws *E* or then equivalent.

No. 7122. Improvements in Harvesting Machines.

(Perfectionnements dans les moissonneuses.)

William Deering, Chicago, Ill., U. S. (Assignee of John F. Steward) 21st February, 1877 for 5 years

Claim.—1st. The side supports *T* provided with the segmental cogs *u* in combination with the axle *S* provided with the teeth or leaves *h* and circular portion *i* for preventing spreading; 2nd. The combination of the supports *T* and axles with the wheel *V*, provided with the openings *k* and hook *o*, lock *l*; 3rd. The combination of the stretcher bar *I* with the brace bars *G*, support *G*, reel shaft *A*; 4th. The combination of the rack *d* and pawl *o* with the rod *e*, bell crank lever *f*, hand lever *J* and adjustable reel shaft *A'*; 5th. The combination of the frame *k* with the hand lever *J*, provided with a pivot *h*, adapted to engage with the notches *r*; 6th. The combination of the swinging stretcher bar *I* with the single sliding reel support *H*, provided with a journal bearing *G*; 7th. The link *g*, for engaging with the notches *r* in combination with the frame *k* for adjusting the reel and preventing it from falling over; 8th. The arm *X* provided with head *r* and sliding plate *z*, provided with anti-friction wheels *re*, in combination with the rod *e* and reel shaft *A'*; 9th. The bar *M*, pivoted at its inner end to the frame of a harvester, in combination with the tongue *L* and foot board *N*; 10th. The combination of the lever *M*, platform *N*, with the lever *J*, shaft *K*, arm *a* and coupling rod *b*; 11th. The combination of the lever *J*, shaft *K*, arm *a*, rod *b* and connecting plate *c* with the tongue *L*, lever or bar *M* and platform *N*; 12th. The sprocket wheels *F* located at the bottom of the elevator and having their inner faces covered by a cap, to prevent the grass from winding on the hubs of the wheels and clogging the elevator; 13th. The sprocket wheel *F*, having side grooves *q*, in combination with the platform *N* and cap *r*; 14th. The sliding arms *Z* and cranks *Y*, in combination with the reciprocating needle arm *Q*; 15th. The tilting receiving platform *k* with the rock shaft *m*, cam *u*, rod *l* and main shaft *A'* for operating the platform and needle arm *m*; 16th. The combination of the sliding arm *Z* and crank shaft *W*; *Y* with the receiving platform *k* having openings for the teeth of the arms *Z*; 17th. The combination of the toothed arms *Z*, slotted receiving platform *k* and the fixed spring arms *n* for compacting the gavels; 18th. The revolving twisting hook *v* so constructed that it will twist the two wires together and wind the main wire around its shaft; 19th. The reciprocating needle arm *Q* having an opening *q*, in combination with the twisting hook *v*; 20th. The twisting hook *v*, bearing *st* and mitre wheel *t*, in combination with mitre wheel *u*, shaft *e*, cog wheel *h*, cog segment *m* and shaft *A*; 21st. The shaft *A* and cam *st*, in combination with the shoe or stop *ut* for preventing the revolution of the twisting hook when the needle arm is descending; 22nd. The shaft *A* and cam *st*, in combination with the pin *ct* and lever or arm *bt*, for operating the blade *ds* and severing the wire; 23rd. The plate *o* having a hole or opening *pu*, in combination with the tilting platform *k* and spring arms *n*, for catching small straws and preventing the clogging of the twisting devices; 24th. The cutter *ds* arranged and operating with reference to the twisting hook and handle *as* to sever the binding wire between the twister and bundle; 25th. The hinged table *F*, in combination with the strap *o*, and spring arm *pu*, for catching the bound bundles and permitting their discharge; 26th. The frame or bar *U*, in combination with the bar *C*, sawing pivots *E*, and sliding collar *F*, for keeping the reel *m* level position under all circumstances; 27th. The combination of the reel supporting cross-bar *G*, stretcher bar *I* and a single operating lever, with the belt tightening device consisting of the lever *X*, head *r*, plate *t* and wheels *u* for adjusting and driving the reel in any desired position.

No. 7123. Display Cards and Holders.

(Cartes et porte-cartes d'éclairage.)
Henry H. Snow New Haven Ct U. S. 21st February 1877 for 5 years

Claim.—1st. In boxes for confectionery and other articles a display card pivoted to the box so as to be turned down upon the surface of the part of the box to which it is attached or elevated in the same plane. 2nd. The plate and the clasp hinged to the plate.

No. 7124. Improvements in Railway Switches.

(Perfectionnements aux aiguilles de railroads.)
Robert Bagnall and John Hall, Toronto, Ont., 21st February, 1877, for 5 years.

Claim.—The switch rails *C* *C'* having the points *D* *D'* and guard rails *E* *E'* connected to them in combination with the rails *A* *A'* *B* *B'*.

No. 7125. Improvements in Compensating Cranks.

(Perfectionnements dans les manivelles de compensations.)

Robert D. Milne, Santa Barbara, Cal., U. S., 21st February, 1877, for 5 years.

Claim.—1st The method of equalizing and balancing the varying pressure exerted by a piston or other motor upon a crank during its revolution, in producing a series of changes in the line of direct propulsion by means of the compensator C moving in the radial slot A or equivalent device so that the point of impact of force recedes from or approaches the centre of the crank during its revolution, 2nd. The method of utilizing the independent motion of a connecting rod between a crank and its reciprocating motor, in bringing it to bear upon the crank at such an angular inclination as to be equivalent to direct propulsion in a line varying from the line of force in reverse as the angle of the connecting rod and crank varies from a right angle, by means of the curves G acting upon the regulator P, or an equivalent device.

No. 7126. Improvements on Refrigerators.

(Perfectionnements aux refrigerants.)

William W. Wickes, (Assignee of John J. Bate), Brooklyn, N. Y., U. S., 23rd February, 1877, (Re-Issue of Patent No. 6291), for 5 years.

Claim.—1st. The combination within a car-chamber or house, &c., of the ice box constructed for the passage of an artificial air blast or current, the outlet pipe formed with the outlet openings and provided with deflecting devices and a mechanical means of inducing the air blast or current; 2nd. The combination with a car chamber or house of the ice box, the mechanical means of inducing the air blast or current, and the slotted inlet pipe provided with slides F varying the available size of its inlet openings; 3rd. The combination of the inlet pipe to the ice box, slotted or formed with openings with the said ice box, the mechanical means for inducing the air blast or current and the outlet pipe constructed with deflectors for distributing the cooled or refrigerated air to the car-chamber or house.

No. 7127. Method of Constructing Water Closets.

(Mode de construction des toilettes a l'Anglaise.)

John Robertson, Montreal, Que., 23rd February, 1877, for 5 years.

Claim.—1st The application of double valves to the soil pipe of a water closet which open and close with a circular and ascending and descending motion. 2nd The combination lever and the inclined plane for giving an upward and descending motion to the valves. 3rd. The trapping of two overflow pipes. 4th The casings &c.

No. 7128. Tank for Supplying Water to Closets.

(Reservoir pour fournir l'eau aux lieux a l'Anglaise.)

John Robertson Montreal Que., 23rd February, 1877, for 5 years.

Claim.—The two valve spindles connected to two balls or floating bodies confined within a water tight case or tank, for the purpose of regulating by their automatic action the admission and discharge of water into closets and urinals, and for similar purposes.

No. 7129. Improvement in Ship Fastenings.

(Perfectionnement dans le chevillage des navires.)

Heber Squier, Grand Haven, Mich., U. S., 23rd February, 1877 for 5 years.

Claim.—1st. The method of fastening the adjoining joints of a ship's frame by key pins, halved into each joint. 2nd. The method of fastening the longitudinal timbers of a ship's hull to the frames, and keying adjacent members to each other by key pins, halved into the contiguous edges of longitudinal timbers and contiguous members of frames. 3rd. A tree and when provided with the barb grooves G.

No. 7130. Improvements on Refrigerator Cars.

(Perfectionnements aux wagons-glaciers.)

James H. Wickes, New York, U. S., 1st March, 1877, for 5 years.

Claim.—1st. The combination of a self-acting float valve with the chamber of a refrigerator car and with a valve chamber and a pipe situated at or near one side of the car. 2nd. The combination in a refrigerator car, of a hand gear d e with the gravitating frame G, pulleys s t and fan blower F. 3rd. The combination, in a refrigerator car, of a ratchet wheel h, pawl c and shaft a, with the gravitating frame G and fan blower F. 4th. The combination of a hand gear with an elevating mechanism, and with the gravitating frame G and fan blower F.

No. 7131. Spring Draft Attachment to Traces.

(Ajustage d'un ressort de tirage aux traits de harnais.)

Austin Berry, Waterloo, Que., 1st March, 1877, for 5 years.

Claim.—1st. In a spring draft attachment, the cylinder A piston B, rod C and spring E, and having hook H and eye G, or other suitable means of connection with the traces and whiffletree. 2nd. In combination with the whiffle tree F, a spring trace attachment. 3rd. A spring draft connecting the vehicle or implement and the harness of the horse, oxen &c. drawing the same.

No. 7132. Improvements in Horse Shoes.

(Perfectionnements aux fers au cheval.)

Thomas Thist erwood, Sparta, Wis., U. S., 1st March, 1877, for 15 years.

Claim.—1st. A horse shoe having the steel centre and outer surfaces of iron; 2nd. A horse shoe having the steel centre and outer surfaces of iron, and the self-sharpening calks continuous therewith. 3rd. The self-sharpening calks for horse shoes having a steel centre and outer iron surfaces.

No. 7133. Marine Danger Signal.

(Signal de danger sur mer.)

Edgar E. Mann, Lawrence, Mass., U. S., 1st March, 1877, for 5 years.

Claim.—1st The combination of the chambers or casings F E and the pipes D. 2nd. The reed L having an adjustable device for regulating the sound, in combination with the inner chamber E. 3rd. The combination of the horn K with the protecting cap M and casing P. 4th. The combination of the chambers or casings L, E, with the tubes D provided with the valves h and the tubes H. 5th. The combination of the casing Q, the inner pipes l, the outer pipes or tubes D and the chambers or casings E E.

No. 7134. Improved Felly Joint.

(Joint de jante perfectionne.)

Daniel T. Boweiman, Middleton, N. Y., U. S., 1st March, 1877, for 5 years.

Claim.—The upper clip C having right and, star flanges overlapping each side of the felly joint, the lower clip D provided with overlapping flanges, and the two bolts e a passing through the tire felly and clips.

No. 7135. Improvements in Grates for Furnaces, &c.

(Perfectionnements aux grilles de fourneaux, &c.)

Harry Rogers, Jamesville, Wis., and John H. Rogers, Springhold, Mass., U. S., 1st March, 1877, for 5 years.

Claim.—The combination of the rock shafts e e resting and operating in suitable bearings, the series of grate bars e made eccentric horizontally with and upon said rock shafts, so that the bars upon each shaft alternates with each other in their location upon the shaft the arms B and the connecting rod D, by means of which the whole series of bars are operated.

No. 7136. Improvements on Grain Dryers.

(Perfectionnements aux secheurs a grains.)

José Guardiola C. Hoeboh, Guatemala, 1st March, 1877, for 15 years.

Claim.—1st The cylinder B, tubular shaft D and radial perforated tubes G. 2nd The cylinder B, tubular shaft D, radial partitions E, plates d d e having formed upon them the wings J. 3rd. The cylinder B having the tubular shaft D and gauze covered apertures J, the radial perforated pipes G, partitions E and the plates d d e having wings J in combination. 4th. The combination of the boxes K with the drying cylinder B having doors I for receiving the dried grain or coffee from the cylinder B as it is discharged through the doors I. 5th. The combination of the conduit o, blast gates a a, branch b, blast gate C, pipe M and tubular shaft D; 6th. The combination of the pipe L having the conduit o and blast gate e the pipe M, conduit o and its blast gates, and the tubular shaft D of the cylinder B for conducting heated air from the heater to the interior of the cylinder B. 7th. The pipe J, leading from the blower pipe V to the conduit o whereby cold air may be blown directly into the drying cylinder. 8th. The combination of the drying cylinder B, having the inclining flange C and the supporting rollers a a. 9th. A heater N, consisting of an inner and an outer cylindrical shell enclosing an annular air space and a central air pipe and radial pipes that connect the same with the annular air space and a fire grate and fire place arranged within the inner shell. 10th. A perforated curved pipe Z placed under the grate V, and the air supply pipe X provided with the valve z for supplying a blast of air to the fire in the heater. 11th. The pipes T perforated, in combination with the heater N. 12th. The pivoted and counter-weighted thermometer f in combination with the drying cylinder B.

No. 7137. Improvements on Water and Steam Engines.

(Perfectionnements aux machines a eau et a vapeur.)

John Fee, George Stacy and Caroline C. Cable, Montreal, Que., 1st March 1877, for 5 years.

Claim.—1st. The cylinder a, one or more, in combination with the valve e having one or more sets of ports A I e f, agreeing with the number of cylinders. 2nd The valve e in combination with shaft d, whereby the motion of the shaft is transmitted and produces a corresponding motion of the valve. 3rd The combination of the cylinders a, one or more, with crank shaft d and valve e, operated with gears or their equivalents. 4th. The valve e having helioidal diaphragms g.

No. 7138. Improvements on Wind Mills.

(Perfectionnements aux moulins a vent.)

François X. de Vault and François Anlet, Montreal, Que., 1st March 1877, for 5 years.

Résumé.—Une ou plusieurs paires de roues à couple de palettes, placées es unes au-dessus des autres et sur le même arbre H, et dont A A seraient les couples de palettes mobiles, armés de goussets B B ou sans goussets, comme le sont les couples de palettes X X, et les palettes A, les charnières D en métal ou en toile godfronées ou non, comme les goussets B B également en toile. De faire les susdites palettes en cadre A également recouvertes de toiles B ou de lames de tôle, ou d'une seule planche de bois; les bras ou rayons E et contre rayons G, avec renforts g g ou non, AG, taillés en angle; le moyeu P percé des trous l; les trous J du tourillon f également destinés au passage des tirettes W et M des débrayages, les trois systèmes de débrayage stoppeur; le système de fermeture automatique des couples de palettes par la trette de renvoi A roulant sur poulies V et V' et reliées à chaque extrémité aux cordes limitant l'écartement de l'ouverture de palettes, et au milieu des susdites cordes A et R. La garniture de cuir h du tourillon f, les contre-poids C C des palettes, et plus particulièrement les débrayages, les anneaux x' et e chevilles z placés perpendiculairement et en spirale sur l'arbre H et en dessous des dits anneaux.

No. 7139. Improvements on Ear Muffs.*(Perfectionnements aux oreillers.)*

John A. M. Cox, London, Ont., 1st March, 1877, for 5 years.

Claim—The wire frame A and elastic band D in combination with the silk covering B having a suitable opening C.**No. 7140. Apparatus for Butting Timber.***(Appareil à couper le bois.)*

William H. Knight, Quebec, Que., 1st March, 1877, for 5 years.

Claim—1st. A pontoon or floating chamber having formed in it one or more channels into which the timber to be butted or dressed is introduced; 2nd. The feed piece C, placed in the floating chamber B and moved forward and backward automatically; 3rd. In combination with the feed piece C the dogs H arranged in beatings so as to revolve and draw back by means of weights and ropes I, passing under and over sheaves set at right angles in the standards K; 4th. The circular saw L placed in recess M, having stuffing box set on its shaft and driven by gearing set in dry chamber N; 5th. The saw L having one or more pieces L^a raised and partly detached from it; 6th. In combination with a carriage carrying the log to be dressed and advancing at a regulated speed, a cutting knife moving in guide, in a vertical standard and actuated by the piston rod of a cylinder**No. 7141. Machine for Distributing Grain.***(Machine à distribuer le grain.)*

David D. Brazel, Tsbp. of London, Ont., 1st March, 1877, for 5 years.

Claim—The combination of the receiver A distributor B regulator C and regulating rod D.**No. 7142. Process for Treating Vegetable Fibres.***(Procédé de traitement des fibres végétales.)*

John S. Butler, London, Eng., 1st March, 1877, for 5 years.

Claim—1st. The employment of nitric acid in treating the cellulose without converting it into gun cotton; 2nd. The process of reduction of an alkaline sulphite by the action of a galvanic current, during the immersion of the fibres; 3rd. The coating of the cellulose with a solution of silk under pressure, in conjunction with a galvanic current; 4th. The method of preparing the fibres for dyeing by the employment of a soapy solution of arsenic acid.**No. 7143. Improvement on Fanning Mills.***(Perfectionnement des tarares.)*

William H. Emmerson and John McKay, Chatham, Ont., 1st March, 1877, for 5 years.

Claim—The hook in the end of the shoe, and in connection with it a pin or projection on the screen for the purpose of changing the pitch of same.**No. 7144. Improvements on Refrigerating Apparatus.***(Perfectionnements aux appareils réfrigérants.)*

Paul H. Bate, Brooklyn, N. Y., U. S., 1st March, 1877, for 5 years.

Claim—1st. A refrigerator or false floor, perforated or provided with opening nearly or quite throughout its area, and communicating with the bottom of an ice box provided with a suitable inlet at its top, whereby the air is caused to pass in upward currents; 2nd. A fan blower in combination with a false floor having perforations nearly or quite throughout its area, communicating with the lower part of the ice box; 3rd. A false ceiling perforated or provided with openings nearly or quite throughout its area, in combination with false floor having perforations nearly or quite throughout its area, communicating with the lower part of the ice box and a fan blower; 4th. In a refrigerating or ventilating apparatus, one or more inner vertical sides perforated nearly or quite throughout its area, in combination with an ice box and a fan blower; 5th. In a refrigerating or ventilating apparatus, an ice box having one or more of its sides perforated nearly or quite throughout its area, in combination with the vertical side or sides of the refrigerating chamber, also perforated nearly or quite throughout its area, and a fan blower arranged to circulate the air; 6th. The combination of a coil or system of pipes reduced to the requisite low temperature by the flow through the same of water resulting from the melting of mugged ice and salt, or of equivalent refrigerating material, a refrigerating chamber or the like, and a fan blower; 7th. The combination of a rose or its equivalent with the coil or system of pipes, kept at a reduced temperature by the circulation of a cooling liquid therethrough; 8th. The combination of an air conduit or air conducting pipe, and the coil or system of pipes kept at a reduced temperature by the circulation of a cooling liquid therethrough.**No. 7145. Compound for Cleaning Boilers.***(Composé pour nettoyer les bouilloires.)*

Gilbert R. Labdell, Toronto, Ont., 1st March, 1877, for 5 years.

Claim—A compound composed of tanner's extract of hemlock bark, tanner's extract of white, red or black oak, logwood or extract of logwood an molasses.**No. 7146. Improvements on Coffee Pots.***(Perfectionnements aux cafetières.)*

John Cromwell, Cranford, N. J., U. S., 1st March, 1877, for 5 years.

Claim—1st. The combination, with the pot or vessel, of a single perforated or reticulated diaphragm F held below the outlet opening of the pot, and dividing the pot into a lower extracting chamber, for the reception of the ground solid coffee or other substance, the virtue whereof are to be extracted, and an upper condensing chamber for the reception, condensationand retention of volatile extracts, said chambers communicating only through the perforations or reticulations in said diaphragm; 2nd. The combination with the pot or vessel of the hollow perforated or reticulated retaining diaphragm FF, arranged and held below the spout or outlet opening of the pot or vessel; 3rd. The combination of the upper disk F^a of the hollow diaphragm F F, above a spring catch L, and rod or stem I attached to the lower disk F of said hollow diaphragm; 4th. The hollow diaphragm F F and its rod or stem I, in combination with the cover B.**No. 7147. Improvements on Baking Machines.***(Perfectionnements aux ustensiles de boulangeries.)*

Alexander Rannie, Palmyra, N. Y., U. S., 1st March, 1877, for 5 years.

Claim—1st. The combination with a way over which baking pans are passed into an oven of a superposed water sprinkler C; 2nd. A sprinkler C having nozzle constructed with fine perforations a and b inclining towards each other, whereby the opposing currents of water impinge after leaving the nozzle to cause a spray.**No. 7148. Manufacture of Explosive Compounds.***(Fabrication de composés explosibles.)*

Egbert Judson, San Francisco, Cal., U. S., 1st March, 1877, for 5 years.

Claim—1st. A powder or explosive compound consisting of particles or grains of agass-producing substance or substances, which are first rendered non-absorbent by coating, cementing or varnishing the grains or particles and subsequently rendered explosive by the incorporation or admixture with said grains or particles of nitro-glycerine; 2nd. The process of coating or varnishing the particles, which compose the dry mixture with a non-absorbent substance, and subsequently adding the nitro glycerine; 3rd. Dust like or pulverulent particles of combustion substances aggregated into grains by stirring and cementing and rendered explosive by the addition of nitro-glycerine.**No. 7149. Improvements on Show Cases.***(Perfectionnements aux vitrines.)*

Robert A. Tyrre, Detroit, Mich., U. S., 1st March, 1877, for 5 years.

Claim—The combination of the mirror A with the mirrors B B B and with the sliding hooks D D D.**No. 7150. Improvements on a Machine to Beat Steak.***(Perfectionnements à une machine pour battre le steak.)*

Olivier Jetté, St Jean-Baptiste, et Elie Marcile, Montreal, Que., 1st March, 1877, for 5 years.

Résumé—1o. La combinaison des rouleaux dentés B placés sur le brancard A en rapport avec la table F; 2o. L'emploi des guides ou ressorts D pour dégager le steak des rouleaux B.**No. 7151. Improvements on Seed Planters.***(Perfectionnements aux semoirs.)*

William Nevins, Titusville, Pa., U. S., 1st March, 1877, for 5 years.

Claim—1st. The adjustable shovel standards E, pivoted in sockets G attached to the platform, in combination with the rods F, head H, balls h h and levers I I having their fulcra in upright standards on the platform; 2nd. The perforated cast metal socket G in combination with the perforated E, and rods F.**No. 7152. Improvement in Milk Coolers.***(Perfectionnement dans les réfrigérants à lait.)*

Thomas DeWitt, and Walter H. Beughner, Ridgeway, Ont., 1st March, 1877, for 5 years.

Claim—The combination of the metal box A with the tank B.**No. 7153. Improvements in Boots and Shoes.***(Perfectionnements dans les chaussures.)*

Thomas Dann, Montreal, Que., 1st March 1877 for 5 years.

Claim—1st. The groove cut out of any ordinary shoe last, and the leaving of a projection in front of the groove, for the purpose of forming leather toe tips to single sole turned boots or shoes, commonly called turned pumps; 2nd. The method of forming a toe tip out of a piece of sole or any kind of thick leather to single sole boots or shoes, which toe tips are not moulded but formed into shape in the making of the shoe.**No. 7154. Improvements on Car-couplings.***(Perfectionnements aux attelages de wagons.)*

Duncan M. Campbell, Flint, Mich., U. S., 1st March, 1877, for 5 years.

Claim—1st. The combination of the coupling hooks A with vertical end of draw bar B; 2nd. The check F F; 3rd. The draw bar B having an extended vertical front; 4th. The draw bar B in combination with the vertical spring B.**No. 7155. Apparatus for the Separation of Petroleum Products.***(Appareil pour séparer les produits du pétrole.)*

James Cole, jr., Cleveland, Ohio, U. S., 1st March, 1877, for 5 years.

Claim—1st. The combination with a still provided with a vapour outlet of perforated steam pipes, for applying heat to the contained liquid, and an independent dust pipe for introducing within the still a current of air or steam; 2nd. The combination with a still provided with perforated steam

pipes for applying heat to the contained liquid and an independent blast pipe for introducing within the still a blast of air or steam of one or more succeeding stills. A A, each still connected with the preceding still by a pipe, B, C, each passing through a condenser L, &c.; 3rd. Two or more stills A A, &c., each provided with perforated pipes for admitting steam heat at or near the bottom, each still connected with the preceding still by a pipe passing through an intermediate condenser, said first still provided with an independent blast pipe for admitting within the series of stills a current of air or steam, the whole constituting a means for separating the liquid products of petroleum or other oil, all combined.

No. 7156. Improvements on Sawing Machines. (*Perfectionnements aux machines à scier.*)

John Abell, Woodbridge, Ont., 1st March, 1877, for 5 years.

Claim—1st The end frames B B and frame C provided with cross bars B B and web extension pieces M, connected together and arranged to receive the working parts of the machine. 2nd. The combination of the detachable pillar blocks cross bars B B and cutter bolts B; 3rd. The detachable pillar block B, with bearing B, arranged, in combination with the cross bar B and shaft A in such manner as to permit the speedy removal of the block and bearing. 4th. The shaft A provided with the longitudinal groove a, in combination with the sliding sleeve blocks D D and fixed sleeve block E. 5th. The sliding sleeve blocks, provided with the collar D, compression nut and washer D; adjusting locking nuts D D and feather connection, with the revolving shaft A. 6th. In combination with a circular saw revolving in a fixed position, one, two or more circular saws mounted on sliding sleeves in such a manner that the distance apart of the saws may be varied to cut lumber of different widths. 7th. In combination with the movable sleeve blocks D D the detachable shifting blocks E operated by rack and pinion gear from shafts provided with index wheels and corresponding locking wheels and bolts, the connection of the shafts with the shifting bolts being made underneath or at the side as desired; 8th. In combination with a revolving shaft provided with fixed and movable circular saws, the lower stationary grooved feed rollers J and upper adjustable feed rollers J. 9th. In combination with the shaft A, pulleys K K K K K, double belt tightener L, with pulleys L, pulley K, pinion L, spur wheels L, mounted on the shaft of the feed rollers J, &c.; 10th. The belt tightener L, pivoted on the shaft A and provided with the angularly placed pulley L and lever extension L; 11th. The upper feed rollers J, supported in the sliding bearing boxes M, in combination with the rocking shafts N N provided with the arms N N and adjustable links O. 12th. The rocking shafts N N provided with the levers P P, in combination with the toggle bars Q and rod Q; 13th. In combination with the rocking shafts N N and connections and the rollers J, the locking bars R R.

No. 7157. Well and Post Hole Boring Machine. (*Machin à percer les puits et les trous de puits.*)

Thomas Elliott, Ferriburgh, Ont., 1st March, 1877, for 5 years.

Claim—1st. The formation of the cutters Z Z as combined with the rods T T. 2nd. The elliptical shape of the rods T T by reason of which the auger can be raised without suction. 3rd. The combination of runners b b.

No. 7158. Improvements on Vehicle Seats. (*Perfectionnements aux sièges de voitures.*)

Frederick Oppenheim, San Francisco, Cal., U. S., 1st March, 1877, for 5 years.

Claim—1st. The combination of the vehicle body A carrying the fixed seat D with the hinged frame F, brace G and hinged seat E, all arranged so that the seat E can be folded over the seat D and separated therefrom; 2nd. The seat D provided with slots in its edge for allowing the passage of the braces G which connect with the shifting seat E. 3rd. The fixed seat D, made with the raised back B, in combination with the shifting seat E, which is arranged to fold over the seat D but under the back B. 4th. In combination with the shifting seat E which is hinged to the panel F, the side panels H H rigidly attached to the panel F. 5th. The combination with the seat D of the side panels H pivoted braces G, transverse support F, hinged to the vehicle bottom, and seat E hinged to the support; 6th. The combination of the longitudinal supporting bar J ears i and pins j, the sliding carriage body A, hinged and slotted side panels H and hinged seat E, all arranged so that in shifting the seat the body A will slide on the bar J. 7th. In combination with the panel F of the folding seat E the connecting bars or bolts L, supporting bar or bars J and vehicle body A. 8th. The combination of the folding seat support F with the link I, having a stop joint I, and with the sliding vehicle body, all arranged so that during part of the folding motion of the seat support the position of the vehicle body will not be affected; 9th. The combination of the sliding carriage body A, folding seat E and supporting frame J with the screw M and nut N.

No. 7159. Improvements in Car Couplings. (*Perfectionnements aux attelages de wagons.*)

William Dunn, Hamilton, Ont., 1st March, 1877, for 5 years.

Claim—1st. The combination with a draw head and arranged in a fixed relation thereto, a stirrup supported in such manner that it will freely move in accordance with the longitudinal motion of the draw head. 2nd. The metal bars E, passing around the dead wood in a single piece and provided with eyes at the ends, in combination with the horizontal guide rods F F. 3rd. The stirrup G in combination with the draw-head B and guide rods F F. 4th. The lugs B, B cast in the sides of the draw head, for the purpose of forming a groove within which the stirrup is contained.

No. 7160. Improvements on Churns. (*Perfectionnements aux barattes.*)

William Knaggs, Etobicoke, Ont., 1st March, 1877, for 5 years.

Claim—1st. The dasher formed of the end pieces C D, connected by pairs of concavo-convex ribs E D F F and wings G G, journalled in

1 shaped end bearings H secured to the pieces C D. 2nd. The shaft journal bearing I, having a boxing J and provided with a latch K and catch L, in combination with a shaft B provided with collars M.

No. 7161. Improvements on Barbers' and Dentists' Chairs.

(*Perfectionnements aux chaises de barbiers et de dentistes.*)

Hugh McLaren, London, Ont., 1st March, 1877, for 5 years.

Claim—1st. The combination of the back of chair A, stand B and arms C and connecting bar D. 2nd. The combination of hinge H joints E F G holders I, fasteners J.

No. 7162. Improvements on a Kitchen Safe. (*Perfectionnements à un buffet de cuisine.*)

John B. Harrison, Saint Joseph, Mo., U. S., 1st March, 1877, for 5 years.

Claim—1st. The combination with the funnel-shaped bin D having a slide G of the removable sieve box E having semi cylindrical sifter h, and a stirrer F' all within the safe walls. 2nd. The funnel neck f, having spurs g and eye l in combination with the sieve box E having perforations i hook K and a crank arm H on the inside of the safe. 3rd. The kneading board J provided with a hinged wing n adapted to be unfolded for the purpose of extending the said board entirely across the front of the safe. 4th. The combination with a safe of the kneading board J, having a hinged wing n adapted to be swung upward into the safe and to be concealed from view by the doors thereof. 5th. The combination with a safe, having a funnel shaped bin D terminating in a neck l of a sieve box E having a sifter h and a rotary stirrer F.

No. 7163. Improvements on Butter Packages. (*Perfectionnements aux boîtes à beurre.*)

Mark W. Spaulding, Keusselaer Falls, N. Y. U. S. 1st March, 1877 for 5 years.

Claim—1st. The combination with a butter package having a metallic body A of the wooden hoop F adapted to preserve the cylindrical form of the metal body and furnishing stays for the metal eyes to which the fastening hoops D are secured. 2nd. The hoops fastenings D, hinged to the hoop F and adapted to secure the cover B by a holding pin K. 3rd. The metallic body A bottom C, wooden cover B, fastenings D and hoops F and C.

No. 7164. Improvements on Reaping Machines. (*Perfectionnements aux moissonneuses.*)

Solomon Rawson, Scott Teacher and Isaac Rawson, Hornellsville, N. Y. U. S., 1st March, 1877, for 5 years.

Claim—1st. The shaft h carrying wheels g and j, in combination with the continuous bearing k moving in guides and the cam collar n provided with a lever extension; 2nd. The track X made double at X and having a reel portion Y and a spring seated section Z. 3rd. The track having a double section X and rocking section Y and a spring seated Z in combination with rake arm, having extensions s, the subjacent lever r having cam L, the r and c and the levers w, v. 4th. The frame A carrying the platform in the rear and sickle driving mechanism in front and made together adjustable therewith on the main axle, as a pivot to regulate the height of the cutter bar, in combination with the tongue loosely pivoted to the main frame immediately below the main axle and an elbow lever l for adjusting the said main frame with respect to the tongue.

No. 7165. Improvements in Stump Extractors. (*Perfectionnements aux arrache-souches.*)

William W. Mason, Cassaca, Ont., 1st March, 1877, for 5 years.

Claim—1st. A machine for raising weights by elevating the upper end of a rigid beam or beams E E pivoted at the lower end the lever or beam E adapted to work freely upon the upper ends of the beam or beams E, E, and also at its opposite end upon the outer ends of the braces G G rigidly connected with the lower ends of the beam or beams F F for the purpose of elevating and distributing the strain upon the outer end of the lever E and adjusting the lifting power of the machine to any required extent. 2nd. In a stump and rock extractor or machine for raising and removing weights the combination of the beam or beams E E D D jointed at their upper ends by the bolt b with the braces G G working beam E, chain H, wheels A A B B, bolster a, tongue C, shuttle trees e, rope d, windlass wheel J, windlass axle c, barrels f f, ropes or chains g g, blocks h h and catch j.

No. 7166. Instrument for Attaching Buttons to Garments.

(*Appareil pour ajuster les boutons des hardes.*)

Clark M. Platt, Waterbury, Ct., U. S., 1st March, 1877, for 5 years.

Claim—1st. A plier shaped instrument for attaching buttons with metallic fastenings to garments, constructed with elliptical recesses formed in and near the ends of the inner faces of the jaws and with a circular convex recess in one jaw and a conical boss formed on the other or said jaws. 2nd. A removable plate with perforation and smooth surface and clamp. 3rd. In combination with a plier-shaped instrument for fastening buttons to garments, a button with conical teeth, and tubular eyelet or fastening device.

No. 7167. Improvements in Gas Stoves. (*Perfectionnements aux poêles à gaz.*)

Walter M. Jackson, Providence, R. I., U. S. 1st March, 1877, for 5 years.

Claim—1st. A gas stove provided with closed retort g arranged to heat the gas and expand its volume before the same is mixed with the air. 2nd. The combination in a gas burner with the retort g of an inlet and outlet aperture below its top, a gas and air mixing chamber and flame orifices, arranged so that the flame will heat the retort; 3rd. The method wherein

the gas is heated in a retort which is heated by the flame, and the heated and expanded gas is mixed with atmospheric air after it leaves the retort, and before it reaches the flame orifices; 4th. In a gas stove the combination with a closed retort surrounded with flame orifices, of the inlet pipe *d* and outlet pipe *e* and cylinder *A*, provided with openings at or near its bottom, the whole arranged so that the gas will be delivered to the retort and from the same will pass down the pipe *e* and again ascend whilst mixing with the air to the flame orifices, 5th. The body *A*, the concentric tube *d* and *e*, the latter provided with the openings *h h*, the retort *g* and the gauze *K*; 6th. In combination with the retort *g* supported on the gauze *K*, seated on the body *A*, the tube *e*, serving both to conduct the gas from the retort and to secure the retort in place.

No. 7168. Improvements on Fluting Irons.

(*Perfectionnements aux fers à lugauter.*)

Nelson R. Streeter, Hiland K. Clark and Dana Rhodes, Groton N. Y. U. S. 1st March, 1877, for 5 for years.

Claims.—1st. The handle *D* provided with a locking device *G*, a notch or recess *c* and foot plate *D*, whereby it may be applied to the iron *A* or the fluting iron *J*; 2nd. The iron *A* provided with mortised projection *E*, with notch *a*, the recess *b* and inclined grooves *d*, in combination with the handle *D* having arm *D*, foot *D* and cam lever *G*; 3rd. The fluting iron *J* provided with notched flange *h* and grooved socket *l*, in combination with the handle and iron; 4th. A handle for smoothing iron that is made detachable therefrom and so formed on its front end as to be adapted for use as a stove lid lifter.

No. 7169. Improvements on Cans.

(*Perfectionnements des boîtes métalliques.*)

Nathan Seeley and George J. Stevens, New York, U. S., (Assignees of T. J. Jewell), 1st March, 1877, for 5 years.

Claim.—1st. A cutting wire *C* arranged and secured upon the interior surface of the metal, of which a vessel is composed and having its end *D* protruding, 2nd. A cover or cap *A* for sheet metal vessels, constructed with a depending flange *a* enclosing a cutting wire *C*, 3rd. A sheet metal vessel provided with a cover *A* having a depending and overlapping flange *a* and a cutting wire *C* arranged between the cover and vessel with its end protruding; 4th. A cover or cap, for sheet metal vessels drawn or stamped from a single piece of metal, and provided with an internal groove for the reception of a cutting wire; 5th. A sheet metal can having a circumferential groove formed in the body thereof, said can being provided with a flanged cover having a corresponding groove formed in its flange, and arranged to register with the groove in the body of the can and form a recess for the reception of a cutting wire; 6th. The internal brace *G* forming no part of the can proper, but inserted within the body of the same and holding the cutting wire in place; 7th. The method of constructing and inserting the cutting wire in place in a sheet metal vessel, by passing the inner end of said wire through coincident holes provided in the flange of the cover and near the upper edge of the body of the can or other vessel, bending the said inner end of the wire into a hook or loop to insure its hold upon the said body and then turning or rotating the said cover to bring the wire within the groove of the flange of the latter and the upper part of the body of the vessel, 8th. The construction of the projecting and flaring seam enclosing the cutting or opening wire, and with or without the turned flange *e* of the end of top, 9th. The flanged cover formed of a single piece of metal, its depending flange *a* passing within the vessel and the cutting or opening wire arranged within an internal groove formed in the body of said vessel; 10th. The groove *x* for containing the cutting wire formed by a leading tool, and reduced in the thickness to facilitate the cutting action of said wire.

Lists of Patents issued up to 26th March, 1877, but not yet Officially published in the Patent Office Record.

- No. 7170. T. Galloway and J. Larsen, Oshawa, Ont., "Horse Rake," 1st March, 1877.
- No. 7171. S. Kinder, Amherst, Nova Scotia, (Assignee of D. O. Parker, Liverpool, N. S.), "Washstand," (Extension of Patent No. 1357), 3rd March, 1877.
- No. 7172. F. M. Stevens, Concord, N. H., U. S. A., H. G. Holmes, New York, U. S. A., and J. A. White, Concord, U. S. A., "Spark Arrestor," 6th March, 1877.
- No. 7173. H. W. Walker and T. L. Patterson, Greenock, Scotland, "Process for Making Syrup," 6th March, 1877.
- No. 7174. A. d'Estampes, New Orleans, La., U. S. A., Manufacture of Porcelain," 6th March, 1877.
- No. 7175. G. Farwell, Salem, Mass., U. S. A., (Assignee of A. Riley, Cambridge, Mass., U. S. A.), "Collar for Coat, Saeque, Cape, &c.," 6th March, 1877.
- No. 7176. A. B. Mullett, Washington, U. S. A., (Assignee of J. Baur, Brooklyn, N. Y., U. S. A.), "Manufacture of Steel," 6th March, 1877.
- No. 7177. F. Guilham Beverly, Ont., "Semaphore Signal," 6th March, 1877.
- No. 7178. W. E. Geer, Chicago, Ill., U. S. A., (Assignee of G. M. Winter, Kankakee, Ill., U. S. A.), "Process of Making Oakum," 6th March, 1877.
- No. 7179. I. Briggs, Middleborough, Mass., U. S. A., "Nail Machine," 6th March, 1877.
- No. 7180. P. Wernum, Stryker, Ohio, U. S. A., "Truss," 6th March, 1877.
- No. 7181. J. A. Chadwick, Hamilton, Ont., "Machine for Threading and Flanging Metal Caps," 6th March, 1877.
- No. 7182. J. W. Elliot, Toronto, Ont., "Fire Pot and Grate or Coal Burning Heating Stove," 6th March, 1877.
- No. 7183. D. O. Parker, Liverpool, N. S., "Rocking-horse, Carriage Seat, High-chair and Step Ladder," (Extension of Patent No. 1352), 10th March, 1877.
- No. 7184. E. Solvay, Brussels, Belgium, "Manufacture of Carbonate of Soda and Apparatus used therefor," 10th March, 1877.
- No. 7185. J. Rulhven, Ottawa, Ont., "Gas Lighting Apparatus," 10th March, 1877.
- No. 7186. J. Kinney and J. W. Smyth, London, Ont., "Saw Frame," 10th March, 1877.
- No. 7187. C. Potter, Toronto, Ont., "Church and Sunday-School Bench," 10th March, 1877.
- No. 7188. J. C. Dietrick, Galt, Ont., "Cross Cut Saw," 10th March, 1877.
- No. 7189. A. G. Gray, St. John, N. B., "Mower and Reaper," 10th March, 1877.
- No. 7190. G. P. Henis, Philadelphia, Pa., U. S. A., "Sheet Metal Pipe," 10th March, 1877.
- No. 7191. G. Bergner, Washington, Miss., U. S. A., "Peach Parer, Slicer and Stoner," 10th March, 1877.
- No. 7192. J. K. Sax, Pittston, Pa., U. S. A., "Car Wheel," 10th March, 1877.
- No. 7193. J. McCarthy, Syracuse, N. Y., U. S. A., "Screw Fastening," 10th March, 1877.
- No. 7194. A. Hill, Yonkers, N. Y., U. S. A., "Hat Brim Lining Machine," 10th March, 1877.
- No. 7195. D. W. Vary, Strathroy, Ont., "Gang Plough," 10th March, 1877.
- No. 7196. M. F. Scott, South Bend, Ind., U. S. A., "Ladies' Work Table," 10th March, 1877.
- No. 7197. W. Green, Montreal, P. Q., "Boot and Shoe Tip," 12th March, 1877.
- No. 7198. W. McKenzie, Morrisburgh, Ont., "Fanning Mill," 13th March, 1877.
- No. 7199. G. Seger and W. Stanton, Humberstone, Ont., "Washing Machine," 13th March, 1877.
- No. 7200. S. A. Ojls, Boston, Mass., U. S. A., "Horse Car Pole Attachment," 13th March, 1877.
- No. 7201. N. Durkee, Yarmouth, N. S., "Fish Flake," 13th March, 1877.
- No. 7202. J. Harvey, London, Eng., "Meat Preserving Process," 13th March, 1877.
- No. 7203. H. R. Ives, (Assignee of N. P. Lench, Montreal, Que.), "Saw Spont," 13th March, 1877.
- No. 7204. C. L. Topliff, Brooklyn, N. Y., U. S. A., "Barbed Metallic Plate for Fences," 13th March, 1877.
- No. 7205. G. Groom, Hamilton, Ont., "Wash Board," 13th March, 1877.
- No. 7206. A. J. Teaner, Evansville, Ind., U. S. A., "Plane Guide," 13th March, 1877.
- No. 7207. G. Choate, East Saginaw, Mich., U. S. A., "Stove Pipe Elbow Blank," 13th March, 1877.
- No. 7208. G. Hargreaves, Detroit, Mich., U. S. A., "Match Splint," 13th March, 1877.
- No. 7209. P. Williams, London, Ont., "Spring Bed Bottom," 13th March, 1877.
- No. 7210. J. S. Lette, Ripon, Wis., U. S. A., "Inhaler," 13th March, 1877.
- No. 7211. C. A. Munger, New York, U. S. A., "Oil Tank," 13th March, 1877.
- No. 7212. L. Baldwin and J. R. Baldwin, Barford, Que., "Gate Valve," 13th March, 1877.
- No. 7213. A. Pearl, Brooklyn, N. Y., U. S. A., "Manufacture of Pig Tobacco," 13th March, 1877.
- No. 7214. A. Adams, North Ekk., N. B., "Freezer and Refrigerator," 13th March, 1877.
- No. 7215. W. H. Essery, Toronto, Ont., and S. Webster, Hamilton, Ont., "Pulley," 14th March, 1877.
- No. 7216. H. N. Waters, West Meriden, Ct., U. S. A., "Locomotive Feed Water Heater," 14th March, 1877.
- No. 7217. J. Findlay, D. McDonald, W. Dunsbaugh and G. A. Burns, Toronto, Ont., "Funnel," 14th March, 1877.
- No. 7218. R. C. Nengst, Dayton, Ohio, U. S. A., "Boiler Head Flanging Machine," 14th March, 1877.
- No. 7219. H. Purdy, Burlington, Iowa, U. S. A., "Steam Boiler," 14th March, 1877.

- No. 7220. M. Little and M. J. Clark East Saginaw Mich U S A
"Sad Iron Heater." 14th March, 1877.
- No. 7221. W. Keys, Montreal, Que. "Horse Shoe Nail Machine," 14th
March, 1877.
- No. 7222. L. B. Arnold, Rochester, N. Y. U S A Process of Treating
Milk in the Manufacture of Butter and Cheese. 14th March, 1877.
- No. 7223. G. P. Clapp, J. A. Pillow and R. Hervey Montreal Que
"Horse Shoe Nail Elongator." 14th March, 1877
- No. 7224. J. Scollick, M. W. Manville and A. G. Brown London Ont
"Twisted Taper Lights Manufacturing Machine," 14th March, 1877.
- No. 7225. S. J. Seymour and J. Milligan Toronto Ont "Plaster for
Dress Making" 14th March, 1877
- No. 7226. E. Sava and W. Burrows, Kingston, Ont. "Wind Mill," 14th
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- No. 7227. T. H. Date. (Assignee of J. Redhear) Woodstock Ont. II
luminating Gas Manufacturing Process, 14th March, 1877
- No. 7228. D. Mayhale, Norwich, N. Y., U. S. A., "Art of Forging Ham-
mers," 14th March, 1877.
- No. 7229. E. G. Whiting, Northfield Minn. U S A "Plow 15th
March, 1877.
- No. 7230. F. Bramer Little Falls, N. Y. U S A, (Assignee of O. W.
Badger Whitney's Point N. Y. U S A) "Wheel Harrow" 15th March,
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- No. 7231. F. M. Earle Edwards, N. Y. U S A., "Clothes Drier," 15th
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- No. 7232. J. S. Winsor, Providence R. I. U S A. "Rail Road Gate,
15th March, 1877.
- No. 7233. A. Christey, Buffalo, N. Y., U. S. A., "Envelope," 15th March,
1877.
- No. 7234. E. N. Forsyth, Ridgetown, Ont., "Spring Bed Bottom," 15th
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- No. 7235. J. P. Hill, Barre Vt., U. S. A., "Clothes Dryer," 15th March,
1877.
- No. 7236. E. R. Powell, Winoski, Vt., U. S. A., and T. C. Kennedy,
Burlington, Vt., U. S. A., "Combined Wheel Harrow and Seed Sower,
15th March, 1877.
- No. 7237. T. E. Daniels, Detroit, Mich., U. S. A., "Art of Manufactur-
ing Artificial Marble Collins and Moulds therefor" 19th March, 1877.
- No. 7238. M. M. Shur, Denver, Col., U. S. A., "Button Fastener," 19th
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- No. 7239. M. Pennypacker, Philadelphia Pa U S A. "Hoisting Ap-
paratus," 19th March, 1877.
- No. 7240. H. Wellbanks, Gananoque, Ont., "Stove-pipe Cleaner," 19th
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- No. 7241. A. Kent and B. Kent, Toronto, Ont., "Instrument for Indica-
ting the Number of Glass required for various Sights," 19th March, 1877.
- No. 7242. T. E. Daniels, Detroit, Mich., U. S. A., "Art of Manufactur-
ing Artificial Marble Collins," 19th March, 1877.
- No. 7243. R. H. McCulloch and J. McCulloch, Port Elgin, Ont., "Baking
Chest or Sideboard," 19th March, 1877.
- No. 7244. C. B. Bryant, Stoneham Mass., U. S. A., H. Young, jr.,
Woburn, Mass., U. S. A., and T. King, jr., Quincy, Mass., U.S.A., "Smoke
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- No. 7245. W. N. Miller (Assignee of J. F. Lush), Toronto, Ont., "Win-
dow Blind Fixture," 19th March, 1877.
- No. 7246. A. J. Finnegan, Minneapolis, Minn. U S A. "Butter Package"
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- No. 7247. A. Bujac, Washington U S A "Device for Preventing Pipes
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- No. 7248. S. C. Blauvelt Blauveltville N. Y., U. S. A., "Step Ladder,"
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- No. 7249. J. Donnelly and I. C. Laylor Hamilton, Ont. Paper Bag
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- No. 7250. E. Collins, Dundas Ont. Bag Holder, (Extension of Patent
No. 1408), 23rd March, 1877.
- No. 7251. J. W. Miller C. Barlow and C. Penoyer, (Assignees of C.
Barlow), Cookshire Que. "Cradle Propeller," 23rd March, 1877.
- No. 7252. J. Behel, Rockton, Ill., U.S.A. F. Behel, Chicago, Ill. U.S.A.,
"Window Blind," 23rd March, 1877
- No. 7253. J. McBride Strathroy, Ont. Carriage Axle Head Blocks,
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- No. 7254. J. C. Moore Philadelphia Pa U S A "Cassobore," 23rd
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- No. 7255. W. F. Moulton Burlington Vt U S A. Eave Trough and
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- No. 7256. J. Fergus Philadelphia, Pa., U. S. A., "Steam Boiler Injector,"
23rd March, 1877.
- No. 7257. W. Wilson, Ramsay Ont. "Dog Power," (Extension of Patent
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- No. 7258. C. W. Pool Wiscovy, N. Y., U. S. A., "Post Auger," 26th
March, 1877.
- No. 7259. Jno. B. Alexander, Montreal, P. Q., "Abdominal Truss and
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- No. 7260. H. S. Coleman, Chelmsford, Eng., "Steam Boiler," 26th
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- No. 7261. O. Pickering, Needham, Mass., U. S. A., "Bush and Cane
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- No. 7262. W. W. Tice, California, Ohio, U. S. A., "Self-Locking Stove
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- No. 7263. T. A. Macaulay N. Y., U.S.A., "Sewing Machine Mechanism,"
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- No. 7264. C. F. Houghton Conning, N. Y., U. S. A. "Semaphore Lens,"
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- No. 7265. T. B. Towusend, Ottawa, Ont., "Method of Hanging Canal
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- No. 7266. H. C. Brush, Brush Mills, N. Y., U. S. A., "Trolley," 26th
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- No. 7267. J. Hoffman, Belvidere, N. J., U. S. A., "Safety Valve," 26th
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- No. 7268. J. W. Grate, St. Catharines Ont. Picture Frame Hanger and
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- No. 7269. S. Noxon, Ingersoll, Ont. "Harvester Power" 26th March,
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- No. 7270. Rev. A. Bergehold, New Ulm Minn., U S A., "Cryptography
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- No. 7271. R. Wilson, Ithaca, N. Y., U. S. A., "Hay Rake and Tedder,"
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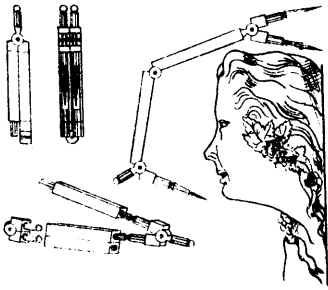
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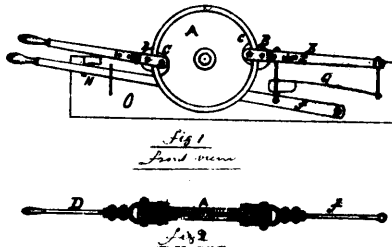
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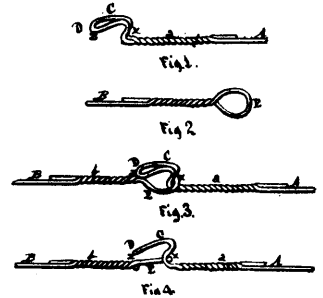
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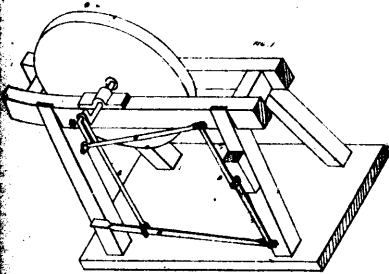
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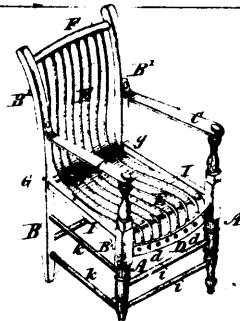
7041 Gawley's Set Gear for Circular Saw Mills.



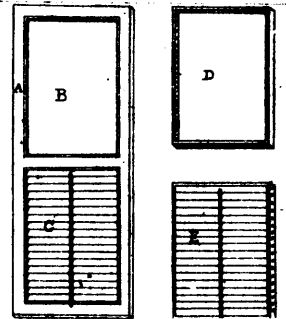
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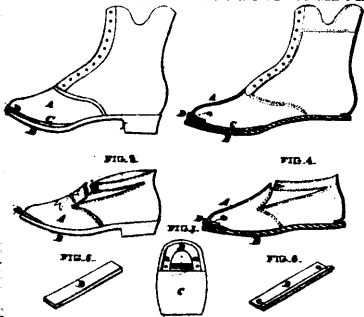
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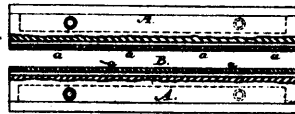
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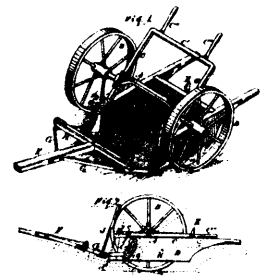
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7046 Stephens' Improvements on Toe Protectors.



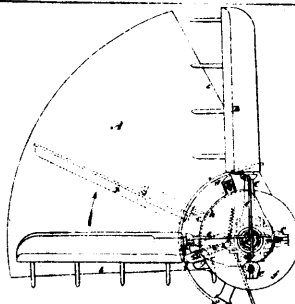
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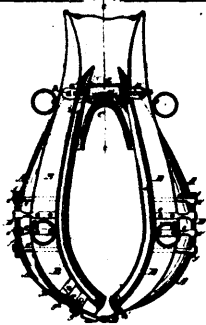
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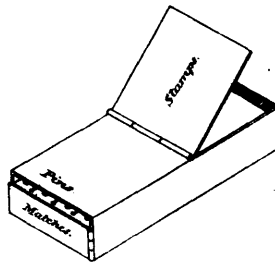
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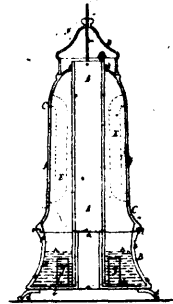
7051 Eccleston's Improvements on Scale Tang Cutlery.



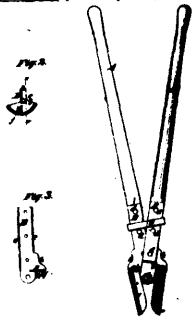
7053 Stroud's Improvements on Horse Collars.



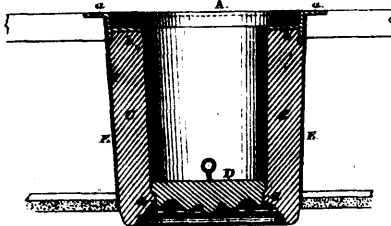
7054 Cowles' Pocket Match Safe, Pin Cushion and Receptacle for Postage Stamps.



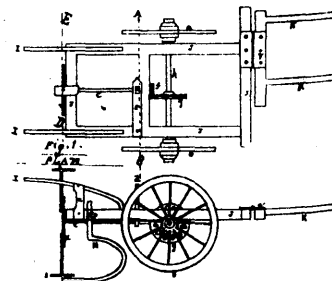
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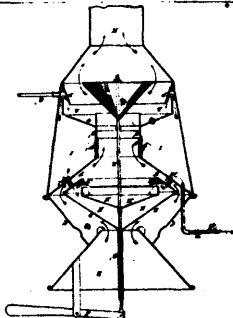
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7059 Carlton's Machine for Thinning Turnips, Carrots, &c.



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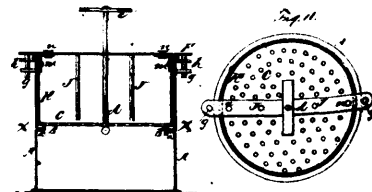
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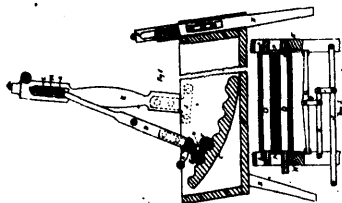
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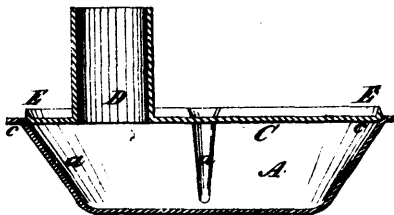
7061 Schoonmaker's Improvements in Lightning Rods.



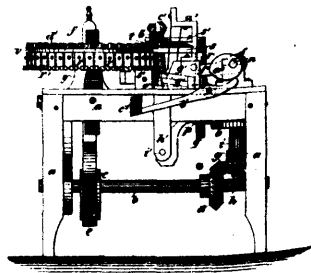
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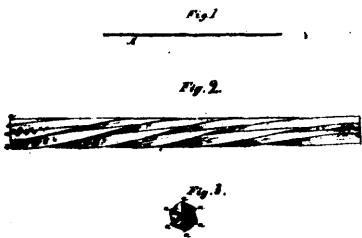
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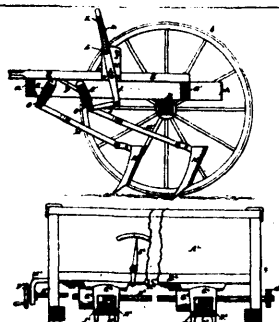
7064 Mitchell's Manufacture of Service Boxes.



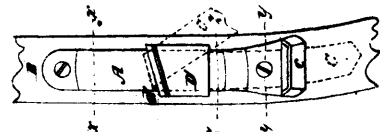
7065 Woodford's Machines for Finishing Horse Shoe Nails.



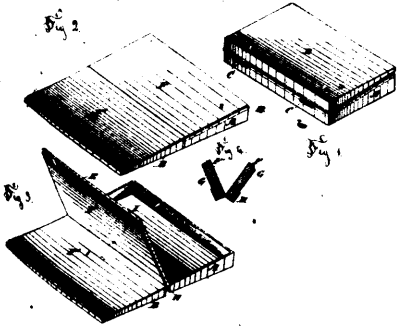
7066 Davies' Improvement in Lightning Rods.



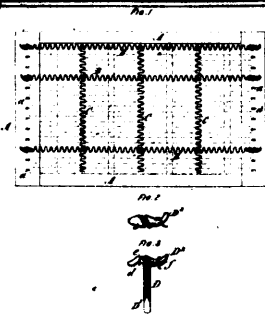
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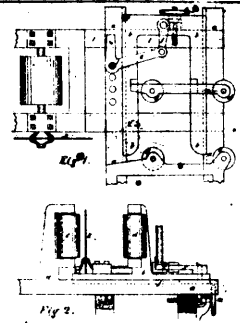
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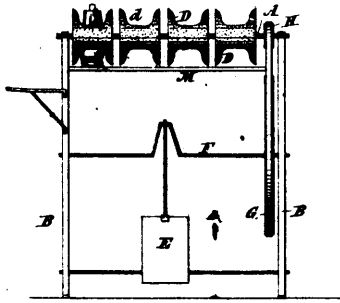
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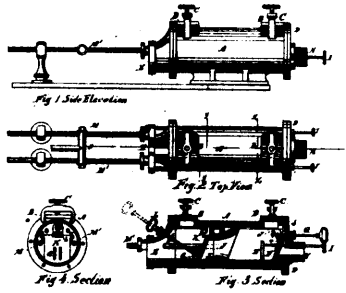
7070 Beemer's Improvements on Spring Bed Bottoms.



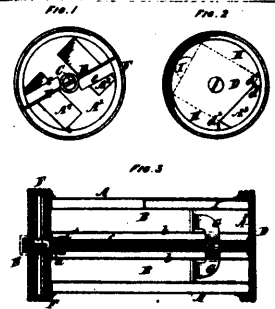
7071 Lamb's Improvements on Re-sawing Machines.



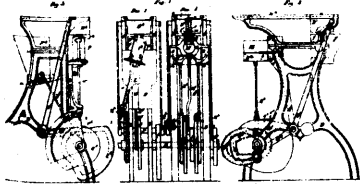
7072 Laurie's Apparatus for Cleaning and Polishing Boots and Shoes.



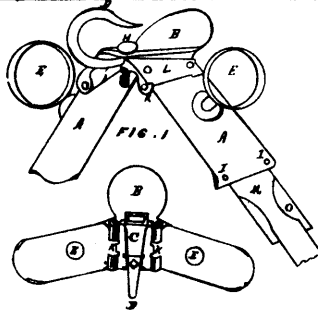
7073 Forbes' Improvements on Pumps.



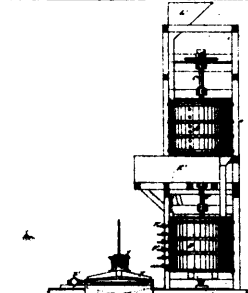
7074 Farrar & Earle's Tobacco Cutter.



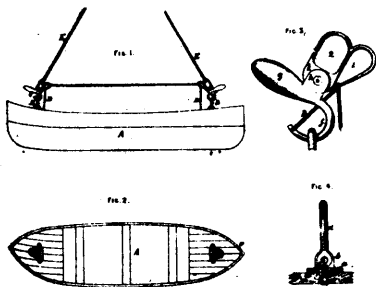
7075 Dillon, Bradford & Cleary's Improvements in Can Making Machines.



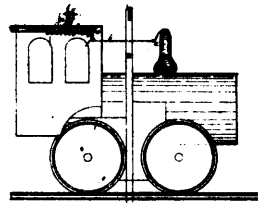
7076 Taylor's Improvements in Saddle-trees.



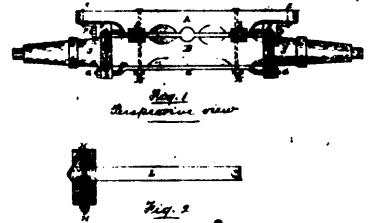
7078 Crosby, Amory, Hannon, Wetherbee, Mitchell & Beats' Process and Apparatus for Treating the Ores of Gold and Silver.



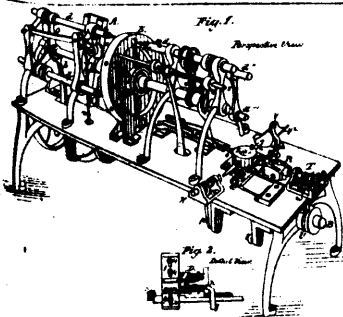
7080 Cruickshank's Apparatus for Disengaging Ship's Boats from their Lowering Tackles.



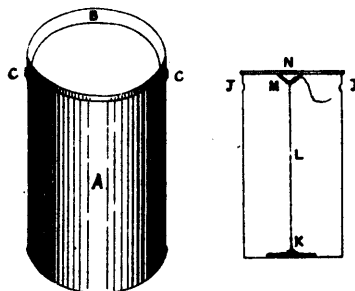
7081 Livingstone's Railway Alarm.



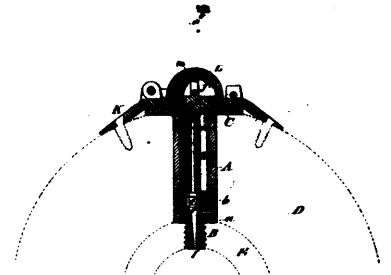
7082 Hertlhey & Dennis' Improvement on Axle Trees.



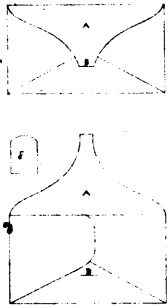
7084 Glazier & Wait's Machine for Making Bobbins.



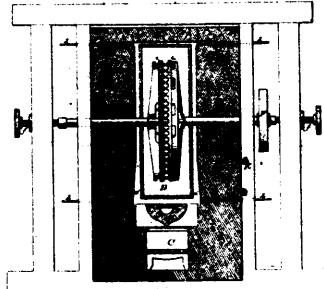
7085 Johnston's Appliance for the Extraction of Solid Alimentary Preparations from their Packages.



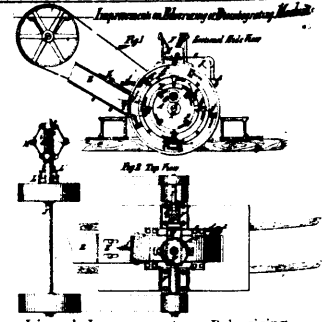
7086 Carpenter's Improvements on Lubricators.



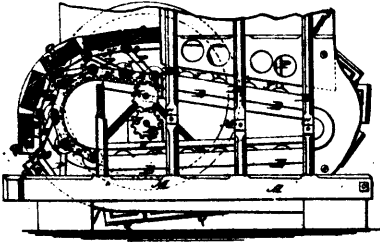
7087 Valpey's Improvement in Envelopes.



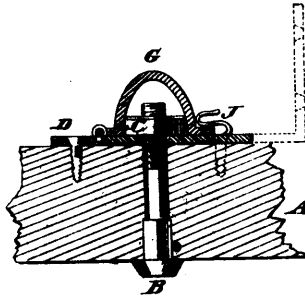
7088 Simonds' Oven for Tempering and Forming Articles of Steel.



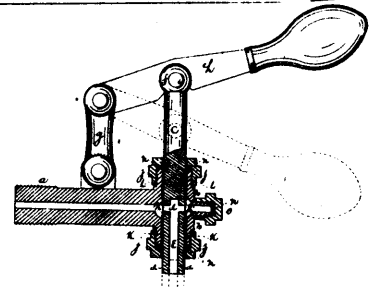
7089 Lipsey's Improvements on Pulverizing Machines.



7090 Trulender & Warburton's Improvements on Horse Power.



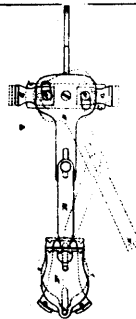
7091 Carpenter's Improvements in Nut Locks.



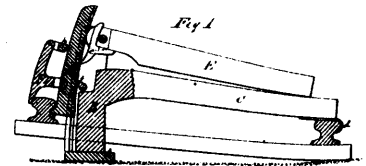
7092 Andrews & Hutchinson's Improvements on a Guage Cock.



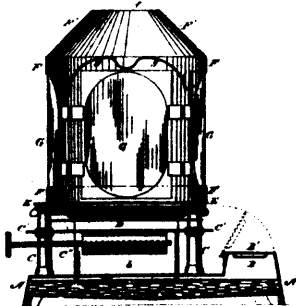
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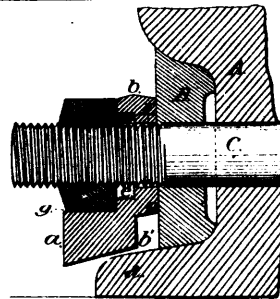
7094 Forbes' Skate.



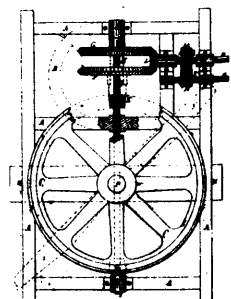
7096 Hunter's Lifting Jack for Railroad Tracks.



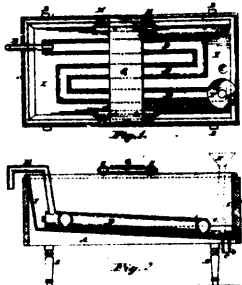
7097 Edwards' Improvements in Oil Stoves.



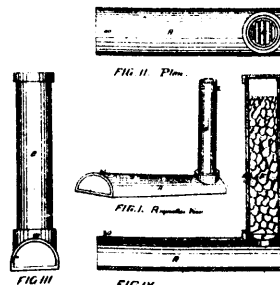
7098 Latham's Improvements on Nut Locks.



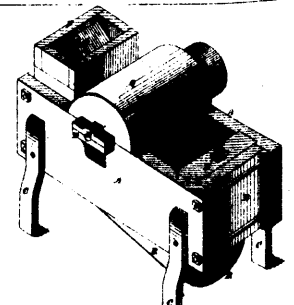
7099 Moore, Cutler, Anthony, Disher & Nagel's Improvements on Horse Powers.



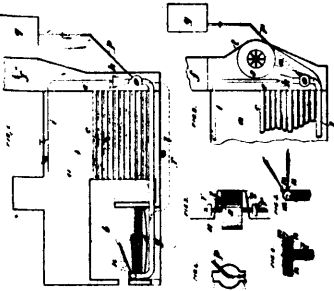
7100 Ingalls' Improvements on Milk Coolers.



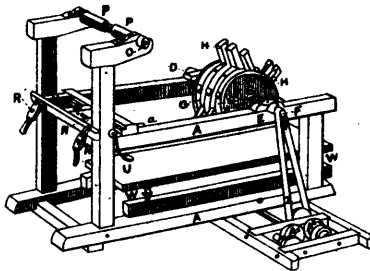
7101 Hicks & Tracy's Improvements in Gas Meters.



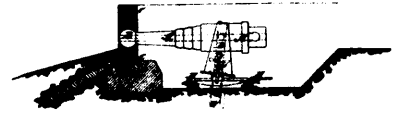
7102 Gillett & Coughran's Improvements on Grinding Mills.



7103 Fee, Stacy & Cable's Improvements on Smoke Consumers.



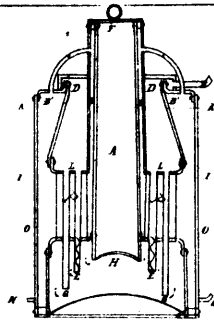
7104 Woods' Improvements on Stone Dressing Machines.



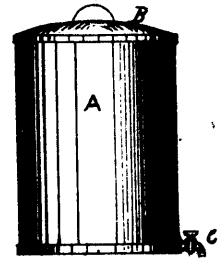
7105 Krupp's Improvements on Ordnance, &c.



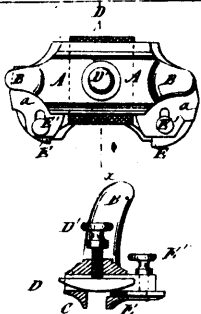
7108 Gowenlock & Mannering's Improvements on Steam Lubricators.



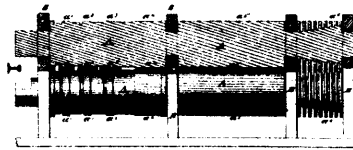
7109 Millen & Feely's Improvement on Steam Boilers.



7110 Huff's Improvements on Milk Pans.



7111 Fisher's Improvements on Skate Sharpeners.



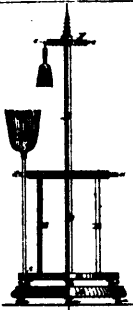
7112 Whitman's Machine for Reducing Railroad Rails to the Form of Plates.

Fig. 2

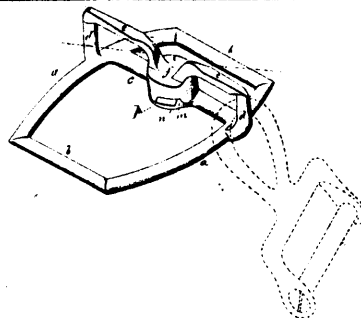


Fig. 4
a b

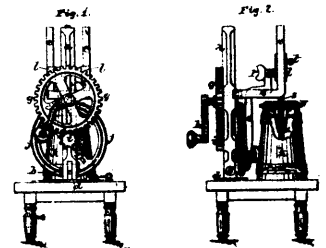
7113 Pearl's Improvements on Cigars and Cigarettes.



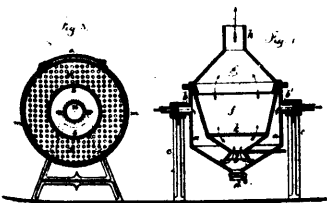
7114 Reardon's Improvements on Broom Stands.



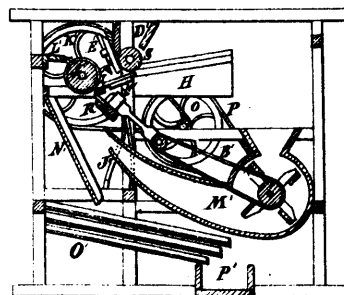
7115 Bristol's Improvements on Trace Carriers.



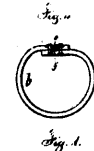
7116 Liston's Improvements in Churns.



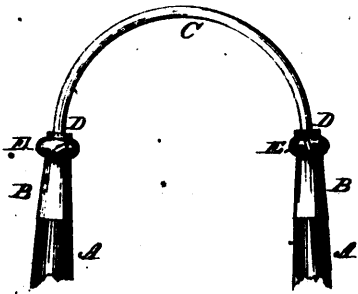
7117 Chichester's Improvements in Preparing Cereals for Food.



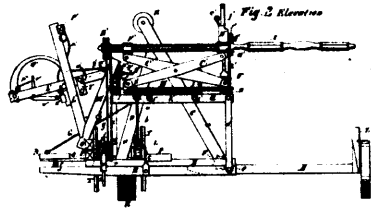
7118 Scott & Hutchinson's Machine for Cutting, Cleaning and Finishing Oatmeal.



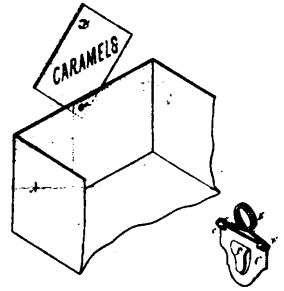
7119 Wakeman's Improvements on Flexible Tubing.



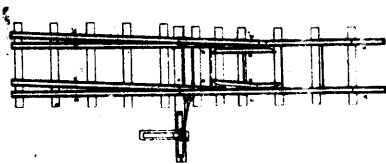
7121 Hewitt's Buggy Shaft Guard.



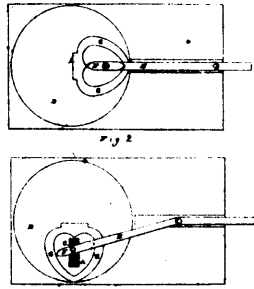
7122 Steward's Improvements in Harvesting Machines.



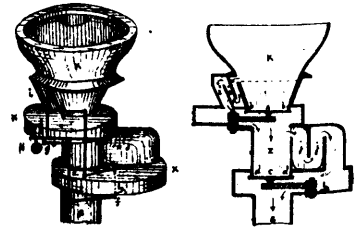
7123 Snow's Display Cards and Holders.



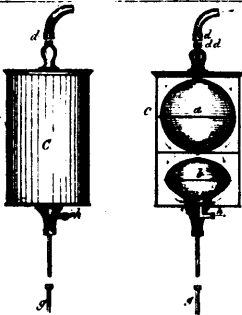
7124 Bagnall & Hall's Improvements in Railway Switches.



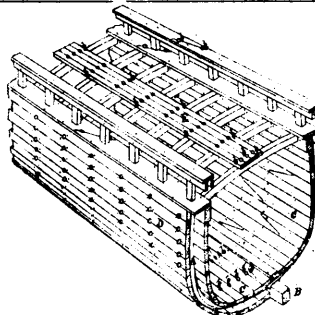
7125 Milne's Improvements in Compensating Cranks.



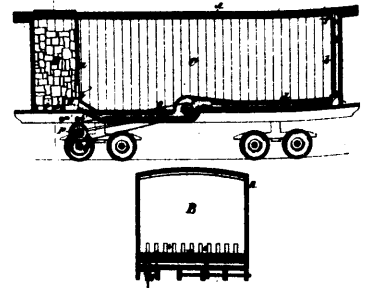
7127 Robertson's Method of Constructing Water Closets.



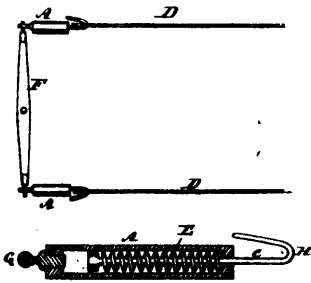
7128 Robertson's Tank for Supplying Water to Closets.



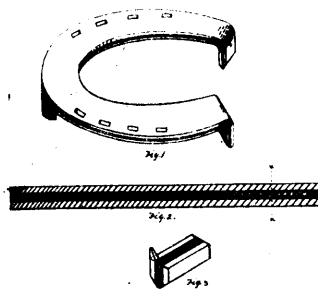
7129 Squier's Improvement in Ship-Fastenings.



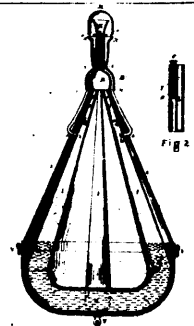
7130 Wickes' Improvements on Refrigerator Cars.



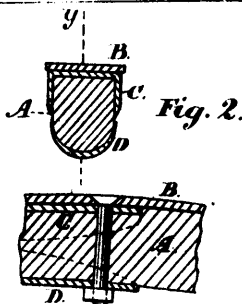
7131 Berry's Spring Draft Attachment to Traces.



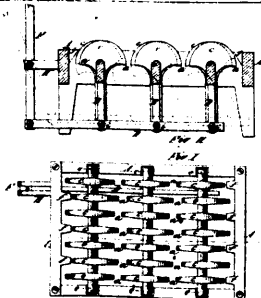
7132 Thistlewood's Improvements in Horse Shoes.



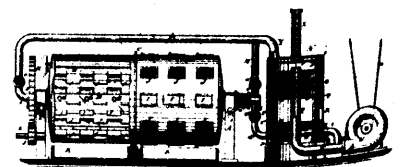
7133 Mann's Marine Danger Signal.



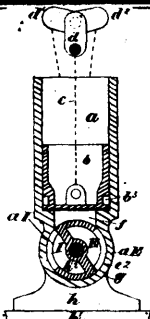
7134 Bowerman's Improved Felly Joints.



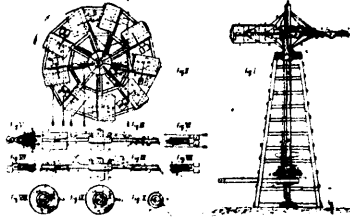
7135 Rogers' Improvements in Grates for Furnaces, &c.



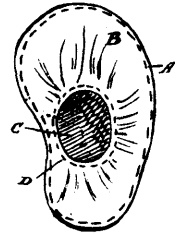
7136 Guardiola's Improvements on Grain Dryers.



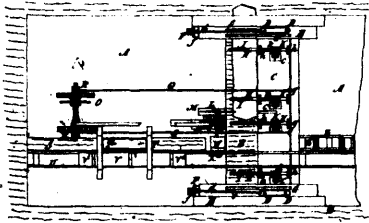
7137 Fee, Stacy & Cable's Improvements on Water and Steam Engines.



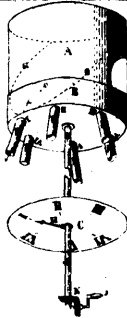
7138 De Vault & Audet's Improvements on Wind Mills.



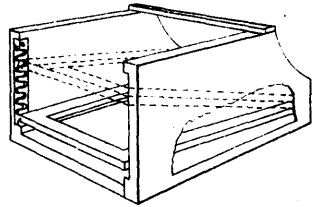
7139 Amiraux's Improvements on Ear Muffs.



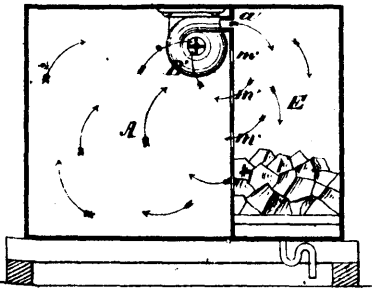
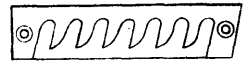
7140 Knight's Apparatus for Butting Timber.



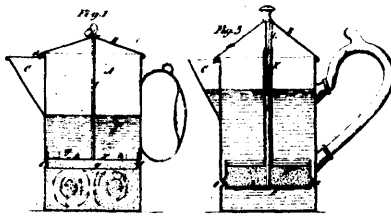
7141 Brazel's Machine for Distributing Grain.



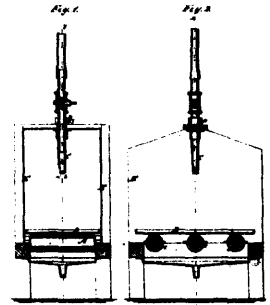
7143 Emmerson & McKay's Improvement on Fanning Mills.



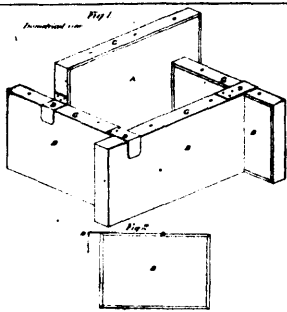
7144 Bate's Improvements on Refrigerating Apparatus.



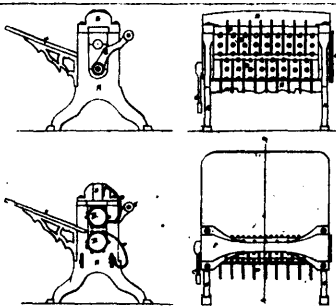
7146 Cromwell's Improvements on Coffee Pots.



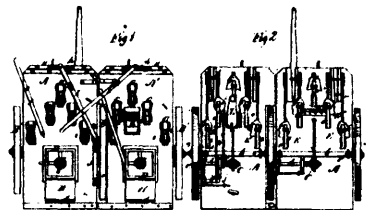
7147 Rannie's Improvements on Baking Machines.



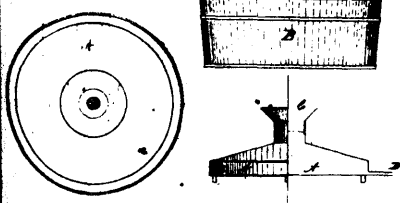
7149 Tyrrel's Improvements on Show Cases.



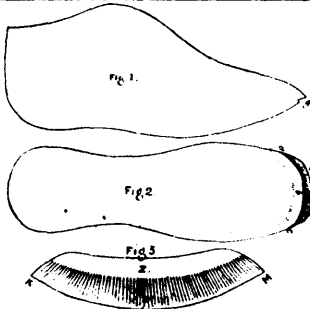
7150 Jetté & Marcile's Improvements on a Machine to Beat Steak.



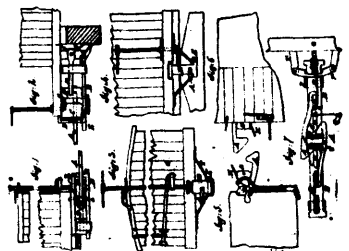
7151 Nevins' Improvements on Seed Planters.



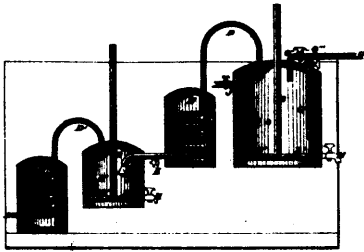
7152 DeWitt & Boughner's Improvement in Milk Coolers.



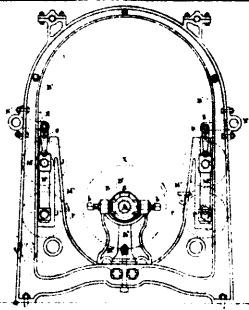
7153 Dann's Improvements in Boots and Shoes.



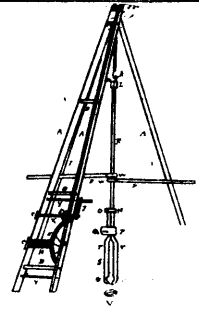
7154 Campbell's Improvements on Car-couplings.



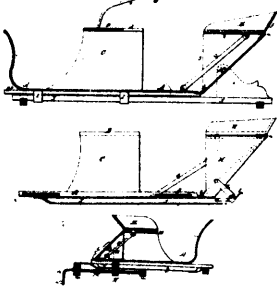
7155 Cole's Apparatus for the Separation of Petroleum Products.



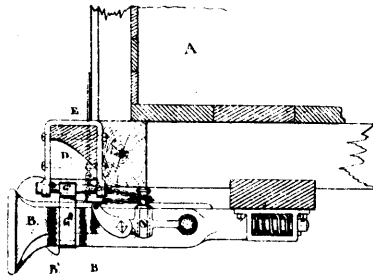
7156 Abell's Improvements in Sawing Machines.



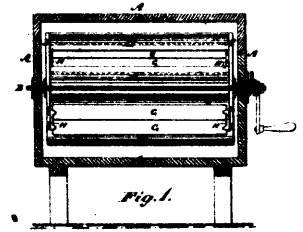
7157 Elliott's Well and Post Hole Boring Machine.



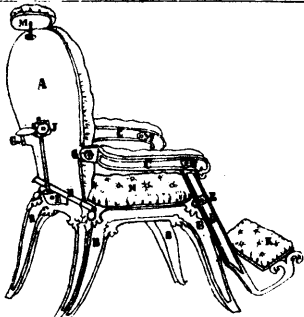
7158 Oppenheim's Improvements on Vehicle Seats.



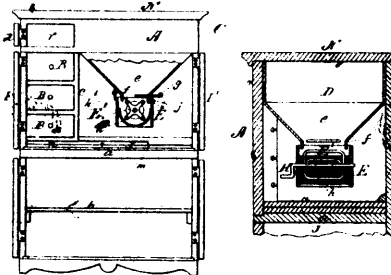
7159 Dunn's Improvements in Car-couplings.



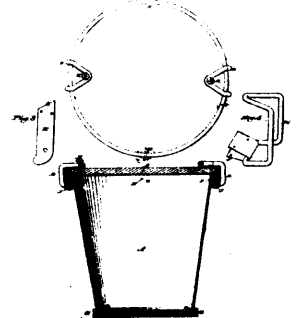
7160 Knaggs' Improvements on Churns.



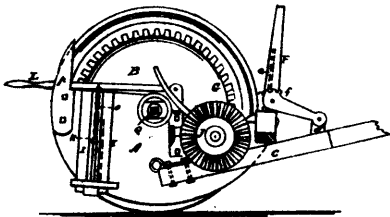
7161 McLaren's Improvements on Barbers' and Dentists' Chairs.



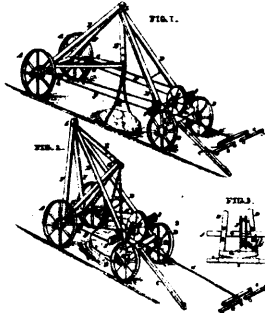
7162 Harrison's Improvements on a Kitchen Safe.



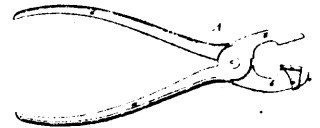
7163 Spaulding's Improvements on Butter Packages.



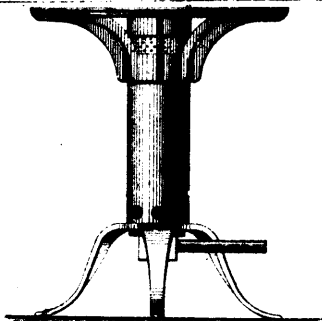
7164 Rawson & Thacher's Improvements on Reaping Machines.



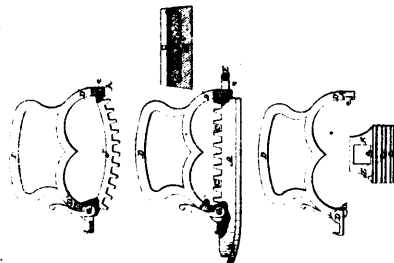
7165 Mason's Improvements in Stump Extractors.



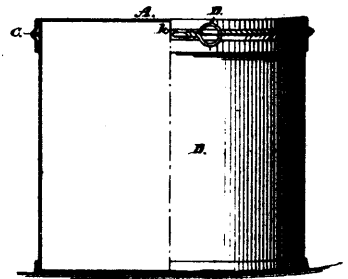
7166 Platt's Instrument for Attaching Buttons to Garments.



7167 Jackson's Improvements in Gas Stoves.



7168 Streeter, Clark & Rhodes' Improvements on Fluting Irons.



7169 Jewell's Improvements on Cans.