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INVENTIONS PATENTED.

No. 14,883. Improvements on Sky-Lights.
(*Perfectionnements aux lucarnes.*)

Anthony C. Dunlevy and Frank M. Campbell, St. Louis, Mo., U. S., 1st June, 1882; for 5 years.

Claim.—1st. In combination with the sash bar, consisting of one piece of sheet metal and provided with gutters B C, central compact web G, packing inserting in the space below the cap, and an apron hung upon the ridge of the web of the sash bar and depending therefrom between the said web and edges of the glass, and means to keep said apron in contact therewith. 2nd. In sash structures for sky-lights, an apron of fibrous material, asbestos or rubber cloth, or its equivalent, arranged to depend from the ridge of the web of the sash bar, and in contact with the edges of the glass, with the depending sides of said apron extending below the glass into the gutters. 3rd. In sky lights, the gutters B C, with a web extending lengthwise through the said gutters, with the glass plates on the sides thereof resting upon the edges of the gutters, in combination with an apron F arranged between the edges of said glass within the gutters. 4th. In the structure of sky light sash, a water shed R extending from the eaves of the sky light above and beyond the curb thereof, and so arranged below the ends of the plates of glass that the drip therefrom will fall upon the water shed.

No. 14,884. Improvements on Washing Machines. (*Perfectionnements aux machines à laver.*)

Henry J. Skinner, Bradford, Penn., U.S., 1st June, 1883; for 5 years.

Claim.—1st. The tub or water holding vessel A, having the curved chambers a a, the perforated washing cases B B¹ set in suitable bearings, and provided with cranks c c¹, in combination with the connecting rods d d¹, crank pin C, and crank D connected to the driving mechanism. 2nd. The tub A, perforated washing cases B B¹, cranks c c¹ and connecting rods d d¹, connected to the crank pin, so that both the washing cases receive their movements from a single crank pin. 3rd. The cranks c c¹ connected to the cases B B¹, in combination with the connecting rods d d¹, crank pin C, crank D and crank shaft D¹, whereby the perforated washing cases receive different movements, so that, when one case is in a horizontal position, the other is in an inclined position. 4th. A perforated washing case provided with troughs or water buckets f f¹ and adapted to oscillate in a tub or water vessel. 5th. A washing case provided with water buckets f f¹, in combination with a series of perforations leading to the interior of the case, for the purpose of carrying the water up and allowing it to fall down through perforations on to the clothes.

No. 14,885. Improvement in Anti Friction Journal Bearings. (*Perfectionnement des coussinets de tourillons à anti-friction.*)

James H. Langley, Boston, Mass., U.S., 1st June, 1882; for 5 years.

Claim.—1st. The combination, in a journal bearing, of a series of anti-friction rollers D provided with circumferential concave grooves d, adapted to receive spherical separators, a series of spherical separators E arranged between said rollers and fitting into said grooves, and concentric bands between which the said rollers and separators revolve. 2nd. The combination, in a journal bearing, of a series of anti-friction rollers D provided with circumferential concave grooves d, a series of spherical separators E arranged between said rollers and fitting into said grooves, and the solid concentric bands F F¹ between which the said rollers and separators revolve. 3rd. The anti-friction rollers D constructed with a hollow cylindrical end d¹ and a

concave ferrule piece d₂ combined with a central spindle d₂, so as to assemble the parts between two solid rings F F¹ and leave the last inserted roller practically solid and grooved, the same as the others.

No. 14,886. Improvements on Cabinets for Holding Paper Scraps. (*Perfectionnements aux buffets pour les retailles de papier.*)

James S. Norris, Joliet, Ill., U.S., 1st June, 1882; for 5 years.

Claim.—1st. The case B¹ containing the swinging skeleton racks s¹, receptacles or envelopes z, rests u and springs m. 2nd. The racks s¹ arranged to swing from the top of the case B¹, in combination with the rest n and spring m to hold up the inner end of the rest n and hold the lower end of the racks s¹ out. 3rd. The receptacle z having its sides connected by the corrugated or wrinkled ends of spring hook i, detachable card A and having ruled sides for reference purposes and arranged to hang suspended from the cross bars w of the swinging frame or racks s¹.

No. 14,887. Improvement in the Process for Preserving Milk. (*Perfectionnement dans le procédé de conservation du lait.*)

Heinrich W. L. O. Von Roden, Hamburg, Germany, 1st June, 1882, for 5 years.

Claim.—The process of preserving milk by bottling, the method of excluding air prior to sealing, which consists in covering the milk with a film or layer of edible oil during the first heating, then removing the same, sealing and reheating.

No. 14,888. Fire Proof Paint.
(*Peinture réfractaire.*)

William L. Maltby, Montreal, Que., (Assignee of Terence Sparkham, Brockville, Ont.,) 2nd June, 1882; (Extension of Patent No. 3786.)

No. 14,889. Improvements on Car Couplings. (*Perfectionnements aux accouplages des chars.*)

David H. Sherman and John Bishop, Wankegan, Ill., U.S., 2nd June, 1882; (Extension of Patent No. 14,707.)

No. 14,890. Improvements on Car Couplings. (*Perfectionnements aux accouplages des chars.*)

David H. Sherman and John Bishop, Wankegan, Ill., U.S., 3rd June, 1882; (Extension of Patent No. 14,707.)

No. 14,891. Improvement in Steam Valves.
(*Perfectionnement des soupapes de vapeur.*)

The Pratt and Cady Company, (Assignee of Rufus N. Pratt,) Hartford, Ct., U.S., 3rd June, 1882; for 5 years.

Claim.—1st. The combination, in a fluid cock, of a barrel a having branches g k and inclined valve seat d, with a swinging flap b and operating rod f. 2nd. A fluid cock having a barrel a, inclined valve seat d, branch g and branch k.

No. 14,892. Improvements in the "F. X. Bertrand Shingle Sawing Machine." (*Perfectionnements à la machine à scier le bardeau dite "de F. X. Bertrand."*)

François X. Bertrand, St. Hyacinthe, Que., 3rd June, 1882; for 5 years.

Claim.—L'excentrique ou came C, seul, et ses équivalents, la combinaison de la roue D, avec la roulette E sur son essieu F, avec le dit excentrique ou came C, et leurs équivalents; La combinaison de la dite roue D avec la roulette E, sur son essieu F, avec le dit excentrique ou came C, et du dit excentrique avec la roulette E sur son es-

sieu F à la base du traineau *n b n n*, ou leurs équivalents, ou le rouleau T ou ses équivalents. La jauge V ou ses équivalents. La combinaison de la jauge V avec le rouleau T, ou de leurs équivalents. La combinaison de la jauge V, avec la partie O et le rouleau T ou leurs équivalents.

No. 14,893. Improvements on Thrashing Machines. (*Perfectionnements aux machines à battre.*)

John A. Beam, Baden, Ont., 3rd June, 1882; for 5 years.

Claim.—1st. The straw carrier, grain tables, skeleton rake and distributor constructed, connected and disposed as described, in combination with the framing cylinder fan, shoe and other parts of an ordinary thrasher. 2nd. The combination, with the frame work of the machine, of the straw-carrier consisting of a channel C, perforated boards B having ridges on the top and bottom, and the end boards B' having a ridge below, all having a slight movement, the serrated and spiked rakes fitting between the boards and having a quick movement, and the crank shafts supporting and actuating the same. 3rd. The combination, with the straw-carrier, of the stationary grain tables G G' and the skeleton rake R sweeping the said tables. 4th. The distributor having tables partly perforated and partly blank, and the perforations being of different sizes, with a plain return table between them and receiving a vibratory movement, in combination with the framing grain tables and shoe.

No. 14,894. Improvements in Nut Locks.

(*Perfectionnement des arrêto-écrous.*)

Samuel Gissinger, Pittsburg, Penn., U.S., 3rd June, 1882; for 5 years.

Claim.—The locking plate F, having spring G and hinged on the rod or pintle *e* in combination with the fish-bar B, bolt or bolts C and nut or nuts D.

No. 14,895. Improvements in Posts for Wire Fences. (*Perfectionnements aux pieux des clôtures en fil métallique.*)

Hubert R. Ives, Montreal, Que., 3rd June, 1882; for 5 years.

Claim.—The combination of the fence post A provided with sharp point A' and curved slots *a a*, for the wires, with the anchor plate B having points *b b* cast thereon.

No. 14,896. Improvements on Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

Nils Nilson, Maple Plain, Minn., U.S., 3rd June, 1882; for 5 years.

Claim.—1st. The compound vehicle spring composed of the curved leaf spring D D' and coiled spring E, in combination with the spring bearings C and bar B provided with the washer *c*, bushing *d* and tubular elastic packing *f*. 2nd. A spring for vehicles, consisting of a curved leaf and a coiled spring firmly connected one with the other, and a supporting bar extending through the centre of the coiled spring. 3rd. A compound spring consisting of a leaf D, and a coil E firmly united one to the other.

No. 14,897. Improvements in Anti-Slipping Materials. (*Perfectionnements aux matériaux anti-glisants.*)

Charles A. Maxfield, New York, U.S., and Allan Ritchie, Montreal, Que., 3rd June, 1882; for 5 years.

Claim.—1st. As a new and improved article of manufacture, an anti-slipping material composed of a plain flexible backing and a compound grain emery, or other infrangible substance, and plastic material wearing surface. 2nd. As an improvement on the manufacture of anti-slipping materials, first covering the former or mould with a composition composed of grain emery, or other infrangible substance, and india rubber adapted to be vulcanized, and then laying over the same a layer of india rubber without any infrangible substance, and vulcanizing the whole together.

No. 14,898. Improvements on Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

Jeremiah H. Moran, London, Ont., 3rd June, 1882; for 5 years.

Claim.—The horizontal vehicle springs B C placed on edge at right angles to the reach A and attached thereto and in combination therewith, the side springs E F on which the body of the vehicle is supported.

No. 14,899. Improvements on an Apparatus for Collecting Waste Fumes from Smelting, &c. (*Perfectionnement d'un appareil à recueillir les fumées perdues provenant de la fuson, &c.*)

George T. Lewis, Philadelphia, Penn., U.S., 3rd June, 1882; for 5 years.

Claim.—The combination of a smelting or roasting furnace producing waste fumes, with a series of cooling pipes, and a catching apparatus with calico, flannel or other textile fabric, as strainer.

No. 14,900. Improvements on Wind Wheels.

(*Perfectionnements aux moulins à vent.*)

Benson J. Palmer, New Durham, Ont., 3rd June, 1882; for 5 years.

Claim.—1st. The combination of a wind wheel having vertical pivoted sails movably arranged to close, to form a drum, and an exterior

fixed case having vertical wind boards tangentially arranged to direct the wind against the sails. 2nd. The wind wheel having sails constructed with an outward and inner wind catch on the opposite longitudinal edges of each sail, whereby the wind in passing through the wheel exerts pressure on its entrance and exit. 3rd. The combination, with the movable sails of a wind wheel, of rods 14, central wheel 15, arm 16, crank levers 17, rods 18 and a governor sliding on shaft 1, rods 21, swinging levers 22, cross heads 23, rods 24 and springs 25 for automatic action, to regulate the pressure of the wind by opening and closing the sails.

No. 14,901. Improvements on the Process and Apparatus for Rendering and Bleaching Animal Fats. (*Perfectionnements au procédé pour extraire et blanchir le gras animal.*)

Garret Cosine, New York, N. Y., U. S., 3rd June, 1882; for 5 years.

Claim.—1st. The process of rendering animal fats, by causing the previously comminuted particles thereof to pass through a heated atmosphere, the rendering being effected by the contact of the atmosphere acting upon the same in a finely-divided state. 2nd. The process of rendering animal fats by causing the previously comminuted particles thereof to descend into a chamber or vessel containing a heated atmosphere to fall through one or more woven or perforated diaphragms therein, and the melted fat to immediately flow therefrom. 3rd. The process of rendering and bleaching animal fats, by causing the previously comminuted particles thereof to fall into a vessel or chamber, in a separated state, through a heated and continually renewed atmosphere therein, and the melted fat to immediately flow therefrom and into a bleaching agitator. 4th. An apparatus for rendering animal fats in a finely divided and separated state, by simple contact with a heated atmosphere therein, consisting essentially of a vessel B, surrounded by a jacketed space for applying heat thereto, with one or more inlets for the fats at the top, one or more outlets for the melted fat near the bottom, and air inlets and outlets for renewing the heated atmosphere therein respectively at the bottom and top. 5th. An apparatus for rendering animal fats in a finely divided state, by simple contact with a heated atmosphere therein, two outlets *v v* for the fat, and inlets for the air, arranged one above the other.

No. 14,902. Improvements on information Tablets. (*Perfectionnements aux tableaux d'annonces.*)

Edward S. Boynton, Bridgeport, Ct., U.S., 3rd June, 1882; for 15 years.

Claim.—1st. In an information tablet, the combination of a number of signs, and a key for automatically displaying a determinate selection thereof. 2nd. The combination of a number of signs, a time indicator, and a key or keys for automatically displaying a determinate selection of signs and setting the hands of the time indicator. 3rd. The combination of the signs and a removable jaquard key for automatically displaying a determinate selection thereof. 4th. The combination of the signs, the sign tumblers and a removable jaquard key. 5th. The combination of the dial and hour and minute hands, the spring actuated rack-bars and pinions, the locking cylinders, the time tumblers, and a removable jaquard key. 6th. The combination of the signs, the sign tumbler, the removable jaquard key and the movable key holder. 7th. The combination of the dial and hour and minute hands, the spring actuated rack-bars and pinions, the locking cylinder, the time tumblers, a removable jaquard key and the movable key holder. 8th. The combination of the spring actuated rack-bars and pinions, and the bellows or governors for covering the resilient action of the springs. 9th. An imperforated jaquard key blank (from which jaquard keys for operating information tablets of above description may be prepared by perforating the blank at determinate points) consisting of a strip of cardboard, or other stiff material, provided with marks of a definite number and arrangement, each such mark being designated by a word or letter or numeral (one or more of each) corresponding to the information that may be displayed on the particular tablet for which the blank is designed.

No. 14,903. Improvements in Feather Renovating Apparatus. (*Perfectionnements aux appareils à rafraîchir la plume.*)

Martin Rose, Indianapolis, Ind., U.S., 3rd June, 1882; for 5 years.

Claim.—1st. The box A provided with pipes E, to steam and stir the feathers, in combination with the fan M, connecting air-trunks or tubes P N and screen R. 2nd. The box A provided with pipe E, to steam the feathers, and screen R, in combination with the fan M, connecting air tubes P N and screen T. 3rd. The combination of box A with pipe E to steam the feathers, fan M, tubes P and N, plates S and screen R. 4th. The combination of box A, provided on the bottom with the chamber D, for steam, with rotating beaters F and pipe E to steam the feathers.

No. 14,904. Improvements on Harvesting Machines. (*Perfectionnements aux moissonneuses.*)

Christopher W. Levalley, St. Paul, Min., U. S., 3rd June, 1882; for 5 years.

Claim.—1st. The combination, with the grain wheel and the slotted plate F, of the pinion E', socketed plate *e e e* provided with sleeve *e s*, the pawl F' provided with lug *f* and the shaft or stud axle E. 2nd. In a harvester, the combination, with the main axle and the main frame, of the cogged yokes, bevel gears, bevel pinion and counter shaft. 3rd. The combination, with the main axle, the bevel gear and pinion and the counter shaft, of the swinging keeper. 4th. The combination, with the main frame and the main axle, of cogged yokes, a gear on the main axle, a counter shaft arranged at right

angles to the axle, and a gear mounted on said counter shaft and engaging with the gear on the main axle. 5th. The combination, with the reel-bearer H provided with loop H⁵, of the bar I provided at its forward end with a hook ⁵ adapted to surround the journal of the reel-shaft, and provided also with the upwardly projecting pin ⁴ adapted to receive the link I⁴. 6th. The combination, with the reel shaft, of the reel-bearers H¹, loops H⁶, bars I¹, lever I³, link I⁴ engaging with pin ⁴, shaft L, pinions ¹ and racks on the bars I¹, hooks ⁵ and pins ⁴. 7th. The removable bushing adapted for a shaft bearing, in combination with a tubular bearing or sleeve provided with a slit in one side, and means adapted to clamp the bearing upon the bushing. 8th. The bearing C⁷ provided with a slit ¹⁰, in combination with the bushing ⁶ slotted at ⁷, the set screw ³, the link ³ and head ¹⁰, mounted upon the bushing. 9th. The combination of the bearing C⁷ slitted upon one side, the clamping screw ⁵, the slotted bushing ⁶, the link ³, the head ¹⁰ and set screw ³. 10th. The bed plate and the tubular bearing C⁵ cast in one piece and provided with the projecting arm C⁸, in combination with the clutch, the shipping lever and the spring D⁷, secured to the projecting arm C⁸. 11th. In a harvester elevator, the combination, with the lower elevator belt, of the upper elevator belt mounted upon a roller at the upper end, and a spring roller E² at the lower end of the rear side piece A¹⁰, of the elevator frame provided with a slot ^a extending to a point lower or nearer to the lower elevator belt than does the slot ^a. 12th. The combination, with the elevator belt and the binding platform, of the oscillating stripping devices arranged to throw the straw outward from the elevator belt after it has passed over the upper end of the same. 13th. The combination, with the elevator belt, the straw carrying arm or binding needle, and the shield P³, of the oscillating strippers arranged to throw the straw outward from said shield. 14th. The combination, with the elevator belt and the shield P³, of the oscillating strippers having curved or rounded upper peripheries. 15th. The combination, with the elevator belt and the shield P³ provided with a series of slots, of the oscillating plates E⁵ mounted in said slots in the shield, and mechanism which vibrates them through said slots. 16th. The combination, with the elevator and the shield P³, of the rock shaft mounted transversely upon said shield, and the oscillating strippers secured at their lower ends to said rock shaft. 17th. The combination, with the shield P³, of the binding platform arranged to slide relatively to said shield, of the oscillating strippers E⁵ arranged at the centre, to permit the needle to be moved forward and backward without interfering with the strippers. 18th. The combination, with the needle M M¹, of the compressor N N¹ and the friction roller ^a forced downward by a spring. 19th. The combination, with the needle M M¹, the elevator frame, the frame which swings the needle towards and from the elevator frame of the needle stripper pivoted at one end to the needle-frame in a vertical frame adjacent to that of the needle, and arranged to reciprocate longitudinally on the elevator frame. 20th. The combination, with the needle frame arranged to swing toward and from the elevator, the needle pivoted on said frame to swing vertically thereon, and the compressor N N¹ pivoted to the needle-frame independently of the needle, of the supplemental compressor R and mechanism arranged to force said compressor against the gavel after the needle and the compressor N N¹ have come to rest. 21st. In a grain binder, the combination of the following elements, namely: the vertically swinging cord carrying needle, the compressor N N¹ arranged to force the straw against said needle, the supplemental compressor R, the bell crank R¹, link r¹, the main shaft R⁴, mechanism for imparting motion from said shaft to said needle and said compressor N N¹, and the crank arm r² situated relatively to said mechanism to move compressor R, while the needle and compressor N N¹ are at rest and the knot is being tied. 22nd. The grain receiver P¹ having the finger P² shorter than the finger P¹. 23rd. In a grain binder, the combination, with the grain elevator, of a lower surface adapted to support the grain during its descent from the elevator to the table over which grain is moved to the binding mechanism, and a feeding-belt having its lower end mounted on a movable roller. 24th. In a grain binder, the combination, with a grain table over which the grain is moved to the binding mechanism, of a feeding belt mounted at its upper end upon and driven by a roller which is capable of being moved longitudinally relative to the upper end of the grain elevator. 25th. In a grain binder, the combination, with a surface adapted to support the grain during its descent from the elevator to the grain table over which the grain is moved to the binding mechanism, of a feeding-belt having its lower end mounted upon a movable roller, and arranged as described, whereby the weight of said belt and roller is caused to press the grain upon the grain support and binding table. 26th. In a grain binder, the combination, with a grain table over which grain is moved to the binding mechanism, of a feeding-belt having its lower end movable, and mechanism connecting said belt, with the devices which throw the binding mechanism into action. 27th. The combination, with the binding mechanism, the devices which throw said mechanism into and out of operation, and the endless belt K suspended above the binding-table and arranged to carry the grain downward, of the lever J¹ pivoted above the binder-frame, the link ¹ pivoted to said lever, the rock shaft J² beneath the binding-table and the toggle-levers J³ J³. 28th. The combination of the gear-wheel R³, pinion S⁴ having clutch-teeth, the shipping lever S⁴, clutch S², cam r², spur r³, toggle levers J³ J³, spring s¹ and rod s. 29th. The combination with the elevator frame, the sliding binder frame, the tension devices, and the levers J¹, of the upright J^x secured to the elevator frame, the upright J, attached to the binder frame, and the bar J^c secured to the upright J¹ at one end, and arranged to slide at the other end on upright J^x and to support the tension devices and tripping lever J¹. 30th. In a grain binder, the combination, with the binder arm and the cord supplying devices, of the described intermittent tension device constructed with the series of studs ³ of different lengths. 31st. In a grain binder, the combination, with the needle shaft m, of the clutch plate m¹ fast thereon, and the segment L⁸ adjustable to each other by means of bolts and slots arranged upon opposite sides of the needle shaft, whereby the segments L⁸ is secured to the clutch-plate independently of said shaft. 32nd. The combination, with the needle shaft m, of the clutch-plate m¹ fast thereon, and the segment L⁸ provided with the adjusting slots ² and the clamping bolts m⁴, whereby the segment L⁸ is rigidly secured to the clutch-plate independently of said shaft.

No. 14,905. Improvements on Telephone Signal Apparatus. (*Perfectionnements aux appareils à signaux téléphoniques.*)

James F. Kettell, Worcester, Mass., U. S., 5th June, 1882; for 5 years.

Claim.—1st. The combination of the clock mechanism with an electro-magnet and its armature in the main line circuit for controlling the said clock mechanism, a branch or grounding circuit, and circuit closer therein controlled by the said clock mechanism, an alarm mechanism consisting of a mechanically actuated train of gears, and the controlling magnet therefor located in the said branch or grounding circuit, whereby the operation of the said alarm mechanism is governed by the circuit closer controlled by the clock mechanism. 2nd. A series of apparatus in a single circuit, each apparatus consisting of a clock mechanism, an electro-magnet and its armature in the said circuit, for controlling the said clock mechanism, a branch or grounding circuit and circuit closer therein controlled by the said clock mechanism, an alarm mechanism consisting of a mechanically actuated train of gears and the electro-magnet and armature in the said branch or grounding circuit for controlling the said alarm mechanism, the circuit closers in the said branch circuit controlled by the different clock mechanisms, being arranged to operate at different periods in the synchronous movement of their controlling clock mechanism, when all started in unison by a common impulse in their controlling electro-magnets. 3rd. A uniformly moving train or clock mechanism at the central station, and circuit closer operated thereby, one electrode of the said closer being moved by the said train from a definite starting point, and the other being adjustable by the operator to any position in the path of the said moving electrode, a stopping device for the said clockwork and circuit closer operated by it in the action of releasing the said clock mechanism, whereby an impulse is sent over the line at the moment the clock work is started, and a second impulse at a different moment in its movement thereafter, in combination with a series of stations each containing a clock work controlled by an electro-magnet in circuit with the said circuit closer, a circuit closer operated by the said clock work at a different moment at each station, and an alarm controlled by the said circuit closer, whereby the first operation of the said central station instrument effects the electro-magnets by which the station clock works are all started in unison with the said central clock work, and the second closure of the circuit at the central station causes the desired one of the alarms, the circuit of which is at the same moment closed by the clock controlled circuit closer. 4th. A clock mechanism stopping device therefor, and circuit closer operated by the said device in releasing the said clock work, combined with a circuit closer operated by the said clock work, one of the electrodes of which is adjustable to cause it to be operated at any desired time in the movement of the said clock work, and a second circuit closer operated by the said clock work during a fixed definite period of its movement, whereby an individual signalling apparatus and top belt signalling apparatus may be operated upon the same line. 5th. The combination of a clock mechanism and stopping device therefor, adapted to arrest its movement at two different fixed points, with a visual signal operated by the said clock mechanism, and adapted to show different signals when the said clock mechanism is arrested at different points, to indicate whether the line is in use or not. 6th. The signalling apparatus controlled or operated by a mechanically actuated train or clock work combined with a visual signal-operated by the said train in its movements to indicate when it is necessary to wind up the said clock movement. 7th. A clock mechanism, a stopping device therefor operated by hand to release the said clock mechanism, a circuit closer operated by said stopping device in releasing the said clock mechanism, and a circuit closer operated by the said clock mechanism in its movement, whereby an electric impulse is transmitted when the said clock mechanism is released or started, followed by another impulse at a different moment during the movement of the said clock mechanism. 8th. The combination of a clock mechanism and circuit controller operated thereby, to produce electric impulses at definite intervals, for the purpose of operating individual receiving instruments of a hand operated circuit closer, and means operated by the said clock mechanism to retain it in circuit for a definite period, and then automatically remove it from circuit, whereby signals may be sent by the said hand operated key without danger of interfering with the individual signalling apparatus.

No. 14,906. Improvements on devices for jointing saws. (*Perfectionnements aux machines à affûter les scies.*)

Edward Preston, Winona, Min., U. S., 5th June, 1882; for 5 years.

Claim.—1st. The combination, with the file holder, of the inclined files, supported by pivoted adjustable bearings, and the intermediate file arranged to be adjustable vertically between the inclined files. 2nd. The combination, with the file holder A having spring-jaws for embracing the sawblade, of the inclined file plates B secured in brackets that are pivoted to set screws passing through the sides of the holder, the intermediate file-plate supported between the inclined file-plates by set screws, and the springs arranged to act against the inclined file-plates.

No. 14,907. Improvements on Fruit Evaporators. (*Perfectionnements aux séchées à fruits.*)

James M. Teasdale, Howell, Mich., U. S., 5th June, 1882; for 5 years.

Claim.—1st. In a fruit evaporator, the horizontal flues thereof all inclined in one and the same direction, in combination with proper inlet and outlet flues. 2nd. In a fruit dryer, a series of rectangular steam flues A, one above the other and all inclining from back to front in the same direction, in combination with the steam inlet and exhaust H, and separate connections between each flue and the inlet and exhaust pipes, said exhaust pipe connections being made at the lowest end of the flues.

No. 14,908. Improvements in Protectors for Telegraphic Instruments.

(*Perfectionnements aux protecteurs des appareils télégraphiques.*)

Charles T. Howard, Providence, R. I., U. S., 5th June, 1882; for 5 years.

Claim.—1st. The combination, with a shunt constructed to connect the line wires with an electric instrument and disconnect the same, outside of a building, of a hand device operated on the inside of the building. 2nd. The combination with a shunt located outside a building, of a bridge operated from the inside of a building, constructed to connect or disconnect an instrument with or from the line. 3rd. The combination with the line wires, of plates placed in close proximity with a grounded plate, and connections with the terminal plates of the line wires, made of a material of less conductive power than the line wires constructed to carry off any abnormal excessively powerful electric currents. 4th. The combination, with the line wires A A', of the plates a b c and at b' c' with their connections, the arm F and bridges E E' operated from the interior of the building, to connect and disconnect the line with the instrument. 5th. The combination with terminal plates connected with the line wires, of terminal plates connected with a telegraphic instrument, a shunt or bridge located on the outside of a building, a hand device located in the building, and stops constructed to limit the motion of the bridge, so as to connect or disconnect the instrument to or from the line. 6th. In a shunt located on the outside of a building, the combination, with the terminal plates of a telegraphic line, of a grounded plate placed in close proximity to the terminal plates, constructed to relieve the line from excessive currents of electricity. 7th. A shunt placed outside of a building, consisting of the plates a b b' c c', connected as described, the knob H, the lever F and bridges E E', and the grounded plate D placed in close proximity to the plates a a', the whole constructed to connect or disconnect the instrument, and carry off abnormal powerful currents of electricity. 8th. The combination, with line wires and electric instrument, of a link or connection interposed at some point in the line wire before reaching the instrument, made of a material of greater resistance than the wire and liable to fuse and thus break the connection by an abnormal excessively powerful electric current. 9th. The combination, with the line wires of terminal plates placed in close proximity to a grounded plate, and connections with the lines to the instrument, of fusible conducting links, constructed to melt by an abnormal excessively powerful electric current, and thus break the connections with the instrument.

No. 14,909. Improvements on Force Pumps.

(*Perfectionnements aux pompes foulantes.*)

John A. Dewell, Simcoe, Ont., 5th June, 1882; for 5 years.

Claim.—The combination, in a metal cylinder containing two compartments and attached to a wooden pump log, of the plunger B working through solid rubber packing D held securely against the upper division plate of cylinder by a removable lower plate E by screws F.

No. 14,910. Improvements on Apparatus for Forming Corsets.

(*Perfectionnements aux appareils à façonner les corsets.*)

James A. House, Bridgeport, Ct., U. S., 5th June, 1882; for 15 years.

Claims.—1st. The combination of the sliding carrier frames, with the eveners pivoted to said frames, the holder-arms, the corset clamps, and the form. 2nd. The combination of the vertically sliding carrier frames, with the eveners independently pivoted thereto, the pivoted corset-holders, the corset clamps, the form, the means for depressing the eveners. 3rd. The combination of the corset-holder with the vertically sliding independently adjustable carrier-frames to which said holders are pivoted, the eveners, the treadle, and the link connecting the eveners and treadle, these members being and operating to admit of forming the corset of varying sizes at the hips and busts.

No. 14,911. Improvements in Baggage Checks and Coupon Tickets.

(*Perfectionnements aux étiquettes des bagages et aux coupons-marges.*)

John M. Lyons, Moncton, N. B., 5th June, 1882; for 5 years.

Claim.—The combination of the coupon ticket, the check ticket holder, and the straps when combined for the purpose of checking baggage or luggage, or other articles.

No. 14,912. Improvements on the Process for Making Artificial Butter.

(*Perfectionnements aux procédés pour faire le beurre artificiel.*)

Garret Cosine, New York, N. Y., U. S., 5th June, 1882; for 5 years.

Claim.—1st. In combining oleine and margarine obtained from animal fats and loppered cream or milk. 2nd. In combining oleine and margarine obtained from animal fats, loppered cream or milk, and a solution of lactic acid. 3rd. The process of making artificial butter for winter use, by combining oleine and margarine obtained from animal fats, loppered cream or milk, vegetable oils, and a solution of lactic acid. 4th. The improvement in the process of making artificial butter by adding to the oleine and margarine and loppered cream or milk, a solution of lactic acid.

No. 14,913. Improvement in Case Fasteners.

(*Perfectionnement des fermetures des boîtes.*)

William A. Firstbrook, Toronto, Ont., 5th June, 1882; for 5 years.

Claim.—1st. In a case constructed with a movable lid, a hook fastener composed of a spring made of hard sheet metal, bent at the bottom and secured to the box, and made with a triangular head, the base of which acts as a catch, so that a cross bar fastened to the lid, when closing the box, will slide down the sloping face of the triangle and pass under the catch and secure the lid thereby. 2nd. In combination with the hook fastener described, a common staple E or its equivalent located at the opposite end of the case for securing the lid at that end.

No. 14,914. Improvement in Stone Dressing Machines.

(*Perfectionnement des machines à tailler la pierre.*)

Alexander McDonald, Cambridge, Mass., U. S., 5th June, 1882; for 5 years.

Claim.—The combination of the cutter spindle support piece o, the lipped slide i, the pivoted and recessed block C and the lipped arm A, arranged, adapted and provided with clamps K and adjusting screws.

No. 14,915. Improvements on Washing Machines.

(*Perfectionnements des machines à laver.*)

Charles A. Conover, London, Ont., 5th June, 1882; for 5 years.

Claim.—1st. The combination of the flange E, bolt G, pin P, plate N, coil spring O and flange piece H. 2nd. In combination with the above, the handle D and washer C. 3rd. The combination of the washboard A, washer C, handle D, flange E, bolt G, pin P, plate N, coil spring O and flange piece H.

No. 14,916. Improvements in Fence Posts.

(*Perfectionnements aux pieux des clôtures.*)

Edward J. Major, Montreal, Que., 5th June, 1882; for 5 years.

Claim.—1st. A post formed of a strip of bent iron, having secured to its lower end a piece exactly corresponding thereto in section. 2nd. The combination, with a post formed of a strip of bent iron, of a piece or pieces of same section reversed and secured thereto at points of strain. 3rd. As a fastening for wire longitudinal to a metal post, an iron pin without head holding the wire passed through post, and secured to the other side by spread ends.

No. 14,917. Improvements on Oil Stoves.

(*Perfectionnements aux poêles à huile.*)

The Boston Petroleum Heating Company, Boston, (Assignee of Pearl Martin, Medford, Mass., U. S., 6th June 1882, for 5 years.

Claim.—1st. In an oil stove or furnace, the combination, with a fire-pot A, having its sides grooved for the reception of wicks, of a series of air inlet apertures h located in its sides, between, or at the sides of the wick grooves, and so arranged that each aperture h on one side of the fire pot will be directly opposite to, or in line with a wick groove c on the other side of the pot. 2nd. The combination, with the air inlet aperture h in the sides of the fire pot A, of the projecting wings or plates i k adapted to increase the surface area of the sides of the air apertures for the purpose of imparting additional heat to the air entering the fire pot. 3rd. The combination, with a fire pot having its sides grooved for the reception of wicks, and a series of air inlet apertures located in its sides, between, or at the sides of the wick grooves, of a deflector so arranged as to intercept and deflect the incoming currents of air down to the bottom of the fire pot into close proximity with the perforated oil pipe. 4th. The combination, with a fire pot provided with air inlet apertures in its sides, and a deflector placed thereover, of a perforated oil pipe B, located above the bottom of the pot, to allow of the passage thereunder of the currents of air projected downward by the deflector.

No. 14,918. Improvements in Bobbin Winders for Sewing Machines.

(*Perfectionnements aux machines à bobiner pour les machines à coudre.*)

Julius C. Goodwin and William Hotop, Kalamazoo, Mich., U. S., 6th June, 1882; for 5 years.

Claim.—1st. The combination, with the recessed pulley shaft, provided with the collar and locking slide, the belt pulley having the recesses to receive the locking slide, and the bobbin winder provided with the cam lever, of the pivoted lever, having the right angled extension, bearing a spring and slotted to receive said cam lever, the upper end of said pivoted lever being adapted to operate the sliding lock. 2nd. In a mechanism for causing the movement of the bobbin winder to lock and unlock the belt pulley, the combination, with the pulley shaft having the recess in which the locking slide is located, and the locking slide having the end projection, of the shaft supporting arm, provided with the recess in which said projection plays when the shaft revolves.

No. 14,919. Improvements on the Process of Manufacturing Barbed Wire.

(*Perfectionnements au procédé de fabrication du fil métallique barbelé.*)

The Worcester Barb Fence Company, (Assignee of Thomas A. Dodge and Charles G. Washburn,) Worcester, Mass., U. S., 6th June, 1882; for 15 years.

Claim.—1st. The improved process of manufacturing four-pointed barbed wire, by, first, running the ends of two barbed wire diagonally across the wire to be barbed, one on each side thereof, second, coiling said ends into a double coil F, with the ends D' E', left projecting in opposite directions, and third, setting back the last cut ends D E of the barb wires against the coils a b by a sudden and quick blow, and straightening out the ends at right angles, or nearly so, to the main wire

for the purposes described. 2nd. The process of manufacturing four pointed barb wires, straightening the barb ends and setting them back to lock their respective coils by a quick and sudden blow. 3rd. A four pointed barb for wire fencing, consisting of two wires spirally coiled with the coils approximately parallel throughout, but having a portion of the last coils at one or both ends slightly bent, so as to lock the two barb wires together.

No. 14,920. Improvements on Lanterns.

(*Perfectionnements aux lanternes.*)

Joseph B. Stetson and Albion D. Wilson, Lincoln, Me., U. S., 6th June, 1882; for 10 years.

Claim.—1st. In a lantern having a globe supporting frame, the vertically adjustable plate C carrying a spring E, adapted to hold or release the globe, as desired, in combination with the globe, the perforated plate on which it rests, the connecting rods F F serving to unite the top and bottom plates, and suitable guides adapted to give lateral support to the lower part of the globe. 2nd. The tubular frame D D' and the globe G, in combination with the plates C p, the connecting rods F and the guides H, whereby said globe is raised and lowered by a suitable lever and guided or steadied laterally in its movements. 3rd. The perforated bottom plate having wings P P and the annular top plate C united thereto by rods F F, forming a vertically sliding carriage for the globe, in combination with lateral guides H H, arranged to encircle the tubular frame, each guide wire having one end free to spring under the edge of the wing P. 4th. In a lantern having a vertically moving globe, the spring lever L with shoulder L' and thumb piece N, in combination with a loop or stop therefor on the frame.

No. 14,921. Improvement on Draft apparatus for Stoves etc. (*Perfectionnement des appareils de tirage pour les poêles, etc.*)

Fred Beaumont, jr., Little Rock, Ark., U. S., 7th June, 1882; for 5 years.

Claim.—The combination with the draft apparatus for stoves, etc., constructed of the band I, whereby the said apparatus is attached to a stove pipe or chimney.

No. 14,922. Improvement in Vehicle Springs. (*Perfectionnement des ressorts de voitures.*)

William W. Grier, Hulton, Penn., U. S., 7th June, 1882; for 5 years.

Claim.—1st. The combination of a vehicle axle and two lateral springs arranged parallel thereto, or nearly so, said springs being wide in the middle, narrow at the ends, and fastened to the axles by pivoted shackles at each end. 2nd. The combination, in a vehicle having lateral springs extending on both sides of and fastened to the axle, of an arched truss connected to the springs and sustaining the fifth wheel and yokes fastened to the arms of the truss, and extending around the circle plate of the fifth wheel. 3rd. The combination, of the axle with a lateral spring arranged on each side thereof and suspended thereto, and an arched truss for sustaining the body fastened to the springs, so as to permit the springs to vibrate below the axle.

No. 14,923. Improvements on Chills for Castings. (*Perfectionnements aux coquilles de fonderie.*)

William Hazelhurst, Portland, N. B., 7th June, 1882; for 5 years.

Claim.—The warm chill and the process of chilling metallic castings by circulating hot water or steam through the chill mould.

No. 14,924. Improvements on Acoustic Telephones. (*Perfectionnements aux téléphones acoustiques.*)

Lina Beecher, Medina, N. Y., U. S., 9th June, 1882; for 5 years.

Claim.—1st. In combination with the line wire of an acoustic telephone, the receiving and transmitting device, consisting of the front end A and back piece A', the former loose on the frame rods a a a and the latter fastened thereto, the mica diaphragm b, rubber ring c, back piece or sounding board C, spiral spring B and its rubber seats f f. 2nd. In combination with the usual line wire and diaphragm b of an acoustic telephone, the coiled or spiral spring B acting automatically on rods a a a in connection with the expansion or contraction of the line wire, and also as a sound expander. 3rd. In an acoustic telephone transmitting and receiving instrument, in combination with the usual line wire and the diaphragm b and spring B, the front or transmitting and receiving end A C adapted to move automatically backward and forward on the rods a a a (attached also to the back piece A) by the contraction or expansion of the line wire aided by spring B.

No. 14,925. Improvements on Wash Boilers. (*Perfectionnements aux chaudières des buanderies.*)

Asher Holmes, Hamilton, Ont., 9th June, 1882; for 5 years.

Claim.—The combination and arrangement of the several parts, namely: the steam generating chamber H, the water ducts B C formed by the partitions M, in connection with the exhaust pipe D.

No. 14,926. Improvements on Car Couplers. (*Perfectionnements aux accouplements des chars.*)

Martin C. Dixon, Guilford, N. C., (Assignee of Rhodom M. Brooks, Jenkinsville, Ga.) U. S., 9th June, 1882; for 15 years.

Claim.—1st. The combination, with a car coupler and the coupling pin O and link C, of the obliquely sliding dogs or pawls B, adapted to be automatically operated to drop the coupling pin O through the link C during the operation of coupling. 2nd. In combination with the

draw heads A, the dogs or pawls B provided with shoulders E F adapted to abut against bearings G H in the draw-heads. 3rd. The dogs or pawls B having a shoulder D at their forward upper ends, and provided with a recess M to hold the link C in an elevated position. 4th. The combination, with the draw-heads A and the dogs or pawls B, of the pins I for holding the same in place. 5th. The combination, with the draw heads A, of the dogs or pawls B, provided with grooves N and adapted to engage a shoulder P, near the lower end of the coupling pin O and hold it in place.

No. 14,927. Improvement on Corsets. (*Perfectionnements aux corsets.*)

Solomon Vermilyea and Hannah M. Vermilyea, Belleville, Ont., 9th June, 1882; for 5 years.

Claim.—The combination of the binder C, the lacing D and the corded busts F.

No. 14,928. Improvements on Cattle Ties. (*Perfectionnements aux chevêtres des bestiaux.*)

Henry M. Robbins, Newington, Ct., U. S., 9th June, 1882; for 5 years.

Claim.—1st. The rope or chain c provided with a suitable tying device attached to supports overhead and underneath the tying device and free to rise and fall. 2nd. The combination of the rope or chain c bearing a suitable tying device, and the cross bar f, with the take up pulley e₂ and the pulleys d d.

No. 14,929. Improvement in Reflectors. (*Perfectionnement des réflecteurs.*)

William Wheeler, Concord, Mass., U. S., 9th June, 1882; for 5 years.

Claim.—1st. A reflector having a reflecting surface generated by the revolution about its principal axis, of a curve which is constantly variable throughout the said revolution. 2nd. A reflector having a reflecting surface generated by the revolution about two or more axes, successively, of a curve which is constantly variable throughout its revolution about one or more of the said axes.

No. 14,930. Improvements on Snow Ploughs. (*Perfectionnements aux charrues à neige.*)

Andrew P. Farrar, Brainerd, Minn., U. S., 9th June, 1882; for 5 years.

Claim.—1st. An apron extending across and beyond the track and provided with knives for clearing the bed of the road, and both sides of the rails, the said apron being hinged to the frame work of the engine or car and adapted to be raised outward, to pass obstructions on the track. 2nd. An apron extending across and beyond the track and provided with devices for clearing the bed of the road, and the sides of the track, and further, with shoes for riding on the top of the rails, the said apron being hinged to a frame work of the engine or car, and adapted to be raised to pass obstructions on the track. 3th. In a pair of mould boards, combined with an apron hinged at the base of the mould boards, the said apron carrying devices for clearing the bed of the road and both sides of the rails, and adapted to be raised to pass obstructions on the track. 4th. Combined with the frame work of an engine or car, an apron provided between the rails with a clearing edge and a series of knives whose edges, with that of the apron, are concave, to conform to the convexity of the road bed. 5th. Combined with a frame work of an engine or car, a pair of mould boards and an apron, having between the rails a concave clearing edge, and knives whose edges are parallel with the edge of the apron. 6th. An apron extending across and beyond the track, and provided with devices for clearing both sides of the rail, and having between the rails a concave clearing edge, and a series of knives whose edges are parallel with the edges of the apron. 7th. A frame work of an engine or car, provided with a series of hinge sections combined with an apron having corresponding hinge sections, and a hinging rod uniting the respective sections, the outer end of the hinge sections of the apron projecting beyond the outer edge of the apron, and forming cutting knives to set on ice in the road bed. 8th. A frame work of an engine or car, provided with a series of hinge sections, an apron having corresponding hinge sections, and a hinging rod uniting the hinge-sections of the frame and apron respectively combined with spiral springs surrounding said rod, one spring being placed thereon in a space left between a pair of the hinge sections of the frame and apron respectively at each side of the centre line of the engine or car. 9th. In a track clearer, a hinged apron mounted with clearing devices, and capable of lateral movement on its hinge, combined with shoes riding on the top of the rails, and flanges or guides attached so as to run inside of the rails, for directing the apron laterally when curves are encountered. 10th. Combined with a supporting frame, a hinged apron provided with a backing extending across the road bed, and having a square shoulder which, when the apron is in its depressed or working position, bears at all points in the length of the apron against the front timber of the supporting frame and effects the bracing of the apron and its mounting, when pushed forward against the obstructing matter. 11th. Combined with a hinged apron extending across and beyond the track, a system of rods D D' and compound levers D¹¹ D₂ communicating with the rear of the engine or car, and an automatic locking device, constituting means whereby the apron may be raised or lowered, locked or released. 12th. In a track clearer, the combination of a pair of mould boards, a vertically and laterally movable apron extending across and beyond the track, and provided with devices for clearing the bed of the road and the sides of the rails, and means for elevating and depressing the apron. 13th. In a track clearer, the following elements in combination, a pair of mould boards, a vertically and laterally movable apron, extending across and beyond the track, and having devices for clearing the bed of the road and both sides of the rails, and shoes for riding on the top of the rails, springs for maintaining the normal position of the apron in the centre line of the engine or car, and means for elevating and depressing the apron.

No. 14,931. Belting Leather and Leather Stuffing and Fulling Machine.
(*Cuir à courroies et machine à bourrer et fouler le cuir*)

John A. J. Shultz, St. Louis, Mo., U.S., 9th June, 1882; (Extension of Patent No. 7555.)

No. 14,932. Improvements on Harvesters and Binders. (*Perfectionnements aux moissonneuses-lieuses.*)

George Draper, Mayo, Maine, Wis., U.S., 10th June, 1882; 5 years.

Claim.—1st. The packers *c* or their equivalent, located between a harvester and a binding apparatus, and constructed to be capable of transferring cut grain from one to the other. 2nd. In a deflector *S* or its equivalent, against which the cut grain may be packed in a suitable manner to cause said deflector to change its position, in combination with a suitable coupling device, whereby the binding mechanism is put in motion. 3rd. A binding mechanism capable of being adjusted by means of a rack and pinion, or other suitable mechanism, in combination with a harvester so constructed and arranged in relation thereto, that the binding apparatus can be regulated to encircle the cut again in the centre of its length, so as to insure satisfactory binding where the cut grain is of uneven lengths. 4th. In a binder arm *B* having an intermittent rotary motion and making a complete revolution while assisting in compressing binding and ejecting a sheaf, in combination with a compress finger *C*. 5th. In a combined harvester and binder capable of adjustment, whereby their relative positions are changeable provided with a tumbling shaft *b* 111. 6th. In a combined harvester and binder mounted upon the wheels *W* 1, *W* 2, each of which are adjustable vertically, and *W* 1 and *W* 2 castor wheels. 7th. A rotary binding arm *B* provided with wheels *e* 1 *d* 1 *d* 2, cutter *e* 1 *n* 1 and gearing *h* 1 *g* 1, in combination with binder head *m* having teeth *e* 1, and projections *f* 1. 8th. A pivotal deflector *S* 1, in combination with crank *a* 11, tappet *B* and mowing track *e* 4, whereby the spring clutch *e* 4 may be thrown in or out of gear. 9th. A rotary binding arm *B*, in combination with a spring compress *C* *m* 11. 10th. A rotary binding arm *B* and a binding head *M*, in combination with a pivotal compress finger *C* *m* 11 that slides upon rods *N* *O* and controlled by spring *d* 1, roller *l* 11, and cam track *h* 1 *c*. 11th. A side and rear cut harvesting machine provided with an overhanging binding apparatus with its grain receptacle nearly on a level with the horizontal conveyer, thus obviating the passage of the grain over the master wheel, in combination with an intermediate conveying and packing mechanism for transferring the cut grain from the conveyer to the binding receptacle. 12th. The lever *d* 11 working with, and actuated by the self-starting mechanism *S* 1 and by which it is caused to raise and obstruct the passage of grain up the incline *J* during the time the binding arm is making its revolution to bind the grain and *l* to retreat, when the binding of a sheaf has been completed. 13th. In a combined harvester and binder capable of adjustment one to the other to suit varying lengths of grain, a telescoping receptacle *I* to receive loose and straggling grain. 14th. A side and rear cut harvester and binder so arranged and constructed that the passage of the cut grain over the master wheel is dispensed with, and having its binding mechanism supported on the main frame of the harvester leaving an unobstructed space in the rear thereof for the free discharge of the gavel. 15th. A side and rear cut harvester and binder constructed to support the weight of the binding mechanism between the main drive wheel and the outer carrying wheel, in order to provide for the discharge of the bound grain in the rear of the main supporting and driving wheel.

No. 14,933. Improvements on Meat Cutters.
(*Perfectionnements aux hache-vande.*)

John Zimmerman and William D. Alford, Cincinnati, Ohio, U.S., 10th June, 1882; for 10 years.

Claim.—1st. The knife collars constructed with one or more radial dovetailed recesses, one face to receive the dovetailed shank of a knife, and of a depth equal to the thickness of said shank. 2nd. The knife collars constructed with radial dovetailed recesses in one face, of different depths, to receive thick or thin knives. 3rd. The combination, upon a single shaft, of a series of collars having one or more radial dovetailed recesses in one face of each, with a series of knives constructed with dovetailed shanks to fit within said recesses, the whole being damped upon the shaft between a fixed head and a nut, with the non-recessed faces of the collars bearing against the shanks of the knives in adjoining collars. 4th. In a machine for cutting meat, the combination of a series of collars, having radial dovetailed recesses in one face, with a series of radial knives having dovetailed shanks to fit within said recesses, the whole being clamped upon a shaft between a fixed head and a nut with the collars so fitted upon a spline or key as to give the knives a spiral arrangement upon the shaft. 5th. In combination with the series of rotary cutters, the cutting comb *I* composed of a metal plate formed with teeth on one edge, which are each shaped longitudinally to produce a raised cutting edge *K*. 6th. The combination of the curved knives formed with one flat side, with the comb teeth *J* formed with a raised cutting edge *K*, said knives and teeth operating with close contact to form a shearing cut. 7th. The combination, with the rotary knives of the cutting comb plate *I* having raised edges *K* and placed on one side of the knife shaft, and suitable clearing comb *L* placed on the opposite side of the shaft. 8th. The combination of the separately removable knives and sliding collars provided with recesses in one side, with the cutting comb-teeth *J* *K*. 9th. The combination of the trough *M* with the frame, the spirally arranged knives and the cutting and clearing combs. 10th. The combination of the heaters, placed with one or both comb plates for the purpose of preventing oleomargarine material from adhering to them, and at the same time preventing the hopper from becoming too highly heated as to melt the material within it.

No. 14,934. Improvements on methods of, and apparatus for filtering water and cleaning filter beds.
(*Perfectionnements aux méthodes et aux appareils pour filtrer l'eau et nettoyer les filtres.*)

The Newark Filtering Company, Newark, (assignee of Patrick Clark, Rahway.) N. J., U.S., 10th June, 1882; for 5 years.

Claim.—1st. In cleansing filtering-beds the upper parts of which are composed of sand, or other material, in granular form, the method of separating from the granular material obnoxious particles of less specific gravity than the granular material, which consists in agitating the latter from above by means of jets of water, and then causing the obnoxious particles which rise above the filter bed to be conducted off by a current of water. 2nd. In cleansing filtering-beds, the upper parts of which are composed of sand, or other material in granular form, the method of separating from the granular material obnoxious particles of less specific gravity than the material, which consists in agitating the latter by means of jets of water travelling over the same, and then causing the obnoxious particles which rise above the filter-bed to be removed by a current of water. 3rd. An apparatus for purifying a filtering bed in which a hollow arm or pipe, provided with apertures upon its lower sides, is actuated horizontally, by means of internal hydraulic pressure. 4th. An apparatus for purifying a filtering bed, in which an arm or pipe having apertures in its lower side, is rotated, and water forced through the apertures by internal pressure, the rotation being effected by unbalanced pressure. 5th. In a filtering apparatus consisting of a filter-bed composed of the perforated floor *D*, wire cloth *E*, layer of sand *G* and the revolving perforated distributing pipe *L* connected with a supply pipe. 6th. In a filtering apparatus, the distributing pipes *L* *L* supplied with the apertures *O* *P* *Q* and connected with a supply pipe, in combination with a filtering-bed. 7th. In a filtering apparatus, a bed composed of sand resting upon fine wire-cloth, in combination with the pipes *L* *L* provided with the apertures *O* *P* and connected with, and turning on the pipe *H*.

No. 14,935. Improvements on Process and Apparatus for the Filtration of Water. (*Perfectionnements aux procédés et appareils de filtration de l'eau.*)

The Newark Filtering Company, (assignee of John W. Hyatt.) Newark, N. J., U. S., 10th June, 1882; for 5 years.

Claim.—1st. A series of independent filter beds of granular or reduced material and a washer or agitator, the beds being each provided with inlet and outlet ports connected with a common supply and delivery pipe, and the washer, or agitator, consisting of a series of suborbinate agitators upon a common shaft, whereby the separate beds are simultaneously agitated to effect a separation of obnoxious material and permit of a removal of the same. 2nd. In a casing containing a bed of filtering material in reduced or granular form, the washer pipe *H* having a pipe or pipes *i* containing an outlet, or outlets, protected with wire-cloth, or analogous material, the pipe or pipes being arranged to enter the bed. 3rd. In a receptacle containing a series of beds of sand, or other suitable filtering material, separated by hollow perforated partitions provided with inlet and outlet ports connecting with a supply and delivery, in combination with washer pipes adapted to be rotated and issue jets of water in each of said beds. 4th. In series of sections *B* forming hollow partitions between beds of filtering material, the central washer pipe *H* passing through the partitions and supplied in the compartments between them with shorter pipes *i*. 5th. The sections *B* cast with the lugs *a*, upon which screens *b* are placed, and forming the compartments *J* containing filter beds, in combination with the rotating pipe *H* and pipes *i*.

No. 14,936. Improvements on Provision Safes. (*Perfectionnements aux garde-manger.*)

Leroy J. Osborne, New York, and Claudius F. Bently, Brooklyn, N. Y., (assignees of Aaron Osborne, Georgetown, Ct.) U. S., 10th June, 1882; for 5 years.

Claim.—1st. As a new article of manufacture, a provision safe having its sides hinged, and adapted to fold together without being detached one from another. 2nd. A provision safe having its several sides jointed together by hinges applied to the joints alternately inside and outside of the body, whereby said body is adapted to fold together without separation, of the sides one from another. 3rd. In combination with a collapsible body of a provision safe, a board or stretcher adapted to fit within the body and to hold the same in an expanded condition. 4th. The collapsible body for a provision safe consisting of parallel sides, and of a front and back extending to the outer faces of said sides, the part being connected by hinges applied to the joints inside and outside of the body alternately.

No. 14,937. Improvement on Harvester Finger Bars. (*Perfectionnement des barres de faucilles des moissonneuses.*)

William N. Whiteley, Springfield, Ohio, U.S., 10th June, 1882; for 5 years.

Claim.—1st. In an angle iron finger beam for harvesting machines, the floor connected to the lower angle, and roller bearing connected to the upper angle, in combination with a guard finger seated in the groove or corner in the finger beam. 2nd. The combination of an angle iron finger beam, with the guard finger seated in recess or angle in a finger beam for the purpose of steadying guards to its place. 3rd. The combination of an angle iron finger beam, the guard finger, seated in a recess or corner of the upward projecting portion of the angle iron finger beam, with a cap or support for the knife, also located upon upper angle, attached to the said support, fastened directly upon the upper flange of said angle. 4th. The combination, with an angle iron finger beam, of the floor attached to the lower angle, and roller bearing, roller and conveying apron supported upon the upper angle of the finger beam, and a recess or seated guard finger on the upper angle of the finger beam.

No. 14,938. Improvements on Harvesting Machines. (*Perfectionnements aux moissonneuses.*)

William N. Whiteley, Springfield, Ohio, U.S., 10th June, 1882; for 5 years.

Claim.—1st. In a harvesting machine in which the axle of the main driving wheel is supported in bearings on the main frame on both sides of the said wheel, and the tongue flexibly connected to the main frame, a bracket *E* pivoted on the main frame *D* and having a vertical rectangular slot made in it to receive the post *E*, supporting the inner end of the finger beam *G*, in combination with a diagonal brace *J* extending from the main frame to the finger beam. 2nd. In a harvesting machine having a single driving wheel, a main frame *D*, the inner side of which is straight and runs at right angles to the axle *B* of the main driving wheel, a rectangular post *F* connected to the finger beam *G* and free to move vertically in a bracket on the straight side of the main frame, to which is also connected a diagonal brace *J* extending from the frame to the finger beam, in combination with the tongue *K* pivoted upon the straight side of the main frame and provided with a diagonal brace extending from the tongue to the outer side of the main frame, which extends out to form a support for the foot rest and driver's seat *E*. 3rd. In a harvesting machine in which the axle of the main driving wheel is supported in bearings on both sides of the said wheel and the tongue flexibly connected to the main frame upon which the said bearings are seated, a linker stirrups *L* formed upon the projecting end of the frame and encircling the tongue in combination with the braces *J* *M*.

No. 14,939. Improvements in Coal Washing Machines. (*Perfectionnements aux machines à laver le charbon.*)

Charles Sheppard, Bridgend, Wales, 10th June, 1882; for 5 years.

Claim.—The arranging or combining parts for use in washing and purifying coal, ashes, and other substances, in respect of figures 1, 2 and 3, whereby the coal or other matter is washed, purified and delivered in a semi-dry state without the use of separate settling ponds, and without the necessity of raising the water again to the machine, and without discharging foul water during the process.

No. 14,940. Improvements on Self-Feeding Stoves. (*Perfectionnements aux poêles à alimentation automatique.*)

Frank J. Gould, Sydney, Ohio, U.S., 10th June, 1882; for 5 years.

Claim.—1st. The combination, with shell *B* and magazine *D* having a vertical row of perforations *h* upon its front, of the tube *G* closed at top and open at bottom, and connected with the outside air by means of pipe *K* situated near the lower end of said tube *G*. 2nd. The combination, with the shell *B* and magazine *D*, of the annular collar *E* having its front cut away to form opening *g*. 3rd. The combination, with the shell *B*, the top *I* and the collar *E* having front orifice *g*, of the magazine *D* whose top is some distance below the top *I* and the chamber *M*, whereby the top of the stove is heated. 4th. The stove consisting of the bottom *A*, shell *B*, top *I*, removable magazine *D* provided with perforations *h*, pipe *K* and tube *G*, annular collar *E*, double top *F*, handles *P* and flue *K*.

No. 14,941. Improvement in Stone Dressing Machines. (*Perfectionnement des machines à tailler la pierre.*)

Alexander McDonald, Cambridge, Mass., U.S., 10th June, 1882; for 5 years.

Claim.—1st. The combination of the cutter carriage and its guides, with the supporting frame and with the vertically movable said arranged within such frame and applied to the said carriage and provided with adjusting screws and nuts, such carriage being furnished, as represented, with friction rollers to bear against the rail. 2nd. The cutter carriage, provided with the series of stalls and adjusting screws to each arranged in it. 3rd. Each cutter carrier provided with the screw and its pivoted nut. 4th. The cutter carriage provided with the cutter carrier receiving stalls and their cutter carrier adjusting or clamping screws, in combination with the cutter carriers arranged in such stalls, and provided with screws and pivoted nuts to operate in and with the carriage. 5th. The cutter carrier having the screw and pivoted nut, and cutters projecting from one side of it and inclined to its axis, such being for use in the cutter carriage and for dressing the vertical edge of a stone.

No. 14,942. Process for making lacing studs. (*Procédé pour faire les boutons à lacer.*)

Mellen Bray, Newton, Mass., U.S., 19th June, 1882; for 5 years.

Claim.—Cutting a cylindrical blank from a wire of a diameter about equal to the desired diameter of the shank of the stud or hook to be made, bending one portion of said blank at right angles to the other portion, and embossing or swaging said bent-over portion by means of suitable dies, to give contour to the parts which are to constitute the neck and the outer or button head, bending the neck to bring the button head over the shank and inner head, and then drilling out the centre of the shank.

No. 14,943. Apparatus for forming heel counters. (*Appareil pour façonner les contreforts des talons.*)

Michael Hynes, (assignee of Etienne Solomon,) Montreal, Que., 10th June, 1882; (extension of patent No. 7550.)

No. 14,944. Improvements on Grain Binders. (*Perfectionnements aux lieuses à grain.*)

The McCormick Harvesting Machine Company, (assignee of William R. Baker,) Chicago, Ill., U.S., 12th June, 1882; for 5 years.

Claim.—1st. In a grain binder, the combination, with the grain receptacle and supporting bar which carries the tripping fingers, of

locking mechanism, which holds said bar positively against movement, away from the receptacle, until the tripping fingers, have started the binding mechanism. 2nd. The combination, with the trip-lever the yielding tripping-fingers and the spring supported bar which carries said fingers, of locking mechanism which positively stops the arm from yielding against the stress of the spring, until the trip lever has been actuated by the fingers. 3rd. The combination, with the vibrating binding arm, the tripping finger or fingers and the supporting bar which carries the latter, of a hinge connection between said binding arm and supporting bar rigid in one direction, whereby the bar is locked against yielding or sagging when the binding arm is down. 4th. The combination of the trip lever, the tripping fingers, the supporting bar which carries the latter, the vibrating binding arm and a hinge connection between said binding arm and supporting bar, adapted to lock the latter against yielding away from the grain receptacle until the trip lever has been actuated and the binding mechanism. 5th. A support *E* for the compressing and tripping fingers *c* hinged to the binding arm, in combination with a pin *e* on support *E* and a lips *ci* on the binding arm.

No. 14,945. Improvements on Harvesters and Binders. (*Perfectionnements aux moissonneuses-lieuses.*)

The Toronto Reaper and Mower Company, Toronto, Ont., (assignee of William N. Whiteley, Springfield, Ohio., U. S.), 12th June, 1882; for 5 years.

Claim.—1st. A single wheel side and rear cut mowing machine provided with a drag bar *C*, ratchet levers *U* *U1* conveyer platform *C* combined with a revolving reel *R* and an extension *C3* *C4* for the support of the binding mechanism and the aforesaid reel. 2nd. A conveyer-platform *C1* with rake teeth *b* and ways *b1* and extension rods *b2*, in combination with a binding table *b1* provided with the extended yielding and upward turned metallic supports *K*. 3rd. An extended shoe *C2* *C11* *C111* *C1111* for supporting the binding mechanism, and the rear end of the conveyer platform *C* combined with meter-gear *n*, tumbling shaft *a*, universal joint *p* and spring clutch *E*. 4th. In a binder table *C* provided with a lever *d* combined with a connecting rod *d1*, spring *j*, clutch *E*, interposed finger *H* operated by projection *H1* of binder arm *l*. 5th. A compress composed of parts *c* *f* *g* provided with extensions *e1* *f1* and operated by crank *h*, link *i* and lever *e3*.

No. 14,946. Improvements on Gas Regulators. (*Perfectionnements aux régulateurs à gaz.*)

Griffin S. Lacey and Arthur B. Denning, New York, N.Y., U.S., 12th June, 1882; for 5 years.

Claim.—1st. In combination with the valve *e*, diaphragm *m*, inlet *a* and outlet *b*, the auxiliary valve *e* and its valve seat *f*, said valve *e* being arranged to slide vertically upon the rod *i* and its valve seat *f* being provided with the perforations *h*. 2nd. The combination of the *o*, ring *p* and annular plate *q* provided with the projections *r*, for the purpose of clamping the diaphragm.

No. 14,947. Improvements on apparatus for transmitting heat to fluids, etc. (*Perfectionnements aux appareils à communiquer la chaleur aux fluides, etc.*)

Alexander R. Fraser, (assignee of Thomas W. Duffy,) Liverpool, Eng., 12th June, 1882; for 15 years.

Claim.—1st. The use of corrugated concentric cylinders or casings united at their ends in pairs by end rings. 2nd. In apparatus of the kind referred to in the preceding claim making the joints between the end rings and the corrugated cylinders or casings. 3rd. In apparatus of the kind referred to in the first claim, the use to afford communication between the closed annular chambers and the outer sides of the tube plates of pipes formed in one with the end rings and secured by hollow set screws. 4th. In apparatus for condensing or cooling utilizing part of the energy of the entering steam to drive a fan for aerating the condensed water. 5th. The improved apparatus for transmitting heat to fluids, applicable also for condensing and cooling.

No. 14,948. Improvements on Stock Cars. (*Perfectionnement aux chars à bestiaux.*)

Jacob H. Shellabarger, Topeka, and Samuel A. Shellabarger, Beloit, Ks., U. S., 12th June 1882; for 5 years.

Claim.—1st. In combination with car *A* having double set of doors *S* arranged opposite each other, the adjustable longitudinally arranged stall partitions *F* and troughs *b1* secured at each end and centre of the car, thereby forming aisles across the car from door to door through which the cattle enter the stalls. 2nd. The stalls or removable partitions *F* bound on their edges with metal and formed with notches *h* *k* and provided with pins *d*, *e*, in combination with cross piece *b*, stationary cleats *a1* and cleats *l*. 3rd. In combination with car *A* having double sets of doors *S* and provided with stationary cleats *a1*, the cross piece *r*, removable and interchangeable stall partitions *F*, troughs *t1* *b1* and cross bar *p*.

No. 14,949. Improvements on Rock Drills. (*Perfectionnements aux tourets à rochers*)

Aaron J. Mershon, Warsaw, Ind., U.S., 12th June, 1882; for 5 years.

Claim.—1st. The combination, in a rock drill to be driven by hand or other power, of a balance wheel *C* having upon its face segmentally formed lifting projections *C1* *C2*, a lifting arm *E1* for raising the drill and a drill stock, said arm being placed loosely upon the drill stock so as to turn thereon an arm *E2* for giving impetus to the downward movement of the drill, and a spring *E3* for aiding such movement. 2nd. The combination of the adjustable frame *A*, the column *D*, drill stock *E* and spring *E3*. 3rd. The combination of the pivoted lever *F* and the arm *E1*.

No. 14,950. Improvements in Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

Horatio W. Murdock, Montreal, Que., 12th June, 1882; for 5 years.

Claim.—1st. In combination with a knitting machine, a dial rotated automatically by means of a screw thread and spur. 2nd. In combination with the dial A and sleeve At, the springs a. 3rd. The combination, with the threaded shaft D, of the spur wheel C capable of adjustment. 4th. In a knitting machine, the combination, with a cam or other operating device of the springs, of shaft G, operating pawl F and ratchet E. 5th. A dial for a knitting machine, graduated for the purpose of indicating the different stages of the operation.

No. 14,951. Improvements on Spring Beds. (*Perfectionnements aux sommiers élastiques.*)

John Chisholm, (Assignee of Dealton W. Whitaker,) Toronto, Ont., 12th June, 1882; for 5 years.

Claim.—1st. The clip c as constructed with a ring in the middle and affording thereby free action to the links of the clips, to adapt themselves to the springs when attached thereto. 2nd. In combination with the clip c, the common coil spring b, the side bars a¹, the end bars a², the cross bars a³, the corner spring d.

No. 14,952. Remedy for Catarrh and Hemorrhoids. (*Remède pour le catarrhe et les Hémorroïdes.*)

James Murray, Toronto, Ont., 13th June, 1882; for 5 years.

Claim.—An emulsion made from horse chestnut boiled in soft water n about the proportions specified.

No. 14,953. Spoke Guide and Gauge. (*Guide et jauge pour les rais des roues.*)

John McCloskey, London, Ont., 13th June, 1882; for 5 years.

Claim.—1st. The lever D, in combination with the spoke guide G provided with a loose jaw P. 2nd. The combination of the lever D, guide G and loose jaw P. 3rd. The lever D in combination with the guide G. 4th. The combination of the arm J, bell crank lever K, rod L, spring N and foot board M. 5th. The combination of the levers D, E, uprights C F, arms E E, and guides G G. 6th. The combination of the bell crank lever K provided with a slot, the rod L, spring N and foot board M. 7th. The combination of the bracket R, bolt S, gauge stick T, spring V, lever Z and notched arm X.

No. 14,954. Improvements on Apparatus for Ventilating, Cooling and Warming Buildings. (*Perfectionnements aux appareils à aérer, rafraîchir et chauffer les bâtisses.*)

Heinrich Mestern, Berlin, Germany, 13th June, 1882; for 5 years.

Claim.—1st. The novel combination of two cylinders A C, top passages E F, valves G G, chain H, axle pin J and rose or spreader K arranged in the manner explained. 2nd. The two valves G G in top passages E F for opening and closing, and for determining the inflow of air to or from a room or apartment, and the cooling or heating of such air in its passage. 3rd. The pressure water rose produced by the combination of the pressure pipe A, the fixed conical valve D, the axially perforated movable conical valve D, the adjusting screw pin F, the adjusting screw socket G and the rotating socket H, with straight or screw-like notches.

No. 14,955. Improvements on Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

Cornelius Callahan, Chelsea, Mass., U. S., 13th June, 1882; for 5 years.

Claim.—1st. The needle cylinder, its reciprocating series of needles, and the welt thread-holder or stud, combined with the cam cylinder having cam surfaces r²⁰ r²⁰ g² r², the preliminary needle lifting surface r²⁰ and butt supporting surface being arranged between the surfaces r² r², to hold the upper ends of several of the needles in position, after they have been particularly lifted to permit the welt thread directed and guided by the stud, to be placed with certainty at rear of the needles just before they are to be raised by the cam surface r. 2nd. The rotating needle cylinder, the revolving warp holding or carrying frame, the hollow bearing a for the same, and the rotating needle carrying cylinder, of smaller diameter extended above the said bearing and suitable intermediate connections between the frame and needle cylinder, to insure the movement of the needle-cylinder and the said frame in unison, combined with a stationary cam cylinder also extended above the said hollow bearing and a series of reciprocating needles. 3rd. The revolving warp holding or carrying frame, the hollow bearing a for the same, the rotating needle carrying cylinder of smaller diameter extended above the said bearing and suitable intermediate connections between the warp frame and needle cylinder to insure their movement in unison, and the stationary cam cylinder also extended up through or above the said bearing and the series of reciprocating needles combined with the welt holder or stud; fixed with relation to the needle cylinder. 4th. The table A², hollow fixed bearing a and revolving warp holding frame having its hollow foot or gear fitted thereon, and the needle cylinder and needles therein elevated above the said hollow bearing and suitable gearing to connect the said warp holding frame and needle cylinder, combined with the stationary cam cylinder arranged inside the space included within the said frame as it revolves, and above the said hollow bearing. 5th. The table A², the hollow fixed bearing a, the cam cylinder and supports extending upward from within the said fixed hollow bearing and tension device and welt holding stud, combined with the revolving warp holding frame, having its foot fitted to the said bearing and the revolving needle cylinder, and suitable connecting means between it and the

said revolving frame. 6th. The revolving needle cylinder c and its shank d and bearing a for it, combined with the intermediate removable reducing plate d². 7th. The hollow needle cylinder and its neck combined with the shield pt provided at its end with the oil lever l² and pan p². 8th. The tension device composed of the plate 14, the lever 12 and suitable means to adjust its position, and the pivoted lever 11 to bear on the threads w, the one lever 1 operating at each end upon a different thread, the tension on each being regulated by one adjusting device. 9th. In a circular knitting machine, the revolving warp holding frame, the revolving needle cylinder and its series of reciprocating needles, means to connect and revolve the said frame and needle cylinder in unison, and a stationary cam cylinder combined with a series of adjustable tension devices attached to the said frame and operating upon the warp threads. 10th. In a circular knitting machine, the revolving warp holding frame, its hollow fixed bearing a, the revolving needle cylinder c arranged above and of smaller diameter than the said hollow bearing, the series of reciprocating needles, means to connect and revolve the said frame and needle cylinder, and stationary cam cylinder also arranged above the said hollow bearing, combined with the tube sizing or gaging ring, to contract and gather the warps above the needles and permit them to be delivered vertically, or nearly so, to the said needles. 11th. In a circular knitting machine, the revolving warp holding frame, its hollow fixed bearing a, the revolving needle cylinder c arranged above and of smaller diameter than the hollow bearing, the series of reciprocating needles, means to connect and revolve the said frame and needle cylinder together in unison, and the stationary cam cylinder also arranged above the said hollow bearing, combined with the tube sizing or gaging ring b⁵ and the warp throwing cam c, and suitable means to hold it stationary within the circle of revolving warps held by the said ring. 12th. The revolving warp holding frame, its tube sizing or gaging ring b⁵, the rotating needle cylinder, suitable means to connect and rotate them together in unison, a series of reciprocating needles, and stationary cam cylinder, combined with the stationary ring b², its adjustable warp tension devices thereon, and the warp throwing cam c provided with holes to deliver the knitting threads to the needles, between the needles and the rear sides of the warp threads. 13th. The revolving warp holding frame, its tube sizing or gaging ring b⁵, the rotating needle cylinder, suitable means to connect and rotate them together in unison, a series of reciprocating needles and stationary cam cylinder, combined with the stationary ring b², the adjustable warp tension devices thereon, and the warp throwing cam c provided with holes to deliver the knitting threads to the needles, between the needles and the rear sides of the warp threads, and the loose wheel p located within the knitting tube. 14th. The revolving warp holding frame and revolving needle cylinder, and series of reciprocating needles, and means to connect and revolve the said frame and needle cylinder, and a stationary cam cylinder, combined with the gear 35, frame D, take-up rolls 11 17, shafts 23 D⁵ and gearing to operate the said rolls, and shaft 23.

No. 14,956. Improvements on Gates. (*Perfectionnements aux barrières.*)

Isaac S. Shirwin, Battle Creek, Mich., U. S., 13th June, 1882; for 15 years.

Claim.—1st. An improved device with bevelled side bearings for limiting the swing of the gate, an intermediate bearing for supporting the gate rail and a fluted shank, in combination with a sliding gate. 2nd. In combination with the gate post E provided with a transverse pin c and with a drop pawl G, sliding gate provided with a projecting tapering bevelled rail A² which rides over the pin c and engages with the pawl G, the gate being further provided with the connecting levers H H adapted to unlock the gate by tripping the pawl. 3rd. The slotted gate post E provided with a pivoted drop pawl G and a transverse pin c, in combination with a sliding gate provided with the projecting tapering bevelled rails A² and the lever H, whereby the gate may be secured either in a horizontal position, or with one end raised. 4th. In combination with a sliding gate, a guide post provided with a vertically adjustable head, whereby vertical displacements of the posts may be compensated for. 5th. In combination with a sliding gate, a guide post, provided with a vertically adjustable head, and a suitable locking device for retaining it in position when set. 6th. In combination with a sliding gate, a guide post provided with a broad flange at its base, a vertically adjustable slotted head for the reception of the lower gate rail, and a sliding collar (or other suitable device) for locking the head to the guide post.

No. 14,957. Improvements in Magazine Stoves. (*Perfectionnements aux poêles à charbon.*)

John Magee and Frank A. Magee, Chelsea, Mass., U. S., 13th June, 1882; for 5 years.

Claim.—1st. A magazine or base burning stove, having the plate or section supporting the doors of the combustion chamber removable, whereby the stove is adapted to be converted from a close to an open grate. 2nd. In a magazine or base burning stove, a removable door supporting front plate F. 3rd. The combination of the plate F forming a portion of one of the walls of the magazine, hinged at e² to the magazine, and means for moving the same to and from the remaining walls of the magazine to diminish or increase the size of its opening. 4th. A magazine or base burning stove having interchangeable front plates or sections, each of which contains the opening to the combustion chamber, one of which is provided with doors and the other is adapted to receive a blower, whereby the stove may be used as a close or open grate.

No. 14,958. Improvements in the Running Gears of Buggies. (*Perfectionnements aux trains des voitures.*)

James Field and Richard E. Hammill, Ancaster, Ont., 13th June, 1882; (Extension of Patent No. 7557.)

No. 14,959. Improvements on Gauge Tubes. (*Perfectionnements aux indicateurs d'eau.*)

Lindley M. Fleet, Boston, Mass., U. S., 14th June, 1882; for 5 years.

Claim.—1st. The gauge tube A having the ground back *a*. 2nd. The gauge tube A provided with the float B. 3rd. The gauge tube A having a double bulb float D. 4th. The gauge tube A provided with the float B, and guard C.

No. 14,960, Improvements on Fences.

(*Perfectionnements aux clôtures.*)

Joseph DuBois, Waverly, N. Y., U. S., 14th June, 1882; for 10 years.

Claim.—1st. A portable worm fence composed of the posts B, having the diverging feet or pins *c* inserted near the bottom, on opposite sides of each alternate post, and the rails D. 2nd. The post B adapted to rest upon the top of the ground and provided with diverging feet or anchor pins *c*, inserted near the bottom on opposite sides of alternate posts, and the rails D, the upper or top rail having mitered ends at the point of contact *e*. 3rd. The posts B having the diverging feet or pins *c* inserted near the bottom of the posts, the ballast receptacle A adapted to rest upon the pins *c* all combined and arranged as described. 4th. A fence composed of the posts B, having divergent feet *c* inserted near the bottom, on opposite sides of each alternate post, the rails D, the top ones of which have mitered ends at the point of junction, and the ballast receptacles A adapted to rest upon the feet *c* within the angles of the fence.

No. 14,961, Improvements on Machines for Manufacturing Paper Pulp from Wood.

(*Perfectionnements aux machines à fabriquer la pâte à papier de bois.*)

Edward M. Ball, Coaticook, Que., 14th June, 1882; for 5 years.

Claim.—1st. The combination of two oppositely revolving grinders with mechanism for feeding said grinders together. 2nd. The combination, with two oppositely revolving grinders provided with mechanism for feeding said grinders together, of means for supplying water to the grinding surfaces of said grinders. 3rd. The combination, with oppositely revolving grinders facing each other, of means for feeding one of said grinders to the other. 4th. The combination, with two oppositely revolving grinders, facing each other and provided with mechanism for feeding one of the grinders to the other, of means for supplying water to the grinding surfaces of said grinders. 5th. The combination, with two oppositely revolving hollow grinders, facing each other, and provided with mechanism for feeding one grinder to the other, of means for supplying water to the grinding surfaces of said grinders. 6th. The combination, with two oppositely revolving grinders facing each other, having concave grinding surfaces to hold and grind the ends of a log, stick or piece of wood, and provided with mechanism for feeding one grinder to the other as the wood is ground, of means for supplying water to the grinding surfaces of said grinders. 7th. The combination, with two oppositely revolving grinders facing each other, provided with means for supplying water to the grinding surfaces thereof, and constructed in such manner as to discharge the water and pulp at the periphery of the grinders, of mechanism for feeding one grinder to the other. 8th. The combination, with a revolving grinder, having a concave grinding surface, a cylindrical shell surrounding the same and joining the periphery of the grinding surface to form a space between the walls of said concave and cylindrical portions, and having an orifice extending from the grinding surface to said space, of a head or chamber meeting the said grinder to form a water chamber. 9th. The combination of the revolving grinder and the head or chamber. 10th. The combination, with the revolving grinders and heads or chambers, of mechanism for feeding one grinder with its head or chamber to the other grinder. 11th. The combination, with the oppositely revolving grinders and the head, or chambers, the latter sliding in ways in a suitable tank, of mechanism for feeding water to said heads or chambers. 12th. The combination of two oppositely revolving hollow grinders provided each with a hollow shaft joining the smaller end of said hollow grinder, with mechanism for feeding said grinders together. 13th. The combination of two oppositely revolving hollow conical grinders provided each with a hollow shaft meeting the smaller end of said grinders and having mechanism for feeding said grinders together, with means for supplying water to the grinding surfaces of said grinders. 14th. The combination, with two oppositely revolving hollow or concave grinders provided each with a hollow shaft meeting the smaller open end of said grinders and having mechanism for feeding one grinder to the other, of means for supplying water to the grinding surfaces of said grinders.

No. 14,962, Improvements on Bread Boxes.

(*Perfectionnements aux boîtes à pain.*)

Joseph Fournier, Jr., New York, N. Y., U. S., 14th June, 1882; for 5 years.

Claim.—1st. The bread box A provided with the loaf-supporting board B, adapted to be held inside of the box when not in use. 2nd. The box A provided upon the inside with the cleats *b* and *b'*, in combination with the board B. 3rd. The board B having the slotted block C secured to it for holding the bread knife. 4th. The board B rounded at its ends, in combination with the box A, provided upon the inside with the cleats *b* and *b'*. 5th. The combination, with the box A provided upon the inside with the cleats *b* and *b'*, of the board B rounded at its ends and provided with the slotted block C. 6th. The board B provided with the dowel pins *f*, in combination with the cleats *b* having the dowels *f*. 7th. The hinged section *g* having the arm *g'*, in combination with the board B and stop pin *h*.

No. 14,963, Improvement in the Method of Treating Wood for Paper Making and other Purposes.

(*Perfectionnement dans la méthode de traiter le bois pour la fabrication du papier et autres fins.*)

Carl D. Ekman, London, Eng., 14th June, 1882; for 15 years.

Claim.—1st. The boiling of wood under pressure with a solution containing sulphurous acid and magnesia in the proportions and under the

conditions described. 2nd. The blowing off of gas and steam during the operation, by a valve or its equivalent.

No. 14,964, Improvements on Carriage Seats.

(*Perfectionnements aux sièges des voitures.*)

John M. Perkins, South Bend, Ind., U. S., 14th June, 1882; for 5 years.

Claim.—1st. The combination of the base frame having the under cut groove in its edge, the back and end piece having the lower edge seated in the groove, and the handles secured firmly to and connecting the ends and the frame, whereby the back and ends are retained in the groove. 2nd. The wagon seat having its back and ends composed of thin sheets connected together with the upper edge stiffened, protected and bound together by grooved strip E applied in such manner as to produce a water tight joint. 3rd. As an improvement in the construction of wagon seats, the combination of a continuous back and end piece B composed of layers of veneer cemented together and bent into shape, and the continuous grooved wooden binding applied and cemented to the edge in such manner as to exclude water from the same. 4th. The combination of the base frame A, the continuous laminated back and ends, and the grooved handle embracing or clamping the ends and secured firmly thereto, and to the base frame. 5th. The seat composed of the grooved base frame, the laminated back and ends in one sheet, the grooved binding and the handles. 6th. The seat composed of the grooved base frame, the laminated back and ends in one sheet, the handles and the metal T-shaped binding. 7th. The wagon seat composed of the grooved base frame, the laminated back and ends in one sheet and the handles. 8th. Attachment of the continuous back B to the base frame A in such a manner as will hold the same rigidly together, by forming the wedge-shape *b d* at their junction.

No. 14,965, Improvements on Cuspadors.

(*Perfectionnements aux crachoirs.*)

William Westlake, Brooklyn, N. Y., and the Adams and Westlake Manufacturing Company, Chicago, Ill., U. S., 14th June, 1882; for 5 years.

Claim.—1st. A cuspador provided with a rigid base plate or platform, detachably secured to the bottom of the vessel, and extending laterally beyond the body. 2nd. A cuspador provided with a rigid base plate or platform, extending beyond its body in a downward incline, to form a bracing support. 3rd. A cuspador platform or base provided with a flat central portion *c* to receive the bottom of the cuspador body, and with an incline bracing portion *cl*. 4th. A cuspador platform or base provided with the inclined bracing portion *cl* and with a supporting hoop or ring *Ct*. 5th. A cuspador body provided with a recess in its bottom adapted to receive a screw socket. 6th. A cuspador provided with tubes set in its body, and adapted to hold umbrellas. 7th. The combination of tubes set in its body and adapted to hold umbrellas, and a base plate or platform extending laterally beyond the body of the cuspador. 8th. In combination with the cuspador body, the tubular shell *G* of size and shape to fit therein, and having umbrella holding tubes *G* set on its inner surface.

No. 14,966, Improvements on Barrel Staves.

(*Perfectionnements aux douves des barils.*)

Edward M. Jewett, (Assignee of John J. Burk.) Buffalo, N. Y., U. S., 14th June, 1882; for 5 years.

Claim.—1st. As a new article of manufacture, a bent wooden stave having condensed and laterally spread fibres. 2nd. A stave for barrels having its outer surface covered with a series of grooves.

No. 14,967, Improvement in Steam Boilers.

(*Perfectionnement des chaudières à vapeur.*)

Garric H. Rheutan, Hartford, Ct., U. S., 14th June, 1882; for 5 years.

Claim.—1st. The tubular boiler having the front of its water leg flush with the front head of the boiler shell, and with such head provided with the arched flange to project from the shell and the opposite ends of the said water leg. 2nd. The combination of the front plate E provided with the two flanges *b* *c* extending from it, with tubular boiler having the front end of its shell even, or flush with the front of the water leg of such boiler, and also having the arched flange to project from such end, and from the opposite vertical ends of the water leg, to the said flush plate.

No. 14,968, Improvements in the Manufacture of Cheese.

(*Perfectionnements dans la fabrication du fromage.*)

James Naylor, Jr., Rochester, N. Y., U. S., 14th June, 1882; for 5 years.

Claim.—1st. In the cheese press, the pressing mechanism and curd receptacle in combination with the spiral springs arranged as described. 2nd. The pressing mechanism consisting of the screw D, having a free movement in line with the press, and held from turning by means of the groove *d* and feather *e*, the hand wheel F provided with the groove *f* and plates *f'*, in combination with the curd receptacle and frame of a cheese press. 3rd. The arrangement consisting of placing a number of hoops in line with each other, making one common receptacle, so that the curd is pressed in one solid column. 4th. The tapering paper hoop A, in combination with the galvanized iron hoop B also tapered, both forming a receptacle for the curd and a mould for the cheese. 5th. In the art of making cheese, pressing the curd within the hoop destined to serve as the body of the permanent package. 6th. The art of making cheese, curing the pressed curd within the hoop destined to serve as the body of the permanent package. 7th. As a new article of manufacture, a cheese made within a paper envelope saturated with paraffine. 8th. The process of making cheese, consisting of the following steps: pressing the curd within the paper hoops A into one solid column, then separating by means of wire, then pressing with cap or press cloth, then curing within the same paper hoop A, and finally putting on the covers.

No. 14,969. Improvements in Processes and Machinery for Manufacturing Cut Nails. (*Perfectionnements dans les procédés et appareils de fabrication du clou coupé.*)

David Farmer, John P. Farmer and Samuel Farmer, Penn Yan, N.Y., U.S., 15th June, 1882; for 5 years.

Claim.—1st. As an improvement in the art of making cut nails and tacks, the process of rolling plates with transverse ridges and depressions, cutting these up into transversely tapered nail plates, with the fibre produced by previous rolling crosswise to said nail plates, feeding such nail plates to the nail machine, without the usual oscillation or alternate inversion, and heading in customary cut nail or tack machinery. 2nd. The rolls constructed and combined as described, for producing nail plates required in carrying out the process specified. 3rd. A transversely tapered plate, for the manufacture of cut nails and tacks, having the fibre crosswise of said plate and in direction of the taper.

No. 14,970. Improvements on Harvesters and Binders. (*Perfectionnements aux moissonneuses-lieuses.*)

The Toronto Reaper and Mower Company, Toronto, Ont., (Assignee of William N. Whiteley and William Bayley, Springfield, Ohio, U.S.,) 15th June, 1882; for 5 years.

Claim.—1st. The combination of an angle iron cutter bar with a self-adjusting platform belt having its fixed and adjustable bearings sustained directly by the upper flange of said angle iron cutter bar. 2nd. The combination of an angle iron cutter bar I, self-adjusting platform belt B₃ and a butter D₃. 3rd. The combination of a rotary packer J to convey the grain from the terminus of an elevator E, and pack it against the vanes *l* of the self-starting device, and thereby connect the binding with the harvesting mechanism. 4th. In a binding machine, the centre wheel R that transmits motion in a direct manner to all the moving parts of the binding apparatus. 5th. A centre wheel R that gives motion in a direct manner to all the moving parts of a binding machine provided with a mutilation in which works the adjustable section Q constructed to be lifted out, or to be lowered into gear, with driving pinion O. 6th. The combination of a wheel R that gives a vibrating motion to a binder arm *m*, shaft *r* connecting rod *x* and arm U and segments *ab* C₃ for giving the desired motion to a knotting device. 7th. The combination of a wheel R that communicates a vibrating motion to a binder arm *m*, shaft *r*, connecting rod *x* and arm W, provided with one or more tracks *u*¹, for opening or closing the grippers of the knoter, and holder and cutting device. 8th. The combination of a wheel R that imparts a direct vibrating motion to a binder arm shaft *r* provided with a track N₃ on its outer edge with starter *g*¹, for throwing a divider wheel *s* T into or out of gear with it, at any desired time. 9th. The combination of a wheel R that gives a direct vibratory motion to a binder arm shaft provided with a crank *i* for giving vibratory motion to an ejector shaft *s*, through the agency of connecting rod J. 10th. A wheel R giving motion directly to a knoter pinion *e* mutilated and provided with a suitable starting device for throwing it into, or out of gear, with pinion O. 11th. A wheel R giving motion directly to a tyer or knoter pinion *e*³ provided with a track N₃ and starter *g*¹ on its periphery, for throwing a divider wheel S T into, or out of gear with it, at any desired time. 12th. A wheel R provided with tracks *u*¹ for operating the grippers and knife of the cutting, holding and knotting mechanism, mutilated and provided with a suitable starting device for throwing it into, or out of gear, with pinion O. 13th. A wheel R provided with tracks *u*¹, for operating the knotting device provided with a track N₃ and a starter *g*¹ around its periphery, for throwing a divider wheel S T into or out of gear with it. 14th. A binding mechanism in which the relative positions of the binder arm *m* and divider *k*, when at rest, will cause the point of the binder arm to stand above the binding table, to hold back the incoming grain, and the divider *k* to stand directly above the flow of the incoming grain so as to be ready to pierce through it the instant the binding mechanism is started, so as to accurately seize the sheaf, and the binder arm to retreat below the table to allow the sheaf to pass over it. 15th. The combination of a continuously running binder arm *m* with an intermittently running divider *k* so arranged that the binder arm retreats below the table, in advance of the grain the divider is bringing in, reaches the extreme of its vibratory movement and commences to return and being met by the divider, moves up the side of it, and thereby keeps the division of grain which the divider has made. 16th. The combination of the compress arm C₃ *e*₃ *d*₃ and *e*₃. 17th. A knoter and griper provided with an overhanging cone-shaped hood *av*, to insure the delivery of the binding cord to the griper *d*₄. 18th. The adjustable tension device *t*₂ on the arm *m*, for the purpose of enabling the binding mechanism to make one or more revolutions while empty, without freeing the band from its retaining griper. 19th. A folding ejector composed of a vibrating arm carrying a folding arm *n* and latch *e*₆, and moved directly from the binder arm shaft by means of the segments *de*⁶. 20th. The combination of an ejector and compress finger working in relative time to each other, so that the bound sheaf is positively forced out of the binder, while the compress finger is opening, and is as positively held down while the compress finger returns to assist in compressing the new sheaf. 21st. A folding ejector so arranged and constructed that it is folded down in front of the unbound sheaf, while it is being brought into the embrace of the compress, then passes underneath it while the compress finger is closing on it, and reaching the limit of its backward stroke behind the sheaf returns in an erect position and conducts the then bound sheaf to the edge of the binding table and folds over it to keep it down.

No. 14,971. Improvements on Barbed Fences. (*Perfectionnements aux clôtures barbelées.*)

Joseph W. Harbaugh and William J. Patterson, Lawrence, Ks., U.S., 15th June, 1882; for 5 years.

Claim.—The rails A A provided or formed on the outer sides with re-inforcing central and edge ribs C¹ C² C³, the outer or edge ribs being cut at alternate intervals to each other, and the two ends thus formed

bent at right angles to the rail, in opposite directions to each other, to form barbs B B.

No. 14,972. Improvements in Harvesting Machines. (*Perfectionnements aux moissonneuses.*)

David Maxwell, Paris, Ont., 15th June, 1882; for 5 years.

Claim.—1st. The combination, with the finger beam, of a bar or rod connected at one end to the finger beam near the post, or inner end of the beam, and at its other end to a bracket situated upon and attached to the finger beam at a point outside of the rake standard, and provided with a nut, or its equivalent, arranged to exert a pushing strain on the said bar for the purpose of bracing the finger beam at the point where the rake jack is carried. 2nd. The combination, with the finger beam, of a bar or rod connected at one end to the finger beam, at or near the inner end thereof, and extending obliquely in an upward direction to a point above the finger beam and near the rake standard, at which point it is adjustably connected to the finger beam, in combination with a nut screwed upon the rod, or any other suitable mechanical device, by which a pushing strain can be exerted through the rod upon the two points connecting it to the finger beam, for the purpose of bracing the latter at the point where the rake jack is carried. 3rd. A bar or rod supported in a suitable bracket attached to the top side of the finger beam near its inner end, and extending to a bracket also attached to the top side of the finger beam, but situated on the outside of the rake standard, in combination with adjusting mechanism arranged to exert through the rod a pushing strain upon the two points connecting it to the finger beam for the purpose of bracing the latter at the point where the rake jack is carried. 4th. A bar or rod rigidly attached to the inner end of the finger beam, and extending therefrom to a bracket attached to the finger beam outside of the rake standard, in combination with nuts I I¹ screwed upon the rod and arranged to jam against the bracket F.

No. 14,973. Improvements on Valve Gears for Engines. (*Perfectionnements aux appareils de soupapes pour les machines à vapeur.*)

Frederick B. Rice, Dunkirk, N. Y., U.S., 16th June, 1882; for 5 years.

Claim.—1st. A moving eccentric pin J, arm J, pin or rock shaft I carried by, and within an opening through the crank disk or a crank pin I¹, in combination with a governor arranged within said disk.

No. 14,974. Improvements on Steps for Vertical Shafting. (*Perfectionnements aux coussinets des arbres verticaux.*)

William Crowe, Boston, Mass., U.S., 16th June, 1882; for 5 years.

Claim.—1st. The step B, balls D and plate E provided with the stud C, in combination with the shaft A provided with the chamber *d*. 2nd. The step B provided with the stud C, chamber *a* and balls D, in combination with the shaft A provided with the chamber *d*.

No. 14,975. Self-Registering Tally. (*Compteur automatique.*)

John W. Elliott, Toronto, Ont., 16th June, 1882; for 5 years.

Claim.—1st. A spindle F suspended within a cylindrical casing, and having at one of its ends a pointed crank H, in combination with a pivoted spring pawl M, acting against the notched block I, so that at each vertical movement of the spindle the pointed crank is caused to move a given distance in a circle. 2nd. In a tally consisting of a spindle with a pointed crank so arranged within a casing that, at each vertical movement of the spindle, the pointed crank is caused to revolve a given distance in a circle, the combination of a vertical spring L acting against the flattened edge of the block I, in order to prevent the spindle revolving when it is being forced down. 3rd. In a tally consisting of a spindle with a pointed crank so arranged within a casing that, at each vertical movement of the spindle, the pointed crank is caused to revolve a given distance in a circle, the combination of a card divided into spaces and held on the base plate of an adjustable frame arranged to support the casing E.

No. 14,976. Improvement in Black Leaf Check Books. (*Perfectionnement des livres de contrôle à feuilles noires.*)

Alexander Gardner, Toronto, Ont., 16th June, 1882; for 5 years.

Claim.—1st. A copying check book, constructing the same with a stationary black (or other color) impression leaf A, in the centre of the book, and one half of the leaves pagged from it backwards to the front, and the other half of the leaves or duplicates pagged consecutively from it forward to the end. 2nd. In a copying check book, the combination of the impression leaf A affixed at the centre of the book, and the forward leaves B and back leaves *c* pagged as shown.

No. 14,977. Improvements on Tubular Lanterns. (*Perfectionnements aux lanternes tubulaires.*)

John H. Stone, Hamilton, Ont., 19th June, 1882; for 5 years.

Claim.—1st. A perforated movable tube or cylinder E inside of an air chamber B, at the top of a globe or lantern, the same being affixed to the movable bottom *a* of the air chamber and having attached, by vertical strips *c* *c*, an annular ring D to surround the globe C as a globe holder. 2nd. A spiral spring I surrounding the perforated tube or cylinder E inside of the air chamber B for the purpose of pressure on the ring D, or globe holder as specified. 3rd. In combination with the air chamber B of a tubular lantern, a perforated movable cylinder or tube E to which is attached a globe holder D, the cylinder being surrounded with a spiral spring I inside of air chamber, for the purpose of obtaining pressure on the globe to hold it in its place, also the

above, in combination with the holes *i* in the collar under the cone of the burner, for the purpose of admitting atmospheric air to mix with the rarified air pressing down the tubes which causes a perfect combustion.

No. 14,978. Improvements on Button Hole Attachments for Sewing Machines. (*Perfectionnements aux machines à coudre faisant les boutonnières.*)

Samuel J. Baird, Covington, Ky., U. S., 19th June, 1882; for 5 years.

Claim.—1st. In combination, the elongated spring cloth clamp, the clamp spring D provided with a thumb piece pin C provided with the head *C*, and the curved end B providing for the abrupt descent of the clamp spring D and quick opening of the clamp pieces A and B. 2nd. In combination, the clamp spring D provided with the vertical thumb piece D², pin C provided with the head *C* and the curved edge B¹. 3rd. A springless double pawl T laterally adjustable with a pin traversing the slot *m*, in a guide piece, in combination with a ratchet wheel F and clamp slide. 4th. A slide pawl U adjustable to the ratchet *m*, by a slot and pin, in combination with the ratchet and cam wheels and clamp slide. 5th. The ratchet wheel M and cam wheel N, in combination with the adjustment plate. 6th. The ratchet wheel M and cam wheel N, in combination with flanges or posts on the clamp slide. 7th. The combination of the ratchet wheel and cam wheel, the clamp slide being provided with flanges or posts *tt*, the plate K provided with a pin *g*, and slide pawl U provided with the slot *u*. 8th. The combination of plate K and lever *J* *j* *2* fitting in notches *J*⁵ *j*⁷. 9th. The steadying bar S.

No. 14,979. Improvements in the Art of Weaving Cloth. (*Perfectionnement dans l'art de tisser.*)

Thomas Isherwood, Westerly, R.I., U.S., 19th June, 1882; for 5 years.

Claim.—1st. Inter-weaving strengthening strips with the cloth, by means interlaving warp threads and separate shuttles for laying the weft for the strips and the weft for the cloth. 2nd. As a new article of manufacture, a cloth having strengthening strips interwoven with the cloth at intervals, so that the cloth is made thicker and stronger at these strips than at the spaces between the strips.

No. 14,980. Improvements on Bench Clamps. (*Perfectionnements aux vis d'établi.*)

James Murphy, San Antonio, Texas, U. S., 19th June, 1882; for 5 years.

Claim.—The combination, with the grooved plate A provided with head B and inclined and serrated toe C, of the adjustable screw E provided with head D, ratchet wheel F and ratchet lever D.

No. 14,981. Improvements on Calculators. (*Perfectionnement aux tables d'arithmétiques.*)

Robert T. Martin, Toronto, Ont., 19th June, 1882; for 5 years.

Claim.—Two rows of the nine digits and nine movable sliding blocks placed in the numeral frame, in such a way that, by a simple movement of the blocks on which the digits are placed, to produce the possible variations of the nine digits, taking two at a time.

No. 14,982. Improvements in Bolt and Rivet Cutters. (*Perfectionnements aux machines à couper les boulons et les rivets.*)

Christopher W. Levalley, St. Paul, Minn., U.S., 19th June, 1882; for 5 years.

Claim.—1st. In a bolt cutter, the combination of the following elements, namely: the yoke or supporting part A having the central opening *a*, the cutter C adapted to slide therein, the screw jaw or head D¹ engaging with the sliding cutter, the toggle levers G G connected by a single pivot to the said part D¹, and the levers E E pivoted to the part A and to the levers G G. 2nd. In a bolt cutter, the combination of the following elements, namely: the yoke part A having a central opening, the cutter C adapted to slide therein, the levers E E pivoted to the yoke, the screw head D¹ engaging on a central line with the cutter C, and the toggle-levers G G connected by one pin or screw to the head D¹, and the other end of the toggle levers connected to the levers E E.

No. 14,983. Improvements on Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

William Davison, Hoboken, N. J., U.S., 19th June, 1882; for 5 years.

Claim.—1st. An elliptic or semi-elliptic spring, made of plates having concavo-convex form in cross section, and arranged with the convex sides of said plates towards the chords of the longitudinal bend or bow, the plate which forms the back at *c* made convex on its inside, and flat on its top or outside. 2nd. In an elliptic or semi-elliptic spring made of plates having concavo-convex form in cross section, and arranged with the convex sides of said plates towards the chord of the longitudinal bend or bow, the combination of the back plate C made convex on its inside and flat on its outside, with the inside and intermediate plates *ab* and with the band *d*, said band being made straight in the part crossing said plate C.

No. 14,984. Improvements in Devices for Converting Reciprocating into Rotary Motion. (*Perfectionnements aux appareils pour transformer le mouvement alternatif en mouvement rotatoire.*)

Absalom G. Smyth, Hamilton, and John Smith, Brantford, Ont., 19th June, 1882; for 5 years.

Claim.—1st. An opening or recess B placed in a shaft, so constructed and arranged that a pawl may be used on either side of said shaft, and engage the central portion of rack wheel E. 2nd. A lock or clutching device, composed of a recess and pawl contained in a shaft upon which a loose wheel may be placed, in combination with a rack pitman for the purpose of converting reciprocating motion into rotary. 3rd. A rack pitman having the side pieces I I made long, so that a piece *j* may be securely fastened between them. 4th. In a rack pitman, one or more cores *d* left wider than the others for retaining the rack in gear. 5th. In combination with a locking device and gear wheels E E for converting reciprocating motion into rotary, an adjustable rack pitman. 6th. A guard frame provided with the opening L or its equivalent. 7th. A nib N or projection formed on block K, in combination with pin *i* or its equivalent for the purpose of retaining the guard frame in position.

No. 14,985. Improvements on Earth Augers. (*Perfectionnements aux sondes à trarières.*)

Charles D. Pierce, Philadelphia, Penn., U. S., 19th June, 1882; (Extension of Patent No. 7846.)

No. 14,986. Improvements on Earth Augers. (*Perfectionnements aux sondes à trarières.*)

Charles D. Pierce, Philadelphia, Penn., U.S., 20th June, 1882; (Ext of Pat. No. 7846.)

No. 14,987. Improvements on Fence Posts. (*Perfectionnements aux pieux des clôtures.*)

Jacob Frazier, Centralia, Ill., U.S., 20th June, 1882; (Ext. of Pat. No. 10,483.)

No. 14,988. Improvements in Metal Packages. (*Perfectionnements dans les boîtes métalliques.*)

John F. Ross, Toronto, Ont., 20th June, 1882; (Ext. of Pat. No. 8807.)

No. 14,989. Improvements on Ammunition Cases. (*Perfectionnements aux boîtes à ammunition.*)

Edward G. Parkhurst, Hartford, Ct., U. S., 20th June, 1882; for 5 years.

Claim.—1st. In combination with the box A and contained cartridges the exterior case composed of the two rectangular pasteboard parts B and C, each bent to form three sides of the box, and turned with their open sides toward each other over the cartridges and the box A, and the binding E covering the corners. 2nd. In combination with the box or casing composed of two parts arranged respectively to each other, the detaching strip D arranged between the two parts of the casing and having projecting portion to be grasped by the hand.

No. 14,990. Improvements on Boots and Shoes. (*Perfectionnements aux chaussures.*)

Edwin L. Sprague, Boston, Mass., U. S., 20th June, 1882; for 5 years.

Claim.—As an improved article of manufacture, a box toe composed of sheet metal having its edge flanged or bent over upon itself.

No. 14,991. Improvements on Devices for Forming Threads on Sheet Metal Cylinders. (*Perfectionnements aux machines à faire les pas de vis sur les cylindres en feuille de métal.*)

Jacob F. Brower, Coral, Mich., U. S., 20th June, 1882; for 15 years.

Claim.—1st. In a screw-thread bending machine, the base A provided with bifurcated standards B C in which are placed the bearings D H I L and the shafts E M, in combination with the stationary bearings D D¹, sliding bearings H I, rocking bearings L L, rotating shafts E M and the spirally grooved wheels F N. 2nd. A device for forming screw threads upon sheet metal cylinders, wherein the upper shaft is supported near its forward end within an oscillating box which is, in turn supported within a vertically reciprocating box. 3rd. In a screw thread bending machine, and in combination with the standards B C and shafts E M carrying the worm wheels F N, the vertically adjustable boxes H I, oscillating boxes L, gear wheels O G and the springs *a b*. 4th. In a device for forming screw-threads upon sheet metal cylinders and in combination with the standards B C and shafts E M carrying the worm wheels F N, the vertically adjustable boxes H I and oscillating boxes L.

No. 14,992. Improvements on Car Seats. (*Perfectionnements aux sièges des chars.*)

Isaac M. Van Wagner, Nyack, N. Y., U. S., 20th June, 1882; for 5 years.

Claim.—1st. The combination of a car seat with the movable partition which is placed under the seat for the purpose of preventing draughts of cold air around the feet of the passengers. 2nd. In a car, the combination of the seats with the partitions placed under them, and connected together, by means of rods, cords, or wires, in such a manner that the partitions can be raised and lowered. 3rd. The combination of the car seats, with the hinged or pivoted partitions placed under the seats and the rubber strips I, the parts being arranged and combined to operate as described. 4th. The combination of a car seat with a suitable partition loosely attached thereto, and having an elastic material attached to its lower edge, the partitions being adapted to be worked backward and forward over the floor, for the purpose of assisting in cleaning the car under the seat.

No. 14,993. Improvement in petroleum Condensers. (*Perfectionnement des condenseurs du pétrole.*)

Martin J. Woodward, Petrolia, Ont., 20th June, 1882; for 5 years.

Claim.—The art or process of separating and condensing vapour of petroleum oil, and regulating the temperature of their condensation, by compelling the condensed oil to return and meet the ascending hot vapours from the still, by the use and with the aid of the receptacle or petroleum condenser.

No. 14,994. Improvements in the Manufacture of Covered Wire for Insulated Cables. (*Perfectionnements dans la fabrication du fil métallique couvert pour les câbles isolés.*)

Henry A. Clark, Boston, Mass., U. S., 20th June, 1882; for 5 years.

Claim.—1st. The method of making compound electrical conductors or cables, by forcing, pressing or compacting around a series of substantially parallel, spaced, or separated wires an insulating material in a plastic state, and afterward vulcanizing the same, whereby the series of wires are surrounded by, or embedded in one and the same homogeneous mass, and are therein spaced or separated from each other. 2nd. The method of making cylindrical compound electrical conductors, by forcing, pressing or compacting, around and between a series of substantially parallel wires, an insulating material in a plastic state, and afterward vulcanizing the homogeneous mass. 3rd. A compound conductor, or cable, composed of a series of wires surrounded by, or embedded in a mass of pressed or moulded insulating material, and therein spaced or separated from each other by the intervening portions of the homogeneous mass.

No. 14,995. Improvements on Machines for Covering Wire with Insulating Material. (*Perfectionnements aux machines à couvrir le fil métallique de material isolant.*)

Henry A. Clark, Boston, Mass., U. S., 20th June, 1882; for 5 years.

Claim.—The combination of a series of wire guides *b* constructed and arranged in relation to each other, and to a common die opening *F*.

No. 14,996. Improvements on Machines for Covering Wire with Insulating Material. (*Perfectionnements aux machines à couvrir le fil métallique de material isolant.*)

Henry A. Clark, Boston, Mass., U. S., 20th June, 1882; for 5 years.

Claim.—The wire-guide *D* having parallel sides, and the opening *a* in die-block *E* having similar parallel sides *b b* arranged and combined together, so that the wire guide *at*, and along its parallel sides, enters and lies axially within the portion of the die opening in its portions having parallel sides *b b*.

No. 14,997. Improvements on Railway Signalling Apparatus. (*Perfectionnements aux appareils à signaux de chemin de fer.*)

Henry Morris, Manchester, Eng., 20th June, 1882; for 5 years.

Claim.—1st. In combination with tapper *C*, rod *G* and gong *I*, the swinging arm *A* operated from the signal cabin by which the tapper *C* is raised, the rod *G* drawn down and the bell or gong *I* sounded with or without the application of an air or electric brake. 2nd. The combination of an air brake and its valve, with mechanism for automatically opening said valve. 3rd. The combination of an electric brake with devices for automatically making or breaking the circuit. 4th. In combination with the brake and signal and necessary connections, the swinging arm *A* for testing the signal and the brake automatically when the locomotive leaves an engine shed or station. 5th. An electric repeater in combination with the swinging arm. 6th. The combination and arrangement of the parts forming the improved apparatus for signalling and applying a brake.

No. 14,998. Improvements on Ball Traps. (*Perfectionnements aux boîtes des boules.*)

George N. Sidney, Syracuse, N. Y., 20th June, 1882; for 5 years.

Claim.—*a*—The combination of the base *H* supporting the pivoted standard *A* having axial channel *a*, the plate *F* provided with the posts *C* carrying the spring bars *B*, plate *h*, swivel *D*, spring *S*, checks *E*, bell and hammer *G*, lines *L* and pulleys *P*. *b*—In combination with the base *H* and standard *A* having the plate *F* and posts *C*, of the spring bars *B*, checks *E* adjustably secured to the plate *F*, the swivel *D* and line *L* and pulleys *P*. *c*—The spring bar *B* having the leg *b3*, bell *G* and hammer *G*, in combination with the post *C* and plate *F*. *d*—The combination, with the base *H*, of the standard *A* carrying the frame *FC* in such a manner as to receive a rotary motion by means of the line *L*.

No. 14,999. Improvements on Apparatus for Drying Wall Paper. (*Perfectionnements aux appareils à sécher le papier de tenture.*)

Henry Hilbero, Flushing, N. Y., U. S., 20th June, 1882; for 5 years.

Claim.—1st. In apparatus for drying paper or other fabric, the travelling festoon carriers *I* combined with the guiding rail *J* and with one or more moving chains *G* *H*, and supporting rail *L*. 2nd. The

combination of the beams *m*, brackets *J*, extensions *K*, with the rails *J* supporting rail *L*, festoon carriers *I* and their blocks *i*, and with one or more chains for moving the festoon carriers. 3rd. The apparatus for drying paper or other fabric, consisting of series of travelling festoon carriers, which are combined with the supporting rail *L* to be dropped automatically when they reach the end of said rail. 4th. The combination of the chain *G* having closely set projections *g* with the chain *H* having more widely set projections *h* and with the festoon carrier *I*, and apparatus for supporting the same. 5th. The festoon carrier *I* adapted to be moved by belt or chain, and combined with the round rod *J*, on which it can slide and swing into vertical and into horizontal position.

No. 15,000. Improvements in Carriage Seats. (*Perfectionnements aux sièges des voitures.*)

Pierre A. Larivière, Ottawa, Ont., 20th June, 1882; for 5 years.

Claim. 1st. In a vehicle seat, the combination of the stationary section and the movable section, and connecting devices, whereby the movable section is permitted to slide backward and subsequently turned upward. 2nd. The combination of the stationary seat section provided with the back support, the movable seat section also provided with the back support and a sliding hinge connection between the parts, whereby the movable section is permitted to move backward and subsequently swing upward to a vertical position. 3rd. The combination of the stationary section, the sliding and swinging section and a locking device with which the movable section engages by a vertical motion. 4th. In combination with the movable seat section and its curtain, a lever and connecting cords, whereby the curtain is automatically folded against the movable section as the latter is raised. 5th. In combination with the stationary seat section and the movable section having a horizontal sliding and a vertical swinging movement, the flange or lip *i*. 6th. The combination of the stationary and movable sections, with the notched plate *g* and stud *f*. 7th. In combination with the stationary section, the horizontal sliding and vertically swinging section, provided with the overlapping plate.

No. 15,001 Improvements on Hay Rakes. (*Perfectionnements aux rateaux à foin.*)

Edward L. Gould, Jesse O. Wisner and Waneham S. Wisner, Brantford, Ont., (Representing Richard R. Sheldon, Shontsuya, N. Y., U. S.) 20th June, 1882; (Extension of Patent No. 7567.)

No. 15,002. Improvements in Egg and Fruit Carriers. (*Perfectionnements des appareils à transporter les oeufs et les fruits.*)

John J. McIntire, Oakland, Cal., U. S., 20th June, 1882; (Extension of Patent No. 14,308.)

No. 15,003. Improvements in Egg and Fruit Carriers. (*Perfectionnements des appareils à transporter les oeufs et les fruits.*)

John J. McIntire, Oakland, Cal., U. S., 21st June, 1882; (Extension of Patent No. 14,308.)

No. 15,004. Improvements in Refrigerators. (*Perfectionnements aux garde-manger.*)

Alfred S. Haslam, Derby, Eng., 21st June, 1882; (Extension of Patent No. 13,902.)

No. 15,005. Improvements in Refrigerators. (*Perfectionnements aux garde-manger.*)

Alfred S. Haslam, Derby, Eng., 22nd June, 1882; (Extension of Patent No. 13,902.)

No. 15,006. Improvements in Moccasins. (*Perfectionnements dans les mocassins.*)

George Boulter, Montreal, Que., 22nd June, 1882; (Extension of Patent No. 7904.)

No. 15,007. Improvement in Fire-Escape Ladders. (*Perfectionnement des échelles des sauveteurs d'incendie.*)

Isaac H. Allen, Black Creek, Ont., 22nd June, 1882; (Extension of Patent No. 7577.)

No. 15,008 Improvements on Pumps. (*Perfectionnements aux pompes.*)

Médor Loscarbeau, Cote St. Louis, Que., 22nd June, 1882; (Extension of Patent No. 7608.)

No. 15,009 Fireman's Protecting Apparatus. (*Appareil protecteur de pompier.*)

William Murray, Vicksburg, Miss., U. S., 22nd June 1882; (Extension of Patent No. 7586.)

No. 15,010. Improvements in Belt Replacing Devices. (*Perfectionnements aux appareils d'embréage des courroies.*)

Henry C. Hartlay and James L. Rogers, Springfield, Ohio, U. S., 22nd June, 1882; for 5 years.

Claim.—As a means for replacing a belt upon a pulley, and in combination therewith, a lug secured within one edge, at the periphery of the same, its inner plain face having a radial and laterally outward inclination, and its edges being bevelled or rounded.

No. 15,011. Improvements on Harvesters.*(Perfectionnements aux moissonneuses.)*

David Maxwell, Paris, Ont., 22nd June, 1882; for 5 years.

Claim.—1st. The corrugated wrought metal bar, having an arched passage way formed through it longitudinally, and a flange on each side of said passage way to support respectively the guards and grain table. 2nd. The corrugated wrought metal bar having an arched passage way formed through it longitudinally, in combination with a rod or chain moving lengthwise in said passage way when operated for the purpose of adjusting the grain wheel end of a table from the driver's seat. 3rd. In a harvesting machine in which the finger beam has a vertical adjustment independent of the main frame, a grain wheel adjusting lever fulcrumed on stubble end of the finger beam and provided with a grain wheel, adjusting rod or chain, which rod or chain, when operated, moves in the direction of its own length, in combination with an arched, or corrugated metal finger beam, forming a covered passage way for the grain wheel adjusting rod or chain and provided with flanges, the front flange forming a support for the finger guards, and the rear flange, a support for the grain table. 4th. The combination of the corrugated wrought metal bar having a passage way and flanges, a grain wheel having a vertical adjustment at right angles to the centre line of the finger beam and directly connected to the adjusting rod or chain passing through said passage way, which rod or chain moves in the direction of its own length, when operated by a lever fulcrumed on the table, for the purpose of adjusting the grain wheel end of table from the driver's seat. 5th. The guiding bracket fastened to the outer end of finger bar, and having the outside guard or shoe fastened to said bracket or cast thereon. 6th. In a harvesting machine having an arched or corrugated finger beam forming a covered passage way for the grain wheel adjusting rod or chain, a bracket bolted to the end of the finger beam and forming the shoe, in combination with the grain wheel journal bracket held in suitable guides in the shoe bracket and connected to the grain wheel adjusting chain. 7th. In a harvesting machine in which the finger beam has a vertical adjustment independent of the main frame, a post, the bottom of which is fastened to the stubble end of the finger beam, and its top stayed by a diagonal brace extending from its top to the finger beam, in combination with a lever pivoted to the post and connected to the grain wheel adjusting chain, which passes through the arched passage way in the finger beam, and is connected at its other end to the grain wheel journal bracket.

No. 15,012. Improvements on Binding Machines.*(Perfectionnements aux lieuses.)*

The Toronto Reaper and Mower Company, Toronto, Ont., (Assignee of William N. Whiteley, Springfield, Ohio, U. S.), 22nd June, 1882; for 5 years.

Claim.—1st. The combination of a double belt elevator, with a harvesting machine and the revolving falling tooth packer having teeth arranged to swing out and sweep the grain away from the elevating belt, and press it back, ready to be taken up by the binder arm, the teeth being so arranged that, while revolving, they will at certain intervals draw out endwise before passing over the grain sweep. 2nd. In a rotary rake constructed with two eccentrically hung rods, each carrying teeth linked together, in combination with a controlling cam formed to impart the required motion to the packer or teeth. 3rd. The combination of two or more rake heads carrying the raking teeth with a link connection for the purpose of controlling the movements of both sets of teeth from a single cam. 4th. The combination of the rotary rakes linked together and the movable cam, with the connecting rod R, for the purpose of arresting and turning the teeth while the binder arm is up, so that the grain may occupy a different position in the grain receptacle in the intervals of binding. 5th. The combination of a continuous rotary raking mechanism which sweeps the grain from the elevating belt, and deposits it in position in the binder receptacle, the rake being automatically controlled by the binder arm mechanism. 6th. In a continuous rake packer controlled by and working in unison with the binder arm, its movement so arranged as to always sweep the grain off the elevating mechanism, but to vary the position of grain deposit in the grain receptacle so as to admit of the free working of the binder arm on its return downwards.

No. 15,013. Improvements on Heating Boilers.*(Perfectionnements aux chaudières des calorifères.)*

William J. Carshore, (Assignee of Joshua Mason,) Paterson, N. J., 24th June, 1882; for 5 years.

Claim.—1st. The combination of an upper and a lower annular water chamber or head, with outer and inner tubes, the former connecting the two water chambers or heads, and the latter passing through the former and through the water chambers or heads, and a fire pot arranged below the said chambers. 2nd. The combination of an upper and a lower hollow annular water chamber or head, with outer and inner tubes, the former connecting the two water chambers or heads, and the latter passing through the former and through the water chambers or heads, and a fire pot having double vertical walls and an intervening water space arranged below and in communication with the lower chamber or head. 3rd. The combination of an upper and a lower hollow annular chamber or head, outer and inner tubes, the former connecting the two water chambers or heads, and the latter passing through the former and through the water chambers or heads, a fire pot from which the products of combustion pass upwards around the water chambers or heads, and outer or water tubes, and through the upper and fire tubes, and a magazine, or cylinder supplying fuel to the fire pot dependent from the top of the boiler, and passing through the upper and lower annular water chambers or heads. 4th. The combination of the water chambers or heads A B with the outer and inner tubes C D, the fire pot F with water spaces f and tubes g , the casing H and magazine or cylinder I.

No. 15,014. Improvements in Water Proofing Felt Stockings.*(Perfectionnements dans la manière de rendre les bas de feutre imperméables.)*

James R. Mackinnon, Montreal, Que., 24th June, 1882; for 5 years.

Claim.—1st. The combination, with a stocking, boot or shoe of felt, cloth or analogous substance, of a coating of rubber cement, or other water-proofing material, said water-proofing material being applied while in a liquid or plastic state, and afterwards dried or vulcanized. 2nd. As a new article of manufacture, a felt stocking having a coating of water-proofing material. 3rd. As a new article of manufacture a felt boot or shoe having a coating of water-proofing material.

No. 15,015. Improvements on Water Closets.*(Perfectionnements aux latrines à l'eau.)*

James E. Boyle, Brooklyn, N. Y., U. S., 24th June, 1882; for 5 years.

Claim.—1st. The combination, with the air space d between the two traps C and D, of the pipe e , the flushing chamber F, the outlet valve j thereof, the flushing pipe l leading to the bowl A, and any suitable means for breaking the partial vacuum in the chamber after the bowl has been siphoned, and before all the water has escaped from the chamber. 2nd. The combination, with the air space d between the two traps C and D, of the pipe e , the flushing chamber F, the inlet and outlet valves thereof, the flushing pipe l leading to the bowl A, and the vent tube c opening near the bottom of the chamber and leading thence to the outer air. 3rd. The combination of the air space d , the pipe e , the chamber F, the valves h j , the pipe l , the check valve g and the vent tube c . 4th. The combination of bowl A, traps C D, air space d , pipe e , chamber F, pipe u depending into said chamber valve seat i projecting up inside the pipe u , valve j , normally unseated pipe l leading from said seat i to the bowl A, a normally closed inlet valve for the chamber F, and means for opening said inlet valve, and closing the valve j upon the depression of the water closet seat. 5th. The combination of tank E, chamber F, pipe e , l , valves h j , overflow pipe m and tube r . 6th. The combination of bowl A and traps C D, moulded in one piece with the belly of the trap C arranged to depend between the two legs of the trap D, and the crown of the latter arranged to one side of the belly of the trap C and close underneath the bowl A. 7th. The combination of bowl A, traps C D and tubular heads t t' moulded in one piece, the tubular head t communicating with the space d between the two traps, and the head t' communicating with the bowl A. 8th. The combination, with the bowl A, traps C D and the tubular heads t t' , of couplings for pipes e l entering said heads at one end, blind caps closing them at the other end, yokes u u' engaging said couplings and caps, and bolt v .

No. 15,016. Improvements on Glove Fasteners.*(Perfectionnements aux agrafes des gants.)*

Edward Horsepool, London, Eng., 24th June, 1882; for 5 years.

Claim.—1st. The deep hollow or recess c of the ears b b' , for the eyelet to lodge itself in as a temporary attachment, the positive attachment being effected by the hinged lever d , which can be secured in position automatically or mechanically. 2nd. Shaping the tail end h of the hinged lever d that it projects into the deep hollow or recess c of the ears b , that the strain of the eyelet on said tail end h keeps the fastener closed automatically. 3rd. The several details f g i j k l as methods by which the lever d can be retained in a closed condition mechanically.

No. 15,017. Improvements in the Manufacture of Jewelry.*(Perfectionnements dans la fabrication de la bijouterie.)*

Oren C. Devereux, Providence, R. I., U. S., 24th June, 1882; for 5 years.

Claim.—1st. An enamel or other composition stone having a moulded-in metallic device that is interlocked, at its inner end, with the material in which it is imbedded and is adapted to be soldered at its outer end to any suitable metallic shank or setting. 2nd. A glass or other composition stone provided with a moulded-in metallic device having both an inner and outer flange.

No. 15,018. Improvements in Malt Houses.*(Perfectionnements aux germoirs.)*

Louis C. Huck, Chicago, Ill., U. S., 24th June, 1882; for 5 years.

Claim.—1st. The malt kiln house G, having ventilator stack g with damper h , in combination with flue H, exhaust fan I and vent j . 2nd. In malting establishments, the vertical flue H connected with a suction fan and communicating through vents with the several compartments above the malt kiln floors, and with all the growing floors of the malt house.

No. 15,019. Improvements on Dynamo-Electric Machines.*(Perfectionnements aux machines electro-dynamiques.)*

Henry R. Sheridan, Cleveland, Ohio, U. S., 24th June, 1882; for 15 years.

Claim.—A dynamo-electric machine constructed as described, with its magnets C made oblong in cross-section, and arranged around the armature shaft B, with the side of each magnet, in the series nearly overlapping the edge of the adjacent magnet.

No. 15,020. Improvement on Glass Ceilings.*(Perfectionnements aux plafonds de verre.)*

James Budd, Boston, Mass., U. S., 24th June, 1882; for 5 years.

Claim.—A ceiling composed of the glass plates D, the rebated strips B and the mouldings C, adapted to cover the lower portions of the strips and secure the glass plates in position.

No. 15,021. Improvements on Railway, Telegraph and Semaphore signals.
(*Perfectionnements aux signaux télégraphiques et sémaphores des chemins de fer.*)

William W. McLellan, Newcastle, N.B., 24th June, 1882; for 5 years.
Claim.—The combination of the several parts, signal board B, lamp C, levers D F, weight rod G, cord H, stop I, shaft J and pulley K L, to be attached to the bar or post A.

No. 15,022. Improvements on Pantaloons Protectors and Toe Pieces for Boots and Shoes, and Machine for Attaching Them. (*Perfectionnements aux protecteurs des pantalons et aux carres des chaussures, et machine pour les poser.*)

Judson L. Thomson, Syracuse, N. Y., U. S., 16th June, 1882; for 5 years.

Claim.—1st. A pantaloons protector consisting essentially of a plate adapted to be secured to the heel of a boot or shoe, and an arm hinged on said plate and restrained from deflecting below a horizontal position, except to spring back again, by a shoulder on the attaching plate. 2nd. A pantaloons protector consisting of an attaching plate and an elastic arm hinged on said plate and prevented from deflecting below a horizontal position by a support on the attaching plate. 3rd. The combination of the plate *a* formed with the loop *b* and with the lateral extension *c* on the ends of said loops, the wire bale *d* hinged in the loop *b* and restrained from deflecting below a horizontal position, by the extensions *c* aforesaid, and the attaching screw or screws *u*. 4th. The combination of the plate *a* provided with the step *s* and with the loop *b*, the latter having the shoulders *e*, the bale *d* hinged on the said loop, and the washer *g* provided with rivets *r*. 5th. The combination of the plate *a* formed with the spurs *u* and with the loop *b* having the lateral extension *c*, the bale *d* hinged in said loop, the whole attached by the screws *u*. 6th. The plate *a* formed with the projection *e* at its upper end, and provided with the vertical slots *ff* and having its base adapted to rest on the heel of the shoe, and the washer *g* provided with clinches *h h*, all combined and applied to the shoe. 7th. The plate *a* having projections *e* resting with its end on the plate *A* and against the clinches *h h*. 8th. The plate *a* having its extension *e* adapted to rest upon the clinches *h h*, when in place upon the shoe. 9th. In combination with the upsetting die D, the flange P and guide *c* arranged moveably in said plunger and provided with lugs *n n*. 10th. In combination with the upsetting die D, the plunger P and guide C arranged moveably in said plunger, and the spring *s* arranged to hold said guide projecting above the plunger. 11th. The combination of the arms B B', the upsetting die D, pivoted arm E, lever L and the plunger P on the free end of the arm E. 12th. In combination with the arms B B' and the plunger P, the upsetting die D pivoted on the arm B' and provided with a locking device for retaining it in its operative position over the plunger. 13th. In combination with the plunger P, the standard arm B' provided with the stop pin *b*. 14th. In combination with the plunger P, the die D provided with the recess *c* and lugs *d d* respectively, at opposite sides of the said recess. 15th. The combination of the concavo-convex arm B, the arm B' over the arm B and provided with the hole *a*, the bell crank lever E pivoted on the standard and having one arm extended under the arm B, and provided at its end with the plunger P, the guide C arranged moveably in the plunger and provided with lugs *d d*, the spring *s*, the die D pivoted on the arm B' and provided with the stop pin *b* and with the recess *c*, and the lever L.

No. 15,023. Improvements on Dynamo-Electric Machines. (*Perfectionnements aux machines électro-dynamiques.*)

Henry B. Sheridan, Cleveland, Ohio, U. S., 26th June, 1882; for 15 years.

Claim.—1st. The armature core D constructed, as described, of a hollow-iron ring nearly rectangular in its cross section, and with sides converging or inclined inward, from the convex side toward the concave side. 2nd. The armature core D constructed of a hollow iron ring having corresponding openings H I in its convex and concave sides and projections forming channels of uniform width upon its inclined or converging sides. 3rd. The armature core D constructed of a hollow iron ring having upon its sides projections J K of different thicknesses, alternating with each other and projecting beyond the concave side of the core, the projections J being made V-shaped or with sides converging to an edge, and the projections K being made with slightly inclined or converging sides and V-shaped ends, whereby channels or grooves of uniform width are formed to receive the helix coils. 4th. The combination, with the armature core D having lugs N and the armature shaft C, of the hubs P having flanges O, whereby the said armature will be firmly connected with the said shaft. 5th. The combination, with the armature and the armature shaft C, of the stationary magnet cores E and the helices F, the said cores being placed spirally around the armature shaft, and at an inclination with the said armature shaft, and the said helices being wound with their coils parallel with the magnetic field of force.

No. 15,024. Improvements on churning apparatus. (*Perfectionnements aux appareils à baratter.*)

Benjamin F. Moore and George Cruikshank, Heathcote, Ont., 26th June, 1882; for 5 years.

Claim.—1st. The combination, with the frame 3, of the base 4, straps 6, levers 5, vertical bars 13, connected at top by a horizontal bar, levers 12, sliding in pivoted boxes 13, bars 14, foot bar 15 and hand frame 17. 2nd. In combination with a frame 3 provided with a

combination of levers, a churn 1 and dasher rod 2, both operating reciprocally, whereby the descent of the churn causes the dasher rod to rise, and the manual operation of the levers raises the churn and depresses the dasher rod simultaneously.

No. 15,025. Improvements in Drawers and tights. (*Perfectionnements aux caleçons et vêtements collants.*)

Robert M. Appleton, Lake Village, N. H., U. S., 26th June, 1882; for 5 years.

Claim.—1st. In circular seamless leg drawers or tights, the combination, with the knitted leg parts, of the body and thigh parts knit in tuck-stitch, and the knee parts knit in plain stitch. 2nd. In circular seamless drawers or tights, the combination of the body and thigh parts knit in tuck-stitch, the knee parts knit in plain stitch, and the leg parts knit partially in plain and partially in tuck-stitch. 3rd. In circular seamless leg drawers or tights, for men, women, and children wear, the combination of the body and thigh parts, knit in tuck-stitch, the knee parts down to the ribbed band in plain stitch. 4th. In circular seamless leg drawers or tights for men, women and children wear, the combination of the body and thigh parts, knit in tuck-stitch, the knee parts and down to the ribbed band in plain stitch with widely separated tuck-stitch.

No. 15,026. Improvements on Machinery for manufacturing wire fastening for securing corks in bottles. (*Perfectionnements aux machines à faire les ligatures en fil métallique pour assujétir les bouchons des bouteilles.*)

Orril R. Chaplin, Daniel C. Knowlton and William R. Macleod, Boston, Mass., U. S., 26th June, 1882; for 15 years.

Claim.—1st. The combination, with cogged hub B₁ and feed rolls B C, of the compound intermittent gear D and its actuating shaft, the gear D constructed as shown to increase or diminish the cogged portion of its periphery and feed forward a greater or less length of wire. 2nd. The rod K₁, cam K₂ and connecting link or lever, in combination with the perforated cutters K K'. 3rd. The conductor G provided with a hinged lid or cover, in combination with the movable cutter K₁ and its actuating mechanism which acts to raise the lid G₁, and the spring *a* which exerts pressure on the lid to keep it closed. 4th. The conductor G in combination with the reciprocating J J', toggle clamps *d₁ d₂*, connection *p₁*, rod *p* and cam *p₆*. 5th. The seizing and twisting clamps *d₁ d₂* and the toggles, connecting rod, lever and cam, which operate to open and close the clamps, in combination with the shaft *m* provided with pinion *j₃*, upright shaft *m₁* provided with gears *j₁ j₂*, and the cogged segment on the periphery of cam wheel M operating together to cause rotation of the shaft *m*, and consequently of the clamps, and to twist the wire. 6th. The combination of the toggle twisting clamps *d₁ d₂* with the connecting rod *p₁*, lever *p* and cam *p₆* which operate to open and close the clamps. 7th. The combination of the toggled twisting clamps *d₁ d₂*, shaft *m*, pinion *j₃*, gear *j₄*, upright shaft *m₁*, gear *j₅* and cogged segments *j₇* set fast on the periphery of cam wheel M, which operate to revolve the clamps *d₁ d₂*. 8th. The toggle clamps *d₁ d₂*, head *r₃* and spindle *r₄*, in combination with connection *e₁*, connecting lever *e₂* and cam *e₆*. 9th. The toggle clamps *d₁ d₂*, head *r₃* and spindle *r₄*, in combination with link *r₂*, rod *r* and its actuating cam. 10th. The combination of toggle clamps *d₁ d₂*, head *r₃*, spindle *r₄*, connection *e₁*, lever *e₂*, cam *e₆*, link *r₂*, rod *r* and its cam. 11th. The clamps *d₁ d₂*, toggles *p₂*, connection *p₂*, rod *p* and its actuating cam, in combination with toggled clamps *d₃ d₅*, connection *e₁*, lever *e₂* and its actuating cam *e₆*. 12th. The reciprocating frame J J' with its rock shaft *n*, lever *o*, link O₁₀ and cam O₄, in combination with seizing and twisting clamps *d₁ d₂* and their toggles *p₂ p₄*, connection *p₁* and rod *p* with its actuating cam. 13th. The combination of carrying head *p₁* with the shaft *o₅* and its gear, and the sector *o₇*, and cam *p₂*, which operate to semi-rotate the head. 14th. The carrying head P₁, in combination with the shaft *o₅*, and mechanism to semi-rotate the head, and the cam-shaped edge V, spring *g₁₂* and link *g₁₃*, which operate to tilt the head. 15th. The carrying clamps *d₃ d₅* and their toggles, in combination with frame *g*, toggle arm *g₃ g₄*, connecting rod *g₁₁*, lever *g* and actuating cam *g₅*. 16th. The carrying head P₁ and its operating mechanism, in combination with clamp *d₃*, toggles *p₂*, connection *p₁*, rod *p* and actuating cam. 17th. In combination with the mechanism for cutting and twisting, cam *g₅*, lever *g*, feed pawl *w*, retaining pawl *w₁* and ratchet R₂. 18th. The ratchet wheel R₁ provided with notch *w₃* and feed pawl *w*, and its lever and cam, in combination with retaining pawl *w₁*, stop motion pawl *w₄*, rock shaft *w₅*, lever *w₆* and clutch T for stopping the machine. 19th. The safety pawl trip lever T₁, in combination with the ratchet wheel R₁, stop motion pawl *w₄* and feed pawl *w* to free the feed pawl from the ratchet whenever the stop motion is engaged in the notch.

No. 15,027. Wheel Rake. (*Râteau à roues.*)

William H. Patten, Samuel P. Young and Charles D. Young, Niagara Falls, N. Y., U. S., 27th June, 1882; (Extension of Patent No. 7626.)

No. 15,028. Improvements on Burial Cases. (*Perfectionnements aux cercueils.*)

The Ontario Glass Burial Case Company, Ridgetown, Ont., (assignee of Joseph Askins, Elida, Ohio, U. S.), 27th June, 1882; (Extension of Patent No. 7863.)

No. 15,029. Improvements on Burial Cases. (*Perfectionnements aux cercueils.*)

The Ontario Glass Burial Case Company, Ridgetown, Ont., (assignee of Joseph Askins, Elida, Ohio, U. S.) 28th June, 1882; (Extension of Patent No. 7863.)

No. 15,030. Improvements on Machines for transferring the grains of wood upon glass. (*Perfectionnements aux machines pour imiter le grain du bois sur le verre.*)

James Budd, Boston, Mass., U. S., 28th June, 1882; for 5 years.

Claim.—1st. The transferring roller F, fitted in adjustable bearings E in combination with a reciprocating frame D. 2nd. The combination, with the bearings E, of the screw e, bevel gears c d and shaft b secured in the frame D. 3rd. The combination of the frame D wheels C, rails B, rope or chain J and pulley I. 4th. The process described of transferring the grain of wood upon glass, the same consisting in first passing a roller over the surface of the wood to be imitated and then passing the said roller over a sheet of glass which has been previously coated with a suitable dye.

No. 15,031. Improvements in Reflectors. (*Perfectionnements aux réflecteurs.*)

William Wheeler, Concord, Mass., U. S., 28th June, 1882; for 5 years.

Claim.—1st. A reflector having a continuous reflecting surface, such as would be generated by the partial revolution of a conic-sectional curve on its latus rectum, and by the partial revolution of such curve on its prolate axis at one or each terminus of the partial revolution on the latus rectum, the axis of revolution intersecting each other in the focus of the curve. 2nd. A reflector having a continuous reflecting surface such as would be generated by the revolution of a conic-sectional curve about its axis and latus rectum successively, the length of said curve being varied during different parts of its revolution. 3rd. A reflector consisting of two opposite parts, of which the reflecting surfaces are such as would be generated, respectively, by the revolution of two different conic sections having a common focus about their common axis. 4th. A reflector of two parts having reflecting surfaces of such forms as would be generated respectively, by the revolution of two different conic-sections, each about two or more axis of revolution successively, said axis being common to both curves and intersecting each other in the common focus thereof. 5th. A reflector of two parts having reflecting surfaces of such forms as would be generated, respectively, by the revolution of two different conic-sections having a common focus about their common latus rectum. 6th. A reflector formed in two parts constructed upon different curvatures, and joining each other at or near the horizontal of their common linear focus, each of said parts having a reflecting surface such as would be generated by the revolution of a conic-sectional curve about a line in the plane of said curve, and meeting the axes or the axis produced of the curve perpendicularly in some point other than the focus. 7th. A reflector having a reflecting surface such as would be generated by the revolution of a conic-sectional curve about two or more axes of revolution successively, said axis intersecting each other in some point of the principal axis, or the said axis produced other than the focus. 8th. A reflector formed in two parts constructed upon different curvatures, and joining each other at, or near the horizontal of their common linear focus, each of said parts having a reflecting surface generated by the revolution or movement of a conic-sectional curve, about one or more lines intersecting its axis or axes, produced at right angles, the said curve revolving or moving in the aggregate three hundred and sixty degrees about the said line or lines.

No. 15,032. Improvements on Fruit Pickers. (*Perfectionnements aux machines à cueillir les fruits.*)

Andrew J. Ferris, Elmore, Ohio, U. S., 28th June, 1882; for 5 years.

Claim.—The combination, with the handle carrying the head, and the flexible tube secured to the latter, of the rings attached to the outside of the tube, and adjusted over the handle, whereby the flexible tube is held from becoming entangled among the branches of the tree.

No. 15,033. Improvements on Rein-Holder. (*Perfectionnements aux accroche guides.*)

Charles M. Grannis and Judson L. Thompson, Syracuse, N. Y., U. S., 28th June, 1882; for 5 years.

Claim.—1st. The plate A provided with suitable devices for holding the rein, and having the concave-convex shank B inserted between the whipsocket and dash-board frame, and clamped in position by the clamp which attaches the whip-socket. 2nd. In combination with the plate C, provided with the post a, the plate A having the arm b provided with side flanges c c, and the block D having the dovetailed end d clamped between the flanges c c.

No. 15,034. Improvements on Convertible Chairs and Cots. (*Perfectionnements aux sièges et aux couchettes pliants.*)

Edward Hatch, Charlestown, Mass., U. S., 28th June, 1882; for 5 years.

Claim.—The combination of the bars A A, with the pivoted legs or supports B B, the frames F F F F provided with eyebolts or staples a sliding on rod L, the supports G G, the hinged bars P P and back O, also constructed as to constitute a convertible camp chair and cot or lounge.

No. 15,035. Improvements in Roofing Compositions. (*Perfectionnements aux compositions de toitures.*)

John W. Paterson, Montreal, Que., 28th June, 1882; for 5 years.

Claim.—1st. A roofing composition consisting of a layer of dry felt, a layer of heavy tarred felt coated with a hot composition of petro-

leum tar and resin, a layer of heavy tarred felt coated with a hot composition of petroleum tar, resin and sand. 2nd. A composition for roofing, consisting of equal proportions of petroleum tar and resin mixed, and used hot. 3rd. A cement for roofing consisting of equal proportions of petroleum tar and resin, mixed whilst hot, with a sufficient quantity of sand to produce, when cold, a hard and flinty substance.

No. 15,036. Improvement on Waggon Brakes. (*Perfectionnement des freins des voitures.*)

Charles J. Le Roy, Palestine, and John W. Henson, Dallas, Texas, U. S., 28th June, 1882; for 5 years.

Claim.—1st. The combination, with a running gear, of a brake arm supported across the reach and connected by rods to the rear bolster, a lever pivoted underneath the reach, and connected rigidly at one end to the said arm, and at the other end having a spring connected to the adjacent hound, and a back and fourth-sliding doubletree connected to said lever by a chain. 2nd. The combination, with a waggon, of the brake arm b supported upon the bar a, the rods c connecting the arm to the rear bolster, the lever d pivoted to the reach and connected to the arm by the rod e, the spring e connecting the long end of the lever to the adjacent hound, and a suitable device for operating the said lever. 3rd. The combination, with a waggon, of the doubletree f having an upward projecting bolt provided with a link g, the guide consisting of the slotted bar p and upward projecting bolts at each end, and the link g² in the rear bolt, and a suitable brake connected to the doubletree.

No. 15,037. Improvements on Iron Fences.

(*Perfectionnements aux clôtures métalliques.*)

Samuel W. Martin, Springfield, Ohio, U. S., 28th June, 1882; for 5 years.

Claim.—1st. As an improvement in iron fences, the combination of notch pickets and horizontal rails provided with openings through which the pickets are passed, and having its metal compressed and seated in the notches of the pickets. 2nd. The combination of the vertical pickets having notches, the horizontal rail having openings through which the pickets are passed, having its metal compressed and seated permanently in the notches of the pickets. 3rd. In combination with the notched pickets, the rail provided with the laterally extended openings, and having its web forced into the notches. 4th. In combination with the rail and the picket sustained directly thereby, the detachable rosette provided with the oppositely arranged lips to engage with the rail, and with the open recesses to receive the pickets. 5th. As a new article of manufacture a rosette having its ends provided with open recesses in the rear side, and its edges provided with two lips, extending upward and downward, respectively. 6th. A rosette for fences provided on the back, at opposite sides, with two lips, one extending upwards and the other downward, whereby the rosette is adapted for attachment to the rail by a rotary movement. 7th. The rosette provided with the lips c d and also with the supplemental malleable lip g, whereby the device may be locked fast after being secured by the lips c d. 8th. A rosette provided with locking lips adapted to engage with the fence rail by a rotary motion of the rosette.

No. 15,038. Improvements on Cultivators and Sowers. (*Perfectionnements aux cultivateurs et aux semeoirs.*)

Wareham S. Wisner, Brantford, (Assignee of Richard B. Sheldon, Shortsville,) Ont., 28th June, 1882; (Reissue of Patent No. 7880.)

Claim.—1st. A spring cultivator in which the tooth has a curved end extending above the point where it is pivoted to the drag bar, and is connected to the rod or spindle of the spring by a link, the holes E pierced through the curved end of the tooth and arranged all on the same radius from its pivoted point, in combination with the pin e arranged to adjustably connect the link F and drag bar A. 2nd. In a spring cultivator, a rod or spindle fastened at one end to the tooth or its connections, while the other end of the rod passes freely through a stud fastened to the drag bar, the operating spring being placed between the fixed end of the spindle and the stud on the drag bar, in combination with a nut or nuts screwed on the spindle against the side of the stud opposite to that against which the end of the operating spring rests, for the purpose of compressing the spring. 3rd. In a cultivator in which the tooth is pivoted upon the drag bar, the combination of a spring connected to the tooth in such a manner, that when the tooth comes in contact with an obstruction, the spring is compressed by the backward movement of the tooth, which tooth, when the obstruction is passed, is thrown back into its original position by the expansion of the spring.

No. 15,039. Improvements on Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

Hiram P. Ballou, Needham, Mass., U. S., 28th June, 1882; for 5 years.

Claim.—A knitting machine or mechanism, as described, having to its spindle and helically grooved head the supporting and setting disk, and the spring stud and handle.

No. 15,040. Improvements in Piston Packings. (*Perfectionnements aux garnitures des pistons.*)

Morris W. Woodruff, Syracuse, N. Y., U. S., 28th June, 1882; for 5 years.

Claim.—1st. The combination, with the piston rod having conical bearing and reverse screw threads on opposite sides of the same, of the segmental supports, packing rings and piston heads provided with cam-clutches, and the cylinder heads provided with clutches

to engage said cam-clutches. 2nd. In combination with the piston rod and its clutch, the stuffing-gland and its clutch, the piston packing and piston heads, the latter provided with cam clutches, and the cylinder heads provided with clutches.

No. 15,041. Improvement in Fuel Saving Apparatus. (*Perfectionnement des appareils à économiser le combustible.*)

James Cunningham and Christian Karch, Hespeler, Ont., 28th June, 1882; for 5 years.

Claim.—1st. A fuel saving apparatus A constructed with a hot air chamber *a*², and a bottom B with a neck *a* forming a cold air passage to the hot air chamber, the combination therewith of the fire pot A, grate D, and hot air passage *a*³, the latter constructed either ver-

tically or horizontally. 2nd. A fuel saving apparatus constructed for a self-feeding stove, the horizontal branch *c* with hot air passages *a*³. 3rd. A fuel saving apparatus A constructed for a common circular stove, the vertical branch *c* with hot air passage *a*³.

No. 15,042. Improvement on Bench-Dog Hooks. (*Perfectionnements aux mentonnets.*)

William M. Howland and James E. Howland, Topsham, Me., U. S., 28th June, 1882; for 5 years.

Claim.—The right angular adjustable bench dog having the laterally projecting biting lug *h* at one end, and the downwardly extending flange *c* at the other end, in combination with a bench having slide groove *b*.

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No. 15,216. S. M. Allen, Duxbury, Mass., "Improvement in Grinding Wood for Paper Pulp," 31st July, 1882.

No. 15,217. Peter Musser, Muscatine, Iowa, "Log Deck for Saw Mills," 31st July, 1882.

No. 15,218. Jesse Wentworth, Payson, Hyde Park, Mass., and W. M. Scribner, Chicago, Ill., "Patent Cover and Blotter," (Extension of Patent No. 7705) 31st July, 1882.

No. 15,219. The Montreal Saw Works, Assignees, Montreal, Que., "Improved Saw Handles," 31st July, 1882.

No. 15,220. Alfred Brown and W. M. Brown, Ottawa, Ont., "Pantalon Waist Band Attachment," 31st July, 1882.

No. 15,221. James McCarrroll, New York, N. Y., "Self-acting Elevator Safety Apparatus," 31st July, 1882.

No. 15,222. William Hanna, Gilroy, Cal., "Improved Steam Cylinder and Piston," 31st July.

No. 15,223. William Kenneyson, Norristown, Penn., "Improved Bicycle Handle," 31st July, 1882.

No. 15,224. George Morehouse, Aylmer, Que., "Improved Churn," 31st July, 1882.

No. 15,225. H. W. Leland, South Framingham, Mass., "Plugs for Electrical Switch Boards," 31st July, 1882.

No. 15,226. I. A. Salmon, Boston, Mass., "Car Heater," 31st July, 1882.

No. 15,227. F. M. Lechner, Columbus, Ohio, "Drive Chain," 31st July, 1882.

No. 15,228. A. J. Dennis, Nicholasville, Kentucky, "Patent Loops," 31st July, 1882.

No. 15,229. J. H. Boers and J. Ridgo, Chicago, Ill., "Water Elevation," 31st July, 1882.

No. 15,230. J. N. Smith, Brooklyn, N. Y., "Tool for Dressing Cylinders," 31st July, 1882.

No. 10,231. F. E. N. Marais, New York, N. Y., "Family Fruit Press," 31st July, 1882.

No. 15,232. T. N. Kirkham, Westminster, D. Hullo, High Holbourne, S. Chandler and J. Chandler, Newington, Causeway, Eng., "Patent Gas Scrubber," (Extension of Patent No. 7770,) 1st August, 1882.

No. 15,233. T. N. Kirkham, D. Hullo, High Holbourne, S. Chandler and J. Chandler, Newington, Causeway, Eng., "Patent Gas Scrubber," (Extension of Patent No. 7770,) 2nd August, 1882.

No. 15,234. C. J. Shurly and J. C. Dietrich, Assignees, Galt, Ont., "Saw Frame," (Extension of Patent No. 9119,) 2nd August, 1882.

No. 15,235. C. J. Shurly and J. E. Dietrich, Galt, Ont., Assignees, "Saw Frame," (Extension of Patent No. 9119,) 2nd August, 1882.

No. 15,236. D. Junc, Fremont, Ohio, Assignee, "Spark Arrester," (Extension of Patent No. 7735,) 3rd August, 1882.

No. 15,237. J. E. Baril, Montreal, Que., Assignee, (Extension of Patent No. 7740,) 4th August, 1882.

No. 15,238. G. Bettschen, Wilmot, Ont., "Cultivator Tooth No. 1," 4th August, 1882.

No. 15,239. S. H. Cochran, Everett, Mass., "Compound to be used in the Place of Butter and Lard," 4th August, 1882.

No. 15,240. S. Levy, Denver, Col., "Preparation of Yeast," 4th August, 1882.

No. 15,241. W. Lampert and H. Hubert, Crestline, G. H. Butler, G. W. Earhart and W. M. Crawford, Columbus, Ohio, "Bretzel Machines," 7th August, 1882.

No. 15,242. S. G. Graham, London, Ont., "Millennial Harvester," 7th August, 1882.

No. 15,243. B. Baldwin, New York, N. Y., "Helix Corset," 7th August, 1882.

No. 15,244. G. H. Waring, Indiantown, N. B., "Machine for making Bolts Spikes Rivets, etc.," 7th August, 1882.

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No. 15,246. G. Heintzman, Toronto, Ont., "Improvements on upright pianos," 7th August, 1882.

No. 15,247. W. C. Benway, Hyde Park, Mass., "Automatic trader for carding engines," 7th August, 1882.

No. 15,248. J. N. Smith, Brooklyn, N. Y., "Tools for dressing wheels and axles," 7th August, 1882.

No. 15,249. J. N. Bannett, Indianapolis, Indiana, "A-coustic telephones," 7th August, 1882.

No. 15,250. D. S. Thomas, North Platt, Nebraska, "Fire escape," 7th August, 1882.

No. 15,251. Z. Beaudry, St. Marc, Que., "Universal Haul Burnisher," 7th August, 1882.

No. 15,252. F. Easton, Pennsylvania, "Grinding mill," 7th August, 1882.

No. 15,253. E. Hallett and R. Thompson, "Car axle rolls," 7th August, 1882.

No. 15,254. C. D. Tisdale and J. D. Gould, Boston, Mass., "Electric Railway Signal," 7th August, 1882.

No. 15,255. D. Davis, London, Ont., "Brick machine," (Extension of Patent No. 1591,) 7th August, 1882.

No. 15,256. H. and C. Fink, Baltimore, Ind., "Lubricating Oil" (Ext. of Pat. No. 9071,) 7th August, 1882.

No. 15,257. J. H. Burrows, Boise City, Idaho, "Nut Lock," 7th August, 1882.

No. 15,258. J. O'Neil, Parkenham, Ont., "Fire Guard and Escape," 7th August, 1882.

No. 15,259. W. E. Banta, J. M. Dodd and A. M. Crothers, Springfield, Ohio, "Underground Protector for Electrical Conductors," 7th August, 1882.

No. 15,260. A. S. Dennis, Sherbrooke, Que., and M. McFarlane, Stratford, Ont., "Mill stones," 7th August, 1882.

No. 15,261. T. Sparham, Brockville, Ont., "Boiler Covering," 8th August, 1882.

No. 15,262. D. Rowley and C. G. Rowley, Jamestown, N. Y., "Stretching machine," 7th August, 1882.

No. 15,263. A. Kendry, Fayetteville, Ark., "Improved Vise," 8th August, 1882.

No. 15,264. W. B. Chambers, Welland, Ont., "Eve Trough Machine," 8th August, 1882.

No. 15,265. J. G. Galley, London, Eng., "Rocking Firebrurs," 8th August, 1882.

No. 15,266. C. C. Eddy and A. A. Levan, Pekin, N. Y., "Fanning Mill," 8th August, 1882.

No. 15,267. T. E. Flynn, London, Ont., "Hay or Grain Rake and Loader," 8th August, 1882.

No. 15,268. A. M. Walls and R. Fuller, Toronto, Ont., "The Eclipse Broom holder," (Ext. of Pat. No. 7754,) 8th August, 1882.

No. 15,269. W. Dodd and S. C. Andrews, Portland, Maine, "Hydrant Improved," (Ext. of Pat. No. 7743,) 8th August, 1882.

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No. 15,271. W. Deeer, Marroing, Michigan, "Patent Laundry Table," 9th August, 1882.

No. 15,272. D. Hanna, Ogdenburg, N. Y., "Sediment Collector for Steam Boilers," 9th August, 1882.

No. 15,273. A. G. Smith, Hamilton, and J. Smyth, Brantford, Ont., "Converting Reciprocating into Rotary Motion," (Ext. of Pat. No. 7753,) 9th August, 1882.

No. 15,274. S. Hart, Muncie, Ind., Assignee, "Window Ventilator," 10th August, 1882.

No. 15,275. E. Lanthier, Montreal, "The Easy Fit Button Boot," 10th August, 1882.

No. 15,276. J. W. Anderson, Lancaster, Penn., Assignee, "Carriage Seat," 10th August, 1882.

No. 15,277. L. M. Senechal, St. Henri and J. de G. Stuart, Montreal, Que., "Automatic Nail Index," 10th August, 1882.

No. 15,278. G. L. Adams and J. C. Ellsworth, Fowlerville, Mich., "Printing Press," 10th August, 1882.

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No. 15,280. Guelph Carriage Goods Co., Guelph, Ont., Assignees, "Safety Clips," (Extension of Patent No. 7761,) 10th August, 1882.

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No. 15,282. D. R. Ashton, Clayton, and J. N. Sperry, Brixton Hill, Eng., "Simple Valve or Lock," 11th August, 1882.

No. 15,283. R. E. Poindexter, Indianapolis, Ind., "Saw Jointer and Gauge," 11th August, 1882.

No. 15,284. J. M. Williams, Hamilton, Ont., "Hoop Buckle," 11th August, 1882.

No. 15,285. J. Thurman, Philadelphia, Penn., "Utility Mill," 11th August, 1882.

No. 15,286. J. H. Bean, Macon, Ill., "Hay Stacker," 11th August, 1882.

No. 15,287. D. M. Kirkpatrick, Kansas, Miss., "Improved Sleigh," 11th August, 1882.

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No. 15,289. L. G. Bayliff, Wapakoneta, and J. Coup, Cleveland, Ohio, "Automatic Car Coupling," 11th August, 1882.

No. 15,290. G. F. Miller, Quincy, Ill., Assignee, "Oil Ejector," 11th August, 1882.

No. 15,291. J. A. Fisher, Dundas, Ont., Assignee, "Apparatus for Recovering Waste Alkalies," (Extension of Patent No. 7707,) 11th August, 1882.

No. 15,292. J. A. Fisher, Dundas, Ont., Assignee, "Apparatus for Recovering Waste Alkalies," (Extension of Patent No. 7707,) 11th August, 1882.

No. 15,293. B. W. Arnold, Litchfield, Ill., "Car Coupling," 12th August, 1882.

No. 15,295. F. C. Weir, Cincinnati, Ohio, "Device for Manufacturing Railway Frogs," 12th August, 1882.

No. 15,295. C. W. Dean and E. Robinson, South Warcham, Mass., "Wire Fence Nail," 12th August, 1882.

No. 15,296. J. A. Gowans, and J. MacMillan, Paris, Ont., "Car Coupler," 12th August, 1882.

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No. 15,302. W. H. Main, Boscobel, Wis., "Trace Carrier," 12th August, 1882.

No. 15,303. J. W. Russell, Ottawa, Ont., "Fanning Mill Grain and Seed Separator," (Ext. of Pat. No. 731,) 12th August, 1882.

No. 15,304. J. Burbank, Danville, Que., "Churn," (Ext. of Pat. No. 737,) 12th August, 1882.

No. 15,305. F. F. Rysselberghe, Schuerbeck, Belgium, "Microphones," 12th August, 1882.

No. 15,306. H. F. Newbury, Brooklyn, N. Y., "Time Locks," 14th August, 1882.

No. 15,307. H. F. Newbury, Brooklyn, N. Y., "Time Lock Attachment," 14th August, 1882.

No. 15,308. H. F. Newbury, Brooklyn, N. Y., "Disconnecting Time Lock Mechanism," 14th August, 1882.

No. 15,309. H. F. Newbury, Brooklyn, N. Y., "Time Lock Mounting," 14th August, 1882.

No. 15,310. R. F. Crowther, Baltimore, Maryland, "Railroad Switches and Signal Whistles," 14th August, 1882.

No. 15,311. O. A. Smith and F. L. Kane, Atlanta, Georgia, "Ready Made Roofing," 14th August, 1882.

No. 15,312. T. S. Very, Boston, Mass., Assignee, "Rolls for Making Horse Blanks," (Ext. of Pat. No. 774,) 14th August, 1882.

No. 15,313. J. Buckett, Southwark, Eng., "Caloric Engine," 14th August, 1882.

No. 15,314. D. W. Stockstill, T. J. Mccleary, E. Anderson and J. C. Smith, Washington, Col., "Plastering and Ornamenting Wall," 14th August, 1882.

No. 15,315. C. H. McEvoy, Middlesex, Eng., "Torpedo Apparatus," 14th August, 1882.

No. 15,316. J. C. Mitchell, J. A. Smith and A. R. Tinkham, Lancaster, N. H., "Car Coupling," 14th August, 1882.

No. 15,317. C. Brumker, Louisville, Kentucky, "Pulp Screen and Breast Roll Boxes for Paper Machines,"

No. 15,318. W. Johnson, Montreal, Que., "Magnetic Paint," (Ext. of Patent No. 732,) 15th August, 1882.

No. 15,319. J. E. Prunty, Baltimore, Maryland, "Hose Pipe Nozzle," 16th August, 1882.

No. 15,320. H. W. O. von Roden, Hambourg, Germany, "Process of Preserving Milk," 16th August, 1882.

No. 15,321. F. Menard, Montreal, Que., "Chaudron Evaporateur," 16e. Aout, 1882.

No. 15,322. W. T. Jobb, Buffalo, N. Y., "Process and Apparatus for Treating the Refuse of Starch and other substances," 6th August, 1882.

No. 15,323. J. E. Jones, Dickinson, Kansas, "Windmill," 16th Aug. 1882.

No. 15,324. E. P. Carter, Arede, N. Y., "Fifth Wheel for Waggon's of all Kinds," 16th August, 1882.

No. 15,325. F. B. Wilkins, Clinton, Mass., "Finishing Woven Cotton Fabrics," 16th August, 1882.



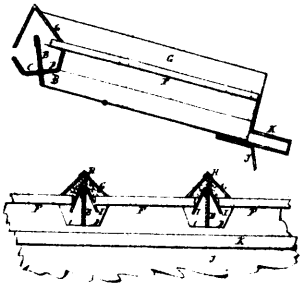
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

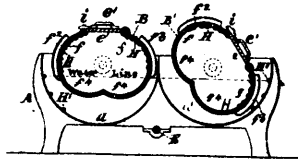
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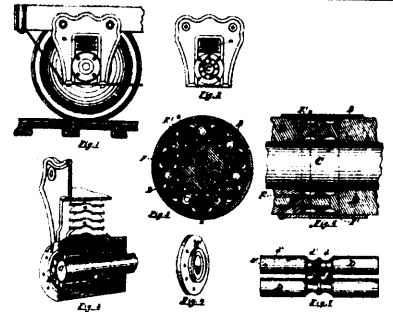
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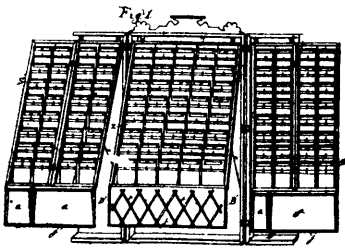
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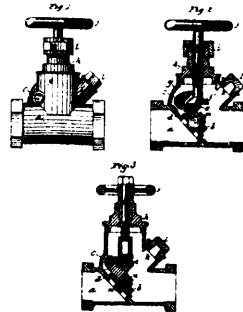
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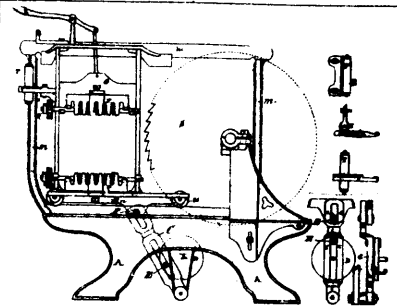
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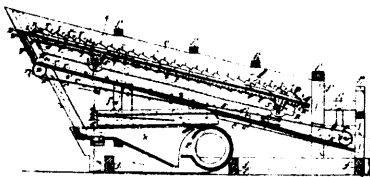
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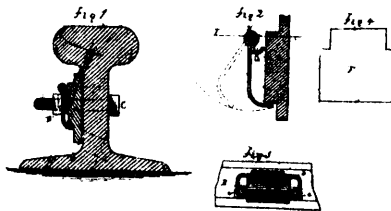
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14892 Bertrand's Improvements in the F. X. Bertrand Shingle Sawing Machine.



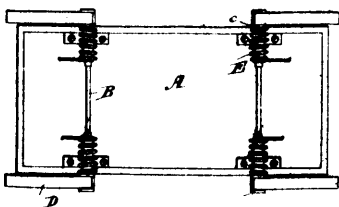
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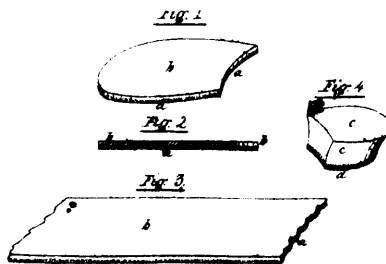
14894 Gissinger's Improvement in Nut Locks.



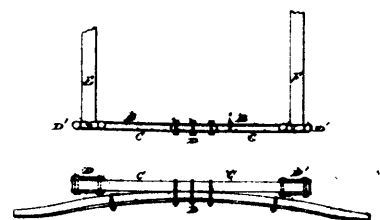
14895 Ives's Improvements in Posts for Wire Fences.



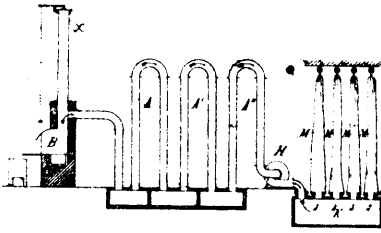
14896 Nilson's Improvements on Vehicle Springs.



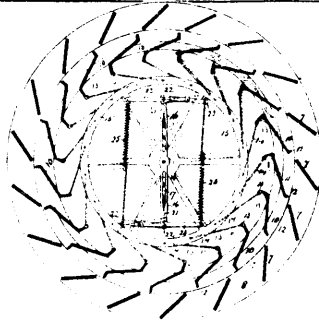
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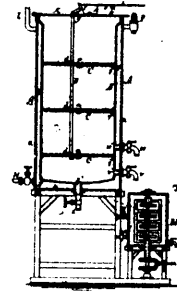
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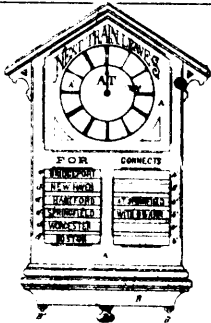
14899 Lewis's Improvement on Apparatus for Collecting Waste Fumes from Smelting.



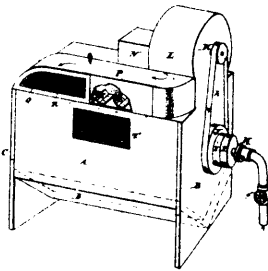
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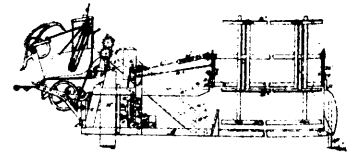
14901 Cosine's Improvements on the Process and Apparatus for Rendering and Bleaching Animal Fat.



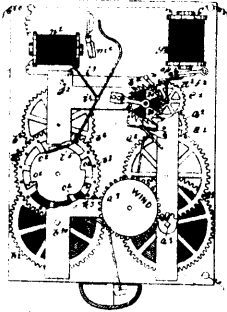
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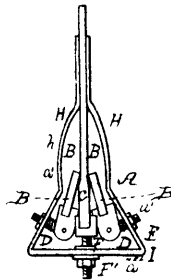
14903 Rose's Improvement in Feather Renovating Apparatus.



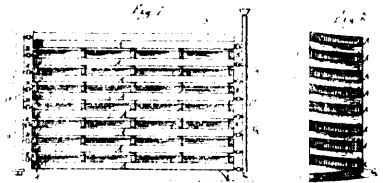
14804 Levalley's Improvements on Harvesting Machines.



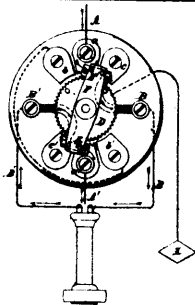
14905 Kettell's Improvements on Telephone Signal Apparatus.



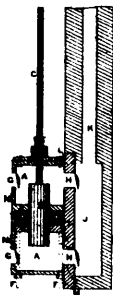
14406 Preston's Improvements on Devices for Jointing Saws.



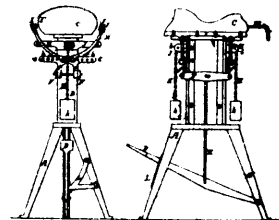
14907 Teardale's Improvements on Fruit Evaporators.



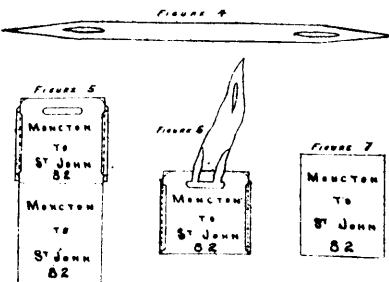
14908 Howard's Improvements in Protectors for Telegraphic Instruments.



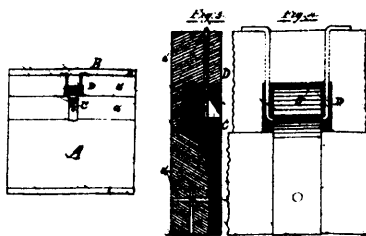
14909 Dewell's Improvements on Force Pumps.



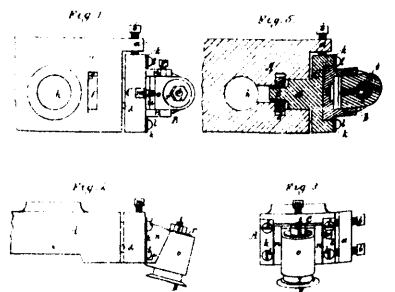
14910 House's Improvements on Apparatus for Forming Corsets.



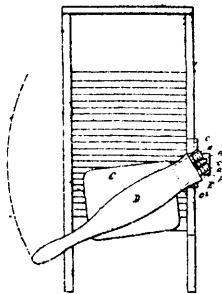
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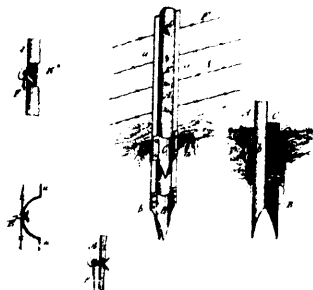
14913 Firstbrook's Improvement in Case Fasteners.



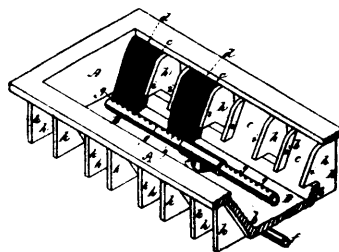
14914 McDonald's Improvement in Stone Dressing Machines.



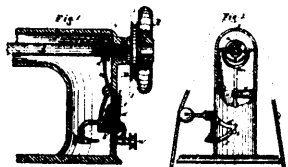
14915 Conover's Improvement on Washing Machines.



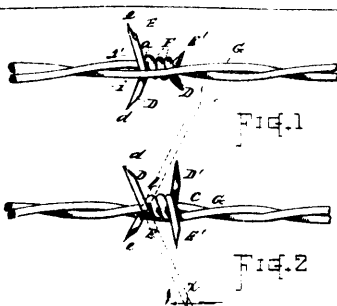
14916 Major's Improvements in Fence Posts.



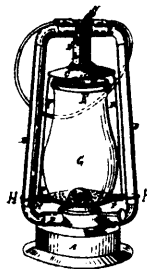
14917 Martin's Improvements on Oil Stoves.



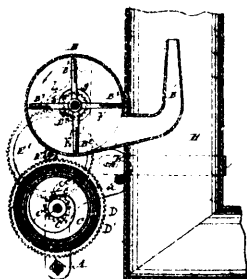
14918 Goodwin's Improvements in Bobbin Winders.



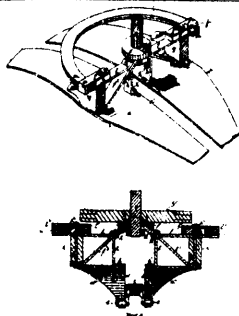
14919 Dodge & Washburn's Improvements on the Process of Manufacturing Barbed Wire.



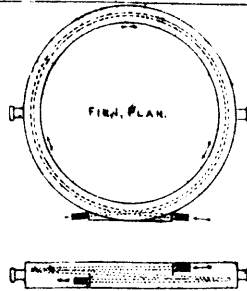
14920 Stetson's Improvements on Lanterns.



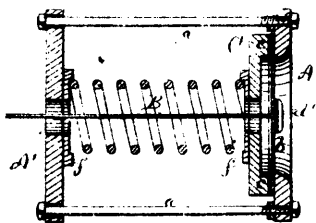
14921 Beaumont's Improvement on Draft Apparatus for Stoves, &c.



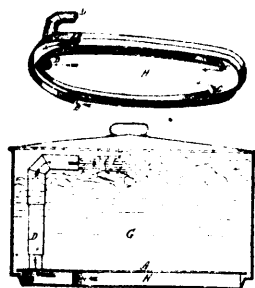
14922 Grier's Improvement in Vehicle Springs.



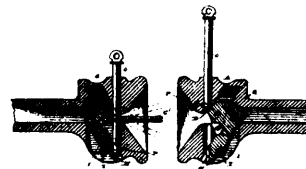
14923 Hazelhurst's Improvements on Chills for Castings.



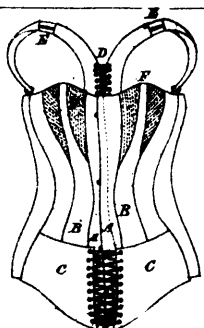
14924 Beecher's Improvements on Acoustic Telephones.



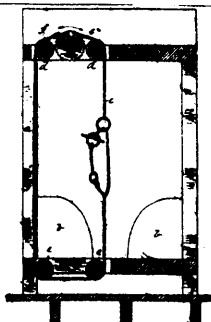
14925 Holmes's Improvements on Wash Boilers.



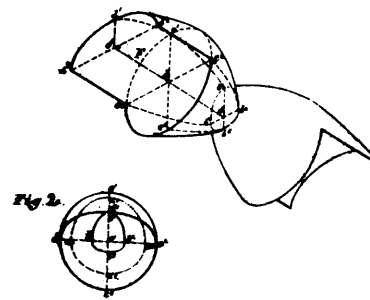
14926 Brook's Improvements on Car Couplers.



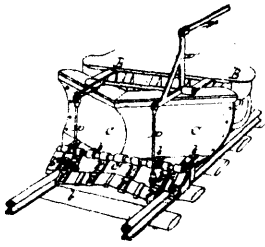
14927 Vermilyea's Improvements on Corsets.



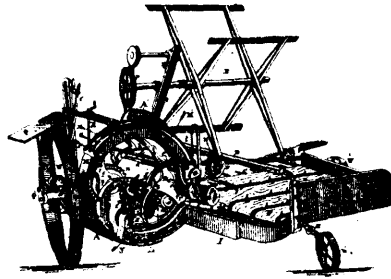
14928 Robbin's Improvements on Cattle Ties.



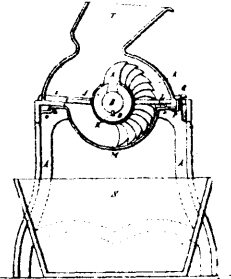
14929 Wheeler's Improvement in Reflectors.



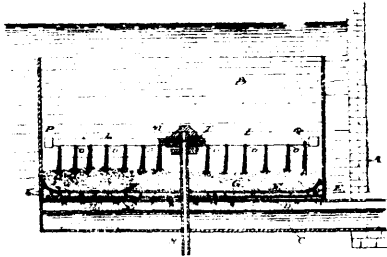
14930 Farrar's Improvements on Snow Ploughs.



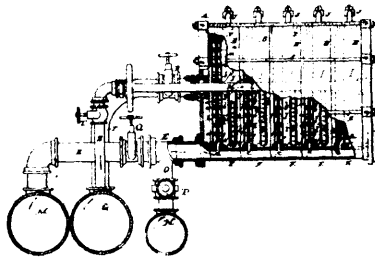
14932 Draper's Improvements on Harvesters and Binders.



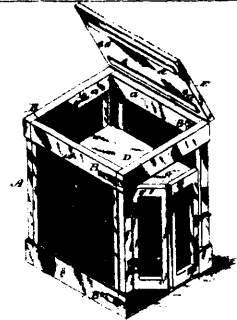
14933 Zimmermann & Alford's Improvements on Meat Cutters.



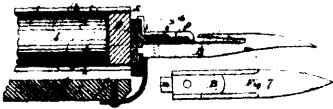
14934 Clark's Improvements on Methods of, and Apparatus for Filtering Water and Cleaning Filter Beds.



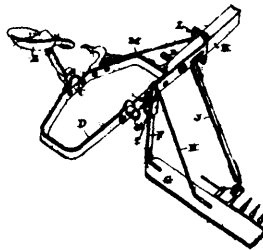
14935 Hyatt's Improvements on Processes and Apparatus for the Filtration of Water.



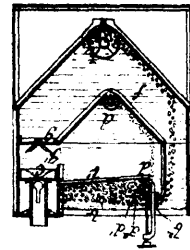
14936 Osburne's Improvements on Provision Safes.



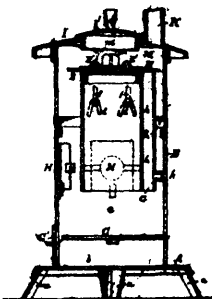
14937 Whiteley's Improvements on Harvester Finger Bars.



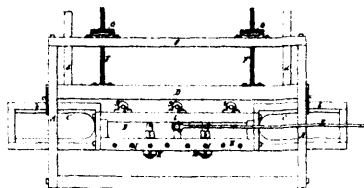
14938 Whiteley's Improvements on Harvesting Machines.



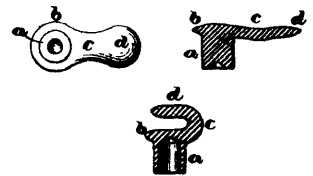
14939 Sheppard's Improvements in Coal Washing Machines.



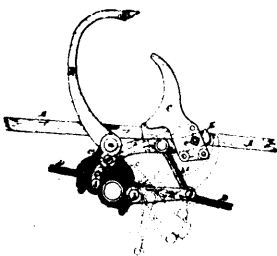
14940 Gould's Improvements on Self-Feeding Stoves.



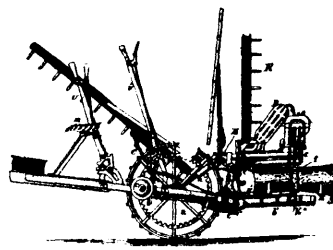
14941 McDonald's Improvement in Stone Dressing Machines.



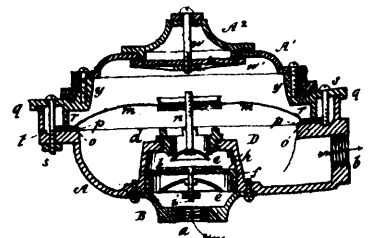
14942 Bray's Process for Making Lacing Studs.



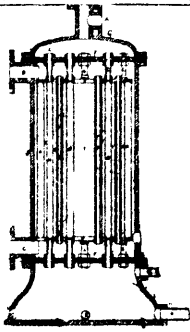
14944 Baker's Improvements on Grain Binders.



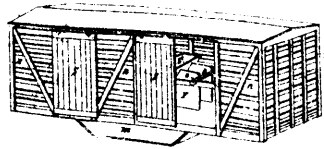
14945 Whiteley's Improvements on Harvesters.



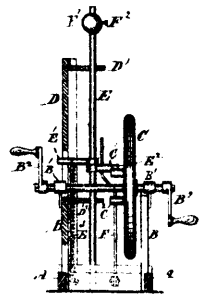
14946 Lacey's Improvements on Gas Regulators.



14947 Duffy's Improvements on Apparatus for Transmitting Heat to Fluids, &c.



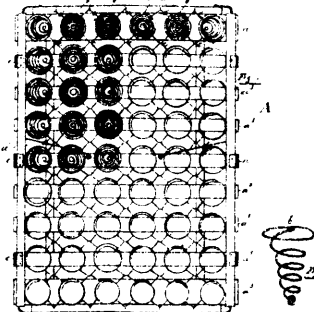
14948 Shellabarger's Improvements on Stock Cars.



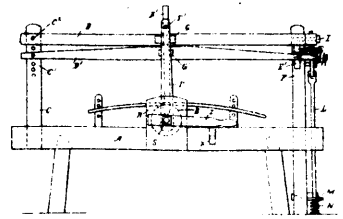
14949 Mershon's Improvements on Rock Drills.



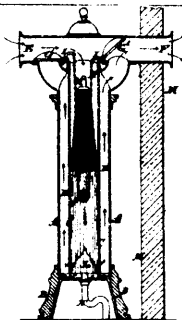
14950 Murdock's Improvements in Knitting Machines.



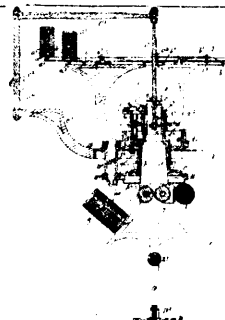
14951 Whitaker's Improvements on Spring Beds.



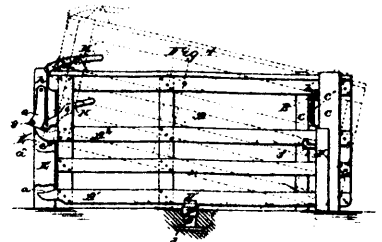
14953 McCloskey's Spoke Guide and Gauge.



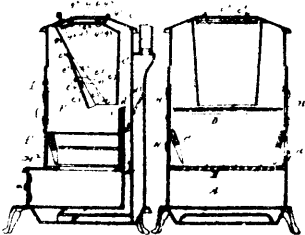
14954 Western's Improvements on Apparatus for Ventilating, Cooling, and Warming Buildings.



14955 Callahan's Improvements on Knitting Machines.



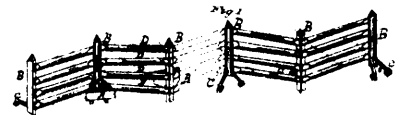
14956 Sherwin's Improvements on Gates.



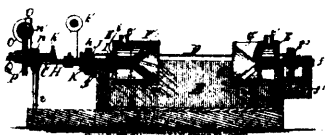
14957 Magee's Improvements in Magazine Stoves.



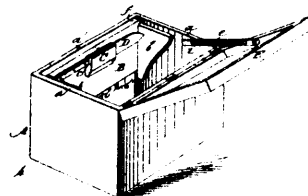
14959 Fleet's Improvements on Gauge Tubes.



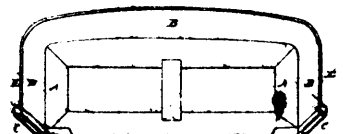
14960 DuBois's Improvements on Fences.



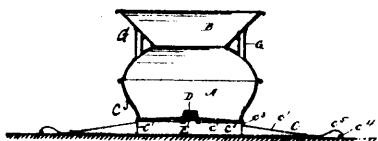
14961 Ball's Improvements on Machines for Manufacturing Paper Pulp from Wood.



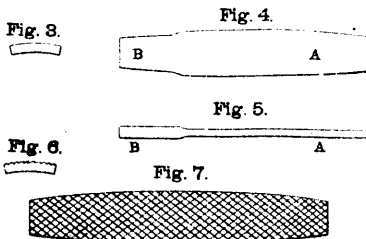
14962 Fournier's Improvements on Bread Boxes.



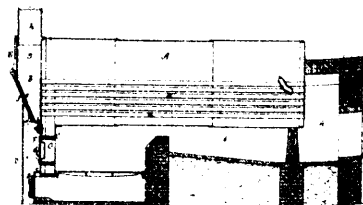
14964 Perkins's Improvements on Carriage Seats.



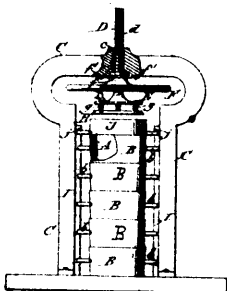
14965 Westlake's Improvements on Cuspators



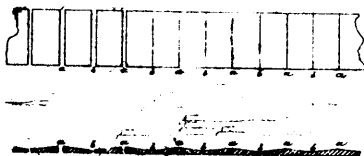
14966 Jewett's Improvements on Barrel Staves.



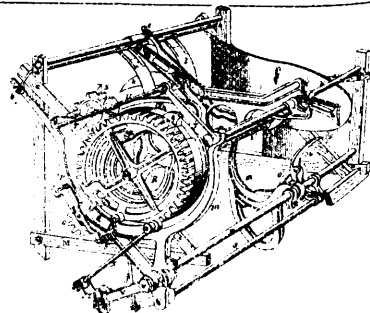
14967 Rheutan's Improvement in Steam Boilers.



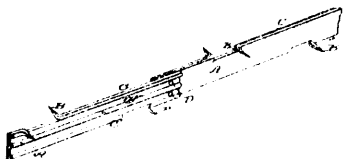
14968 Naylor's Improvements in the Manufacture of Cheese.



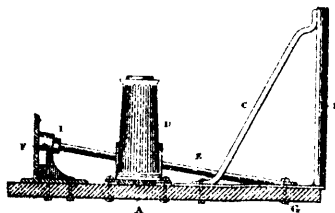
14969 Farmer's Improvements in Processes and Machinery for Manufacturing Cut Nails.



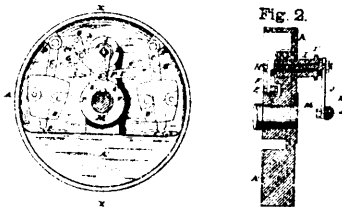
14970 Whiteley & Bailey's Improvements on Harvesters and Binders.



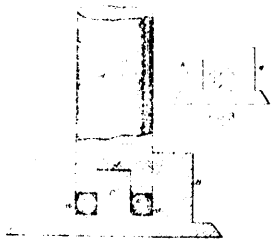
14971 Harbaugh's Improvements on Barbed Fences.



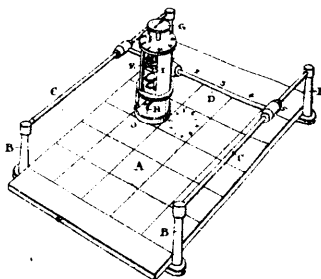
14972 Maxwell's Improvements in Harvesting Machines.



14973 Rice's Improvements on Valve Gear for Engines.



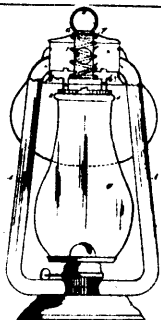
14974 Crowe's Improvements on Steps for Vertical Shafting.



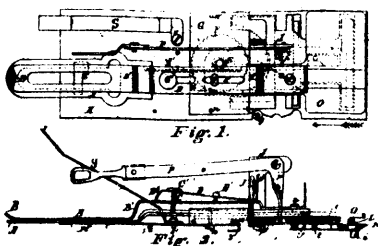
14975 Elliot's Self-Registering Tally.



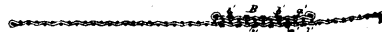
14976 Gardner's Improvement in Black Leaf Check Books.



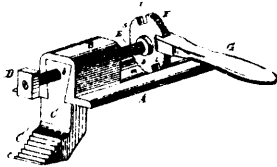
14977 Stone's Improvements on Tubular Lanterns.



14978 Baird's Improvements on Button Hole Attachments for Sewing Machines.



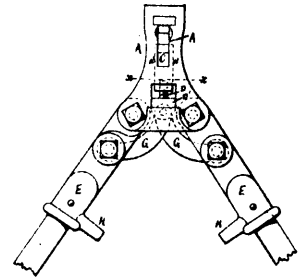
14979 Isherwood's Improvements in the Art of Weaving Cloth.



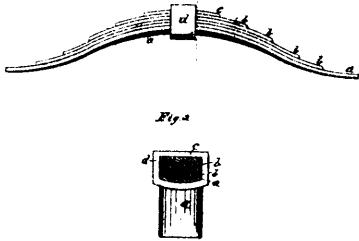
4980 Murphy's Improvements on Bench Clamps.



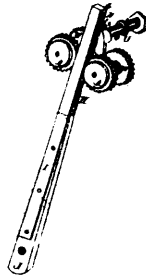
14981 Martin's Improvements on Calculators.



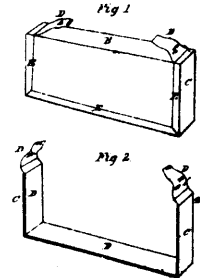
14982 Levalley's Improvements in Bolt and Rivet Cutters.



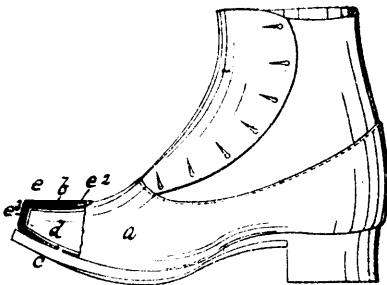
14983 Davison's Improvements on Vehicle Springs



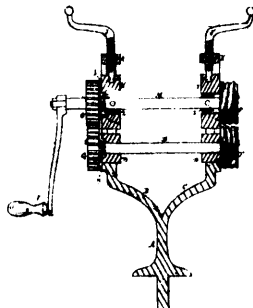
14984 Smith's Improvements in Devices for Converting Reciprocating into Rotary Motion



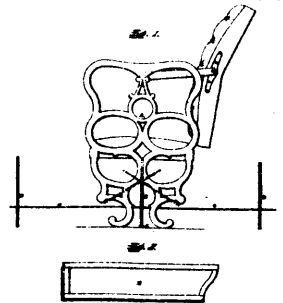
14989 Parkhurst's Improvements on Ammunition Cases.



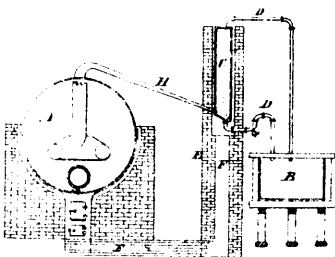
14990 Sprague's Improvements on Boots and Shoes.



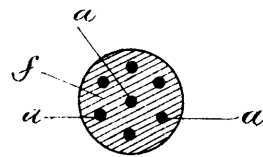
14991 Brower's Improvements on Devices for forming Threads on Sheet Metal Cylinders.



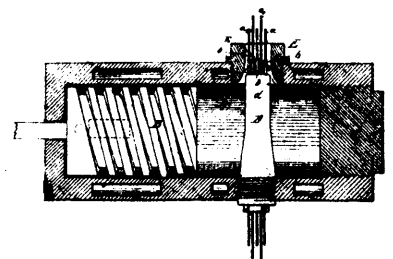
14992 Wagner's Improvements on Car Seats.



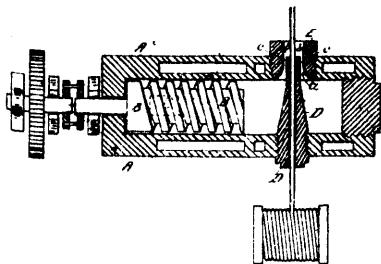
14993 Woodward's Improvements in Petroleum Condensers.



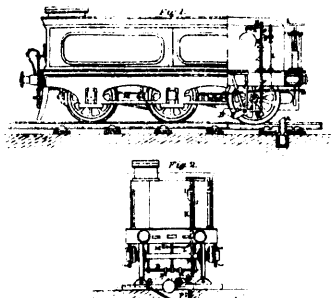
14994 Clark's Improvements in the Manufacture of Covered Wire for Insulated Cables.



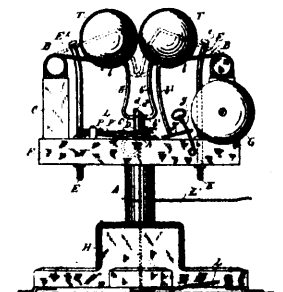
14995 Clark's Improvements on Machinery for Covering Wire with Insulating Material.



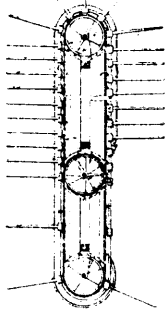
14996 Clark's Improvements on Machines for Covering Wire with Insulating Material.



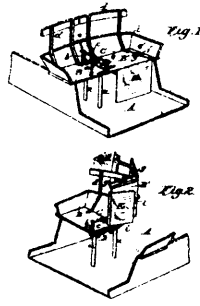
14997 Morris's Improvements on Railway Signaling Apparatus.



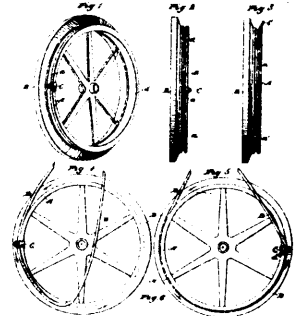
14998 Sidney's Improvements on Ball Traps.



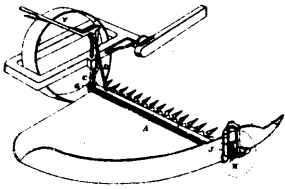
14999 Hilbers' Improvements on Apparatus for Drying Wall Paper.



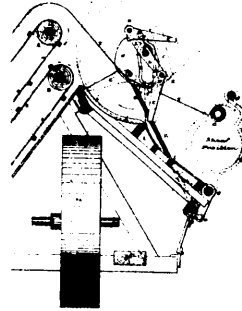
15300 Larivière's Improvements in Carriage Seats



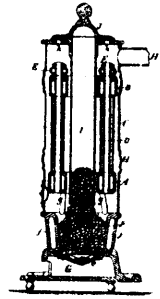
15010 Hartley's Improvements in Belt Replacing Devices.



15011 Maxwell's Improvements in Harvesters.



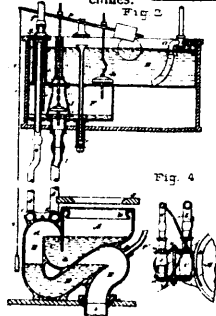
15012 Whiteley's Improvements on Binding Machines.



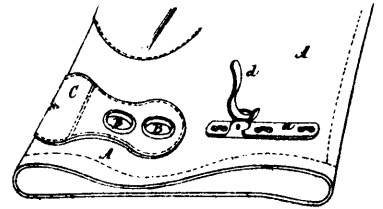
15013 Car-hore's Improvements on Heating Boilers.



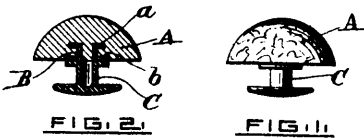
15014 MacKinnon's Improvements in Water Proofing Felt Stockings.



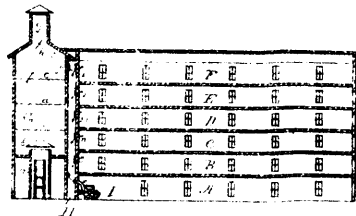
15015 Boyle's Improvements on Water Closets.



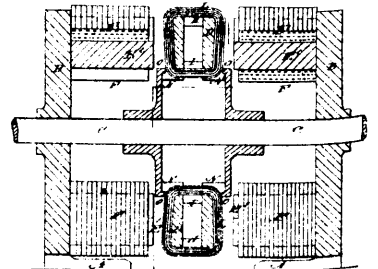
15016 Horsepool's Improvements on Glove Fasteners.



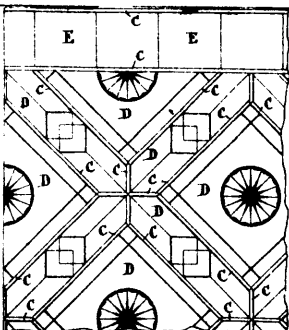
15017 Devereux's Improvements in the Manufacture of Jewelry.



15018 Huck's Improvements on Malt Houses.



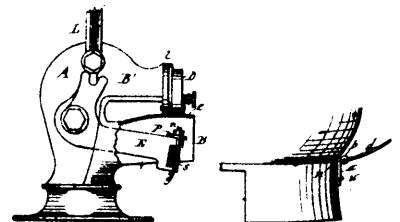
15019 Sheridan's Improvements on Dynamo-Electric Machines.



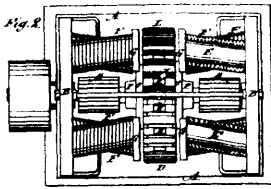
15020 Budd's Improvements on Glass Ceilings.



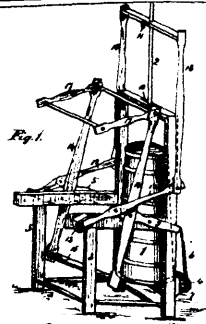
15021 McLellan's Improvements on Railway, Telegraph and Semaphore Signals.



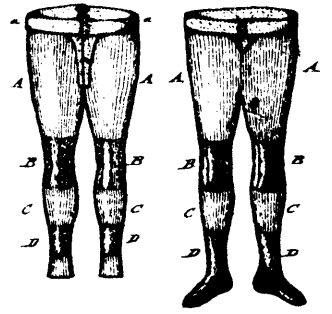
15022 Improvements on Pantaloons Protectors and Toe Pieces for Boots and Shoes, and Machine for Attaching them.



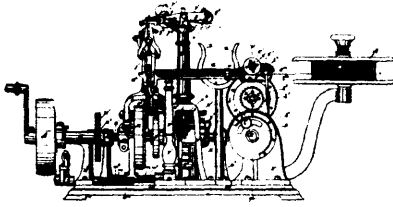
15023 Sheridan's Improvements on Dynamo Electric Machines.



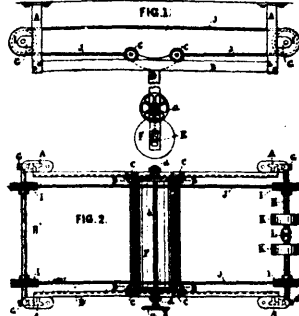
15024 Moore's Improvements on Churning Apparatus.



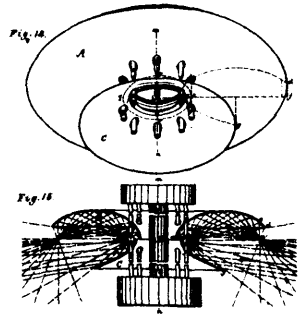
15025 Appleton's Improvements in Drawers and Tights.



15026 Chaplin's Improvement on Machinery for Manufacturing Wire Fastening for securing Corks in Bottles.



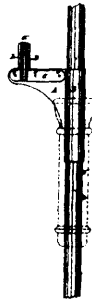
15030 Budd's Improvements on Machines for Transferring the Grains of Wood upon Glass.



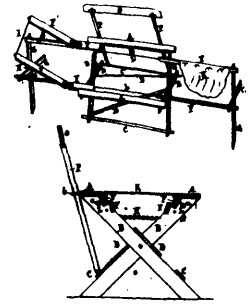
15031 Wheeler's Improvement in Reflectors.



15032 Ferris's Improvements on Fruit Pickers.



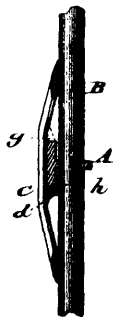
15033 Grannis & Thomson's Improvements on Rein Holders.



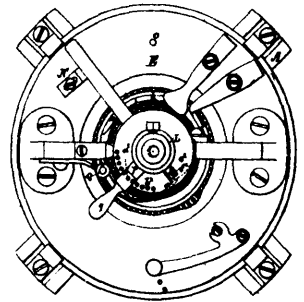
15034 Hatch's Improvements on Convertible Chairs and Cots.



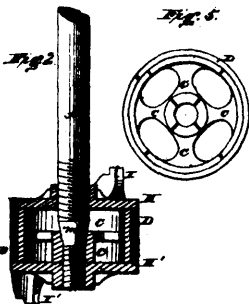
15036 LeRoy & Henson's Improvements on Waggon Brakes.



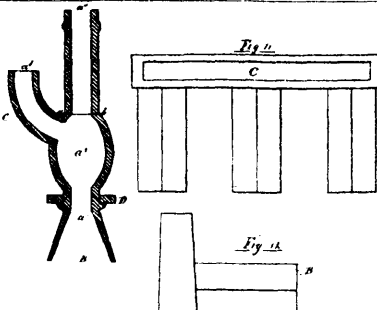
15037 Martin's Improvements on Iron Fences.



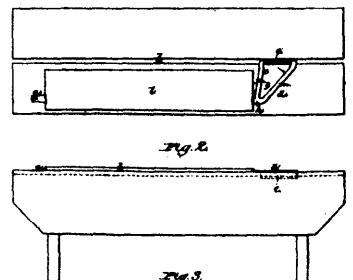
15038 Ballou's Improvements on Knitting Machines.



15040 Woodruff's Improvements in Piston Packings.



15041 Cunningham & Karch's Improvement in Fuel Saving Apparatus.



15042 Howland's Improvements on Bench Dog Hooks.