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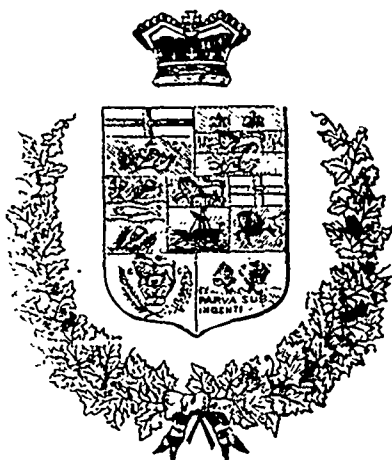
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VOLUME IV.

OTTAWA:

PUBLISHED BY AUTHORITY.

1876.



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The Canadian Patent Office

RECORD

Vol. IV.—No. 1.

JANUARY, 1876.

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

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INVENTIONS PATENTED.

No. 5406. Improvements on Vehicle-Gears.

(*Perfectionnements aux trains des voitures.*)

Harry S. Clark, Tawanda, Pa., U. S., 24th November, 1875, for 5 years.

Claim.—The combination with the side springs fifth wheel and rigid bars *b, b*, intersecting at the king bolt of the spring extensions *a, a*, bolted to the ends of said bars *b, b*.

No. 5407. Manufacture of Timed-Plates.

(*Fabrication des plaques étamées.*)

George E. Taylor, Philadelphia, Pa., U. S., 24th November, 1875, for 5 years.

Claim.—1st. Plates of sheet iron tinned on both sides and at all the edges and shaped for conversion into or forming parts of articles of tin ware without being sheared prior to such conversion; 2nd. The mode of preparing plates of tinned iron for the manufacture of tin ware, that is to say, first cutting the plates from sheet iron to the desired shape and then tinning the shaped plates.

No. 5408. Fire-Extinguisher. (*Extincteur d'incendie.*)

William Dickson, jr., Richmond, Que., 24th November, 1875, for 5 years.

Claim.—The combination of a pump *P*, with a portable reservoir *A*, hose *M*, faucet *F*, and leg rest *T*.

No. 5409. Hand-Truck. (*Camion à bras.*)

Henry H. Baltzly, Assumption, Ill., and Loyall A. Hoyt, Parishville, N. Y., U. S., 24th November, 1875, for 5 years.

Claim.—1st. A vertically adjustable platform for hand-trucks, which when not in use lies flat upon the truck, but is elevated in the act of loading or transporting a load, and depressed in unloading the same; 2nd. A platform for a hand-truck bevelled from underneath at its outer end so as to more readily get hold of the load to be lifted; 3rd. The combination of the platform *B*, with the truck *A*, crank arms *a, a'*, and levers *d, d'*; 4th. The combination of the handle and lever with the axle at the centre of the axle whereby the lever applies power to the centre of the platform.

No. 5410. Process for the Manufacture of Paper Pulp from Wood.

(*Procédé de fabrication de la pâte à papier avec du bois.*)

Henry H. Furbish, Yarmouth, Me., U. S., 24th November, 1875, for 5 years.

Claim.—1st. The mode of cutting the wood across the grain around the periphery of the log and into veneer clips; 2nd. The water to make a steam bath for the saturated clips applied after the unabsorbed liquor has been drawn off and before the cooking process is begun; 3rd. The mode of washing the cooked and disintegrated mass in a high narrow vessel or tank; 4th. The method of raising the strength of the solution of recovered ash; 5th. The process of saving the heat and steam and the fibre which might otherwise be lost; 6th. The process as described, to wit, of reducing clips of wood to pulp, washing the same, saving the unabsorbed liquor, reclaiming the spent lees from the percolating tank, recovering, recausticising and raising strength of the ash liquor.

No. 5411. Lightning Conductor. (*Paratonnerre.*)

John C. Schoonmaker, Geddes, N. Y., U. S., 24th November, 1875, for 5 years.

Claim.—A lightning conductor constructed of a Tube *A* or tubes of metal wrapped with metal wires *b* and *c*.

No. 5412. Improvements on Wringers.

(*Perfectionnements auxessoreuses.*)

Augustus Page (Assignee of C. E. Haynes), Boston, Mass., U. S., 24th November, 1875, for 5 years.

Claim.—The bent spring with a bearing for the upper roll in its free end, in combination with the standard formed with a bearing for the lower roll, and a seat upon which the spring is fixed and held.

No. 5413. Improvements on Freight-Cars.

(*Perfectionnements aux wagons à fret.*)

Alfred Willson, Bell-Ewart, and James B. Silliman, Toronto, Ont., 24th November, 1875, for 5 years.

Claim.—The longitudinal foot way *B* and hand rails *a*, in combination with the cross foot ways *B'*, *B''*, cross hand rails *b, b*, sloping hand rails *c* and *d*, the stands *a', a'*, *a'', a''*, *a''', a'''*, and *a3, a3*.

No. 5414. Improvements on Saw-Collars for Grooving Laths.

(*Perfectionnements aux collets des scies à canneler la latte.*)

Philo W. Hart, Camden, N. Y., U. S., 24th November, 1875, for 5 years.

Claim.—A saw collar *C*, provided with teeth *d*, on its face or periphery.

No. 5415. Sleigh Lance.

(*Appareil de propulsion des traîneaux.*)

Adolphe Corbett, Hicksville, N. Y., U. S., 24th November, 1875, for 5 years.

Claim.—1st. The sleigh lance consisting of a shaft and a pointed head; 2nd. The combination of the staff *A*, provided with the ferule *B*, and socket *D*, and the pointed head *E, a, b*, provided with the screw-threaded nipple or boss *c*; 3rd. The lance head consisting of a taper core or body *E*, provided with two series of longitudinal ribs *a* and *b*.

No. 5416. Improvements on Rowing Gear.

(*Perfectionnements aux appareils à ramer.*)

William Lyman, Middlefield, Ct., U. S., 24th November, 1875, for 15 years.

Claim.—1st. An oar constructed in two parts, each hung to the gunwale, and connected one to the other by a jointed connection whereby the oarsman is enabled to face the direction in which the boat is propelled; 2nd. An oar constructed in two parts, each hung to the gunwale by a universal joint, and the two connected by a rod jointed to the handle part inside the gunwale, and to the oar part outside the gunwale.

No. 5417. Process of Tanning Raw-Hides and Skins with the Hair Left on and Composition of Matter used in the Said Process.

(*Procédé de tannage des peaux avec le poil et composé pour cet objet.*)

John Angus, Saint Stephen, N. B., 24th November, 1875, for 5 years.

Claim.—1st. The process of tanning hides and skins without removing the hair by the use of the sulphuric acid and water in which to soak the hides and skins, and the use of the tanning liquors composed of salt, alum, borax, sweet fern and water in the proportions described; 2nd. The tanning compound composed of salt, alum, borax, sweet fern and water in the proportions described; 3rd. The stuffing compound composed of beef, tallow, light foot *a, a, z*, oil, straits oil and green tar.

No. 5418. Improvements in Regulating Percolators. (*Perfectionnements aux filtres-régulateurs.*)

George McPherson, Chicago, Ill., U. S., 24th November, 1875, for 5 years.

Claim.—1st. The combination with a percolator of a suitable faucet provided with depressions *K, K*, for controlling and regulating the admission of air; 2nd. The percolator provided with the air tight fitting cap *B*, faucet shell *A*, and plug *E*, the latter provided with orifices and depressions *K, K*; 3rd. In combination with the closed top percolator *A, B*, the faucet shell and plug *C, E*, the latter provided with the long handle *F*; 4th. The combination with a percolator of the faucet provided at its top with a funnel; 5th. The combination with a percolator provided with a closed top *B*, faucet

E, and depressions K, K, of a suitable pump, or air compressing apparatus. 6th. In combination with the percolator provided with the closed top B, faucet E, and funnel D, the removable nipple C; 7th. The percolator consisting of the body or shell A, perforated diaphragm b, perforated weight c, air tight cap B, shell c and faucet E.

No. 5419. Improvements on Steam and other Cocks and Valves.

(*Perfectionnements aux robinets et soupapes de vapeur et autres.*)
James Mallinson, Welwyn, Eng., 24th November, 1875, for 5 years.

Claim.—1st. The combination of cocks which are rendered fluid tight by packing with the packing applied on lines c, c, down the side of the water ways a, or passage a, through the shell and with a hollow space e, between them; 2nd. The construction of sluice and slide valves rendered fluid tight by packing c, applied around the water ways or passage a, a, such packing being confined in its position and compressed; 3rd. Protecting the packing of cocks and valves which are kept fluid tight by packing, by covering the packing with thin sheet metal c'.

No. 5420. Distilling Apparatus.

(*Appareil de distillerie.*)

William Watt (Assignee of J. W. Reford), New York, U. S., 24th November 1875, for 5 years.

Claim.—1st. In a liquor apparatus, the combination of two or more stills each having a perforated boiling bottom and surrounded with a steam jacket and connected by pipes having suitable cocks whereby each still may be operated independently or all in conjunction; 2nd. The combination with a steam superheater and connecting pipes of a series of independent jacketed stills whereby the distilling capacity may be varied at pleasure; 3rd. The combination of a still, the steam superheater, the chamber H, and mechanism therein and the pipes K, M; 4th. The combination of the steam superheater, the series of jacketed stills, the heater D, with the pipes K, Q, R; 5th. The combination of the steam superheater, the still, the heater D, and the doubler E, for effecting the first separation of the low proof liquors and their return to the still; 6th. The combination of the steam superheater, the still, the heater D, the doubler E, and the return liquor chamber F, and its pipe for effecting the second separation of the low proof liquors and their return to the still; 7th. The combination of the heater D, return liquor chamber F, and its return pipes, and the safety condenser N, and its return pipes; 8th. The combination of a gravimeter with a still and connecting with its boiling chamber whereby the specific gravity of its contents may be at any time determined; 9th. The combination of a horizontal revolving cylinder containing purifying material through which the spirit is passed by suitable pipes, and an enclosing chamber to be supplied with heated air; 10th. The combination of a series of horizontal revolving cylinders, filled with purifying material and pipes connecting their ends; 11th. The mechanism for effecting the continuous distillation of spirits and consisting essentially in the combination of the stills, the superheater, the heater, the doubler for making the first separation, the return liquor chamber and the pipes o, o, for making the second separation, the safety condenser, the main condenser, and the connecting pipes.

No. 5421. Machine for Labelling Newspapers.

(*Machine à étiqueter les papiers nouvelles.*)

Robert Dick, Buffalo, N. Y., U. S., 24th November, 1875, for 5 years.

Claim.—1st. The combination with the shell M, of the slide way A, A, made adjustable to the blade P; 2nd. The combination with the shell M, of the buffing roller D; 3rd. The combination with the shell M, of the slide way A, A, and the buffing roller D.

No. 5422. Method of, and Apparatus for Securing the Combustion of Fuel and for the Utilization of the Gases arising therefrom.

(*Méthode et appareil pour assurer l'embrassement du combustible et en utiliser les gaz.*)

John C. Ramsden, Lightcliffe, Eng., 26th November, 1875, for 5 years.

Claim.—1st. The capillary tubes for supplying the liquid fuel; the coil steam pipes B, in the construction of steam boilers heated by liquid fuel, having generators B, in the vessel f, and pipe e.

No. 5423. Fanning Mill. (*Tarrare-cribleur*)

Lewis Theobald, Plainfield, Mich., U. S., 26th November, 1875, for 5 years.

Claim.—1st. The combination of the crank F, slotted lever E, and the links a, d, with the elbow-lever b, and shoe C, and the rock-bar g, and shoe D; 2nd. In combination with the slotted-lever E, connected with the shoes, the crank F, attached to the fan-shaft and provided with a roller on its wrist; 3rd. The combination of the shoe D, with the body provided with the notches, or seats m, and the adjustable bar k; 4th. In combination with the shoe D, having the projection p, the rollers n; 5th. In combination with the shoe C, and removable screens s, the notched plates or bars u, attached to the rear end of the shoe; 6th. In combination with the vertically adjustable shoe D, the forked arm e, and rock bar g.

No. 5424. Gas Burner and Regulator.

(*Bec-régulateur à gaz.*)

John Ellis Lynn, Mass., U. S., 26th November, 1875, for 5 years.

Claim.—1st. The chamber c, having connection with the orifice b, of burner base A, in combination and having communication by means of apertures d, with the chamber D and burner tip F; 2nd. In combination with the first claim, the plug G, or the screw plug I.

No. 5425. Improvements on Closing Gas Retorts and other Vessels Hermetically.

(*Perfectionnements dans la manière de fermer hermétiquement les cornues à gaz et autres vaisseaux*)

Henry Collinson, Boston, Mass., U. S., 26th November, 1875, for 5 years.

Claim.—1st. In combination with a seat or bearing A, a plate or cover B, fitting against the same and having a sliding or grinding movement

thereon in other than a straight line; 2nd. In combination with a seat or bearing A, a lid or cover B, arranged to have a sliding and rotating movement thereon; 3rd. In combination with a seat or bearing A, a lid or cover B, mounted loosely on an eccentric rotating support and arranged to receive a pressure against the seat during the rotation of said support; 4th. In combination with a seat or bearing A, a lid or cover B, mounted on the eccentric end of a pressure screw in such manner that it can rotate thereon; 5th. In combination with a seat or bearing A, a lid or cover B, forced against the same with a yielding or spring pressure and at the same time giving a grinding or sliding movement thereon; 6th. In combination with a stationary seat or bearing A, a lid or cover mounted and arranged to rotate on the eccentric end of a pressure screw mounted on a hinged cutter bar, having a yielding or spring support at one end; 7th. The combination of the seat A, lid B, eccentric head C, screw D, hinged cutter bar E, spring G, and latch F; 8th. In combination with the lid or cover B, and the screw d, or equivalent supporting and pressing device the eccentric skeleton plate constructed as described.

No. 5426. Bale Ties. (*Cercles d'emballage.*)

Jonathan R. Foster, Springvale, Me., U. S., 26th November, 1875, for 5 years.

Claim.—A bale tie formed of the hoop slot b, in the end a, of the hoop A.

No. 5427. Improvements on Furnaces for the Combustion of Coal.

(*Perfectionnements aux fourneaux consommant le charbon.*)

Horatio M. Smith, Chicago, Ill., U. S., 26th November, 1875, for 5 years.

Claim.—1st. The combination with the rear grate surface and its supporting jaw, of a descending partition arranged to form a throat or chamber at the juncture of the grate and wall the same adapted to be partially banked up with fuel; 2nd. The combination with the rear grate surface and its supporting wall, of a descending partition arranged to form a throat or chamber at the juncture of the grate and wall and air supply pipes or openings debouching at the crown or in front of said arch; 3rd. The grate G, partition F, and dead plate t, combined with the bridge wall D.

No. 5428. Stench Trap. (*Trappe d'égout.*)

René Garand, Montreal, Que., 26th November, 1875, for 5 years.

Claim.—A stench trap A, having a cover B, and weight C.

No. 5429. Boot and Shoe Pegging Stand.

(*Forme fixe pour cheviller les chaussures.*)

André Stone, Ticonderoga, N. Y., U. S., 26th November, 1875, for 5 years.

Claim.—1st. The combination of the stop jointed rods D, with the plate C, and hinged leaf E; 2nd. The combination of the jointed rods D, plate C, hinged leaf E, and pivoted plate B; 3rd. The pivoted cam K, provided with the projection K, and detachable arm J, having the support H, in combination with the arm f, having projecting pin p, adapted to receive the last L.

No. 5430. Improvements in Clamps for Assembling Staves of Barrels.

(*Perfectionnements aux mordages d'assemblage des douves de barils.*)

Jonathan R. Foster, Springvale, Me., U. S., 26th November, 1875, for 5 years.

Claim.—A shock clamp consisting of bottom piece A, side bars C, C, top piece G, and set screw I, with disc m.

No. 5431. Glass Crucible. (*Crucet de verrerie.*)

Austin Kenny, John N. Tharbox and Edward R. Kent, Hamilton, Ont., 30th November, 1875, for 5 years.

Claim.—The opening b, in the top of a glass crucible A, and provided with the projection d, together with the cover c, for the same, for melting the glass of any colour.

No. 5432. Improvements on Reservoir for Street Lanterns.

(*Perfectionnements aux réservoirs des lampes de rues.*)

Ephraim Patterson, David A. Hutchinson and John G. Hunter, (Assignees of A. H. Watkins), Cornwall, Ont., 30th November, 1875, for 5 years.

Claim.—The tapering reservoir C, having its outlet end of larger area in cross section than its opposite end, and its bottom inclined down toward the outlet.

No. 5433. Advertising Medium.

(*Appareil d'annonce.*)

Edward Rawlings, (Co-inventor with and Assignee of A. M. Neave), Montreal, Que., 30th November, 1875, for 5 years.

Claim.—1st. An advertising medium containing the advertisement in combination with a match scratch B, and match receptacle D, having an ornamental feature; 2nd. The combination for an advertising medium of an advertisement with the match scratch B, and cut or vignette C.

No. 5434. Ozone Machine. (*Machine à ozone.*)

Robert Heneage and Seth Clark, Buffalo, N. Y., U. S., 30th November, 1875, for 5 years.

Claim.—1st. The generating chamber A, fire chamber D, alkaline chamber E, and washing and forcing chamber F; 2nd. The combination of the generating chamber A, and fire chamber D; 3rd. The tube or tubes I, in combination with a water receptacle H, for drawing and forcing the ozone; 4th. The washing and forcing chamber F, provided with compartments formed by the partition J, K, L, M, in combination with the receptacle H, and tube I; 5th. The generating chamber A, provided with openings B, a phosphorous receptacle C, and an open space U, in combination with the alkaline chamber E, and air forcing chamber F, having a water inlet G, receptacle H, tubes I, outlet N, and ozone outlet P.

No. 5435. Improvements in the Manufacture of Peat.

(*Perfectionnements dans la fabrication de la tourbe.*)

Robert A. Griffin, Montreal, Que., 30th November, 1875, (Extension of Patent No. 751), for 5 years.

Claim.—1st. The novel combination of the curers *f*₁, excavator *w*, scow *m*, with vessel *n*, vessel *n*, with elevator *n*₁, and spout *o*, waggon *G*₂, and mills *k*; 2nd. The novel arrangement of the excavator *h*, in its parts of vessel *h*₂, rollers *h*₃, and *h*₄, chains *h*₅, hangers *h*₆, buckets *h*₁, segment *i*, spout *I*, screw *l*.

No. 5436. Machine for Cutting Veneers.

(*Machine à tailler les bois de placage.*)

Samuel Wallace, Seaforth, Ont., (Assignee of J. D. McEachern), 1st December, 1875, for 5 years.

Claim.—1st. An attachment to a machine for cutting veneers for the purpose of bevelling the edges of and cutting off the sheets and consisting of the knives *c*, *d*, and *G*, held within the frames *c*, *c*, and *G*, pivoted upon the rod *d*; 2nd. The frames *C*, *C*, pivoted upon the rod *D*, in combination with the blocks *E*, *E*, and screw *F*; 3rd. The set screws *S*, *S*, operating upon the loose nuts within the blocks *E*, in combination with the screw *F*.

No. 5437. Machine for Washing Linen.

(*Machine à laver le linge.*)

Anthony Kline, Bondhead, Ont., 1st December, 1875, for 5 years.

Claim.—The frame *A*, *A*, the combination of levers *D*, *E*, *G*, and *H*, with the cross bars *F*, and *K*, and the arm *I*, *J*, in the rollers *B*, and the fluted board *C*, when used in combination with the other parts of the machine.

No. 5438. Horse Detaching Apparatus.

(*Appareil à détacher les chevaux.*)

Johusa W. Glover, Mount Savage, Ky., U. S., 1st December, 1875, for 5 years

Claim.—The spring catch bolts *A*, cord *D*, pulleys *C*, and weight *E*, combined and arranged with the whippetree of a carriage for automatically detaching the braces when the carriage turns over.

No. 5439. Railway Frogs.

(*Rails de croisement de rail-route.*)

James Cumming, Buffalo, N. Y., U. S., 1st December, 1875, for 5 years.

Claim.—1st. The combination with the intersecting track rails *B*, *B*, and combination *C*, *C*, thereof, of the chair *A*, cast complete in one piece with the guard rails *D*, *D*, and recesses *A*₁; 2nd. The combination with the rails *B*, *C*, and the chair *A*, of the detachable bridge piece *E*, constructed with bevelled sides and retained in proper position by the head of the rails; 3rd. In combination with the track rails *B*, *B*, and *C*, *C*, intersecting each other at any angle of a yielding bridge piece *E*, provided with the cushion *E*, and arranged within a recess in the chair base and held therein by the head of the rails.

No. 5440. Tea Kettle Handle. (*Anse de bouilloire.*)

William S. Potwin, Chicago, Ill., U. S., 1st December, 1875, for 5 years.

Claim.—The large hollow part at both ends and of the slender corrugated parts *C*, *C*, provided with the parts *e*, *e*, all made in one continuous piece.

No. 5441. Sash Holder. (*Support de croisée.*)

Charles E. Steller, Milwaukee, U. S., 1st December, 1875, for 5 years.

Claim.—1st. The hollow wheel integrally formed of a circular plate *A*, having at one side a peripheral rim *B*, to retain thereon a frictional band *C*; 2nd. A hollow wheel having a series of concentrically arranged holes *D*; 3rd. A hollow wheel having a removable face plate *E*.

No. 5442. Improvements on Watches.

(*Perfectionnements aux montres.*)

Albert H. Potter, Chicago, Ill., U. S., 1st December, 1875, for 10 years.

Claim.—1st. The block *A*, recessed and constructed for the reception of the works or internal operative parts of the movement of a watch or time piece; 2nd. The combination of the plate *B*, with the recessed block *A*; 3rd. The balance constructed with the auxiliary bows *B*, adjustably loaded.

No. 5443. Apparatus for Transferring the Wool from the Breaker of Custom and Feeding it to the Finisher.

(*Appareil à transporter la laine des cardes en gros et en alimenter le finisseur.*)

Hugh McKenzie, Rawdon, N. S., 1st December, 1875, for 5 years.

Claim.—1st. The combination with the breaker frame of any carding mills, the frame *B*, carrying on rollers *C*, *C*, the revolving belt *D*; 2nd. In combination with the revolving tube of any side draw apparatus the packing ring *H*; 3rd. In any side draw apparatus the arrangement with the draw rods *G*, *G*, the upper one of which is fluted, of a clearing plate *I*; 4th. In combination with the breaker and carder frames of any mill, the frame *W*, carrying on rollers *V*, *V*, the endless belt *X*, actuated as described; 5th. The combination with the carder of the frame *d*, secured to the table frame *b*, by pieces *C*; 6th. The sliding carriage *g*, *g*, mounted on the shafts *c*, and driving belt *K*; 7th. The combination with the belt *K*, of the link *n*, crank *m*, and plate *s*; 8th. The combination with the plate *L*, of the reciprocating pieces *p*, pivoted thereto actuated from the crank *m*, through the link *n*, and carrying the spindles of the rollers *q*, *q*; 9th. In combination with the plate *L*, the arm *u*, and guide box *t*, arranged and acting in combination with the rollers *q*, *q*; 10th. The combination with the rollers *w*, *w*, of the rollers *g*, *g*, all operated and working together; 11th. The combination with the sliding carriage *g*, *g*, of the rocking arm *d*, operated by the wheel *I*.

No. 5444. Improvements on Side Plaiters.

(*Perfectionnements aux plisseurs de côté.*)

James M. Cooley, Hamilton, Ont., 1st December, 1875, for 5 years.

Claim.—The combination of a perforated metal plate *B*, having two or more rows of holes *a*, *b*, the metal plates *C*, having the notches *c*, the edging *D*, having a groove *f*, as a stop to the needles; the needles or rods *E*, and the drawer *F*, with a plaiting board *A*.

No. 5445. Feed Cutter. (*Hache-paille.*)

Thomas Webb, Elyria, Ohio, U. S., 1st December, 1875, for 5 years.

Claim.—The double slotted lever *N*, fulcrumed on shaft *J*, provided with pinion *M*, and adjustable on fixed plate *Q*.

No. 5446. Combined Corset, Shoulder Brace, Spinal and Abdominal Supporter.

(*Corset, harnais et suspensoir vertébral et abdominal combinés.*)

Charles C. Robertson, Hamilton, Ont., 1st December, 1875, for 5 years.

Claim.—1st. The combination and arrangement of the backs *a*, *a*, side pieces *b*, *b*, united together by the cross lacing *e*, *e*, &c., and straps *n*, *n*, also the intermediate pieces *d*, *d*, and fronts *c*, *c*, united by cross lacing *f*, *f*; 2nd. In combination with the sides *b*, *b*, fronts *c*, *c*, and backs *a*, *a*, the abdominal supporter pad *h*, held to the sides by the straps *t*, *t*; 3rd. The combination of a corset, spinal support, shoulder brace, and abdominal supporter.

No. 5447. Liniment for Rheumatism.

(*Liniment pour les rhumatismes.*)

Louis N. Fontaine, Ottawa, Ont., 1st December, 1875, for 5 years.

Claim.—A compound composed of gall, olive oil, turpentine, brandy, cream tartar, and white vitriol and mixed in the proportion set forth.

No. 5448. Railway Pneumatic Signal.

(*Signal pneumatique de rail-route.*)

Austin Chambers, London, Eng., 1st December, 1875, for 5 years.

Claim.—1st. The combination with a hand lever *a*, or handle a pipe *e*, tube or passage charged with elastic fluid and a collapsible vessel *f*, connected to the signalling object of a compressor so constructed that as one portion of the compressor is collapsed by moving the lever or handle to move the signal another portion shall temporarily expand to receive the displaced fluid and afterwards complete the compression of fluid and move the signal *t*, by automatically resuming its original position or a position approximating thereto; 2nd. The combination with a hand lever *a*, or handle a pipe *e*, tube or passage charged with elastic fluid and a collapsible vessel *f*, connected to the signalling object *t*, of a rarefier so constructed and connected to the lever that as one portion of the rarefier is expanded or drawn out by the movement of the lever or handle to move the signal, another portion shall temporarily collapse to partially occupy the space vacated by the displaced fluid and afterwards complete the rarefaction of fluid, and move the signal as required by automatically resuming its original position or a position approximating thereto; 3rd. The mode of constructing the flexible portion of the compressors, rarefiers and collapsible vessels of pneumatic signalling apparatus for railways, by fastening together by interposed adhesive substance two or more layers of thin flexible material in such manner that the joint or junction of the inner thickness or layers of flexible material shall be covered strengthened and protected by a superposed layer, or layers, of the same material as described; 4th. The combination with a collapsible vessel or chamber *f*, connected to the signalling object *t*, a pipe *e*, tube or passage charged with elastic fluid, and apparatus for changing the pressure or density of said fluid of two gauges or indicators in juxtaposition one connected by a pipe tube or passage *l*, with a chamber *m*, communicating with the interior of the collapsible vessel or chamber by a hole or passage governed by a valve *n*, operated by a rod or projection *p*, and the other gauge or indicator communicating through a pipe tube or passage *r*, with the compressor or rarefier so as by the relative indications of the two gauges to show the position of the collapsible vessel that operates the signal; 5th. As means for controlling from a distance the moving of the signalling object the combination with an opening in a fluid containing portion of the apparatus of a valve *s*, lid or closure in conjunction with a locking or holding device operated by electricity from the point or station whence the moving of the signalling object is governed; 6th. The combination with a hand lever *a*, *a*, of a rod *b*, operating in conjunction with a tube *c*, carried by the compressor end *d*, said tube having a hole at one end of smaller diameter than the tube itself; 7th. The compressor consisting of the collapsible parts *d*₁ and *d*₂, united by a central rigid flange ring *d*, and provided with guide rods or their equivalents *e*, and *d*₅, working in tubes *d*₃ and *d*₄, carried by a plate or cross piece *d*₇; 8th. In combination with a compressor the pipe *e*, with its opening *e*, valve *s*, lever *t*, weight *l*, armature *u*, and electro magnet *u*, said pipe communicating with the collapsible vessel *f*, connected to the semaphore arm *i*; 9th. The combination of the parts comprising those marked *a*, *a*₁, *b*, *c*, *d*, *d*₁, *d*₂, *d*₃, *d*₄, *d*₅, *d*₆, *d*₇, *d*₈, *d*₉, *e*, *e*₁, *f*, *g*, *h*, *i*, *l*, *l*₁, *l*₂, *l*₃, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *t*₁, *t*₂, *u*, *u*₁, *u*₂, *w*, forming the improved pneumatic signalling apparatus for railways.

No. 5449. Art of Printing with Rubber Type and Apparatus therefor.

(*Art d'imprimer avec des caractères en caoutchouc et appareil pour cet objet.*)

William L. Scott, (Assignee of S. B. Scott,) Montreal, Que., 1st December, 1875, for 5 years.

Claim.—1st. The formation of words, phrases or sentences not limited as to length by the use of alphabets of rubber types, each composed of single letter and used separately or one at a time; 2nd. A type composed of the type proper *A*, made of hardened rubber and securely fixed upon cushion made of soft rubber or other elastic substance the whole being mounted or not as desired upon a block; 3rd. A type composed of rubber secured to the face of any metal type and reproducing the figure out thereon; 4th. A type composed of a letter, figure or device, &c., &c., of rubber or other elastic material secured on the face of a metal backing or mounting; 5th. In combination

with rubber type used singly or one at a time or with a rubber stamp, a frame or guide for securing accuracy of position and correctness of impression; 6th. The combination of the bar D, vertical piece E, and clip piece F, used in combination with a rubber type; 7th. As a portable means of advertising, writing or lettering the combination within the box G, of the type A, a guide for placing same, ink and inking apparatus.

No. 5450. Improvements on Carriages.

(*Perfectionnements aux voitures.*)

Issao H. Culp and John R. Marshall, (Assignees of J. C. Heater), Clifford, Ont., 1st December, 1875, for 5 years.

Claim.—1st. In combination with a light carriage A, the four reaches or levers H, H', H'', and the pillars I, I', I'', the carriage spring K, having either the angled iron rod L, or pliable straps W, forming a yielding reach; 2nd. In combination with a light carriage A, the cross links M, journalled by toggles f, f', to the spring bars J, to keep the carriage body level with the axles E and F, when the weight is greater on one side than on the other; 3rd. In combination with a light carriage A, the cast iron bozings or fifth wheel consisting in the head block O and Q, through which the front axle revolves and works, the under plate R, the top plate U, the stirrup strap T, and bolts J, and the king bolt V, said combination dispensing with till or shaft joints.

No. 5451. Gang Plough. (*Charrue à socs multiples.*)

William P. Plant and Howard Blizard, London, Ont., 1st December, 1875, for 5 years.

Claim.—1st. The arms D, E, K, rods E, L, lever M, cross bar G, and standard H; 2nd. In combination with the first claim the axle C, tongue P, and arm N.

No. 5452. Combined Land Roller and Seeding Machine, &c.

(*Rouleau, semoir, &c., combinés.*)

James H. Holland, Aurora, Mo., U. S., 1st December, 1875, for 5 years.

Claim.—1st. The combination of the detachable wheels F, F', and roller F'', with the shaft H', and frame A; 2nd. The combination of the broad cast plate W, with a grain sower; 3rd. The combination of the tumbler S, with the roller A', and the slide R, of the grain box Q; 4th. The combination of the plough staves I, and the detachable boots H, with a sower; 5th. The combination of the plough staves I, having a collar and projections; the double pointed plough and eye bolts e, having grooves to receive the projection on the collar of the plough staves, said ploughs J, J', being secured to the plough staves by means of a nut screwed to the lower end of the plough staves with sower.

No. 5453. Improvements on Lap Robes.

(*Perfectionnements aux tabliers de voitures.*)

Frederick L. Blakely, Clinton, Iowa, U. S., 4th December, 1875, for 5 years.

Claim.—The covering D, E, of any suitable cloth and the middle piece F, of oil silk, or cloth fabric, impervious to air and water.

No. 5454. Water Supply and Ventilation of Buildings, &c.

(*Distribution de l'eau et ventilation des édifices, &c.*)

John H. Morrell, New York, U. S., 4th December, 1875, for 5 years.

Claim.—1st. The water reservoir D, constructed so as to serve as a storage reservoir as well as a distributing reservoir permitting also of ventilation; 2nd. The combination of said reservoir D, with one or more traps so that said traps will be both supplied and ventilated; 3rd. The partitioned chamber K, K'; 4th. The general arrangement of the water reservoir conducting pipes and divided or partitioned chambers; 5th. The combination with the reservoir D, or with one or more of its pipes G, of a water supply pipe F; 6th. The combination of the register valves z, h, with the reservoir D; 7th. The employment of a ventilating pipe within the water supply pipe or vice-versa, so that ventilation will be effected during the down flow of water and at all times; 8th. The combination with the entrance pipe of a ventilating pipe O; 9th. The construction of pipe H, with a partition m; 10th. The combination of the ventilating and supply pipe H, O, with the traps, water closet, or urinals; 11th. The combination with the pipes H, O, of branch distributing and ventilating pipes H, O, H', O'; 12th. The combination with the distributing pipes H, H', H'', or either of them of dividing plate n; 13th. The arrangement of the ventilating and water supply pipes H, H', H'', O, O', Orr, with the urinal K; 14th. In the water supply and ventilation of buildings and their appendances the employment of combined or double pipes one within the other or of partitioned pipes.

No. 5455. Drum heater. (*Poêle-sourd.*)

Samson H. Ghent, Hamilton, Ont., 4th December, 1875, for 5 years.

Claim.—1st. The drum heater A, having a central pipe B, perforated as set forth and a series of radial partitions C, D; 2nd. The provision of a damper G, in the pipe B.

No. 5456. Apparatus for Rendering Doors and Gates Self-closing.

(*Appareil à faire fermer les portes et barrières automatiquement.*)

Austin D. Cable and Randolph L. Moseley, Montreal, Que., 4th December, 1875, for 5 years.

Claim.—1st. The combination of the spring g, spindle h, and cam or lever L, having increasing leverage as door or gate to which it is attached closes; 2nd. The combination of the spindle h, with reversible spring g, and reversible and increasing leverage cam or arm l; 3rd. The combination of the shell e, spindle h, spring g, cam or arm L, and chain, &c., n.

No. 5457. Tube Kettle and Cooking Apparatus. (*Bouilloire et ustensile de cuisine tubulaires.*)

Benjamin Temple, Hamilton, Ont., 4th December, 1875, for 5 years.

Claim.—1st. The kettle I, with the fire tube or chamber D, fitted through the centre of it and all surrounded by the water space P, in connection with

the damper E, and the float N; 2nd. The connecting slide H, in connection with the neck G, and the stove pipe F; 3rd. The egg boiler K, and meat pan L, in connection with the kettle I, and the fire tube or chamber D, also the combination and arrangement of the several parts.

No. 5458. Sole and Heel Protector for Boots and Shoes.

(*Protecteur de semelle et de talon des chaussures.*)

Henry E. Van Benchooten, Hillsdale, N. Y., U. S., 4th December, 1875, for 10 years.

Claim.—1st. A metallic plate or die provided with notched, twisted, barbed, or arrow pointed shanks or prongs b, c, for attaching it to the bottom; 2nd. Soles and heels of boots and shoes armed with the metallic wear plate or protectors a, a', inserted in counter sunk depressions so as to be flush with the outer surface or bottom of such heels and soles, and attached hereto by means of notched, twisted, barbed, or arrow pointed shanks or prongs.

No. 5459. Lightning Rod Standard.

(*Support de paratonnerre.*)

John C. Schoonmaker, Geddes, N. Y., U. S., 4th December, 1875, for 5 years.

Claim.—1st. The combination of the tube B, and bench C, with the legs D, D, D, for the lightning rod to pass through; 2nd. The arrangement of the clips G, G, on the tube B, for glass insulators.

No. 5460. Tubular Flues for Steam Boilers.

(*Bouilleurs de chaudières à vapeur.*)

Henry Bailey, New York, U. S., 4th December, 1875, for 5 years.

Claim.—1st. The spiral sections a, within the flue tube b, in combination with the combustion chamber d, formed by the space between two of said sections; 2nd. The spiral sections a, connected by the wires or rods c; 3rd. The method of directing the heated products of combustion upon the interior of the flue tube by twisted or spiral plates introduced within such flue tube; 4th. The means for twisting the metallic flue strip consisting of the revolving mandrel and vice and movable head block and vice.

No. 5461. Improvements on Printer's Galleys.

(*Perfectionnements aux galées d'imprimerie.*)

Charles A. Scadding, Toronto, Ont., 4th December, 1875, for 5 years.

Claim.—The combination of the rolled sides B, B, and bottom A, and secured together by means of screws entering from the outside thereof.

No. 5462. Improvements in Neck Yoke Leathers. (*Perfectionnements aux cuirs des jougs.*)

Jerome B. Relyea, Hicksville, Ohio, U. S., 4th December, 1875, for 5 years.

Claim.—The combination with a neck yoke A, and leather C, the metallic clip B, placed around the yoke under said leather, and fastened to the same by a bolt or rivet a, passing through the leather and the ears of said clip.

No. 5463. Mechanism for Propelling Sleds.

(*Appareil de propulsion des traîneaux.*)

David W. DeForest, Brooklyn, N. Y., U. S., 4th December, 1875, for 5 years.

Claim.—The combination of an actuating lever A, propelling staff C, and spring D, the whole combined and arranged for operation upon a sled.

No. 5464. Hay Loader. (*Élévateur à foin.*)

Charles W. Williams, Rochelle, Ill., U. S., 4th December, 1875, for 5 years.

Claim.—In combination with the horse hay rake provided with the wheel or pulleys B, B, and with the removable draft device J, J', J, K, the elevator D, connected to the draft device and one or more chains I, I.

No. 5465. Box Coffee Mill. (*Moulin à café à tiroir.*)

Rodolphus L. Webb, New-Britain, Ct., U. S., 4th December, 1875, for 15 years.

Claim.—1st. The box A, the cover B, and the hopper C, the box constructed with the headed lugs a, and the cover with corresponding slots whereby the two parts are secured together; 2nd. The combination of the cover B and hopper c constructed with the intermediate recess F, with the runner cylinder H constructed with the flange h, and so as to interlock between and with the said hopper and cover; 3rd. In a vertical mill, the combination of the runner shaft, the notched sleeve I, and corresponding projection l, on the saddle.

No. 5466. Machine for Making Plumbers Traps. (*Machine à faire des trappes de plomberie.*)

Frederic N. DuBois, New-York, U. S., 4th December, 1875, for 5 years.

Claim.—1st. The combination of two or more plungers operated by hydraulic or other suitable power with a corresponding number of receivers connected by suitable passages with an annular die, the plungers being provided with suitable adjuncts for varying their relative speed; 2nd. The combination of two hydraulic presses arranged in the same axial line, the receivers G, G, arranged between the press cylinders and constructed with the annular die C, C', and the straining bars B, B; 3rd. The valves N, actuated by mechanism common to both and combined in relation with the hydraulic presses whereby the relative velocities of the plungers F, F, actuated by said presses may be varied.

No. 5467. Steam Governor. (*Gouverneur de vapeur.*)

Daniel La F. Chase, Boston, Mass., U. S., 4th December, 1875, for 5 years.

Claim.—1st. The combination in a steam governor of a steam chamber, having induction and ejection ports with a steam conductor or conductors disposed within said chamber and provided with steam ports and valves arranged to close such ports by direct centrifugal action; 2nd. The combination of the case A, A', provided with induction and ejection ports D, C, the driving shaft S, S', provided with hollow arms or conductor B, B, having

ports O, O, the centrifugal valves V, V, and springs E, E, E, E; 3rd. The combination of the centrifugal valves V, V, with the hollow arms or conductors B, B provided with ports O, O, and the casing A A; 4th. The combination with the steam chamber or case A, and the shaft S, Sr, of the conductor or hollow drum B; provided with ports O, O, in each of its head valves V, V, and springs E, E; 5th. The combination of the steam chamber or case A, the shaft S, springs E, balls F, F, and tube or conductor B, provided with ports O; 6th. The arrangement of a centrifugal mechanism within the steam chamber of the governor.

No. 5468. Water Wheel. (*Roue hydraulique.*)

Orange Jull, Orangeville, Ont., 4th December, 1875, for 5 years.

Claim.—1st. The combination of the guide vanes K, placed on the large band J, to receive the infowing water with the buckets F, through which the water outflows; 2nd. The combination and arrangement of the guide vanes K, to receive the infowing water with the combination and arrangements of the buckets F, through and by which the water outflows in an opposite direction and in a parallel line to the infowing water; 3rd. The combination of the buckets F, having the inclined partition E running the whole height of the cylinder of the turbine wheel B, from the lower band X and dividing all the periphery of the wheel into grooves U, with the segmental part of the buckets F, through which the water outflows; 4th. The combination of the guide vanes K, and the bands L, separating the guide vanes K, with a turbine wheel B; 5th. The combination of the inclined planes P, having slots Q, through which the pins R, move obliquely to open and close the gate O, with a turbine wheel B; 6th. The combination of the outside gate O, bearing on the large band J, the pins R, the segmental rack S and the pinion T, to open and shut the gate O, with a turbine wheel B.

No. 5469. Vehicle Seat. (*Siège de voiture.*)

Everett A. Rice, New-York, U. S., 4th December, 1875, for 5 years.

Claim.—1st. The tooth bars m, and m; and cog wheel F and F, in combination with the lever rods C and D, connecting rods q and q, bed plate K, back rest B, and seat A; 2nd. The side rods T and T, in combination with the guide plate u and u, set screw w, w, seat A, and back rest B.

No. 5470. Paint Brush Bridler.

(*Serre-pinceau.*)

Theodore Snell and John W. Charles, Toronto, Ont., 4th December, 1875, for 5 years.

Claim.—The brush bridler C, constructed of sheet metal, rubber, or any other suitable material provided with an adjustable coupling C, C, and flanged or beaded lower edge C, and attached to the brush by the shouldered and bent cleats D, or by the strip F, and plate G, or their equivalent.

No. 5471. Self-Acting Sluice Doors and Lock Gates for Canals.

(*Vannes et portes d'écluses de canaux automatiques.*)

Thomas Milette, Trois-Rivières, Que., 4th December, 1875, for 5 years.

Claim.—1st. The combination of a water wheel P, placed in the drain o and having the main cog wheel Q, on its shaft with the puppet R, R, set on the main shaft S, to give it motion; 2nd. The combination of the second puppet T, the main friction wheel X, and its spur wheel, the large cog wheel Y, the cog-wheel z, and its shaft, the spur wheel a, the rack b, the toggles G, g, the levers l, l, the groove e, of the plate f, with the lock gates M, to open or shut them; 3rd. The combination of the lever j, the pivoted square K, the lever l, the arms m, m, the lever V, and its arm, the pulley W, with the second puppet T, hung on the main shaft S, to keep the lock gates either open or shut; 4th. The combination of the third puppet p, the main friction wheel u, the spur-wheel v, the quadrant z, the shaft y, with the valve doors z, to open or shut them; 5th. The combination of the lever A, the pivoted square B, the lever C, the arms D, D, the lever r, and the pulley t, with the third puppet p, hung on the main shaft S; 6th. The combination of the sluices E, divided by the cut stone divisions F, or beams H, the battened decking I, having the spaces J, between them forming the bottom of the basins with the valve doors z, to fill or empty the basins.

No. 5472. Improvements on Mocassins.

(*Perfectionnements aux mocassins.*)

Selby Lee, Ottawa, Ont., 4th December, 1875, for 5 years.

Claim.—1st. The shoe pack A, provided with a top B, shaped as described having a free edge f, overlapping the front upper b, at the instep; 2nd. The shoe pack having the top B, the combination of the eyelets d, and hooks e, for readily lacing the boot.

No. 5473. Chain-Stopper. (*Arrête-chaîne.*)

David N. B. Coffin, jr., Newton, and Benjamin Woodward, Cambridge, Mass., U. S., 9th December, 1875, for 5 years.

Claim.—1st. A suitable yielding pawl g, in combination with a cable or chain stopper-bed provided with a spring chamber c, and a chainway b; 2nd. A traversing pawl g, having a movement in the direction parallel to or approximately parallel to the chainway b, in combination with a stationary-bed to support the chain; 3rd. The combination of a pawl having a fore and aft movement in relation to the chain bed with the spring e, and follower d.

No. 5474. Paper Bag. (*Sac en papier.*)

Albert S. Dennison and John D. Huntington, Watertown, N. Y., U. S., 9th December, 1875, for 5 years.

Claim.—A paper bag A, for tradesmen's use provided with a metallic reinforcing strip B, at the seams.

No. 5475. Waterproof Bag. (*Sac imperméable.*)

Albert S. Dennison and John D. Huntington, Watertown, N. Y., U. S., 9th December, 1875, for 5 years.

Claim.—A waterproof paper bag for tradesmen's use.

No. 5476. Improvements on Machine Guns.

(*Perfectionnements aux canons à répétition.*)

James P. Taylor, Elizabethton, and John Baxter, Knoxville, Ten., U. S., 9th December, 1875, for 5 years.

Claim.—1st. The combination of the breech block 2; one or more barrels 1 a breech frame 3, cam or cams 8, revolving thereon and one or more sliding locks or plungers 9; 2nd. The combination of the cam 8 with a concentric front portion 17 to afford a rest or dwell for firing; 3rd. The construction of the eccentric cam 8, with a concentric rear portion 18 to afford a rest or dwell for loading; 4th. The cocking cam 31 carried by the eccentric cam 8 and adjustable to regulate the stroke of the firing pins; 5th. The combination of the breech block 2; the frame 3, the longitudinal breech bars 7 of the cam-shaft 10; eccentric cams 8 and sliding plungers 9, to take up the recoil; 6th. The combination of the breech frame with removable longitudinal breech bars 7; 7th. The recesses 11, grooves 12 and switch bars 13, in combination with the plungers 9 and extractors 14, for guiding and controlling said plungers and extractors; 8th. The combination of the ledges 16 and trough-bottoms 24 for supporting the cartridges at the rear of the barrels; 9th. The sliding lock 9, carrying yokes for retracting the lock and the firing pin respectively; 10th. The combination with the sliding lock 9, of the extractor 14, with lugs 15, and the switch bars 13 to elevate and release the said extractor 14th. The top plate 35 of the plunger constituting a guiding flange and formed with a slot 36 to receive the retracting latch or arm of the hopper valve; 12th. The hopper 5 constructed with fingers 43 and throats 44 for receiving cartridge from suitable cases or holders and conducting them to the proper position above the breech of each barrel; 13th. The hopper floor 47 constructed with T-shaped apertures to support the cartridge and drop them when drawn back; 14th. The hopper valves 38 constructed with T shaped openings 45, and operating in connection with the hopper throats 44, and floors 47; 15th. The hopper 5 hinged to the frame 3 to admit of tipping it to expose the loading chambers; 16th. A set or series of valves arranged in the arc of a cylinder in combination with a revolving cam cylinder constructed with two grooves or flanges one for operating the sliding locks or plungers and the other for retracting the firing pins; 17th. The recess 57 in the cam groove 19, to permit the retracting of the plungers to a point which enables their removal; 18th. The adjustable hopper front for adapting the hopper throats to suit blank cartridges; 19th. The hopper floor adjustable to suit blank cartridges.

No. 5477. Improvements on Capstans and Windlasses.

(*Perfectionnements aux cabestans et aux guindaux.*)

David N. B. Coffin, jr., Newton, and Benjamin Woodward, Cambridge, Mass., U. S., 9th December, 1875, for 5 years.

Claim.—1st. The combination of the internal worm gear or nut-wheel a, with the screw or screws b, and barrel c, of the capstan; 2nd. The combination of the two screws b, the two gears, and shaft f, with the head of the capstan; 3rd. The pawl-holder k, hinged to the capstan; 4th. The combination of short lever socket p, its cam hinged to the screw rod q, made to turn in the deck and nut r, attached to the friction brake or strap of a windlass; 5th. The arrangement and combination of two sets of elastic cushions between and with the driving and driven parts of the actuating or impelling mechanism of a windlass; 6th. The centre bearing constructed with step and bars n, for upright shaft and the rest or bearing for the horizontal shaft; 7th. The combination of the two fixed non rotating spindles u, u, with the chain wheels or windlass barrels v, the capstan and suitable connecting gears; 8th. The combination of the two fixed non-rotating spindles u, u, the chain-wheels or windlass-barrels v, and the messenger wheel 46, with suitable connecting gears; 9th. The combination of the capstan z, and the messenger wheel 46, with suitable connecting gear; 10th. The sleeve 8, in combination with its friction grooved-plates, the chain-wheel and the friction grooved plate connected thereto and the nut wheel 24; 11th. Friction rings or sections of rings g, in combination with the grooved-friction plates; 12th. In a windlass, the arrangement of an anchor chain to engage with the chain wheel at its lower forward side, extend around aft and upward, leaving the periphery on the upper forward side for the hawse-pipe and anchor in combination with a turn around the forward side of the bit as it passes from the deck-pipe to the windlass; 13th. The upright roller 26, in combination with the windlass bit, and the arrangement of the cable or anchor-chain; 14th. The combination of the pawl 50, located forward of the windlass with the chain-wheel and its pawl-wheel or drum 43; 15th. The separate friction wheel 38, in combination with the separate chain-wheel, when the two are automatically locked to each other; 16th. The combination of the sliding lock-bolt 40, friction wheel 38, and a ratchet wheel and shaft 36 and 46; 17th. The construction of a windlass-beam with the T-section shaped connection to the links; 18th. The construction of a windlass-beam with through open sockets for levers arranged obliquely to each other; 19th. The internal ratchet wheel 36, in combination with the pawl lever or wheel 34, 35, and the windlass shaft; 20th. The double series or reversed pawls of wheels 34, in combination with the ratchet wheel 36; 21st. The construction of the chain-guard and chain-guide in one article for the double use; 22nd. The chain-wheel or barrel 29, and pawl wheel 43, constructed separately and automatically clutched together by projections and recesses or shoulders.

No. 5478. Improvements on Window Blind Fasteners. (*Perfectionnements aux arrêtes persiennes.*)

Joel Shedd, Waltham, Mass., U. S., 11th December, 1875, for 5 years.

Claim.—A wire blind fastener having a horizontal spring arm A, projecting end G, inclined or brace-arm E, intermediate spring coil E, and horizontal eye F, the same being constructed and adapted to be applied to the blind or shutter.

No. 5479. Improvements on Treadles.

(*Perfectionnements aux marches.*)

Daniel E. Lillis, Jackson, Mich., U. S., 11th December, 1875, for 5 years.

Claim.—The combination of the rock-shaft B, having a central crank provided with a foot rest C, arm D, and pitman E, with the frame A, and power wheel F, for operating the machine by a swinging motion of the foot.

No. 5480. Improvement in Making Nuts.*(Perfectionnements dans la fabrication des noix.)*

Alfred Marland, Pittsburgh, Pa., U. S., 11th December, 1875, for 5 years.

Claim.—1st. The method of making square, hexagon, octagon, or round nuts out of round, oval, square or other shaped rods by first severing the blanks transversely without materially distorting the form from rods or bars *f*, a diameter equal or about equal to that of the inscribed circle of a cross section of the nut to be made, second: in closing the same in a close die or box corresponding in transverse section to the shape of the nut to be made, third: expanding the same by end compression so as to fill the die and, fourth: punching the eye in the axial line of the blank; 2nd. The knife moving across the face of the die box and covering the box while the blank is shaped by the dies; 3rd. The die *H*, connected to the sliding cross head which is adjustable on the bars *M*; 4th. The punch adjustably connected to the main cam yoke in combination with dies *H* and *I*, and moved by means of the main cam *C*; 5th. The sliding cross head and die *H*, arranged for the purpose of pressing the nut into shape and after passing for delivering the nut out of the box; 6th. The side cams *J*, in combination with yokes *K*, bars *M*, cross-head *L*, and dies *H*, *I*, 7th. The combination of dies *H*, *I*, cutter *O* and punch *E*; 8th. The cutter arranged in combination with die *I*, to close the same and hold the blank while being pressed into shape.

No. 5481. Machine for Taking and Pumping Water out of any Vessel, Ship or Boat.*(Machine à puiser et pomper l'eau de tout vaisseau, navire ou bateau.)*

Isaac Cosgrave, Chatham, Ont., 11th December, 1875, for 5 years.

Claim.—1st. The combination of the chambers *A*, *D*, with their respective slots *I*, *L*, and openings *F*, *G*, to the siphon *H*, and their application; 2nd. The application of the siphon *H*, with the chambers *A*, *O*, for use in any vessel no matter how propelled.

No. 5482. Manufacture of certain Oxides and Sulphides.*(Fabrication de certains oxides et sulfides.)*

Henry Knight, Liverpool, Eng., 11th December, 1875, for 5 years.

Claim.—1st. The application of one or more soluble sulphides as a precipitant of zinc sulphide from solutions of zinc, in combination with the subsequent calcination of the precipitate; 2nd. The application of the washing of soda waste on a soluble sulphide of calcium as a precipitant of zinc from its solution; 3rd. The combination of the elimination of sulphuric acid from solution of zinc by means of a soluble salt of Barium together with the subsequent precipitation of the zinc by a solution containing a soluble sulphide of calcium; 4th. The mode of making an extremely comminuted form of oxide or sub-sulphide of zinc by roasting artificially precipitated zinc sulphide; 5th. The method of manufacturing oxide or sub-sulphide of zinc as described.

No. 5483. Mop-Wringer.*(Essoreuse à torchon.)*

John Lang, Arnprior, Ont., 11th December, 1875, for 5 years.

Claim.—1st. A mop wringer frame composed integrally of three sided bars *C*, helixially terminating in a perforated focus *B*, combined with a rim *A*; 2nd. In the lugs *D*, integrally combined with the rim *A*, and straddling the edge of the pail for holding the wringer.

No. 5484. Improvements in Paddle Wheels.*(Perfectionnement des roues à aubes.)*

Ross Forward, Cincinnati, Ohio, U. S., 11th December, 1875, for 10 years.

Claim.—1st. The combination in a propeller wheel, of paddles *C*, having side *e*, wider and heavier than the one *c*, with stud *c*, and shoulders *c*₃, with a slide *D*, having stud *d*; 2nd. A reversible propeller paddle *C*, pivoted loosely in wheel arms *B*, striking the water in feathered position and passing through it in an arc corresponding to that in which wheel moves until it arrives at a point within 30 to 35 degrees of the perpendicular from shaft, thence assuming a vertical position for 60 to 70 degrees, and thence moving loosely through and out of the water in the line of least resistance; 3rd. The combination of slides and reversible eccentric grooves as formed by plates *F*, and *C* in frame *A*, for the purpose of reversing and operating the wheel in their direction; 4th. The combination with studs *d*, *e*₂, *e*₃, of intermediate cam to prevent sudden impact.

No. 5485. Apparatus for Draining and Pumping Water from the Holds of Ships.*(Appareil à puiser et pomper l'eau de la cale des navires.)*

James E. Nute, John H. Nute and James Roode, New-Glasgow, N. S., 11th December, 1875, for 5 years.

Claim.—1st. The application to ships, &c., of the cylinder *B*, having the projecting port *C*, for creating a vacuum when the vessel is moving, extending through the bottom *A*, of the vessel and provided with outlet drop valve *D*, and inlet valve *E*, for expelling leakage water by gravitation when the vessel is moving a head; 2nd. In combination with cylinder *B*, having the constructive and operating features described in the preceding claim, the piston *G*, for expelling the leakage water downwardly through the bottom of the vessel when at rest, by pumping.

No. 5486. Stove-Pipe Shelf and Drier.*(Tablette-séchoir à tuyau de poêle.)*

John C. Schoonmaker, Hamilton, Ont., 11th December, 1875, for 5 years.

Claim.—The combination of the stove pipe-shelf *b*, formed of the letters "Handy stove shelf" (or their equivalent) and inner and outer circles *c*, *i*, *v*, provided with lugs *A*, *Al*, with the rods *g*, and loops *f*, forming a combined stove-pipe shelf and drier frame.

No. 5487. Tanning-Apparatus.*(Appareil de tannerie.)*

Harvey Reed, Vineland, N. J., U. S., 11th December, 1875, for 5 years.

Claim.—1st. The combination in a series of tan-vats of removable partitions and racks, for suspending the hides; 2nd. The combination of a series of tan-

vats, a series of leaches, and a propelling-wheel, the leaches and the vat provided with passages for an endless-current of the liquor to be forced around through the leaches and vats in succession; 3rd. The combination of a series of removable leaches and removable partitions; 4th. The wheel *M*, provided with internal and external projecting blades as arranged, and adapted to soften and scour hides or skins, and to keep the liquor in continuous circulation.

No. 5488. Harness Pad Press.*(Presse de bottrelieur.)*

William Dippert, Des Moines, Iowa, U. S., 11th December, 1875, for 5 years.

Claim.—In a harness pad press, the combination of the forms 1 and 2, the hinged rims *d*, *d*, and the screw press *f*, *g*, *h*, adapted to depress and hold the rims.

No. 5489. Improvements on Scale Pans.*(Perfectionnements aux plateaux des balances.)*

James McLean, St. George, N. B., 11th December, 1875, for 5 years.

Claim.—A combined scale pan, scoop and funnel constructed of the continuous or connected funnel handle, and scoop-ports *A*, *B*, *C*.

No. 5490. Machine for Making Lightning-Rods.*(Machine à faire les paratonnerres.)*

John C. Schoonmaker, Geddes, N. Y., U. S., 11th December, 1875.

Claim.—In combination with the hollow-shaft *B*, the twisting-plate *E*, having dies *e*, either inserted or formed therein, reels *g*, die *a*, and reel *J*.

No. 5491. Machine for Whitening and Buffing Leather.*(Machine à mégisser et chamoiser les peaux.)*

Joseph E. Fisk, Salem, Mass., U. S., 14th December, 1875, for 5 years.

Claim.—1st. The combination and arrangement of the rotary-cutter *C*, with the vibrating-bed *F*, and sliding frame *E*; 2nd. The combination of the lever *L*, with the clutch *j*, and friction wheel *J*, for raising and lowering the bed simultaneously with its vibrating movement.

No. 5492. Adjustable Waggon-Axle.*(Essieu de wagon mobile.)*

Joseph R. Lantz and Thomas L. Mitchell, Marrowbone, Ill., [U. S., 14th December, 1875, for 5 years.

Claim.—1st. The octagonal-shaped axle-sections *B*, in combination with the hexagonal box *A*, formed in section *a*, *ar*, and bolt or rod *e*, for tightening and clamping the sections; 2nd. The hexagonal-box *A*, composed of the sections *a*, *ar*, the latter having slot *b*, and shoulders *c*, in combination with the octagonal axle sections *B*, and set-screw *d*.

No. 5493. Improvements on Electric Telegraphs.*(Perfectionnements aux télégraphes électriques.)*

Robert K. Boyle, New York, U. S., 14th December, 1875, for 5 years.

Claim.—1st. The combination with two or more induction coils of a brush or key moving over a surface composed of alternating sections of conducting and non-conducting materials, each of the conducting sections being connected to the inner or inducing helix of one of the coils, and through this helix with one pole of a battery while all the conducting sections are connected to the other pole of said battery whereby a constant current of induced electricity of either kind can be produced; 2nd. The combination of the circuit wheel *B*, shaft *E*, disc *A*, and induction coils *C*, *D*, with each other with one or more batteries, and with the line wire of a telegraph line; 3rd. An electric telegraph apparatus whereby successive waves of one kind of induced electricity, say positive, can be produced so as to form a continuous current for the purpose of recording messages, while the induced electricity of the opposite kind, say, the negative, is thrown into form the spaces between the letters and words, and thereby tailing of the signals is prevented.

No. 5494. Cutting Bolt Nipper.*(Tenaille à couper les boulons.)*

William Ellard, Shead's Mills, Ont., 14th December, 1875, for 5 years.

Claim.—1st. The combination of box *B*, having slots *G*, *G*₁, in its upper plate *F*, and bottom plate *E*; the mortise *M*, the wedges *O*, the stationary die *N*; the movable die *R*, the die-holder *Q*; the links *P*, with the handles *A*, having eccentrics *D*, at their pivoted end *I*, to make a cutting bolt nipper; 2nd. In combination with the handles *A*, of a cutting bolt nipper, the notches *C*, and the tail *T*, having the tip end *U*.

No. 5495. Horse Overshoe.*(Couvre-fer à cheval.)*

Arthur C. Snowden, South Norwalk, Ct., U. S., 14th November, 1875, for 5 years.

Claim.—1st. The correspondingly constructed plates *A*, *B*, and *D*, *D*, attached to an ordinary shoe by means of lugs *E*, *E*, and screw *F*; 2nd. The calks *G*, constructed with steel points *H*, *H*.

No. 5496. Art of Transmitting Musical Sounds Telegraphically and Apparatus therefor.*(Art de transmettre les sons musicaux télégraphiquement et appareil pour cet objet.)*

Elisha Gray, Chicago, Ill., U. S., 14th December, 1875, for 15 years.

Claim.—Transmitting a series of tones of different pitch, provided by vibrating electro tones or automatic circuit interruptions through an electric circuit to a corresponding series of receiving instruments, each vibrating synchronously with the impulses of its respective transmitting circuit interrupter whereby each receiver reproduces its appropriate tone without interfering with the others transmitted through the same circuit; the combination of a main line, an intermittent circuit breaker adapted to throw upon the line a definite number of electrical impulses in a given time, and a key for controlling such circuit breaker; the combination of a telegraphic circuit, an automatic circuit breaker capable of producing a musical tone and an

electro-magnet receiver which reproduces the tone by being thrown into vibration by impulses generated by the circuit breaker; the combination in the receiver of the vibrating bar which reproduces a musical tone and its circuit breaking lever constructed to vibrate more slowly than the bar, whereby the circuit is interrupted without de-magnetizing the magnet; the combination of a series of transmitters, a series of receivers and a local circuit and recording mechanism, with each receiver, whereby each receiver is enabled to analyse or select and record its own notes from a number simultaneously transmitted through the same circuit; the combination in an electric circuit, of a series of vibrating electro-tones whose circuit breaking springs when in action produce tones of different pitch and a series of keys each controlling its corresponding electro-tone, whereby several tones simultaneously may be transmitted through a single circuit; the combination with a single electric circuit of a series of transmitters or circuit interrupters composed of bars or strings electrically vibrated with sufficient rapidity each to produce a tone of a pitch differing from its fellows and a series of corresponding receiving instruments likewise arranged in the circuit, and each caused to vibrate synchronously with its transmitter of corresponding pitch by impulses generated by the interruptions of the current occasioned by the vibrations of the transmitting instrument, whereby each receiver selects its own tones without interfering with others simultaneously passing through the circuit.

No. 5497. Improvements on Hydraulic Dredges and Peat Elevators.

(Perfectionnements aux dragues hydrauliques et aux élévateurs à tourbes.)

William H. Newton, Chicago, Ill., U. S., 14th December, 1875, for 5 years.
Claim.—1st. The combination of a suction pipe with an ejection pipe to be used with a dredge for disintegrating and holding earth in suspension in water and elevating the substance; 2nd. The combination of a telescopic suction pipe F, G, with rubber rings or flexible rings placed between the sections; 3rd. The reversible hood V, combined with its operating attachments H, R, S, 5, and reversible nozzle T; 4th. The telescopic suction pipe F, G, provided with a horizontal pipe 2, in combination with sleeves 3, communicating with vacuum pumps E, E; 5th. The combination of the telescopic pipe F, G, joined to the pump E, E, at 2, 3, with an ejection pipe M, N, L, and a free pump b, and conveyer pipe a, arranged with reference to a dredge scow or hull A, provided with a well hole Q**, and elevating a capstan D; 6th. The combination of the suction of a telescopic pipe F, G, with the elliptical spring H, for holding the section G, in a yielding position down to its work.

No. 5498. Improvements on Printer's Quoins.

(Perfectionnements aux biseaux d'imprimerie.)
 John Foley, Orangeville, Ont., 14th December, 1875, for 5 years.
Claim.—1st. The combination of the double bevelled side pieces A, wedges E, and screw D, having a collar c; 2nd. The combination of the wedges E, having dovetail lugs F, and side pieces A, having dovetail grooves G, for retaining the several parts of the quoin operatively together.

No. 5499. Improvements in Sheet Metal Pipe Elbows.

(Perfectionnements aux coudes de tuyaux en tôle.)
 George Lupton, Indianapolis, Ind., U. S., 14th December, 1875, for 5 years.
Claim.—1st. An un-crimped and uncut curved trough B of sheet metal; as a blank for pipe elbows, the same being smooth on its surface and of approximately uniform thickness throughout; 2nd. A curved pipe elbow, formed from a single piece, or blank of sheet metal without cutting or crimping the same, and being smooth on its surface and of approximately uniform thickness throughout.

No. 5500. Improvements on Harness Buckles.

(Perfectionnements aux boucles de harnais.)
 Joshua Challenger, Mitchell, Ont., 14th December, 1875, for 5 years.
Claim.—The combination of the snap with the buckle and the formation of the bar on which the tongue is secured, also in the formation of the buckle combined with the snap and the metallic-guard loop for holding the end of the strap behind the section of union between the buckle and snap.

No. 5501. Improvements on Hay Presses.

(Perfectionnements aux presses à foin.)
 Charles G. C. Simpson, Montreal, Que., 14th December, 1875, (Extension of Patent No. 982), for 5 years.

Claim.—1st. The frame a, box b, moveable side b1, cover c, bottom d, horizontal balks e, curved surface f, levers g, toothed ends g1, supports h, friction rollers h1, friction wheels i, pulley wheels k, hold fast l, friction roller l1, rope or chain m, friction roller n, drum o, capstan p, lever p1, capstan head p2, bolt p3, eccentric p4, arm p5, roller g, bar g1, arm g2, catch q3, doors r; rounded ends r2, eccentrically curved end r3, vertical bar r4, arm r5, catch r6, 2nd. The curved surface f, whether convex or concave, and the toothed ends g1, of lever g, meshing into each other; 3rd. The friction roller n, bolt p3, actuated by eccentric p4, and arm p5; 4th. The eccentrically curved end r3, of the rails r1; 5th. The rollers n, rope m, levers g, g, connected under the follower or support h; 6th. The levers g, g, with gear connections g1, and brackets k1, extending downwards between the timbers e, so as to apply the power below the tread of the lever rollers i.

No. 5502. Improvements in the Art of and Apparatus for Tanning Skins.

(Perfectionnements dans l'art et les appareils de tannage des peaux.)
 Horace W. Woodruff, (Assignee of G. Scoullar), New York, U. S., 14th December, 1875, (Extension of Patent No. 773), for 5 years.

Claim.—A vat A, a chamber or hollow cylinder B, sundry pipes E, G, G, H, I, K, P, R, and a vacuum gauge F, with a rack or racks D, in the chamber B, also the method, process or art for operating with the same, such consisting

of the suspension of the skins within such chamber or cylinder B, on the rack or racks D, thereof, and subsequently exhausting the chamber and skins therein of most of if not all the air contained therein and afterwards introducing the tanning liquid into the space so exhausted of air.

No. 5503. Improvements in the Art of and Apparatus for Tanning Skins.

(Perfectionnements dans l'art et les appareils de tannage des peaux.)

Horace W. Woodruff, (Assignee of G. Scoullar), New York, U. S., 15th December, 1875, (Extension of Patent No. 773), for 5 years.

No. 5504. Improvements in Refrigerators.

(Perfectionnements aux réfrigérants.)
 Daniel Y. Howell, Toledo, Ohio, U. S., and Ethelbert B. Paxton, Windsor, Ont., 16th December, 1875, for 10 years.
Claim.—The annular ice receptacle D, in combination with the box A.

No. 5505. Improvements in a Machine for Freezing Fish and Meat.

(Perfectionnements à une machine à geler le poisson et la viande.)
 Daniel Y. Howell, Toledo, Ohio, U. S., and Ethelbert B. Paxton, Windsor, Ont., 16th December, 1875, for 10 years.
Claim.—1st. The employment of sheets of metal arranged in pairs in a suitable box, in connection with a freezing mixture; 2nd. The arrangement within the box A, of the sheet metal plates B, and blocks C, D and E.

No. 5506. Dumping Platform for Railway Cars.

(Plateforme à bascule pour les wagons de railroute.)
 John W. Harrison, Niles, Mich., U. S., and Henry E. Susand, Berlin, Ont., 16th December, 1875, for 5 years.

Claim.—1st. The combination of the strip A, frame B, B, cross-pieces C, C, C, friction rollers X, X, X, bulk heads F, F, and the shaft D, having pinion wheel d, d; 2nd. The combination of the sliding floor K, cog-bar L, L, gauge bars M, M, M, pivot shaft N, and rollers n, n.

No. 5507. Apparatus for Braking and Signaling in Railway trains.

(Appareil serre-frein et télégraphique pour les convois de railroutes.)
 James Steel, Glasgow, Scot., 16th December, 1875, for 5 years.

Claim.—1st. The arrangement and construction of brake apparatus consisting of a vertical cylinder A, placed at the central part of each carriage and provided with a receiver B, either surrounding the cylinder or placed above, below, or at one side thereof into which compressed air for actuating the brakes is conducted through chambers W, and pipes Q, R, jointed by flexible couplings at each end of the carriage; 2nd. The arrangement of mechanism consisting of the pipes T, T, and valves w, whereby equilibrium of air pressure in the upper part of the cylinder and in the air vessel or receiver is effected; 3rd. The arrangement of levers C, by which the flexible couplings are connected and disconnected, and the employment thereof in connection with the arrangement of brake apparatus having the air cylinder A at the centre of the carriage or with that in which the air cylinders are placed at each end of the carriages; 4th. The arrangement by which the direct coupling of the piston of each brake cylinder to the brake blocks at both ends of the carriage is effected by means of the bell crank levers G, links H, H, and cross ties or stays I; 5th. The funicular acting mechanism I, t, t, for operating the brakes or any mere modification thereof; 6th. The packing of the piston F, consisting of cup leather h, k, springs l, and shot, and the employment thereof for purposes generally in which a moveable piston is employed; 7th. The several packings described and the employment thereof in the stuffing boxes of the brake cylinder and in stuffing boxes generally; 8th. The cock of valve z, for withdrawing the air pressure from the receiver B, and so preventing the application of the brakes when the carriages composing a train are uncoupled thereby leaving them free to be moved about; 9th. The arrangement and construction of apparatus for operating the brakes on the locomotive tender by compressed air; 10th. The employment of the reducing valve t, or of an equivalent valve as described; 11th. The use or employment of fog horns for signalling apparatus, in trains provided with brakes actuated by compressed air generally and the arrangement of signalling apparatus H, or any mere modification thereof; the passengers or guard in sounding the horns H, also apply the brakera as described.

No. 5508. Improvements in Folding Blinds.

(Perfectionnements aux persiennes pliantes.)

Alphonzo LeRoy, Syracuse, N. Y., U. S., 16th December, 1875, for 5 years.
Claim.—1st. A folding blind consisting of two side rails or their equivalents, and a series of overlapping slats pivoted thereto; 2nd. The combination of the hollow rail or body B, the rail C, and the pivoted slats A; 3rd. In combination with the rails B, C, and pivoted slats A, the sliding bar D, and links E.

No. 5509. Improvements on Whiffle-trees.

(Perfectionnements aux palonniers.)
 Stephen F. Humphrey, St. Thomas, Ont., 16th December, 1875, for 5 years.
Claim.—1st. The combination of the whiffle-tree C, tube D, spiral spring E, bolt F, and strap G; 2nd. The combination of hanger H, and roller J, J, also hook and spring J.

No. 5510. Apparatus for Raising Water, &c.

(Appareil pour élever l'eau, &c.)
 Henry Port, Stapleton, N. Y., U. S., 16th December, 1875, for 5 years.
Claim.—1st. The elevator composed of an endless band of buckets with a central tube in each through which passes the sustaining rope or links in

combination with the cog blocks C; 2nd. The combination with buckets each containing a central tube of metal links passing through such central tube and cog blocks for connecting such links together; 3rd. The endless band of buckets passing over a wheel at the upper portion of the apparatus in combination with the inclosing case trough and tubular openings through the trough.

No. 5511. Device for Indicating the Distance Travelled by Vehicles.

(Appareil pour indiquer la distance parcourue par les voitures.)
Thomas Bournann and Harrison T. Beebe, Fort Erie, Ont., 16th December, 1875, for 5 years.

Claim.—1st. A registering indicator or counter formed by the spur wheel D, operating as described, the ratchet wheel E, in combination with the index wheels F and G; 2nd. The pin a, in a wheel A, of a buggy or any other wheel in combination with the spokes B, and spur pinion c; 3rd. The pawl d, pivoted to the spur-wheel D, and acted on by the spring b, in combination with the ratchet wheel E.

No. 5512. Stove-Board. (Sous-poële.)

George F. Sawyer, Albion, N. Y., U. S., 16th December, 1875, for 5 years.

Claim.—The disc A, and the rim B, having the apertures a, a, a, for the circulation of air.

No. 5513. Coal Scuttle. (Seau à charbon.)

George F. Sawyer, Albion, N. Y., U. S., 16th December, 1875, for 5 years.

Claim.—1st. A bottom A, provided with apertures c, c, c, locked or fastened to the body of a coal-hod or other article by means of the lips d, d, d; 2nd. In the bottom, the apertures c, c, c, for the circulation of air under the hod; 3rd. A bail handle D, made from one piece of sheet metal having the ends E, E, corrugated and drawn in.

No. 5514. Fifth Wheel for Vehicles.

(Rond d'avant-train de voiture.)

LaFayette Blair, Painesville, Ohio, U. S., 16th December, 1875, for 5 years.

Claim.—1st. The plate or bearing c, provided with inner and outer spherical surfaces and means for attachment to the axle; 2nd. The plate or bearing c, provided with the lubricating chamber, upon its friction face; 3rd. The combination with the plate c, of the cylindrical or conical king-bolt K, and the elongated-slot t; 4th. The combination with the plate C, of the box A; 5th. The combination with the plate C, and box A, of the plate G, and the clips b; 6th. The combination with a hollow spherical bearing plate c, of the spherical cap-plate B, and king-bolt K, the said king-bolt starting from the under side of the plate C; 7th. The combination with the spherical cap B, of the reach box g; 8th. The combination with the plate C, and the reach box g, of the brace H, attached rigidly to the said plate and hinged to the reach box; 9th. The combination with the plate c and B, and king-bolt K, of the head block D, and shoulder h; 10th. The combination with the plates C and B, head-block D, and spring E, of the king-bolt K, starting from the underside of the plate E, and the nuts C; 11th. The combination of box A, plates C and D, reach-box G, head block D, king-bolt K, and elongated slot t.

No. 5515. Improvement in Hame Fasteners.

(Perfectionnement dans l'ajustage des attelles.)

Alfred J. Park, Virginia, Mo., U. S., 16th December, 1875, for 5 years.

Claim.—1st. The hame-fastener composed of the pieces A, B, and latch C; 2nd. The locking slide D, arranged in combination with the parts A, B, C.

No. 5516. Hay Rake and Loader.

(Râteau élévateur à foin.)

Thomas Curtis, Urbana, Ill., U. S., 16th December, 1875, for 5 years.

Claim.—1st. The inclined guard plate W, with slots W₁, the rake F, conveyor or elevator G, g, H, H, and its driving attachments b, I, h, when supported on the frames C and D, and wheels B, B.

No. 5517. Buckle for Garments (Boucle de hardes.)

William H. Barker, Pella, Iowa, U. S., 16th December, 1875, for 5 years.

Claim.—The combination of tongues A, the bows B, and the straps C.

No. 5518. Soda Cask. (Fût à soda.)

Ira N. Herrick, Chicago, Ill., U. S., 16th December, 1875, for 5 years.

Claim.—1st. The port H, in combination with the thimble G, provided with the port J, and faucet C, D, F; 2nd. The devices enumerated in combination with the removable cap E.

No. 5519. Lifting Jack. (Cric.)

David T. Welch, St. Louis, Mo., U. S., 16th December, 1875, for 5 years.

Claim.—The combination of the upright B, B, cross beam C, and yoke beam D, with the crank K, shaft F, worm W, nut N, and screw S, provided with a swivel and grapple.

No. 5520. Stove-Pipe Damper.

(Clé de tuyau de poêle.)

Samuel Selden, Erie, Pa., U. S., 16th December, 1875 for 5 years.

Claim.—1st. The spring plate or tongue D, attached to the damper, in combination with the notched or recessed spindle B; 2nd. The combination with the thimble E, of the sleeve F, arranged and operating relatively to the thimble bearing the pipe A; 3rd. The thimble or sleeve F, and spring G, applied to the spindle B, and operating in combination with the damper C, to hold the pipe with a frictional grasp.

No. 5521. Improvements on Machines for Cutting Paper Bags.

(Perfectionnements aux machines à tailler les sacs en papier.)

Thomas Gain, Hamilton, Ont., 16th December, 1875, for 5 years.

Claim.—1st. In combination with a paper cutting machine the knives G, G, constructed with a cutter projection a, at nearly right angles with the main cutting edge; 2nd. In combination with a paper cutting machine the two knife cutters having their inner ends constructed with projecting cutters a, a, rendered adjustable for cutting paper in the shape and form shown for paper bags of any size; 3rd. The adjustment of the knives G, G, to the bar E, by means of the bolts J, J, through the slot I; 4th. In combination with the cutters G, G, the holders L, L, provided with projections g, and slot c, and adjusted to bar F, by bolt d, and nut f.

No. 5522. Railway Signalling Apparatus.

(Appareil à signaux de railroutes.)

Austin Chambers, London, Eng., 16th December, 1875, for 5 years.

Claim.—1st. The application and use in combination with a collapsible compressor g, and a pipe f, tube or passage charged with elastic fluid for operating by change of pressure a semaphore arm b, or its equivalent, of a valve l, operating in connexion with an orifice i, in the end of the compressor and so arranged in relation to a stop or stud l₂, that when and so long as the compressor is in its expanded condition the valve shall be open thereby establishing and maintaining the atmospheric pressure within the compressor until the latter is again moved or compressed; 2nd. The arrangement of apparatus in which a semaphore arm b, or its equivalent, is combined with it a slotted rod d, a lever or scale beam m, and two collapsible vessels e, e', operated from independent stations or places; 3rd. The combination with a pipe f, tube or passage charged with elastic fluid, and apparatus for changing the pressure of such fluid for operating a semaphore arm, or its equivalent, of apparatus composed of two or more collapsible chambers e, e', separated by a division e₂, or divisions, each collapsible vessel being in communication by its pipe f or f', with an independent pressure changing apparatus; 4th. An apparatus designed to meet the requirements of cases in which three distinct and separate levers are to be moved over in order to move the semaphore arm or signalling body into the safety or pass position the combination of three collapsible vessels, namely, one upper vessel e, and two lower vessels e', e₂, each of the said collapsible vessels being independently governed by one of the three levers; 5th. The application and use in conjunction with a pipe f, tube or passage charged with elastic fluid and apparatus for changing the pressure of said fluid of a lever i, i, valve n, and nozzle f₁₅, having an elastic seat f₁₄, in connexion with which the valve is arranged to operate as described; 6th. The combination with a lever f₆, or its equivalent for moving railway points or switches of a pipe f, tube or passage charged with air or other elastic fluid and means for increasing or diminishing the pressure thereof above or below the external atmospheric pressure, such pipe tube or passage having branches f₁₁, f₁₂, or connexions to the respective semaphore arms or other signalling objects or bodies and being provided with a valve f₁₂, operated by the movement of the said lever or its equivalent for operating and closing communication between the main pipe tube or passage and its respective branches as well as between the latter and the external atmosphere in such manner as to ensure correct signalling according to the position for the time being of the points or switches; 7th. The combination with the levers f₆, and stud f₇, of the link f₅, rod f₄, stud f₃, slide valve f₂, pipes f, f₁₁, f₁₂, and eduction port f₁₃; 8th. The combination with a pipe f, tube or passage charged with elastic fluid, apparatus for changing the pressure of said fluid, a collapsible vessel e and a rod d, operating a semaphore arm b, of a burner c₁, fed with gas by a flexible tube c₂, and guided by a frame c₃, so as to operate in conjunction with the "safety and danger" lenses c₄, c₅, of lamp c, carried by the post a; 9th. An apparatus wherein the semaphore arm b, or its equivalent is operated by changing the pressure of elastic fluid, in a pipe f, tube or passage by means of a collapsible compressor g, the application and use in connexion with air aperture in such compressor of a valve o, arranged to open upward in such manner as during the earlier portion of the upward or expanding movement of the compressor to open by the excess of the external atmospheric pressure thus admitting air into the compressor whereby its expansion is expedited; 10th. The combination with a semaphore arm b, or its equivalent for signalling on railways of a pipe f, tube or passage charged with elastic fluid, a collapsible vessel e, or chamber operating by its movement the semaphore arm or equivalent, an air pump compressor g, or rarefier actuated by a lever t, and a valve f₂₁, or governing apparatus operated by a second lever f₆, said valve or governing apparatus being interposed between the pipe tube or passage f₂₀, leading from the air pump compressor or rarefier and the pipe tube or passage f, leading to the collapsible vessel or chamber so as to prevent the giving of a safety signal until the lever of the valve or governing apparatus has been moved from the "danger" position; 11th. The application and use for indicating to the operator that position of the signalling object or body of a valve t, arranged in connexion with a hole e₂₀, in a moving part of the collapsible vessel e, whereby the signalling body is actuated, said hole and valve being so arranged in relation to a pipe u, communicating with an indicator placed near the operator, as at the proper time to establish communication between the said indicator and the interior of the collapsible vessel, and thereby to indicate that the signal has resumed the danger position; 12th. An apparatus wherein the semaphore b, or their equivalents are operated by changing the pressure of elastic fluid in pipes f, tubes or passages combining an air pump compressor or rarefier with a series of semaphore arms or equivalent signalling object by the interposition of a main pipe f₂₀, and a corresponding series of branches f, each furnished with a valve f₂₁, or governing apparatus operated by a suitable lever s; 13th. The method of working a point lock pneumatically for securing a pair of points at a distance by combining with the lever f₆, a locking plate r, and arranging in conjunction therewith a bolt w, operated by the movements of a collapsible vessel e, actuated by changing of the pressure of elastic fluid within it.

No. 5523. Tramway for Conveying Excavated Material.

(Chemin à ornières pour transporter le déblai d'excavation.)

Jam s Canan, Port Colborne, Ont., 16th December, 1875, for 5 years.

Claim.—1st. The frame C, with sides C₁, containing the tramway H, in combination with the derrick D, and winch E; 2nd. The rack I, upon the

tramway H, in combination with the spur wheel G, arm I, and dumping cart F; 3rd. The rope or chain g, attached at one end f, to the cart F, and operated upon by some conveniently situated motor as to cause the cart F, to ascend the tramway H.

No. 5524. Railway Car-Axle.

(*Essieu de wagon de railroute.*)

Theron S. E. Dixon and George H. Wards, Chicago, Ill., U. S., 18th December, 1875, for 5 years.

Claim.—1st. The railway-car axle A, having an elevated rim or shoulder D, an inner bearing C, of greater diameter than the body of the axle, and a smaller outer bearing E; 2nd. The railway-car-axle A, having an elevated rim or shoulder D, larger-bearing C, and smaller bearing E, and provided with the oil passages G; 3rd. The combination of the loose wheel B, revolving axle A, and nut or cap F, having in connection therewith the oil passages G.

No. 5525. Oil-Tank. (*Réservoir à l'huile.*)

Newell W. Wilson and Alphonso W. Blye, (Assignes of Henry E. Wolcott) Chicago, Ill., U. S., 18th December, 1875, for 5 years.

Claim.—1st. The provision in a tank can having a fixed hood E, of a permanent dripping shelf B, having inclined corrugations or gutters b, and perforation b₁; 2nd. The combination with the dripping shelf B, of the shelf extension B₂, for the pump support D; 3rd. The combination with the dripping shelf B, of a fixed hood E, and a rim guard b₂, inclosing and forming a base-boundary for the shelf; 4th. The combination with a removable sink c, and a fixed dripping shelf B, of the extension B₂, for the pump support independent of the sink and the shelf; 5th. The cover F, constructed with the tapering end and gore sections F₁, F₂, in combination with the fixed hood E, having the inclined back e, and the rim guard b₂, over and upon which the cover is hinged to be opened and closed without binding of the overlapping parts; 6th. The combination of the hinged cover F, fixed

hood E, and the dripping shelf B, the latter being inclosed and rim bounded above the sink and serving with the pump support to form a firm and compact superstructure for the can.

No. 5526. Drying-Kiln. (*Four de sécherie.*)

Ezra Davee, William B. Baker and David B. Christy, Springfield, Ohio, U. S., 18th December, 1875, for 5 years.

Claim.—1st. A drying kiln constructed with an inner and outer wall of plank, with the space between the same filled with earth for the purpose of absorbing from the wood or other material contained therein, and in process of seasoning the moisture driven out by the heat; 2nd. The flues F, F₁, B, F₂, C and in combination with earth ex, through which the heat passes to the interior of the drying kiln; 3rd. In combination with the series of flues described, the drying kiln constructed with walls and surrounded with an envelope of earth.

No. 5527. Improvements on Lamp Chimneys.

(*Perfectionnements aux cheminées de lampes.*)

William H. Shapley and Edward L. Goold, Brantford, Ont., 18th December, 1875, for 5 years.

Claim.—1st. The mode of constructing lamp chimneys of sheet metal, with base-rings A, and F, supporting ribs C, C, and upper-rings B and f, in combination with the mica-sides D, D; 2nd. The removable cap or top G, in combination with the base ring A, and F, supporting-ribs C, C, upper rings B and f, and the mica sides D, D.

No. 5528. Oil Stove. (*Poêle à l'huile.*)

Abram Q. Allis and Hugh McConnell, Cleveland, Ohio, U. S., 18th December, 1875, for 5 years.

Claim.—The supplemental reservoir D, elevated in combination with the depressed reservoir C, connecting tube B, when the oil is kept separate from the stove.

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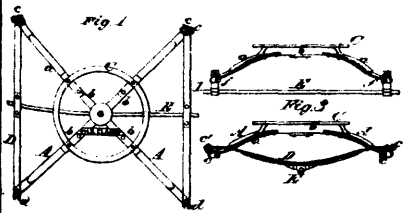
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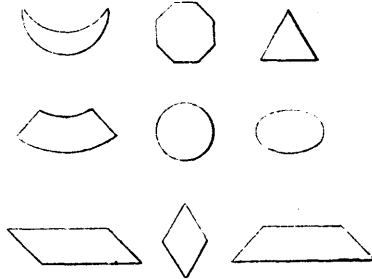
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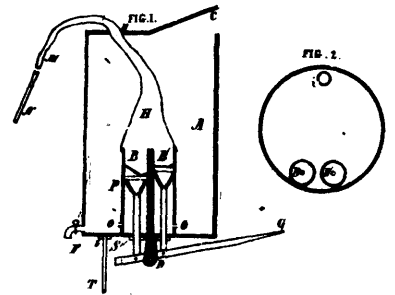
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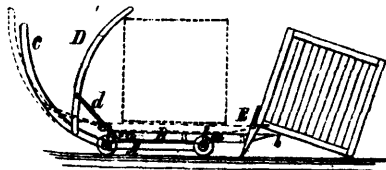
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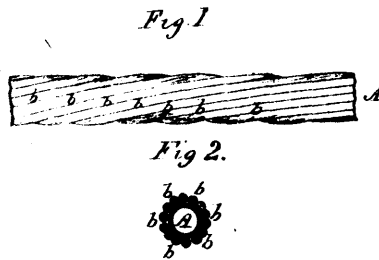
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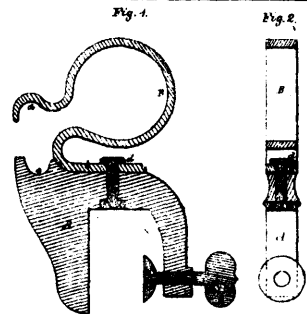
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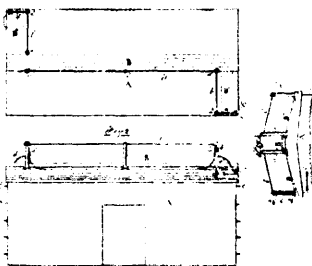
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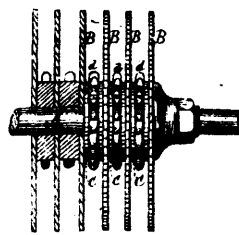
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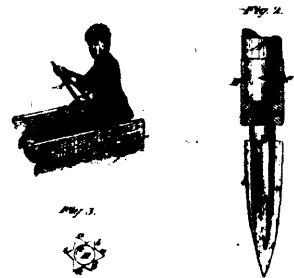
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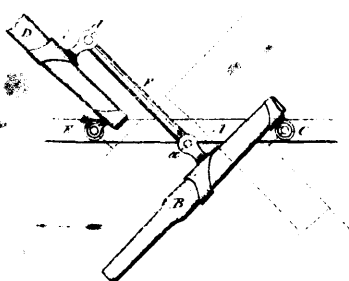
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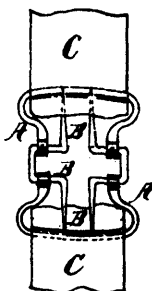
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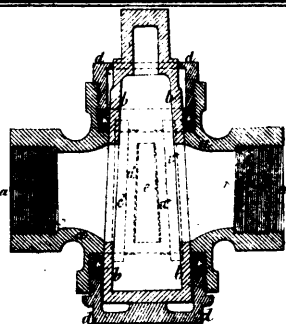
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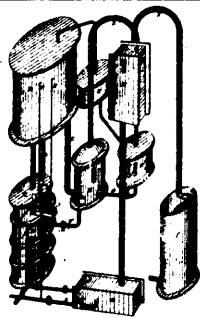
5517 Barker's Buckle for Garments.



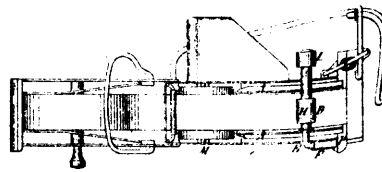
5418 McPherson's Improvements in Regulating Percolators.



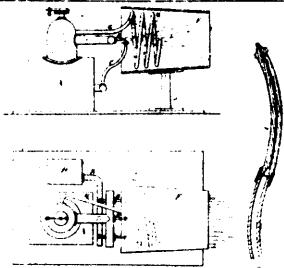
5419 Mallinson's Improvements on Steam and other Cocks and Valves.



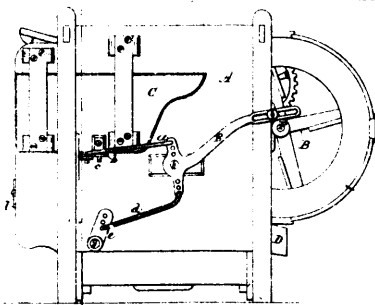
5420 Reford's Distilling Apparatus.



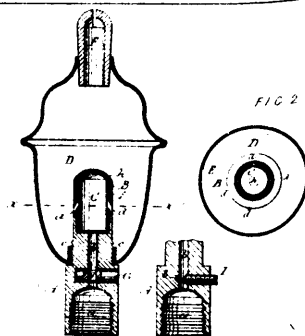
5421 Dick's Machine for Labelling Newspaper.



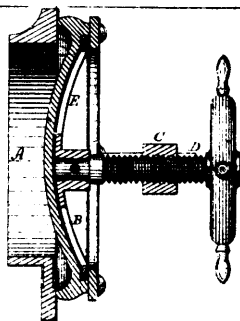
5422 Ramsden's Method of, and Apparatus for Securing the Combustion of Fuel and for the Utilization of the Gases arising therefrom.



5423 Theobald's Fanning Mill.



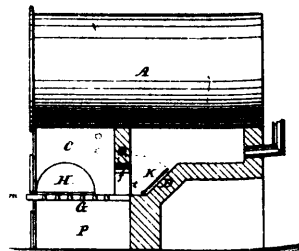
5424 Lynn's Gas Burner and Regulator.



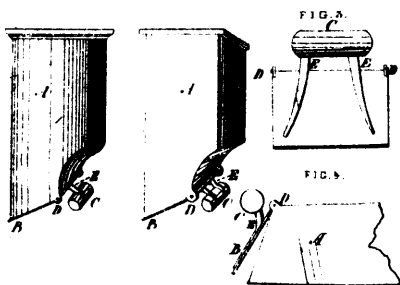
5425 Collinson's Improvements on Closing Gas Retorts and other Vessels Hermetically.



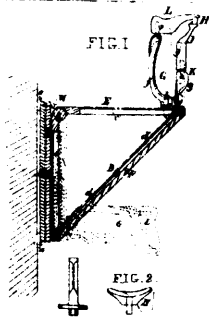
5426 Foster's Bale Ties.



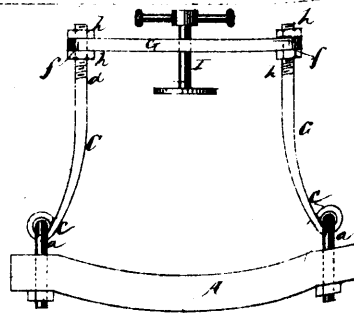
5427 Smith's Improvements on Furnaces for the Combustion of Coal.



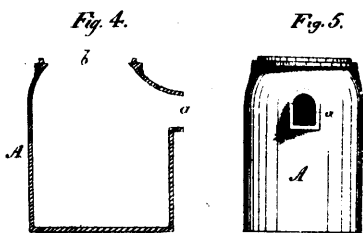
5428 Grand's Stretch Trap.



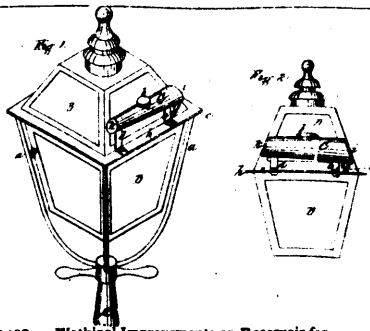
5429 Stone's Boot and Shoe Pegging Stand.



5430 Foster's Improvements in Clamps for Assembling Staves of Barrels.



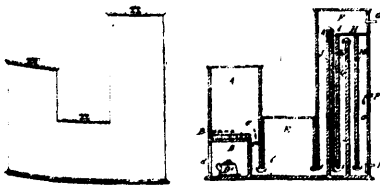
5431 Kenny, Thorbox & Keat's Glass Crucible.



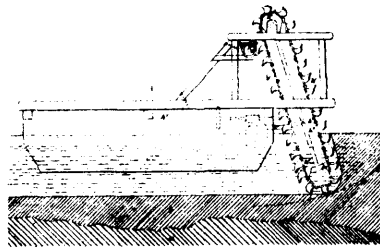
5432 Watkins' Improvements on Reservoir for Street Lantarns.



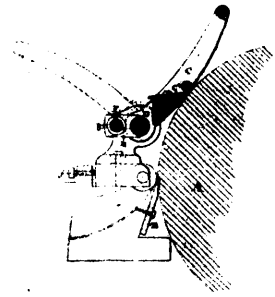
5433 Rawlings & Neave's Advertising Medium.



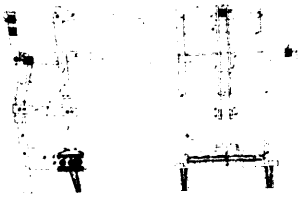
5434 Henega & Clark's Ozone Machine.



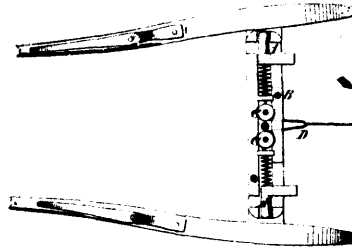
5435 Griffin's Improvements in the Manufacture of Peat,



5436 McEachern's Machines for Cutting Veneers.



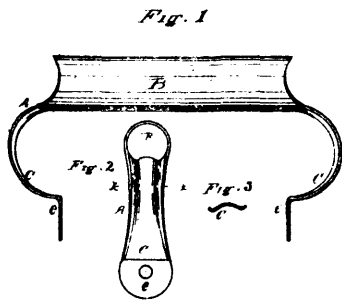
5437 Kline's Machine for Washing Linen.



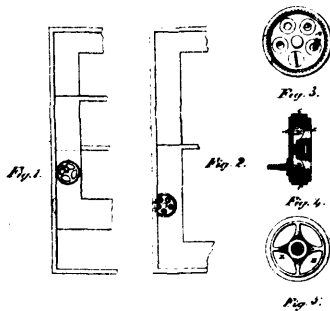
5438 Glover's Horse Detaching Apparatus.



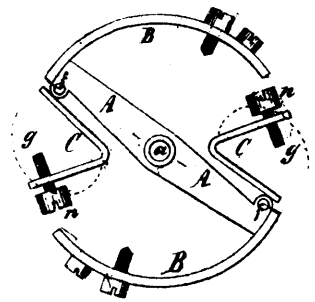
5439 Cumming's Railway Frogs.



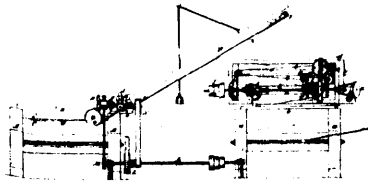
5440 Potwin's Tea Kettle Handle.



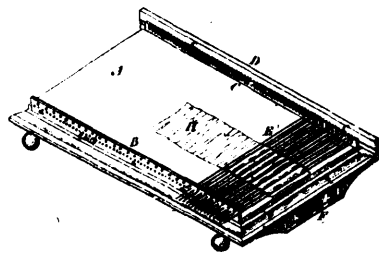
5441 Steller's Sash Holder.



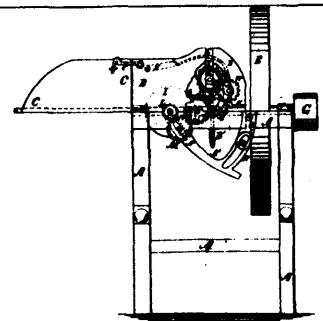
5442 Potter's Improvements on Watches.



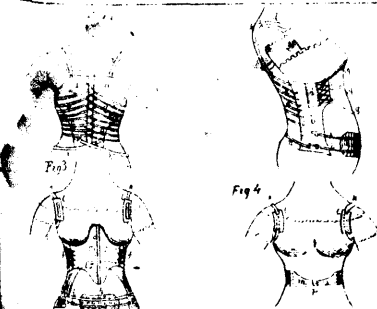
5443 McKenzie's Apparatus for Transferring the Wool from the Breaker of Custom and Feeding it to the Finisher.



5444 Cooley's Improvements on Side Plaiters.



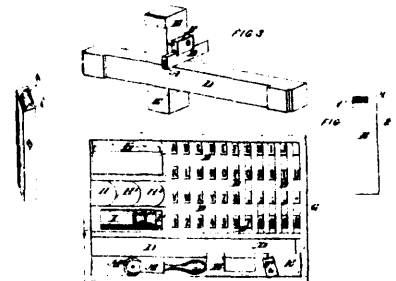
5445 Webb's Feed Cutter.



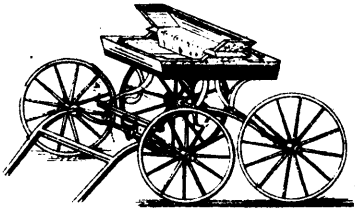
5446 Robertson's Combined Corset, Shoulder Brace, Spinal and Abdominal Supporter.



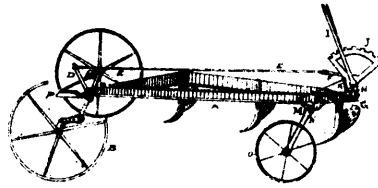
5448 Chambers' Railway Pneumatic Signal.



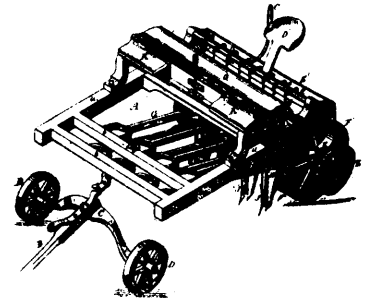
5449 Scott's Art of Printing with Rubber Type and Apparatus therefor.



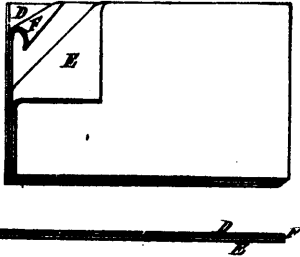
6450 Heater's Improvements on Carriages.



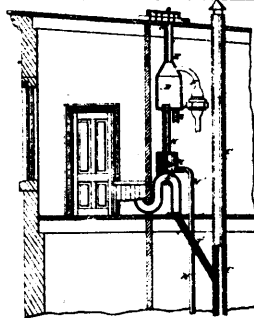
6451 Plant & Blizard's Gang Plough.



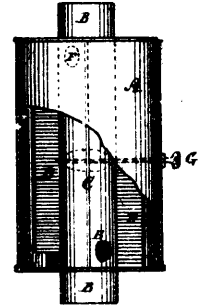
6452 Holland's Combined Land Roller and Seeding Machine, &c.



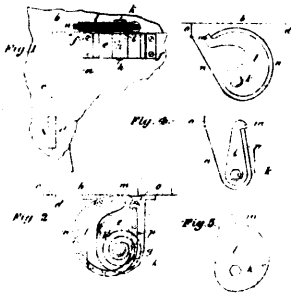
6453 Blakeley's Improvements on Lap Robes.



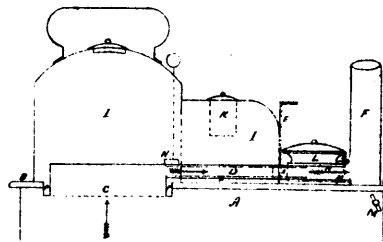
6454 Morrell's Water Supply and Ventilation of Buildings, &c.



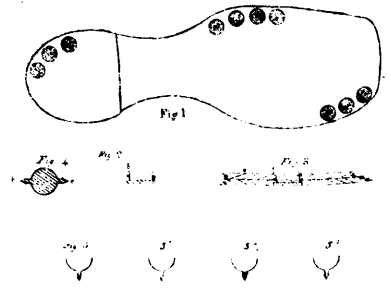
6455 Ghent's Drum Heater.



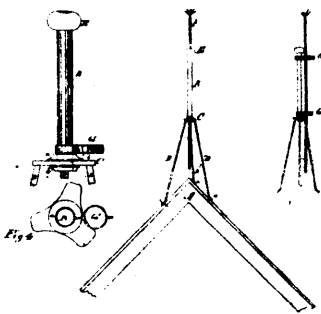
6456 Cable & Moseley's Apparatus for Rendering Doors and Gates Self-closing.



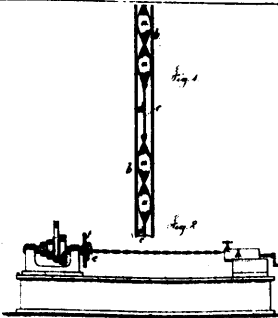
6457 Temple's Tube Kettle and Cooking Apparatus.



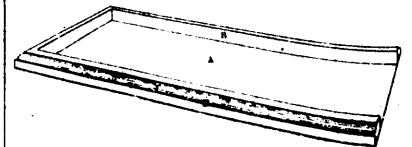
6458 Van Benchooten's Sole and Heel Protector for Boots and Shoes.



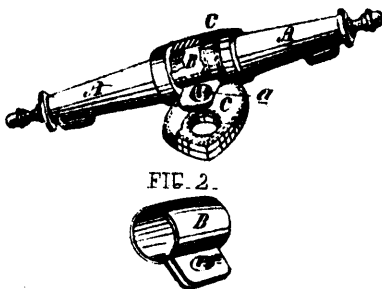
6459 Schoonmaker's Lightning Rod Standard.



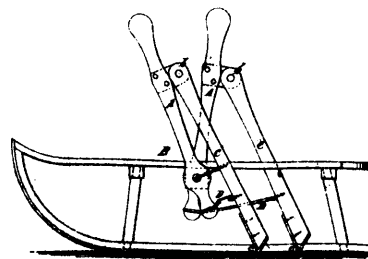
6460 Bailey's Tubular Flues for Steam Boilers.



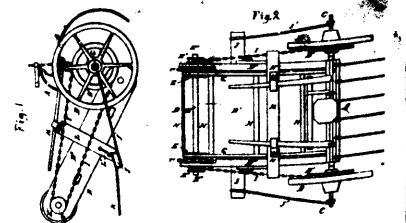
6461 Scadding's Improvements on Printer's Gallies.



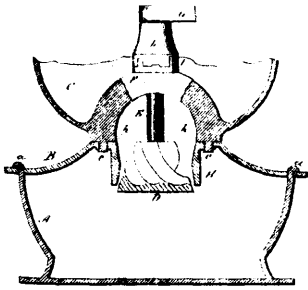
6462 Relyea's Improvements in Neck Yoke Leathers.



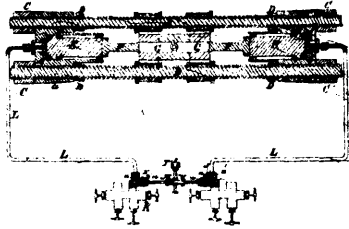
6463 De Forest's Mechanism for Propelling Sleds.



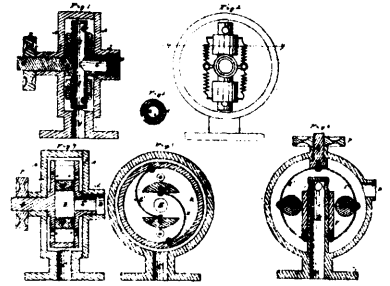
6464 Williams' Hay Loader.



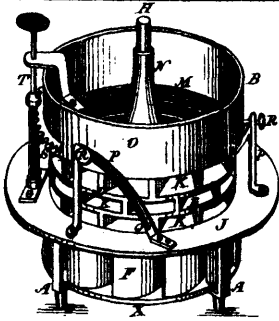
5465 Webb's Box Coffee Mill.



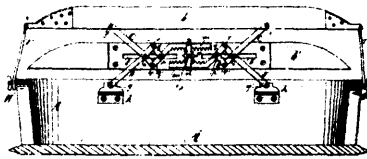
5466 Du Bois' Machine for making Plumbers Traps.



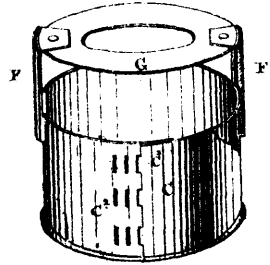
5467 Chase's Steam Governor.



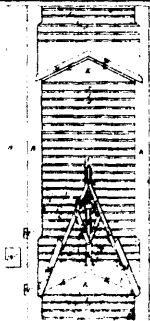
5468 Jull's Water Wheel.



5469 Rice's Vehicle Seat.



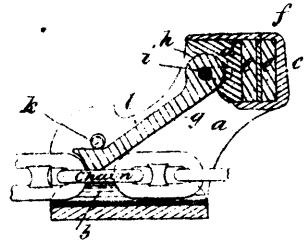
5470 Snell & Charles' Faint Brush Bridler.



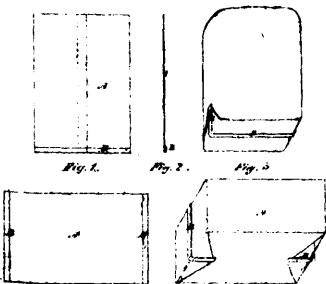
5471 Milette's Self-acting Sluice Doors and Lock Gates for Canals.



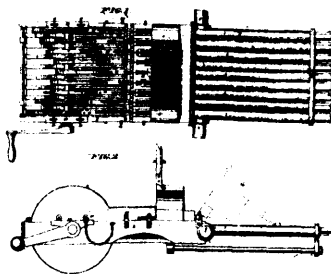
5472 Lee's Improvements on Moccasins.



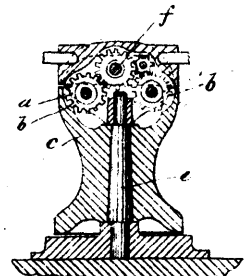
5473 Coffin & Woodward's Chain-stopper.



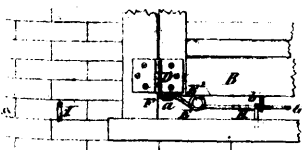
5474 Dennison & Huntington's Paper Bag.



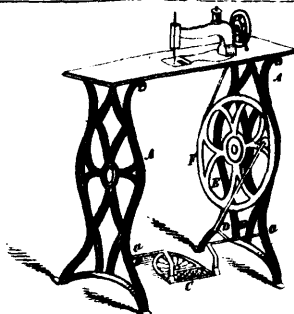
5476 Taylor & Baxter's Improvements on Machine Guns.



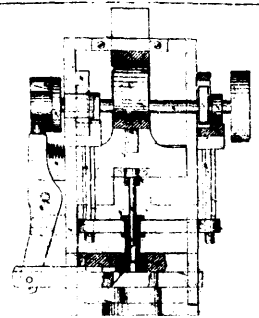
5477 Coffin & Woodward's Improvements on Capstans and Windlasses.



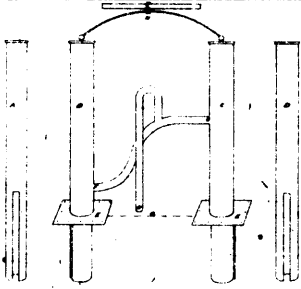
5478 Shedd's Improvements on Window Blind Fasteners.



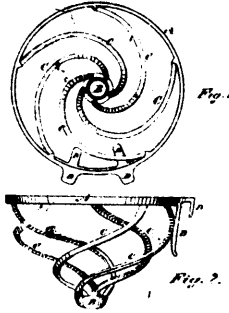
5479 Lillis' Improvements on Treadles.



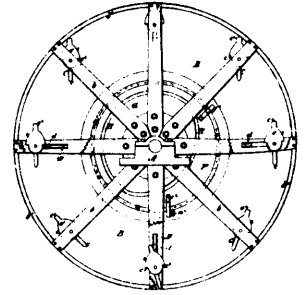
5480 Marland's Improvements in Making Nuts.



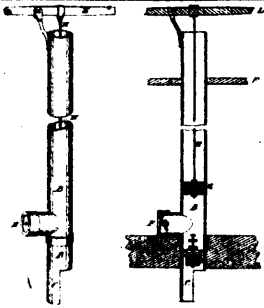
5481 Cosgrave's Machine for Taking and Pumping Water out of any Vessel, Ship or Boat.



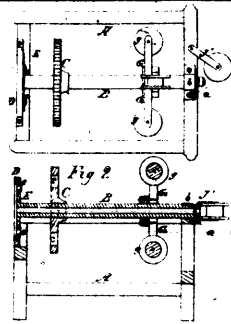
5483 Lang's Mop-wringer.



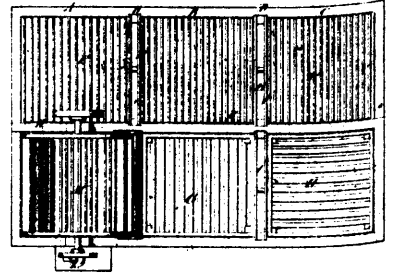
5484 Forward's Improvements in Paddle Wheels.



5485 Nute & Roode's Apparatus for Draining and Pumping Water from the Holds of Ships.



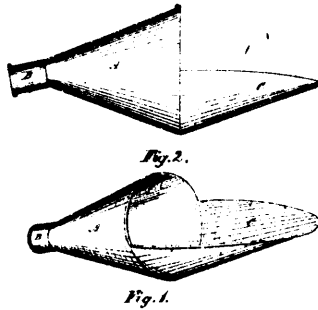
5486 Schoonmaker's Stove-pipe Shelf and Drier.



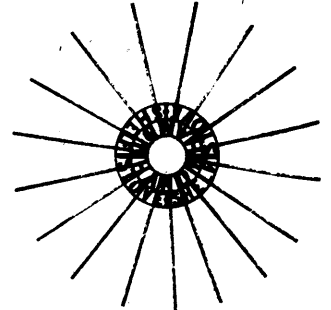
5487 Reed's Tanning Apparatus.



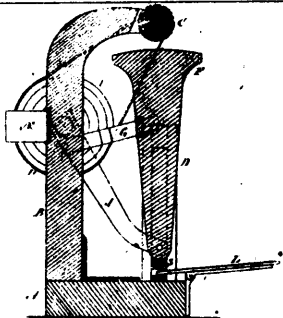
5488 Dippert's Harness Pad Press.



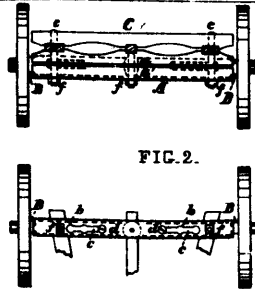
5489 McLean's Improvements on Scale Pans.



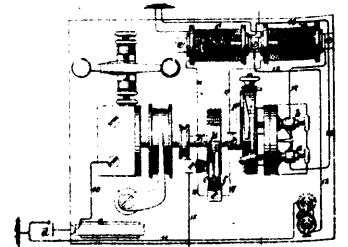
5490 Schoonmaker's Machine for making Lightning Rods.



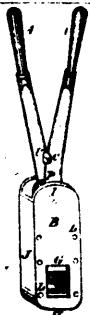
5491 Fisk's Machine for Whitening and Buffing Leather.



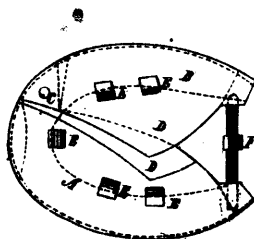
5492 Lantz & Mitchell's Adjustable Waggon Axle.



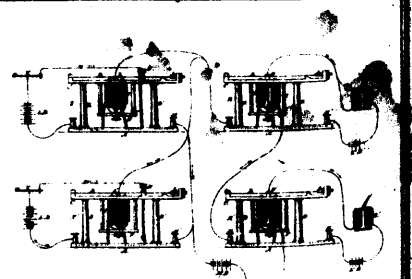
5493 Boyle's Improvements on Electric Telegraphs.



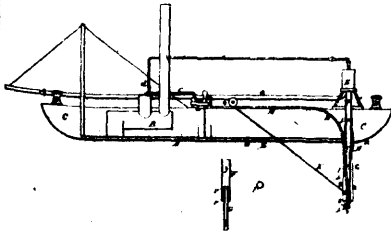
5494 Ellard's Cutting Bolt Nipper.



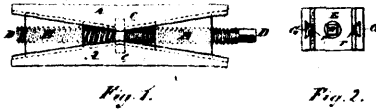
5495 Snowden's Horse Overshoe.



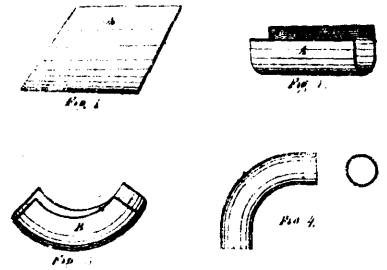
5496 Gray's Art of Transmitting Musical Sounds Telegraphically and Apparatus therefor



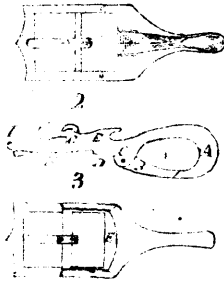
5497 Newton's Improvements on Hydraulic Dredges and Peat Elevators.



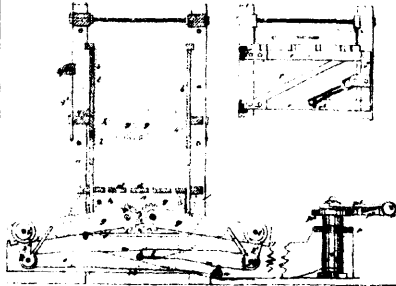
5498 Foley's Improvements on Printer's Quoins.



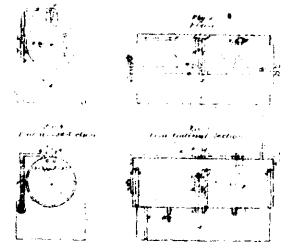
5499 Lupton's Improvements in Sheet Metal Pipe Elbows.



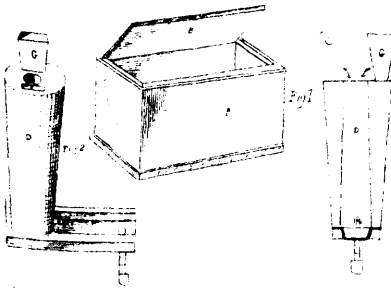
5500 Challenger's Improvements on Harness Buckles.



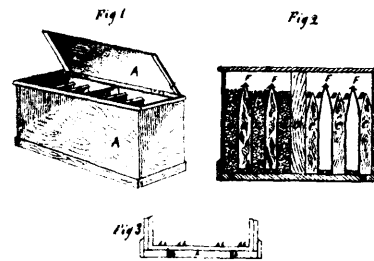
5501 Simpson's Improvements on Hay Presses.



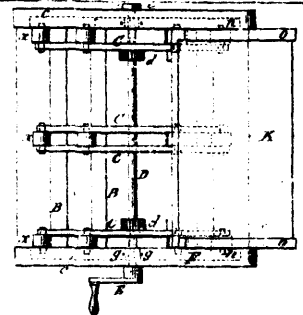
5502 Scoullar's Improvements in the Art of and Apparatus for Tanning Skins.



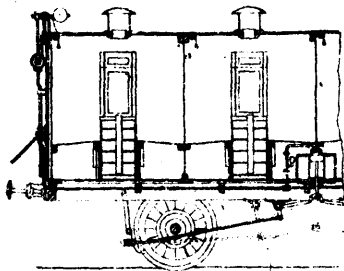
5504 Howell & Paxton's Improvements in Refrigerators.



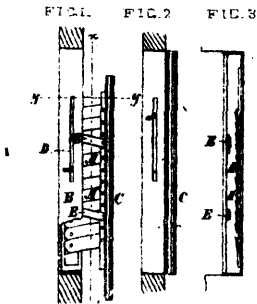
5505 Howell & Paxton's Improvements in a Machine for Freezing Fish and Meat.



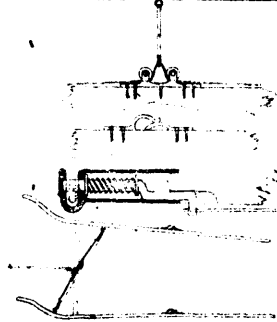
5508 Harrison & Susand's Dumping Platform for Railway Cars.



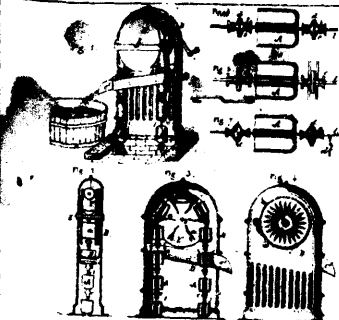
5507 Steel's Apparatus for Breaking and Signalling in Railway Trains.



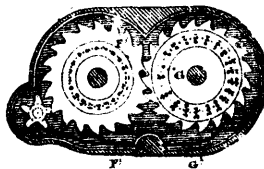
5508 Le Roy's Improvements in Folding Blinds.



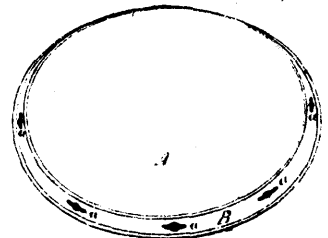
5509 Humphrey's Improvements on Whiffle-trees.



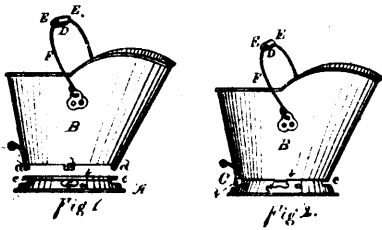
5510 Fort's Apparatus for Raising Water, &c.



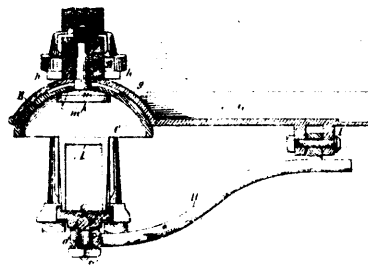
5511 Bournann & Beebe's Device for Indicating the Distance Travelled by Vehicles.



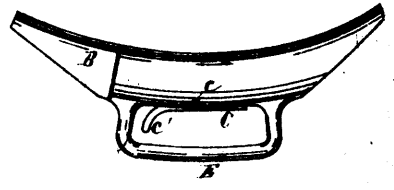
5512 Sawyer's Stove Board.



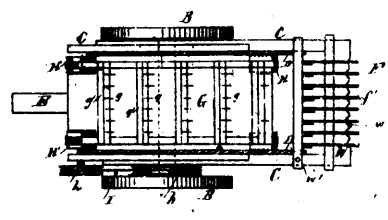
5513 Sawyer's Coal Scuttle.



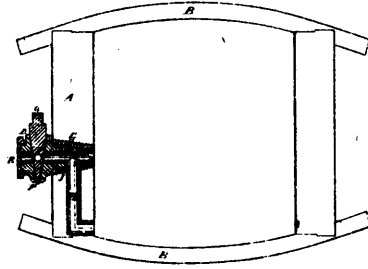
5514 La Fayette Blair's Fifth Wheel for Vehicles.



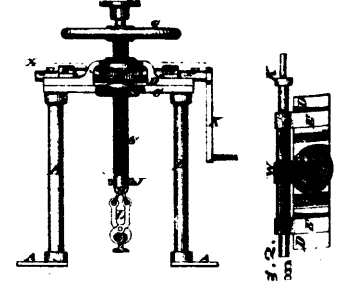
5515 Park's Improvements in Hame Fasteners.



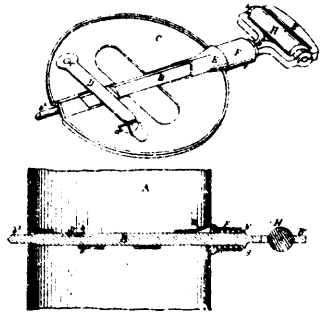
5516 Curtis' Hay Rake and Loader.



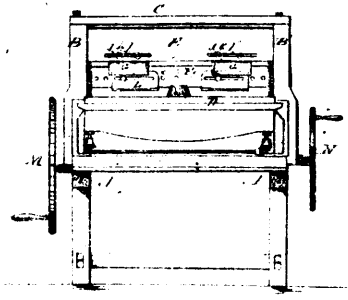
5518 Herrick's Soda Cask.



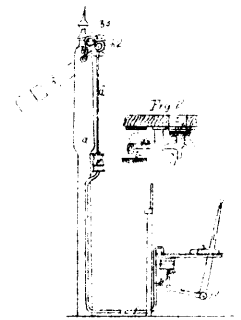
5519 Welch's Lifting Jack.



5520 Selden's Stove-pipe Damper.



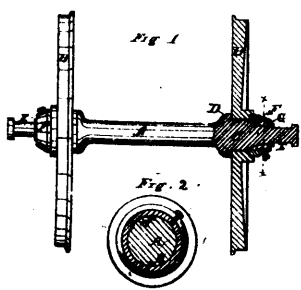
5521 Gain's Improvements on Machines for Cutting Paper Bags.



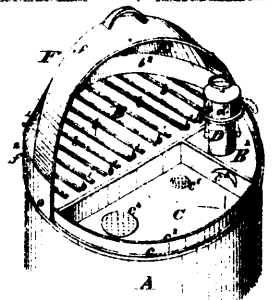
5522 Chambers' Railway Signalling Apparatus.



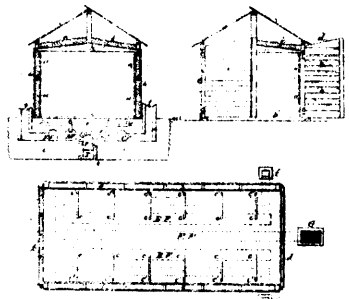
5523 Canan's Tramway for Conveying Excavated Material.



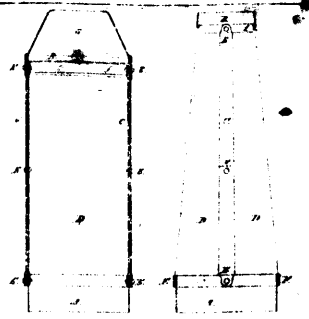
5524 Dixon & Ward's Railway Car-axle.



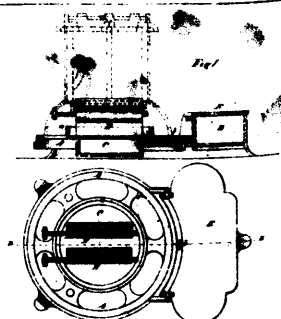
5525 Wolcott's Oil Tank.



5526 Davee, Baker & Christy's Drying-kiln.



5527 Shapley & Goold's Improvements on Lamp Chimneys.



5528 Allis & McConnell's Oil Stove.