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INVENTIONS PATENTED.

No. 12,594. Improvements on Refrigerators. (*Perfectionnements aux garde-manger.*)

Léon Ribourt, Paris, France, 7th April, 1881; for 5 years.

Claim.—The outer cylinder A and inner cylinder B with an annular space between them, such annular space being closed at both ends and fitted with partitions E E forming a circuitous channel to the two ends of which are connected the inlet and outlet pipes F G, for the circulation of in-congealable liquid.

No. 12,595. Improvements on Baggage Checks. (*Perfectionnements aux contremarques de bagage.*)

William W. Wilcox, Chicago, Ill., U. S., 7th April, 1881; for 5 years.

Claim.—1st. The combination, with two flat plates having suitable openings, of a destination cord arranged between the plates and exposed through said openings. 2nd. The combination, with two flat plates having upon their faces the number of the check, and letters indicating the roads over which it is used, and provided near their opposite ends with openings, of intermediate destination card exposed through said openings, said plates and cards being detachable and reversibly connected together by a strap passing through corresponding slots in the plates and cords. 3rd. A reversible baggage check consisting of the flat plates A C, destination card B and strap D, said plates indicating the terminating roads in large and small letters and in reverse order, both in relative position to each other upon the check and in size of lettering, whereby the terminating road at either end of the line upon which the check is used may be made conspicuous by reversing the strap.

No. 12,596. Improvements in Saws. (*Perfectionnements aux scies.*)

Enoch Osgood, Brooklyn, N. Y., U. S., 7th April, 1881; for 15 years.

Claim.—1st. A curved chisel tooth or teeth *f f* when applied to any saw between two, more or less, side cutting or grooving teeth *a e*, the curve being sufficient to allow the sharp edge or point of the teeth *f f* to strike the core formed by the side cutters and cut it out smooth, the same as a chisel directing its sharp edge to cut out the same core easily. 2nd. The curved chisel teeth *f f*, when applied to a saw or a spiral tooth, or between two or each pair of common saw teeth, and so arranged as to cut out the base or core left in the channel or groove formed by the common saw teeth. 3rd. The side cutting or grooving teeth *a e*, made with round cutting edges that will give more moving and cutting surface that will cut both ways and combined with chisel teeth *f f*.

No. 12,597. Improvement on Method of, and Apparatus for Preserving Organic Substances by Gas. (*Perfectionnement aux procédés et appareils de conservation des substances organiques par le gaz.*)

Charles F. Lawton, Arthur W. Lawton and Albert L. Lawton, Rochester, N. Y., U. S., 7th April, 1881; for 5 years.

Claim.—1st. The method described of preserving organic substances, which consists in placing the same in a closed chamber or chambers and subjecting them to mixed carbonic oxide and nitrogen gases, retained in said chambers, or receptacles, while the preserving action continues. 2nd. In an apparatus for preserving organic substances by gas, the combination of the gas holder A B, a gas pipe C leading from the gas holder, and a chamber or chambers D with which the gas pipe communicates, and within which the substances to be preserved are placed, whereby the gas is held in the preserving chamber or chambers while preserving action continues. 3rd. The combination, with the series of preserving chambers D D D, of a con-

tinuous induction pipe C and a continuous eduction pipe C₁, each communicating with the several chambers by separate branches *c c* and the several branches being provided with independent cocks. 4th. The combination, with the closed chamber, of the groove or trough *f* at its top, filled with water or other suitable material, and the gas tight cover *g* provided with a vertical flange resting in said groove or trough. 5th. The combination, with the gas holder A B and the preserving chamber or chambers D, of an automatic temperature regulator, interposed in the supply pipe, between the gas holder and the chamber or chambers, whereby the gas in its passage, will be warmed or cooled, to a mean temperature, before it reaches the preserving chamber or chambers. 6th. The temperature regulator, consisting of the hot and cold water cylinders E E₁, the discharge pipes *l l*, the receptacle G, the cups *t t*, valves *u u*, lever *v* and crank *j*, connected with an armature operated by an electro-magnet, for the purpose of shifting the valves and changing the currents of the gas through the cylinders. 7th. The combination of the iron tube *w* located in the case H and filled with mercury, the glass tube *x* and the rock lever I provided with a wire *y* resting in a glass tube and connected with a battery, whereby the electric current is broken and closed by the raising and falling of the mercury in the tube.

No. 12,598. Improvements on Gates. (*Perfectionnements aux barrières.*)

Robert Cosby, Sidney, Ont., 7th April, 1881; for 5 years.

Claim.—The adjustable block A and the circular indented plate F and pin G.

No. 12,599. Improvements on Air Brakes. (*Perfectionnements aux freins atmosphériques.*)

John Hall, Hamilton, Ont., 7th April, 1881; for 5 years.

Claim.—1st. The combination, in an air brake, with the locomotive exhaust pipes, the nozzle *c* having extension *c* and the tube *d*, of the cock *e* having stem whose crank connects with the cab rod *e*, and a slide *g* connected by a jointed rod with an arm *f* of the cock stem. 2nd. The combination, with the steam pipes *a*, of the relief valve *t* arranged in a vertical pipe *b* passing through the smoke box, and having a valve seat at its upper end to release compressed air. 3rd. The shaft *m* having arm *m*₁, spring *l*, arm *n*, carrying pawl *n* and notched segment *o* combined together and with the lever of *k* the relief valve. 4th. In combination with the steam pipe of a locomotive fitted with a relief valve, the pipe *e* connected below the relief-valve and adapted for connection to the pipes of the air brake, and the cock *p* in the pipe *e*.

No. 12,600. Improvements on Harvester Rakes. (*Perfectionnements aux râtaux des moissonneuses.*)

Charles D. Dewey, (Assignee of Orville Cooley), Brockport, N. Y., U. S., 7th April, 1881; for 5 years.

Claim.—1st. The hub of the cam provided with one or more radially projecting flanges. 2nd. The hub of the cam provided with flanges which extend out radially from said hub, and also extend upwardly, so as to surround and enclose the hub of the rake head. 3rd. The combination, with flanges projecting radially from the cam hub, of the rake head having a downwardly projecting annular flange.

No. 12,601. Improvements on Hasps and Staples for Car Doors. (*Perfectionnements aux charnières et aux gâches pour les portes des chars.*)

James E. Thomson, Buffalo, N. Y., U. S., 7th April, 1881; for 5 years.

Claim.—1st. A staple provided with a flange *c* and a tubular portion F having a projection rim *e*, in combination with plug E having a flange *e* and a suitable expanding portion *a*. 2nd. A staple provided with a tubular portion F and a plug E, in combination with a hasp B suitably connected thereto.

No. 12,602. Improvements on Lamp Stoves. (*Perfectionnements aux poêles à lampe.*)

Thomas G. Watson, Paris, Ont., 7th April, 1881; for 5 years.

Claim.—The combination of base A, annular side C, annular wall G, exterior casing H forming flue I and chimney K.

No. 12,603. Improvements on Saw Sets.*(Perfectionnements aux fers à contourner.)*

Charles Morrill and Asa Farr, New York, U. S., 7th April, 1881; for 5 years.

Claim.—1st. The adjusting plate B in combination with the slotted frame work G and die D.**No. 12,604. Improvements on Churns.***(Perfectionnements aux barattes.)*

William Spence, Arnprior, Ont., 7th April, 1881; for 5 years.

Claim.—A churn A of rectangular construction, having partial partition B, wheel D and gate G.**No. 12,605. Machine for Thrashing Grain.***(Machine à battre les grains.)*

John H. Elward, St. Paul, Min., U. S., 7th April, 1881; (Extension of Patent No. 7,442.)

No. 12,606. Machine for Thrashing Grain.*(Machine à battre les grains.)*

John H. Elward, St. Paul, Min., U. S., 8th April, 1881; (Extension of Patent No. 7,442.)

No. 12,607. Improvements in Thrashing Machines.*(Perfectionnements aux machines à battre.)*

John McCloskey, Strathroy, Ont., 8th April, 1881; for 5 years.

Claim.—1st. In a thrashing machine, the combination of concave 5 provided with projecting bearing C, and rock shaft 8 having cam 7 for adjustment of the concave. 2nd. The combination, with fan case 12, of the end doors 15, connecting rods 16, pull rod 17, cross handle 50 and rack bar 18 to regulate the blast of the fan. 3rd. The hinged casing 19 in combination with the main frame for guarding belt 20. 4th. The hinged casing 21 secured to the elevator 22 for guarding belt 23. 5th. The combination of the straw deck 25, hangers 53, double throw crank shaft 24, pitmans 31 and reciprocating grain deck 26. 6th. The straw deck 25 constructed of longitudinal bed pieces 32 carrying triangular sided cross bars 33 and notched longitudinal rails 34. 7th. The reciprocating grain table or deck 26 having flaring sides 29 operated independently of the shoe by pitman 31 from a crank shaft 24. 8th. The combination, with band wheel 28, of the jointed pitman 45, rock shaft 38 having arms 37 39 and bar 40 for shaking the shoe 14. 9th. A continuous belt 20 in combination with band wheel 28 pulleys 42 43 and 44 for operating the straw and grain decks 25 26, fan 11 and straw apron 35 connected by their respective shafts and shoe 14, and elevator belt 23. 10th. In a separating machine, the fan case 12 provided with hinged and drop doors 15 at both ends. 11th. The reciprocating grain deck 26 in combination with a reciprocating straw deck 25.**No. 12,608. Improvements in the Manufacture of Wood Pulp.***(Perfectionnements dans la fabrication de la pâte à papier de bois.)*

Charles B. Carter, Lawrence, Mass., U. S., 8th April, 1881; for 5 years.

Claim.—1st. The method of treating vegetable fibres or wood for removal therefrom of matters detrimental to the conversion of such wood or vegetable fibres into paper pulp, the said method consisting in introducing the raw wood, or material, into a suitable vessel or retort, and while therein applying to it (the said wood or material) dry heat and the vapours expelled thereby from such wood or material, so as not only to partially or sufficiently decompose the wood or material without in the meantime injuriously charring or carbonizing it, but to extract from it the said detrimental matter, or matters, and remove the same by the said vapour or vapours on such being allowed, or caused to pass out of the vessel or retort through the duct thereof. 2nd. A new or improved manufacture in the fibrous material, resulting from wood or vegetable fibres after treatment thereof, by means, as specified, so as to separate from such wood, or vegetable fibres, matters detrimental to the conversion of such into paper pulp. 3rd. In combination with the process of treating wood or a vegetable fibrous material, in a retort or vessel, by heat and by vapour extracted thereby from the wood, or charge the subsequent passage of steam through to the retort or vessel and upon, or about the charge, so as to prevent the accumulation on, or remove from it condensed vapours of the products eliminated from it.**No. 12,609. Improvements in Portable Fences.***(Perfectionnements aux clôtures portatives.)*

Eli Miller, Kalamazoo, Mich., U. S., 8th April, 1881; for 5 years.

Claim.—A fence composed of panels having boards with the holes in which the ends of the panel hook are located, the brace hook and pin, the hooked end of which brace is caught around the body portion of the pawl hook coupling the panels.**No. 12,610. Improvements on Post Hole Diggers.***(Perfectionnements aux sondes pour les pieux de clôture.)*

Joseph Scheidler, Coldwater, Mich., U. S., 8th April, 1881; for 5 years.

Claim.—The combination of bar B provided with footrest c and shovel A pivoted lever E, pivoted scoop D and parallel connecting bar C provided with spring S.**No. 12,611. Machine for Forming Heel Counters.***(Machine à former les contreforts des talons.)*

Joseph Kieffer, Montreal, Que., 11th April, 1881; (Extension of Patent No. 5,955.)

No. 12,612. Improvements on Hose and Pipe Nozzles.*(Perfectionnements aux lancees des boyaux et des tuyaux.)*

The Eaton and Burnham Company, Bridgeport, Conn. (Assignee of Melville Clemens, Worcester, Mass., U.S.), 11th April, 1881; (Extension of Patent No. 6,046.)

No. 12,613. System of Electric Lighting.*(Système d'éclairage électrique.)*

St. George L. Fox, London, Eng., 11th April, 1881; for 5 years.

Claim.—1st. The novel combination of the globe A, bridge a, block d, clips c, block d, platinum wires e c, mercury tubes f f, stopper g, mercury i and glue j. 2nd. The bridge a in combination with the block l, clip c, block d, platinum wires e e and mercury tubes f f. 3rd. The novel combination of the globe A, bridge a, spirals m m into which the ends of the glass burner are united, platinum wires e e fused into pieces n n of lead, said and mercury tubes f f. 4th. In electric lamps, in which the light results from the incandescence of continuous conductor, the employment, for the luminous bridge, of vulcanized fibre. 5th. The process of manufacturing bridges for electric lamps, by bending into the form of loops approximately shaped, strips a of a suitable material containing a substance of a highly refractory character, submitting them when so bent and by means of an appliance, such as that described, to a white heat and then carbonizing them by raising them by means of an electric current or otherwise to a white heat in benzole vapour, or other suitable carbon compound. 6th. The use, in the manufacture of bridges for electric lamps, of a suitably shaped block o with a projecting cutting edge p. 7th. The method or process of producing incandescence in the baked threads, strings or tapes, when manufacturing them into bridges for electric lamps, by connecting the said baked threads, strings or tapes with a dynamo electric machine or other electric generator, by then momentarily short circuiting the machine and suddenly breaking contact through the short circuit, repeating the operations as often as required. 8th. The method or process of thickening the ends of the threads, strings or tapes by connecting the two sides at a short distance from their ends by a wire or metal clip and then continuing to send a current through. 9th. The novel combination of the tube B, bulb c, neck D, rod E, bulb F, neck G, cup H, flexible tube I, vessel K filled or partly filled with mercury or other liquid, and tube M N O, all working together in the manner explained. 10th. The novel combination of the tube B, bulb c, neck D, rod E, bulb F, neck G, cup H, flexible tube I, vessel K filled partly with mercury or other liquid, tube P and valve Q. 11th. The novel combination of the vessel A, neck D, bulb or cup C, rod K, pipe T, vessel B, valve G, tube E communicating with a pump, air drier U and tube P having a valve V and communicating with electric lamps. 12th. The vessels A B communicating with each other by the pipe T, the vessel A being provided with a bulb or cap C and closing rod D, and the vessel B communicating with a pump, in combination with the tube P fitted with a valve V and communicating with the lamps to be exhausted. 13th. The electric magnets n n connected with the earth, and with an electro-meter or electro-dynamometer, in combination with the armatures o o, arms P P and rocking shaft q for controlling the action of the engines which work the electric generators or for controlling the action of rheostats or resistances in systems of electric lighting. 14th. The method of turning on or off the current for lighting and extinguishing a number of lamps, without lighting or extinguishing other lamps which derive their current from the same electric main, by sending a current through a line wire so as to act through apparatus upon each lamp, in the series to be lighted or extinguished by turning on or off the current from the electric main between which and the earth the said lamps are joined. 15th. The permanent magnet E and electro-magnet F, in combination with the line wire A and with the lamp B joined between the main C and the earth D. 16th. The method of turning on and off the currents for lighting and extinguishing a number of lamps without lighting or extinguishing other lamps which derive their current from the same electric main, by employing, in connection with every lamp to be lighted or extinguished, an electric magnet of very high resistance, its circuit being always closed so that a feeble current is always passing through it from the main to the earth, by providing this electro-magnet with a spring armature, the tension of the spring exactly balancing the attraction of the magnet at the normal electro-motive force of the main, and by employing in connection with the said electro-magnet and armature, two other electro-magnets whose circuits are respectively closed and respectively turn on and off the lamp current, when the armature respectively approaches or recedes from its magnets owing to an increase or decrease in the electro-motive force and by momentarily increasing or decreasing the electro-motive force according as the lamp current is to be turned on or off. 17th. The electro-magnet F of very high resistance, with its circuit between the main C and the earth always closed, in combination with the spring armature H, electro-magnets I K, bar L connected with the main C, contact peg G and lamp B.**No. 12,614. Improvements on Netting Machines.***(Perfectionnements aux machines à filets.)*

Edward Keeler, Boston, (Assignee of Albert T. Anderson, Chelsea,) Mass., U. S., 11th April, 1881; for 5 years.

Claim.—1st. The combination of the single warp roller B and take up B₂ B₃ B₄ with the bar C and warp carriers C₅ C₆. 2nd. The combination of the four way movement bar C and the carriers C₅ with the cord and loop holders D and the loop-holder pins E E'. 3rd. The combination of the overlapping looper holder pins E E'. 4th. The combination of the shuttle H with its inclined carriers H'. 5th. The cord-holder and looper D formed as shown with the broad looper holder d and the cord holding notch d'. 6th. The combination of the shuttle carrier bars H₂ with the levers H₄ H₇ and the cams H₈, whereby an alternating lateral motion is given to the shuttle carriers.**No. 12,615. Improvements on Thrashing Machines.***(Perfectionnements aux machines à battre.)*

Archibald Filshie, Elora, Ont., 11th April, 1881; for 5 years.

Claim.—The combination, with the elevating belt for carrying the straw

and grain from the thrashing cylinder past the beater, of hook-shaped teeth suitably connected to an endless apron or belt suspended over the elevating belt between the thrashing cylinder and the beater, and caused to travel with the elevating belt so as to assist it in carrying the straw from the thrashing cylinder to the beater.

No. 12,616. Improvements on Potato-Diggers. (*Perfectionnements aux arrache-patates.*)

Edward Lane, New Perth, P.E.I., 11th April, 1881; for 10 years.

Claim.—The sole plate *a*, share *b* and steel prongs *f* and their combination with the shank *c*.

No. 12,617. Improvements on Duplex Telegraphs. (*Perfectionnements aux télégraphes à double courant.*)

Gerritt Smith, Astoria, N.Y., U.S., 11th April, 1881; for 5 years.

Claim.—1st. The combination of a main line, a differential receiving instrument, and two independent artificial or compensating lines, each permanently connected with the earth through the said receiving instrument, one of which lines acts to compensate the dynamic, and the other the static effects of the current transmitted from the home station. 2nd. The combination of a battery, a main line, an artificial or compensating line, a differential receiving instrument and two inductive surfaces separated from each other by a dielectric, one of said surfaces being included in or connected with the main line and the other permanently with the earth through the receiving instrument. 3rd. The combination of a transmitting key, a battery placed between said key and the earth, a main line extending from said key to the earth at the distant station, an artificial line extending from said key to the earth at the home station, and an auxiliary artificial line, one end of which is permanently connected to the earth at the home station, while the other end terminates in an inductive surface capable of receiving a charge from the main line. 4th. The combination of a transmitting key, a battery between said key and the earth, a main line extending from said key to the earth at the distant station, an artificial line extending from said key to the earth at the home station, an auxiliary artificial line, one end of which is permanently connected to the earth at the home station, while the other end terminates in an inductive surface capable of receiving a charge from the main line, and an adjustable resistance interposed in the last named artificial line at a point between said inductive surface and the earth. 5th. The combination of a main telegraph line, an artificial line permanently connected with the earth and capable of receiving a charge inductively from said main line, and differential electro-magnet having one of its coils included in said artificial line. 6th. The combination of an electro-magnet core and armature, three independent coils or helices capable of acting simultaneously thereon, which are included respectively in the circuit of a main line, an artificial line for compensating the dynamic effects of the main line currents, and an auxiliary artificial line for compensating the static effects of the main line currents. 7th. The combination of a battery, a main line, an artificial or compensating line, two inductive surfaces separated from each other by a dielectric, one of said surfaces being included in, or connected to the main line and the other to the earth, and means for disconnecting or rendering inoperative any required portion of one of said inductive surfaces.

No. 12,618. Revolving Book-Case. (*Bois de bibliothèque tournant.*)

John Danner, Canton, Ohio, U.S., 11th April, 1881; (Re-issue of Patent No. 6,371).

Claim.—1st. In combination with a revolving book case suspended from the top of a stationary post, having an oil cup bearing *h*, the pendent spindle *g* attached to the top shelf of the frame, and oil duct *i* constructed as described. 2nd. In a revolving book-case, the combination of a solid upper shelf, a pendent spindle *g* attached to said upper shelf, and a post having an oil cup bearing in its upper extremities. 3rd. In combination with a revolving book-case suspended from the top of a stationary post *F*, the series of vertical strips *D* located at the end of the shelves, adjacent to the corners of the book-case, to support the outer ends of the shelves, and keep books from falling off. 4th. In a revolving book-case, the combination of a series of quadrangular shelves, with a series of vertical strips located at the end, and adjacent to the corners of said shelves. 5th. In combination with the lower shelf or a series of shelves of a revolving book case, the series of horizontal bars or strips *B* projecting above said shelves. 6th. The combination of a quadrangular platform, or solid upper shelf *C*, a series of shelves parallel with said platform, a central vertical hollow shaft *a* and a series of horizontal strips *B*. 7th. The combination of the quadrangular platform or solid upper shelf *C*, a series of shelves parallel with said platform and vertical strips at one end of said shelves adjacent to the corners. 8th. A revolving book-case suspended upon a post and having a series of shelves provided with horizontal strips projecting therefrom to retain books thereon, the quadrangular platform or solid upper shelf *C* above said post.

No. 12,619. Improvements on Thrashing Machines. (*Perfectionnements aux machines à battre.*)

John H. Elward, Stillwater, Min., U.S., 13th April, 1881; for 15 years.

Claim.—1st. The combination, with the main frame of a thrashing machine, of a supplemental supporting frame hinged thereto and having the horizontal beams *F*, the vertical beams *F*₂ and the inclined braces *F*₃. 2nd. The combination, with the main frame and the cylinder of a thrashing machine, and a detachable supplemental frame hinged to the main frame, of the pulleys *F*₅ *F*₆ mounted in the detachable frame. 3rd. The combination, with the supplemental supporting frame *F* *F*₂ *F*₃ and the pulleys *F*₅ *F*₆, of the standard *f* pivoted to the frame, and the detachable rod *f*₄. 4th. The combination of a cylinder shaft, a sleeve coupling and a belt pulley attached to said sleeve coupling. 5th. The combination, with the cylinder shaft *D*, of the belt pulley *K* having the inwardly projecting central boss *K*₃ and the sleeve coupling *K* formed with the laterally projecting flange *K*₂. 6th. A support for the outer end of the cylinder shaft consisting of a horizontal arm secured to but one end of the machine and having the said shaft mounted in its free end, in combination with a detachable brace pivoted

beneath said arm. 7th. In combination with a vertical brace pivoted beneath the cylinder shaft, a mounting for the shaft recessed to receive and retain the upper end of said brace. 8th. The combination with the cylinder shaft, of a pivoted hook which retains the belt and relieves the shaft from strain. 9th. The combination, with the drive pulley, of a two part support for the cylinder shaft surrounding the pulley, which is separated to permit the removal or attachment of the belt. 10th. A revolving straw beater formed of blades or wings, which are arranged to form a closed central chamber, and of which one blade is divided longitudinally and is arranged to be detached from the beater to permit access to the chamber. 11th. The combination, with the cylinder, the feed trough *A*₂ and the tailings elevator, of the divider *A*₇, whereby the tailings and the straw may be conveyed to the cylinder separately from each other. 12th. The combination of the following elements, whereby power may be applied to the cylinder from a belt or from a tumbling rod interchangeably, namely: the belt pulley *D*₂ mounted on the cylinder shaft, the spur wheel *i* also mounted on said shaft, outside of the belt pulley *D*₂, the short shaft *I* mounted entirely outside of the frame of the machine, the spur wheel *I* and bevel pinion *i*, both attached to said shaft *I*, the tumbling rod shaft *H* and the bevel wheel *H*₃. 13th. The combination, with a thrashing cylinder and the shaft *D*, of the shaft *I* mounted parallel to shaft *D* and arranged to rotate the same, the shaft *H* at right angles to shaft *I*, wheel *H*₃ on shaft *H*, and devices adapted to transmit motion in opposite directions alternately to shaft *I* from shaft *H*. 14th. The combination, with the frame of a thrashing machine, the feed trough *a*₂ and a divider *a*₇, of the adjusting hanger *F*₂. 15th. The combination, with the thrashing cylinder, of the returning board *D*₆ provided with inclined ribs and the returning board *D*₅ having ribs inclined in directions opposite to those on the returning board *D*₆. 16th. The combination with the cylinder of the returning board or plate *D*₇ upon the front side of the cylinder, and provided with two sets of ribs inclined in directions opposite to each other. 17th. The combination, with the front concave *C*₇ having the ribs *c* serrated upon upper edges, and corrugated upon their vertical sides, of the removable rear concave *C*₈ having similar ribs, said concave being arranged to form a light wall below the cylinder, both in rear and in front thereof. 18th. The combination, with the permanent grating *B*₃ formed with continuous transverse bars, of the front removable concave *C*₇ and the rear removable concave *C*₈ arranged to rest upon said grating, and to close the passages between said bars. 19th. The combination, with the thrashing cylinder, of the returning plate *D*₆ situated behind the cylinder and constructed with spiral corrugations extending continuously from the top to the bottom of said plate. 20th. The combination, with the cylinder, of the returning plate *D*₇, in front of the cylinder and constructed with spiral corrugations extending continuously from the top to the bottom. 21st. The combination, with a thrashing cylinder, of a returning plate having spirally arranged corrugations formed by bending said plate. 22nd. The combination, with the concave and cross head, of the bell crank levers *A*₆, links *a*, links *a*₁ and the ratchet and pawl at *a*₃. 23rd. The main separating table *P*₂ and the supplemental tables *F*₂ situated obliquely to the main table and constructed with transverse slats. 24th. The combination, with the separating table *P*₂, of wires *f*₇ arranged to have their ends rest upon the table. 25th. In combination with the fan, the doors *Q*₁ *Q*₂ arranged on the front side of the fan, and the doors *Q*₃ *Q*₄ on the rear side. 26th. In a grain separator, the separating table constructed with the main table constructed with the main table *P*₂ lying in a continuous plane, and with inclines projecting upward from the table, and adapted to lift and temporarily retard the straw, in combination with a continuously rotating shaft, and eccentrically revolving devices which connect the shaft to the table. 27th. The combination, with the vibrating separating table having transverse slats and inclined above said transverse slats, of revolving eccentrics or cranks, beneath the table for imparting motion thereto. 28th. A revolving straw beater, constructed of wings or blades which are arranged to form a close central chamber, and of which one is constructed with detachable bevelled parts *O* *O*₁. 29th. In a thrashing machine, the combination with a reciprocating separator which receives the straw from the cylinder, of an adjustable revolving counterbalancing weight.

No. 12,620. Inoxidable Alloy to be Applied to Steel, and Process for Applying it with or without a Silver or other Coating. (*Allot non-oxidable pour être appliqué à l'acier, et procédé pour l'appliquer sans enduit d'argent ou autre.*)

Peter de Villiers, St. Leonards-on-Sea, Eng., 13th April, 1881; for 5 years.

Claim.—1st. The alloy composed of tin, lead and silver combined. 2nd. The process whereby steel, iron or other metal is prepared by immersion in, or washing by an acid solution, or bath, and then subjected to the action of said alloy in such a manner as to be impregnated or permeated by the same, the process being either terminated at this point, or continued by the application of the amalgam, and a final coating or covering of silver or other metal.

No. 12,621. Improvements on Coin Pocket-Books. (*Perfectionnements aux porte-monnaie.*)

John W. Meaker, Auburn, N.Y., U.S., 13th April, 1881; for 5 years.

Claim.—1st. In a pocket-book, a coin receptacle adapted to expose the coins loosely contained therein in a horizontal position, and having a rigid inclined side *I* extending from the bottom to the margin of the coin space. 2nd. A rigid coin receptacle *R* having an inclined inner face *I*. 3rd. In combination with the shallow coin receptacle *R* of a pocket book adapted to be uncovered so as to expose the combined coins in a horizontal position, the hood *m* overhanging the coin space. 4th. In combination with a pocket-book, the rigid coin drawer or slide *S* provided with one or more depressions *a* for the reception of coins, each having the hole *H* through its bottom at its outer end. 5th. As an article of manufacture, a pocket-book combining a bill department or pockets *P* and a drawer for coin. 6th. As an article of manufacture, the pocket-book combining a bill department or pockets *P*, a dish-shaped coin receptacle, means for covering and uncovering said receptacle, and a gravity stop arranged with the moving and stationary parts concerned in covering and uncovering said receptacle to prevent its being opened except when right side up. 7th. In combination with the spring catch *f*, the inclined passage *r* and shot *t* movable therein by gravity.

No. 12,622. Improvements on Eave Trough Formers. (*Perfectionnements aux machines à former les auges des toits.*)

James Dunn, Port Hope, Ont., 13th April, 1881; for 5 years.

Claim.—1st. A bed plate A provided with adjustable gauges, and having hinged to it a forming block B furnished with a handle E, in combination with a forming block F hinged to the block B and having a handle G. The said parts being arranged to operate as described, for the purpose of making metallic eave troughing. 2nd. A forming block B provided with receivers J, in combination with the hinge blocks B F for the purpose of forming the edge of the eave troughing. 3rd. A block B having an ogee-face, and hinged to the bed plate A by the arms C, the spiral springs H and adjusting levers I arranged and operating in combination with the forming blocks B F.

No. 12,623. Improvements on Thrashing Machines. (*Perfectionnements aux machines à battre.*)

James Gladstone, Salem, (Assignee of George McKinlay, Elora), Ont., 13th April, 1881; for 5 years.

Claim. 1st. In placing two fans F F, one on each end of the cylinder C, with their wind passages connecting with the box or chamber G. 2nd. Making the main carrier of one continuous length with two or more breaks in its upper side. 3rd. Connecting the main carrier at the two breaks or pulleys S S with the ends of the rocking rake frame K, to be placed immediately behind the cylinder and on the top of the lower rakes to be operated in the manner specified. 4th. An upper back rake running in fixed bearings made in the manner set forth.

No. 12,624. Improvements on Hay Unloaders. (*Perfectionnements aux décharge-foin.*)

Frank Patrick, Brownville, N. Y., U. S., 13th April, 1881; for 5 years.

Claim.—1st. The car consisting of the frame G, having rollers H, pulleys I I and break levers K, having cross-bars L L. 2nd. The combination with the car G having pulleys I I and brake levers K K with cross-bars L L, of the frame G having spring ball R, catches T T, inclined guides U U and slides V V. 3rd. The combination, with the car G having pulleys I I, brake levers K K and block J, of the draft rope M having hook H, small ropes P P and pulleys N O. 4th. The spring X consisting of ropes Y Z, having latch boxes B B, catches J J, and operating ropes H H. 5th. The hay unloading device consisting of track A, frame L, car G, string X, draft rope M, ropes P P and pulleys N O.

No. 12,625. Improvements in Furnaces. (*Perfectionnements dans les fourneaux.*)

John A. Rafter, Montreal, Que., and Hugh McBratney, Kingston, Ont., (Assignees of Charles McWilliams, Montreal, Que.), 13th April, 1881; for 5 years.

Claim.—1st. In combination with the furnace of any steam generator, a chamber surrounding the boiler space into which air is admitted, and a transverse chamber connected therewith, into which the products of combustion mingled with steam are exhausted, the whole mixture being discharged above or below the grate. 2nd. The combination, in a steam generating furnace, of the chamber F communicating with fire chambers steam pipe and injectors H h, ducts G and chamber C, with outlet L.

No. 12,626. Improvements on Spring Teeth for Harrows. (*Perfectionnements aux dents élastiques des herses.*)

Aaron J. Nellis, Pittsburg, Pa., U. S., 13th April, 1881; for 5 years.

Claim.—1st. A spring tooth, for harrows and cultivators, composed of two reversely coiled spirals, the ends of which terminate at the centre, where they are united with the tooth. 2nd. The combination of the spirally coiled tooth spring, with the curved bearing spring arranged between the coiled spring and the beam. 3rd. The combination of the spirally coiled tooth spring, with the curved bearing spring and the interposed bearing block. 4th. The spirally coiled tooth spring having a stirrup to engage with a notch in the tooth, in combination with a twisted tooth having longitudinal grooves, and a notch for the reception of the stirrup, of the coiled spring.

No. 12,627. Improvements on the Means of Splicing Traces. (*Perfectionnements dans le moyen d'épisser les traits.*)

Joseph E. Curd, Charleston, Ill., 13th April, 1881; for 5 years.

Claim.—1st. A splice for harness formed of a thin metal blade perforated and adapted to fit between the leathers of the trace, and to be secured thereto. 2nd. The combination, with the sections of a trace, of a metal blade inserted between the leathers of the band and secured as described.

No. 12,628. Improvements on Bolt Clippers. (*Perfectionnements aux cisailles à boulons.*)

Henry K. Porter, Boston, Mass., 13th April, 1881; for 5 years.

Claim.—1st. The levers a a and jaws b b, the combination therewith of auxiliary arms c, connected therewith and laterally adjustable relatively to levers a. 2nd. The levers a a and jaws b b, the pivoted connecting arms c c and means for adjusting them relatively to, and parallel with levers a. 3rd. The levers a a and jaws b b, the adjusting arms c and links h pivoted to said arms and to levers a, and means for adjusting said arm relatively and parallel with said levers a. 4th. In a compound lever clipper, the combination of the levers a, jaws b, and the supplemental arms c c pivoted at one end to levers a, and at the other end to jaws b, and provided with means of divergent adjustment relatively to jaws a. 5th. The combination of levers a, jaws b, arms c, bolts e and plates j, all combined and arranged to effect the adjustment of arms h relatively to and parallel with levers a. 6th. In a compound lever clipper, the interlocking teeth 2 2, formed and arranged upon arcs of a circle, whose centre is the pivot bolts K K of jaws b. 7th. In a bolt clipper and in combination with levers a a, an elastic buffer p, ar-

ranged upon said levers to arrest their converging motion by a cushioning resistance as the opening jaws are brought together. 8th. The combination of jaws b b, pivot bolts K K with their supporting straps l in the nuts x with their teeth y, and the locking plate Z formed with the corresponding internal teeth S. 9th. In combination with jaws b b, the pivot bolts K K, straps l m, the toothed nuts x and toothed locking plate z, and the pins t inserted in bolts K, and straps l to interlock the same. 10th. The arms 4 bolted to jaws b and formed with the hollow hubs 3 enclosing the nuts x in bolts K, and having the inwardly extended segmentary gears 2.

No. 12,629. Improvements in Tanning Process. (*Perfectionnements dans le procédé de tannage.*)

Christian Heinzerling, Frankfort on the Main, Germany, 13th May, 1881; for 5 years.

Claim.—1st. As a new article of manufacture, in leather made from skins which have been soaked in a chrome solution and then treated with stearine or an equivalent compound, and afterwards submitted to the action of light before use. 2nd. A leather made from skins which have been treated with a chrome solution, an aluminous solution, a solution of soap, chloride of barium, or other material having a decomposing action on the aluminous solution (causing hydrate of alumina or barium sulphate, or both, to be deposited in the pores of the skin) then treated with stearine or its chemically equivalent compounds mentioned and exposed to light before use. 3rd. The process of tanning leather by soaking it in a chrome solution, an aluminous solution, a fixing solution acting upon the aluminous material, so as to form a precipitate in the pores of the leather, and their treating it with stearine, or its chemical equivalent and exposing it to light before use. 4th. The process of converting skins into leather by soaking them in a chrome solution, and then treating them with stearine or the herein described equivalent materials, and then exposing them to light before use. 5th. The process of converting skins into leather by means of chromium compounds, the employment of a soluble salt of alumina and aluminous matter successively. 6th. The process of converting skins into leather by means of chromium and aluminum compounds, treating the said skins with sulphate of copper, sulphate of zinc, sulphate of manganese, chloride or borate of zinc, protoxide or sesquioxide of iron in the uncrystallized state, or oxide of manganese, or tungstate of sodium, or potassium. 7th. The combination, in the tanning of leather, of the chromium process and the tanning process, that is converting a hide into leather by treating it with a solution of a chrome compound, and also with materials containing tannic acid.

No. 12,630. Improvements on Whiffletrees. (*Perfectionnements aux palonniers.*)

Edward Warren, Jackson, Mich., U. S., 13th April, 1881; for 5 years.

Claim.—The combination, with a double or single whiffletree A, of a brace or truss rod B, of greater length than the tree, impinging upon the back edge of the tree, and doubled to overlap the ends of the same, and secured thereupon by the end collars C C.

No. 12,631. Process of Restoring Waste Vulcanized India Rubber and Gutta Percha. (*Procédé de révivification des rebuts de caoutchouc et de gutta percha vulcanisés.*)

Henry A. Clark, Boston, Mass., U. S., 13th April, 1881; for 5 years.

Claim.—1st. In restoring waste vulcanized India rubber, first moistening and dampening the material with water and evaporating such water, and then moistening and dampening the material with turpentine, camphine, or equivalent substances, and then heating or evaporating the turpentine, etc. 2nd. The treatment of waste vulcanized India rubber or gutta percha and the compounding of a vegetable oil or oils, or a resinous material, or materials, or both with the same. 3rd. The combination either of a vegetable oil or oils, or of a resinous matter, or matters, or of both with restored waste vulcanized India rubber or gutta percha.

No. 12,632. Improvements on Shovels, Spades and Forks. (*Perfectionnements aux pelles, bêches et fourches.*)

William Chisholm, Cleveland, Ohio, U. S., 13th April, 1881; for 5 years.

Claim.—1st. In a shovel, spade, or fork, the combination with a handle of a body or blade having a tang formed integral therewith and bent upward or forward and secured to the front or lifting face of the handle, and a separate and independent pad provided with a tang, said pad being secured to the rear surface of the body or blade, and the tang secured to the rear side of the handle, the body or blade being formed with a shank portion A² which is folded around the upper portion of the pad.

No. 12,633. Improvements on Drag Sawing Machines. (*Perfectionnements aux machines à scies traînantes.*)

Cyrus S. Dean, Crowland, and William Rainsford, Fort Erie, Ont., 15th April, 1881; for 5 years.

Claim.—1st. The combination, with a drag saw F and a stationary frame A A B, of the treadle I, connecting rod n, hand lever K, rock shaft t, rock lever H and connecting rod g. 2nd. The combination, with the drag saw F, and mechanism for actuating the same of the stationary frame A A B, and the supporting bar C pivoted with its rear end to the stationary frame and connected adjustably with the front end of the stationary frame.

No. 12,634. Improvements on Apparatus for Heating and Ventilating Cars. (*Perfectionnements aux appareils à chauffer et à aérer les chars.*)

Henry A. Gouge, New Rochelle, N. Y., U. S., 15th April, 1881; for 5 years.

Claim.—1st. In a hot air heating apparatus, having a cold air duct and a hood for supplying fresh air under pressure, while the car is in mo-

tion, the combination of a duck or ducks for supplying air to the heater when the car is at rest, an exit aperture for hot air, and a valve at said aperture which is automatically closed, and maintained in a closed position, by the pressure of air within the heater when the car is in motion, and readily opened and left open while the car is at rest. 2nd. An air space containing a furnace, with means for admitting cold air to the bottom of said space, and provided at the top thereof with a hooded opening through its casing, through which opening the heated air may escape while the car is at rest, and provided also with a balanced valve arranged to close when the pressure of air within the air space exceeds a certain amount. 3rd. The combination, with the main cold air duct and its hood, of an outlet to the open air at the base of said duct, for the discharge of cinders and dirt while the car is in motion, and for the admission of cold air when the car is at rest. 4th. The combination, with a cold air duct, and its hood, for supplying fresh air under pressure, of an outlet for hot air near the top of the heater, and one or more cold air ducts or tubes entering from beneath the heater whereby, when the car is at rest, fresh air is supplied to the heater, and discharged therefrom into the car, and while the car is in motion, and accompanied with cinders, etc., is forced outward through the ducts beneath the heater. 5th. The combination, with the main cold air duct and its hood, of the branch duct near the top of the heater, communicating with the main duct, and with the upper portion of the air heating chamber, whereby, when the car is in motion, fresh air is forced through the branch duct into the heater, and hot air is discharged from the heater through said branch duct, and the main duct into the open air when the car is at rest. 6th. A car heating apparatus consisting of an outer casing containing a furnace, a hood outside the car, a cold air duct leading thence to near the bottom of the casing, and suitable means for discharging the air heated within the casing into the car, provided with a screen or partition plate P within the casing and between it and the furnace, forming thereby an air space *q* and with a branch air duct M leading from the cold air inlet duct, and discharging cold air into the said air spaces. 7th. The combination of a hooded cold air duct for supplying fresh air under pressure, a hot air discharge aperture near the top of the heater, and the duct which discharges warm air near the bottom of the heater, when the car is in motion, and admits air to the heater when the car is at rest. 8th. The combination of the cold air duct and its hood, the warm air duct, and the valve or damper, whereby fresh cold air may be mixed with the outgoing heated air. 9th. The combination of the air space G, the cold air duct I opening into the bottom thereof, the warm air duct J opening into the upper portion thereof, the opening *g* in the lower part of said duct, the self-seating valve or damper *g* normally covering said opening, and means for opening said damper and holding it open. 10th. The duct or ducts, conveying the warm or heated air therefrom, terminating in eduction openings F provided with a deflecting plate *f* for giving a downward direction to the escaping air. 11th. The eduction openings F, for the warm or hot air duct of a car heater, provided with a downwardly inclined plate *f* above it, for deflecting the escaping air toward the car floor, and with another oppositely arranged inclined plate *f*, below it, over the upper and inner edge of which the escaping air flows, and which serves to intercept the duct or cinders borne thereby. 12th. The eduction opening F, for the warm or hot air duct of a car heater, provided with a backwardly and upwardly inclined plate *f*, hinged or pivoted at or near its bottom edge, at the lower side of the opening, and provided with means for tilting it backward or forward, to different angles, whereby the effective area of the discharge opening may be governed. 13th. The door C of a car heater provided with a latch *r* and a spring bolt *t*, whose bearings are integral with or connected to said latch, and which works at right angles thereto, in combination with its frame provided with a keeper *s* in which are formed a notch *r* for engaging said latch, and a socket *l*, for engaging said bolt.

No. 12,635. Improvements on Cars for Constructing Railways. (*Perfectionnements aux chars de construction des chemins de fer.*)

George F. Harris, New York, and Gordis D. Harris, Keen, N.H., U.S., 15th April, 1881; for 15 years.

Claim.—1st. In a construction train, the combination, with a series of flat platform cars and a supplemental car moving thereon, of a continuous track for the supplemental car supported on the platform car. 2nd. A platform construction car provided with permanent rails and with anti-friction rollers situated between said permanent rails, whereby loose rails may be moved on to and off the car, and a supplemental car may be moved over the loose material loaded on the lower car. 3rd. The combination, with the platform cars C C, permanent rails F F and a car adapted to move on said rails, of the connecting rails I I. 4th. In a construction train, the combination, with a platform car having a train track, of the detachable extension track beams L. 5th. The combination, with a platform car having a train track, of the detachable extension track beams L L, supporting cross beam K, pins *l* and keys *t*. 6th. The combination, with a transporting car having a train thereon and a cross beam arranged to project above said train track, of a supplemental car which moves upon said train track and is constructed to automatically unload itself.

No. 12,636. Improvements on Corn-Shellers. (*Perfectionnements aux egrenoirs à ble d'inde.*)

John W. Ricker, Chelsea, and Horatio B. Frye, Boston, Mass., U. S., 15th April, 1881; for 5 years.

Claim.—The sectional jointed pressure plate G, with its guide fingers *n* and rods *r*, in combination with plate H and its bar *p*, the spring *t*, thumb nuts *v* and plate I with its slots S.

No. 12,637. Improvements in Stamps, Cheques, Bonds, &c. (*Perfectionnements aux timbres, mandats, billets, &c.*)

Joseph E. Winner and Henry K. Fox, Philadelphia, Pa., U. S., 18th April, 1881; (Extension of Patent No. 5,958.)

No. 12,638. Improvements in Harvesters. (*Perfectionnements aux moissonneuses.*)

Christopher C. Bradley, Syracuse, N. Y., U. S., 18th April, 1881; (Extension of Patent No. 6,605.)

No. 12,639. Improvements on Bed Bottoms. (*Perfectionnements aux sommiers des lits.*)

Jesse Bowen, Lancaster, Ohio, U. S., 18th April, 1881; for 5 years.

Claim.—In a bed bottom, a series of slats having their ends placed over cross-bars B and held down by cross-bars D, and each slat provided with bridges *i*, rods *d* double hooks *h*, springs *t*, central connecting rod *f* and devices for regulating the tension of the spring.

No. 12,640. Improvements on Door Checks. (*Perfectionnements aux verrous des portes.*)

Clark Hooper, Caro, Mich., U. S., 18th April, 1881; for 5 years.

Claim.—The combination, with the door F provided with the keepers *b b*, of the casing plates E E, shaft *d* having knob D, and eccentric disk A, provided with the flange *a* and stop pins *c c*, and rod B slotted in its upper end at *f*, and provided at its lower end with the friction shoe C.

No. 12,641. Apparatus for the Fractional Distillation of Petroleum. (*Appareil pour la distillation fractionnaire du pétrole.*)

Hermann Frasch, Cleveland, Ohio, U. S., 18th April, 1881; for 5 years.

Claim.—In an apparatus for fractionally separating oils from vapours of the same, the combination, with a condenser, of a bath capable of sustaining a constant temperature above 212° Fahrenheit, and a duct for drawing off and separately collecting the product condensed by the temperature of said bath.

No. 12,642. Improvements on Locomotive Ash Pans. (*Perfectionnements aux cendriers des locomotives.*)

Michael B. O'Neill, Halifax, N. S., 18th April, 1881; for 5 years.

Claim.—1st. The overlapping trough pans D, hung pivotally at their ends and arranged under the grate bars E to dump. 2nd. The combination with the pivoted pans D, of the connecting bar G, and levers I H, for dumping the pans simultaneously. 3rd. The perforated pipe L arranged to discharge water from the tender into the ash pans D.

No. 12,643. Improvements on Fruit Pickers. (*Perfectionnements aux cueilleurs des fruits.*)

James Ross, London, Ont., 18th April, 1881; for 5 years.

Claim.—The combination of the zig-zag frame work A, handle B and bag D.

No. 12,644. Improvements on Cross Cut Saw Handles. (*Perfectionnements aux manches des scies de travers.*)

William Ross, Toronto, Ont., 18th April, 1881; for 5 years.

Claim.—A saw handle bracket split in two halves and rivetted together, so as to grasp the blade of the saw between them, in combination with an adjustable wedge set into a tapered recess in the bracket behind the back of the saw for tightening the connection between them. 2nd. A saw handle bracket rivetted to the blade of the saw and provided with an eye to receive the saw handle, in combination with a wedge secured to the bracket within the eye, for the purpose of expanding the end of the handle when driven therein.

No. 12,645. Improvements on Butter Tubs. (*Perfectionnements aux tinettes à beurre.*)

Louis D. Goodwin, Swetsburg, Que., 18th April, 1881; for 5 years.

Claim.—The combination, with a butter tub of the recessed seat formed by the top edge B, of the tub A and the upper hoop C, with spring catches or hooks E E, and their staples G G placed in the semi-circular recesses F F and the locking pin at I I.

No. 12,646. Improvements on Door and Gate Springs. (*Perfectionnements aux ressorts des portes et des barrières.*)

Ira S. Davis, Detroit, Mich., U. S., 19th March, 1881; for 5 years.

Claim.—The combination, with the clamping plate B and tension spring A, of the coupling journal D to which the upper end of the spring A is connected, provided with the angular portion E and lugs *c*, the clamping plate B provided with a cylindrical recess *e*, ratchet teeth *d* and spiral spring H and the locking head I connecting it with the coupling journal.

No. 12,647. Device for Deadening the Noise of Blow off Steam from Safety Valves. (*Appareil pour amortir le bruit de l'échappement de la vapeur des soupapes de sûreté.*)

Guilmore C. Fink, St. Petersburg, Pa., U. S., 19th April, 1881; for 5 years.

Claim.—1st. The combination of an injector located within the tender and a blow off chamber with an injector located within the tender and being connected by a suitable pipe, whereby the blow off steam is condensed and the noise usually occasioned thereby is avoided. 2nd. The combination, with an injector located within the tender, of the water circulating device operated by the blow off steam from the boiler by which the water passing through said injector or a portion thereof, is made to circulate and again pass through the injector. 3rd. The method of retaining the hot water in one portion of the tender by means of a steam injector and a circulating device.

No. 12,648. Improvements on Fruit Jars.*(Perfectionnements aux pots à fruits.)*

Albert W. Stossmeister, Newport, Ky., U. S., 19th April, 1881; for 5 years.

Claim.—1st. A fruit jar constructed with a sharp raised edge *d*, around the inner circumference of the neck. 2nd. The combination, with the sharp raised edge *d* in the neck of the fruit jar, of the packing, the cover and the cover clamp. 3rd. The four armed clamp combined with the fruit jar, provided with the sharp raised edge *d* in the neck, and the exterior verticle notches *G*. 4th. The covers of the jars constructed with the recess or notch *H*, in their upper surfaces.

No. 12,649. Improvements on Vehicle Wheels.*(Perfectionnements aux roues des voitures.)*

Augustin B. Y. Fabregas, New York, U. S., 19th April, 1881; for 5 years.

Claim.—1st. The combination of two or more superposed laminae or plates of wood forming the felly proper, the continuous metal tire *l*, the segmental leather or other elastic layer *m* placed next thereto, the separate or segmental steel wearing pieces *n* and the tie bolts passing through said parts. 2nd. A continuous felly formed wholly of superposed laminae or plates of wood. 3rd. The felly formed wholly of superposed laminae or plates of wood, the fastening screws *k* passing through all of said parts. 4th. The hub proper formed of the butt ends of spokes having a dovetailed shape, the rings applied on opposite sides of said ends, and tie bolts passing transversely through all of said parts. 5th. The combination, with the hub box and spokes having dovetailed butts, of two wooden concave rings *c*, the metal rings *d*, metal ring *h* and the tie bolts *e* passing through all said parts, whereby they are secured rigidly together. 6th. The felly *B* composed of laminae of wood, the metal tie elastic layer *m* and steel wearing plates *n*, spoked and the hub formed of the dovetailed butts of said spoked, the wooden and metal rings and tie bolts. 7th. The nut *f*, in combination with the axle box *b* and ring *d*.

No. 12,650. Improvements on Machines for Shaving Skins:*(Perfectionnements aux machines à raser les peaux.)*

Henry A. House and Samuel D. Castle, Bridgeport, Ct., U. S., 19th April, 1881; for 5 years.

Claim.—1st. A shaving machine composed of a revolving sharp edged annular frame and driving appliances. 2nd. The combination of a carrying frame, an annular cutter and driving appliances, and a cap carrying an adjustable throat piece. 3rd. The combination with the revolving annular cutter, of the throat piece and sharpening appliances. 4th. The combination of the revolving cutter throat piece, cap and trough *J*. 5th. The frame *A* carrying the cutter and driving shafts in combination with the cap *F* and hood *K*. 6th. The combination of the frame *A*, inclined shaft carrying the cutter *E*, cap *F* carrying the adjustable throat piece *f*, and hood *K*. 7th. The combination of the cutter *E*, sharpening wheels *n* and shaft *a* driving both cutter and sharpening wheels.

No. 12,651. Improvements on Grinding Mills.*(Perfectionnements aux moulins à moudeur.)*

John Stevens, Neenah, Wis., U. S., 19th April, 1881; for 5 years.

Claim.—1st. The combination of the adjusting screws, the graduated dials, the pointers keyed or otherwise secured to said screws to turn therewith, and the bolts upon said pointers taking into notches in the dials to lock the screws in the adjustment indicated. 2nd. The combination of the screws, whereby the maximum of retreat of one grinding or crushing surface from the other is determined, the screws concentric therewith, whereby the minimum limit of approach of said surfaces is determined, the springs coiled about said screws and pressing the grinding agents toward each other, the graduated and notched dials supported by a bracket between the heads of said screws and concentric with their spindles, and the pointers and bolts secured to the second named screws to turn therewith, indicate their adjustment upon the dial and lock them against accidental change.

No. 12,652. Improvements on Horse Collars.*(Perfectionnements aux colliers de cheval.)*

Alexander Colborne, Emmanuel Pritchard and James Colborne, Paisley, Ont., 19th April, 1881; for 5 years.

Claim.—1st. The hinge *A* rivetted directly to the pads of the collar as a means of forming and holding their upper ends. 2nd. The combination of the hinge *A* with the hooks *c* secured thereto by the rivets *a*, which also secure the hinge to collar pad. 3rd. The combination of the hinge *A* and hooks *c* with the hinge protector *B*.

No. 12,653. Improvements in Ironing Tables.*(Perfectionnements aux tables à repasser.)*

Sumner Blodget, Glover, Vt., U. S., 19th April, 1881; for 5 years.

Claim.—1st. The combination, of the binding legs, of a board or table hinged to one pair of said legs and provided with a pivoted rack bar, to engage with a rod on the other pair of legs. 2nd. The combination, with the folding legs, one pair of which has a rod *D*, of a board or table hinged to the other pair of said legs and provided with a pivoted rack bar having a lever hinged thereto. 3rd. The combination, with the folding legs, of a board or table hinged to one pair of said legs and provided with a pivoted rack bar to engage with a rod on the other pair of legs, and the cord having means to prevent its escapement from the cross piece of the said board or table. 4th. The combination, with the folding legs, one pair of which has a rod *D*, of a board or table hinged to the other pair of said legs and provided with a pivoted rack bar having a lever hinged thereto, and the cord provided with means to prevent its escapement from the cross piece of said board or table. 5th. The combination with the legs *A*, and rod *D* secured to one end of the legs, of the hinged board *B*, provided with the pivoted rack bar *C*, and lever *E* hinged to said rack bar, and cord *F* having the ring *f*.

No. 12,654. Improvements in Harvesters.*(Perfectionnements aux moissonneuses.)*

Christopher C. Bradley, Syracuse, N. Y., U. S., 20th April, 1881; (Extension of Patent No. 5,990.)

No. 12,655. Improvement in the Manufacture of Boots and Shoes.*(Perfectionnements dans la fabrication des chaussures.)*

Elbridge S. Pratt, Chicago, Ill., U. S., 20th April, 1881; for 5 years.

Claim.—1st. The mode described as an improvement in the art of manufacturing boots and shoes, in bevelling depressing or channelling the inner or upper surface of the outer sole, so as to have its outer edge higher or thicker than the body of the sole applying the upper to the sole with its lower edge turned outward, placing a welt on the top of such outward turned upper, and then securing the three parts in place by fastenings. 2nd. A boot or shoe having its upper turned outward upon the sole edge at the line of juncture and a welt overlaying such outwardly turned portion, the sole, upper and welt being united by suitable fastenings outside of the body of the upper. 3rd. As an improved article of manufacture, a continuous strip of wetting for boots and shoes provided with holes or perforations.

No. 12,656. Improvements in Toe Calks for Horse Shoes.*(Perfectionnements aux pointes des fers à cheval.)*

Hiram Snider, Owensborough, Ky., U. S., 20th April, 1881; for 5 years.

Claim.—1st. The combination of a body portion *b*, a calk proper *b1* and a clinching or welding lap portion *b2* of a length sufficient to extend over the toe portion of the shoe and down in front thereof, and to be welded to the calk proper *b1*. 2nd. The perforated wings *w*, in combination with the welding or clinching lap *b2*, body portion *b* and calk proper *b1*.

No. 12,657. Improvements in Burners.*(Perfectionnements aux becs de lampes et de gaz.)*

James N. Douglass, Dulwich, England, 20th April, 1881; for 5 years.

Claim.—The use, in burners having two or more rings for flame of deflector *B* or deflectors *B B*, which are formed so as to overlap one or more of the rings of flame of the burner *A*, in combination with a glass chimney *C*, whereby the rings of flame are made to converge, and the maximum quantity of air and oxygen is so conducted to, and forced into the flames at the proper point or points, that a highly condensed and compact bright light with perfect combustion and of maximum intensity is produced in the manner described and shown in the drawings.

No. 12,658. Improvements on Machines for Excavating and for Washing Gold.*(Perfectionnements aux machines à miner et à laver l'or.)*

Joseph Hébert, Wimsiege, Man., 20th April, 1881; for 5 years.

Claim.—The combination of the adjustable elevator *D* and chain pump, co-operatively discharging into a washing box *P*, and a floatable vessel *A* having a central opening *B*, in which the elevator is suspended and driven by gears *H I*.

No. 12,659. Improvements on Fog Signals.*(Perfectionnements aux signaux de brume.)*

Walter R. Close, Bangor, Me., U. S., 20th April, 1881; for 15 years.

Claim.—1st. In an apparatus for operating fog bells, the combination of a suspended bell *m*, shaft *d* rotating in one direction only and operating a striker *l*, with a float port and connecting mechanism, subjected to the action of the waves or tide, and transmitting motion to the shaft and striker. 2nd. The double bell boat consisting of the two boats or floats *p* connected by a joint, one of the said boats having the belt and striking apparatus thereon, and the other connecting mechanism *u*, whereby the motion of the waves is transmitted to the striking apparatus. 3rd. The combination, with the boat or float *o*, of the anchor chain or cable *w* attached to said boat at or about one third of its length from its bows, either with or without the swinging yoke *g*. 4th. The combination, with the boats or floats *o p*, of the rack rod *n* pivoted upon the boat *p*, gear *d*, shaft *a* capable of revolution in one direction only, disc *h*, pins *i*, lever *j*, striker *L* and bell *m* secured to the boat *O*.

No. 12,660. Improvements in Ventilators.*(Perfectionnements aux ventilateurs.)*

William Dewart, Fenelon Falls, Ont., 20th April, 1881; for 5 years.

Claim.—1st. In ventilating houses, the method of freeing the air of its impurities, which consists in conducting the same from the house into a conservatory where it is purified by the plants, and then reconducting it back into the house in its purified condition. 2nd. The combination with a house *A* and an adjacent conservatory of the inlet pipe *C* having pump *D*, the outlet pipe *E* having pump *F*, and the outside air pipe *G* having bell and flared enter end, whereby the impure air from the house is purified by the plants and introduced into the house purer than the outside air.

No. 12,661. Improvements on Velocipedes.*(Perfectionnements aux velocipèdes.)*

Charles J. Shirreff, Brockville, Ont., 20th April, 1881; for 5 years.

Claim.—1st. A velocipede frame composed of cast iron malleable steering arm *E* and reach head *K* having cavities *a a* and rolled iron arms *F F*, and reaches *D D* conjoined to socket therein, and rivetted and connected by pin *l*. 2nd. The adjustable sliding seat *L*, in combination with spring *S* and reach head *K*. 3rd. The removable seat *M* connected to reach head *K* by bar *N* and bearing on reach bars *D D*.

No. 12,662. Improvements on Trucks.*(Perfectionnements aux camions.)*

Montgomery A. Reynolds, Stanton, Mich., U. S., 20th April, 1881; for 5 years.

Claim.—The frame *A*, main wheel *B*, axle *C*, bearing blocks *D*, two caster wheels *G*, cross bars *H I*, braces *J K L*, box *Q R* and the locking ods *S*.

List of Patents issued up to 9th May, 1881, but not yet Officially published in the Patent Office Record.

- No. 12,689. James Cameron, Victoria, B.C., "Self Counting Egg Packer" patented 27th April, 1881.
- No. 12,690. Ze Butt, Ocala, Florida, U. S., "Dumping Cart and Waggon," patented 27th April, 1881.
- No. 12,691. Kenneth Kennedy, Kenyon, Ont., "Dumping Waggon," patented 27th April, 1881.
- No. 12,692. Seth Ward, Princeton, Ind., U. S. A., "Breast Strap Slides," patented 27th April, 1881.
- No. 12,693. James Lally, Kendall, N. Y., U. S., "Force Buckle," patented 27th April, 1881.
- No. 12,694. Uri G. Coon, Medina, (Assignee of Elijah S. Coon), Watertown, N. Y., U. S., "Creoper and Spar Fastener," patented 27th April, 1881.
- No. 12,695. Selby Lee, Ottawa, Ont., "Shoe Pack," patented 27th April, 1881.
- No. 12,696. John Butler, New York, N. Y., U. S., "Electro Magnetic Apparatus for Medical Use," patented 27th April, 1881.
- No. 12,697. George Taylor, Lynn, Mass., U. S. A., "Boot and Shoe," patented 27th April, 1881.
- No. 12,698. Franklin B. Bradley, (Assignee of Adolph Delkescamp), Southington, Conn., U. S., "Eyelet," patented 27th April, 1881.
- No. 12,699. Clark J. Brown, Randolph, N. Y., U. S., "Portfolio and Pen Wiper," patented 27th April, 1881.
- No. 12,700. Charles Mattern, Jersey City, N. J., U. S., "Child's Carriage," patented 27th April, 1881.
- No. 12,701. Edward J. Hall, (Assignee of J.W. Heylman), Buffalo, N. Y., U. S., "Feed Water Heater," patented 27th April, 1881.
- No. 12,702. John D. Ripson and Thomas Devens, Cambridge, Mass., U. S., "Machine for Covering Mouldings with Cloth," patented 27th April, 1881.
- No. 12,703. Francois M. Lechner, and J. A. Jeffreys, Columbus, Ohio, "Mining Machine," patented 27th April, 1881.
- No. 12,704. Paul G. L. G. Designolle, Paris, France, "Traitement des Minerais de Cuivre Contenant des Métaux précieux," patented 27th April, 1881.
- No. 12,705. J. B. Emond, Quebec, Que., "Gate," patented 27th April, 1881.
- No. 12,706. John McLean, L'Etéte, N. B., "Check Rein," (Extension of Patent No. 6,052,) patented 28th April, 1881.
- No. 12,707. Edward T. Smith and James Ritchie, Ottawa, Ont., "Nut Lock," patented 28th April, 1881.
- No. 12,708. Charles H. Warren, Toronto, Ont., "Churn," (Extension of Patent No. 6,055,) patented 28th April, 1881.
- No. 12,709. Levi B. Howe, New York, N. Y., and Henry W. Shephard, Brooklyn, N. Y., U. S., "Counter Support for Boots and Shoes," patented 29th April, 1881.
- No. 12,710. The Mason and Hamlin Organ Company, Boston, Mass., U. S., "Baby Organ," patented 29th April, 1881.
- No. 12,711. Martin A. Bidwell, Sacramento, Ky., U.S., "Shingle Machine," patented 29th April, 1881.
- No. 12,712. Henry Calcutt, Ashburnham, Ont., "Process of Brewing," patented 29th April, 1881.
- No. 12,713. Charles H. Kuhne, Butler, Penn., U.S., "Feed Water Regulator for Boilers," patented 29th April, 1881.
- No. 12,714. Wm. Wilkie, Guelph, Ont., "Skate," patented 29th April, 1881.
- No. 12,715. John A. Galle, Berlin, Ont., "Pancake Insoling," patented 29th April, 1881.
- No. 12,716. William H. Packham, Dresden, Ont., "Stove Pipe Drums," patented 29th April, 1881.
- No. 12,717. Simon Florsheim, Chicago, Ill., U. S., "Elastic Gore," patented 29th April, 1881.
- No. 12,718. Charles E. Bigelow, Brooklyn, N. Y., U. S., "Counter Supports for Boots and Shoes," patented 29th April, 1881.
- No. 12,719. William Brattle, Coon Rapids, Iowa, U. S., "Car Brake Powers," patented 30th April, 1881.
- No. 12,720. Herbert Loud, Everett, Mass., (Assignee of T. R. Ferrall, Boston, Mass.,) U. S., "Snath Lock," patented 30th April, 1881.
- No. 12,721. George D. Maodougald, Wm. Adie, George R. Adams and Peter Fleming, Forfar, Scotland, "Monotype," patented 3rd May, 1881.
- No. 12,722. Adolphus Davis, Montreal, Que., "Sleeping and Drawing Room Cars," patented 3rd May, 1881.
- No. 12,723. James Howard, Hamilton, Ont., "Stock Cars," patented 3rd May, 1881.
- No. 12,724. The Brunswick Berth Co., Hartford, Ct., (Assignee of William T. Mulligan, Boston, Mass., U. S.,) "Self Levelling Berth," patented 3rd May, 1881.
- No. 12,725. Charles D. Haskins, New York, N. Y., U. S., "Telephone Switches," patented 3rd May, 1881.
- No. 12,726. Thomas Clarke, Truro, N. S., "Box and Cattle Cars," patented 3rd May, 1881.
- No. 12,727. The Ransom Stove Works, Albany, (Assignee of Charles A. Hamlin, Green Bush,) N. Y., U. S., "Soft Coal Stove," patented 3rd May, 1881.
- No. 12,728. Elias E. Pratt, Norwood, Mass., U. S., "Car Door Hanger," patented 3rd May, 1881.
- No. 12,729. Wm. Stephenson, Jordon, Ont., "Steam Engine," patented 3rd May, 1881.
- No. 12,730. George B. Kelly, Boston, Mass., U. S., "Mechanical Musical Instruments," patented 3rd May, 1881.
- No. 12,731. Edwin J. Hart and W. L. Graham, Butler, Pa., U. S., "Farm Gate," patented 3rd May, 1881.
- No. 12,732. William S. Hunter and Thomas Fuller, Belleville, Ont., "Cattle Car," patented 3rd May, 1881.
- No. 12,733. Henry A. Broguard, Philadelphia, Pa., (Assignee of John H. Irwin, Morton,) Penn., U. S., patented 3rd May, 1881.
- No. 12,734. Peter Donnelly, and Frederik Gardiners, Oshawa, Ont., "Plough Coulter," patented 3rd May, 1881.
- No. 12,735. Erastus B. Kunkle, Fort Wayne, Ind., "Safety Valve," (Extension of Patent No. 6,134,) extended 7th May, 1881.
- No. 12,736. John A. Fordan, Barrie, Ont., "Saw-Mill Dog," (Extension of Patent No. 6,147,) extended 7th May, 1881.
- No. 12,737. Roswell T. Smith, Nashua, N. H., U. S., "Paper Perforating Machine," patented 7th May, 1881.
- No. 12,738. Elizabeth Ferguson, Westminster, Ont., "Knife Cleaners," patented 7th May, 1881.
- No. 12,739. Pierre Dausereau, Montréal, Que., "Carriage Top," 7th May, 1881.
- No. 12,740. Frank B. Covell, Boston, Mass., U.S., "Duplex Safety Valve," patented 7th May, 1881.
- No. 12,741. John B. Ward, San Francisco, Cal., U.S., "Screw Propellers," patented 7th May, 1881.
- No. 12,742. George F. Evans, Mechanic Falls, Me., U.S., "Wood Pulping Machine," patented 7th May, 1881.
- No. 12,743. Robert McLaughlin, Oshawa, Ont., "Buggy Gear," patented 7th May, 1881.
- No. 12,744. William Wilson, Brooklyn, N. Y., U. S., "Magnetic Stays," patented 7th May, 1881.
- No. 12,745. George Groom, Hamilton, Ont., "Rubber Skate Pad," patented 7th May, 1881.
- No. 12,746. John H. Adams, Kingston, Ont., "Spring Beds," patented 7th May, 1881.
- No. 12,747. Thomas Graydon, Middleton, Ont., "Hoop Cutter," patented 7th May, 1881.
- No. 12,748. John G. Stephens, Jersey City, N. Y., U. S., "Vegetable Fibre," patented 7th May, 1881.
- No. 12,749. Archibald C. Sinclair, Winnipeg, Man., "Medical Compound," patented 7th May, 1881.
- No. 12,750. James Elliott, Montreal, Que., "Fuel Economizer and Smoke Consumer," patented 7th May, 1881.
- No. 12,751. John Asher, Fort Erie, Ont., "School Desks," patented 7th May, 1881.
- No. 12,752. Samuel N. Silver, Auburn, Maine, U. S., "Steam Engine," patented 7th May, 1881.
- No. 12,753. Charles F. Littlejohn and Harvey Ford, New Haven, Conn., "Boot Hook," patented 7th May, 1881.
- No. 12,754. Everett H. Barney, Springfield, Mass., U. S. A., "Skate Fastenings," patented 7th May, 1881.
- No. 12,755. Walter F. Abbott, Montreal, Que., and Moses Harris, New York, N. Y., U. S., (Assignees of G. B. Kelly, Boston, Mass., U. S., and J. H. Chase, Montreal, Que.,) "Mechanical Organ," patented 7th May, 1881.
- No. 12,756. Asa J. Stott, Montreal, Que., "Heel Plate," patented 7th May, 1881.
- No. 12,757. Charles D. Dewey, (Assignee of Edward Pridmore, Brookport,) N. Y., U. S., "Harvester Rakes," patented 9th May, 1881.
- No. 12,758. Daniel Edgar, Adrian, Mich., U. S., "Spring Bed Bottoms," patented 9th May, 1881.
- No. 12,759. Frederick B. Ginn, Oakland, Cal., U. S., "Arithmetical Frame," patented 9th May, 1881.

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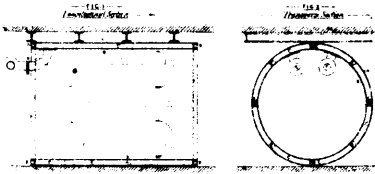
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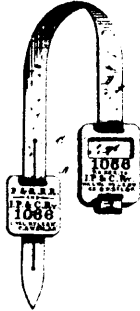
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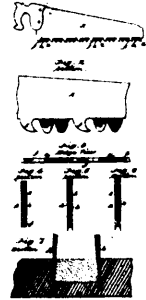
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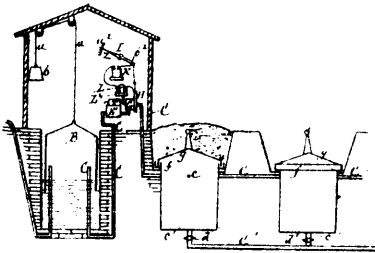
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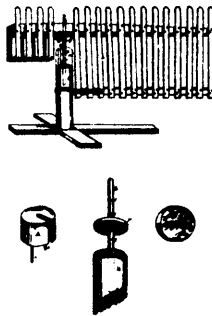
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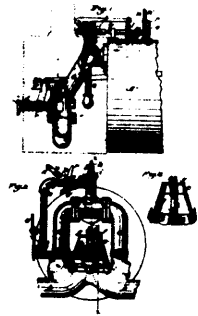
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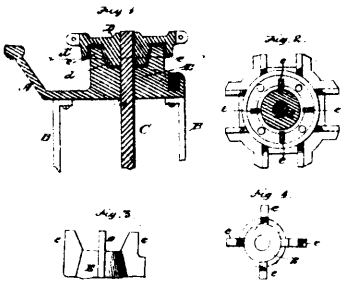
12597 Lawton's Improvement on Method of, and Apparatus for Preserving Organic Substances by Gas.



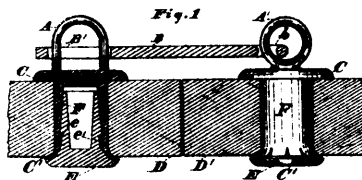
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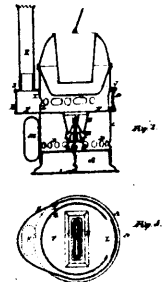
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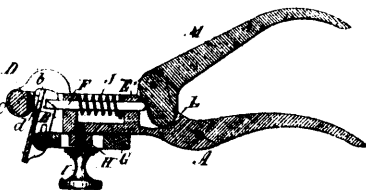
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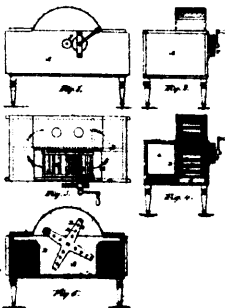
12601 Thomson's Improvements on Hasp and Staples for Car Doors.



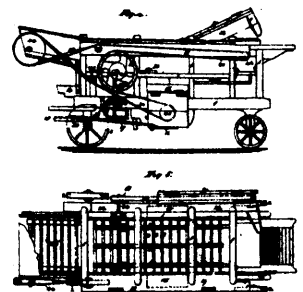
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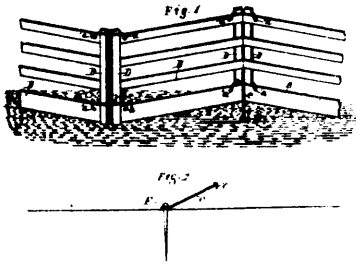
12603 Morrill's Improvements on Saw Sets.



12604 Spence's Improvements on Churns.



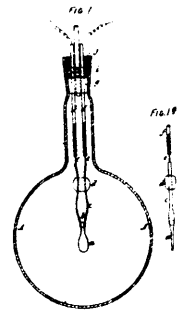
12607 McCloskey's Improvements in Thrashing Machines.



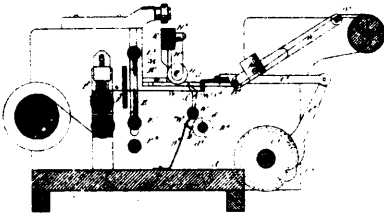
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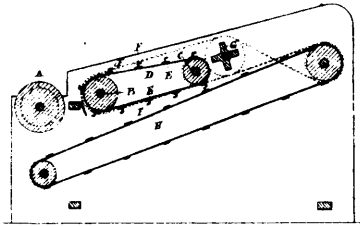
12610 Scheidler's Improvements on Post Hole Diggers.



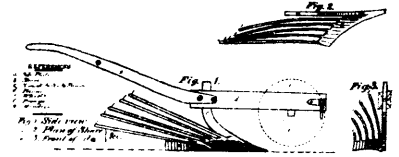
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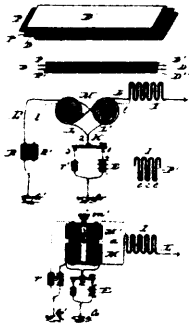
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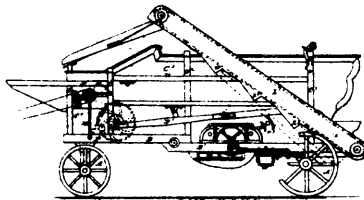
12615 Filshie's Improvements on Threshing Machines.



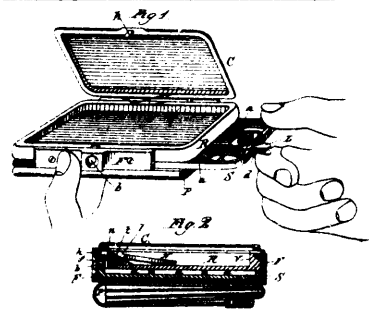
12616 Lane's Improvements on Potato-Diggers.



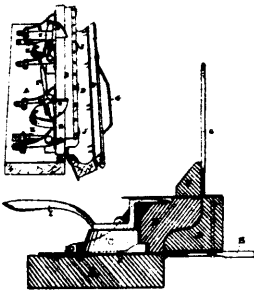
12617 Smith's Improvements on Duplex Telegraphs.



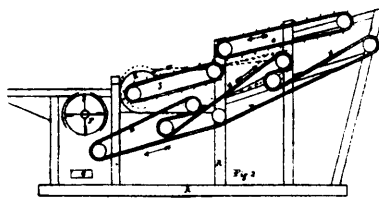
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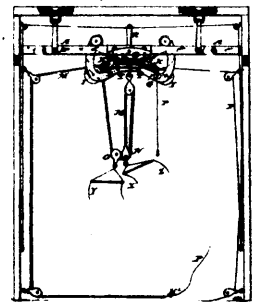
12621 Meaker's Improvements on Coin Pocket-books



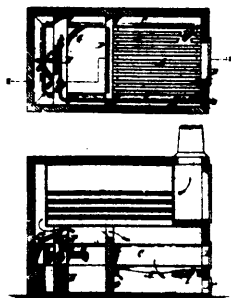
12622 Dunn's Improvements on Eave Trough Formers.



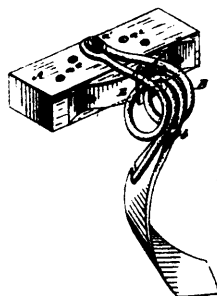
12623 McKinlay's Improvements on Threshing Machines.



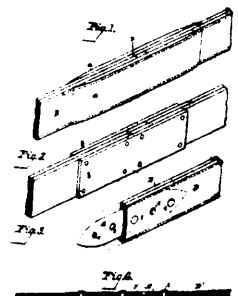
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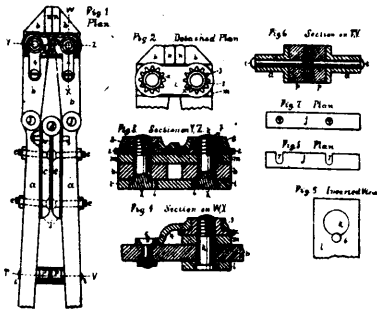
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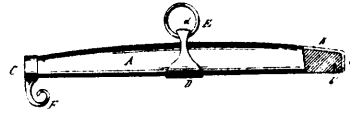
12626 Nells's Improvements on Spring Teeth Harrows and Cultivators.



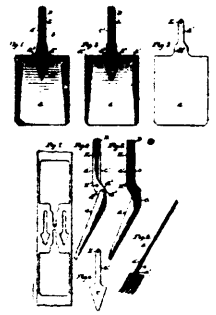
12627 Curd's Improvements on the Means of Splicing Traces.



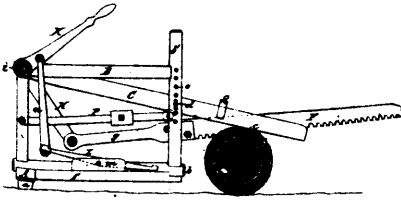
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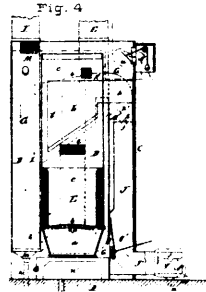
12630 Warren's Improvements on Whiffletrees.



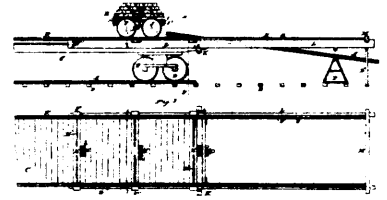
12632 Chisholm's Improvements on Shovels, Spades and Forks.



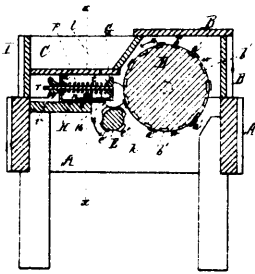
12633 Dean's Improvement on Drag Sawing Machines.



12634 Gouge's Improvements on Apparatus for Heating and Ventilating Cars.



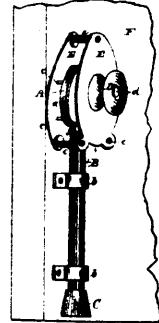
12635 Harris's Improvements on Cars for Constructing Railways.



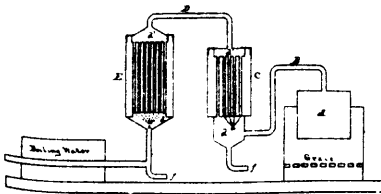
12636 Ricker's Improvements on Corn-shellers.



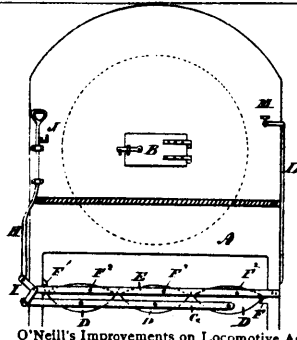
12639 Bowen's Improvements on Bed Bottoms.



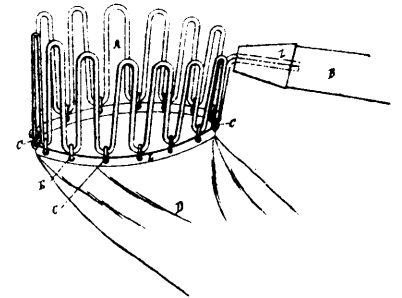
12640 Hooper's Improvements on Door Checks



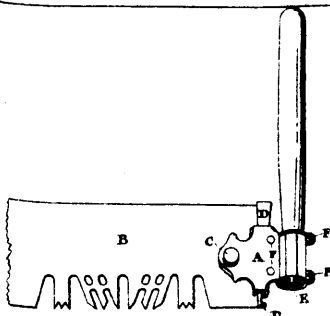
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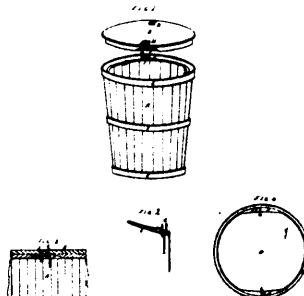
12642 O'Neill's Improvements on Locomotive Ash Pans.



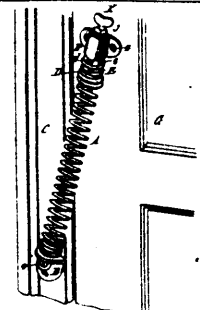
12643 Ross's Improvements on Fruit Pickers.



12644 Robertson's Improvements on Cross Cut Saw Handles.



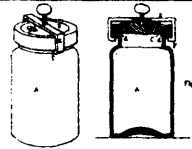
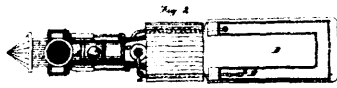
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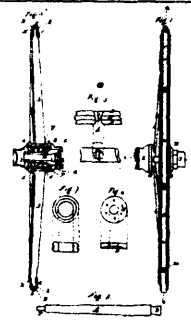
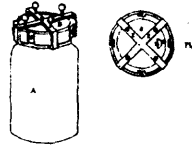
12646 Davis's Improvements on Door and Gate Springs.



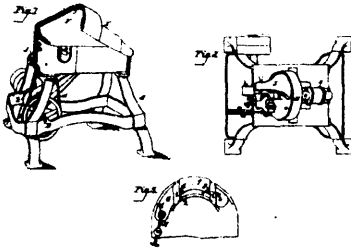
12647 Fink's Device for Deadening the Noise of Blow off Steam from Safety Valves.



12648 Stossmeister's Improvements on Fruit Jars.



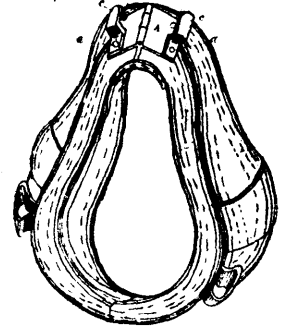
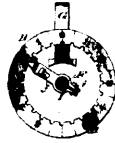
12649 Fabregas's Improvements on Vehicle Wheels.



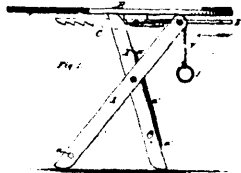
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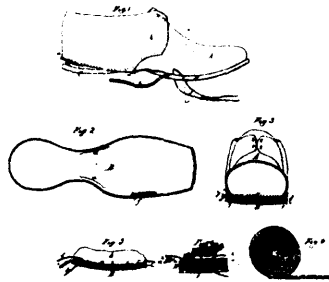
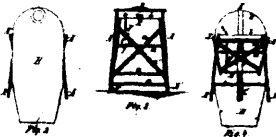
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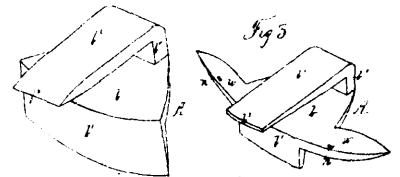
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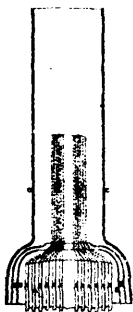
12653 Blodget's Improvements in Ironing Tables.



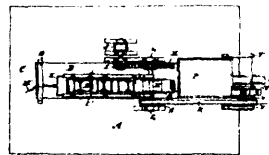
12655 Pratt's Improvement in Boots and Shoes.



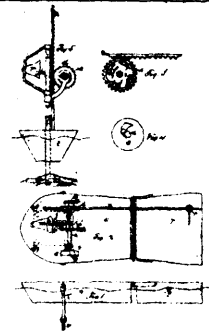
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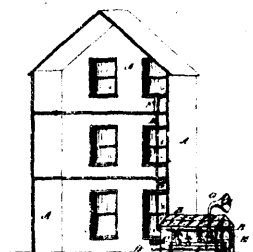
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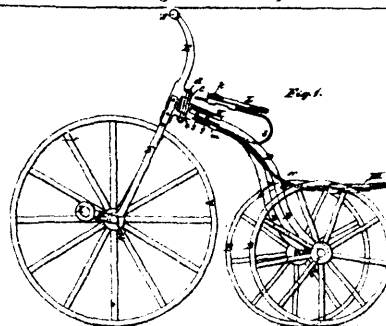
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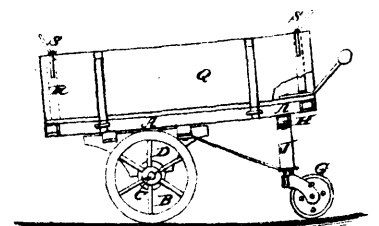
12659 Close's Improvements on Fog Signals.



12660 Dewart's Improvement in Ventilators.



12661 Shirreff's Improvements on Velocipedes.



12662 Reynolds's Improvements on Trucks.