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INVENTIONS PATENTED.

No. 10,826. Improvements in Mowing Machines. (*Perfectionnements aux faucheuses.*)
Matthew Garvin, Newcastle, Ont., 17th January, 1880; for 5 years.

Claim.—1st. In a front cut mowing machine, the cutter bar is so arranged that it can be tilted up or down, independently of the frame or lead wheel; 2nd. The lever H, in combination with the pivoted block G, frame A₁ and shoe E with its connections; 3rd. The independently adjustable shoe E and connections, in combination with the lead wheel, bracket F provided with the grooves F₁ or its equivalent; 4th. The block G provided with the slot G₁ and arms g; 5th. The combination of the lever H, block G and independently tilting shoe and cutter bar, with the frame, lead wheel and working parts of a front cut mowing machine.

No. 10,827. Improvements on Hand Trucks. (*Perfectionnements aux camions à bras.*)
Moses Johnson, Lockport, N. Y., U. S., 17th January, 1880; for 5 years.

Claim.—1st. The longitudinal side pieces A A B B with guides c c f f; 2nd. The rigid hooks h h, longitudinal side pieces B B and adjustable hooks t t g; 3rd. The combination of the longitudinal side pieces B B, adjustable hooks t t, rigid hooks h h and guides f f; 4th. The longitudinal side pieces A A, guides c c and uprights b b; 5th. The adjustable hooks i i in combination with shouldered guides f f; 6th. The combination of handles D D, longitudinal pieces B B with rigid hooks h h and loose hook G; 7th. The longitudinal side pieces A A, guides c c and longitudinal sides B B, with guides f f and adjustable hooks i i.

No. 10,828. Improvements on Oscillating Chairs. (*Perfectionnements aux chaises oscillantes.*)
Albert H. Ordway, Haverhill, Mass., U. S., 17th January, 1880; for 5 years.

Claim.—1st. The base or supporting frames a a, downward projecting chair frames or brackets e e and the flexible connecting links f f; 2nd. The combination of the base or supporting frames a a, chair frames or brackets e e, flexible connecting links f f and steps b₁ b₁.

No. 10,829. Improvements on Paper Boxes. (*Perfectionnements aux boîtes en papier.*)
Joseph R. Smith and Pitt W. Strong, Brockville, Ont., 17th January, 1880; for 5 years.

Claim.—1st. A box blank having the end flaps of sides A C nicked rectangularly from the centre; 2nd. A box blank having the flaps of side B incised with a semi-circular cut c, and side D having tongues d d; 3rd. The tongues d d subdivided by slot g; 4th. The dovetail projections e e on tongues d d; 5th. A box blank cut and creased to form a rectangular body, having the end flaps of sides A C nicked rectangularly from the centre, the end flaps of side B incised with a semi-circular cut c, and side D having locking tongues d d with projections e e subdivided by cut c, whereby the end flaps of the box interlap and lock.

No. 10,830. Improvements on Pantaloon Suspender. (*Perfectionnements aux bretelles de pantalons.*)
Henry Turner and William Turner, Montreal, Que., 18th January, 1880; for 5 years.

Claim.—1st. The combination of the two straps A A, crossed and secured together, with loops G H; 2nd. The combination of the straps A A pulley

I I L and cord M; 3rd. The combination of the straps A A, pulleys I I L, cord M and loops G H.

No. 10,831. Improvements on Files. (*Perfectionnements aux scier-papiers.*)
Wilber F. Dial and Lucius H. Packard, Montreal, Que., 18th January, 1880; for 5 years.

Claim.—1st. The combination of the tubes H with movable wires I; 2nd. The combination of the plate B having tubes H, with the wire F having ends I and spring K.

No. 10,832. Mechanism for Planing the Cogs of Bevel Gear Wheels. (*Machine à planer les dents des roues coniques.*)
George M. Holmes, Garbner, Me., U. S., 19th January, 1880; (extension of patent, No. 4,310,) for 5 years.

No. 10,833. Letter Post Marking and Postage Stamp Cancelling Machine. (*Machine à timbrer les lettres et maculer les timbres-poste.*)
Thomas Leavitt, Everett, Mass., U. S., 20th January, 1880; for 5 years.

Claim.—1st. The inclined chute, or hopper, in combination with the follower L, provided with a frictional surface, and the feed pawl; 2nd. In combination with a pair of printing cylinders, and a hopper arranged above said cylinders and having an inclined bottom, a vertical abutment at its lowest end and a throat through its bottom, two or more vertically arranged rods or wires q q and the two springs r r, said wires and springs being secured to the plate C; 3rd. The combination of the reciprocating cross-head N, the pivoted feed pawl P provided with one or more feed plates s or s₁ and the anti-friction roll t, the stand P₂ provided with the cam slot P₁, the toggle link u, rod u₁ and the springs w; 4th. The cylindrical ink fountain T, weighted upon one side and provided with one or more openings e₂ upon its opposite sides, in combination with the absorbent covering or envelope d₂; 5th. The combination of the cylindrical ink fountain T, weighted upon one side and provided with one or more openings e₂ upon the opposite side, the absorbent covering d₂, and eccentric journal a₂; 6th. In combination with a cylindrical ink fountain weighted upon one side and adapted to be revolved about an axis, by contact with the distributing or other roll, a loose cylinder or roll e₁ placed within said fountain; 7th. The combination of the cylindrical ink fountain T, eccentric journal a₂ and the pivoted adjustable stand v; 8th. The combination, with the type cylinder D provided with the circumferential groove d, of the mortised type-holder E or E₁, one or more type or type blocks set in said mortised holder, one or more set screws e e screwed into the flange d₁ of the cylinder D, to secure the type-holder, and a single set screw h passing freely through a smooth hole in said flange d₁, and screwed into the holder to secure the type blocks; 9th. The combination of levers J provided with one or more toothed feed plates, or surfaces at one end, and pivoted, at its other end, to the lever K, rocket shaft H, lever H₁, trucks d e, cams F G, levers I O, connecting rod L, and the spring l m.

No. 10,834. Process of Chlorinating ores. (*Procédé pour chlorer les minerais.*)
James H. Mears, Philadelphia, Penn., U. S., 20th January, 1880; for 5 years.

Claim.—Subjecting the ore, mixed with water in a strong air-tight vessel, while in a state of agitation, to chlorine gas under a greater pressure than that of the atmospheric pressure, so as to produce the pressure for the purpose of extracting the precious metals, in combination as chlorides in solution.

No. 10,835. Lacing Stud for Boots and Shoes. (*Bouton pour lacrer les chaussures.*)
Mellen Bray, Newton, Mass., U. S., 20th January, 1880; (Re-issue of Patent, No. 7,558).

Claim.—1st. A stud or hook having discs b b₁, the eccentric neck e made round, or nearly so, in cross section, and a shank for securing said hook to the shoe, or other material, all cut from a single piece of solid wire; 2nd. A

stud or hook having a tubular shank or body *a* closed at one end and provided with shoulder *c*, discs *b b'* and eccentric neck *e*, all made from a single piece of wire.

No. 10,836. Improvements on Fire-Escapes.
(*Perfectionnements aux sauveteurs d'incendie.*)

Charles Barlow, Cookshire, Que., 20th January, 1880; for 5 years.

Claim.—The combination of the cylinder *A* with the fluid or gas, the screw *a* with the steel rope *ax* and nut *B*, the case *C* with piston *J* and airtight head *F*, the valve *P* with stop rod *R*; also the scale *S* and packing box *K* with cap screw *H* and nut *L*.

No. 10,837. Improvements on Sash Cord Guides.
(*Perfectionnements aux guide-cordons des jalousies.*)

Edward H. N. Clarkon, Baltimore, Md., 20th January, 1880; for 5 years.

Claim.—A casing provided with a bevelled lower end and a perforated flange at the upper end.

No. 10,838. Improvements on Car Wheels.
(*Perfectionnements aux roues des wagons.*)

George W. Swett, Troy, N. Y., U. S., 20th January, 1880; for 15 years.

Claim.—1st. A cast metal car wheel having a single annular cavity *O* about its hub, and double plates united at *N* to form a single plate, the corrugations *A E B* on one side, and *A' S B'* on the other, the opposite diametrical curves being arranged in relation to each other; 2nd. The two plates inclosing the annular space and uniting at *N* to form a single plate, said plates being formed and arranged in relation to each other, in combination with the corrugations *H' C' C''*.

No. 10,839. Art of Manufacturing Horse-shoes.
(*Art de fabriquer les fers à cheval.*)

John B. White, Buffalo, N. Y., (Assignee of George Bryden, Hartford, Ct.), U. S., 20th January, 1880; for 5 years.

Claim.—1st. The process of hot bending bar iron to horseshoe shape and re-heating the same, then swaging the same in dies which impart the final shape in rough, the surplus metal escaping in a marginal fin, then removing said fin by means of trimming dies, then immediately re-swaging in the same or similar swaging dies without re-heating and finally, trimming and cold punching the forging; 2nd. The process of hot bending bar iron to horseshoe shape, and attaching steel oak blanks thereto, to be welded on at the swaging operation, then re-heating the same, then swaging the same in dies which impart the final shape in rough, the surplus metal escaping in a marginal fin, then removing said fin by means of trimming dies, then immediately re-swaging in the same or similar swaging dies without re-heating, and finally trimming and cold punching the forging.

No. 10,840. Improvements on Nut Locks.
(*Perfectionnements aux arrête-écrous.*)

Henry W. Stanton, Montreal, Que., 20th January, 1880; for 5 years.

Claim.—The washer plate *e* having those portions of the circular part which project past the outside of the nut bent or folded up against the sides of the nut.

No. 10,841. Improvements in Harvesting Machines.
(*Perfectionnements aux moissonneuses.*)

William N. Whiteley, Springfield, Ohio, U. S., 20th January, 1880; for 15 years.

Claim.—1st. The combination with the main frame and master wheel, of the tongue yoke *U* and tongue *T*, said yoke being hinged to the main frame; 2nd. The combination of the main frame provided with the quadrant bracket *v*, the hinged yoke *u* and connections, the adjusting and locking hand lever *v*₃ and the adjustable link *v*₅; 3rd. The tongue yoke *U* provided with a tongue socket, yoke arms, side seat wing, lugs and feet bars, all combined in a single piece of metal; 4th. The combination, with the main frame carrying the supporting bracket *h*, of the main shoe, said shoe and connections being coupled to said bracket and frame by a rolling hinge connection; 5th. The combination of the main frame provided with the slotted bracket *L*, adjusting lever *M* and link, with the tilting and retaining bar *J* and its connections, and the rolling hinge attachment of the main shoe to the main frame; 6th. The combination, with the main shoe having the rake mechanism mounted thereon and connected to the main frame by a rolling hinge joint at the heel of the cutting apparatus, of an adjusting and tilting hand lever mounted on the main frame and connected to said shoe, for the purpose of giving a tilting motion to the cutting apparatus and rakes, in order that they may be dropped down to pick up lodged and tangled grain; 7th. The combination of the driving and supporting master wheel mounted on the frame of machine, and having the oscillating differential gear arranged upon the outer side of machine, and the rake driving mechanism mounted on the inner side of master wheel, the cutting apparatus and rake gear connected to the main frame of machine, by a rolling hinged joint at the heel of the cutting apparatus, and at the front end by a tilting bar and adjustable hand lever; 8th. A single wheel harvesting machine having a hinged joint at the heel of the cutting apparatus, so arranged that while it holds the machine rigid between the cutting apparatus and master wheel (to retain said wheel in a vertical position) it shall yet, at the same time, permit the cutting apparatus and rake mechanism to be rolled, or rocked in the line of the length of the cutting apparatus, by means of a tilting hand lever; 9th. The differential oscillating gear mounted upon the master wheel axle or hub and connected to the main frame, in combination with the rolling blinged joint connecting apparatus to the main frame; 10th. The combination, with the main shoe *J* provided with the lugs *n* and sockets *J*₁, of the rake head standard provided with the spreading legs *N*; 11th. The combination of the tilting lever *M* provided with the extension arm *w*₃, link and chain tightener *O*, with the rake head driving chain.

No. 10,842. Improvements on Railway Tanks.
(*Perfectionnements aux puits des chemins de fer.*)

John D. Craig, Vincennes, Ind., U. S., 20th January, 1880; for 5 years.

Claim.—1st. The goose-neck pipe *B* passing up through the bottom of the tank, with the horizontally fitted valve and a valve stem passing through the side of pipe *B*; 2nd. The hollow perforated valve stem *D* passed through the side of the tank and through the outlet pipe *B*, in combination with the conical valve *E* and pipe *B* formed with a valve seat, whereby air is admitted at the upper end of the outlet pipe; 3rd. In combination with the valve stem *D*, the tube *C* extending through the side of the tank to the socket *c* and enclosing the valve stem; 4th. The pivoted collar *k*, in yoke *F* of lever *G*, in combination with lever *G* and valve stem *D*; 5th. In combination with tube *C* and stem *D*, the stuffing box *c*, gland *a* and screw cap *b*; 6th. The hinged link *m* and collar *n*, combined with the pipe *B* and its extension, whereby the extension is capable of both vertical and horizontal movement; 7th. In combination with the swinging extension *H*, the chain *z* attached to *H*, passing over pulley *p* and provided with weights *q*.

No. 10,843. Water Wheel.
(*Roue hydraulique.*)

Charles H. Parker, Robinson, Que., 20th January, 1880; (Extension of Patent No. 4,366), for 5 years.

No. 10,844. Process for Smelting and Reducing Iron Ores.
(*Procédé pour fondre et réduire les minerais de fer.*)

David Adams, Cleveland, Ohio, U. S., 20th January, 1880; for 5 years.

Claim.—1st. The process for smelting and reducing iron ores; 2nd. The use of a composition or paint composed of ground or pulverized ores, carbons and moist; 3rd. The use of crude petroleum or like oils; 4th. The grinding or pulverizing of iron ore to be mixed with substances, for the purpose of supplying carbon for reducing the ore to steel; 5th. The mixing of the ground ore intimately with the composition and a solution of lime to be moulded into slabs or blooms; 6th. The dipping of slabs or blooms into a solution of lime and carbonaceous matter.

No. 10,845. Grain Door for Freight Cars.
(*Porte pour les wagons à grain.*)

Dennis F. Van Liew, Aurora, Ill., U. S., 20th January, 1880, (Extension of Patent No. 4,354), for 5 years.

No. 10,846. Grain Door for Freight Cars.
(*Porte pour les wagons à grain.*)

Dennis F. Van Liew, Aurora, Ill., U. S., 21st January, 1880; (Extension of Patent No. 4,354), for 5 years.

No. 10,847. Improvements on Grain Sowers.
(*Perfectionnements aux semoirs à grain.*)

James S. Bogle, Springfield, Ohio, U. S., 21st January, 1880; for 5 years.

Claim.—1st. The distributor casing provided with the flanges through which it is secured to the hopper, in combination with the retaining bracket or hanger; 2nd. The casing plate and its retaining bracket or hanger provided with bearings for the rock shaft, by which the feed gauges are adjusted; 3rd. The distributor casing provided with the round guards projecting laterally in front and in rear of the discharge outlet; 4th. The gears inter-transported, whereby the speed of the distributor shaft can be changed without the aid of extra gears, change of centres, or any adjustment of parts; 5th. The lifting lever in combination with the gears connecting it with the lifting roller, whereby a backward thrust of the lever is made to rock the lifting roller upward and forward; 6th. The lifting roller made to move past its pivotal centre adapting it to sustain the hoos raised out of the ground, without the aid of catch or pawl; 7th. The gear lever provided with the irregular slot or yoke, in combination with the irregular cam for actuating said lever; 8th. The irregular cam actuating the gear lever, made adjustable on its shaft for regulating the throw of said lever; 9th. The irregular cam actuating the gear lever connected with the lifting roller shaft, by the clutch sleeve or trunnion and through bolt adapting it to be adjusted relatively to the throw of said shaft; 10th. The lifting roller shaft, in combination with an adjustable actuating gear for regulating or adjusting the throw of the lifting lever; 11th. The tube top or funnel, in combination with the flat spring having eyes or perforations at both ends, for attaching it to horns or lugs on the distributor casing; 12th. The pivoted angle board forming the grass seed distributor, whereby, by a slight rocking movement, it is adapted to deposit the seed, either in front or in rear of the drill teeth; 13th. The pivoted angle board or grass seed distributor, in combination with the spring pawl or catch for holding said board.

No. 10,848. Improvements on Plough Coulters.
(*Perfectionnements aux coutres des charrues.*)

Joseph Lane, Chicago, Ill., U. S., 21st January, 1880; for 5 years.

Claim.—1st. In combination with a concave rolling coulters *B*, or its equivalent, a scraper *E*; 2nd. A concave rolling coulters *B*, or its equivalent, having for its axis a spindle *D*, supported by the standard *A* and brace *C*, in combination with the scraper *E*; 3rd. A concave steel disc *a*, in combination with the spider *b* having a deep hub *d* to form a broad bearing on the spindle *D*.

No. 10,849. Improvements on Oatmeal Machines.
(*Perfectionnements aux machines à gruau d'avoine.*)

John Quayle, (Assignee of George W. Severance), Ravenna, Ohio, U. S., 21st January, 1880; for 5 years.

Claim.—1st. The stationary wheel *s* having one or more rings *f* and hub with perpendicular notched flanges *s'*, in combination with the rotating

Wheel *g*, having one or more rings *z* with circular unnotched sides to turn in contact with flanges *s*; and carrying the series of radial knives *c*, the sides of rings *z* being converging down to the flanges; 2nd. The rotating wheel *g*, having the circular unnotched rim or ring *z* with the agitator *c* attached to its top, and the radial knives *c* to its base, in combination with the stationary wheel *o* having the rim or ring *f* and hub with notched flanges *s*.

No. 10,850. Improvements on Lamps. (*Perfectionnements aux lampes.*)

Henry E. Shaffer, (Assignee of Charles F. Spencer), Rochester, N. Y., U. S., 21st January, 1880; for 5 years.

Claim.—The standard A provided with the socket *a*, situated at right angles to each other, and the front *c*, provided with the stem *d* adapted to fit in either of said sockets or holes.

No. 10,851. Improvement on Lamps. (*Perfectionnements aux lampes.*)

Henry E. Shaffer, (Assignee of Charles F. Spencer), Rochester, N. Y., U. S., 21st January, 1880; for 5 years.

Claim.—1st. The base A, the fount C and the standard B, the standard being made in two sections hinged or jointed together, one section being a permanent attachment of the base and the other of the fount, and provided with a locking attachment which enables the lamp to be stiffened for use, either as a stand or bracket lamp; 2nd. The combination, with the standard B made in two sections, of the hinge or joint uniting said sections consisting of the bar D provided with slot *b* attached to the upper section, the pin *d* attached to the lower section passing through said slot, and the slot *f* in the lower section; 3rd. The combination, with the standard B made in two sections of the drip cup *k* surrounding the upper section.

No. 10,852. Improvements in Car Brakes. (*Perfectionnements aux freins des wagons.*)

George Smith, Stratford, Ont., 21st January, 1880; for 5 years.

Claim.—1st. A lever pivoted on the bottom of a car and operated by a rope G, in combination with a rope H passing over friction pulleys *b* and connected to the brake levers I and J; 2nd. The plates A B C, pulleys *a*, *b*, bolts *d* forming a lever and pivoted, on the pins *f*, to the plate D and bracket E, in combination with the continuous rope H; 3rd. A lever pivoted on the bottom of a car and connected to the brake levers I and J, in combination with a continuous rope H passing over friction pulleys K; 4th. A lever pivoted on the bottom of a car and connected to the brake rod E; in combination with a continuous rope H.

No. 10,853. Improvements on Telephones. (*Perfectionnements aux téléphones.*)

George L. Anders, Boston, Mass., U. S., 21st January, 1880; for 5 years.

Claim.—1st. In an electric circuit, two signal bells, each provided with an electric magnet and with a polarized armature, controlling the action of its bell hammer, and the armature of one bell responding only to a current in one direction, and the armature of the other bell responding only to a current in the opposite direction, so that either bell may be rung without ringing the other according to the direction of the current; 2nd. In an electric circuit, two signal bells, each provided with an electro-magnet and with a biased polarized armature operating its bell hammer, the bias of one armature being opposite to the bias of the other armature; 3rd. In an electric circuit, two signal bells provided with electro-magnets, with oppositely biased polarized armatures operating the bell hammers combined with a third signal bell having a polarized armature free to respond to currents of either polarity; 4th. In an electric circuit, the combination of two signal bells, each having an electro-magnet, a bias polarized armature operating the bell hammer, a magneto induction device to signal the central office, and means for removing the bias spring from the armature of one of the signal bells; 5th. In an electric circuit, one or more signal bells having biased polarized armature operating the bell hammer, with another signal bell having a free polarized armature and a magneto-induction device to signal the central office.

No. 10,854. Improvements on Clothes Wringers. (*Perfectionnements aux essoreuses a linge.*)

Joseph W. Galef, North Easton, Mass., U. S., and Austin D. Cable, Montreal, Que., 21st January, 1880; for 5 years.

Claim.—1st. The bolt H with head K passing through a round hollow D, or of any other suitable shape; 2nd. A metal spiral spring I, or of any other shape, tightened or loosened by a thumb screw G; 3rd. A pinion F passing through the head K of the bolt H, and also through the lever itself; 4th. A support L, metallic or of any other suitable material; 5th. A lever M having the lion shape, or of any other suitable shape; 6th. The whole combined.

No. 10,855. Improvements in Commodes. (*Perfectionnements aux latrines à terre sèche.*)

John W. Sprint, Millwood, Va., U. S., 21st January, 1880; for 5 years.

Claim.—1st. The combination of a commode box, a receiving receptacle therein provided with a valve to close its opening and be removed therewith and a lever detachably connected to the valve for operating the same. 2nd. The combination of a box A, the lever J, the slide H and the valve F detachably secured thereto; 3rd. The combination of the box A, the lever J, the slide H and the ledge O.

No. 10,856. Improvements in Furnace Regulators. (*Perfectionnements aux régulateurs des calorifères.*)

Charles H. White, Malden, and Benjamin Woodward, Watertown, Mass., U. S., 21st January, 1880; for 5 years.

Claim.—1st. The vertical air flue or chimney in combination with the more expandable rod or rods *b*; 2nd. The combination of the differential

expansion members arranged vertically in the air-heating space, with their lower ends in the cold air or base of the column and extending upward through the heated air; 3rd. A differential metallic expansion furnace regulating device, the partly cylindrical construction of the regulating valve pivoted at or near the semi-circumference of the smoke pipe; 4th. The graduated arm J in immediate connection with the regulating air valve of a furnace regulator; 5th. The regulating air valve of a furnace regulator having its pivots or journals outside of the smoke flue; 6th. The looped rod *b*, *c*, in combination with the less expandable differential member and compound levers of a furnace regulator; 7th. The combination of the chimney *a*, rod or rods *b*, *c*, lever *d*, lever *e*, rod *f*, or equivalent, lever arm J and valve *m*; 8th. The combination of the chimney *a*, rod or rods *b* *c* operating valve *m*, with the space *n* having branch pipe *n*; 9th. The branch cold air jacket *z*, in combination with the smoke flue *g*, regulating pipe *n*.

No. 10,857. Improvements on Audiphones. (*Perfectionnements aux audiphones.*)

Richard S. Rhodes, Chicago, Ill., U. S., 22nd January, 1880; for 15 years.

Claim.—1st. As an improvement in the art of enabling persons of defective hearing to distinguish sounds through the upper teeth, the application of a sonorous plate strained to be responsive to sound waves; 2nd. The plate *a* in combination with one or more straining cords; 3rd. A vibrating sonorous plate capable of being strained to be responsive to sound waves, and adapted to be held by the hand and to communicate sound by contact with the teeth; 4th. The combination of two or more sonorous plates adapted to be strained for the purpose of transmitting sound waves through the teeth; 5th. Two or more sonorous plates secured, at one end only, in a fixed position, and prevented from coming in contact with each other at their outer ends, in combination with one or more suitable straining cords.

No. 10,858. Improvements on Railway Switches. (*Perfectionnements aux aiguilles des chemins de fer.*)

Conzao S. Bastright, Lebanon, N. H., U. S., 22nd January, 1880; for 5 years.

Claim.—1st. The combination of the three armed lever F, the two connecting rods I, the two three armed levers J, the bent bars K, the notched cross bar E, the catch bar H and the switch bar L with the main and switch rails B D of a track; 2nd. The combination of the sliding bar M, spring N, the two three armed levers P R and the two connecting rods O Q with the bent bar K.

No. 10,859. Device for Fastening Carpets. (*Appareil pour assujétir les tapis.*)

William Bray, Petitcodiac, N. B., 22d January, 1880; for 5 years.

Claim.—The combination, with the rods *a* and eye screws *b*, of the spring catches *c*.

No. 10,860. Improvements on Horse Collars. (*Perfectionnements aux colliers de cheval.*)

Archibald McCorvie, Lucknow, Ont., 22nd January, 1880, for 5 years.

Claim.—1st. Sections A A, attachably connected, composed of a solid frame B of wood or other suitable material, a stuffed lining C secured thereto on the inner face and a metallic plate D secured to the outer face of the frame B, for attachment of the draft tugs; 2nd. The metallic plates D, to form the outer face of the collar, provided with draft clevis E and a stuffed lining C.

No. 10,861. Improvements on Pleasure Swings. (*Perfectionnements aux balançoires.*)

William F. Phillips, Watford, Ont., 22nd January, 1880; for 5 years.

Claim.—The upright A, cross bars F and cap B, in combination with the pendulums C and basket D, the whole combined.

No. 10,862. Improvements on Reins. (*Perfectionnements aux rênes.*)

Hazael B. Powell, Napoleon, Ohio, U. S., 22nd January, 1880; for 5 years.

Claim.—A frame A, tongue B and concave plate C.

No. 10,863. Machine for Grinding Mower Knives. (*Machine à grindre les couteaux des faucheuses.*)

John W. Elliott, Toronto, Ont., 22nd January, 1880, for 5 years.

Claim.—1st. The arms E hinged to the frame A and supporting the head plate F, swivel frame G and knife clamp I operated in connection with an emery wheel; 2nd. The swivel frame G pivoted upon the head plate F and supporting the knife clamp I; 3rd. The knife clamp I sliding on the horizontal bar H and supporting the knife K; 4th. The washer I hollowed out to receive the nut *h* and provided with wings *z* in combination with the nut *h*.

No. 10,864. Salve for the Curing of Sores. (*Onguent pour guérir les plaies.*)

Julye Myers, Boston, Mass., U. S., 22nd January, 1880; for 5 years.

Claim.—A compound of iodine, turpentine, camphor, glycerine, olive oil, soap, beeswax, shoemaker's wax and lard.

No. 10,865. Process of Purifying Gas. (*Procédé pour l'épuration du gaz.*)

Orazio Lugo, Flushing, and William T. Lees, Brooklyn, N. Y., U. S., 22nd January, 1880; for 5 years.

Claim.—1st. The process of converting the sulphur contained in crude gas into soluble sulphur compounds, for removal, which consists in heating

the crude gas by itself, between the place of its generation and the washer: 2nd. The process of converting the sulphur, or sulphur compounds contained therein, into soluble compounds of sulphur readily removable from the gas, which consists in introducing into the gas, a gas, vapour or vaporizable substance which will form, with the sulphur of the gas, soluble sulphur compounds upon the application of heat and then heating the mixture; 3rd. The process of purifying illuminating gas, freeing it from sulphur and ammonia, which consists in introducing into the gas, a gas or vapour, such as air or caustic ammonia, which will form, with the sulphur of the gas, soluble sulphur compounds, heating the mixture and then washing as set forth.

No. 10,866. Method and Machinery for Manufacturing Cheese. (*Méthode de fabrication du fromage et appareil pour cet objet.*)

Archibald H. Brintnell, Belleville, Ont., 22nd January, 1880; for 5 years.

Claim.—1st. The combination, with the curd vat or vats, in the process of cheese making, of rotating, travelling or reciprocating agitators, said agitators being adjustable, removable and operated by machinery; 2nd. The combination with the vat agitator shafts C₁, of the frame C connecting bar C₅, pulley C₂ C₃ and belt C₄; 3rd. The combination, with the frame C and mechanism connected thereto, of the bevel wheels F₂ F₃, shafts F₄ F₅, gearing F₁ and the main line shaft E; 4th. In combination with the shaft E, counter shaft F, frame F₅ and mechanism for operating the agitators, the slotted wedge f, or its equivalent; 5th. The circular curd sink B provided with the well B₁ and strainer B₂; 6th. The combination, with the sink B with well and strainer, of the rotating agitators J; 7th. A rotating agitator J provided with the arms J₁ and detachable teeth K having spurs k; 8th. The combination of curd vats provided with mechanical agitators and circular sinks provided with agitators, said vat and sink mechanisms being connected and operated from a line shaft, so that the agitators may be worked intermittently, independently or collectively.

No. 10,867. Improvements on Feed Water Heaters. (*Perfectionnements aux Chauffeurs de l'eau d'alimentation.*)

William Baragwanath, Chicago, Ill., U. S., 22nd January, 1880; for 15 years.

Claim.—1st. The hand plate g in combination with the cap opening j, j, pipe space b and cases or cylinders A B; 2nd. The combination of the case A, case or cylinder B having one or more pipes or flues, with the lower steam chamber and the steam pipes D C, both located and operating at or near the bottom; 3rd. The combination of the heater B and water pipes E F, with the case A, flues a a and pipes C D arranged to force the steam up through the pipes, and around between the cases; 4th. The combination of the heater B with an outer case or jacket and a scum chamber; 5th. The scum chamber H in combination with the water cylinder B, for removing the scum from the upper part of the heater; 6th. The combination of the scum chamber H, water cylinder B, connecting pipe G, flow off pipe M, for removing the lighter impurities; 7th. The combination of the scum chamber H, water cylinder B, pipe G connecting the scum chamber and water cylinder, and blow off pipe L, for removing the heavy sediment from the bottom of the scum chamber.

No. 10,868. Improvements in Gates. (*Perfectionnements aux barrières.*)

William J. Watson (Assignee of Alexander Nicol), Ayrton, Ont., 22nd January, 1880; for 5 years.

Claim.—1st. The combination of the rocking standards e f and the suspension bars or rods g h, with the horizontal beam d and diagonal brace i.

No. 10,869. Improvements on Mowing and Reaping Machines. (*Perfectionnements aux faucheuses-moissonneuses.*)

Daniel B. Campbell, Palisade, Nev., U. S., 22nd January, 1880; for 5 years.

Claim.—1st. As an improvement in means for operating the cutter bars of reaping and mowing machines, the roller A formed with the continuous spiral groove a, and fitted to give motion to the cutter bar, by means of a lever; 2nd. The spirally grooved roller A, lever b and cutter bar d; 3rd. The spirally grooved roller A fitted on the main axle and the lever b fulcrumed on the frame of the machine, combined for operation together and with the cutter bar.

No. 10,870. Sash Support and Lock. (*Support arrête-croisée.*)

Addison Richardson, Port Perry, Ont., 22nd January, 1880; for 5 years.

Claim.—1st. The use and application of the ratchet F formed with a weight on the short arm k; 2nd. The stop E in connection with the ratchet F.

No. 10,871. Improvements on Stove Castors. (*Perfectionnements aux roulettes de poêles.*)

James M. Harper, El Paso, Ill., U. S., 22nd January, 1880; for 5 years.

Claim.—1st. The portable cup-castor consisting of the cup A adapted to receive the foot of a stove or other like leg, the said cup having the radial arms A₁ and rollers B.

No. 10,872. Improvements on Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

John J. Cobb, Grand Rapids, Mich., U. S., 22nd January, 1880; for 5 years.

Claim.—1st. A single perpendicular coil D formed near the centre of a bar or rod of steel, the two projecting ends of which, extending in the same direction from upper arm H, (the end of which is shaped at angle G into rest F for the box seat, &c.) and lower arm E longer than arm H and bent, near the end, to a perpendicular elbow C and, upon the end, having eyes or ears B; 2nd. A single perpendicular coil D having upper arm H with angle G

and rest F; also having arm E with elbow C and eyes or ears B, in combination with clip ties A.

No. 10,873. Improvements in Broom Handles.

(*Perfectionnements aux manches des balais.*)

David A. Scott, Boston, Mass., U. S., 22nd January, 1880; for 5 years.

Claim.—1st. The expansive broom stock holder A, with its female screw b arranged to extend within it, from its rear end, a portion only of the length of the bore of the said holder, or to, or about to the axis a of the holder, in combination with the handle B having the male screw c, the unthreaded cylindrical extension d and the cone or frustum e.

No. 10,874. Improvements on Hay Loading Machines. (*Perfectionnements aux machines à charger le foin.*)

Simeon B. Castle, Syracuse, N. Y., U. S., 22nd January, 1880; for 5 years.

Claim.—1st. The combination of the frame A; guard rail A₁ and the plate F, the latter provided with slots f; 2nd. The carrier frame E in combination with the link B provide l with sleeve C, the roller R and bolt d; 3rd. In combination with the frame A, guide rails A₁ and pivoted carrier frame E having flexible rake teeth e, the rod b connecting the guide rails, and the inclined platform H attached to the upper part of the frame; 4th. The rake tooth e when formed of sheet metal and with a gradually tapering width.

No. 10,875. Improvements on Pipe Couplings.

(*Perfectionnements aux manchons des tuyaux.*)

William J. Stevens, New York, U. S., 22nd January, 1880; for 5 years.

Claim.—1st. A coupling, the two parts of which correspond in shape, each being half male and half female and are each provided with a cylindrical socket, a partly tubular extension adapted to enter the cylindrical socket of the other part, a ball valve and a pocket or cavity for the reception of such valve when the latter is open; 2nd. The combination, with a coupling composed of the two parts A corresponding in shape with each other, each furnished with a ball valve E and provided with a pocket or cavity F, of a semi-tubular stop G made separate from and extending from each of said parts, and adapted to be inserted within the other of said parts, whereby the said valves are retained in said pockets or cavities and the parts of the coupling prevented from turning independently of each other.

No. 10,876. Improvements in Telephones.

(*Perfectionnements aux téléphones.*)

Frank Shaw, New York, U. S., 22nd January, 1880; for 5 years.

Claim.—1st. The signal wire W extending to a series of subscriber stations, in combination with direct private wires W₁, each extending to one or more subscriber stations; 2nd. Placing a receiving operator at the central office end of a signal wire, common to a series of subscriber stations, to repeat the directions received by telephone to a switch board operator who, thereupon, connects the two private wires of the two subscribers between whom communications are to pass; 3rd. The signal wires W W of two or more central offices or stations and the private wires W₁ of the same offices, or stations, connected by the intermediate wire A₁ A₂ or A₃; 4th. The signal wires W, the private wires W₁, the receiving instruments R, the receiving instruments C, the switch devices S, the central switch board S₁, the connecting ends E and bar B; 5th. The switch S, in combination with the call wire W and private wire W₁; 6th. The designation of subscribers by numbers to be announced between the subscribers and the central office, to indicate the connections desired, and between subscribers to call and identify the parties with whom conversation is to be had.

No. 10,877. Improvements on Incubators.

(*Perfectionnements aux fours d'incubation.*)

Harris W. Oxford, Chicago, Ill., U. S., 22nd January, 1880; for 5 years.

Claim.—1st. The incubating oven, composed of straw board or like material, with a perforated bottom; 2nd. An incubating oven provided with a perforated bottom C and turn table F; 3rd. An incubating oven provided with a perforated bottom C, turn table F and trays H, and curtains J suspended over the inside of the door way; 4th. The combination of the incubating oven constructed with the heater K, flame chamber W, cold air chamber N and smoke flue R; 5th. The electro-thermostat provided with regulating screw l and screw P, with the wires L₁ M₁ P₁, in combination with the incubating oven and the heater; 6th. The combination of an incubating oven with heater K and lamp generator consisting of reservoir A₁, stop cock C₁, cup E₁, pipe D and heat Q.

No. 10,878. Mode of Raising Bodies in Water or Air and Apparatus therefor.

(*Mode d'élever les corps dans l'eau ou l'air et appareil pour cet objet.*)

Wilhelm Raydt, Hanover, Germany, 26th January, 1880; for 5 years.

Claim.—1st. The raising of bodies in water and air by balloons filled with gas kept in a condensed state in portable or other reservoirs, and the recovery of said gas, or some of it after use, by pumping it back into the reservoir; 2nd. The connection c between the reservoir containing the condensed gas and the balloon to be filled; 3rd. The connection between the reservoir and balloon together with the perforated tube b and the plates a a; 4th. The air valves in plate a; 5th. The auxiliary connection g for filling the reservoir with liquid gas, together with the screw attachment to screw on a pressure gauge; 6th. In the inflated balloon, the communication of all the carrying straps p connected to the metal ring l, the rods m, together with the shackle n.

No. 10,879. Improvements on Window Screens. (*Perfectionnements aux écrans des fenêtres.*)

George Hartig, Brixton, Eng., 26th January, 1880; for 5 years.

Claim.—1st. In combination with the extension screen composed of the pivoted slats and provided with the rigid end bars respectively; 2nd. The

combination of the elastic bands arranged at each side of said screens, and having their opposite ends secured to said rigid end bars respectively; 3rd. The elastic extensible screen having the rigid end bars provided with the recesses covered by the slotted plates adapted to engage with T-headed studs.

No. 10,880. Improvements on Fog Horns.

(*Perfectionnements aux signaux de brume.*)

Adolph Jaeger, Bremerhaven, Germany, 26th January, 1880; for 5 years.

Claim.—1st. A fog horn operated by means of steam generated by the heat of a galley stove, or range, of a vessel; 2nd. The resonant diaphragm in combination with the sound producing device.

No. 10,881. Improvements in Gates. (*Perfectionnements aux barrières.*)

John S. Henshaw, Goshen, Ky., U. S., 26th January, 1880; for 5 years.

Claim.—1st. The combination, with a swinging gate, of the cords *l* or *m*, or both, extending through guiding eyes in fixed posts, in advance of the gate on one side thereof, to the opposite side of the gate, where the said cord or cords extend downwardly to and connect with the upper front corner of the gate, together with the loose playing upper hinge *s* *t* and inclined interlocking lower hinge *a* *e*; 2nd. The combination, with a swinging gate, of the movable latch *g*, operating lever *k* and connection *i*, with the actuating cords *l* or *m*, or both, connecting with said lever in a downwardly inclined direction from the supporting posts.

No. 10,882. Improvements on Grain Weighing and Registering Machines.

(*Perfectionnements aux peseurs-compteurs à grain.*)

William H. Allen, New York, U. S., 26th January, 1880; for 5 years.

Claim.—1st. The oscillating box *M* made with a stationary partition *N* and hinged bottom valves *O*, in combination with the stationary rods *P*, so that the machine may be adjusted to receive and discharge grain by the oscillations of the said box *M*; 2nd. The combination, with the frames or bars *J* carrying the box *M*, of the rods *P* and hinged bottom valves *O*, so that the said bottom valves may be locked and unlocked by the oscillations of the box *M*.

No. 10,883. Improvements in Bending and Shaping Machines. (*Perfectionnements aux machines à plier et former.*)

John B. Armstrong, (Assignee of Augustus R. Woodyatt), Guelph, Ont., 26th January, 1880; for 5 years.

Claim.—1st. The combination of an intermittently moving head provided with wipers, with a bed plate provided with pivoted and fixed bending and shaping blocks; 2nd. A slotted bed plate provided with pivoted and fixed blocks and a movable head provided with wipers, said slot and blocks being formed to correspond with the shape of the article to be produced, and adapted, in connection with said wipers, to bend and shape blanks; 3rd. The moving head *E* provided with the stud pins *e*, in combination with the bed plate provided with the slot *B*, said pins and slot being shaped to correspond to the form of the article produced in the machine; 4th. In combination with the pivoted bending and shaping blocks and the bed plate of machine, the springs *G*.

No. 10,884. Improvements on Waggon Gears.

(*Perfectionnements aux trains des wagons.*)

Benjamin C. Shaw and John V. Cook, Indianapolis, Ind., U. S., 26th January, 1880; for 10 years.

Claim.—1st. The metallic block *E* provided with side flanges *X X* and a central downward projecting part *E*₂ having a round hole *E*₃ extending through the same longitudinally from end to end; 2nd. The metallic block *F*, provided with side flanges *X X*, and a central downward projecting part *E*₁, having a round hole *E*₃ extending through the same longitudinally, from end to end, combined with the round rod *F* and bar *H*.

No. 10,885. Improvements on Middlings Purifiers. (*Perfectionnements aux épurateurs des gruaux.*)

John Russell and George P. Funkhouser, Plattsburgh, Mo., U. S., 28th January, 1880; for 5 years.

Claim.—1st. A middlings purifier adapted to be operated without a fan, the same consisting in combination with a frame provided with sieves placed one above the other and devices which support the frame in the open atmosphere, of means which vibrate said sieve frame longitudinally, and automatic valve mechanism which control the currents of air passing lengthwise through said sieve frame; 2nd. The combination, with a series of sieves and springs which support them in the open atmosphere, of actuating mechanism which shakes the sieves longitudinally, and valve mechanism which regulates the air current thus produced through the machine; 3rd. The combination, with the sieves and the inclines located beneath their head ends, of the valve openings provided with automatic inwardly opening valves and respectively registering with the air passages formed by said incline; 4th. The combination, with the sieves, inclines and valve openings provided with valves, of the doors which permit more or less air to enter such valve openings, and adjusting mechanism which maintains said doors in desired position; 5th. The combination, with the swinging or reciprocating frame upheld or supported by suitable springs and having the hanger attached thereto, of the rotary adjustable face plate provided with means for its adjustable adjustment to the pitman; 6th. The combination, with the swinging or reciprocating frame and the hanger secured thereto in a laterally adjustable manner, of the rotary adjustable face plate pivoted to the hanger, said face plate provided with one or more perforated lugs and set screws for securing the face plate to the pitman in any desired longitudinal adjustment; 7th. The combination, with the swinging or reciprocating frame or receptacle upheld or supported by suitable springs and having the hanger attached thereto, of the pivoted face plate provided with arc-shaped slots

and set-screws or clamps, for securing said face plate in any desired rotary adjustment, said face plate also provided with perforated lugs and set screws, for securing the plate to the pitman in any desired longitudinal adjustment.

No. 10,886. Improvements on Pulp Machines.

(*Perfectionnements aux machines à pâte à papier.*)

Robert B. McPherson, (Assignee of William H. Howell), Thorold, Ont., 28th January, 1880; for 5 years.

Claim.—1st. The combination of the stones *B E*, the hopper *C*, feed water pipes *D D*, gear *I*, spindle *F* and bearing *J*; 2nd. The combination of the stones *B E*, the hopper *C*, feed water pipes *D D*, gear *I*, spindle *F*, bearing *J* and the feed *K*.

No. 10,887. Improvements on Valves. (*Perfectionnements aux soupapes.*)

Benjamin N. Stuart and George A. Fuxbury, (Assignees of James W. Gear), Haverhill, Mass., U. S., 28th January, 1880; for 5 years.

Claim.—1st. The chamber *A* having inlet *B* and outlets *C*, in combination with the screw threaded valve stem *D* having annular shoulder *d*, headed screw *d* and removable conical sleeve *D*.

No. 10,888. Process for Manufacturing and Purifying Sulphate of Alumina and Alum. (*Procédé pour fabriquer et purifier le sulfate d'alumine et l'alun.*)

William Chadwick, Thomas Chadwick and James Chadwick, Manchester, and Josiah W. Kynaston, Liverpool, Eng., 28th January, 1880; for 5 years.

Claim.—1st. The use of arsenious or oxalic acid in the manufacture of sulphate of alumina or alum from minerals containing iron, so as to obtain a product nearly pure from iron; 2nd. The process of making sulphate of alumina or alum cake commercially pure, namely, treating bauxite, or other alumina or hydrate of alumina soluble in sulphuric acid, with sulphuric acid and arsenious acid neutralizing with carbonate of lime until the iron is precipitated, and then separating the arsenic by sulphurated hydrogen; 3rd. The mode of separating iron from alum, or sulphate of alumina in solution, by treating the solution with arsenious acid neutralizing the carbonate of lime until the iron is precipitated, and then precipitating the remaining arsenic by sulphurated hydrogen; 4th. The process of making chemically pure sulphate of alumina, or alum cake, by treating bauxite, or other alumina or hydrate of alumina soluble in sulphuric acid, with sulphuric acid and arsenious acid neutralizing with carbonate of lime until most of the iron is precipitated, and then treating with ferrocyanide of calcium and sulphurated hydrogen successively; 5th. The purification of alum, or sulphate of alumina, from iron, by treating the aluminous solution with arsenious acid, carbonate of lime, ferrocyanide of calcium and sulphurated hydrogen successively; 6th. In the manufacture or purification of sulphate of alumina, alum cake or alum, the use of arsenious acid and carbonate of lime, conjointly, for the purification of iron; 7th. The mode of regenerating the ferrocyanide of calcium from the precipitate, for fresh use, by boiling the Prussian blue precipitate with milk of lime and separating the precipitated matter; 8th. The mode of purifying bauxite, hydrated alumina and other aluminous materials by means of oxalic acid and sufficient hydro-chloric acid, to neutralize the lime for the purpose of making sulphate of alumina or alum.

No. 10,889. Improvement in Portable Engines. (*Perfectionnements aux machines portatives.*)

Jonathan Hall and Cleon M. Lane, Keene, N. H., U. S., 28th January, 1880; for 5 years.

Claim.—The combination of the standards *A D*, journals *a b*, axle *c*, crank *d*, connecting rod *e* and cylinder *B* and guard *C*.

No. 10,890. Improvements in Portable Boilers. (*Perfectionnements aux chaudières portatives.*)

Jonathan Hall and Cleon M. Lane, Keene, N. H., U. S., 28th January, 1880; for 5 years.

Claim.—The combination of the fire-box *A*, the front *b*, back rest *C*, side connections *i*, smoke stack base *D* and cradle *E* with the steam boiler *B*.

No. 10,891. Improvements on Lawn Rakes.

(*Perfectionnements aux râteaux à gazon.*)

Theodore D. Davis, Syracuse, N. Y., U. S., (Assignee of Joseph R. Smith, Brockville, Ont.), 31st January, 1880; for 5 years.

Claim.—1st. In combination with the rake head composed of two or more pieces, the teeth *B* and the fastening devices for clamping the teeth and the extensions thereof in the rake head, and the handle *D* extending over the hood; 2nd. A series of teeth formed of a single piece of wire; 3rd. The end *E* serving as a runner and guard; 4th. The teeth *B* and projections or extensions forming hood *C* made of a single piece of wire; 5th. The combination of teeth *B*, guards and runners *E* and hood *C*; 6th. In combination with head *A*, a wire tooth, bent, tapering to an oval point, and the extension thereof above the rake head.

No. 10,892. Improvements in Archery. (*Perfectionnements dans la fabrication des arcs.*)

George L. Thorne, Buffalo, (Assignee of William H. Wright, Rochester), N. Y., U. S., 31st January, 1880; for 5 years.

Claim.—1st. A separable bow consisting of a centre piece and two spring pieces removably affixed to said centre piece; 2nd. The separable bow consisting of the metallic centre piece *A* having an opening for the passage of the arrow, and the detachable spring pieces *C*; 3rd. In an archery bow,

a centre piece having a guide for the arrow; 4th. In an archery bow, a centre piece consisting of an annular ring having the guide bars D; 5th. In an archery bow, a metallic centre piece having the annular ring provided with the guides D, arranged in the shape of the letter X and the sockets B; 6th. In an arrow, wings composed of hair cloth; 7th. An arrow having its tail end split for the reception of the wings; 8th. In an arrow, the wings H constructed of hair cloth having the warp removed to present the horse hair at right angles to the centre line of said arrow; 9th. An arrow having its point weighted and rein forced by a rod inserted into the end of the said arrow point.

No. 10,893. Improvements on Mowing Machines. (*Perfectionnements aux faucheuses.*)

Alanson Harris, John Harris, James K. Osborne and Lyman M. Jones, Brantford, Ont., (Assignees of James H. Jones and Ralph Emerson, Rockford, Ill., U. S.,) 31st January, 1880; for 5 years.

Claim.—1st. The combination of the main frame, the coupling arm in the vertical plane of the finger beam having a hook at its inner end jointed to the main frame at a point in advance of the main axle, the yoke and the shoe to which the coupling arm is secured, at its outer end, to render the coupling arm readily detachable from the frame, and to give the cutting apparatus the capacity of vertical adjustment and of rocking about its longitudinal axis; 2nd. The combination of the main frame, the push bar and the coupling arm with which, and above its surface, the front end of the push bar is connected; 3rd. The combination of the main frame, the coupling arm, the push bar, the draft arm on the coupling arm, the lever pivoted into the frame and connected with the draft arm, the spring detent and the sector mounted on the frame; 4th. The combination of the coupling arm having the loose yoke at its outer end and the hook at its inner end, the crank shaft supporting arm C' the main frame beneath which the coupling arm is jointed by its hook, the shoe having the front and rear lugs to which the yoke is jointed, the lifting lever and chain, the draft arm and the rocking lever connecting with said draft arm; 5th. The combination of the coupling arm, the draft arm thereon, the push bar fastened to the draft arm, the lever mounted on the frame, the link connecting the lever and the draft arm, and the sector secured upon the frame and serving to lock the lever; 6th. The combination of the main frame provided, in advance of the axle, with the forwardly extending crank shaft supporting corner arm C', and tool box and tongue socket extension C₂, and in rear of the axle, with the down hanger H, the coupling arm hook jointed, at its heel end, to the arm C' and forming a centre of rotation to the shoe, at its outer end, the push bar L', jointed to the main frame down hanger and having a fixed connection with the coupling arm, the lever M mounted on the frame and connected with the coupling arm, and the lever N also connecting with said arm; 7th. The combination of the first half or lower section of the gear casing, the seat standard and the upper half or cover section of the casing tipping on the seat standard; 8th. The gearing casing adjustable section or cover slotted at its rear end, to embrace the seat standard and adjustable thereon.

No. 10,894. Improvements on Safety Elevators. (*Perfectionnements aux éleveurs de sûreté.*)

Benjamin Slusser, Sidney, Ohio, U. S., 31st January, 1880; for 5 years.

Claim.—1st. The safety clutch, for an elevator, consisting of the clutch frame F notched to receive the guide bar, and provided with rollers p p combined with and pivoted to the platform-frame, or one side, and connected by levers c c with the draft rope for holding the clutch-frame in its normal position; 2nd. The combination, with the vertical guide bars and the movable platform-frame, of a right angular bar or clutch frame notched to receive the guide bars, and pivoted, at one side of the guide bars, to the said platform-frame, so as to cause the weight of the platform to cramp the guide bars, and arrest the downward movement of the same; 3rd. The combination of the trap doors having arms g and levers i, the rock shaft k connected with the movable platform having off setting projections for striking and operating said arms; 4th. The combination, with the guide bar B and the double trap doors, of the bifurcated bolt j arranged to embrace the guide bar and hold up both doors, together with suitable mechanism for operating said bolts; 5th. The platform-frame consisting of the single bent bar a a₁ at, the U-shaped brackets P P, carrying beams D D' and the suspending rods E E, the inner beams D and arms of the brackets being bolted through the lower ends of bars a₁, and the outer beams and arms of the brackets being bolted to the suspending rods E.

No. 10,895. Improvements on Spring Matresses. (*Perfectionnement aux paillasses à ressorts.*)

Onésime I. Bergeron, Larochelle, Que., 31st January, 1880; for 5 years.

Résumé.—La peinture ou couplet A, la jointure B B, l'élévation C C et l'élargissement des barres transversales D.

No. 10,896. Improvements on Stoves. (*Perfectionnements aux poêles.*)

Pierre Lajoie, St. Hyacinthe, Que., 31st January, 1880; for 5 years.

Résumé.—Un poêle sourd, pour la cuisson des aliments, avec un fourneau contenant des glissoires et grille G, en combinaison avec les tuyaux d'aspiration et de sortie F K.

No. 10,897. Improvements on Extension Tables. (*Perfectionnements aux tables à rallonge.*)

John D. Brassington, New York, U. S., 31st January, 1880; for 5 years.

Claim.—1st. An extension table or its equivalent, constructed with a lazy tongs arranged with its width vertical, and connecting the leg-ends of the table with the permanent and extending sections e f of the table top supported alternately from the top and bottom angles of the tongs' sections whereby the action of extending the tongs and separating the leg-ends of the table, causes the permanent sections to separate on a level line, while the extending sections rise up between them flush with their surface; 2nd. The combination of the leg-ends a a₁, the lazy tongs B B connecting the

same, the uprights g h crossing the sections and angles of the tongs and secured thereto, and the permanent top sections e and extending top sections f f alternating with each other and mounted on the said uprights; 3rd. The combination with the permanent sections e and extending sections f of the lazy tongs B, arranged in parallel line with said sections, together with the uprights g h crossing and connecting with the sections of said tongs, and supporting the sections e f of the top, and formed in two parts jointed midway by a sliding joint; 4th. The combination of the leg or supporting ends a a₁ the lazy tongs B connecting the same, the permanent level sections of the top or platform, and the rising and falling extending sections f f.

No. 10,898. Improvements on Horse Collars and Dies for Forging the same. (*Perfectionnements aux colliers de cheval et aux matrices pour les forger.*)

Ebenezer Fisher and John Watson, Kincoardine, Ont., 31st January, 1880; for 15 years.

Claim.—1st. A collar having its metallic sections connected at the top by a coupling provided with a series of holes to receive the fastening or pivot bolts and permit their adjustment vertically; 2nd. A collar formed of two metallic flanged sections having their upper ends provided with eyes a constructed integrally therewith to adapt them for attachment to the coupling by means of pintles or bolts; 3rd. The combination with the metallic collar sections and the curved neck pad, of a coupling having parallel lateral flanges provided with perforations to receive the pintles or hinge bolts of the sections; 4th. In the coupling having lateral perforated flanges and the bridge piece e and the fastening bolt, in combination with the metallic neck pad and flanged metallic collar sections; 5th. The coupling having lateral perforated flanges which are inclined inward from the base, in combination with the metallic collar sections and a suitable device for connecting the lower ends of the latter and permitting lateral adjustment thereof; 6th. The collar coupling consisting of flanges perforated as specified, and a base or bridge which rigidly connects the said flanges; 7th. The combination with a metallic collar composed of two flanged sections, of a curved metallic neck pad whose ends are fitted to closely embrace or clasp said sections when connected or fastened together at the lower ends; 8th. A metallic collar whose sections have their lower ends formed into semi-tubular shape and provided with lips or flanges to receive a coupling device; 9th. The metallic collar sections having semi-tubular lower ends and the semi-tubular coupling and a suitable fastening device therefor; 10th. A collar consisting of metallic sections which are hinged and also adapted for vertical adjustment at the top and coupled together at the lower end so as to permit lateral adjustment and yet be held rigidly in any adjustment; 11th. The spring catch having lug n, the semi-tubular coupling and the fastening bolt m, in combination with the semi-tubular metallic sections of the collar; 12th. The combination of the semi-tubular coupling, and a fastening device, with the metallic collar sections having semi-tubular lower ends k provided with lips or flanges l and a coupling for the top of the collar which has inclined and perforated edges; 13th. The combination with the metallic collar sections having laterally projecting flanges, of the bracket or bed piece and the hame pintle H having the ring i for the neck-yoke strap; 14th. A die for use in forging a section of a metallic horse-collar frame having the shorter portion of its cavity placed at an oblique inclination; 15th. The die B' having shorter portion of its cavity inclined obliquely at an angle of about 45°; 16th. A die for use in forging a section of a metallic horse-collar frame, having its outer end wall out away or sloped; 17th. A die for forging a section of a horse collar frame, having its outer end wall out away or sloped down to the bed of the cavity, and the shorter portion of its cavity placed at an oblique inclination; 18th. The combination of the break-down dies A, B having corresponding obliquely inclined portions, the matrix A', having its outer end wall sloped; 19th. The metallic plate E' having the end extension and the lateral flanges to adapt it to serve as a blank for subsequent forging into a collar frame section; 20th. The blank for a collar-frame section having the end flange O', bent inward at a right angle or thereabouts; 21st. The finishing dies having the form shown, to adapt them to act on the blank as it comes from the break-down dies, and respectively provided with the cavity r and horn z; 22nd. The combination of the finishing dies D' E', with the break-down dies A' B', the latter having the oblique inclination specified; 23rd. The lower finishing die E' having its side under cut at t, beneath the bulge.

No. 10,899. Improvements on Revolving Screens. (*Perfectionnements aux écrans tournants.*)

Lewis J. Bennett, Buffalo, N. Y., U. S., 31st January, 1880; for 5 years.

Claim.—1st. A multiple revolving screen having the inner most section fitted with coarse, and the outer section or sections with finer screening-cloth, said sections being composed of removable panels, each provided with its own portion of said screening-cloth removably fixed to said panels; 2nd. The removable panels, each panel being provided with its portion of the screening-cloth removably fixed to their panels by strips entering grooves, on the inner side of said panels together with the outer edges of said cloth; 3rd. In the removable panels, the frame A consisting of the pieces B and C, all provided with grooves D for receiving the screening-cloth F and the strips E, the latter being retained in position by the triangular strips N covering the longitudinal strips entirely and the ends of the cross strips; 4th. In the removable panels, the sections A grooved on their inner side, the longitudinal strips E entering said grooves, and the triangular strips N serving as a rest for the sections and retaining said longitudinal strips E and cloth F in position; 5th. The frame A having the edges of the pieces B bevelled and notched, the screw threaded arms H provided with the nuts L L', the strips N and the clamping plates P; 6th. The device for jarring the screen consisting, in combination with the panels, of the strips S, the support U and the rod T, said rod being fixed at one end, and engaging the strips S near its other end.

No. 10,900. Improvements on Door Bolts. (*Perfectionnements aux verrous des portes.*)

Ira D. Bush, Detroit, Mich., U. S., 31st January, 1880; for 5 years.

Claim.—1st. A door bolt composed of a case I, sliding bolt A, catch G, sockets H, H, bar S and jamb catch R, combined, whereby the bolt will operate like an ordinary door bolt, but will also hold the door in a partial opened position; 2nd. A sliding door bolt provided at its forward end with

vertical projections which pass into sockets in a jamb catch, whereby the bolt can be partially rotated upon the said vertical projections; 3rd. The combination of the bolt A, the knob E, the catch G, the socket H H and the jamb catch R; 4th. The jamb catch R provided with a recess N, sockets P P and slots Q Q, whereby the projections at the end of the bolt can enter into the socket, but cannot be removed therefrom while the bolt is being rotated; 5th. The combination of the jamb catch R, knob E, bar S and bolt A, whereby the bar S can rest against the knob E when the bolt is partially rotated upon its vertical projections; 6th. The combination of the bolt A, knob E, catch G and sockets H H.

No. 10,901. Slicing Machine. (*Machine à trancher.*)

Tobias Witmer, Buffalo, and Martia M. Witmer, Niagara, N. Y., U. S., 5th February, 1880; (Extension of Patent No. 4,373), for 5 years.

No. 10,902. Improvements on Dust Pans. (*Perfectionnements aux porte-ordures.*)

William H. Munson, Ottawa, Ont., 5th February, 1880, for 5 years.

Claim.—The supporting frame C, hinged to the bottom of the pan, near its handle, so as to elevate and hold the pan inclinedly.

No. 10,903. Process of Preparing Gelatine Dry Plates for use in Photography. (*Procédé pour préparer les clichés secs photographiques, à la gelatine.*)

George Eastman, Rochester, N. Y., U. S., 5th February, 1880; for 5 years.

Claim.—1st. The combination, in an apparatus for coating glass plates with gelatine emulsion, of the revolving roller A and the stationary trough B composed of materials unaffected by the emulsion; 2nd. The method of coating glass plates with gelatine emulsion, by applying the same thereto by a roller supplied from a reservoir of emulsion.

No. 10,904. Stove pipe Elbow. (*Coude de tuyau de poêle.*)

Henry S. Hoeller, (Co-inventor with Charles Hoeller), Cincinnati, Ohio, U. S., 6th February, 1880; (Extension of Patent No. 1,691); for 5 years.

No. 10,905. Improvements on Middlings Purifiers. (*Perfectionnements aux épurateurs des gruaux.*)

Abalom R. Guildler, Minneapolis, Minn., U. S., 10th February 1880; for 5 years.

Claim.—1st. The cylinder disintegrating brush C, in combination with the corrugated or roughened inside surface of yielding jacket C¹; 2nd. The yielding corrugated or roughened jacket C¹, in combination with the contracting bar C² and devices for adjusting the same; 3rd. The combination of the revolving scouring brush C, yielding jacket C¹, and endless carrier E having carrier troughs E¹ and exhaust fan A¹; 4th. The travelling brush F, carrier troughs E¹ and dust cloth F¹, in combination with the exhaust fan A¹; 5th. The combination of the reciprocating bolt and transverse brush K having a longitudinal reciprocating motion; 6th. The combination of the corrugated guide plate on cross bar L, with the transverse travelling brush K having guide rollers K¹ K²; 7th. The combination of the reciprocating bolt, the travelling transverse brush K and adjustable bridge trees J¹; 8th. The combination of the diagonal cross rods A with the reciprocating shaker or bolt; 9th. The combination, in a machine for purifying middlings of the revolving disintegrating brush C, the corrugated or roughened yielding jacket C¹, the dust cloth F¹, the travelling brush F, the reciprocating bolt and transverse longitudinally reciprocating brush K, their operating devices and exhaust fan A¹.

No. 10,906. Improvements in the Manufacture of Gas. (*Perfectionnements dans la fabrication du gaz.*)

Henry Y. Attrill and William Farmer, New York, U. S., 10th February, 1880; for 5 years.

Claim.—1st. The method of keeping separate the different grades of gas generated, in the same retort or stack, which consists in maintaining, between the points of withdrawal of the different grades, a neutral zone; 2nd. The method of manufacturing gases of two or more grades, by causing the gas producing material to traverse through a heated chamber, from a feeding aperture, to a fire, and conducting away a rich gas through one or more apertures on the way, and also conducting away a poor gas through one or more apertures at a later stage than the other; 3rd. In the manufacture of gas: first, the manufacture of an illuminating gas; second, the further distillation of the solid material to produce a poor gas; third, the burning of the solid residuum; fourth, the mingling of the products of combustion with the poor gas, to be subsequently employed for heating purposes; 4th. The method of insuring the even good quality of illuminating gas, in combination with the manufacture of poor gas generated in the same chamber or stack, which consists in passing the gases and vapours distilled from the fresh portions of the charges, through partially distilled and coked portions which have a higher temperature, and withdrawing the gas from the chamber or stack, at a point distant from the outlet for the poor gas, to prevent admixture of the latter therewith; 5th. The continuous process of producing illuminating gas, by the aid of combustible gases generated in the chamber or stack from the same fuel as the illuminating gas, which consists in feeding into the stack, from time to time, solid or partly solid material, causing the latter to gradually traverse the chamber or stack, maintaining coke or the residuum of said material in a state of partial combustion, at the further or lower end of the stack, withdrawing and burning the combustible gas generated at that stage, heating thereby the chamber or stack, near the point of feeding in the aforesaid material, and thus distilling the said material, and withdrawing the illuminating gas without permitting it to become mixed with the products of combustion from the further or lower end of the chamber or stack; 6th. The method of facilitating and increasing the production of illuminating gas, by the aid of combustible gases generated in the same

chamber or stack, which consists in maintaining a partial combustion at the further end or bottom of the chamber or stack, withdrawing the gases therefrom, heating a current of air by said combustion, mixing said air with the combustible gases and burning them, heating thereby the upper part of the chamber or stack to distil and produce the illuminating gas which is withdrawn without permitting a mixture of the combustible gases aforesaid therewith; 7th. The process of producing, in the same chamber or stack, from the same material, and delivering in different directions, gases of different grades, which consists in distilling an illuminating gas from the material when first introduced, withdrawing said gas, maintaining a partial combustion of the material after withdrawal of the illuminating, and withdrawing the poor gas thus produced without permitting admixture thereof with the illuminating gas; 8th. The process of producing, in the same chamber or stack, from the same material, and delivering in different directions, an illuminating gas of even good quality and a poor gas adapted to heating purposes, the same consisting in distilling gases and vapours from the material when freshly charged, passing said gases and vapours through a portion of the charge of higher temperature from which the rich gases and vapours have been previously distilled, withdrawing the illuminating gas thus produced, causing a partial combustion of the whole or a portion of the coke remaining from the former operations, withdrawing the poor gas thus produced at a point distant from that for the illuminating gas, burning a part of the poor gas to furnish the heat requisite for producing the illuminating gas and conveying away the remainder of the heating gas; 9th. The continuous process of manufacturing, in the same chamber or stack, from the same material, and by means of heat furnished by said material, gases of different grades, one, an illuminating gas of uniform good quality, and the other, a poor gas adapted to heating purposes, the said process consisting in: first, feeding into the stack or chamber, from time to time, a uniformly solid or partially solid material; second, causing the latter to gradually traverse the chamber or stack; third, maintaining coke or the residuum of said material in a state of partial combustion at the further or lower end of said stack or chamber; fourth, withdrawing the gas thus generated; fifth, separating and carrying off a portion; sixth, heating a current of air by said combustion; seventh, mingling said air with the remainder of the upper part of the chamber or stack; eighth, heating thereby the gas part of the chamber or stack; ninth, distilling by such heat the gases and vapours from the charge when freshly introduced; tenth, passing said vapours and gases through partially distilled and coked portions which have a higher temperature; and, eleventh, withdrawing the illuminating gas without admixture with the poor gas, the two gases being kept separate by maintaining between their points of withdrawal, a neutral zone; 10th. The combination of the chamber or stack m, having a combustion chamber at the bottom, with the pipe e connected with said chamber and provided with an outlet or opening for gas, and adapted, also, to permit the withdrawal of coke through its outer end; 11th. The combination of the chamber or stack m having a combustion chamber at the bottom, with the independent pipes or sets of pipes or passages e c, for withdrawing the gases of different grades without admixture; 12th. The combination of the chamber m having a combustion chamber at the bottom and the flue c₃ surrounding its upper part, with the independent pipe e c, the latter communicating with the flue c₃; 13th. The apparatus described having the upright vertical retort m, surrounding flue c₃, fixed grate a, provisions e for taking away the illuminating gas provisions c c₁ c₂ c₃, for taking away and utilizing the poor or heating gas, the passages g g¹ for supplying heated air to mingle with the products of combustion, and supply heat to the material at the early stages of its distillation; 14th. An apparatus composed of the following elements in combination; first, a chamber or stack having a combustion chamber at the bottom; second, a flue surrounding the upper part of said chamber or stack; third, a hot air flue near the combustion chamber and communicating with the first named flue; fourth, a pipe for the withdrawal of the gas generated in said combustion chamber communicating therewith and also with said first named flue; and fifth, a pipe for the withdrawal of gas distilled in the upper part of the chamber or stack, communicating with the interior thereof above the last named pipe and adapted also to permit the withdrawal of coke; 15th. The vertical retort branched near the base, equipped, one branch with provisions for burning and the other with provisions for extracting the solid matter descending therein; 16th. The upright retort, branched as described, in combination with the inclined grate f₁ in one of the branches, one of the branches adapted to serve, at will, either for the extraction or the combustion of the solid matter received in that branch; 17th. In combination with a gas retort, adapted for continuous operation, the revolving feed cylinder or drum I formed with pockets and revolved within a close fitting case J; 18th. In combination with the upright gas retort m, operating continuously, and the automatic revolving feeder I J, adapted to supply the gas producing material without allowing the passage of air or gas, the friction coupling L K adapted to allow the feeder to stop with too great resistance; 19th. In combination with an upright gas retort arranged for continuous operation, the shaking grate a having inclined teeth, and the raking device H H¹ adapted for both agitating and carrying away the unconsumed matter.

No. 10,907. Improvements on Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

Levi E. Salisbury, Providence, R. I., U. S., 10th February, 1880; for 5 years.

Claim.—1st. In a weft thread knitting loom, the combination, with the reciprocating needles, of mechanism whereby the said needles are vertically divided or separated for the introduction of the weft or filling thread; 2nd. A weft thread knitting loom having a rotary cylinder and reciprocating needles, and mechanism for vertically dividing or separating the same for the introduction of the weft thread, the hook h operating to assist in laying the weft thread or threads behind a portion of the needles, to produce the interlacing and also to hold down the weft thread or threads, when the needles rise to take the knitting thread, and prevent the looping of the weft thread; 3rd. The combination of the hooks h, the needles and the operating mechanism whereby the said needles are reciprocated and vertically divided to take the filling thread or threads; 4th. In combination with the needles of a circular, rotary knitting machine or weft thread knitting loom, the cams or equivalent devices operating to produce the vertical reciprocations of the said needles for the introduction of the weft thread; 5th. The combination of the cams or equivalent devices, the needles operated by the said cams and the hooks h; 6th. The rotary cylinder of a knitting machine or knitting loom having the needle channels constructed of the pieces S S¹; 7th. The combination of the hooks h, the cylinder with the needle channels constructed of the pieces

8 St, and the reciprocating needles actuated by the cams bounding the grooves; 8th. In combination with a knitting loom, the stop motion.

No. 10,908. Improvements in Stump Extractors. (*Perfectionnements aux arrache-souches.*)

Jean E. Trotter, Three Rivers, Que., 10th February, 1880; for 5 years.

Claim.—1st. The link C connecting the lever, by which the power is applied, with the other parts of the machine and having hooks *h*; 2nd. The combination of the supporting pins *g* with the pin handle *i*.

No. 10,909. Improvements in Sleigh Clutches. (*Perfectionnements aux guide-traineaux.*)

James Boydell, Kingsey, Que., 10th February, 1880; for 5 years.

Claim.—The clutch B with the pedal C, the joint D and rod E, all in combination.

No. 10,910. Milk Coffee. (*Café au lait.*)

Samuel Marrotte, Montreal, Que., 10th February, 1880; for 5 years.

Claim.—A dry food preparation composed of ground coffee, or chicory, milk and sugar, prepared and mixed with fresh coffee.

No. 10,911. Nail Cutting Machine. (*Machine à couper le clou.*)

Jeremiah G. Shaw, Biddeford, Me., Henry J. Jennings, Alfred Davis, Worcester and William Wickersham, Boston, Mass., U. S., 10th February, 1880; (Extension of Patent No. 5,642), for 5 years.

No. 10,912. Improvements on Wrenches. (*Perfectionnements aux clés à écrous.*)

Charles Salter, (Assignee of Joseph Best, Montreal, Que., 12th February, 1880; for 5 years.

Claim.—1st. The handle C provided with the circular end *d* working in a corresponding circular opening in the tenon *b*; 2nd. The handle C having the circular end *d* and slot *e*; 3rd. In combination with the head A, handle C, slot *e* and circular end *d*, the serrated jaws *i i*.

No. 10,913. Compound for the Cure of Catarrh. (*Composé pour la guérison du catarrhe.*)

Alfred T. Mitchell and Annie T. Mitchell (Assignees of Samuel T. Dobyns), North Middletown, Ky., U. S., 14th February, 1880; for 15 years.

Claim.—A compound composed of common salt, camphor and carbolic acid.

No. 10,914. Improvements in Gas Burners. (*Perfectionnements aux becs à gaz.*)

John N. Chamberlain, Springfield, Mass., U. S., 14th February, 1880; for 5 years.

Claim.—1st. The case A provided with the gas passages *6 i i i*, the cup *7* and chamber *a*, in combination with the tube *o* provided with the holes *x z n* and having the disc *e* attached thereto; 2nd. The case A consisting of the sections *1 2 3* and having the screen *5* secured across its inlet passage *4*; 3rd. The case A provided with chamber *a*, in combination with the disc *e* and tube *o*, said tube having holes *x z n* pierced therein, said disc and tube being secured one to the other and adapted to operate within said chamber *a* and within the gas current therein; 4th. The case A having vertical interior walls, in section 3 thereof, and having formed therein the horizontal gas passage *i i* above the vertical gas passage *i*, and the cup *7* of a less exterior diameter at its top than at its base; 5th. The case A provided with the cup *7* located directly under the burner tip *b* and adapted to catch the drip therefrom.

No. 10,915. Improvements on Fences. (*Perfectionnements aux clôtures.*)

Jonathan Brown, Malahide, Ont., 14th February, 1880; for 5 years.

Claim.—1st. The formation of a worm fence so that the outer or longer rails, or poles, shall rise on an incline, lie against and conform to the outer angle of the stakes; 2nd. The decreasing length of the shorter rails, or poles, which lie against the side of the stakes, in combination with the first mentioned part of the first claim; 3rd. The method of locking the stakes, by placing them under and against the incline of the longer rails, or poles, at their junctions with the shorter ones.

No. 10,916. Improvements in Hydraulic Machinery. (*Perfectionnements aux machines hydrauliques.*)

Edward W. Blackhall, (Assignee of Robert W. Semple,) Toronto, Ont., 14th February, 1880; for 5 years.

Claim.—1st. The water and liquid feeder consisting of a moving piston or its equivalent provided with recesses which are arranged to be filled and to discharge; 2nd. The combination with a steam boiler, air vessel or other equivalent receptacle, of a liquor feeder, said feeder having a moving piston or conveyer provided with recesses which are adapted to be filled and to discharge into an atmosphere of less specific gravity than the liquor conveyed.

No. 10,917. Improvements on Carriage Wheels. (*Perfectionnements aux roues des voitures.*)

Joseph Blais and Auselme S. Ruel, Sherbrooke, Que., 14th February, 1880; for 5 years.

Claim.—The combination of the band A with the sockets B B.

No. 10,918. Liniment for the Cure of Spavins, &c. (*Onguent pour la guérison des épavins, etc.*)

John H. Ellis, Boston, Mass., U. S., 14th February, 1880; for 5 years.

Claim.—A liniment composed of lamb laurel, chamber lye, saltpetre, alcohol and herb spearmint, also a liniment composed of chamber lye, an admixture of lamb laurel, or other vegetable healing substance, whose poisonous qualities are capable of neutralization by said lye.

No. 10,919. Improvements on Copy Books. (*Perfectionnements aux cahiers d'exemples.*)

Jotham W. Wakeman, Jersey City, N. J., U. S., 14th February, 1880; for 5 years.

Claim.—1st. The combination, with a writing book, of double copy slips *b* placed around the leaves and adapted to slide thereon; 2nd. The combination, with a writing book having its leaves formed with the projections *c*, of doubled copy slips *b* adapted for sliding upon the sleeves.

No. 10,920. Improvements on Rail Joints. (*Perfectionnements aux joints des rails.*)

Levi B. Tyng, Lowell, Mass., U. S., 14th February, 1880; for 15 years.

Claim.—1st. The combination of the cross bar D provided with the ribs G G, the caps C C provided with the ribs I I and the fish plates B B; 2nd. The combination of the cross bar D provided with the ribs G G, the caps C C provided with the ribs I I, and the fish plates B B provided with the flanges Y Y; 3rd. The combination of the cross bar D provided with the ribs G G, the caps C C provided with the ribs I I, and the fish plates B B provided with the wedge-shaped flanges Y Y; 4th. The cross bar D provided with the slot W and the rib V, in combination with the bolt E and washer X; 5th. The nut lock R S T composed of a plate bent at four right angles and provided with a hole at each end to receive the bolts F F; 6th. The nut lock P Q composed of a plate provided with a hole to receive the end of the bolt E, and bent down to fill the space between the nut of said bolt E and the fish plate B or nut lock R S T.

No. 10,921. Improvements on Seed Sowers. (*Perfectionnements aux semoirs à grains.*)

John A. Allison, Dunbar, Ont., 14th February, 1880; for 5 years.

Claim.—1st. The funnels H and cones I; 2nd. The combination of the seed box A with the mouth pieces *e*, slides *f*, lever *g*, slide bar C a d stops *h*; 3rd. The combination of all the parts described, with the truck of a horse rake.

No. 10,922. Improvements on Seeding Machines. (*Perfectionnements aux semoirs à grains.*)

James W. Mann, Brockville, Ont., 14th February, 1880; for 5 years.

Claim.—1st. The castings K of the seed discharge apertures L, having an interior semi-cylindrical face and an external flat face provided with lugs and inserted in the bottom of the hopper J; 2nd. The wheels O provided with arms carrying, on their extremities, a flexible blade P keyed on a shaft G journalled longitudinally in the hopper for agitating the seeds; 3rd. In combination with the castings K having lugs, the bolts R for securing the slide S, movably; 4th. The guards *m*, in combination with the castings K and wheels O; 5th. The combination, with the casting K having lugs Q and bolts R, of the slide S having blocks T T, facing U, slotted longitudinal bar V and lever W, for adjusting the area of the seed apertures; 6th. The scale plate *z*, in combination with lever W, for indicating the adjustment of the slide apertures.

No. 10,923. Improvements in Gas Regulators. (*Perfectionnements aux régulateurs à gaz.*)

Augustus Parsons, Chicago, Ill., U. S., 17th February, 1880; for 5 years.

Claim.—1st. The combination of the casing A, projection N and conical valve E D; 2nd. The combination of the float C, valve rod E and valve D.

No. 10,924. Improvements in Duplex Telegraphy. (*Perfectionnements aux télégraphes à double courant.*)

Alexander Muirhead, Westminster, Eng., James A. Briggs, Jubblepore, and George K. Winter, Arcanon, Madras, India, 17th February, 1880; for 5 years.

Claim.—1st. The method of duplex telegraphy consisting in inserting the battery between the true and the artificial lines, and the receiving apparatus between an intermediate point in the battery and the earth, the signals being made by a reversing key crossing the connections of the true and artificial line; 2nd. Inserting the battery between the true and the artificial lines, and the receiving apparatus between an intermediate point in the battery and the earth, the signals being made by a key short circuiting the battery; 3rd. The method of adjustment by shunting apart of the battery and connecting the receiving apparatus at a suitable point in the shunt.

No. 10,925. Improvements on Eye Glasses. (*Perfectionnements aux lunettes.*)

Alonso C. Blethen, Lynn, Mass., U. S., 17th February, 1880; for 5 years.

Claim.—In combination with the frame A, the attaching clips C having hooks D and provided with the elastic rubber tube E.

No. 10,926. Improvements on Rail Joints. (*Perfectionnements aux joints des rails.*)

Hiram Williams, Jackson, Mich., U. S., 17th February, 1880; for 5 years.

Claim.—1st. A rail joint splice consisting of rails A A slotted, through the upper and lower webs *a b*, to the bolt holes, a fish plate B inserted thereon

and extending beyond the bolt holes, said plate being flush with the top and bottom of the rail and projecting below the same into a chair C, or other fixture spiked to the ties, and bolts E passing through fish plate and rails in the ordinary manner; 2nd. In combination with the plate B, bolts E and nuts D, the reversible washer plate F fitting on the bolts and stotted longitudinally from both ends, one portion turned up against the edge of the nuts to prevent them from turning.

No. 10,927. Heating, Cooking and Drying Apparatus. (*Appareil de chauffage, de cuisine et de séchage.*)

John K. Boswell, St. Louis, Mo., U. S., 17th February, 1880; for 5 years.

Claim.—1st. The fire box having a circular bottom diverging upwardly and contracted into a lateral exit flue, in combination with an elongated case and having a flat upper surface or cooking table; 2nd. The combination, with the outer case, of the prismatic combustion chamber, the fire box opening into the same, and the cooking table forming the top of said fire box and combustion chamber; 3rd. The prismatic combustion chamber provided with the plates *f g* arranged to form a return flue; 4th. The combination, with the outer case and the central heating device, of the hollow casings interposed between the two and communicating with the outside air beneath the device and with the air in the cabinet above the cooking table; 5th. The combination, with the fire box E and communicating combustion chamber H, of an intermediate collar provided with air inlets; 6th. The combination, with the fire box and the combustion chamber, of the hollow casings K K and cooking table I arranged to close in said fire box and combustion chamber, and extending over said hollow casings and provided with outlets with registers for the same; 7th. The combination, with a heating case having a hot air flue and an inclosing cabinet above, of a baking case N, the roof of which is a fixture in the top of the cabinet, and the flue and chamber of which are adapted to be fitted to the heating flue of the case below or removed as set forth.

No. 10,928. Improvements on Metal Punches. (*Perfectionnements aux poinçons métalliques.*)

De Lancy Kennedy, New York, and James H. Raymond, Chicago, Ill., U. S., 17th February, 1880; for 5 years.

Claim.—1st. The spiral shearing punch A provided with the central bearing a; 2nd. The spiral shearing punch A having the bevelled guiding or easing edge c; 3rd. The spiral shearing punch A having a portion e of its cutting face removed, between the centre and first cutting point of the periphery; 4th. The spiral shearing punch A having two first cutting points, at opposite sides of the periphery, united by spirals.

No. 10,929. Striking Mechanism for Clocks. (*Mécanisme de sonnerie pour les horloges.*)

William Lindon, Brooklyn, N. Y., U. S., 17th February, 1880; for 5 years.

Claim.—1st. In a clock movement, the combination and arrangement of the hammers *f f*, wheel *d* having radial arms *e e*, and bell that is struck by the hammers; 2nd. The bells *h h* and their respective hammers *f f*, in combination with the wheel *d* fitted upon the arbor of the minute hand and provided with radial arms *e e*.

No. 10,930. Improvements on Reaping Machines. (*Perfectionnements aux moissonneuses.*)

Nelson Green, Waterford, Ont., 17th February, 1880; for 5 years.

Claim.—1st. The rolling rake head C provided with a spindle B, in combination with the hollow rake arm A; 2cd. A dog a attached to the rake head C and provided with a catch d, in combination with the collar e on the rake arm A; 3rd. A dog a attached to the rake head C and provided with a tripping projection b, in combination with the pivoted dog J and sliding block E; 4th. The steel bearing plate *f* on the lug *f*, in combination with the dog a on the rolling rake head C; 5th. The sliding block E provided with the heads *E*, in combination with the tripping projection b attached to the rolling rake head C; 6th. The tripping projection b attached to the rolling rake head C, in combination with the guide D; 7th. The weighted lever I pivoted beneath the bed F and provided with a tripping chain H, in combination with the sliding block E and spring G; 8th. The sliding head E provided with a head *E*, in combination with the guides D D.

No. 10,931. Improvements on Spoon Bait Hooks. (*Perfectionnements aux hameçons à cuiller-amorce.*)

Lysander S. Hill, Grand Rapids, Mich., U. S., 17th February, 1880; for 5 years.

Claim.—The combination, with the spoon *d* and rod *a*, of the U-shaped guide *t* rigidly secured to the spoon and passing around the rod, and the spring *e* surrounding the guide between the spoon and rod and entirely disconnected from them.

No. 10,932. Improvements on Berths for Vessels. (*Perfectionnements aux lits des navires.*)

The Huston Ships' Berth Co., (Assignees of David Huston), Boston, Mass., U. S., 17th February, 1880; for 5 years.

Claim.—The berth frame B, supported upon a double swivel or universal joint, consisting essentially of the shaft C pivoted to the underside of the berth frame and to a stationary frame D, or part beneath in lines at right angles to each other, in combination with the counterpoise weight G attached to, and extending longitudinally under the centre of the berth frame, and the springs H H attached to the berth frame and to the casing A; 2nd. The combination, with the berth frame B supported on a double swivel or universal joint and provided with a counterpoise weight G and springs H H, of an upper berth frame I connected with the frame B, by means of cords or wires A, and suspended from an overhung swinging frame K.

No. 10,933. Improvements on Bit Braces.

(*Perfectionnements aux vilebrequins.*)

Obed Peck, Rowe, and Daniel Powers, Shelburne, Mass., U. S., 18th February, 1880 for 5 years.

Claim.—1st. A shell attached to the sweep of a bit brace containing a united jaw piece having two jaws and having, also, a threaded portion, whereby said jaws are driven forward and backward in said shell by a threaded sleeve operating on the same, when the cross section of said threaded portion, perpendicular to the axis of the rotation of said threaded sleeve operating the same, is less in area than the circle of the thread on said threaded portion; 2nd. The united jaw piece E having two jaws connected together by a threaded portion operated on by the sleeve D, to draw them into the shell A, when each of said jaws is a part of a spring tending to throw it apart from the other jaw, and when said united jaw piece is shorter in length than the portion of the part A, which lies between its end containing the socket H and the junction of the part A with the sweep of the brace; 3rd. The threaded united jaw piece E, slotted off and having two jaws, and the part A with its socket H combined with a threaded sleeve located between the end of part A containing the socket H, and the junction of part A with the sweep of the brace; 4th. The shell A having projections *e e* around the slot F, in combination with the jaw piece E and sleeve D.

No. 10,934. Improvements in Live Stock Cars.

(*Perfectionnements aux wagons à bestiaux.*)

Edward D. Shaffer, Moncton, N.B., 18th February, 1880; for 5 years.

Claim.—A railway car, for carrying cattle or sheep, or both cattle and sheep, having movable floors.

No. 10,935. Improvements on Rotary Engines. (*Perfectionnements aux machines rotatoires.*)

William N. De Groat, sr., and Anthony L. Maxwell, Knoxville, Tenn., U. S., 18th February, 1880; for 5 years.

Claim.—1st. The combination of the cylinder C, rotating disc D having one or more piston heads E, the steam pipe G in line with the solid shaft S, the central and radial steam ports G¹ G² within the rotating disc D, the radially sliding abutments K¹ K² K³, the cam wheel Q and the levers P P P; 2nd. The combination, with the cylinder C, disc D and piston head E, of the steam ports G¹ G², exhaust ports H H¹ H² and the plug or valve J provided with channels *g h*, and turning on an axis parallel with that of the disc; 3rd. The combination of the cylinder C, solid shaft S, rotary disc D, piston head E, abutments K¹ K² K³, annular exhaust port H, and the external radial exhaust pipe H communicating directly with said annular exhaust port. H¹.

No. 10,936. Improvements on Cross Sectors.

(*Perfectionnements aux secteurs gradués.*)

George J. O'Doherty, (Assignee of William E. Soare, (Ottawa, Ont., 18th February, 1880; for 5 years.

Claim.—The rods A B adjustably connected by slide E, and slide D having an arm C and a hook d, or other device, for the attachment of a cord or tape measure *e* for setting out slope stakes in railway and canal construction, and other engineering works, and for cross sectioning and measuring up work, and running levels with greater facility and accuracy than by the means hitherto employed for that purpose.

No. 10,937. Improvements on Harvesters.

(*Perfectionnements aux moissonneuses.*)

William R. Whittington, Middletown, and William S. Neales, Lakeport, Cal., U. S., 18th February, 1880; for 5 years.

Claim.—1st. The bar A having the groove B formed in its upper surface, in combination with the section C having the projection D upon their lower surface, said groove and projection being so formed as to interlock and secure the bar and sections together; 2nd. The grooved bar A fitted to receive and hold the projection D upon the sections C, in combination with the key or locking device E.

No. 10,938. Improvements on Berths for Vessels. (*Perfectionnements aux lits des navires.*)

The Huston Ships' Berth Co., (Assignees of David Huston), Boston, Mass., U. S., 18th February, 1880; for 5 years.

Claim.—1st. A berth suspended from a swinging frame supported on two pairs of journals, arranged in lines at right angles to each other; 2nd. The cross piece E pivoted to the swinging frame D and to the hanger G, in lines at right angles to each other; 3rd. A berth suspended from a swinging frame D, in combination with a cross piece E pivoted to the frame and to a hanger G, in lines at right angles to each other, whereby the frame is allowed to vibrate on both a longitudinal and transverse axis, but is prevented from moving in a horizontal plane around a vertical axis; 4th. The combination, with the berth frame B, of the cross piece I pivoted to its underside and to a stationary part beneath, in lines at right angles to each other; 5th. The combination, with a berth suspended from an overhung swinging frame D, of the cross piece I pivoted to the berth and to a stationary part beneath, in lines at right angles to each other; 6th. The combination, with the vibrating berth B, of the springs K K attached thereto and to the casing A; 7th. The combination, with the slotted arms *c*, of three movable nipples 19 and screw caps 20 for holding the cords *a*.

No. 10,939. Improvements on Boots and Shoes. (*Perfectionnements aux chaussures.*)

Gédéon Desforges St Maurice, St. Henri, Que., 18th February, 1880; for 5 years.

Résumé.—Dans les chaussures de dames et d'enfants, la combinaison de la semelle et du bonnet de la pointe du pied formés d'un seul morceau de cuir.

No. 10,940. Improvements on Car Brakes.

(*Perfectionnements aux freins des wagons.*)

The Card Automatic Brake Co., (Assignees of William L. Card and Jay Noble), St. Louis, Mo., U. S., 18th February, 1880; for 5 years.

Claim.—1st. The combination of the lever R, yoke R₁, fulcrum link W, spring e, lazy bar X, yoke X₁, rod S and pull rod G; 2nd. The automatic device or governor consisting of frame h, weights j connecting the two arms of said frame at each end, sliding collar T, sleeve U, springs t and links k, attached to the axle of a railway car, for transmitting motion by means of suitable transmitting bars and connections, thereby coupling and uncoupling the draw bar of a railway car from the brake mechanism; 3rd. The brake lever M consisting of two parallel bars, grooved pulley O secured within one end thereof, fulcrum bracket N, chain P attached, at one end, to the timbers of the car and, at the other end, to the brake rod; 4th. The pull rod G provided with fixed collar G₁, loose collar H, spring I, collar J and nut K for coupling said rod to the bracket F; 5th. The combination of the axle V, sleeve U, weighted frame h, links k, springs t, sliding collar T, fixed collar T₁, lazy bar X, fulcrum link W and lever R₁, with connecting rod S, spring e, pull rod G, bracket a, link or hanger Y and the draw bar of a railway car; 6th. The combination of the axle V, sleeve U, weighted frame h, links k, springs t, sliding collar T, fixed collar T₁, lazy bar X, fulcrum link W, lever R, connecting rod S, hooked pull rod G, bracket a and draw bar C, with the lever M, fulcrumed at m, upon the bracket N bolted to one of the draught timbers of the railway car; 7th. The combination of the axle V, sleeve U, weighted frame h, links k, springs t sliding collar T, fixed collar T₁, lazy bar X, fulcrum link W, link Y, lever R, connecting rod S, hooked pull rod G, lever M, grooved pulley O and chain P, with the ordinary hand brake mechanism of a railway car; 8th. The combination of the lazy bar X having yoke X₁, fixed collar T₁, governor sleeve U and link connections a Y; 9th. The combination of the governor sleeve U formed in two pieces and provided with ears and bolts by which they are secured together and attached to the axle V; 10th. The pull rod G formed with a hook L; 11th. The combination of the draw bar C with the hand brake mechanism of a railway car, by means of the bracket F, cushion pull rod G with hook L, rod S, lever R, fulcrum link W, lazy bar X, yokes R₁ X₁, bracket a, link Y, or their equivalent, sleeve U, frame h, weights j, links k, springs t, sliding collar T, fixed collar T₁, fulcrum N, lever M, pulley O and chain P.

No. 10,941. Improvements on Mechanical Movements.

(*Perfectionnements aux mouvements mécaniques.*)

Charles E. Patric, Rochester, N. Y., U. S., 18th February, 1880; for 5 years.

Claim.—1st. A gyrating device combined with a rotating shaft and a series of clutches upon said shaft, and a corresponding series of interposed connecting rods coupling said clutches with said gyrating member, at a distance from its centre of motion; 2nd. The disc or body A, moving upon bearings at a and provided with an arm B whose movements, around an axial line which cuts the centre of the bearing a, cause said disc to gyrate, combined with the connecting rods E, clutches D and shaft C; 3rd. The gyrating disc A provided with studs B and the spherical bearing b, combined with the cross axis joint pieces d, connecting rods E, clutches D and shaft C; 4th. The gyrating member A provided with the stud B rigidly attached thereto, and connected with the shaft C combined with a crank K, at the end of a driving shaft G, whereby the rotation of said shaft G may be converted into a gyratory movement of said member A; 5th. The gyratory member A provided with the stud B combined with the crank K and bearing head m sliding therein, so that the stud B may be adjusted to greater or less amplitude of gyration; 6th. The gyratory member A provided with the stud B, crank K and sliding head m combined with the bell crank n and sliding collar p with the requisite connecting links; 7th. The gyrating member A provided with the stud B, crank K and operative clutch lever q, whereby the relative speed of shaft C may be varied and controlled at will; 8th. The gyrating member A provided with the stud B, crank K, and sliding bearing head m combined with the bell crank n and sliding collar p with the requisite connecting links, and the clutch lever q, whereby the relative speed of shaft C may be varied at pleasure.

No. 10,942. Improvements on Steam Brakes.

(*Perfectionnements aux freins à vapeur.*)

The Card Automatic Brake Co., (Assignees of William L. Card), St. Louis, Mo., U. S., 18th February, 1880; for 5 years.

Claim.—1st. The combination of a direct acting cylinder and piston, brake blocks connected thereto, and supporting hangers X X hung upon a single pin or stud common to both; 2nd. The combination of brake blocks Y Y attached respectively to the cylinder b, and pistons i supported in any suitable manner; 3rd. The combination with the brake cylinder b, of adjustable support a c; 4th. The combination of supporting plate v with guide flange or rib a, cylinder b with guide flange or rib c and adjustable bearing device d e; 5th. The combination of the cylinder b or piston i with bearing extension f, set screw h and brake block Y; 6th. In combination with the brake cylinders b b and valve I, the valve seat having steam ports D B and exhaust port R; 7th. The combination of the cylinder E and piston L supported underneath the locomotive foot board, by pivot stud F₁, and connected to lever M, carrying chain P and return spring O; 8th. The actuating mechanism of the tender brake, consisting of the cylinder E, piston L, lever M and spring O attached to the foot board F₁ by pivot studs F₂ N.

No. 10,943. Improvements on Railway Cars.

(*Perfectionnements aux chars des chemins de fer.*)

William Stapley, London East, Ont., 21st February, 1880; for 5 years.

Claim.—The board or boards A, frame B, grooved flanges D, rods E, coil springs F and brace G.

No. 10,744. Improvements on Harvesters.

(*Perfectionnements aux moissonneuses.*)

John Skinner, Flint, Mich., U. S., 21st February, 1880; for 5 years.

Claim.—In combination, with the outer bar A, the springs E E secured at each end of said outer bar.

No. 10,945. Improvements on Ploughs.

(*Perfectionnements aux charrues.*)

Thomas Richardson, (Co-inventor with Malcolm McInnes), Fergus, Ont., 21st February, 1880; (Extension of Patent No. 4,501), for 5 years.

No. 10,946. Improvements on Harvesters.

(*Perfectionnements aux moissonneuses.*)

John S. Boyce, Cuylerville, N. Y., U. S., 21st February, 1880; (Extension of Patent No. 4,461), for 5 years.

No. 10,947. Furnace for Extracting Metals from their Ores.

(*Fourneau pour extraire les métaux de leurs minerais.*)

Anson C. Tichenor, San Francisco, Cal., U. S., 21st January 1880; for 5 years.

Claim.—1st. Applying an electrical current to a body of molten metal into which the ores are being passed; 2nd. The tank A and pipe B, in combination with the pulleys D E and chain feeder C, provided with discs d to which is imparted a downward movement.

No. 10,948. Artificial Stone or Marble.

(*Pierre ou marbre artificiels.*)

William H. Hoopes, Baltimore, Md., U. S., 21st February, 1880; for 5 years.

Claim.—The composition composed of cement, gypsum, or analogous material as a base, combined with silica, ferric oxide, alumina, magnesia, pearl ash, tungstate of soda, tartaric acid, bicarbonate of soda, tartrate of sodium and potassium and water; 2nd. The hardening or solidifying compositions, for making artificial stone or marble, composed of silica, ferric oxide, alumina, magnesia, pearl ash, tungstate of soda, tartaric acid, bicarbonate of soda, tartrate of sodium and potassium and water; 3rd. The process of veining artificial marble or stone by drawing through it, while in the plastic state, hairs carrying a colouring material.

No. 10,949. Improvements on Valves.

(*Perfectionnements aux soupapes.*)

Matthew Morton, Romeo, Mich., U. S., 21st February, 1880; for 5 years.

Claim.—A check valve case or body made in two equal halves or sections connected together by a clamping device, whereby the valve case may be adjusted to be used on pipes running in a straight line, or at any angle in the same plane; 2nd. In a check valve, the reversible valve seat D provided with the faces d, one being longer than the other; 3rd. The combination of the two sections or shells A with clamping device C and provided with a reversible double seat D; 4th. The combination of the two sections or shells A with clamping device C, reversible double seat D and reversible valve F.

No. 10,950. Improvements on Coal Sifters.

(*Perfectionnements aux cribles à charbon.*)

William W. Whitaker, Gloversville, N. Y., U. S., 21st February, 1880; for 5 years.

Claim.—1st. The combination of the sieve sections D E arranged in relation to the case A, hopper B and receptacle C, and provided with the knocking plate or projection H, and the revolving cam G provided with knocking projections k k k; 2nd. The lid K, in combination with the sieve section E and case A divided into parts hinged together.

No. 10,951. Improvements on Mowing Machines.

(*Perfectionnements aux faucheuses.*)

Edwin R. Whitney, Montreal, Que., 21st February, 1880; for 5 years.

Claim.—A knife and finger bar combinedly adjustable from front to rear cut, by movement under the ground wheel, the frame carrying said knife and finger bar having a swing motion on the axle, and the cutter reversely adjustable by a connecting sleeve L within a portion of said frame; 2nd. The combination of the casing F, cylinder L, carrying the finger bar, and knife K having hinged connection with the rod H, for tilting the finger bar to high or low cut, and for overthrowing the cut of the knife by the lever L; 3rd. The combination of the connecting rod H having blocks G₁ G₂, and d so G having cruciform grooves g g, and driving shaft E for operating the knife K; 4th. The combination of the cylinders B₁ mounted on axle A and carrying the sleeve B, the casing F having extension F₁ for elevating the knife vertically by lever and chain N; 5th. The combination of crown wheel B, bevel gears C C, spindle D, bevel pinions E₁, and shaft E for operating the knife K reciprocally by the connecting bar H.

No. 10,952. Improvements in Machines for Moulding in Sand.

(*Perfectionnements aux machines à mouler en sable.*)

William Alkin and William W. Drummond, Louisville, Ky., U. S. 21st February, 1880; for 15 years.

Claim.—1st. The removable head H, to which the patterns are attached, when used in combination with the reciprocating plunger of a machine for moulding in sand; 2nd. In combination with the half flask I furnished with lugs or pins I₁, the reciprocating pin m and guide m₁, for engaging the flask and pin and holding the flask in place; 3rd. In combination with the flask and sliding sand drawer, the hinged apron P for supporting the sand while being conveyed from the hopper to the flask; 4th. In combination with the sand drawer, the adjustable eccentric shaft T, connecting rod U, oscillating arm S, slotted yokes S and pulley or wheel B₃; 5th. In combination with the cam E₂, the yoke K₁, rods K₂ and adjustable spiral springs K₄; 6th. In combination with the binder plate Q, swinging arm Q₁ and standards Q₂, the spring catch Q₃; 7th. In combination with the plunger which carries the patterns and driver, an intermediate idle wheel bearing by adjustable pressure on the driver and driven pinions, to move the plunger by friction with a regulated force.

No. 10,953. Improvements on Thill Couplings.

(Perfectionnements aux armons des limonnières.)

Josiah Jacoby, Lodi, Ohio, U. S., 21st February, 1880; for 5 years.

Claim.—The combination of the shell F provided with registering holes c, the clip B with its ears D, the pin E and thill C; 2nd. In combination with the clip B, pin E and thill packing adjusting screw and plate e, the shell F provided with registering holes and having openings A in the sides of the chamber or recess of said shell.

No. 10,954. Improvements on Book Cases.

(Perfectionnements aux bibliothèques.)

Frank G. Johnson, Brooklyn, N. Y., U. S., 21st February, 1880; for 5 years.

Claim.—1st. The combination, in a revolving book-case, of a central tubular vertical support and adjustable shelves provided with ribs or flanges; 2nd. The combination, in a revolving book-case, of a central vertical support, a surrounding tube and two or more metallic shelves, each shelf consisting of a single casting having a central boss and set screw, and a series of ribs dividing the shelf into four equal divisions, each of which has ribs on a three sides; 3rd. The combination, with a central vertical support, of a series of shelves, each shelf being provided with a central boss and a series of ribs connected with said boss, each rib passing in a straight line to one of the sides of the shelf and then turning at right angles along said side, to form a support for the bottom of the shelf and a guard for the books.

No. 10,955. Improvements on Lifting Pumps.

(Perfectionnements aux pompes aspirantes.)

Emory Barnes, Mount Pleasant, Mich., U. S., 21st February, 1880; for 5 years.

Claim.—1st. A barrel with open or perforated bottom, contracted neck and valve seat, spider seat and annular ring, all cast in one piece; 2nd. In combination with the recess formed by the flange b and ring C, the latter of which is internally threaded and above the valve at the upper end of a pump barrel, the valve G, spider H and shell I; 3rd. The barrel, neck, valve and spider seat, and holding ring of which are cast in one piece and in combination therewith, the hollow piston D, valve E, piston rod F provided with stop e, valve G, spider H and shell I.

No. 10,956. Improvements on Gang Ploughs.

(Perfectionnements aux charrues à socs multiples.)

Benjamin Waggoner, Reach, Ont., 23rd February, 1880; (Extension of Patent No. 4,421), for 5 years.

No. 10,957. Improvements on Car-Couplers.

(Perfectionnements aux attelages des wagons.)

Franklin White, Pickering, Ont., 26th February, 1880; for 5 years.

Claim.—An automatic car-coupler F supported by the auxiliary frame E and truck beam G, in combination with the truck frame D.

No. 10,958. Speedy Process of Tanning. (Système de tannage accéléré.)

Simon Ullmo, Lyon, France, 26th February, 1880; for 5 years.

Resumé.—1o. Le nouveau système de tannage consistant à baigner les peaux après avoir subi les opérations du travail de rivière, dans un foulon

contenant la solution décrite, puis de les traiter dans une cuve ordinaire et fléissant par les coucher à l'écorce dans une fosse ordinaire; 2o. La solution pour traiter les peaux, composée à chaque 100 kilos de peaux, de 30 p.c. Dividivi, 30 p.c. garouille, 30 p.c. alun, 15 p.c. de farine d'orge aigrie, 1 p.c. sulphate de cuivre, le tout dissout en assez d'eau pour baigner entièrement les peaux; 3o. La solution composée à chaque 100 kilos de peaux, de 30 p.c. Dividivi, 30 p.c. garouille, 30 p.c. alun et de 5 p.c. à 10 p.c. de sulphate de cuivre, le tout dissout en assez d'eau pour baigner entièrement les peaux.

No. 10,959. Improvements in Paper Boxes.

(Perfectionnements aux boites en papier.)

Charles M. Arthur, Brockville, Ont., 26th February, 1880; for 5 years.

Claim.—A paper box blank cut and scored to form the sides A B C D with the lip E, on one side, the side A provided with the extensions G H, the side C with an extension F, the side D with an extension I, at one end, and extension I, at the other end, equal to the width of the side A, and with the score a diagonally across it, and the part I provided with extensions L N.

No. 10,960. Method of Preserving Animal and Vegetable Substances. (Procédé de conservation des substances animales et végétales.)

John M. Reid, Moncton, N. B., 26th February, 1880; for 5 years.

Claim.—1st. The method of curing animal and vegetable substances, intended for human food, by quickly drying them in and by means of one and the same volume of hot dry air in an air tight vessel, the hot air in the air tight vessel being continuously dried by means of a vapour condensing chamber, communicating with the interior of the air tight vessel in which the food substances are dried; 2nd. The method of quickly imparting salt, or other antiseptic, to animal substances intended for human food, by rubbing into the surface of the meats finely pulverized salt, or other antiseptic, and then subjecting them to air pressure in an air tight vessel, and by placing the meats in a solution of salt or other antiseptic under pressure.

No. 10,961. Improvements on Plate-Lifters.

(Perfectionnements aux porte-assiettes.)

Robert, Rugg, Beamsville, Ont., 26th February, 1880; for 5 years.

Claim.—As an improved article of manufacture, a plate lifter, composed of the sides A A hinged together, having the bent wire wings D and a spring C, to open the sides when compressed together.

No. 10,962. Improvements on Coffee Percolators. (Perfectionnements aux cafetières.)

Wentworth G. Petry, Quebec, Que., 26th February, 1880; for 5 years.

Claim.—The perforated diaphragms c d e f made of different sizes to fit into the percolator a; 2nd. The combination of the perforated diaphragms c d e f, tray b and tapering percolator a.

No. 10,963. Improvements in Coal Scuttles.

(Perfectionnements aux seaux à charbon.)

Oscar Eisenbuth, Hamilton, Ont., 26th February, 1880; for 5 years.

Claim.—The ash sifter D in combination with a coal scuttle A; 2nd. The ash box B, with hole and slide N in bottom, front or sides, in combination with the scuttle A; 3rd. The combination of the coal scuttle A, sifter D, ash box B with opening and slide N.

List of Patents issued up to 22nd March, 1880, but not yet Officially published in the Patent Office Record.

No. 10,964. J. Qnersey, London, and J. and J. Kidd, Wandsworth, England, "Carburettor and Gas Burner Combined;" Patent dated 26th February, 1880.

No. 10,965. H. E. Hunter, Hinsdale, N. H., U. S. A., "Galvanic Batteries and Medicated Pads Combined;" 28th February, 1880.

No. 10,966. C. F. Shoemaker, Cleveland, O., U. S. A., "Carriage Spring Fitting and Shaping Machine;" 28th February, 1880.

No. 10,967. N. F. Wynkoop, Chemung, N. Y., U. S. A., "Car Coupler;" 28th February, 1880.

No. 10,968. W. Shaw, Kingman, Me., U. S. A., "Bark Reducing Machine;" 28th February, 1880.

No. 10,969. E. Bradley, Three Rivers, Q., "Process and Apparatus for Purifying Bark Extracts;" 28th February, 1880.

No. 10,970. R. W. Phillips, and A. Tolton, Guelph, O., "Plough;" 28th February, 1880.

No. 10,971. N. Jarvie, and W. Miller, Glasgow, Scotland, "Fire Extinguishing Apparatus;" 28th February, 1880.

No. 10,972. F. Hanson, Hollis; and D. H. Bacon, Portland, Me., U. S. A., "Wood Turning Tool;" 28th February, 1880.

No. 10,973. G. B. Van Vorst, and J. A. Pratt, West Albany, N. Y., U. S. A., "Stand Pipes for Railway Water Stations;" 28th February, 1880.

No. 10,974. C. E. Chinnock, Brooklyn, N. Y., U. S. A., "Electrical Conductors for Telegraphic and Telephonic Purposes;" 28th February, 1880.

No. 10,975. J. Myers, Adams, O., U. S. A., "Method for Curing Foot-rot in Sheep;" 28th February, 1880.

- No. 10,976. W. N. Wylie, Black River Falls, Wis., U. S. A., "Clothes Washer;" 28th February, 1880.
- No. 10,977. P. G. Peltret, San Francisco, Cal., U. S. A., "Automatic Cream Collector;" 1st March, 1880.
- No. 10,978. C. E. Chinnoek, Brooklyn, N. Y., U. S. A., "Electrical Conductors for Telegraphic and Telephonic Purposes;" 1st March, 1880.
- No. 10,979. R. H. E. Siebert, Washington, Col., U. S. A., "Candlestick;" 1st March, 1880.
- No. 10,980. W. H. McNary, Brooklyn, N. Y., U. S. A., "Knitting Machinery;" 1st March, 1880.
- No. 10,981. E. P. Needham, New York, N. Y., U. S. A., "Mechanical Musical Instrument;" 1st March, 1880.
- No. 10,982. B. R. Starratt and F. G. Smith, Truro, N. S., "Railway Frog;" 1st March, 1880.
- No. 10,983. T. B. Osborne, New Haven, Conn., and K. Smith, New York, N. Y., U. S. A., "Middlings Purifier;" 4th March, 1880.
- No. 10,984. J. H. Wilhelm, Denver, Col., U. S. A., "Ore Washing and Amalgamating Machine;" 4th March, 1880.
- No. 10,985. J. Coltham, King, O., "Yarn Winding and Twisting Machine;" 4th March, 1880.
- No. 10,986. A. Stoner, Baton Rouge, La., U. S. A., "Fire Extinguisher;" 4th March, 1880.
- No. 10,987. W. G. Mitchell, Brooklyn, N. Y., U. S. A., "Car Axle Lubricator;" 4th March, 1880.
- No. 10,988. W. M. Smith, Philadelphia, Penn., U. S. A., "Sewing, Embroidering and Overseaming Machine;" 4th March, 1880.
- No. 10,989. I. L. Rosenfeld, M. J. Lasar and A. J. Grimberg, New York, N. Y., U. S. A., "Snow Plough;" 5th March, 1880.
- No. 10,990. J. E. Wiener, Friendship, N. Y., U. S. A., "Horse Hay Rake" (Extension of Patent, No. 4,641); 5th March, 1880.
- No. 10,991. J. A. Lakin, Westfield, Mass., U. S. A., "Overdraw Bar Check" (Extension of Patent, No. 4,491); 5th March, 1880.
- No. 10,992. F. A. Fouts, Washington, Col., U. S. A., and A. Holland, Ottawa, O., "Car Wheel;" 5th March, 1880.
- No. 10,993. A. W. Schulerburg, St. Louis, Miss., U. S. A., "Shipping Tanks for Fluids;" 5th March, 1880.
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- No. 11,013. N. B. Sherwood, Saratoga, N. Y., U. S. A., "Car Seat;" 11th March, 1880.
- No. 11,014. W. Grassick, Lucknow, O., "Snap Hook;" 11th March, 1880.
- No. 11,015. A. Laing, Essex Centre, O., "Wood Working Machine;" 11th March, 1880.
- No. 11,016. J. B. Armstrong, Guelph, O., (Assignee of W. C. Peel, and J. V. Elster, Springfield, O., U. S. A.), "Dash Moulding" (Extension of Patent, No. 5,301); 11th March, 1880.
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- No. 11,020. A. Whalen, Aldborough, Ont., "Brick and Tile Machine;" 13th March, 1880.
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- No. 11,022. G. Cowing, Cleveland, Ohio, U. S. A., "Moulds for Making Steel;" 13th March, 1880.
- No. 11,023. E. C. F. Otte, Pickham, England, "Tricycle;" 13th March, 1880.
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- No. 11,051. C. L. French, Brooklyn, N. Y., U. S. A., "Clutch;" 20th March, 1880.
- No. 11,052. G. B. Dixwell, Boston, Mass., U. S. A., "Steam Engines and Boilers" (Extension of Patent No. 4,548); 20th March, 1880.
- No. 11,053. J. B. Armstrong, Guelph, Ont., (Assignee of W. C. Peel and J. V. Elster, Springfield, Ohio, U. S. A.), "Dash Moulding" (Extension of Patent No. 5,301); 20th March, 1880.
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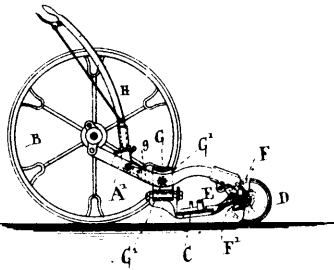
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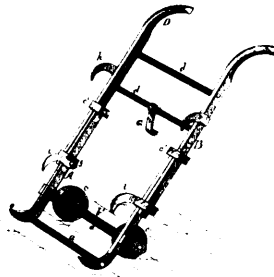
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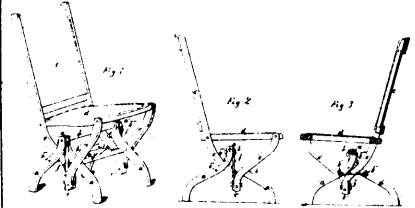
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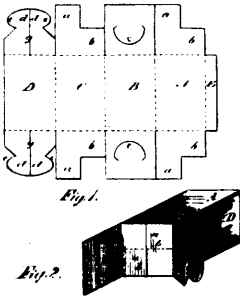
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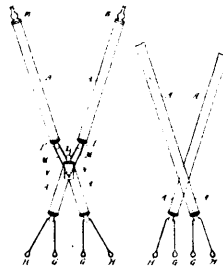
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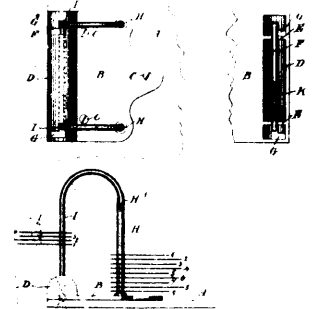
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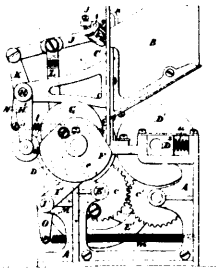
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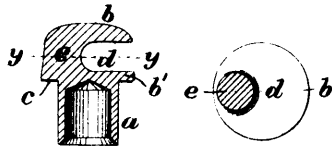
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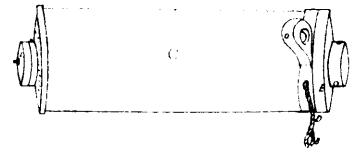
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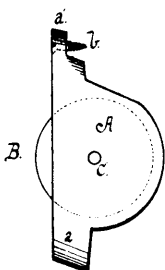
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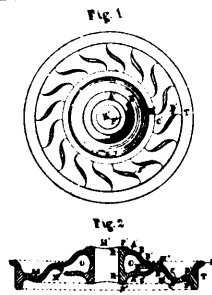
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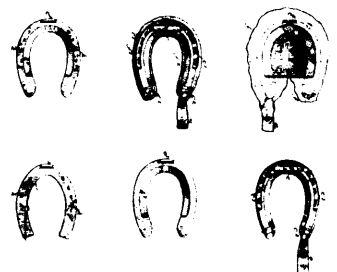
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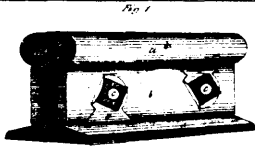
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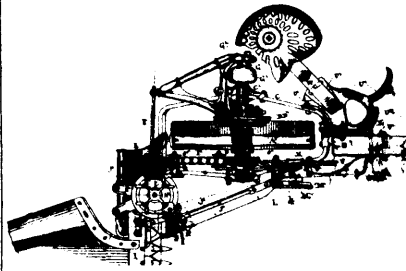
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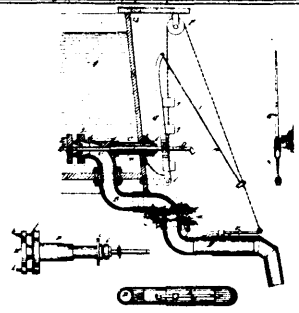
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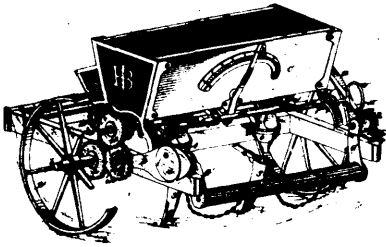
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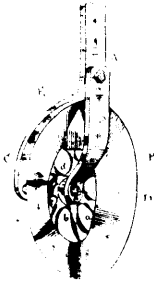
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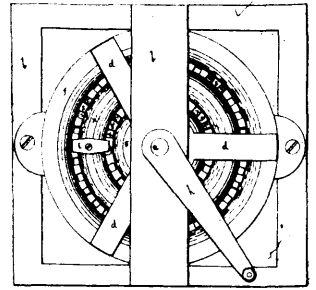
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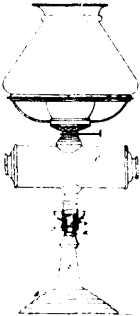
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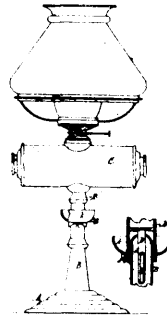
10848 Lane's Improvements on Plough Coulters.



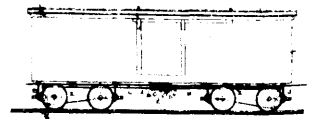
10849 Severance's Improvements on Oatmeal Machines.



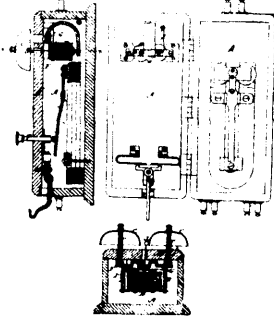
10850 Spencer's Improvement on Lamps.



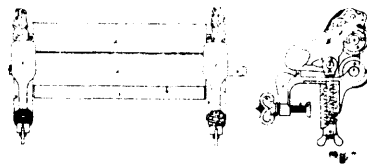
10851 Spencer's Improvement on Lamps.



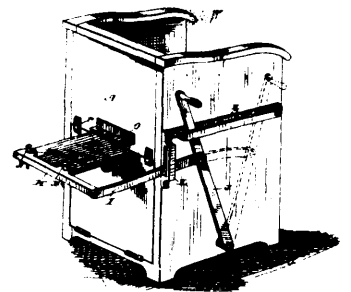
10852 Smith's Improvement on Car Brakes.



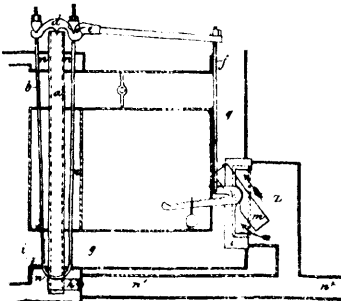
10853 Anders' Improvements on Telephones.



10854 Calef & Cable's Improvements on Clothes Wringers.



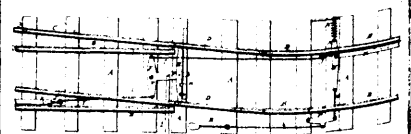
10855 Sprint's Improvements in Commodes.



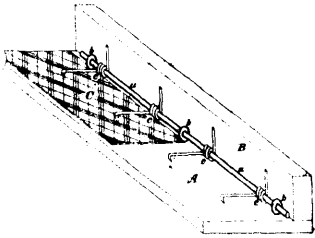
10856 White's Improvements on Telegraph Regulators.



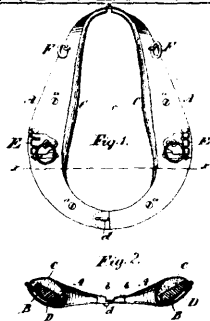
10857 Rhodes' Improvements on Audiphones.



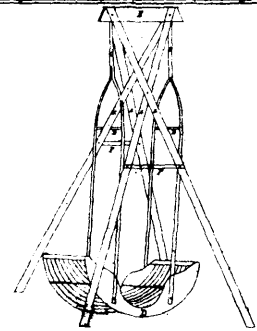
10858 Baertrighe's Improvements on Railway Switches.



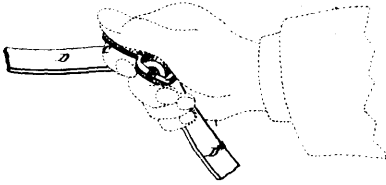
10850 Bray's Device for Fastening Carpets.



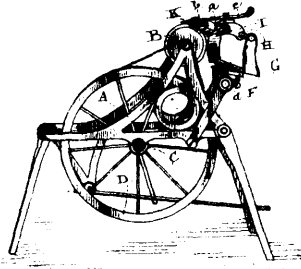
10860 McCorvie's Improvements on Horse Collars.



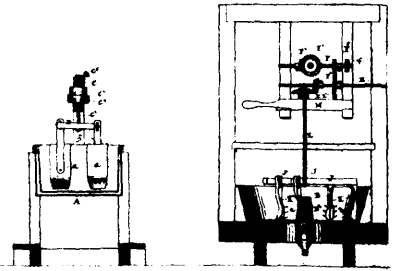
10861 Phillips' Improvements on Pleasure Swings.



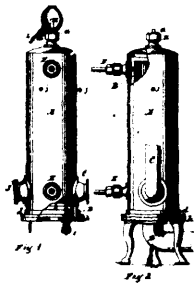
10862 Powell's Improvements on Reins.



10863 Elliott's Machine for Grinding Mower Knives.



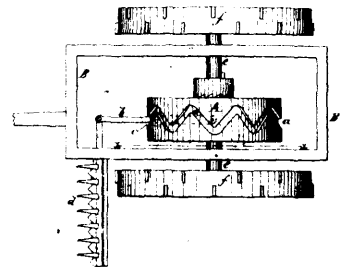
10866 Brintnell's Method and Machinery for Manufacturing Cheese.



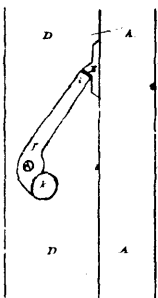
10867 Baragwanath's Improvements on Feed Water Heaters.



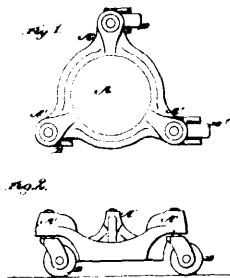
10868 Nicol's Improvements in Gates.



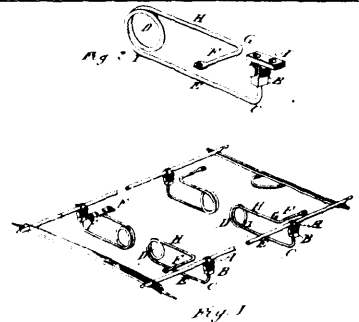
10869 Campbell's Improvements on Mowing and Reaping Machines.



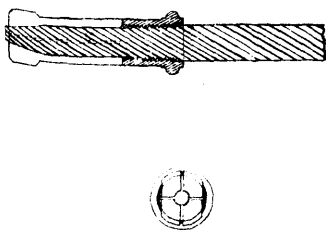
10870 Richardson's Sash Support and Lock.



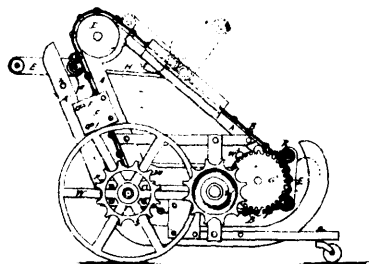
10871 Harper's Improvements on Stoves Castors.



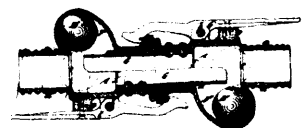
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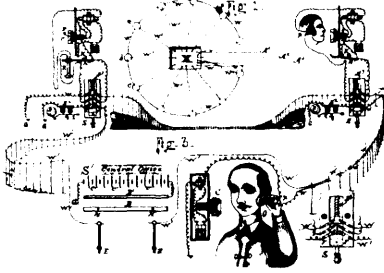
10873 Scott's Improvement in Broom Handles



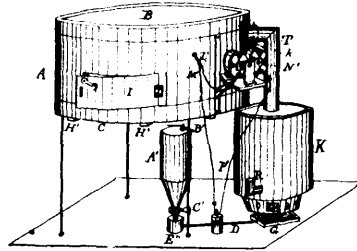
10874 Castle's Improvements on Hay Loading Machines.



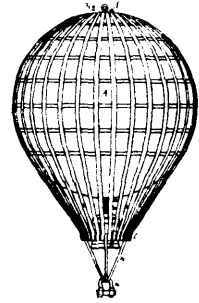
10875 Stevens' Improvements on Pipe Couplings



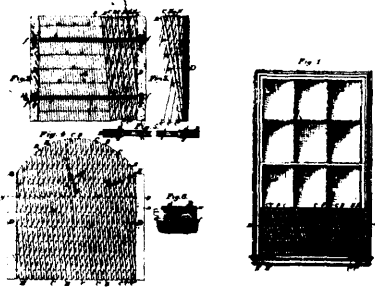
10876 Shaw's Improvements in Telephones.



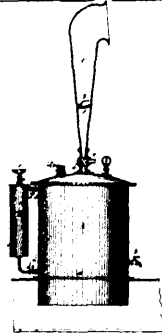
10877 Oxford's Improvements on Incubators.



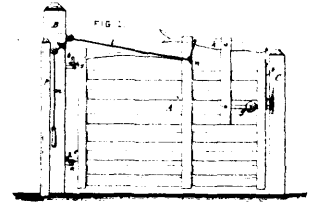
10878 Raydt's Mode of Raising Bodies in Water or Air.



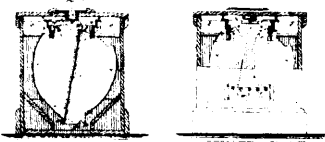
10879 Hartig's Improvements on Window Screens.



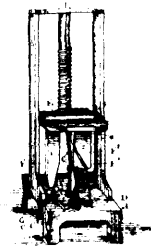
10880 Jaeger's Improvements on Fog Horns.



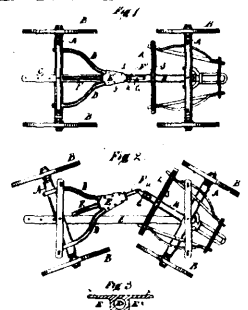
10881 Henshaw's Improvements in Gates



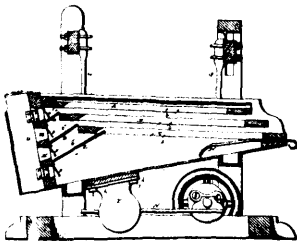
10882 Allen's Improvements on Grain Weighing and Registering Machines.



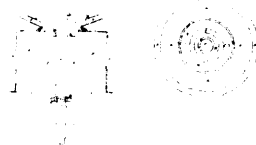
10883 Armstrong's Improvements on Bending and Shaping Machines.



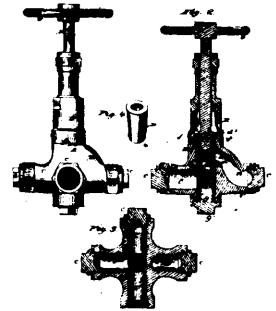
10884 Shaw & Cook's Improvements on Waggon Gears.



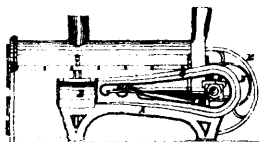
10885 Russell's Improvements on Middlings Purifiers.



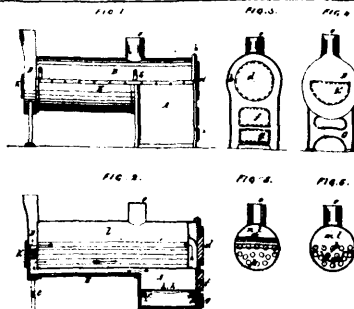
10886. Howell's Improvements on Pulp Machines.



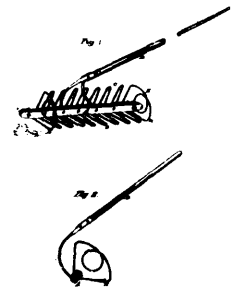
10887 Gear's Improvements on Valves.



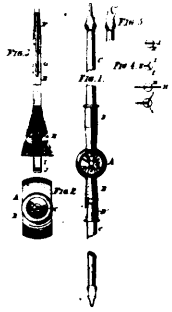
10889 Hall & Lane's Improvement in Portable Engines.



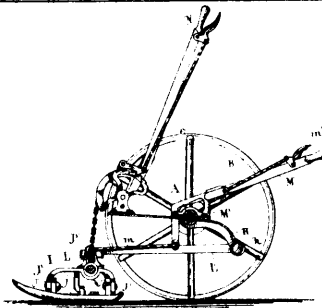
10890 Hall & Lane's Improvement in Portable Boilers.



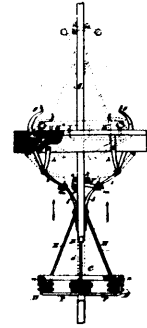
10891 Smith's Improvements on Lawn Rakes.



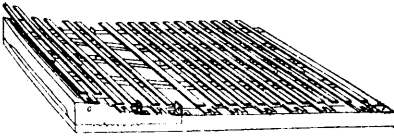
10892 Thorne's Improvements in Archery.



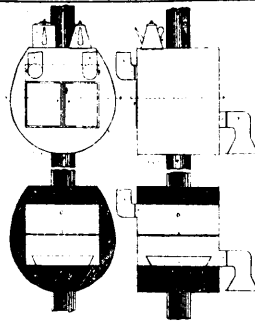
10893 Jones & Emerson's Improvements on Mowing Machines.



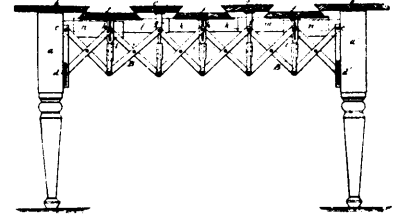
10894 Slusser's Improvements on Safety Elevators.



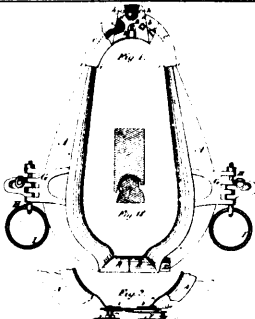
10895 Bergeron's Improvements on Spring Mattresses.



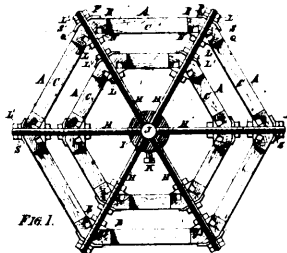
10896 Lajoie's Improvements on Stoves.



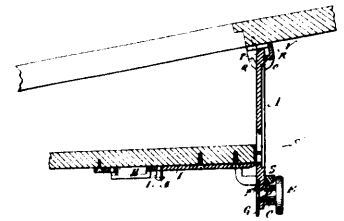
10897 Brassington's Improvements on Extension Tables.



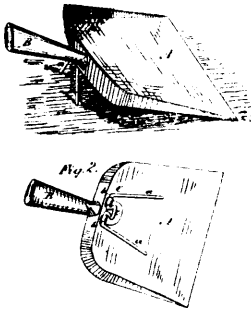
10898 Fisher & Watson's Improvements on Horse Collars and Dies for Forging the Same.



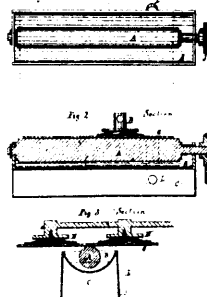
10899 Bennett's Improvements on Revolving Screens.



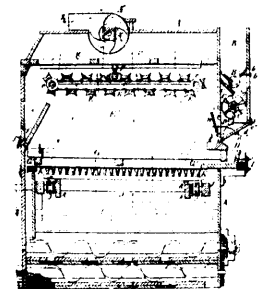
10900 Bush's Improvements on Door Bolts.



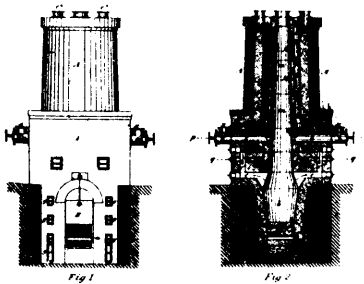
10902 Munson's Improvements on Dust Pass.



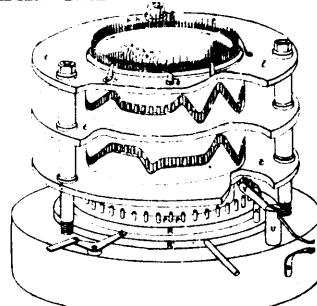
10903 Eastman's Process for Preparing Gelatine Dry Plates for use in Photography.



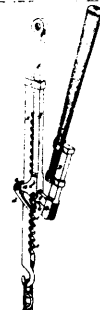
10905 Guildler's Improvements on Middlings Purifiers.



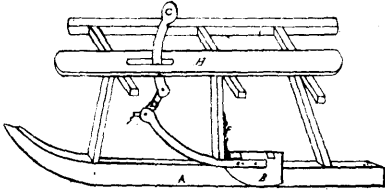
10908 Attrill & Farmer's Improvements in the Manufacture of Gas.



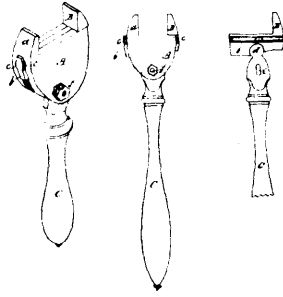
10907 Salisbury's Improvements on Knitting Machines.



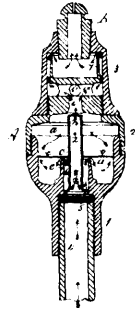
10908 Trotter's Improvements in Stump Extractors.



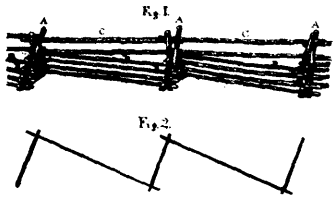
10909 **Boydell's Improvements on Sleigh Clutches.**



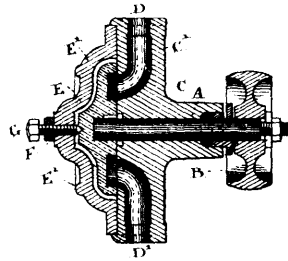
10912 **Best's Improvements on Wrenches.**



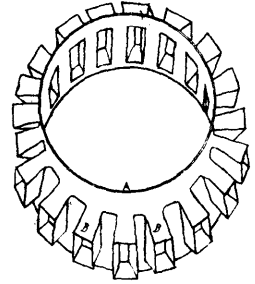
10914 **Chamberlain's Improvements in Gas Burners.**



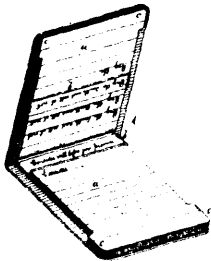
10915 **Brown's Improvements on Fences.**



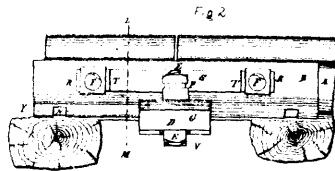
10916 **Semple's Improvements in Hydraulic Machinery.**



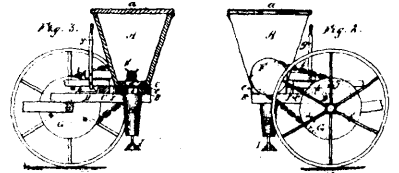
10917 **Blais' Improvements on Carriage Wheels.**



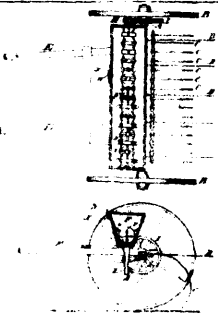
10919 **Wakeman's Improvements on Copy Books.**



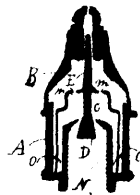
10920 **Tyng's Improvements on Rail Joints.**



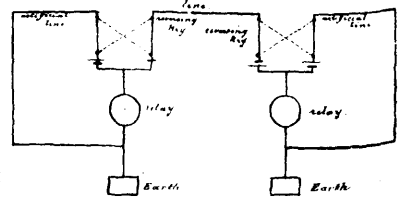
10921 **Allison's Improvements on Seed Sowers.**



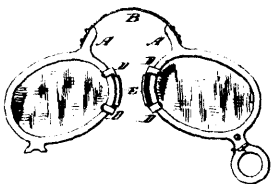
10922 **Mann's Improvements on Seeding Machines.**



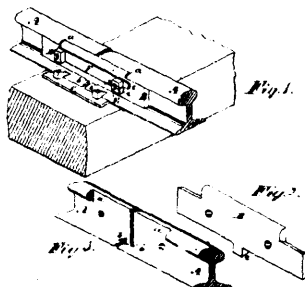
10923 **Parsons' Improvements in Gas Regulators.**



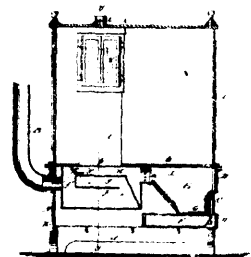
10924 **Muirhead, Briggs & Winter's Improvements on Duplex Telegraphy.**



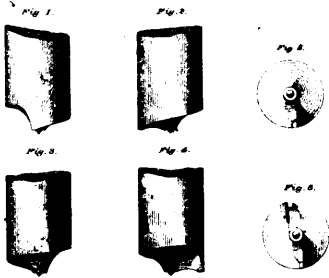
10925 **Blethen's Improvements on Eye Glasses.**



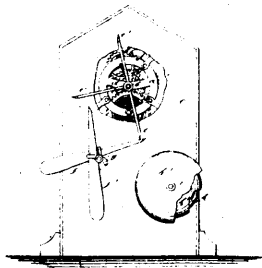
10926 **Williams' Improvements on Rail Joints.**



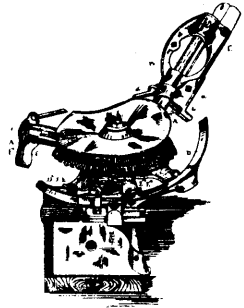
10927 **Boswell's Heating, Cooking and Drying Apparatus.**



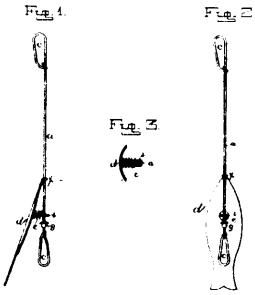
10928 Kennedy's Improvements on Metal Punches.



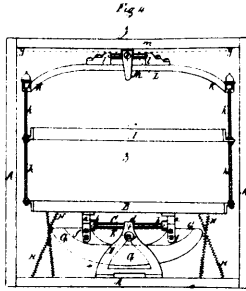
10929 Lindon's Striking Mechanism for Clocks.



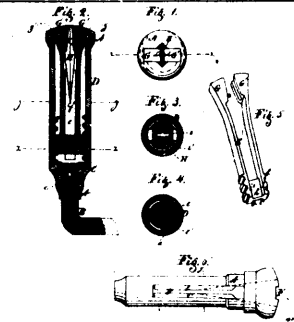
10930 Green's Improvements on Reaping Machines.



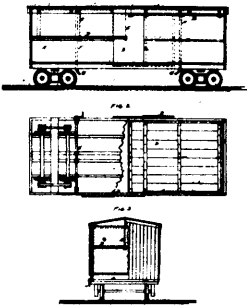
10931 Hill's Improvements in Spoon Bait Hooks.



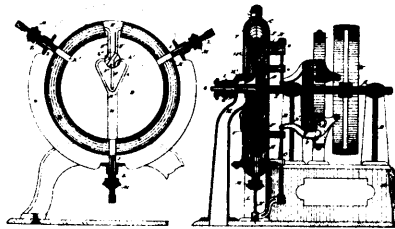
10932 Huston's Improvements on Berths for Vessels.



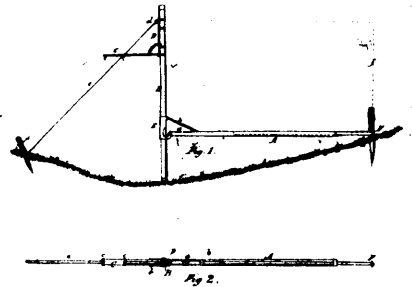
10933 Peck's Improvements on Bit Braces.



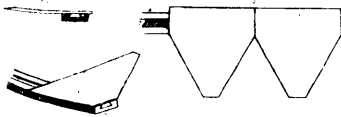
10934 Shaffer's Improvements in Live Stock Cars.



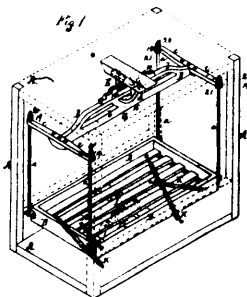
10935 De Groat & Maxwell's Improvements on Rotary Engines.



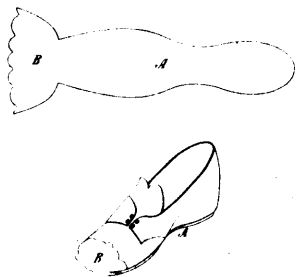
10936 Soare's Improvements on Cross Sectors.



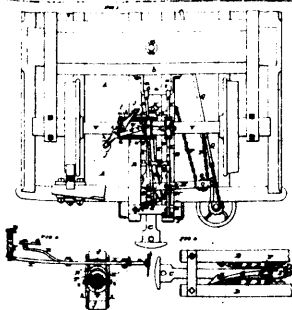
10937 Whittington's Improvements on Harvesters.



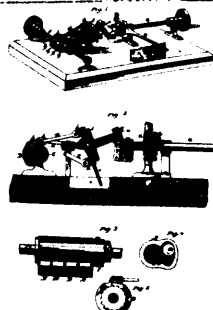
10938 Huston's Improvements on Berths for Vessels.



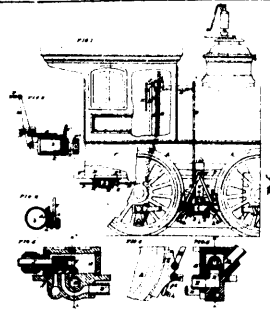
10939 Desforges' Improvements on Boots and Shoes.



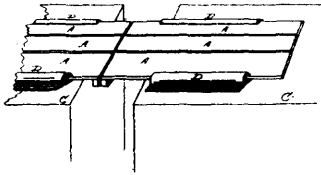
10940 Card's Improvements on Car Brakes.



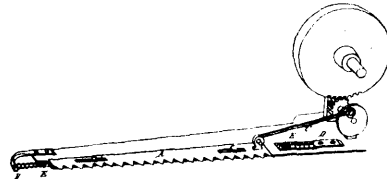
10941 Patric's Improvements on Mechanical Movements.



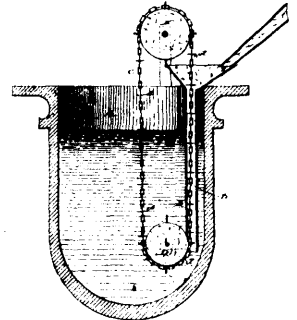
10942 Card's Improvements on Steam Brakes.



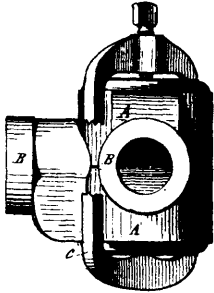
10943 Stapley's Improvements on Railway Cars.



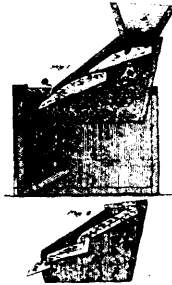
10944 Skinner's Improvements on Harvesters.



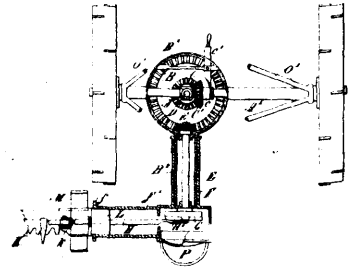
10947 Tichenor's Furnace for Extracting Metals from their Ores.



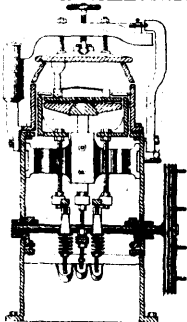
10949 Morton's Improvements on Valves.



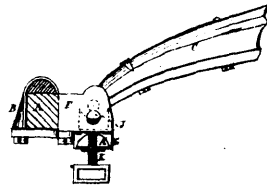
10950 Whitaker's Improvements on Coal Sifters.



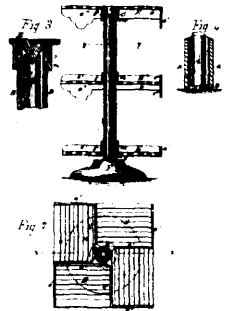
10951 Whitney's Improvements on Mowing Machines.



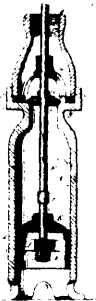
10952 Aikin & Drummond's Improvements in Machines for Moulding in Sand.



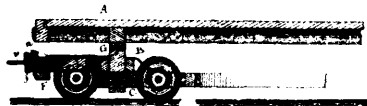
10953 Jacoby's Improvements on Thill Couplings.



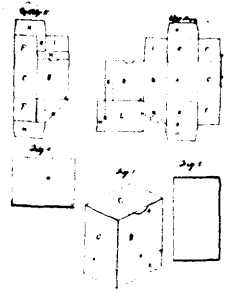
10954 Johnson's Improvements on Book Cases.



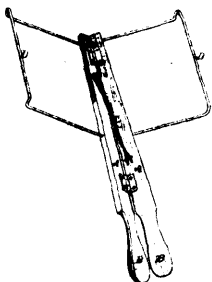
10955 Barnes' Improvements on Lifting Pumps.



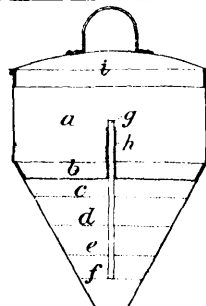
10957 White's Improvements in Car-couplers.



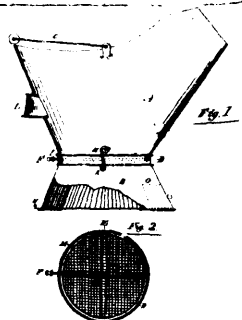
10959 Arthur's Improvements in Paper Boxes.



10961 Rugg's Improvements on Plate-lifters.



10962 Petry's Improvements on Coffee Percolators.



10963 Eisenhuth's Improvements in Coal Scuttles.