## Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

L'Institut a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- ☐ Coloured covers / Couverture de couleur
- ☐ Covers damaged / Couverture endommagée
- ☐ Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- ☐ Cover title missing / Le titre de couverture manque
- ☐ Coloured maps / Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- ☐ Bound with other material / Relié avec d'autres documents
- ☐ Only edition available / Seule édition disponible
- ☐ Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.

- ☐ Coloured pages / Pages de couleur
- ☐ Pages damaged / Pages endommagées
- ☐ Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached / Pages détachées
- ☑ Showthrough / Transparence
- ☑ Quality of print varies / Qualité inégale de l'impression
- ☐ Includes supplementary materials / Comprend du matériel supplémentaire
- ☐ Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from scanning / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été numérisées.

☑ Additional comments / Commentaires supplémentaires: Continuous pagination.

# The Canadian Patent Office Record

Vol. XII.—No. 7. JULY, 1884. Price in Canada $2.00 per An. United States - $2.50 "


## CONTENTS.



## INVENTIONS PATENTED.

NOTE—Patents are granted for 15 years. The term of years for which the fees have been paid, is given after the date of the patent.

### No. 19,500. Grain Cleaning Machine.

(*Machine à Nettoyer les Grains.*)

Frank E. Curtis, and William H. Elfrich, Minneapolis, Minn., U.S., 31st May, 1884; 5 years.

*Claim.*—1st. In a grain cleaning machine, a series of rotating shafts carrying beaters, in combination with an inclosing investment having a series of curvilinear plain surfaces, the curves of which are substantially struck from the axes of the rotating shafts, for the purpose set forth. 2nd. The casing A, provided with the section fan G and discharge pipe H, and proper gearing to drive said fan, in combination with the curvilinear shell E of less cross sectional dimension than casing A, and a series of shafts B, C, D, geared to revolve in opposite directions, and carrying interlapping beaters *l*, all constructed arranged and operated as set forth.

### No. 19,501. Burglar Alarm Catch.

(*Détente de Sonnerie d'Alarme.*)

Robert G. Vassar, New York, N.Y., U.S., 7th June, 1884; 15 years.

*Claim.*—1st. The combination, with the freely movable catch bar adapted to rock upon either of two fulcrums on the same side of the bar, of an alarm mechanism and detent therefor, said detent being connected with the bar between its two fulcrums so that a movement of the bar on either fulcrum will release the alarm. 2nd. The combination, with the upper and lower sashes in a window, of the catch bar mounted on one sash and engaging with the other, and an alarm whose detent is controlled by said bar, all arranged as set forth, so that the alarm will be released by a movement of either sash up or down. 3rd. The combination of base plate A, the bar B sliding thereon, the plate G or other suitable device, adapted to move freely in a plane, at right angles to the sliding movement of the bar, and resting on said bar over the plate so as to be moved in the same direction by the tilting of the bar B in either direction, and a detent for an alarm mechanism released by movement of the plate G, and for the purpose described. 4th. The combination of the sliding bar B, the transversely movable plate G, the detent pin E and the perforated wheel $G_2$, of an alarm movement. 5th. The combination of the catch bar B, pin L, plate or support G for the alarm detent, and wheel $G_2$ controlled by said detent, as set forth. 6th. The combination of the plate A, spring K, notched sliding bar B adapted to work freely in a transverse direction on a pin L, and an alarm controlled by a connection with the bar B at a portion thereof, which moves upon pin L when the projecting end of the bar rises or falls above or below its normal plane. 7th. The combination, with the sliding bar working freely in a plane at right angles to its sliding movement, so that it may rock on either of two pivotal points on the same side of the bar, and an alarm controlled by connection with the bar at a portion thereof, which moves in the same direction irrespective of the direction in which its projecting end moves when the bar rocks.

### No. 19,502. Rope-Holder or Clamp.

(*Serre-Corde ou Coulisse.*)

Charles Littlefield, Vinalhaven, Me., U.S., 7th June, 1884; 5 years.

*Claim.*—1st. The herein-described rope-holder or clamp consisting of the connected jaws or plates A, $A_1$, the jaw A being formed with an inclined slot B adapted to cause the jaws to grasp the rope, as set forth. 2nd. The herein-described rope-holder or clamp consisting of jaw $A_1$ in combination with the jaw A, formed with an inclined slot B, side plate or plates connecting the jaw $A_1$ with the jaw A and bolts G, $G_1$, as set forth. 3rd. The combination, with the jaws A, $A_1$, plate F, bolts G, $G_1$ and inclined slot B, of the hooked plate $F_1$ adapted to fit upon the double-headed bolt $G_1$, as set forth.

### No. 19,503. Cultivator. (*Cultivateur.*)

Harmon L Smith, Watkins, N.Y., U.S., 7th June, 1884; 5 years.

*Claim.*—1st. As an improvement in cultivators, the combination, with the adjustable side beams A, A, carrying the cultivator blades and connected together at their front ends by a pin or bolt, of the intermediate central beam J fulcrumed on the said bolt down between the side beams, so that it works between the same, and provided with the cultivator-blade and front wheels or roller, as set forth. 2nd. As an improvement in cultivators, the combination of the adjustable side beams A, A having the slots in their front ends, by which they are capable of lateral adjustment, the cross-pin or bolt connecting the said beams A, A and passing through the said slots, the central intermediate beam fulcrumed between the beams on the said cross-pin or bolt and carrying the front wheel or roller, and means for retaining the central beam in the position to which it has been adjusted, as set forth.

### No. 19,504. Fluid Burning Lamp.

(*Lampe à Fluide*)

Marmaduke Mathews, Toronto Ont., 7th June, 1884; 5 years.

*Claim.*—1st. A wick-tube B having a burner A fitted to it and connected to the oil reservoir, in combination with a vessel E, arranged to contain brine or other fluid heavier than oil, and provided with a float F supported in fluid within a lamp body D, and arranged to keep the oil at about an equal distance from the burner, substantially as and for the purpose specified. 2nd. A wick-tube B, connected to the oil reservoir C, communicating with a compressible vessel E, in combination with a float F, contained within the body D and arranged by floatation to compress the vessel E, substantially as and for the purpose specified.

### No. 19,505. Knife or Cutter for Wood Working Machine. (*Couteau ou Ciseau de Machine à Travailler le Bois.*)

Samuel J. Shimer, Milton, Pa., U.S., 7th June 1884; 5 years.

*Claim.*—1st. A knife or cutter for wood-working machines consisting of a steel body having, rigidly secured to one of its faces, a coating of soft metal, substantially as and for the purpose set forth. 2nd. A knife or cutter for wood-working machines consisting of a steel body having soldered or otherwise rigidly secured thereto, a thin layer or coating of soft metal, substantially as and for the purpose set forth.

### No. 19,506. Sewing Machine. (*Machine à Coudre.*)

Charles Culley, Toronto, Ont., 7th June, 1884; 5 years.

*Claim.*—1st. In a sewing machine, the needle-wheel F containing a circular needle G and pivoted, as shown, on the bearing plate or head-block N, shown and described. 2nd. In a sewing machine, the combination of the needle-wheel F and needle G, with the vertically moving shuttle E, as shown and for the purpose specified. 3rd. In a sewing machine, the side presser 9 advancing at the same time that the needle passes through the sole, and retiring when the feed approaches the sole for the purpose of moving it, as shown and for the purpose specified. 4th. In a sewing machine, the feed P, in combination with the presser wheel P, needle G and side presser Q, and acting substantially as shown and for the purpose specified.

### No. 19,507. Machine for Planting Corn.

(*Machine pour Semer le Blé d'Inde.*)

John M. Warner, Hamilton, Ont., 7th June, 1884; 5 years.

*Claim.*—1st. The inclined plane in the rod, for the purpose of

operating the feed slide. 2nd. The inverted flanges on the tongue, for the purpose of closing the lower end of the same when the plunger is raised up.

## No. 19,508. Press for Baling Goods.

(*Presse d'Emballage.*)

Abraham Fitts, Herbert M. Rice and Alonso E. Blanchard, Worcester, Mass., U.S., 7th June, 1884 ; 5 years.

*Claim.*—1st. In a knuckle-joint press, the combination, substantially as described, with the operating arms, of two cylinders arranged in connection with the knuckle-joints and respectively provided with pistons that are connected one with the other, as specified, and means for producing pressure within said cylinders, for effecting the operation of the arms and press-follower by the movement of said cylinders, in the manner set forth. 2nd. The combination, substantially as described, of the operating arms, the cylinders arranged in connection with the knuckle-joints of said arms and moveable therewith, and the pistons supported at stationary position in relation to the press, for the purposes set forth. 3rd. The combination, substantially as described, of the operating arms, the cylinders arranged on the knuckle-joints of said arms, the pistons attached to rods passing through the respective cylinders, and rigidly connecting said pistons to a ring or slide-piece supported on a central guide, and means for producing pressure within said cylinders, for effecting movement of the parts, as set forth. 4th. The combination, substantially as described, of the pressing-follower the operating-arms, the cylinders supported on the knuckle-joint plates, the pistons in the respective cylinders joined to each other by a rigid connecting-rod, the flexible pipes communicating with the interior of said cylinders and a valve for directing the flow to or from said cylinders, as set forth. 5th. The combination, substantially as described, with the operating-arms of the knuckle-joint plates provided with joints or seats *d* for the arms, stuffing-boxes *s* and connecting-flanges for attaching cylinders thereto, the cylinders D and pistons G, as and for the purpose set forth. 6th. In a knuckle-joint press having operating-arms that fold together, in the manner set forth, the combination, with the pressing-follower, the knuckle-jointed operating-arms and an actuating mechanism for effecting pressure through said arms, of a hydraulic elevating-cylinder and piston-column arranged between the press-bed and follower, and means for producing pressure within said cylinder, substantially as and for the purpose set forth. 7th. The combination, substantially as described, of the pressing-follower, the hydraulic elevating-cylinder and column arranged beneath said follower, the operating-arms, the hydraulic cylinders arranged upon the knuckle-joints of said arms, the pistons of said cylinders rigidly inter-connected by the coupled rods guided by a ring upon the elevating column, the pipes for delivering water to the respective cylinders, and a directing-valve for regulating the flow thereto, as set forth. 8th. The combination, substantially as described, with the operating-arms in a knuckle-joint press of the joint-plates or cylinder-heads having screw-threaded flanges, stuffing-boxes and ports, as shown, and the cylinder-shells externally screw-threaded and screwed into the flanges of said joint-plates. 9th. A press, the follower in which is operated by knuckle-jointed arms, in combination with hydrostatic presses mounted upon, or acting directly in connection with the knuckle-joints of said arms, and means for connecting together said hydrostatic presses, whereby they are adapted for exerting their resistant forces one against the other, as set forth.

## No. 19,509. Flour Dressing Machine.

(*Blutoir.*)

John E. Wilson, Galt. Ont., 7th June, 1884; 5 years.

*Claim.*—1st. In a flour bolt reel having longitudinal slats $B^2$ supported on two heads $B^1$, $B^1$ provided with perforated rims, and metallic hoops $B^5$ for the tension of the cloth $B^4$, a series of bands or rings $B^3$ supported upon the exterior of said slats $B^2$, upon which said cloth is stretched, for the purpose set forth. 2nd. In a flour bolt or purifier, a hopper C having in converging sides a series of openings $C^1$ at the bottom, provided with angle-pivoted or hinged valves G supported on the conveyor casing J, and arranged to be moved to cut off at any point to either conveyor D, as set forth. 3rd. In combination with the two conveyors D, D and the hopper C, the pintled or hinged valves G supported on the conveyor casing intermediate of the conveyors, and adapted to be moved inwardly to either side of the hopper, as set forth, for the purpose described. 4th. The combination, with the conveyors D, D, the hopper C having angle-pintled or hinged valves G, and the conveyor casing having pivoted or hinged doors $J^1$ to permit inspection of the bolted material and adjustment of the valves G, as set forth. 5th. The conveyors D, D, hopper C arranged above the conveyors D, D, and valves G pintled intermediately of the conveyors and hopper bottom, the guides or partitions $C^2$ and stop $J^1$ arranged to engage with the ends and side of the valves, as set forth. 6th. In a flour dressing machine, the combination of the reel or bolt B having a series of bands or rings $B^3$, supported on longitudinal slots $B^2$ connecting the heads $B^1$, the internal reel E provided with a series of longitudinal and tangential beaters F supported by reel arms $E^1$, the hopper C having converging sides provided at the bottom with partitions $C^2$, and inwardly opening pintled or hinged valves G and the conveyor casing I provided with doors $I^1$, as set forth for the purposes described.

## No. 19,510. Electrical Haulage System and Apparatus Connected Therewith. (*Système Electrique de Halage et Appareil pour cet objet.*)

William E. Ayrton and John Perry, London, Eng., 7th June, 1884 ; 15 years.

*Claim.*—1st. The use of a carriage, which is propelled by wheels gripping "the rail," worked by an electro-motor or motors, the gripping wheels being odd in number or in pairs, substantially as described. 2nd. The use of a carriage for hauling purposes, which is propelled by wheels gripping the rail, worked by an electro-motor or motors, the grip being dependent on the amount of pull in the hauling line, substantially as described. 3rd. The use of an electro-magnetic or other arrangement, which, when a motor is receiving no electricity, reverses automatically the connections between the armature and field magnets if the motor is a "series" or single circuit motor, does not reverse the connection if it is a "shunt motor," and which in both cases produces the change in the lead of the brushes necessary to be made when the machine used as a motor is to act efficiently as a generator. 4th. When shunt motors are used in parallel circuit with other motors or lamps, the use of an arrangement by which, when the motor is going too fast or when it is desired to stop the motion, the speed of the armature is automatically or at will increased when the speed of the machine driven by the motor remains constant or diminishes. 5th. The use of a system of two or more motor carriages in which one motor carriage, after running a certain distance along the rail, fixes itself firmly to the rail and winds up the hauling line in the meantime its fellow runs on ahead, then fixes itself and hauls, while the former, having loosened its grip, is running along the rail. 6th. When there is motive power on the boat or waggon, whether this is furnished by steam engine, or manual power, or by an electric motor on the boat which can be used for winding purposes, the use of motor carriages without winding arrangements which, by alternately running forward and then fixing themselves to the rail, afford a succession of fastenings for one end of the hauling line. 7th. The method of automatically making electrical connection and disconnection at the junction of sections of rubbed conductors, whether on the parallel or series systems by electrical means, herein described and shown in Figs. 8, 9, 10 and 11.

## No. 19,511. Electric Regulator and Alarm for Incubators. (*Régulateur et Sonnerie Electriques pour Incubateurs.*)

Frank Rosebrook, Elmira, N.Y., U.S., 7th June, 1884 ; 5 years.

*Claim.*—1st. The combination, with a clock-work, of the rotating rod $J^2$, the notched wheel L, the spring $L^1$ resting thereon, the armature $L^2$ attached to the spring $L^1$, the electro-magnet $L^3$ and the spring M1, substantially as herein shown and described and for the purpose set forth. 2nd. The combination, with the hard rubber rod *b*, of the spring *d*, the standards $g^1$, $g^2$ and the lever *e* pivoted thereto and acted upon by the rod *b*, substantially as herein shown and described and for the purpose set forth. 3rd. The combination, with the valve-operating mechanism, of the hard rubber ball *b*, bracket *c*, spring *d*, vibrating lever *e*, standards $g^1$, $g^2$ and adjusting contact screws $f^1$, $f^2$, the circuit extending through $f^1$, binding post $P^4$, brush-wire $P^2$, disk N, binding post Y, battery W and lever *e*, and the circuit extending through $f^2$, binding-post $P^3$, brush-wire $P^1$, disk N, binding-post Y, battery W and lever *e*, whereby the two separate circuits are closed respectively at maximum and minimum temperatures, substantially as specified. 4th. In an incubator, the combination, with the valve-operating mechanism, of the rotating rod $J^2$ carrying the valve or damper J, the disk K provided with pins $K^1$, and the rod $K^2$ provided with regulator $K^3$, whereby the effective heat of lamp G or its equivalent is diminished and restored, substantially as shown and described. 6th. In a valve regulator, the combination, with a series of parts of contact studs, projecting from a disk mounted on the rotating valve-rod, of a series of pairs of brush-wires connected with the battery and an electro-magnet by suitable devices, and clock mechanism for rotating said rod J4, substantially as herein shown and described and for the purpose set forth. 7th. In a valve regulator, the combination, with the clock-work casing $J^3$, of the arm O, the insulating bracket P, the binding screws $P^3$, $P^4$, the brushes $P^1$, $P^2$, $O^1$, $O^2$, the valve rod $J^2$, the disk N provided with studs $N^1$, $N^2$, $N^3$, $N^4$, the electro-magnet $L^3$ and clock mechanism, substantially as herein shown and described and for the purpose set forth. 8th. The combination, with the base $Q^1$, of the insulated block S, sliding in a groove, in the end of the base of the standards $F^1$, $F^2$, the thermostat-plate R $R^1$ and the wires $V^1$, $V^2$ connecting the lower ends of the standards with the binding screws $U^1$, $U^2$, substantially as herein shown and described and for the purpose set forth. 9th. The combination, with a clock-work or like motor, of the rod $J^2$, the notched disk L, the electro-magnet, a device for connecting the electro-magnet with the disk, the damper or door and the circuit-closer, substantially as shown and described. 10th. The combination, with two separate electric circuits and a thermostat, of a damper or door secured to an oscillatory rod $J^2$, and mechanism for oscillating said rod, substantially as shown and described. 11th. The combination, with two separate electric circuits and an automatic circuit-closer, of a damper door or valve adapted to be operated by an electro-magnet, either directly or through mechanism, which electro-magnet is connected with the two independent circuits, substantially as herein shown and described. 12th. The combination, with an incubator, of an electric heat regulating device, a bell, gong or other alarm, and means for sounding the said bell, gong or other alarm, both when the minimum of heat desired in the incubator are reached, substantially as herein shown and described.

## No. 19,512. Shingle and Heading Sawing Machine. (*Machine à Scier le Bardeau et les Fonds de Barils.*)

William F. Dake and James H. Seek, Grand Haven, Mich., U.S., 7th June, 1884 ; 5 years.

*Claim.*—1st. In a shingle or heading sawing machine, the combination, with the saw mandrel and its saw, of the shaft having a pulley belted to a pulley on the saw mandrel, said shaft having also a worm, the vertical shafts having the sprocket wheels carrying the endless belt of bars, one of said shafts also having a toothed wheel, and the said belt of bars being provided with a dog, and the frame having the flanged guard plate S U, substantially as and for the purpose set forth. 2nd, In a shingle or heading machine, the endless belt of upright cross-bars provided with dogs, in combination with the vertical guard plate *s* having a narrow horizontal flange at its front edge, the table A and the spring adapted to hold the table inward toward the saw, substantially as and for the purpose set forth. 3rd. In a shingle

or heading sawing machine, the endless belt of upright cross-bars provided with dogs, in combination with the vertical plate S having its upper and lower portions forming guide-ways or guards for the endless belt of upright cross-bars, and its rear side connected to movable uprights W, and the fixed uprights Y connected to the latter, of the bolts X, and having the adjusting screws Z, Z adapted to act upon the guard plate uprights W, substantially as and for the purpose set forth. 4th. In a shingle or heading sawing machine, the endless belt of bars M provided with dogs, in combination with the guard plate S with its upper and lower ends adapted to receive and permit the passage through them of the endless belt of bars, its lower end having also a narrow horizontal flange u at its forward edge, substantially as and for the purpose set forth. 5th. In a shingle or heading sawing machine, the endless belt of bars M having dogs V, in combination with the guard or guide-plate *s* having the narrow horizontal flange U, and the rear plate *d* forming a continuation of the flange U, and having a vertical flange *e* with the forward end inclined toward, and terminating close to the side of the rear part of the saw, substantially as and for the purpose set forth. 6th. In a shingle or heading machine, the endless belt of upright cross-bars provided with dogs, in combination with the vertical guard-plate S having a narrow horizontal flange at its front edge, the table *a* and the spring adapted to hold the table inward toward the saw, and the pressure bar or levers *f* provided at its upper end with the adjustable plate *g*, and the vertical shaft terminating at each end in serrated wheels, for the purpose of holding the spault against the endless belt of bars, substantially as and for the purpose set forth. 7th. In a shingle or heading machine, the combination, with the saw mandrel and saw, the endless belt of upright bars and the vertical guard-plates, of the adjusting box *n* regulated by the adjusting screw *o*, for the purpose of regulating the thickness of the shingle or heading, substantially as and for the purpose set forth.

## No. 19,513. Wood Pulp Coating.

(*Enduit de Pulpe de Bois.*)

Laurent Grenier, Ste. Ursule, Que., 7th June, 1884; 5 years.

*Reclame.*—Une composition formée de pâte de bois et de plâtre, de zinc, de ciment de Portland, de silicate de soude, de bicromate de potasse, d'alum, de gomme arabique et de colle de poisson, ou leurs équivalents, dans les proportions et pour les fins décrites.

## No. 19,514. Combined Table and Clothes Dryer. (*Table et Séchoir à Linge Combinés.*)

Jasper Bates, Thornbury, Ont., 7th June, 1884; 5 years.

*Claim.*—1st. In a combined table and clothes dryer, the combination of hinged bars or standards $H_1$, $H_2$, perforated to receive associate bars horizontally with, and as pivoting upon a supporting table frame B C D, substantially as and for the purposes set forth. 2nd. The combination of exterior bars $E_1$, $E_2$, the bolts K and the table frame B C D, substantially as and for the purposes set forth. 3rd. The combination of the supporting rods $G_1$, $G_2$, with the exterior bars $E_1$, $E_2$, the interior bars E, E, the pivoted bars $H_1$, $H_2$ and the table frame B C D, substantially as and for the purposes set forth.

## No. 19,515. Automatic Railway Switch.

(*Aiguille Automatique de Railroute.*)

Harry W. Howell, Jr., Elizabeth, N.J., U.S., 7th June, 1884; 5 years.

*Claim*—The combination, with the fixed and movable rails of the switch, of the levers G, $G_1$, connected together to act in unison, as shown, the lever H mounted on a fixed fulcrum $L_1$ and pivoted to the switch bar at L, the connecting bar of the levers being pivoted to said lever H between the fulcrum and the pivot L, substantially as herein set forth.

## No. 19,516. Automatic Grain Measuring Machine. (*Appareil de mesurage Autotique des Grains.*)

Joseph Nafziger and Andrew Nafziger, Hopedale, Ill., U. S., 7th June, 1884; 5 years.

*Claim.*—1st. The combination, with the measuring cylinder having a toothed ring secured around the same, and projections secured to said ring at given distances apart, of the shaft, a loose pinion thereon gearing with said ring, the clutch on the said shaft adapted to engage the pinion, and the arm pivoted to the clutch fork and having a catch adapted to engage the lugs on the said ring, substantially as shown and described. 2nd. The combination of the toothed ring carrying the measuring cylinder, and provided with lugs having inclines T and lips U, the shaft having the loose pinion gearing with the ring, the spring-actuated clutch feathered on said shaft and adapted to engage the pinion, the clutch fork supporting the clutch, the arm pivoted to the clutch fork and arranged between lugs thereon, and having a catch adapted to be engaged by the lugs on the ring, whereby the clutch shall be thrown out of engagement with the pinion before the ring is stopped by the catch, substantially as specified. 3rd. The combination of the toothed ring carrying the measuring cylinder, and provided with lugs having inclines T and lips U, shaft having the loose pinion gearing with ring, the spring-actuated clutch feathered on said shaft and adapted to engage the pinion, the clutch fork supporting the clutch, the arm pivoted to the clutch fork and arranged between lugs thereon, and having a catch adapted to be engaged by lugs on the ring, the grain packers and its supporting lever, the eccentric and connecting rod for oscillating said lever, and the rod connecting the said pivoted arm with the said lever, substantially as shown and described, and for the purpose set forth. 4th. The combination, with the measuring cylinder, of the grain packer consisting of a radially slitted disc or equivalent device, the lever carrying the said packer, and means for oscillating said lever, substantially as shown and described. 5th. The combination of the oscillatory lever of the grain packer, the clutch fork, the oscillatory arm pivoted to the said clutch fork, and the rod connecting the said arm with the lever and serving as a fulcrum for said lever, substantially as shown and described, whereby the lifting of the lever by the contact of the grain with the packer shall lift the said arm, and thereby allow the clutch to act, as specified. 6th. The combination, with the measuring cylinder made open at both ends, and having the ring secured around the same, and adapted to rotate on a base of the roller supported above the said ring and in contact therewith, substantially as shown and described. 7th. The combination, with the measuring cylinder and its vertical supporting shaft, of the registering device comprising the rotary dial plate, the feed screw and the drum having pegs in its outer surface arranged in spiral order around the same and in vertical rows, substantially as shown and described. 8th. The combination of the dial plate having numbers marked thereon, the feed screw mounted on the shaft of the dial plate, the pegged drum supported on a vertical post and connected to a thread on said post, and having the pegs arranged in spiral order, substantially as shown and described. 9th. The combination of the drum, the post supporting the same and having a spiral thread thereon, and the dog supported in standards in the upper end of the drum and having a notch in its lower end which engages said thread, and having its upper end extended over the upper end of said post, substantially as shown and described, whereby the fall of the drum, when it runs off the upper end of the thread, shall cause the dog to re-engage the thread, as set forth.

## No. 19,517. Tool-Holder for Grindstones.

(*Porte-Outil pour Meules.*)

John I. Carr, (Co-inventor with George H. Strong,) and Charles E. Brown, Chicago, Ill., U. S., 9th June, 1884; 5 years.

*Claim.*—1st. The combination, in a tool-holder for grindstones, of the grooved base C, the screw E, the sliding standard D, the bar F, the tilting plate H, the screw G, a rotar or pivoted jaw for receiving the tool to be sharpened, the screw I and a screw for binding the tool in the jaw, substantially as and for the purpose specified. 2nd. The combination, in a tool holder for grindstones, of the sliding standard D, the cylindrical bar F, the tilting and sliding plate H, a rotary or pivoted jaw for receiving the tool and mounted on the said plate, and the binding screws K, I and G, substantially as and for the purposes specified.

## No. 19,518. Tool-Holder for Grindstones.

(*Porte-Outil pour Meules.*)

John I. Carr and Charles E. Brown, Chicago, Ill., U. S., 9th June, 1884; 5 years.

*Claim.*—1st. The combination, substantially as specified, of the arm or lever F with its bridged table or plate G $G_1$ thereon, near its forward end, the screw H entering the said bridge, and the standard C having therein grooves or recesses arranged one above the other, and adapted to receive the rear end of the said arm, substantially as and for the purposes set forth.

## No 19,519. Road-Scraper. (*Grattoir de Chemins.*)

Aaron J. Nellis, Pittsburg, Pa., U. S., 9th June, 1884; 5 years.

*Claim*—1st. The combination, in a wheel scraper, of a scraper pivoted on a tilting bar, a tilting bar pivoted on a sustaining and operating lever, a sustaining and operating lever on the frame or carriage and a slotted guide-post through which the free end of the tilting bar passes, substantially as and for the purpose specified. 2nd. The combination, in a wheeled scraper, of a scraper pivoted on a tilting bar, a slotted guide-post through which the free end of the tilting bar passes, a circle-plate and links which connect the opposite ends of the scraper with the circle-plate, substantially as and for the purpose specified. 3rd. The combination, in a wheeled scraper, of the loosely-suspended scraper B, the reciprocating tilting bar C having the scraper pivoted at or near one extremity, the opposite end being free, and the operating lever D pivoted on the frame and having an elongated slot at the point of its connection with the tilting bar, substantially as and for the purposes specified. 4th. The combination, in a wheeled scraper, of a loosely-suspended scraper B, a circle-plate arranged on the carriage in front thereof, rods L connecting the extremities of the scraper with the circle-plate, loose links *l* encircling the rods L and lever G, substantially as and for the purpose specified.

## No. 19,520. Meat Roaster. (*Rotissoire.*)

Marvin Campbell, (Assignee of David B. Eastburn,) East Bend, Ind. U. S., 9th June, 1884; 5 years.

*Claim.*—1st. The combination of the bake pans A, C, with the perforated bottom D and the bottomless connecting section B, said section being provided with the flange E upon its lower edge, adapted to fit within the pan C, and the ledge ' upon its upper edge adapted to surround the edge of the pan A. 2nd. In a meat roaster, the bake pans A and C connected by the bottomless section B, substantially as shown and described.

## No 19,521. Potato-Digger. (*Arrache-Patate.*)

Hans Nelson and Jacob Nelson, Waupaca, Wis., U. S., 9th June, 1884; 5 years.

*Claim.*—1st. In a potato-digger, the combination, with the beam and the scoop, connected to its rear downwardly and inwardly curved end, of the clearer with its forward curved bar supported in the lower end of the beam, and in lugs on the rear bottom portion of the scoop and connected to the divergent ends of bars, fastened at their convergent ends to the beam, and the clearer vibrating cams or wings on the axle of supporting wheels, substantially as and for the purpose set forth. 2nd. In a potato-digger, the combination of the beam, the scoop, the curved clearer supported at its forward end in the lower end of the beam, and in lugs on the rear bottom edge of the scoop, and connected to the divergent ends of bars fastened to the beam, the handles with their right-angled portions connected to the

beam, and the axles having the clearer-vibrating cams, and the axle-supporting bars connected to the forward bar of the clearer and to the handles, substantially as and for the purpose set forth.

## No. 19,522. Clod Crusher. (*Brise-Motte.*)

August Peterson, Kent, Ohio, U. S., 9th June, 1884; 5 years.

*Claim.*—The circular-edged hollow crushers *s* bevelled on both sides, in combination with frame *f* and rotating wooden shafts *e*, *e*1 provided with, and grooved to receive metallic strips *c*, the crushers *s* being free to rotate both on and with their shafts, and each crusher having rotation on its shaft independently of the others, substantially as described.

## No. 19,523. Staple Extractor. (*Arrache-Crampe.*)

Benjamin Hubbell and John W. McLellan, Afton, Iowa, U. S., 9th June, 1884; 5 years.

*Claim.*—The staple-extractor consisting of a pair of lever jaws, pivoted together and having laterally-projecting rounded fulcrum surfaces, commencing at the meeting edges of the jaws and forming with said rounded surfaces wedge-like ends *k*, and the central staple-receiving notches *n* made in the terminal ends of the jaws, substantially as specified.

## No. 19,524. Lacing for Gloves and Boots.

(*Ligature pour Gants et Bottines.*)

Hutton & Co., London, Eng., (assignees of Alonzo C. Mather, Chicago, Ill., U. S.,) 9th June, 1884; 5 years.

*Claim.*—1st. As a new article of manufacture, a glove having a slit A on either side of which is a series of opposing eyelets C. through which is inserted a continuous lacing cord B crossed between and running freely in and through all of said eyelets, the free end of said cord passing through a slide D adapted to hold the cord in its operative position, when drawn taut and close the slit A, substantially in the manner described and shown. 2nd. A shoe provided with a flap or tongue having loops or eyes on its underside, the side or sides of the instep opening being provided with eyelets or eyes, and the lacing cord being applied through the said loops and eyes or eyelets, substantially as specified for the purposes set forth.

## No. 19,525. Slate Washer. (*Torchon d'Ardoise.*)

Howard L. Weed, Grass Valley, Cal., U. S., 9th June, 1884; 5 years.

*Claim.*—1st. In a slate washer, an interchangeable pad bevelled at both ends, to form a point or wiper C made compact and held together by a cord or clamp, substantially in the manner specified. 2nd. In a slate-washer and wiper, the hollow trough or cup to receive and hold the pad or wiper with its lower end provided with clamp or hooks to receive and hold a sponge or washer, in combination with a box or holder for said washer, constructed and arranged in the manner as herein set forth and described.

## No. 19,526. Combined Wash Bench and Step Ladder. (*Banc de Buanderie et Marche-Pied Combinés.*)

James S. Nelson, Springfield, Ohio, U. S., 9th June, 1884; 5 years.

*Claim.*—1st. The combination, with the pivoted cross legs connected together by rounds or bars, of the ladder frame having notched side pieces and steps, and the whole adapted to be converted into a wash bench or step-ladder as desired, substantially as described. 2nd. The combination of two pairs of pivoted cross legs connected together by rounds, and a ladder frame having nitched side pieces pivoted to each leg of one pair of said cross legs, and the round connecting the other pair of cross legs engaging with the notches in the side pieces of the ladder frame, whereby, when the ladder is brought into a horizontal position, the whole is adapted to form a support for an ironing board and the height of the same regulated by means of the notches and connecting round, substantially as described. 3rd. The combination of the pairs of pivoted legs 1 and 2 provided, at their extremities respectively, with the bars or rounds 4 and 7 with the notched side pieces 8 having steps 10 and hung on the bar or round 7, to form the extension 11, said extension being constructed substantially as made by applicant, whereby said bar or round 4 may interlock with such extension for holding the parts in position to form a step-ladder, substantially as shown and specified. 4th. The combination of the pairs of pivoted supporting legs 1 and 2, provided at their extremities respectively with the bars or rounds 4 and 7, with the side pieces 8 having steps 10 and hung on the bar or round 7, to form the extension 11, which is provided with the step 12 extending beyond the inner edges of the side pieces, to provide the offset 13 under which the bar or round 4 of the legs is capable of engaging, to support the parts in position for a step-ladder.

## No. 19,527. Machine for Separating Potatoes. (*Machine pour Trier les Patates.*)

James R. Bellamy, Everett, Ont., 9th June, 1884; 5 years.

*Claim.*—As a screen or separator, the combination of the two sieves B and C of different mesh, enclosed in a frame A, so as to deliver two sizes or grades of potatoes in different places, with the legs E, such legs acting as springs, as shewn and described and for the purpose specified.

## No. 19,528. Railway Tie. (*Traverse de Railroute.*)

Elias B. Hungerford, Corning, N. Y., U. S., 9th June, 1884; 5 years.

*Claim.*—1st. A metallic railway tie having portions thereof punched out and bent downward to form feet, which enter the earth and prevent displacement of the tie, substantially as described. 2nd. The combination, with a railway tie, of a bed plate for the rail having a curved jaw which overlaps the base of the rail, thereby holding it on the plate, substantially as described. 3rd. The combination, with a railway tie and rail, of a bed plate for the rail having a curved jaw to overlap the base of the rail, and a rabbet for receiving a fastening key, substantially as described. 4th. The combination, with a railway tie and rail, of a bed plate for the rail having a jaw to overlap the base of the rail, and of a key for locking the bed plate on the tie, substantially as described. 5th. The combination, with the rail and the metallic railway tie having vertical longitudinal flanges, provided with recess for receiving one edge of the base of the rail, and with key holes, of a bed plate for the rail having a jaw which overlaps the other edge of the base of the rail, and of the key passing through holes of the tie flanges, substantially as described for the purpose set forth. 6th. The combination, with the rail and the metallic railway tie having vertical longitudinal flanges provided with recesses and key holes, of the bed plate having the curved jaw and rabbet, and of the key passing through the holes of the tie flanges, substantially as described for the purpose set forth. 7th. The combination, with the rail and the metallic railway tie, of the bed plate having the curved jaw to overlap the base of the rail, and of the key having teeth on one edge, substantially as and for the purpose described. 8th. The combination, with the rail and the metallic railway tie, of the bed plate having the jaw to overlap the base of the rail, and having one edge chamfered or bevelled, and the key for locking the bed plate on the tie, subtantially as described for the purpose set forth. 9th. The combination, with a railway tie and rail, of a bed plate for the rail having a jaw to overlap the base of the rail, and an upward extension on said jaw to support the head of the rail, substantially as described.

## No. 19,529. Telephone Time Signal System.

(*Système Téléphonique de Signal Horaire.*)

John M. Oram, Dallas, Texas, U. S., 9th June, 1884; 5 years.

*Claim*—1st. The method herein described of supplying standard time to any numbers of subscribers in a telephonic system, which consists in continuously making and breaking (or varying) the electrical condition of the main circuit into significant signals, having different intervals of time between the signals of the several groups denoting different sub-divisions of time, whereby the audible signals are made recognizable and significant as to time in each receiver, separate receiving clocks at each subscriber's station are dispensed with, and the simplicity and efficiency of the telephonic system preserved without interference or interruption, as described. 2nd. The method of striking standard time upon the bells of any number of subscribers in a telephone system, which consists in continuously making and breaking the electrical current into recognizable signals, having different intervals of time between the signals of the several groups and dividing this current at the central office upon opposite side of the annunciators, to prevent the dropping of the annunciator doors from said signals, as described. 3rd. The combination, with a telephone system and a suitable battery, of a clock, constructed as described, to repeat continuously throughout the whole day, and break or vary the current on the line into recognizable significant signals of time, as described. 4th. The combination, with the bells, of the receivers, their several lines and their annunciators, and jacks of a repeating clock, a local circuit controlled thereby, an electro-magnet operated by said circuit, a main line-circuit and the armature B, and spring O connected respectively to branch lines leading to the opposite sides of the subscriber's annunciators, as and for the purposes set forth. 5th. A telephone system without a normal ground circuit, as and for the purposes set forth. 6th. In a telephone time-signalling apparatus, a polarized annunciator, as and for the purposes set forth. 7th. A telephone time circuit with one pole of the battery connected with the system of telephone circuits, and the other pole connected with a circuit closer controlled by, and operating simultaneously with a standard clock, as and for the purposes set forth. 8th. A telephone time circuit without a normal ground circuit, one pole of the battery being connected to the telephone circuit, and the other to the circuit-closer of the telephone circuit, in combination with a standard clock, which connects electrically directly with the circuit-closer, substantially as specified.

## No. 19,530. Fluid Burning Lamp.

(*Lampe à Fluide.*)

Marmaduke Mathews, Toronto, Ont., 9th June, 1884; 5 years.

*Claim.*—1st. The burner A fixed to the long stationary wick tube B, in combination with the oil reservoir F provided with a hole *a*, through which the wick tube passes, and a balance weight calculated to carry the weight of the reservoir F when full, but arranged to force the said reservoir closer to the burner in proportion to the consumption of the oil contained within the reservoir, substantially as and for the purpose specified. 2nd. The oil reservoir F adjustably fitted on to the wick tube B and provided with a float G extending into the lamp body D, which contains water or other fluid, the said float being made of such a size and so connected to the oil reservoir F that it forces by floatation the said reservoir up towards the burner D in proportion to the consumption of the oil within the reservoir. 3rd. The lamp body D arranged to support the syphon tubes to which the burners A are attached, in combination with the oil reservoir F floated within the lamp body D, substantially as and for the purpose specified. 4th. The oil reservoir F floated within the lamp body D, as specified, and provided with holes *a* for the passage of the tubes B to which the burners A are attached, in combination with the central tube I provided with oil cup J, arranged substantially as and for the purpose specified.

## No. 19,531. Spring Gear for Vehicles.

(*Suspension des Voitures sur Ressorts.*)

Robert McCaughlin, Oshawa, Ont., 9th June, 1884; 5 years.

*Claim.*—1st. A curved spring steel body loop B arranged to support the body A and clasp around a spring bar C, substantially as and for the purpose specified. 2nd. The combination, with the bolster D, of the steel plate E extending beyond its ends, so as to form a spring support for the side bars F, substantially as and for the purpose

specified. 3rd. The side bars F having, bolted to their bottom sides, a spring steel plate G, in combination with the spring steel plate E bolted to the bolster D, substantially as and for the purpose specified. 4th. The reach I K having a top reach place H secured to it by the bolts J and L, arranged substantially as shown and for the purpose specified.

## No. 19,532. Flour Dressing Machine.

(*Blutoir à Brosses.*)

John Riddell, Packenham, Ont., 9th June, 1884 ; 5 years.

*Claim.*—1st. In a flour dressing machine, the sieve B suspended by the flat bars *a* from the sliding bars *b*, arranged to slide transversely in the frame A, substantially as described. 2nd. In a flour dressing machine, the sieve B suspended from the sliding bars *b*, which are arranged to run endways on the rollers or pulleys *c*, substantially as described. 3rd. A flour dressing machine provided with the eccentric shaft E working in the arm F, which is attached to the sieve B, and the crank and connecting rod *l*, all of which are for the purpose of imparting to the sieve or shaker B a combined longitudinal and transverse motion over stationary brushes, substantially as shown and described.

## No. 19,533. Watch. (*Montre.*)

The Fahey's Watch Case Company, (assignee of James Lamont,) Sag Harbor, N. Y., U. S., 9th June, 1884 ; 5 years.

*Claim.*—1st. In a watch case, the combination of an outer case, a suitable pendant or stem attached to an inner case, an inner case hinged to the outer case upon an axis or pintle parallel with the pendant or stem and adapted to be opened on said hinge, substantially as described. 2nd. In a watch case, the combination of an inner case for carrying the movement, a suitable pendant or stem attached to the inner case, and an outer case composed of two parts secured together, the outer and inner cases having a hinged connection upon an axis or pintle parallel with the stem or pendant, whereby the inner case may be turned outwardly from the outer case at a right angle to the stem or pendant, substantially as described.

## No. 19,534. Electric Block Signal for Railways. (*Bloc de Signal Electrique pour Chemins de Fer.*)

Stephen J. Swayze and John C. Lane, Sag Harbor. N. Y., U. S., 9th June, 1884 ; 5 years.

*Claim.*—1st. The signal-board E adapted to be automatically elevated by the passage of a train, the clutching and retarding mechanism D and the fan C, or its equivalent, in combination with the magnets *a*, lever *b*, spring *c* and switch G, connected as described and adapted to be opened and closed by the signal-board E, substantially as specified. 2nd. In a signalling system, the switches G connected to the main wire *f* by wires $f^1$ and *i*, and adapted to be opened and closed by the signal-board E, in combination with the magnets *a* and the locking mechanism, whereby the setting of one signal will release the other, substantially as described.

## No. 19,535. Hot Air Stove. (*Calorifère à Air.*)

Peter H. Sims and Philip Hohmeier, Waterloo, 9th June, 1884; 5 years.

*Claim.*—1st. A self-feeding coal hot air stove, consisting of an annular base A, having central air passage $A_1$, a conical grate casing B having elongated portion Bo joining the external casing, and closed by a door $B^1$ having air slide $B_2$, and containing grate $B_4$, with shaker, said cone B supporting the fire-pot D, having a flaring flange *d*, furnished with air pipes $D_1$, connecting a parallel flange or cone *e*, which supports the feed tube F and the cylindrical portion E, the external part of the casing $E_5$ enclosing the fire-pot and grate cone, and extending down to the base, the cylinder $E_1$ and downwardly and outwardly extending casing $E_2$ provided with fire doors and mica lights, and the flue box H at the rear containing flue *h* opening into the down flue I, communicating with the base and the return flue $I_1$, also the opening $h^1$ provided with damper $h_2$, said box H provided with opening $H_3$, stove-pipe base $H_1$ and check regulator $H_2$, the feed tube F and cylinder $E^1$ closed in at the top by a crown plate G provided with air outlets $G_1$, *g*, *g*, slide $g^1$ and a sand groove $g_3$, and the cover $G^2$ swivelled from a lifting pivot and having dip flange $g^2$ dipping into the groove $g_3$. 2nd. The combination of the hollow annular base A having air passage $A_1$ and vertical partition at the rear, to separate the smoke inlet from the outlet, in combination with the down flue I communicating with the fire space, and the up flue $I_1$ communicating with the outlet $H_1$. 3rd. The combination of the base A with the grate cone B having elongated portion Bo joining the casing $E_5$, and closed by a door provided with air slide. 4th. The combination of the base A supporting grate cone B, with the fire-pot D having flaring flange *d*, furnished with air tubes $D_1$ and connecting a parallel flange or cone *e*, enclosed by the external facing $E_5$ having flues I and $I_1$ at the rear. 5th. The combination of the fire-pot D, flaring flange *d*, air tubes $D_1$, and parallel flange *e* supporting cylinder E and feed tube F. 6th. The fire-pot D, flange *d* supporting the external casing $E_5$, with flues I, $I_1$, in combination with the flange *e* connected to the flange *d* by air tubes $D_1$. 7th. The combination of the cylinder $E^1$ and downwardly and outwardly extended portion $E_2$, provided with fire doors $E_3$ and mica lights $E_4$, the box H at the rear containg flue *h* communicating with the down flue I and the up flue $I_1$, and provided with stove pipe base $A_1$, check regulator $H_2$, internal opening $h^1$ and damper $h_2$. 8th. The combination of the fire-pot D, flange *d*, air tubes $D_1$, flange *e*, cylinder E and feed tube F, also casing $E_5$, having flues I, $I_1$. 9th. The combination of the cylinder $E^1$, feed tube F and crown plate G, provided with air outlets $G_1$, *g*, with slide and sand groove $g_3$. 10th. The combination of the crown plates G connecting the cylinders $E_1$, F, and provided with air outlets and said dip $g_3$, in combination with the cover $G_2$ pivoted thereto and having dip flange $g_2$. 11th. The cover $G_2$ pivoted to the crown plate G, the latter closing the air space between the feed tube F and the external casing $E_1$, in combination with the casing $E_2$ and the cylinder E, supported by the flange *e*, tubes $D_1$, flange *d* and fire-pot D, all substantially as described and for the purpose set forth.

## No. 19,536. Hat Sizing Machine.

(*Machine pour Feutrer les Chapeaux.*)

Nathan Harper, Newark, N.J., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. In a hat-sizing machine, the combination of an endless felting belt travelling on pulleys or rollers, and a co-operating felting surface adapted and arranged to enable the hat-rolls fed thereto to traverse continuously the entire circuit of said surfaces as many times as may be desired before removal. 2nd. In a hat-sizing machine, a felting-bed having an additional opening at the opposite end or side to that at which the hats are usually introduced, said opening being provided with an adjustable lid or connecting piece adapted to close the same. 3rd. In a hat-sizing machine provided with an opening at each end, for the admission or for the discharge of the hat rolls, an adjustable lid door or connecting-piece adapted to close one of said openings when desired, to enable the hat rolls to traverse the entire circuit of the felting surfaces before removal. 4th. In a hat-sizing machine, the combination of an endless felting belt travelling on pulleys or rollers, with a stationary co-operating felting-bed, consisting of a yielding flexible apron or blanket entirely surrounding said felting belt, except at the joint where the hat rolls are introduced to said felting-belt. 5th. In a hat-sizing machine, the combination of pressing bands, consisting of metallic chains and springs, arranged to operate in connection therewith, for the purpose of increasing and regulating the pressure of the felting-bed or surface, substantially as described for the purpose set forth. 6th. In a hat-sizing machine, the combination of a felting surface consisting of independent rollers or slats and springs adapted to uplift or neutralize the weight of said rollers or slats, and thereby diminish the pressure of said rollers or slats upon the felting fabric, as set forth. 7th. In a hat-sizing machine, a feeding mechanism adapted to convey the hat-rolls or hat-bodies from the folders to the felting surfaces. 8th. In a hat-sizing machine, the combination of the felting surfaces with a discharging mechanism adapted to take or convey the hat-rolls from the said felting surfaces to the folders or other parts desired. 9th. In a hat-sizing machine, the combination of a feeding and discharging mechanism adapted to convey the hat-rolls from the folders to the felting surfaces, and from the felting surfaces to the folders. 10th. In a hat-sizing machine, the combination of a feeding and discharging mechanism constructed and arranged so that the hat-rolls, when supplied to either mechanism, will be conveyed to the felting surfaces. 11th. In a hat-sizing machine, the combination of a feeding and a discharging mechanism constructed and arranged so that the hat-rolls placed thereon will be conveyed to the felting surfaces, and will continue to traverse said surfaces and said mechanism as many times as may be desired without removal. 12th. In a hat-sizing machine, the combination of the felting-surfaces with a feeding-belt adapted to convey the hat-rolls from the folders to said felting surfaces. 13th. In a hat-sizing machine, the combination of a travelling belt adapted to take or remove the hat-rolls from said felting surfaces and convey them to the folders 14th. In a hat-sizing machine, the combination of a travelling belt adapted to convey the hat-rolls to the felting surfaces with a travelling belt adapted to take or remove the hat-rolls from said surfaces. 15th. In a hat-sizing machine, a feeding-belt actuated by drums or rollers, arranged and adapted to cause the hat-rolls to travel to a point where they will come under the operation of the felting surfaces. 16th. In a hat-sizing machine, the combination of an endless felting-belt travelling on pulleys or rollers, with an endless feeding belt adapted to feed the hat-rolls to said felting belt. 17th. In a hat-sizing machine, the combination of an endless felting-belt with an endless discharging-belt adapted to take or remove the hat-rolls from the said felting-belt. 18th. In a hat-sizing machine, the combination of an endless felting-belt with an endless feeding-belt and an endless discharging belt, for the purpose set forth. 19th. In a hat-sizing machine, a feeding and a discharging belt or apron constructed and arranged at the same end of said machine 20th. In a hat-sizing machine, a feeding and a discharging belt or apron, one of said belts being above and over, or approximately over the other. 21st. In a hat-sizing machine provided with feeding and discharging mechanism, a guide or connecting device adapted to guide or convey the hat-rolls from the one mechanism to the other. 22nd. In a hat-sizing machine, the combination of the feeding belt or band with adjustable bearings adapted to graduate the tension of said belt. 23rd. In a hat-sizing machine, the combination of the feeding mechanism with adjustable bearings adapted to move said mechanism nearer to, or farther from, the felting surfaces. 24th. In a hat-sizing machine, the combination of the discharging mechanism with adjustable bearings adapted to move said mechanism nearer to, or farther from, the felting surfaces. 25th. In a hat-sizing machine, the combination of the discharging belt or bands with adjustable bearings adapted to graduate the tension of said belts. 26th. In a hat-sizing machine provided with feeding or discharging mechanism, adjustable supports adapted to raise or lower the inner end of said mechanism to its appropriate relation to the felting-surfaces. 27th. In a hat-sizing machine, feeding or discharging mechanism arranged upon pivoted bearings that adapt said mechanism to be raised or lowered to its appropriate relation to the felting surfaces. 28th. In a hat-sizing machine, the combination of the felting-surfaces with adjustable bars *c*, belt *u* and rollers *f*, arranged and adapted for the purpose set forth. 29th. In a hat-sizing machine, the combination of belts *n*, *o*, drums or rollers *f*, *h*, $h^1$, *m* and guide *s*, arranged and adapted for the purpose set forth.

## No. 19,537. Hat-Sizing Apparatus.

(*Appareil pour Feutrer les Chapeaux.*)

Nathan Harper, Newark, N.J., U.S., 9th June, 1884 ; 5 years.

*Claim.*—1st. In a hat-sizing machine, a felting chamber having more depth or space at or near its centre, as at *q*, than at or near its sides or edge, as at *r*, said chamber being constructed and adapted to cause the hat-rolls while felting to have both a rotary motion on their axes, and a progressive motion at right angles thereto, substantially

as set forth. 2nd. In a hat-sizing machine, a felting bed having a concave or centrally receding profile in the line of the axes of the hat-rolls, said bed being constructed and adapted to cause said hat-rolls, while felting, to have both a rotary motion on their axes, and a progressive motion at right angles thereto, substantially as set forth. 3rd. In a hat-sizing machine, one or more drums, pulleys or rollers having a concave or centrally-receding longitudinal profile, and forming one part or side of a felting chamber, said chamber being constructed and adapted to cause the hat-rolls, while felting, to have both a rotary motion on their axes, and a progressive motion at right angles thereto, substantially as set forth. 4th. In a hat-sizing machine, a two-fold series of drums, pulleys, or rollers having concaved or centrally-receding longitudinal profiles, and forming the two sides or parts of the two sides, of a felting chamber, said chamber being constructed and adapted to cause the hat rolls, while felting, to have both a rotary motion on their axes and a progressive motion at right angles thereto, substantially as set forth. 5th. In a hat-sizing machine, a felting surface consisting of a series of rollers having a concave or centrally-receding longitudinal profile, and free to move inward or outward toward or from the felting-chamber, said rollers and chamber being constructed and adapted to cause the hat-rolls, while felting, to have both a rotary motion on their axes, and a progressive motion at right angles thereto, substantially as set forth. 6th. In a hat sizing machine, one or more drums, pulleys or rollers, having concave or centrally-receding longitudinal profiles, and fluted, ribbed or corrugated lengthwise of their axes, in combination with a co-operating felting surface arranged at a suitable distance therefrom to form a felting chamber, said chamber being adapted to cause the hats, while felting, to have both a rotary motion on their axes, and a progressive motion at right angles thereto, substantially as set forth. 7th. In a hat-sizing machine, one or more drums, pulleys or rollers having concave or centrally-receding longitudinal profiles, and fluted, ribbed or corrugated crosswise on their axes, in combination with a co-operating felting surface arranged at a suitable distance therefrom, to form a felting chamber, said chamber being adapted to cause the hats, while felting, to have both a rotary motion on their axes, and a progressive motion at right angles thereto, substantially as set forth. 8th. In a hat-sizing machine, the combination of one or more felting drums, pulleys or rollers, fluted, ribbed or corrugated lengthwise of their axes, with one or more felting drums, pulleys or rollers, fluted, ribbed or corrugated crosswise of their axes. 9th. In a hat-sizing machine, a felting bed consisting of a series of slats having concave or centrally-recessed longitudinal profiles, said slats being employed separate and detached from the felting drums, rollers or belts used in said machine, and adjusted to form a convex felting-chamber, substantially as set forth. 10th. In a hat-sizing machine, a felting surface consisting of a series of slats having concave or centrally-recessed longitudinal profiles, and mounted by their ends only in slots or guides adapted to allow them to move toward or from the surface of the hat-rolls, substantially as set forth. 11th. In a hat-sizing machine, the combination of one or more felting slats having concave or centrally-recessed longitudinal profiles, with one or more felting rollers having concave or centrally-recessed profiles, the said slats and rollers being mounted by their ends in or between slots or guides adapted to allow them to move toward or from the surface of the hat-rolls, substantially as set forth. 12th. In a hat-sizing machine, the combination of a single revolving felting drum, having a rigid felting surface, a felting chamber, surrounding or partially surrounding said drum, and a series of pressing rollers forming a co-operating felting bed on the outer side of said felting chamber, substantially as set forth. 13th. In a hat-sizing machine, a single revolving felting drum or cylinder having a rigid surface, ribbed, corrugated or fluted, either lengthwise of its axes, in combination with a co-operating series of felting rollers, substantially as set forth. 14th. In a hat-sizing machine, a single revolving felting-drum or cylinder having a rigid surface, in combination with a co-operating series of felting-rollers or felting-slats, separated from said drum by the felting chamber and mounted by their ends in slots or guides adapted to allow them to move inward or outward toward or from the surface of said drum. 15th. In a hat-sizing machine, two co-operating surfaces, or series of surfaces, arranged at an appropriate distance apart to form a felting chamber between them, either or both of said surfaces having a concave or centrally-recessed profile, said surfaces being constructed and adapted to cause the hat-rolls, while felting, to have both a rotary motion on their axes, and a progressive motion at right angles thereto, substantially as set forth. 16th. In a hat-sizing machine, a felting belt having a continuous concave or centrally-recessed surface, substantially as set forth. 17th. In a hat-sizing machine, a felting jacket or belt, having a straight profile, in combination with, and applied to one or more drums or rollers, having concave profiles, the felting function of said jacket or belt being performed by the outer surface thereof, substantially as set forth. 18th. In a hat-sizing machine, a felting-belt apron or jacket having its surface ribbed, fluted or corrugated, either longitudinally or at right angles to its length, in combination with a series of co-operating felting rollers, substantially as set forth. 19th. In a hat-sizing machine, stationary disc as B, in combination with detachable-slotted bearings or guides being secured to said discs, and adapted to receive and guide the bearing ends of the pressing rollers or pressing slats, substantially as set forth. 20th. In a hat-sizing machine, the combination of a single revolving felting-drum, an annular felting-chamber, co-operating felting rollers, a feeding and discharging belt, substantially as and for the purposes set forth. 21st. In a hat-sizing machine, the combination of a single revolving felting-drum, provided with a yielding or elastic jacket closely fitting its surface, a felting-chamber surrounding or partially surrounding said drum, and a series of pressing rollers forming a co-operating felting-bed on the outer side of said chamber, substantially as set forth.

## No. 19,538. Blueing Compound.

(*Composition d' Indigo.*)

George A. Conant, Littleton, Mass., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. As a new article of manufacture, blueing paper saturated with a solution of Prussian blue, oxalic acid and sugar, in the proportions and substantially as set forth. 2nd. The improved process of manufacturing blueing paper, herein described, the same consisting of saturating the paper with a compound consisting of oxalic acid, sugar, Prussian blue and water, and drying and cutting the paper into sheets of any required size, substantially as described. 3rd In a compound for the manufacture of blueing paper, oxalic acid, sugar, Prussian blue and water, substantially as set forth.

## No. 19,539. Wick Trimmer.

(*Mouchettes de Lampes.*)

Thomas Redihough, Boston, Mass., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. A wick trimmer having two pivoted or pointed handles adapted to clamp or grasp the wick, a guide or support attached to one of the handles and adapted to pass over the wick tube, and a lateral slot through which a knife or cutting implement may be passed above the tube to cut or trim the wick, substantially as described 2nd. In a wick trimmer, substantially such as described, the curved slot *l*, substantially as specified. 3rd. The impro ed wick trimmer herein described, the same consisting of the handles A B jointed at *m*, and provided with the curved slots *l*, and the guide C provided with the slots *f*, constructed, combined and arranged to operate substantially as described.

## No. 19,540. Lubricator. (*Graisseur.*)

Cushing C. Harlow, Brockton, Mass., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. In a lubricator, the reservoir having two or more outlet passages, combined with a series of independent forcing devices actuated in common, by means of which different quantities of the lubricant may be forced from each outlet, as desired, substantially as described. 2nd. In a lubricator, the reservoir and forcing-rod therein combined with the actuating rock-shaft and pinion thereon, and rack meshing with the said pinion and connected with the said forcing rod, substantially as described. 3rd. The reservoir for the lubricant, and the actuating rock-shaft pinion and rack, combined with the forcing rod adjustable longitudinally in the said rack, substantially as and for the purpose described. 4th. The reservoir and internal threaded actuating rack, combined with the threaded forcing rod connected with the said rack and the gaging upright co-operating with the said rod to indicate its effective movement, substantially as described. 5th. The oil reservoir and forcing device, consisting of a longitudinally movable nipple and independent actuating rod adapted to seat on the end of the said nipple, close the passage through it, and then move the said nipple longitudinally, substantially as and for the purpose described. 6th. The oil reservoir having a chambered base provided with a bushing combined with the spring-pressed forcing nipple longitudinally movable in the said bushing, and provided with a stop limiting its movement caused by the spring and the actuating rod seating on the end of the said nipple and moving it therewith, substantially as described. 7th. In a lubricator, the reservoir provided with a foot adapted to be attached to a steam chest or cylinder, combined with non-conducting material interposed between the main portion of the reservoir and its foot, whereby said reservoir and its contents are protected from the heat of the steam chest or cylinder, substantially as described. 8th. The forcing rod having a spring held portion adapted to yield when the flow of the forced liquid is obstructed, as and for the purpose described. 9th. In a lubricator, the reservoir and forcing device therein combined, with the strainer consisting of a gauze cylinder provided at its end with rings, the said strainer surrounding the said forcing device, substantially as described. 10th. The reservoir, having a chambered base, provided with an outlet passage, combined with a forcing device for expelling the liquid from the chamber of the base, and a valve controlling the flow through the outlet passage provided with a tubular stem and spring within the said stem, which is provided with inlet openings admitting the lubricant to the interior thereof, substantially as described. 11th. The reservoir having its base provided with a chamber and outlet passage, combined with the tube and valve therein, and the screw closing the upper end of the passage which communicates with the chamber, substantially as described. 12th. The lubricator, having a forcing device, combined with the sight-feed device having a chamber connected with the outlet passage from the forcing device, a drop-forming nozzle and a retarding device between the said chamber and nozzle, whereby the lubricant entering the chamber intermittently is delivered uniformly to the nozzle, substantially as described. 13th. The lubricator, having a forcing device, and the sight-feed device having a receiving chamber at it upper end, an outlet passage therefrom terminating in a drop-forming nozzle, combined with fibrous material interposed between said receiving chamber and nozzle, substantially as described. 14th. The combination of the valve-seat $k_2$, valve $k_2$ and device for rotating the said valve with relation to its seat, substantially as described.

## No. 19,541. Waggon Axle Truss.

(*Armature d' Essieu de Voiture.*)

Frederick Ulrich, Peru, Ind., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. The thimble skeins B formed with lugs *a*, in combination with the truss C consisting of two bars, either separate or connected together in the form of a link, said truss embracing the sides of the lugs and held thereon, by means substantially as shown and for the purpose set forth. 2nd. The thimble-skeins B, having lugs *a*, *b*, in combination with the link-shaped truss C and plates *c*, with the nuts and clips for holding the plate in position, substantially as and for the purpose specified. 3rd. The thimble-skeins B, having upon their under side, lug or lugs, in combination with the truss C, constructed as described, and the washers *g* interposed between the truss and axle and removable therefrom, whereby the tension of the truss may be increased, substantially as and for the purpose set forth.

## No. 19,542. Reel Fastening for Fishing Rods. (*Coulisse de Dévidoir pour Cannes de Pêche.*)

Gilbert L. Bailey, Portland, Me., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. In a reel fastening for a fishing rod, a loose or sliding

band having a raised receptacle for one end of a reel plate on one portion of its surface, and a groove struck from the inside on an opposite portion, in combination with a cam working in said groove having a lever attached and adapted to fasten said band over said reel plate, and a metal reel seat adapted to surround the butt of a fishing rod, and having a raised receptacle for the other end of said reel plate fixed thereto, substantially as and for the purpose herein set forth. 2nd. In a reel fastening for a fishing rod, a loose or sliding band having a raised receptacle for one end of a reel plate on one portion of its surface, and a groove struck from the inside of an opposite portion, in combination with a cam working in said groove, having a lever attached and adapted to fasten said band over said reel plate, and with the butt of a fishing rod having a raised receptacle for the other end of said reel plate fixed thereto, substantially as and for the purpose herein set forth. 3rd. In a reel fastening for fishing rods, a loose or sliding band having a raised tapering receptacle for one end of a reel plate, and a groove struck from the inside, in combination with a cam to work in said groove, having a lever attached, adapted to tighten said band upon, and release it from said reel plate, substantially as and for the purpose herein described. 4th. In a reel fastening for fishing rods, a loose or sliding band having a groove struck from the inside for the reception of, and in combination with a cam to work in said groove, having a lever attached, adapted to tighten said band upon and release it from a reel plate, substantially as and for the purpose herein described. 5th. In a reel fastening for fishing rods, a loose or sliding band having a raised tapering receptacle for one end of a reel plate, in combination with a suitable device for tightening said band upon said plate, substantially as and for the purpose herein set forth. 6th. The combination of a sliding band $b$, with its raised portions $c$ and $i$, lever $g$, with its cam $h$, and tube $a$ provided with a receptacle $f$, substantially as herein described.

## No. 19,543. Roller Mill. (*Moulin à Cylindres.*)

Jesse Warrington, Indianapolis, Ind., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. The combination, in a roller-mill, of the swinging roll-supporting arms, means for holding said arms inwardly at both the top and the bottom, springs which when compressed permit said arms to swing outwardly, and pivots or stops located between the upper and the lower devices for holding the arms inwardly, which limit the inward movement of the arms, substantially as set forth. 2nd. The combination, in a roller-mill, of roll supporting arms D, movable bearings therefor, the adjustable rods or screws at the upper and lower ends of said arms, and springs $F^1$, said bearings being located between said rods or screws, substantially as set forth. 3rd. The combination, in a roller-mill, of swinging arms supporting one of the rolls of a pair, rods at both ends thereof which hold said arms and the roll supported thereby toward the other roll of the pair, and spring on the rods at the ends of the arms opposite to the ends which support the roll, and beyond the supporting-pivots of said arms, which springs operate to throw the ends of said arms which support the roll, and the roll supported thereby outward, thus forcing said roll away from its fellow as far as the rods which hold it inwardly will permit, substantially as set forth. 4th. The combination, in a roller-mill, of the swinging roll-supporting arms D having elongated pivot-openings, the pivot-pins $d$, the adjusting screws at the upper ends of the arms, the rods F and the springs $F^1$, whereby said arms are adjusted to position and held in said position against fixed stops, and the roll supported thereby is held forward with a fixed force needed for a grinding-pressure, and is at the same time permitted to swing back slightly when any hard substance comes between it and its fellow, all substantially as set forth. 5th. The combination, in a roller-mill, of supporting seats for the bearings for the rolls, the boxes forming said bearings, and means for moving said boxes on said seats, said boxes having portions with spherical surfaces fitting spherical surfaces on the seats, said surfaces having a common center horizontally removed from the center of the rolls whereby a vertical adjustment of said boxes may be had by a shifting of the box on its seat, these spherical surfaces at the same time obviating any binding action of the boxes on the roll-journals, substantially as set forth. 6th. In a roller-mill, the combination of the journal-boxes and supporting surfaces therefor, said surfaces being struck from a common center, as at*, and said boxes being formed to fit said surfaces, whereby a moving of said boxes on said surfaces will vary the relation of said rolls on the plane which passes through both without causing a binding on the roll-journals, substantially as set forth. 7th. The combination, in a roller-mill, of the rolls swinging arms carrying one roll of the pair, levers for operating said swinging arms, and a cam-rod on which said levers are mounted and whereby they are operated, said cam-rod being provided with an appropriate handle, substantially as set forth. 8th. The combination, in a roller-mill, of the rolls, swinging arms carrying one roll of a pair, levers for operating said swinging arms, a cam-rod on which said levers are mounted, and a handle for operating said cam-rod, said handle having a segmental extension $h^1$, whereby a second set of mechanism may be operated simultaneously with the first, all substantially as shown and specified. 9th. The combination, in a roller-mill, of the rolls, swinging arms carrying the same, levers for operating said swinging arms, and distance or adjusting screws for determining the position of said levers, substantially as set forth. 10th. The combination of the grinding rolls, the adjustable boxes attached to the frame-work and carrying the outer roll of the pair, the swinging arms carrying the inner roll of the pair, and means for operating said swinging arms to carry said inner roll into grinding relation with said outer roll, or to part it therefrom, substantially as shown and specified. 11th. The combination, in a roller-mill, of the roll-carrying swinging arms D mounted on pivots $d$ and provided with adjusting screws $d^1$, the tempering rods F and the levers G, substantially as set forth. 12th. The combination, in a roller-mill, of the roll-shafts, the counter-shaft, pulleys thereon, belts on said pulleys, a yoke or frame-work extending from one of the journal-boxes of the counter shaft to the other and supporting said boxes, and means for adjusting said yoke or frame-work, substantially as described and for the purposes specified. 13th. The combination of the counter-shaft L, the boxes M, the yoke or frame-work N, and means of adjusting said frame-work, substantially as set forth. 14th. The combination of the counter-shaft L mounted on the yoke or frame-work N, said frame-work and a screw, whereby the position thereof can be adjusted, substantially as set forth. 15th. The combination of the counter-shaft L, the yoke N mounted on pivots $n$ and the screw O provided with hand-nuts $o^1$, $o^2$, substantially as shown and described and for the purposes specified. 16th. The combination, with a grinding roll of a roller-mill, of a scraper consisting of a blade mounted in slides on the frame-work, and weighted levers mounted on fulcrums and adapted to keep said blade in contact with said roll, substantially as set forth. 17th. The combination, in a roller-mill, of a grinding roll, a scraper blade P, slides $p$ therefor, weighted levers $P^1$ and fulcrums $p^1$ therefor, the points of said levers extending under and holding said blade in position, substantially as set forth. 18th. The combination, in a roller-mill, of a grinding-roll, a scraper-blade having notches in its lower edge, and levers which extend across and rest upon fulcrums, and pass under and enter said notches, whereby said levers are secured against endway movement on said fulcrums, substantially as set forth. 19th. The combination of a scraper-blade, weighted levers for sustaining said scraper-blade, and fulcrums on which said levers are mounted, said fulcrums being flattened and said levers having lips $p^2$ adapted to come in contact with the side of said fulcrums and thus hold said levers from too great a movement, substantially as set forth. 20th. The combination of the scraper-blade P, the weighted lever $P^1$ having lips $p^2$ on the weight side of the fulcrum, and the fulcrum $p^1$ flattened or extended downwardly to form a stop, with which said lip may come in contact, substantially as shown and specified.

## No. 19,544. Lumber Dryer. (*Sécherie à Bois.*)

Aaron S. Nicholas, Chicago, Ill., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. The herein described platon for drying lumber, consisting of a flat coil of tubing combined with transverse series of bars or strips arranged to form bearings for the lumber on opposite sides of said flat coil of tubing, the bars of the series arranged to leave an opening between them, the said coil of tubing constructed for connection with, and discharge of a supply of steam or hot water, substantially as described. 2nd. The combination of a coil of tubing, with transverse series of strips or bars arranged to form bearings for the lumber on opposite sides of said flat coil, the bars constructed with their surface next the coils flat and the outside surface rounded, the bars arranged to leave an opening between them and the said coil constructed for connection with and discharge of a supply of steam or hot water, substantially as described.

## No. 19,545. Lever. (*Levier.*)

Daniel Buckley, Boston Mass., U.S., 9th June, 1884; 5 years.

*Claim.*—1st. In a device substantially such as described, the arm A provided with the slot $x$, and studs $m$, $d$, and the arm B provided with the slot $x$ and studs $i$, in combination with means for clamping said arms together and journalling or pivoting them, substantially as described. 2nd. In a device substantially such as described, the screw-bolt D provided with the round elongated head $z$ and flattened portion $t$, in combination with the nut E having the round elongated body $v$ for journalling and clamping the arms A B, substantially as set forth. 3rd. In a device substantially such as described, the standard C provided with the bolt D and nut E adapted to clamp and journal the arms A, B, substantially as described. 4th. The improved extensible lever, herein described, the same consisting of the arm A provided with the slot $x$ studs $d$, $m$, and holes $r$, the arm B provided with the studs $i$, slot $x$ and holes $r$, the screw-bolt D having the rounded head $z$ and flattened portion $t$, the nut E having the rounded body $v$, and the support C provided with the standard $t$, $f$, constructed, combined and arranged to operate substantially as set forth. 5th In a device substantially such as described, the arms A, B provided with the holes $r$ for attaching auxiliary arms to lengthen the lever, substantially as described.

## No. 19,546. Vapour Burner. (*Bec à Gaz.*)

Clarmont V. Best, Martin L. Best, Levi L. Miller, and Jacob Miller, Canton Ohio, U.S., 10th June 1884; 5 years.

*Claim.*—1st. The combination, with the angular heating-plate B, of the inclined passage $d$ communicating with the mixing-chamber near the upper end to form an oil jet, substantially as and for the purpose set forth. 2nd. The angular heating-plate B provided with corner side extension $q$, substantially as and for the purpose specified. 3rd. The angular heating plate B and inclined passage $d$, in combination with the passage $f$ having its upper portion extending along the underside of said angular heating plate, substantially as shown and described.

## No. 19,547. Improvement in Dentistry. (*Perfectionnement dans l'Art Dentaire.*)

Lucius T. Sheffield, (assignee of Cassius M. Richmond,) New York, N. Y., U. S., 10th June, 1884; 15 years.

*Claim.*—1st. The process of preparing roots for the reception of artificial dentures, which consists in grooving the same by opposite grooves, and then suddenly removing the crown from the root by suitable forceps, substantially as described. 2nd. The process of preparing a root for the reception of an artificial denture, which consists in removing the crown from the root by a suitable contrivance, and then immediately expelling the nerve from its cavity by driving a suitably-shaped piece of wood into the nerve cavity, substantially as described. 3rd. The process of treating and preparing the roots of teeth the same consisting in suddenly expelling the nerve from its cavity, as set forth, and then instantly filling the nerve cavity with a wooden plug, substantially as set forth. 4th. The process of preparing a root for the reception of an artificial denture, which consists in grooving the same, in cutting off the crown from the root by suitable forceps, in immediately driving into the nerve cavity a suitably shaped piece of wood, in removing the same and cleansing the nerve cavity, and in immediately plugging or filling the upper part of the nerve cavity by driving in another piece of wood, substantially as described. 5th. The process of treating teeth to remove the nerves, the the same consisting in isolating the tooth to be treated, and then sub-

jecting the latter to the action of a jet of volatile liquid until the nerve within the same is benumbed, subtantially as set forth. 6th. The combination of a prepared root having its natural terminal contour near the margin of the gum, with an enclosing cap attached thereto for supporting an artificial denture, substantially as described. 7th. The combination of a prepared root having its natural terminal contour near the margin of the gum, with an enclosing cap attached thereto, and with an artificial porcelain or other crown supported by said cap, substantially as described. 8th. The combination of a prepared root having its natural terminal contour near the margin of the gum, with an enclosing cap attached thereto, the said cap being attached to the root by a pine or suitable attaching contrivance passing upward and into a suitable cavity in the root, substantially as described. 9th. The combination of a tooth crown, a metallic backing soldered to said crown and a pin firmly soldered to said artificial backing and secured to and passing through a ferrule adapted to surround the root, substantially as described. 10th. The combination of the crown provided with a suitable attaching pin, the backing plate and the metallic backing united to ferrule and pin, substantially as described. 11th. The combination of the crown metallic backing united to protecting plate and pin, the root and cement uniting the pin to the root, substantially as described. 12th. The method of preparing an artificial denture, which consists in suitably preparing a root for the reception of a surrounding ferrule, retaining the natural terminal contour near the gum, in placing upon the back of a suitable tooth crown a backing of platinum or other suitable metal, in soldering said backing to the tooth crown by means of pins or clamps projecting through said backing and to the ferrule, substantially as described. 13th. The method of preparing an artificial denture, which consists in suitably preparing a root for the reception of a surrounding ferrule, in placing upon the back of a suitable tooth crown a backing of platinum or other suitable metal, in soldering said backing to the tooth crown by means of pins or clamps projecting through said backing and to the ferrule, in placing said prepared crown upon the tooth and in connecting the root with the crown, substantially as described. 14th. The combination of a prepared root, having attached to it permanently an enclosing cup with a removable denture or tooth crown, substantially as described. 15th. The combination of a root with an enclosing cap or covering, sealing the end of said root, said cap or covering having attached to it a threaded tube projecting upward into said root, substantially as described. 16th. The combination of the root *a* enclosing cap *l* and closed threaded screw *d*, with an artificial denture *a* or tooth crown F attached thereto by screw *g*, substantially as described. 17th. The combination of the root *a* enclosing cup *e*, artificial crown or denture *f* and screw *g*, the upper part of said denture *f* surrounding and fitting closely the ferrule at the cup *e*, substantially as described. 18th. The combination, with a natural root, of a metallic attachment covering the end of the root, a denture with a flat upper face adapted to fit the face of said attachment, and a connecting-screw, substantially as set forth. 19th. The combination of a denture comprising a metal bridge supporting two or more teeth, prepared roots or natural teeth with attachments secured thereto, and detachable receiving devices, whereby the denture is detachably connected to said roots or teeth at different points, as set forth. 20th. The combination of a root, and a hermetically closed cap placed over and enclosing the ends of said root or tooth, and a screw passing through the cap and root projecting substantially at right angles to the major axis of the tooth, substantially as described. 21st. An artificial denture consisting of a metallic bridge, artificial teeth supported thereby upon the outer side thereof, and two or more cups or caps adapted to natural roots or teeth and attached to the bridge, whereby the said teeth or roots are made the sole bearings of the denture, substantially as set forth. 22nd. An artificial denture, which consists of two cups or sockets adapted to fit over, and surround two teeth or roots connected together by an intermediate bar or support upon which artificial teeth are mounted, which bar constitutes the masticating portion of the denture, for the purpose of preventing the strain upon the artificial teeth, substantially as described. 23rd. The combination, with the fixed natural teeth or roots, of an intermediate bridge supporting artificial teeth, and provided with caps having their bearings upon the ends of such natural teeth and secured thereto by fastening means, substantially as set forth. 24th. The method of setting artificial porcelian teeth, which consists in drilling, through the hard supporting backing, one or more holes corresponding to a supporting pin or pins, and in then spreading or increasing the size of said pin or pins at its inner end, for the purpose of locking said porcelain teeth after they are in position, substantially as described. 25th. The combination of an artificial porcelain tooth with one or more tubular locking pins adapted to be spread at their inner ends, thereby locking the crown in position, substantially as described. 26th. The combination of an artificial porcelain tooth, and a tubular pin attached to a pin baked in the tooth, substantially as described. 27th. The combination of an artificial porcelain tooth with two holding devices consisting of flat strips of metal bent double, to form loops at the inner ends, one of said holding devices projecting at the top, and the other at the back of said artificial crown, substantially as described. 28th. The combination of the metallic bridge C, provided with sockets or holding devices D and extending between its support and free from contact with the gum, with the artificial tooth E and the artificial gum G extending above the bridge and covering the space between the latter and the natural gum, substantially as shown and described.

## No. 19,548. Carpenter's Bevel.

(*Sauterelle de Charpentier.*)

Benjamin F. Van Amringe, (Co-inventor with James B. Cumming,) and Matilda Henderson, Oakland, Cal., U. S., 10th June, 1884; 5 years.

*Claim.*—1st. In a carpenter's bevel, a stock or handle having at each end an adjustable blade, said blades being pivoted in parallel planes, substantially as described. 2nd. In a carpenter's bevel, the horizontally slotted stock A, in combination with the adjustable blades B, B1 having each a bevelled end and pivoted in parallel planes in opposite ends of the stock, substantially as herein described. 3rd. In a carpenter's bevel, the slotted stock A, in combination with the adjustable blades B, B1 having each a bevyled end and an end cut to a point to form a right angle, said blades being pivoted in opposite ends of the stock, substantially as herein described.

## No. 19,549. Hand Motive Power.

(*Moteur à Manivelle.*)

William H. S. Burgwin and Richard A. Dunlop, Richmond, Va., U. S., 10th June, 1884; 5 years.

*Claim.*—1st. In a sewing or other machine, the hand motor attachment consisting of the combination of the treadle, the projecting stud thereon, and the vertical rod or handle loosely pivoted thereto and having a vertical play, whereby motion is imparted to the treadle and the use of the feet to work the machine is obviated, substantially as set forth. 2nd. In a sewing or other machine, the hand motor attachment consisting of the combination of the treadle, the projecting stud thereon, the vertical rod or handle loosely pivoted thereto and projecting above the top of the table, whereby motion is imparted to the treadle, and the top of the table having the aperture D serving as guide to the vertical rod, and through which the vertical rod plays, substantially as set forth.

## No. 19,550. Fence. (*Clôture.*)

Abraham C. Scarr, Maryborough, Ont., 10th June, 1884; 5 years.

*Claim.*—1st. A postless movable fence, composed of conveniently portable panels, each complete in itself, set in sill laid on the ground surface and supported in an erect position by suitable lateral braces extending diagonally from the sills to the upper part of said panels, substantially as shown and described. 2nd. In a postless movable fence, the wire braces F attached to the sills E and having formed in them the loops *a*, substantially as shown and specified. 3rd. In a fence composed of movable panels, the holding pins *b* passing through the stiles B and through the loop *a* of the wire braces F, as shown and described. 4th. In a fence, the arrangement and combination of the rails A, stiles B, wire bars C, cross wires D, sills E, with the wire braces F attached to said sills and having the loops *a*, substantially as shown and described and for the purpose set forth.

## No. 19,551. Boot or Glove Fastener.

(*Agrafe de Botte ou de Gant.*)

George Valiant, Toronto, Ont., 10th June, 1884; 5 years.

*Claim*—1st. The bar or plate A, having a slot or groove *a* made in it, and a head *b* formed at one end, in combination with a pin or staple *c* secured to the material, substantially as and for the purpose specified. 2nd. A bar or plate A, having a slot or groove *a* made in it, and a groove head *b* formed at one end of it, in combination with a flat plate B fixed to the material C, and having jaws *d* between which the bar A is inserted, and a pin *c* to pass through the slot *a*, substantially as and for the purpose specified. 3rd. A bar A, having a groove or slot *a* formed in it, and heads *b* and *f* formed on it, in combination with a pin *c* arranged to connect the bar to the material, substantially as and for the purpose specified.

## No. 19,552. Non-Conducting Covering.

(*Couverture non-Conducteur.*)

George Kelly, Chicago, Ill., U. S., 10th June, 1884; 5 years.

*Claim.*—1st. In a non-conducting covering, the casing A formed with a small fold *a1* and a main fold *a2*, substantially as described and for the purpose set forth. 2nd. In a non-conducting covering, the casing A formed with a small fold *a1*, main fold *a2* and overlap *a3*, substantially as described and for the purpose set forth. 3rd. The combination, with a non-conducting covering, of a staple or staples *c* having sunken bearing bars *c1*, as described and for the purpose set forth.

## No. 19,553. Box. (*Boîte.*)

Henry A. Shaw and Edward D. Chidley, Toronto, Ont., 10th June, 1884; 5 years.

*Claim.*—1st. The box A provided with the headed pins or screws *h*, in combination with the cover B provided with the corresponding claw-plates *i*, substantially as and for the purposes set forth. 2nd. The box A provided with headed pins *h* on its upper edges, and formed with an offset *e* at the upper edge of one of the side pieces, in combination with the cover B provided with plates *i* having open slats thereon, and the locking springs *f* on the under side of the lid and arranged to engage the offset *e* when the cover is in place, substantially as set forth. 3rd. The box A, the end pieces of which are cut away on their upper edges at *b*, headed screws or pins *h* within said cut away portions and the offset *e* formed between the end piece and the side of the box, as shown, in combination with the cover provided with plates *i*, having flaring open slats bevelled on their under edges, and plate spring *f* on the under side of the cover at the corner, and constructed to engage the offset when the cover is in place, substantially as set forth.

## No. 19,554. Buffer for Railways.

(*Tampon de Choc pour Chemins de fer.*)

John T. Schoffer, Rochester, N.Y., U.S., 10th June, 1884; 5 years.

*Claim.*—1st. In a buffer, the combination of the hydraulic and pneumatic cylinder, provided with passages for the admission of the outer air, the piston and the piston rod, whereby both air and liquid are at the same time utilized as cushions, both in colliding and in pulling, substantially as described. 2nd. The combination of the cylinder, the piston, the piston rod and the springs, the said springs arranged within the cylinder and one on each side of the piston to take up the shock in colliding or in pulling, and the air and liquid cushions, substantially as described. 3rd. In a buffer, the combination of the cylinder, the piston, the piston rod with a cut out portion, such as *b*, and the springs on opposite sides of the piston, substantially as described. 4th. The cylinder, provided with the passages for the

admission of air and of liquid, in combination with the piston provided with the passages for admission to both sides of the piston, of the air and liquid, and the piston rod also provided with a similar passage, substantially as described. 5th. The combination of the cylinder provided with the flange $e^1$, the draw bar or piston rod with the cut out portion $b$ and the timber supports $f$ and $e^2$, substantially as described.

## No. 19,555. Gate. (*Barrière.*)

Amon W. Chilcott, Mattoon, Ill., U.S., 14th June, 1884; 5 years.

*Claim.*—1st. The combination, with a sliding gate, of a bar K pivoted near one end thereof, a dip O in the side of the gate and an elbow-lever J having one arm pointed to the said rod, and so arranged, with reference to the gate and its operating mechanism, that the said arm of lever J and the bar K will be in alignment, or nearly so, whenever the gate is closed, and thus lock it securely, as described. 2nd. The combination, with the gate A, of the elbow-lever J, the connecting bar K, the connecting rods L and the levers M pivoted on the cross piece N of a standard C, substantially as herein shown and described and for the purpose set forth. 3rd. The combination, with the gate A, of the elbow lever J, the connecting rod K, the clip O, and of levers and connecting rods for swinging the angle lever J, substantially as herein shown and described and for the purpose set forth.

## No. 19,556. Valve Mechanism.

(*Mécanisme de Soupape.*)

Charles Belknap, Bridgeport, and John W. Bradley, Stratford, Ct., U.S., 14th June, 1884; 5 years.

*Claim.*—1st. An improved valve, composed of a valve seat, a stiff hinged arm having a stationary bearing, and a non-rotating disk loosely connected to the arm, substantially as set forth, so that, when the disk is pressed to its seat, it is free to adjust itself and bear equally at all points. 2nd. The combination, with the sectional valve shell, of an independent removable, dished or recessed valve seat, firmly clamped between the sections of the shell (whereby a light internal packing is afforded) and the valve contained within the valve seat, substantially as described. 3rd. The combination of the hinged valve and an independent removable dished or recessed valve seat, with shoulders integrally formed therewith, which are provided with sockets for the bearing pin of the hinged valve, substantially as set forth. 4th. The combination, with the valve shell, of an independent removable, dished or recessed valve seat, containing a valve composed of a hinged arm, and a removable disk loosely connected together, the valve seat and valve being conveniently removable together from the shell, substantially as set forth.

## No. 19,557. Gradual Reduction Machine.

(*Machine à Réduction Graduelle.*)

The Case Manufacturing Company (Assignee of John M. Case), Columbus, Ohio, U.S., 14th June, 1884; 5 years.

*Claim.*—1st. In a gradual reduction machine, the combination of a vertical series of rolls, riddles and return boards, an iron frame on which are mounted the rolls and the gearing for driving the same, and a wooden frame of any necessary length, extending therefrom and supporting the ends of the riddles and return boards, substantially as set forth. 2nd. In a gradual reduction mill, the combination, with a vertical series of paired rolls, of a belt-tightening pulley located between each two pairs of said rolls, in the manner and for the purpose set forth, and means for simultaneously operating said pulleys, as described. 3rd. In a quadral reduction mill, the combination, with a vertical series of roll-driving pulleys and a belt passing over said pulleys, of a series of tightening pulleys located in position relatively to the rolls to adapt them to take the belt, as it passes from each roll, and deflect it out of its natural course, whereby it is made to encircle a greater part of the peripheries of the roll pulleys, and means for simultaneously adjusting said series of tightening pulleys for taking up slack in the belt, substantially in the manner set forth. 4th. The combination of the eccentric shaft 20, having a box fitted loosely thereon, the riddle straps 18, suitable horizontal friction pulleys and springs 21 for imparting a vibrating motion to the riddle, as set forth. 5th. The combination of two or more riddles and their connecting straps, with an eccentric shaft common to all, a box loosely fitted thereon, and springs acting in opposition to said straps for imparting a shaking movement to said riddles in opposite directions, so that each will counteract the momentum of the others, as explained. 6th. The combination of a riddle, a return board suspending hangers and adjusting support common to both, substantially as and for the purpose set forth.

## No. 19,558. Electric Automatic Railway Signal Register. (*Registre de Signal Electrique Automatique pour Chemins de Fer.*)

George W. Babbitt, Alonzo Ellison and Joseph H. Bacon, St. Thomas, Ont., 14th June, 1884; 5 years.

*Claim.*—1st. The key board E, attached to an electric circuit and operated by any mode of changing the position of the signal, enabling the party interested to know that said signal is changed, as desired. 2nd. And the arrangement of the keys, Fig. 4 and Fig. 5, on the key board, to indicate any particular signal.

## No. 19,559. Machine for making Felt Boots. (*Machine pour Confectionner les Bottes de Feutre.*)

Laurent Ruel, Merrimac, Mass., U.S., 14th June, 1884; 5 years.

*Claim.*—1st. In a felt boot machine, the vat B having the two bottoms $b$, the upper one being perforated, as and for the purpose set forth. 2nd. In a felt boot machine, the jaws $c$, $c^1$, spring $d$, eccentric $e$ and lever $f$ substantially as described. 3rd. The cylinder C, placed as shown, the pipe E working in said cylinder, carrying the piston $h$ and rack $k$, substantially as shown and described. 4th. The tree pieces F and $F^1$, connected by the arms $i$ to the rod $j$ in such a manner that the opposite arms $i$ form a toggle joint to be operated upon by the rod $j$, for moving the tree piece F, $F^1$, together or apart, substantially as and for the purpose set forth. 5th. In a felt boot machine, the rod $j$ working in the pipe E, and having its lower part widened where it passes through a slit in the floor of the machine or the building, $s$, as thereby to prevent its turning and operated upon by the foot lever G, substantially as shown and described. 6th. The arrangement and combination of the pulley H, with the rack $k$, pinion $l$, ratchet wheel $m$ and pawl $n$, substantially as and for the purpose set forth. 7th. In a felt boot machine, the combination of the tree piece $F^1$ having the heeler J sliding therein, with the lifting rod K and the levers L and M for operating the same, substantially as herein shown and described. 8th. In a felt boot machine, the combination of the cylinder C, with the clamps $u$, placed as shown, and movable by the levered eccentrics $v$, for the purpose herein specified. 9th. In a felt boot machine, the steam pipe $s$ branching into the steaming vat B and the cylinder C, substantially as and for the purpose herein specified.

## No. 19,560. Axle for Two-Wheeled Vehicles.

(*Essieu pour Voitures à deux Roues.*)

Frank Gilbert, Union, Ind., U.S., 14th June, 1884; 5 years.

*Claim.*—1st. The combination, with a metallic axle formed with two longitudinal beds, of a spring located transversely on said beds, substantially as set forth. 2nd. The combination, with an axle formed with two beds substantially parallel with, and on opposite sides, of a straight line forming the axle-spindles, of a spring resting upon and secured to both said beds, substantially as set forth.

## No. 19,561. Cheese Press. (*Presse à Fromage.*)

George W. Hay, Syracuse, N.Y., U.S., 14th June, 1884; 5 years.

*Claim.*—1st. A gang press, having a platen provided with arms, which bear against the followers of several series of cheese hoops supported in the press frame, and operated by suitable pressing mechanism to simultaneously press said series of hoops. 2nd. A gang press, having a platen carrying the pressing screw, and provided with arms bearing against the followers of cheese hoops arranged in separate tiers within the press frame, and combined with an adjustable head block, substantially as specified. 3rd. The combination of a platen adapted to bear against the followers of separate tiers of cheese hoops, a press frame provided with quadruplex way, and a central guide channel and a pressing screw, substantially as described. 4th. The platen P, having central hub or boss $p$ and arms $p^1$, $p^1$ radiating from the centre, and guides or slides $s$, $s$, substantially as and for the purpose specified. 5th. The combination of the platen P, constructed as described, with a screw $s$ and pawl and ratchet, said pawl consisting of the dogs $d$, $d^1$ adapted to engage with and reverse the action of the screw, substantially as described. 6th. A gang press frame, composed of the ways $w$, $w$, central guide channel $c$, and having side opening $a$, $a$ for the admission and removal of the lower tiers of hoops, substantially as specified. 7th. The within described gang press, composed of the platen press screw frame, adjustable head block and the tension or take up screw T or its equivalent, substantially as and for the purpose specified.

## No. 19,562. Turbine Water Wheel.

(*Turbine Hydraulique.*)

Joseph Raab, Dayton, Ohio, U. S., 14th May, 1884; 5 years.

*Claim.*—1st. In a turbine water wheel, the combination of the shaft and hub having the buckets, as described, with the casing gate and crown cover, said gate being suspended on the upper rim of the casing by journals to which are arranged the friction rollers, substantially as set forth. 2nd. In a turbine water wheel, the case provided with the annulus on its top rim, the combination of the gate suspended and held therein on the friction rollers, as described, with the crown top and guide, said guide having the key turning in the slot in the top rim of the casing and adapted to engage between the shoulders on the gate, as set forth. 3rd. In a turbine water wheel, the combination of the shaft having the hub and buckets, as described, the gate and casing and the crown top having thereon the means for operating the gate with the bridge tree and step, said bridge tree having a standard to each side of the step on which is secured a guide plate for the shaft, as set forth. 4th. In a turbine water wheel, the herein described combination of the gate having the shoulders $i$, $i$, suspended on the upper part of the rim of the casing by the friction rollers, and adapted to be controlled by the key in the crown top, with the wheel having the buckets and annular rim K, as set forth, said buckets being contiguous to the openings of the gate and casing. 5th. In a water wheel, the combination, with the wheel and shaft, of the thimble $g$ having flange $g^1$, stuffing box G fitting on said flange, the bridge tree step $a$ and guide plate $b$, said parts being formed and arranged substantially as set forth.

## No. 19,563. Type Rubbing Machinery.

(*Machine à Frotter les Caractères d'Imprimerie.*)

George S. Eaton, Brooklyn, N. Y., U. S., 14th June, 1884; 5 years.

*Claim.*—1st. The combination, in a type-rubbing machine, of the adjustable heads B, C, cutters $i$ and revolving conveyer $l$, substantially as set forth. 2nd. The combination of the heads B, C having rubbing surfaces $q$ and cutters $i$, with the revolving conveyer $l$, feed table F, delivery inclines $l^1$, galley $m$ and means, substantially as described, for moving the line of types endwise, substantially as set forth. 3rd. The feeding table, having an inclined base-plate G and the adjustable guides 3 and 4, in combination with the adjustable heads B, C, conveyer $l$ and cutters $i$, substantially as set forth. 4th. The combination, with the rubbing mechanism and galley $m$, of the pusher $s$, revolving cams 13, tappet 12, shaft $t$ and spring 11, substantially as specified. 5th. The combination, in a type-rubbing machine, of

adjustable rubbing surface cutters, and a conveyer to carry the types through between the cutters and the rubbing surfaces, substantially as specified.

## No. 19,564. Pipe Tongs or Wrench.

*(Pinces ou Clé de Tubes.)*

Thomas Patton, Cleveland, Ohio, U. S., 14th June, 1884 ; 5 years.

*Claim.*—1st. In a pipe-wrench, the combination of the serrated *a*, *b*, of the cam head with the handle, as described, said part *b* having the projection adapted to fit in the part *a* forming a neck, said parts being separable, as and in the manner described. 2nd. In a pipe-wrench, the combination of the rigid cam, of two separable parts forming a continuous screw-threaded neck when put together, as described, and the socketed handle with the movable pivoted curved jaw, said jaw being s rrated and formed with the side checks for holding it in position, as set forth. 3rd. In a pipe-wrench, the handle formed of either a hollow or solid bar provided at one end with a screw-threaded socket, in combination with the parts *a*, *b* joined and forming the screw-threaded neck, as described, and the curved movable jaw pivoted between them, said parts being formed and connected substantially as described. 4th. The combination, in a pipe-wrench, of the side jaws or parts provided with tongue and groove tapering joints, and central serrated piece, the former being adapted to fit a socketed handle, as set forth. 5th. The combination, in a pipe-wrench, of the side jaws tongued and grooved together and increased in thickness to form a space between the jaws, a central gripping jaw pivoted and working in said space, which jaw is enlarged at its serrated end to keep its place on the jaws and to counterbalance the pressure and gripping surface on each side of a pipe, as set forth. 6th. A pipe-wrench, consisting of the central pivoted jaw, the separable side portions of the cam, as described, and handle, the side portions being socketed in the handle, as an article of manufacture.

## No. 19,565. Skate. *(Patin.)*

Patrick J. Doherty, Chelsea, Mass., U. S., 14th June, 1884 ; 5 years.

*Claim.*—1st In a skate, in combination with the toe and heel plates, the sliding clamps operated by racks extending lengthwise of the skate and a free cog-wheel, substantially as set forth. 2nd. In a skate fore and heel clamps operated by means of rack-bars, each connected thereto respectively at one end and free at the other, and a cog wheel, whereby said bars have a direct movement lengthwise of the skate, substantially as described. 3rd. In a skate, the combination, with toe plate A, pivoted side clamps D, rack-bar *e* and cog-wheel G G. of the rack-bar *f*, heel clamps F, F1 and plate B, substantially as described. 4th. In a skate, sliding heel and fore clamps each having a rack combined with a free cog-wheel, substantially as described. 5th. In a skate, in combination with toe and heel plates A and B, pivoted side clamps D, movable heel clamp F, rack-bars *e* and *f* and cog-wheel G G of the spring pawl H, substantially as described.

## No. 19,566. Interchangeable Chart Frame.

*(Porte-Carte à Succession Alternative.)*

James E. Hamilton, Two Rivers, Wis., U.S., 14th June, 1884 ; 5 years.

*Claim.*—1st. In an interchangeable chart-frame, the combination of the side bars A, A and top and bottom bars B, B1, forming a skeleton frame, with the transverse supports D and the letter or symbol blocks E, E, the contiguous surface of the parts D and E being held together by means of horizontal grooves in one of them, receiving the edges of the other both above and below, and each alternate groove being of different depth from the groove immediately above and the groove immediately below it, whereby every block E shall be firmly held at its upper and lower edge and yet be capable of removal, interchange or replacement without disturbing the block or either side of it, substantially as set forth. 2nd. In an interchangeable chart-frame, the combination of the skeleton frame A A B B1, the base C forming part of the frame and divided into compartments to retain the letter-blocks, the transverse supports D and the blocks E, E, substantially as set forth. 3rd. In an interchangeable chart-frame, the combination of the skeleton frame A A B B1 and the transverse supports D having rear extended flanges *b* of greater height or depth than their front flanges, and having between said front and rear flanges the shallow grooves *a* and the deeper groove *a1* with the letter or symbol blocks E, E, substantially as set forth.

## No. 19,567. Harrow. *(Herse.)*

Enoch J. Rogers, Little Britain, Ont., 14th June, 1884 ; 5 years.

*Claim.*—1st. As a means of general enlockment together of the parts in drag harrows, the tooth driven drawborewisely, as described, through an iron clip block upon the bull made in staple form and upon the cross bars in pairs, which at their intersecting point also pass through the said clip block straddlewise upon and at right angle to the tooth, substantially as and for the purpose set forth. 2nd. The combination of the single malleable iron clip F, the tooth E and the staple bull A A, substantially as and for the purpose herein set forth.

## No. 19,568. Pencil-Clasp and Pocket-Holder. *(Serre-Crayon et Agrafe.)*

Gustavus A. Schlechter, Reading, Pa., U.S., 14th June, 1884 ; 5 years.

*Claim.*—1st. In combination, with an elastic case adapted to receive and adjust itself to pencils of varying diameter, provided with a presser foot spring and an attaching pin, the movable and reversable holder G having at one end a pen and at the opposite end an eraser, a hook J on said movable holder serving to lock the pin of the case to the material, substantially as shown and for the purpose described. 2nd. The adjustable and reversible holder G, as shown, having at one of its ends a receptacle for and provided with an erasure, and at its opposite end provision for, and the insertion of a writing pen K with a pencil sharpener Q within the pen pocket P, a hook J and an interlocking bead I, in combination with an elastic pencil case clash pin F, slot C and bead D, substantially as and for the purpose set forth.

## No. 19,569. Car Door. *(Porte de Char.)*

Thomas Lee, Cincinnati, Ohio, U. S., 14th May, 1884 ; 5 years.

*Claim.*—1st. A plain car-door frame, having along the floor an angled groove or recess H to receive the flange of the door, said groove having holes I through the floor, substantially as herein set forth. 2nd. The floor of the car-door opening, having the angled groove H, in combination with the door D having the projecting or flanged ends J, K1 to enter the grooved floor, substantially as herein set forth. 3rd. The combination of the car-door opening having the angled groove E into floor, and the vertical bars or rods L on the sides, with the door D having the staples or eyes M and the flanged lower end, substantially as herein set forth.

## No. 19,570. Fruit Evaporator.

*(Séchoir à Fruits.)*

George L. Grier, Milford Del., U. S., 14th June, 1884 ; 5 years.

*Claim.*—1st. The combination of the lifting bar B, B1, &c., arranged in four pairs and provided with lifting pawls, the two rock shafts C, C1, with arms *c*, *c1* connected to the oppositely moving bars, the cranks H, H1, the links I and lever J, as and for the purpose described. 2nd. The combination, with the evaporator case, of the bars L, L, the screen J2 and the longitudinally adjustable crank shaft K attached to, and operating the screen, as and for the purpose described. 3rd. The combination, with the case of fruit evaporator, of a screen or damper arranged at the bottom thereof and between it, and the heater, the said screen having an integral adjustment back or forth and to each side of the central position, as described. 4th. The combination, with a fruit evaporator case and sets of reversely working pawls, of a skeleton frame of the same dimensions as the interior of the case, and trays of smaller size resting thereon, as described. 5th. The combination of the reck shafts and their arms, of the point bolts having eyes and the vertically-reciprocating bars extended through said eyes and secured adjustably therein by nuts, as described.

## No. 19,571. Ticket Punch.

*(Emporte-Pièce pour Billets.)*

Carl J. A. Sjoberg, Bridgeport, Ct., U. S., 14th June, 1884; 5 years.

*Claim.*—1st. The combination, in a ticket punch, of two levers A, B pivoted together, the lever B terminating in two arms, one carrying a punch and the other having an opening below the punch, and the lever A terminating in an arm extended over the punch, substantially as set forth. 2nd. The combination, in a punch, of the levers A, B having arms *b*, *c*, *f*, the arms *b* and *c* forming part of one of the levers, and a punch C sliding in the end of the arm *c*, substantially as set forth. 3rd. A ticket punch, in which one of the levers is provided with two arms one of which is perforated to receive the end of the punch pin while the other has a terminal head adapted to receive said pin, substantially as specified. 4th. A ticket punch, in which the punch pin is guided in a head, in an arm overhanging the portion having the opening for the reception of the end of the punch pin, the said head constituting a gauge, substantially as specified. 5th. The combination, in a punch, of a lever B having terminal arms *c*, *b*, the arm *c* provided with a head receiving the punch pin, and a lever A having an arm extended over the end of the punch pin, and a spring connected to elevate the punch pin, substantially as set forth.

## No. 19,572. Cash and Parcel Carrier.

*(Transport pour la Monnaie et les Paquets.)*

James Burns, Chicago, Ill., U.S., 14th June, 1884; 5 years.

*Claim.*—1st. The combination of the track wires W, W1, and means for giving them proper tension, elevating slide S having the fingers S1, S1, guide wires *x1*, *x1*, cord *m* and pulley *i*, carrier *a* having a cash receptacle wheels *e* and hook *c1* arresting and delivering slide F having the arm D, cord *n*, weight *z2* and pulley *z*, all adapted to operate, as and for the purpose hereinbefore set forth. 2nd. In the cash and parcel carrier described, the combination of the track wire W1, slide F having the arm D, guide wires X, X, cord *n*, weight *z2* and carrier *a* having the wheels *e* and hook *c1*, all adapted to operate as and for the purpose hereinbefore set forth. 3rd. In the cash and parcel carrier described, the combination of the wire W, slides S having the fingers S1, S1, guide wires *x1*, *x1*, cord *m* and carrier *a* having the grooved wheel *e* and hook *c1*, all adapted to operate as and for the purpose hereinbefore set forth. 4th. In the cash and parcel carrier described, the combination of the track wire W having the enlargement E, carrier *a* having the parcel hook *h*, catch basket B having the slotted bottom B, bail *d3*, guide bars *d*, *d*, cross bar *d2* and cord *d d1*, pulleys *z4*, *z3* and weight *d3*, all adapted to operate as and for the purpose hereinbefore set forth. 5th. In the cash and parcel carrier described, the combination of the track wires W, W1, roller shaft R', levers R2, frame R and sliding bars R3, all adapted to operate as and for the purpose hereinbefore set forth. 6th. In the cash and parcel carrier described, the combination of the track wire W, arresting and delivery slide F having the switch arm D3 and arm D, guide wires *x*, *x*, cord *u*, weight *z2* and cross bar D11, all adapted to operate, as and for the purpose hereinbefore set forth. 7th. In the cash and parcel carrier described, the flat track wire having the branches W3 and W4 and switches W5, W6, as and for the purpose hereinbefore set forth. 8th. In the cash and parcel carrier described, the basket B having the slot B1, as and for the purpose hereinbefore set forth.

## No. 19,573. Apparatus for Amalgamating and otherwise Treating Ores.

*(Appareil pour Amalgamer et autrement Traiter les Minerais.)*

Elias Bollinger, Louisville, Md., U.S., 14th June, 1884; 5 years.

*Claim.*—1st. In an amalgamating and guiding apparatus, the combination of an amalgamating pan having a central revoluble shaft provided at its lower end with rolls and scrapers, a pair of crushing-rolls situated over the said amalgamating-pan, and a chute to convey ore to the said crushing-rolls, substantially as and for the purpose specified. 2nd. In an amalgamating and grinding apparatus, the combination of an amalgamating pan, having therein revoluble rolls and scrapers, and a steam pipe to heat the contents of the said amalgamating pan, substantially as and for the purpose specified.

## No. 19,574. Apparatus for Grinding, Crushing, or Reducing to Powder, Ores, Quartz, or other like Substances. (*Appareil pour Moudre, Ecraser ou Pulvériser les Minerais, Quartz, ou autres Substances semblables,*)

Thomas W. B. Munford and Robert Moodie, Victoria Docks, Eng., 16th June, 1884; 5 years.

*Claim.*—1s. The combination of parts constituting the apparatus for grinding, crushing, or reducing to powder, ores, quartz or other like substances, constructed substantially as hereinbefore described and illustrated by the accompanying drawings. 2nd. In apparatus, such as is herein described, as applicable for crushing or reducing ores, quartz or the like, to powder, by means of rolls, the use of a jogging or vibrating, perforated or reticulated, inclined plate or tray for separating foreign matter from the ores or the like, preparatory to feeding them to the rolls, substantially as hereinbefore described and illustrated by the accompanying drawings. 3rd. In apparatus, such as is herein described, as applicable for crushing or reducing ores, quartz or the like, to powder, by means of rolls, the combination of rolls with a chamber or receptacle beneath, and with an elevator conducting the materials to a receptacle below, in which are different sized riddles or sieves (preferably jogging or vibrating) with compartments or receptacles below, and shoots, so arranged that the matters, after being acted upon by the grinding rolls, are elevated to the said riddles or sieves and sorted thereby and redistributed for regrinding and for discharge, substantially as hereinbefore described and illustrated by the accompanying drawings. 4th. Providing in apparatus, such as is herein described, as applicable for crushing or reducing ores, quartz or the like, to powdered receptacles, with adjustable valves or deflector plates *i*, for the purpose of dividing and redistributing the material which passes over the ends of the riddles or sieves, substantially as hereinbefore described and illustrated in the accompanying drawings.

## No. 19,575. Electric Wire. (*Fil Electrique.*)

Charles McIntire, Newark, N.J., U.S., 16th June, 1884; 5 years.

*Claim*—The improved electric wire, composed of a core wire and a covering arranged around and in contact therewith, the edges of said covering overlapping and being soldered together, substantially as herein set forth.

## No. 19,576. Paper Holder. (*Serre-Papier.*)

Benjamin F. Eaton, Coxsachie, N.Y, U.S., 16th June, 1884; 5 years.

*Claim.*—1st. In combination with a holder for a roll of paper, a knife with serrations or points on its edge and axis for the knife to swing in, and counter-poise to bring the knife into a nearly vertical position when not in use, substantially as set forth. 3rd. The knife and the means for supporting a roll of paper, in combination with the elastic strip *h* in contact with said roll of paper, for the purposes and substantially as set forth. 4th. The combination, with the roll of paper and means for supporting the same, a knife, pivots for the same to swing upon, and a weight or spring to swing the edge of the knife up toward the roll of paper, substantially as set forth.

## No. 19,577. Screw-Driver. (*Tourne-Vis.*)

Christopher H. Olsen, Decatur, Ill., U.S., 16th June, 1884; 5 years.

*Claim.*—1st. The combination of a cylinder, provided on its inner surface with a set of helical grooves, a screw-driver shaft fitted in said cylinder and provided on its inner end with a series of projections, and a drive block having a limited amount of motion longitudinally on the inner end of the driver shaft, provided with projections adapted to fit into and receive motion from the grooves of the cylinder, and also provided with recesses adapted to engage the projections of the shaft and impart motion thereto. 2nd. The combination, in a screw-driver, of cylinder *a* provided with two sets of helical grooves, *e*, traversing the inner surface of the cylinder in opposite directions and terminating in recess *f*, shaft *d* provided with projections *k* and block *g* provided with recesses *n* and pivoting projections *h*. 3rd. The combination, with cylinder *a* and shaft *d*, of bearing *c* provided on its inner surface with a circumferential concavity, as and for the purpose set forth.

## No. 19,578. Tire for Road Vehicle Wheels. (*Bandage pour Roues de Voiture Routière.*)

John B. Armstrong, Guelph, Ont., 16th June, 1884; 5 years.

*Claim.*—A tire, having inwardly projecting flanges on each side, the cross section of each flange being semi-circular, commencing at and forming part of the outer edge of the tire, and continuing on a circle till it reaches the inner flat surface of the tire, substantially as and for the purpose specified.

## No. 19,579. Lawn Mower. (*Faucheuse de Gazon*)

Fuller Trump, Springfield, Ohio, U.S., 16th June, 1884; 5 years.

*Claim.*—1st. In a lawn mower having connected disks B, flanged wheels C and a cutter-shaft provided with pinions driven by gears from said wheels, recesses in the plates B opposite the bearing plates of the shaft F, and closing plates adapted to said recesses, substantially as specified. 2nd. A lawn mower having connected disks, flanged wheels and cutter shaft carrying pinions driven from gears enclosed in said wheels outside of the disks, and with recesses in the disks permitting the ends of the shaft with the attached pinions to be placed in, and removed from the bearing, substantially as set forth. 3rd. A lawn mower having bearings for the cutter-shafts adjacent to disks at the inner sides, or flanged wheels and openings in said disks permitting the shaft to be placed in, and lifted from said bearings, substantially as set forth. 4th. A lawn mower having bearings for the cutter-shaft adjacent to connected disks attached to the cross-bar, and with openings adjacent to said bearings and with guards or closing pieces for said openings, substantially as set forth. 5th. The combination, in a lawn mower, of the connected disks and bearings H secured thereto, and removable plates adapted to cover openings in said disk adjacent to the bearings, substantially as set forth. 6th. The combination of the disks B, bearings for the shaft of the cutters and openings adjacent to the bearings, and plates adapted to cover said openings, and carrying cap pieces for confining the shaft to the bearings, substantially as specified.

## No. 19,580. Watch Case. (*Boîte de Montre.*)

George S. Ladd, Providence R. I., U. S., 16th June, 1884; 5 years.

*Claim.*—The combination, with the centre rim of a watch-case, of the flat plate E covering the flattened portion of the rim between the hinge and the edge of the rim, and extending beyond the rim to form a protection or wearing-surface, as set forth.

## No. 19,581. Telephone Receiver. (*Récepteur Téléphonique.*)

Théodore F. Taylor, Brooklyn, N. Y., U. S., 16th June, 1884; 5 years.

*Claim.* 1st. A telephone receiver which is thrown into vibration by the varying force of attraction or repulsion mutually exerted between different portions of the same electric conductor, when said conductor is traversed by an electrical current of varying strength. 2nd The combination, substantially as hereinbefore set forth, of an electrical conductor formed into two confronting flat spirals situated in parallel planes, and means, substantially such as described, for supporting the same in position. 3rd. A telephonic receiving instrument consisting of an electrical conductor formed into one or more spiral coils, and means serving to support the spirals in their relative position. 4th. A telephonic receiving instrument, consisting of an electrical conductor, so disposed that the different portions of its length extend in directions parallel to each other. 5th. A telephonic receiving instrument consisting of an electric conductor, so disposed that an electric current traversing the same will cause a variable attractive or repulsive force to be exerted between different portions of the conductor. 6th. In a telephone receiver which is thrown into vibration by the varying force of attraction or repulsion mutually exerted between different portions of the same electrical conductor, when said conductor is traversed by an electric current of varying strength, a plate or mass of soft iron serving to re-enforce the vibration of the same. 7th. The combination, substantially as hereinbefore set forth, of an electrical conductor formed into two confronting flat spirals situated in parallel planes, and a plate of soft iron intervening between the same. 8th. A telephonic receiving instrument consisting of an electrical conductor formed into one or more spiral coils, means serving to support the spirals in their relative position, and a soft iron plate intervening between the same. 9th. A telephonic receiving instrument consisting of an electrical conductor so disposed that the different portions of its length extend in directions parallel to each other, and two non-magnetic plates upon which said coils are respectively supported. 10th. A telephonic receiving instrument consisting of an electrical conductor so disposed that the different portions of its length extend in directions parallel to each other, two non-magnetic plates upon which said coils are respectively supported, and a soft iron plate serving to re-enforce the vibrations imparted to said non-magnetic plates. 11th. A telephonic receiving instrument consisting of an electric conductor so disposed that an electric current traversing the same will cause a variable attractive or repulsive force to be exerted between different portion of the conductor, a non-magnetic support for said conductor and a plate of soft iron placed in proximity to said conductor. 12th. In a telephone receiver, the combination, substantially as hereinbefore set forth, of a vibrating medium, two enclosing plates for the same, one of which plates is perforated, substantially as described. 13th. In a telephone receiver which is thrown into vibration by the varying force of attraction or repulsion exerted between different portion of the same electrical conductor, when said conductor is traversed by an electrical current of varying strength, the use of soft iron for re-enforcing the action of the instrument. 14th. A telephonic receiving instrument consisting of an electrical conductor so disposed that the different portions of its length extend in directions parallel to each other, and an iron case upon or within which said conductor is supported. 15th. A telephonic receiving instrument consisting of an electric conductor so disposed that an electric current traversing the same will cause a variable attractive or repulsive force to be exerted between portions of the conductor, and an iron case in which said conductor is supported. 16th. The combination, substantially as hereinbefore set forth, of an electric conductor formed into two or more flat spirals situated in parallel planes, and soft iron plates for supporting the same. 17th. A telephone receiver consisting of the combination, substantially as hereinbefore set forth, of two soft iron plates, a non-magnetic supporting spool or core for the same, a coil of insulated wire surrounding said spool or core, and means for attaching conductors to the terminals of said coil 18th. A telephonic receiving instrument consisting of a series of parallel insulated electric conductors included in the circuit, of a main line in multiple arc, substantially as described. 19th. A telephonic receiver consisting of one or more insulated electric conductors wound upon a flat supporting frame, and provided with means for securing electrical connections therewith, substantially as set forth.

## No. 19,582. Hay and Grain Rack Elevator.

*(Monte-Râtelier pour le Foin et le Grain.)*

Peter G. Walker, Westwood, Ont., 16th June, 1884; 5 years.

*Claim.*—The shaft A, journalled at an elevation overhead in a barn or building, and having attached to it ropes I1 I1 passing over pulleys *a*, *a* to the load to be lifted, grooved pulley C having wound upon it, rope D and provided with brake lever L1, cord *l*1, pawls K and cord *k*, the whole being arranged to operate substantially as and for the purpose described.

## No. 19,583. Machine for Gumming and Sharpening Saws. *(Machine pour Fréder et Aiguiser les Scies.)*

Samuel C. Rogers, Hamilton, Ont., 16th June, 1884; 5 years.

*Claim.*—1st. In a saw gummer and sharpener, of a double hinge device to produce a parallel motion of spindle and grinding wheel, substantially as and for the purpose specified. 2nd. The combination, in a saw gummer or sharpener, of the movable frame A, the hinge frame F and bed plate G to carry a non-sliding spindle to which a grinding wheel is attached, all constructed and relatively arranged substantially as herein set forth. 3rd. In combination with a saw gummer and sharpener, of the hinged guide H, substantially as and for the purpose specified. 4th. In combination with a saw gummer and sharpener, of the slotted plate *d*, the same being formed at one end with a lug *d*1 and projection *k*, the guide arm *f* hinged to the plate *d*, a spring *g* attached to guide arm *f* and made adjustable by thumb screws *h*, *i* and *i*1, a stop screw *j*, all constructed substantially as and for the purpose specified 6th. In combination with a saw gummer and sharpener, and guide frame H, of the adjustable stop pin *c* provided with block nut *n*, substantially as and for the purpose specified. 6th. In combination with the saw gummer and sharpener, of the circular spiked base piece *m*, the same being provided with a cone screw pin and nut, all constructed to hold a saw while being gummed and sharpened substantially as specified. 7th. In combination, with the frame F of a hinged saw gummer, of the step pin *l*, as and for the purpose specified.

## No. 19,584. Conveyor for Grain and Flour Machines. *(Vis sans fin pour Machines à Grain et à Farine.)*

Eli S. Edmonson, Oshawa, John Goldie and Hugh McCulloch, Galt, Ont., 16th June, 1884; 5 years.

*Claim.*—As an improved conveyer for a grain or flour machine, a spirally-bent rod C, substantially as and for the purpose specifind.

## No. 19,585. Machine for Mangling Clothes.

*(Machine à Calendrer de Linge.)*

Hubert R. Ives, (assignee of George Scott,) Montreal, Que., 16th June, 1884; 5 years.

*Claim.*—1st. In a mangling machine, the combination, with a fixed upper roller and an adjustable lower roller, of the arms D, D carrying the table, said arms being fulcrumed to the standards and provided with sockets to receive the journals of said lower roller, substantially as and for the purpose set forth. 2nd. The combination, with the frame, the table *c*, levers D, D and the lower roller B1, of the spring board E, rod F and crank nut C, substantially as and for the purpose set forth. 3rd. The combination of the standard A A having vertical slots *c* and fulcrum pins *d*, with the levers D, D having horizontal slots *d* and carrying-table *c*, substantially as and for the purpose set forth.

## No. 19,586. Fifth-Wheel for Vehicles.

*(Rond d'Avant-Train pour Voitures.)*

The Fallesen Fifth-Wheel Company, (assignee of Christian Fallesen, and Johannes M. Jensen,) Brooklyn, N. Y., U. S., 16th June, 1884; 5 years.

*Claim.*— In a fifth-wheel, constructed of annular plates, the combination, with an inner ring connected and secured to the running gear of the vehicle, of an upper transversely divided annular plate rotating upon said inner ring, and constructed to overlap, conceal and protect the upper surface and outer rim of said inner ring, one section of said upper plate being connected to the body of the vehicle and its other section hinged to the first and left free to open out independently therefrom, substantially as and for the purpose hereinbefore set forth.

## No. 19,587. Harvesting Machine.

*(Moissonneuse.)*

George Fielden, Dundas, Ont., 16th June, 1884; 5 years.

*Claim.*—1st. The combination of the movable arm A, yoke B, reel shaft C, reel arms D, reel pins E, grain platform *et.* 2nd. The combination of the movable arm A, yoke B, set-screw F, lock-bolt G, pivot-bolt H, as and for the purpose hereinbefore set forth.

## No. 19,588. Thrashing Machine.

*(Machine à Battre.)*

George A. Roberte and Christian Schafer, Three Rivers, Mich., U.S., 16th June, 1884; 5 years.

*Claim.*—1st. The combination, with a straw shaker, of two sets of rake fingers arranged to take the straw therefrom, one set pivoted above the other, and means for vibrating said sets of fingers past each other in opposite direction, substantially as and for the purpose set forth. 2nd. The combination with a straw shaker, of a rock-bar mounted independently thereof, the straw-carrying fingers projecting from said rock-bar over said shaker, and means for giving said rock-bar a lateral reciprocating motion opposite to that of the shaker and a simultaneous rocking motion, thereby causing the carrying fingers to vibrate up and down as well as to move longitudinally, substantially as and for the purpose set forth. 3rd. The combination, with a straw shaker, of one or more sets of carrying fingers arranged above the same, and means for causing said fingers to rise and move forward as the shaker moves backward, and to fall and move backward as the shaker moves forward, substantially as described. 4th. The combination, with two connected moving straw-shakers, one in advance of the other, of two sets of rake fingers, one set connected to the rear end of the first shaker, and the other set connected to the front end of the second shaker and under the set connected to the first shaker, and means for raising the fingers of each set as the shaker to which it is connected moves rearward and *vice versa*, substantially as described, whereby the fingers of the two sets will be caused to pass each other in opposite directions as the shakers operate. 5th. In a separator, the combination, with two shakers arranged one in advance of, and above the other and having counter movements, of a rake-head and a set of straw fingers journalled at the junction of the two and moving with the upper shaker, said fingers constructed to rise and move forward as the upper shaker advances and to drop and move backward as the upper shaker recedes, substantially as described. 6th. In a separator, the combination, with two reciprocating shakers arranged one in rear of and below the other and having counter movements, of a set of straw fingers and rake-head journalled at the junction of the two, said rake-head being arranged to move with the upper shaker, the rearward shaker being provided with longitudinal slots adapted to receive said rake-head and in which it may have a reciprocating movement, substantially as described.

## No. 19,589. Ditching Machine.

*(Machine à Fossoyer.)*

Russell H. Nogar, Dundee, Mich., U. S, 15th June, 1884; 5 years.

*Claim.* - 1st. The combination, in a truck for a ditching machine, of the front and rear axles secured to the bed, each by a proper king-bolt with locking cams or their equivalents for locking said axles in position, said axles being each provided with suitable hounds or other known appliances for securing a tongue thereto, whereby the device may be run in either direction, substantially as and for the purposes described. 2nd. In a ditching machine, a cutting wheel constructed as described, journalled in the lower end of a sash having a vertically reciprocating movement within a frame, in combination with cleaning devices or plates adapted to clear the earth from the cutting wheel in advance of its cut in either direction, substantially as specified. 3rd. In a ditching machine, and in combination with the cutting wheel journalled in the lowest end of a sash, such sash being provided with means for elevating or lowering the same, a frame secured longitudinally to said sash and carrying at each end thereof cleaners, constructed substantially as described, and provided with means by which such cleaners may be alternately thrown out of action as circumstances may require, substantially as set forth. 4th. A ditching machine, consisting of the bed A to which are pivotally secured the axles B, locking devices C by which such axles are secured as required, frame D centrally supported upon the bed A, sash E to which is journalled the cutting wheel F with means for elevating or lowering said sash frame G secured to said sash and carrying upon its ends the fingered cleaners H provided with means for being alternately thrown out of action, the parts being arranged, constructed, combined and operating, substantially as and for the purposes described.

## No. 19,590. Telephone Transmitter.

*(Transmetteur Téléphonique.)*

The Bell Telephone Company of Canada, Montreal, Que., (assignee of Emile Berliner, Boston, Mass., U. S.,) 16th June, 1884; 5 years.

*Claim.*—1st. In a telephone transmitter, a variable resistance consisting of a mechanical mixture of small conducting particles such as lamp black, or granulated coke with water or other liquid of low conductivity. 2nd. The combination, in a telephone transmitter, of a vibrating diaphragm, a weight and a non-conducting ring, the whole constituting a chamber of which the diaphragm forms one side the weight the other and the inner surfaces of the ring the walls thereof, with a variable resistance placed in the chamber thus formed and consisting of a damp conducting mass produced by mixing granulated carbon particles with water or some other semi-conducting liquid. 3rd. The combination, in a transmitting telephone, of the containing cavity, the moist carbon mass formed by adding a partially conducting liquid to granulated carbon, the conducting weight peripherally grooved and the soft and flexible packing for the said groove, all substantially as hereinbefore described. 4th. In a telephone transmitter, the combination of a sliding weight adapted to be acted upon by sound waves, and a packing of felt or similar soft material around said weight.

## No. 19,591. Telephone Transmitter.

*(Transmetteur Téléphonique.)*

The Bell Telephone Company of Canada, Montreal, Que., (assignee of Emile Berliner, Boston, U. S.,) 16th June, 1884; 5 years.

*Claim.*—In a telephone-transmitter, a tube or chamber containing a mass of loose conducting particles through which a current passes, and which particles are held together by a movable weight resting on said mass, substantially as described.

## No. 19,592. Spring Shade Roller.

*(Bâton de Rideau à Ressort.)*

The Shorey Spring Bed and Shade Roller Company, (assignee of Marshall E. Graves and Prescott C. Gates,) Lowell, Mass., U. S., 16th June, 1884; 5 years.

*Claim.*—1st. The combination of the hollow barrel, the spindle having a portion angular in cross-section, means of imparting a longitudinal outward motion to said spindle, the plug secured within

said barrel and having a longitudinal central opening adapted to fit said spindle and thereby to prevent rotation of the same, as and for the purpose specified. 2nd. The combination of the hollow barrel, the spindle having a portion angular in cross section, the locking spring, the sliding bearing, the plug secured within said barrel and having a longitudinal central opening, a portion of said opening being angular in cross section to fit said spindle and thereby prevent the rotation of the same, all constructed and arranged substantially as set forth.

## No. 19,593. Construction and Internal Arrangement of Ships to Save Drainage from Cargoes of Sugar and Molasses. (*Construction et Disposition Intérieure des Navires pour Eviter le Drainage des Chargements de Sucre et de Mélasse.*)

Titus Langille, Mahone Bay, and Benjamin Westhover, Lunenburg, N. S., 16th June, 1884; 5 years.

*Claim.*—As an improvement in the construction of ships, the hold constructed with a bottom formed by the parallel cross timbers K tapering towards the turn of the bilge on the side of the vessel, set on edge at right angles to the keelson and having openings $o^1$ intermediately, in combination with the holding cleats M, cross timbers N, flooring O and removable strips P filling the spaces $O^1$, constructed and combined, substantially as and for the purpose shown and set forth.

## No. 19,594. Carriage Curtain Fastening.

(*Suspension de Rideau de Voiture.*)

Washington Welker, S. F. Heffner and J. V. Beery, Tremont, Ohio, U. S., 16th June, 1884; 5 years.

*Claim.*—1st. A curtain fastener consisting of the curved plate B, hook *a* having flanges *b* and tongue $a^2$ and eye D, substantially as shown and specified. 2nd. The combination of the curved plate B, hook *a* having slots $a^1$, tongue $a^2$ and flanges *b* and eye D, substantially as shown and for the purposes described.

## No. 19,595. Wood Screw. (*Vis à Bois.*)

George A. Stiles, West Gardner, and Carmi M. Parker, Fitchburg, Mass., U. S., 16th June, 1884; 5 years.

*Claim.*—1st. The improved wood screw, herein shown and described, having a reduced stem or shank C provided with a collar or annular enlargement D E at its upper end where it connects with the head A, as a new article of manufacture.

## No. 19,596. Bed Spring Connection.

(*Ligature de Sommier Elastique.*)

Samuel K. Butterfield, Swanton, Vt., U. S., 19th June, 1884; 5 years.

*Claim.*—1st. A bed spring connection consisting of a wire having its ends bent into loop hooks *b*, and the shank bent into three corners $b^2$, $b^3$, forming two loops $b^1$, the hooks *b* and loops $b^1$ occupying the four corners of an imaginary quadrangle and each engaging one of the four adjacent springs. 2nd. The combination of four adjacent springs A connected by the hooked and looped wire B, all substantially as and for the purpose set forth.

## No. 19,597. Check-Rein Carrier.

(*Porte Fausses-Rênes.*)

Lafayette E. Champlain, Ypsilanti, Mich., U. S., 19th June, 1884; 5 years.

*Claim.*—1st. A tubular overcheck-rein carrier pivotally secured to top of a bridle, said carrier having a covering for the rein at or near the centre of its length adapted to support a ring-holder and hold the rein in place, substantially as and for the purposes specified. 2nd. In combination with a bridle for a horse, a metallic tubular check rein carrier, a plate secured to said bridle and a ball-and-socket joint connecting said plate and carrier, substantially as and for the purposes specified.

## No. 19,598. Mowing and Reaping Machine.

(*Faucheuse-Moissonneuse.*)

Isaac Branch, Adairsville, Ga., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. The combination, with the frame A having ears $a^1$, and the axle B and wheels C supporting the rear portion thereof, of the pole $A^1$ pivoted in said ears, the inverted T-shaped lever D pivoted to the frame, the links $d^1$ and *d* connecting lever D with the pole $a^1$ and the rock-shaft $a^{11}$ respectively, the rock-shaft journalled at *j* in frame *a* and the bifurcated cutter bar E hinged to said rock-shaft, as shown and described. 2nd. The scalloped wheel N, the anchor lever bars K, $K^1$, in combination with the two sets of shear blades J, $J^1$, each blade being independently pivoted to the cutter bars E, $E^1$, and the cutter-bar E having said blades J, $J^1$ and the T-shaped lever *k* pivoted thereto, as shown and described. 3rd. The blades J and $J_1$, each having cutting edges at both ends and both sides, and each adapted to oscillate upon an independent bushing *l*, in combination with the bars E, $E^1$, and the bolts L passing through said bars and bushing, binding the bars against the bushings, and said bushings, each extending through its blade and beyond the face thereof to an amount equal to the thickness of the mate blade, substantially as and for the purpose specified.

## No. 19,599. Process and Means for Drying Malt. (*Procédé et Moyens de Dessication du Malt.*)

Friedrich Winter, Prossnitz, Austria, 19th June, 1884; 5 years.

*Claim.*—1st. An improved process of drying malt, in malt-kilns, having three or more floors in which the noxious vapours deriving from the malt on the lower floors are prevented from passing through the green freshly introduced malt, which purpose is obtained by separating the upper compartment of the kiln, in which the malt is at first introduced, from the lower compartments by means of a partition, and by supplying that upper compartment with fresh atmospheric air through separate air-conduits, which air is heated to the required temperature by means of heating pipes conducted through the said separated compartments and forming a continuation of the general heating-pipe-system, substantially as described. 2nd. A malt-kiln with three or more drying floors, in which the upper compartment containing the green newly introduced malt is separated from the other compartments, so that the vapours deriving from the malt on the lower floors are prevented from passing through the green malt and escape directly in the flue, substantially as specified. 3rd. In malt-kilns having three or more drying floors and being provided with a separated compartment for the first drying of the green malt, the arrangement of conduits A for introducing fresh air in the upper green-malt compartment, and of the extended heating pipes B running through this compartment in order to heat to the required degree the introduced atmospheric air, substantially as described and shown. 4th. In malt kilns having three or more floors and constructed as hereinbefore specified, the arrangement of the air-conduits E for leading the heated air from the last compartment in which the drying of the malt is terminated into the upper compartments, so that in the said undermost compartment a very feeble circulation of air takes place, substantially as and for purpose specified. 5th. In malt-kilns having three or more floors and constructed as hereinbefore described, a widened portion D of the vapour stack C, whereby the vapours deriving from green malt on the uppermost floor are allowed to escape through a separate exit, in which owing to the heating of the vapour stack C by the hot gases escaping through the heating pipes and by the vapours from the lower floor, a very energetic air-draught is maintained, substantially as shown and described and for the purpose set forth.

## No. 19,600. Joint Lever. (*Levier Brise.*)

William B. Hall, Du Quoin, Ill., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. As an improvement in joint-levers, the combination, with the double-arm pawls projecting in opposite directions, of an operating lever having arms projecting over the inner arms of the pawls and bearing against the outer face of the same, as shown, whereby the arms of the lever are adapted to independently operate either pawl, substantially as and for the purpose set forth. 2nd. As an improvement in joint-levers, the combination of the main lever carrying two oppositely-projecting pawls, the segmental rack spring mechanism secured upon the lever and acting upon the pawls, and an operating lever having arms bearing against the outer face of the pawls, so that they will independently operate either pawl without engaging the other, substantially as set forth. 3rd. As an improvement in joint-levers, the combination, with the segmental rack, of the main lever carrying the bell crank pawls having their engaging ends projecting in opposite directions, and a double arm spring disposed between the inner arms of the pawls and acting upon the same, substantially as and for the purpose set forth. 4th. As an improvement in joint-levers, the combination of the main lever, the segmental rack, two bell-crank pawls fulcrumed upon the main lever above the rack, and having their engaging arms projecting in opposite directions, the double arm spring acting upon the pawls, the operating lever fulcrumed upon the main lever and provided with an arm projecting at each side and engaging the inner arms of the pawls, and a centrally disposed stop-pin to limit the movement of the operating-lever in either direction, substantially as set forth. 5th. As an improvement in joint levers, the combination of the main lever, the segmental rack, the bell crank pawls having their main arms projecting laterally in opposite directions and provided with the bevelled inner faces, the centrally disposed double-arm spring acting upon the inner arms of both pawls, the centrally disposed stop-pin arranged above the spring and the operating-lever fulcrumed upon the main lever having the central recess in its bottom and the downwardly-projecting arms at each side of this recess, substantially as and for the purpose set forth.

## No. 19,601. Shaded Straw Hat. (*Chapeau de Paille Nuancé.*)

Charles Desjardins, Montreal, Que., 19th June, 1884; 5 years.

*Réclame:* Un article nouveau de manufacture consistant en un chapeau de paille ordinaire, nuancé par le procédé décrit.

## No. 19,602. Gate. (*Barrière.*)

Mark W. Foster, Minneapolis, Minn., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. The combination, with the levers *d* and gate *a* suspended therefrom, of the angle-levers A pivoted on the studs *v* and connecting-rods *i*, substantially as shown and described. 2nd. The combination, with the levers *a*, connecting-rods *i*, levers *d* and rails *f*, of the gate *a*, said gate being suspended from the rails *f*, and the said levers *d* and levers *a* being arranged to raise the gate and cause it to roll along the rails *f*, substantially as described. 3rd. The combination of the levers *a*, connecting-rod *i*, levers *d* and rail *f*, with the gate *a*, said levers *d* being fitted by slots *h* to fulcrum-pins, and said levers *d* and levers *a* being arranged to operate the gate, substantially as described. 4th. The combination, with the levers *d* and gate *a* suspended therefrom and the connecting-rod *e* provided with a pivot *x*, of the angle-lever *a* composed of the arms *j* and *k* rigidly secured at their ends by the plate $a^1$ having angle-slot *w* and pivots *v*, substantially as shown and described. 5th. The combination, with the levers

*d*, gate *a* suspended therefrom, angle levers A pivoted on the studs *v* and connecting-rod *i*, of the end pieces *m* pivoted to arms *k*, springs *p* and ways *s*, substantially as shown and described. 6th. The combination, with the levers *d*, gate *a* suspended therefrom, angle levers A pivoted on the studs *v* and connecting rod *i*, of the end pieces *m* pivoted to arms *k*, springs *p*, way *s*, perforated adjustable uprights *t*, pins *z* and way *u*, substantially as shown and described.

## No. 19,603. Belt Fastener. (*Joint de Courroie.*)

Daniel Lovejoy, Lowell, Mass., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. A belt fastener consisting of the plate D having curved ends, and provided with the curved ribs *e* and the conical teeth *c*, substantially as set forth. 2nd. A belt fastener consisting of the plate D having curved ends, and provided with the curved ribs *e* and the teeth *c* arranged in rows upon each of said ribs and between the latter, substantially as set forth. 2nd. A belt fastener consisting of the plate D provided with the ribs *e* and the teeth *c*, substantially as set forth. 4th. The combination, with the contiguous ends of a belt, of the plate D provided with the conical malleable teeth *c*, as shown, and adapted to unite the plate to the belt by having their ends clinched by being bent diagonally towards the end of the belt, as set forth.

## No. 19,604. Shutter Fastener. (*Arrête-Persienne.*)

Willliam E. Doolittle and David E. Doolittle, New Briatin, Ct., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. A band fastener consisting of a case having a socket extending through the case and bell-mouthed at each end, and also of a spring actuated latch having an integral operating handle outside of the case and an engaging hook inside the case, and also of a keeper for engaging the latch at a point with the socket, the whole being constructed and operating together substantially as described. 2nd. The herein-described blind-fastener consisting of the case provided with a latch and spring-chamber, the latch and spring arranged therein, and the socket bell mouthed at each end and extending through the case by the side of the spring-chamber, and in the same general direction as the length of the latch, substantially as described and for the purposes specified.

## No. 19,605. Medical Manipulator. (*Maniputaleur Médical*)

James Rice, Detroit, Mich., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. An adjustable medical manipulator, substantially as described, and provided with elastic jaws, substantially as and for the purposes set forth. 2nd. In combination with the spring jaws of a medical manipulator, constructed substantially as described, the removable cushions sleeved thereon, substantially as and for the purposes specified.

## No. 19,606. Rotary Engine. (*Machine Rotatoire.*)

James H. Philps, Sharon Wis., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. The combination, with the piston and its abutment, of the valve formed with the recess $D^2$ and rotating in unison with said piston, and the inlet ports *e*, $e^1$ opened and closed by said valve, substantially as specified. 2nd. The combination, with the piston and its abutment, of the valve having the recess to receive the abutment and rotating in unison with said cylinder, the inlet-ports opened and closed by said valve and the passage F, substantially as specified. 3rd. The rotary engine consisting of the piston and its abutment and rotating in unison with the piston, the valve having the recess to receive the abutment, inlet ports opened and closed by the valve and the outlet port located near the end of the stroke, substantially as and for the purpose specified. 4th. The combination, in a rotary engine, of the piston and its abutment, the valve and its recess and inlet ports opened and closed by said valve, with one or more sides corresponding to the recess in the valve, substantially as and for the purpose specified.

## No. 19,607. Saw Swaging Device. (*Machine pour Etamper les Scies.*)

Pascal B. Charbonneau, Bay City, Mich., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. The combination of the anvil B and reciprocating die C, one having a rounded portion as at *a* to form a recess in the rear of the cutting edge of the tooth, and the die C adapted to strike diagonally on the back of the tooth, substantially as described. 2nd. The anvil or stationary die B having the rounded portion, as shown, combined with the movable die having inclined surface, and the whole adapted to swage a recess in the face of the tooth in the rear of the cutting edge and spread the metal on either side thereof, as set forth.

## No. 19,608. Electric Arc Lamp. (*Lampe Electrique à Arc.*)

Nathan H. Edgerton, Philadelphia, Pa., U.S. 19th June, 1884; 5 years.

*Claim.*—1st. In an electric arc lamp, in which a lower fixed electrode of irreducible material is combined with an upper movable electrode, being a carbon pencil free to gravitate with respect to an arc internal between it and the fixed electrode, until entirely consumed, a fixed magazine or carbon feed tube, which is adapted to contain a series of carbon pencils arranged to successively gravitate therefrom, and which is uninfluenced as to its position in the lamp by the passage of the electric current, substantially as set forth. 2nd. In an electric arc lamp, the following instrumentalities in combination, viz: first, a fixed magazine or carbon feed tube adapted to contain a series of carbon pencils, so arranged as to successively gravitate therefrom; second, detaining pins, points, or equivalent contrivances, adapted to arrest the gravitative action of that carbon pencil which, for the time being, is the upper electrode by bearing against its conical front extremity: third, a carbon lifting sleeve, to which said detaining pins are attached; fourth, an armature applied to said lifting sleeve; and, fifth, an electro-magnet in the circuit of the lamp; the arrangement being such that the setting up of a current in the circuit energizes the electro-magnet, and thereby occasions the attraction of the armature, the lift of the lifting sleeve, and the consequent lift of the carbon electrode to a distance from the fixed electrode corresponding to the arc interval desired, substantially as set forth. 3rd. In an electric arc lamp of the class herein recited, the combination of a casing or kindred containing device inclosing an electro-magnet, a fixed magazine or carbon feed tube adapted to contain a series of carbons arranged to successively gravitate therefrom, a carbon lifting sleeve independent of the magazine and an armature upon said lifting sleeve, the arrangement being such that upon the energizing of the magnet the armature is attracted and the sleeve lifted with respect to both magazine and casing, substantially as set forth. 4th. In an electric arc lamp of the class herein recited, the combination of the carbon feed tube, the lifting sleeve and the stud and slot connection between said tube and sleeve, substantially as and for the purpose specified. 5th. In an electric-arc lamp, in which a lower fixed electrode of irreducible material is combined with an upper movable electrode, being a carbon pencil free to gravitate with respect to an arc interval between it and the fixed electrode, the combination of two pieces or plates of graphite positive and negative terminals of the line-wires with which the lamp is connected, and an armature adapted upon its unrestrained descent to rest upon said plates and complete a circuit of high resistance, substantially as and for the purposes set forth. 6th. In an electro arc lamp of the class herein recited, the combination of an electro-magnet in the circuit of the lamp, a fixed carbon magazine, a carbon-lifting sleeve which is vertically movable with respect to said magazine, an armature directly attached to said lifting sleeve, and suitable means for adjusting said armature upon said lifting sleeve, substantially as and for the purpose set forth.

## No. 19,609. Construction of Portable Covers for Hay or Corn Ricks, &c. (*Construction des Couvertures Portatives pour Meules de Foin, Grain, &c.*)

Louis A. Couteau, Léonville, France, 19th June, 1884; 5 years.

*Claim.*— In the construction of portable roofings for affording temporary protection, the channelled, looped and hooked rafters A, notched pannels H, solid and tubular iron bars J, $J^1$, slotted ridge L, crescent-shaped cotters N, looped weights O, and the combination of the whole of these parts, substantially as above described and represented in the accompanying drawings.

## No. 19,610. Buckle for the Support of Harness Breechings. (*Boucle pour le Support des Avaloirs de Harnais.*)

Russell S. Boulter, Saco, Me., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. The rim A *a* $A^1$ $a^1$ having the parts A depressed, as herein specified, in combination with the alternately depressed cross-bars, as and for the purpose set forth. 2nd. The rim A *a* $A^1$ $a^1$ and cross-bars B and C, depressed in manner and form as hereinbefore shown and described, and provided with a stud *d*, the whole to form an improved article of manufacture.

## No. 19,611. Close Weeding and Thinning Hoe. (*Houe à Sarclage Serré et pour Eclaircir.*)

John C. Wilson, Mitchell Square, Ont., 19th June, 1884; 5 years.

*Claim.*—1st. As an improved close-weeding and thinning hoe, the narrow hoe B fixed to the handle-socket A and having notches *a* cut near its cutting edge, in combination with a curved spring hoe C, arranged substantially as and for the purpose specified. 2nd. As an improved close-weeding and thinning hoe, a narrow hoe B fixed to the handle-socket A and having notches *a* cut near its cutting edge, in combination with a curved spring hoe C rigidly fastened to the upper end of the hoe B and connected at its lower end by the flexible connection E, substantially as and for the purpose specified. 3rd. As an improved close-weeding and thinning hoe, a narrow hoe B fixed to the handle-socket A and having notches *a* cut near its cutting edge, in combination with a curved spring hoe C and spike F, substantially as and for the purpose specified.

## No. 19,612. Metal Mould for Casting Vices. (*Moule Métallique pour Couler les Vis.*)

William E. Snediker, Trenton, N.J., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. The divided mold for casting vices, comprising one or more cavities, as C, $C^1$, with hinge-plate recesses, as *c*, $c^1$, a pouring gate, as D, and core seats, as *b*, $b^1$, *d*, for supporting the cores E, F, all substantially as herein described. 2nd. The divided mold for casting vices, comprising two lower mold sections A, $A^1$, and two upper sections $A^*$, $A^{1*}$, capable of moving towards the said lower sections, substantially as and for the purpose herein described. 3rd. In a divided mold for casting vises, the combination of two upper sections, two lower sections and an interposed divided shrinkage plate, substantially as herein described. 4th. The combination of the upper and lower mold sections, and interposed divided shrinkage plate, and the levers for operating the said shrinkage plate, substantially as and for the purpose herein set forth.

## No. 19,613. Construction of Wood Floorings. (*Construction des Planchers.*)

Alfred Putney, London, Eng., 19th June, 1884; 5 years.

*Claim.*—1st. The strengthening of the tongue marked P, by having

the portion indicated by the line B C on the incline. 2nd. The accessibility for driving the pins, nails, or screws through the surface or incline B C.

## No. 19,614. Broom Holder. (*Porte-Balai.*)

James M. Van Horn, Bridgewater, N.S., 19th June, 1884; 5 years.

*Claim.*—A broom-holder, composed of the movable rocking sections A and A1, both provided with inwardly turned jaws E, E and connected centrally by a pivot joint B, and having an interposed spring D for closing one section against the other section to clasp an interposed broom, as set forth.

## No. 19,615. Folding Hammock Support.

(*Support Pliant à Hamac.*)

James F. Plucke, Watertown, N.Y., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. The combination of the long bar or bed-piece, the cross pieces hinged one to each end of said bar or bed-piece, the uprights, the stretchers pivoted near their middle between the upper ends of said uprights and the stirrups, substantially as described. 2nd. The combination, with the bed-piece and braces hinged thereto, of the stretchers pivoted to said braces, and the stirrups for receiving the inner ends of the stretchers and holding them against said bed-pieces, substantially as described. 3rd. The combination of the bed-piece, cross pieces detachably connected therewith, uprights secured to the ends of said cross pieces and converging toward their upper extremities, stretchers pivoted between the ends of said uprights and stirrups on said bed-piece for receiving the ends of said stretchers which are beveled from beneath, substantially as described. 4th. The combination, with the frame or support, comprising a bed-piece, uprights and stretchers, of the auxiliary cross-pieces, substantially as and for the purpose set forth. 5th. The combination, with the bed-piece and cross pieces attached thereto, of the slats or boards supported by said cross pieces and forming foot rests, substantially as described.

## No. 19,616. Animal Trap. (*Chausse-Trape.*)

Jacob H. Brubaker, Rockton, Pa., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. The combination of a platform mounted upon a rod or standard, the lower end of which rests upon a notched lever, a pawl, a wire or rope, a series of springs and means for withdrawing the wire from the springs, substantially as and for the uses and purposes set forth. 2nd. The combination of a platform mounted upon a rod or standard, the lower end of which rests upon a notched lever, a pawl, a wire rope, an apertured plate, a series of springs having stops to support the wire and means for withdrawing the wire from the springs, as and for the purposes set forth.

## No. 19,617. Spring Rocking Chair.

(*Fauteuil à Ressort Bascule.*)

Albert H. Ordway, Melrose, Mass. U.S., 19th June, 1884; 5 years.

*Claim.*—1st. In a spring rocking chair, the seat *a* and frames *b*, *b* hinged to the base *c c* at *d d*, in combination with springs *f*, *f* secured to frames *b*, *b* and adapted to work and roll on the antifrictional rollers *h*, *h*, as and for the purpose set forth. 2nd. In a spring rocking chair, the seat *a* and frames *b*, *b* hinged to the base *c c*, and having secured to them the springs *f*, *f* adapted to work and roll on the rollers *h*, *h*, in combination with the elastic stops *i*, *k* and braces c11, c11, as and for the purpose set forth. 3rd. In a spring rocking chair, the seat *a* with its frames *b*, *b* hinged to the base *c c* and having springs *f*, *f* adapted to work and roll on the rollers *h*, *h*, in combination with the bearing pieces *e*, *e* secured to braces c1, c11 on the inside of frames *b*, *b*, as and for the purpose set forth.

## No. 19,618. Process for Locking up Type on Galleys. (*Procédé pour Serrer les Formes.*)

Thomas Moore and Alexander Allen, Toronto, Ont., 19th June, 1884; 5 years.

*Claim.*—1st. The combination of the spring figure *a*, with the binder or side stick *b*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the spring *a*, and the binder or side stick *b* on the galley, as in Figs. 1 and 2, substantially as and for the purpose hereinbefore set forth.

## No. 19,619. Grain Shovel Mechanism.

(*Mécanisme de Pelle à Grain.*)

John S. Metcalfe, Burlington, Iowa, U.S., 19th June, 1884; 5 years.

*Claim.*—1st. In a clutch mechanism, the hinged yoke-arm *y a* having an opening at the top to receive the T-arm of the weighted lever *t a*, the latter mounted on a shaft passing through bearings in the yoke-arm, which shaft also supports a cam sector *e c*, in combination with such cam, a friction-wheel adapted to engage with it and a supporting frame, substantially as described. 2nd. In a clutch mechanism, the combination of the spool S *p*1, the collar *c o*, screw S, clutch *c*, all formed in one piece, the friction-wheel rigidly connected with the spool, a main shaft on which they are mounted and adapted to revolve, a clutch feathered upon such main shaft, the cam sector *e c*, the yoke-arm carrying a shaft on which is mounted the cam sector, and a weighted arm for actuating the same, substantially as described. 3rd. In a clutch mechanism, an arm supported upon a main frame carrying a tripping lever with a latch pivoted at one end and adapted to engage with a latch-pin attached to a cam sector, and to be tripped by the mechanism of a weighted arm mounted on the same shaft as the cam, substantially as described. 4th. In a clutch mechanism, the cap *h b* secured to the main frame, and recessed to admit the flange of a collar rigidly connected with the rope spool for holding the latter in the same relative position with the frame, substantially as described, 5th. In a clutch mechanism, the combination of the yoke-arm *y a*, the shaft *p*, the weighted arm *t u*, the cam *e c*, the friction-wheel *F w* connected with the spool, a main shaft and a supporting-frame, substantially as described. 6th. In a clutch mechanism, a cam mounted on an axis supported in bearings above the main frame and adapted to control the forward and reverse movements of the clutched by its grip upon the friction-wheel, connected to the spool and mounted on the main shaft, substantially as described. 7th. In combination with a clutch feathered upon a main shaft, a corresponding clutch connected with a friction-wheel and rope spool and adapted to revolve on the main shaft, a cam for controlling the forward and reverse movement of the clutches, by contact with such friction-wheel, and means for engaging and releasing the clutches, substantially as described. 8th. In a clutch mechanism, the combination of a secondary frame above the main frame carrying a shaft in bearings, a cam sector secured to and revolving with such shaft and adapted to engage with a friction-wheel mounted on the main shaft, one of the supports or standards of such secondary frame being closely connected with the main frame by a set screw or its equivalent, to allow vertical motion for gaging and determining the frictional bearing of the cam on the friction-wheel, substantially as described. 9th. In a clutch mechanism, a cam sector mounted on a shaft in bearings above the main frame and adapted to engage the face of a friction wheel mounted on the main shaft, the cam and its supports capable of a vertical adjustment to determine its grip upon the friction wheel, substantially as described. 10th. In a clutch mechanism, the clutch *c* having an opening dovetailed on one side to receive the diagonal arm of the steel face S *p*, in combination with such steel face and a screw driven through the clutch and parallel with the face S *p*, and through the point of the diagonal arm for holding the latter in place, substantially as described.

## No. 19,620. Salve for the Cure of Piles.

(*Onguent pour les Hemorroides.*)

William Richardson, Buffalo, Mo., U.S., 19th June, 1884; 5 years.

*Claim.*—1st. In a salve for the cure of piles, a compound formed of ooze of mullein leaves, four ounces (4 oz.); hog's lard, four ounces (4 oz.); gum camphor, one-half of one ounce (½ oz.); laudanum, eighty drops (80 drops); substantially as described and for the purposes set forth.

## No. 19,621. Bag-Holder. (*Accroche Sac.*)

William J. Messervey (Assignee of Michael B. O'Neil), Halifax, 19th June, 1884; 5 years.

*Claim.*—A bag-holder consisting of the base A, sub-case A1, post C footed therein and provided with a series of holes E, and pin D, block H adjustable on post C and carrying a band G provided with spurs or hooks *a*, *a*, the whole combined and constructed to operate as set forth.

## No. 19,622. Drive Chain Link.

(*Maillon de Chaine de Commande.*)

Theodore F. Hall, Marietta, Ohio, U.S., 21st June, 1884; 5 years.

*Claim.*—A drive chain link consisting of the side bars *g*, *g*, straight bar C at one end, an open hook D at the opposite end, the socket or bearing in which the pivot bar works being straight and its throat or slot being curved, that is to say, convex on the side next to the point of the hook, and concave on the opposite side next to the end bar, and having the projections *i*, *i* extending into said socket, substantially as shown and described.

## No. 19,623. Carriage Axle Box.

(*Boîte d'Essieu de Voiture.*)

Alonzo B. Poor and John I. Doyle, Lawrence, Mass., U. S., 21st June, 1884; 5 years.

*Claim.*—1st. A journal box or carriage axle box, provided on its interior with a series of friction rollers, and held in position by a ring at either end substantially as set forth. 2nd. The improved carriage axle box herein described, the same consisting of the body B, provided with the annular chambers *m*, the rings *d* provided with the holes *i* and the rollers *f*, constructed, combined and arranged to operate substantially as specified. 3rd. The axle A provided with the nut H, in combination with the box B provided with the rollers *f* and rings *d*, constructed and arranged to operate substantially as set forth.

## No. 19,624. Horse Power. (*Manège.*)

Homer Adkins, Concordia, Ks., U.S., 21st June, 1884; 5 years.

*Claim.*—1st. In horizontal wheel horse-powers capable of being laterally tipped or tilted, to provide for the entry and removal of the draft animals within and from the wheel, the combination of the balance wheel A and its shaft B, with the tipping or tilting lower supporting frame C, substantially as specified. 2nd. The horizontal balanced wheel A, having its hub constructed of plates *d*, *d*1, *f* and braces *e*, *s* arranged in relation to the wheel and its shaft B, essentially as shown and described. 3rd. The combination of the wedge or shifting prop D, with the lower supporting frame C and the wheel A arranged to tip or tilt laterally along with said frame, substantially as and for the purposes herein described. 4th. In horizontal wheel horse-powers, capable of being laterally tipped or tilted, as described, the combination with the tipping or tilting lower supporting frame C, of the shaft B and the balanced wheel A provided with weight-holding receptacles F to steady the run of the wheel, essentially as specified.

## No. 19,625. Machine for Distributing Manure, &c. (*Machine pour Distribuer les Engrais, &c.*)

Louis A. Couteau, Léonville, France, 21st June, 1884; 5 years.

*Claim.*—In a machine for sowing, spreading, depositing or distributing manures, or other pulverulent matters, a smooth surfaced drum

or cylinder, and a small roller smooth surfaced also, revolving at a greater speed than the cylinder, a hopper with vertical and rectangular sides slightly slanting from the bottom upwards, so that the hopper becomes smaller as to form a smaller circumference at the top than at the bottom, the bottom of which is formed by the cylinder, a movable trap regulating the exit of the matter and disengaging blades or knives, the combination of these several parts constituting an entirely new machine.

## No. 19,626. Revolving Stand.

(*Montre Tournante.*)

Samuel T. Culp, Toronto, Ont., 21st June, 1884; 5 years.

*Claim.*—1st. The spindle J rigidly connected to mechanism, by which it derives a rotary movement, in combination with the rod K flexibly connected to the spindle J and arranged to convey the rotary movement of the spindle J to the cylindrical vessel A, supported, as described, by water or other fluid. 2nd. The rod K, fitted in a hole made in the top of the tube C, so that the said tube may be moved freely vertically on the said rod, but not permitted to revolve thereon, in combination with a flexible joint arranged to connect the rod K to the spindle J, substantially as and for the purpose specified. 3rd. The rod K having a head *m* and extending downwardly through the tubes C and D, as specified, in combination with the spindle J, extending, as specified, into the head *m*, substantially as and for the purpose specified.

## No. 19,627. Vertical Sectional Steam Boiler.

(*Chaudière à Vapeur Verticale en Sections.*)

Julius E. Waterous, Brantford, Ont., 21st June, 1884; 5 years.

*Claim.*—1st. The combination of the outer shells A, A and B, B of a vertical tubular boiler made in sections, and connected by outer and inner annular rings E, E, E, substantially as and far the purpose hereinbefore set forth. 2nd. A vertical tubular boiler having its upper tube head D connected to the outer shells A, A by the inner annular ring E, substantially as and for the purpose hereinbefore set forth. 3rd. The use of an asbestos joint ring C between the tube head D and inner annular ring E, substantially as and for the purpose hereinbefore set forth.

## No. 19,628. Steam Washer.

(*Buanderie à la Vapeur.*)

Richard J. Johnson, and Francis M. Johnson, Meadville, Mo., U.S., 21st June, 1884; 5 years.

*Claim*— In a wash-boiler of the class described, the combination with the suds box or boiler, of the herein described revolving cylinder having tapering or frustum-shaped ends provided with openings K widest at their inner ends, buckets L arranged over the said openings, as described, and the interiorly arranged ribs or deflectors M triangular in cross-section and connecting the sides with the ends of the cylinder which are thereby braced, as herein shown and specified for the purpose set forth.

## No. 19,629. Lubricator. (*Graisseur.*)

William A. Lovelis and James D. Sprott, Ozan, Ark., U.S., 21st June 1884; 5 years.

*Claim.*—1st. In an oil-box or cup, the box A having oil-receptacle, $A_1$, openings *a* and $C_1$, in combination with an oiler-plug B having oil passages C and D, for the purposes set forth. 2nd. In an oil-box or cup, the box A having sliding cover F, oil-receptacle $A_1$, openings *a*, $C_1$ and oiler-plug B, in combination with pipe G, as set forth.

## No. 19,630. Mechanical Movement.

(*Mouvement Mécanique.*)

John W. Dodge, Malden, and William Gordon, Boston, Mass., U. S., 21st June, 1884; 5 years.

*Claim.*—1st. The improved mechanical movement composed of the flexibly supported stock *a* adapted to be grasped by the operator's hand, and having two segmental guides, two segmental slides adapted to reciprocate in said guides, and provided with operating tools and mechanism for reciprocating said slides simultaneously in opposite directions, as set forth. 2nd. The combination of the stock having the handle portion and the segmental guides, the segmental slides 4, 4 adapted to reciprocate in said guides, and provided with tools 5, 5, the arbor *e* journalled in the stock and provided with two oppositely projecting eccentrics, and rods *g*, *g* connecting said eccentrics with the slides 4, 4, as set forth.

## No. 19,631. Windlass. (*Guindeau.*)

John Hamilton, St. John, N.B., and George W. Rambie, Montreal, Que., 21st June, 1884: 5 years.

*Claim.*—1st. The combination of the frame A secured either by bolts or the clips G, drum G operated through gearing by ratchet-wheels D and pawls F, all substantially as herein described. 2nd. The combination, with the frame A, of clips G, as and for the purposes set forth.

## No. 19,632. Knitting Machine.

(*Machine à Tricoter.*)

John Bradley, Chelmsford, Mass., U.S., 21st June, 1884; 5 years.

*Claim.*—1st. The combination, with the needle-head provided with a series of needles and the vibrating thread guides, of the stitch-wheel, dividing wheel and rotary thread-cutting wheel, substantially as described. 2nd. The combination, with the vibrating thread-guides, of the pivoted horizontal vibrating cam plates P, $P_1$ having the cams R and provided with the studs O, and the course-wheel L having the blocks N and actuating means therefor, substantially as described. 3rd. The combination, with the needle-head having the cam I, vibrating arm H having the pawl J, of the actuating wheel G having the block K, and the course-wheel L provided with the adjustable blocks N and the vibrating cam-plates P having the cams R, whereby the threaded guides M having the projections S, are vibrated, substantially as described. 4th. The combination, with the thread-guides and stitch-wheel, of the thread-holding plates T, $T_1$ and adjustable tension plate V and thread-cutting wheel U, substantially as described. 5th. The combination, with the thread-guides M, of the guide-plates W and intermediate plates Y forming the horizontal arm, substantially as described.

## No. 19,633. Illuminated Knob for Doors, &c. (*Bouton Illuminé pour Portes, &c.*)

Rollin D. Huntley and Samuel C. Keeler, Havana, N. Y., U. S., 21st June, 1884; 5 years.

*Claim.*—A luminous handle-knob, consisting of a body A having a circular recess B with bevelled edge, a layer D of luminous paint or composition, a glass disk C having a bevelled rim and shaped to conform to the shape of the finished knob, and a strip of cement E interposed between the bevelled edge of the recess and bevelled rim of the glass disk, substantially as and for the purpose shown and set forth.

## No. 19,634. Manufacture of Sugar.

(*Fabrication du Sucre.*)

Lucas M. Campi, Havana, Cuba, 21st June, 1884; 15 years.

*Claim.*—1st. In a vacuum pan, the combination, with the stationary dome, of the receiver movable to and from the dome, substantially as and for the purpose set forth. 2nd. In a vacuum pan, the combination, with the stationary dome, of the receiver movable vertically to and from the dome and horizontally from its vertical plane of movement, substantially as and for the purpose set forth. 3rd. In a vacuum pan, the receiver pivotally connected to its support, whereby it is adapted to be tilted to empty its contents, substantially as described and for the purpose set forth. 4th. In a vacuum pan, the receiver pivotally connected to its support and held from accidentally tilting, and, when tilted, from being suddenly precipated by the action of the springs, substantially as set forth. 5th. The combination, with the stationary dome A of the vacuum pan, of the receiver $A_1$ placed upon the screw F, whereby the receiver may be raised and lowered, substantially as and for the purposes set forth. 6th. The receiver $A_1$ of the vacuum pan pivoted upon its support, whereby the receiver may be tilted for emptying out its contents, substantially as described. 7th. The receiver $A_1$ held upon the screw F, which works through the truck G, in combination with the supporting track for the truck, whereby the receiver may be raised or lowered and moved to and from the dome A, substantially as and for the purposes set forth. 8th. The trucks G, G placed upon tracks C, C, and connected by rods or plates H, in combination with screw F, the receiver $A_1$ and stationary dome A, substantially as and for the purposes set forth. 9th. The dome A having the lower ring casting $a^1$, in combination with the receiver $A_1$ having the upper ring casting $b_2$, the casting $a^1$ being adapted to enclose the casting $b_2$, substantially as and for the purposes set forth. 10th. The upper casting $b_2$ of the jacket of the receiver formed with the flange $J_1$ and lip $J_2$, in combination with the dome formed with the lower casting $a_1$ to surround the casting $b_2$ and rest at its lower edge upon the flange $J_1$, substantially as and for the purposes set forth. 11th. The dome A formed with the recess $m_1$, in combination with the packing N placed in said recess, and the receiver $A_1$ adapted to be brought up to the packing, substantially as and for the purposes set forth. 12th. In a vacuum pan, the casting $b_2$ formed with the flange P and vertical plate Q, substantially as and for the purposes set forth. 13th. In a vacuum pan, the casting $b_2$ formed with the recess $m_1$, in combination with the dome A formed with the lip O, substantially as and for the purposes set forth. 14th. The shell S and arms R formed with the heating space $R_2$, in combination with the pipe T and short pipes $T_1$, through which steam is admitted to the spaces $R_2$, the arms being provided with the valves $q$ and short passages $q_1$ for exhausting the steam from the space $R_2$ into the shell, substantially as and for the purposes set forth. 15th. In a vacuum pan, the hollow agitator K having hollow arms R, in combination with the hollow journal U and means, substantially as described, for supplying steam to and revolving the agitator, substantially as and for the purposes set forth. 16th. In a vacuum pan, the coupling pipe $g_2$ arranged to connect the steam pipe $g$ with the space $h$ and to lock the dome and receive together, substantially as described. 17th. The box $h_2$ having the elongated space $i$, in combination with the longitudinally movable screw couplings pipe $q_2$, arranged to operate, substantially as and for the purposes set forth. 18th. In a vacuum pan, the agitator composed of a series of hollow arms R connected to a shell S journalled in the lower edge of the dome, in combination with the pipe T and short pipes $T_1$, the former being enclosed in the arms R, substantially as and for the purpose set forth. 19th. In a vacuum pan, the combination, with the agitator provided with the hollow arms R connected to the shell S having steam tight packed journals, of the pipe U and gear wheel V gearing with the pinion $V_1$ driven by suitable means, substantially as and for the purposes set forth. 20th. In a vacuum pan, the combination, with the agitator provided with the hollow arms R having short pipes $T_1$ and connected to the shell S having the pipe T, of the hollow steam tight packed journals the pipes U and $T_2$, the gear wheel V and pinion $V_1$ driven by suitable means, substantially as and for the purposes set forth. 21st. A calcimeter, made, substantially as herein shown and described, and consisting of a longitudinal instrument provided with a recess adapted to receive lime, and with an adjustable pusher moving within the recess to discharge the lime, as set forth. 22nd. In combination with the lime recess of the calcimeter, the graduations adapted to indicate the quantity of lime contained in, or discharged from, the calcimeter. 23rd. The lime measure $B_2$ formed with the groove $C_3$ and having graduations $d_3$, in combination with the pusher $C_3$, arranged to operate, substantially as described. 24th. The measure $B_2$ formed with groove $C_3$ and side grooves $g_3$, $g_3$, in combination with the pusher $C_3$ having central projections $e_3$ and lips $f_4$, $f_4$ that run in the grooves $g_3$,

$g^3$, and provided with the screw $C^4$ for holding the slide at any desired position, substantially as described. 25th. The combination, with the grooved measure $B^2$, of the pusher $C^3$ having projections $e^3$ that fit the groove, substantially as described. 26th. The method, herein described, of supplying and determining the exact quantities of lime deposited in the saccharine juice, which consists in applying the outer end of the lime-filled calcimeter above the mouth of the graduator, and then moving the pusher to the desired degree or mark upon the calcimeter, thereby discharging the lime into the graduator, and at the same time indicating the quantity of lime so discharged, substantially as set forth. 27th. The shell S of the agitator K carrying hollow arms R, and provided with the central partitions $s$ and small openings $s^1$, substantially as and for the purposes set forth. 28th. The receiver $A^1$ provided with the trunnions $h^1$, whereby it is adapted to rest upon the carriage $H^1$, to be moved to and from the screw F, substantially as described. 29th. The screw F held in a stationary socket, combined with the receiver $A^1$ adapted to be raised and lowered by the screw, substantially as described. 30th. The carriage $H^1$ provided with the drum $I^4$ and suitable gearing for revolving the drum, in combination with the receiver $A^1$ formed with the flange $j^3$, the flange and drum being connected by the chain $I^3$, substantially as and for the purposes set forth. 31st. The combination, with the elevating screw for elevating and lowering the receiver, of suitable worm gear $G^1$ arranged for operating the screw F, substantially as set forth. 32nd. In a vacuum pan, the combination of the shell S enclosing the pipe T and carrying the agitator arms R, provided with steam spaces $R^2$ and short pipes $T^1$, the pipe U, pipe $T^2$, nut W, coupling and clutch nut $W^1$, packing $W^2$, ring $k^1$, gear wheel V and pinion $V^1$ driven by suitable means, substantially as and for the purpose set forth.

## No. 19,635. Means of Ventilating Roofs and Houses. (*Moyens de Ventiler les Toits et les Maisons.*)

George Yon, Montreal, Que., 21st June, 1884 ; 5 years.

*Réclame.*—1o. La combinaison, dans une toiture de maison ayant un vide ou circule un courant d'air formé par les ouvertures d'entrée et de sortie E $E^1$ et des tubes aspirateurs G, le tout combiné tel que décrit et pour les fins indiquées. 2o. La combinaison, dans une toiture ayant un vide ou circule l'air, des tubes aspirateurs G et des ouvertures d'entrée et de sortie E $E^1$, tel que décrit.

## No. 19,636. Rack for Holding Barrels.

(*Chantier à Futaille.*)

William Walter and James B. Brown, Latrobe, Pa., U. S., 21st June, 1884 ; 5 years.

*Claim.*—The combination of a suitable frame or rack, with the two separate tilting devices L which are pivoted at their centres and arranged end to end, with the operating lever N, connecting-rods O, pivoted levers P, substantially as shown and described.

## No. 19,637. Metallic Oil Barrel.

(*Baril Métallique à Huile.*)

James W. Cuthbertson and James D. Anderson, Bothwell, Ont., 21st June, 1884 ; 5 years.

*Claim.*—1st. The body A of a metallic oil barrel, constructed in one or more sections, in which corrugations A A1 are formed, in combination with one or more ring braces F, F, either on the inside or outside of the barrel, or both, as required, substantially as described. 2nd. The body A of a metallic oil barrel, constructed in one or more sections, and provided with corrugations $A^1$, $A^2$, overlapping edges $A^3$, $A^3$ and concaved heads C provided with flange $C^1$, in combination with one or more ring braces F, F, substantially as described.

## No. 19,638. Belt for Money, &c.

(*Ceinture pour Monnaie, &c.*)

Ada H. Kepley, Effingham, Ill., U.S., 25th June, 1884 ; 5 years.

*Claim.*—A belt for carrying money, diamonds or other valuables, consisting of a yielding belt or band adapted to be secured around the body, provided with pockets, as described, and having shoulder straps, the belt or band provided with buckles, whereby the belt and straps may be adjusted, all substantially as set forth.

## No. 19,639. Chain Sawing Machine.

(*Scierie à Chaîne.*)

Frederick L. Magaw, Flatlands, N. Y., U. S., 25th June, 1884 ; 5 years.

*Claim.*—1st. A saw composed of a number of teeth made in the form of links and having mortised and rounded ends provided with integral pivots, and a number of intermediate connecting links severally composed of longitudinal sections having rounded ends, mortised and perforated to fit the integral pivots of the toothed link and secured together by rivets or like devices, substantially as specified. 2nd. A saw comprising a number of links, each forming the stock of a tooth, detachable faces secured to the projecting portions of the stocks by means of dove-tailed tongues and grooves, and intermediate links connecting the links on which are the teeth, substantially as specified. 3rd. A saw comprising a number of links, each forming the stock of a tooth, detachable faces secured to the projecting portions of the stocks by means of dovetailed tongues and grooves which are tapered longitudinally, and intermediate links connecting the links on which are the teeth, substantially as specified. 4th. The combination, in an endless chain-saw, of a number of saw teeth links, a number of intemediate connecting links and intermatching tongues, and grooves on the saw-teeth for steadying the saw-teeth laterally, substantially as specified. 5th. The combination, in an endless chain-saw, of a number of saw-teeth links, a number of intermediate links and pins inserted through and secured in the intermediate links, and passing through arc-shaped slots in the saw-teeth links for the purpose of steadying the saw teeth laterally, substantially as specified. 6th. The combination, in an endless chain-saw, of a number of saw-teeth links, a number of intermediate links intermatching tongues and grooves on said teeth, and pins inserted through and secured in the intermediate links and passing through arc-shaped slots in the saw-teeth links for steadying the saw teeth laterally, substantially as specified. 7th. The combination, with a number of saws made in the form of chains, of drums for supporting the same composed of a number of peripherally-grooved disks for receiving the several saws, and secured together on shafts upon which they fit, whereby provision is afforded for readily arranging the saws at different distances apart so that they will produce boards of different thickness. 8th. The combination, with a number of saws made in the form of chains, of drums for supporting and operating the same, and means for holding the stock or log and for automatically feeding it to the chain saws, all substantially as and for the purposes described. 9th. The combination, in a chain sawing machine, of a number of chain-saws and drums for supporting and operating the same, having a lateral adjustment in relation to each other, and means for holding the stock or log and for feeding it to the saws, all substantially as and for the purposes described.

## No. 19,640. Vehicle Wheel. (*Roue de Voiture.*)

James J. Bush, Tacoma, W.T., U. S., 25th June, 1884 ; 5 years.

*Claim.*—1st. In an adjustable and expanding vehicle-wheel, as described, the inner and outer flanges $g$, $g^1$ of the half hub sections C, C constructed to form tapering oval sockets $g^2$, in combination with the tapering oval-shaped spokes E, and the bolts F arranged to pass in between the spokes and free of them, substantially as specified. 2nd, The hub sections C, C having inner and outer flanges $g$, $g^1$ forming sockets for the spokes of the wheel, constructed or provided with outer annular lips or branch flanges $g^3$ arranged to close the dividing space between said hub sections, essentially as and for the purpose herein set forth. 3rd. The set screw $s$, in combination with the hub sections C, C, the box B, the hollow screw cone G and the axle A, substantially as specified. 4th. The metallic half hubs C, C, having bodies of shell-like construction stiffened internally by end brackets $h$, $h^1$, and constructed with inwardly bent outer end flanges $f$, $f^1$, essentially as described.

## No. 19,641. Grapnel. (*Grapin.*)

Hubbard C. Chester, Noawk, Ct., U. S., 25th June, 1884 ; 5 years.

*Claim.*—The combination, with the shank and hinged and folding arms or flukes, of the recessed or cupped slide adapted to receive the points of the folded arms and to rest upon the unfolded or spread-apart arms and the locking-device, whereby the slide is held in either of its two positions, substantially as hereinbefore set forth.

## No. 19,642. Car-Coupling.

(*Accouplage de Wagon.*)

William H. Thurmond, Forsyth, Ga., U. S., 19th June, 1884 ; 5 years.

*Claim.*—1st. The combination, with the thrust bar and its operating means, of the locking jaw having hook part $c$, tail $c^1$ and bevel $c^2$, and the gravital plug D having the bevel $d$, substantially as described. and for the purpose set forth. 2nd. In combination with the draw-bar A having inclines $a^1$, $a^1$ and shoulder $a^2$, and with the pivoted jaw $c$ having tail $c^1$, with rebate $c^3$ and bevel $c^2$, the thrust bar F having inclines $f$, $f^1$ and shoulder $f^2$, and the gravital plug D having bevel $d$, as set forth. 3rd The combination of the draw-bar A, as described, and the detachable mouth-piece M, substantially as described and for the purposes set forth.

## No. 19,643. Machine for Sifting Soil from Potatoes. (*Machine à Cribler les Patates.*)

Isaac V. Puterbaugh, Vaughan, Ont., 25th June, 1884 ; 5 years.

*Claim.*—1st. A combined cleaning and grading machine for potatoes, consisting of a frame or shoe A, flexibly supported from a frame B and divided into two compartments separated by the partition E, in combination with netting grade $d$, as described, and placed on top of the shoe A with a grated bottom F, placed at the bottom of one of the compartments, substantially as and for the purpose specified. 2nd. A shoe A, flexibly supported by hangers C and divided into two compartments by the partition E, the grate F placed at the bottom of one of the compartments, and the spouts G and H extending from the said compartments, as specified, in combination with netting placed on top of the shoe, the netting over the grating bottom F being of a finer mesh than the grating over the other compartments, substantially as and for the purpose specified. 3rd. The frame or shoe A, flexibly supported and divided into two compartments by the partition E, the spouts G and H leading from the said compartments, in combination with graded netting placed on top of the shoe and partially surrounded by the sides L, substantially as and for the purpose specified.

## No. 19,644. Steam Cooking Utensil.

(*Ustensile de Cuisine à la Vapeur.*)

Allen S. Fisher, Clinton, Ont., 25th June, 1884 ; 5 years.

*Claim.*—1st. In combination with vessel A, Fig. 1, partition $f$ or $f^1$ forming stem chamber D or $D^1$, holes $i^1$ or $i$ and cover $g$, constructed substantially as herein shown and described. 2nd. In combination with vessel A, Fig. 1, disk C, partition $f$ or $f^1$ forming steam chamber D or $D^1$, holes $i$ or $i^1$ and cover $g$, substantially as shown and described. 3rd. In combination with vessel A, Fig. 2, partition $f$ or $f^1$ forming steam chamber D, holes $i^1$ and cover $g$, substantially as shown and described. 4th. In combination with vessel A, Fig. 2, partition $f$ or $f^1$ forming steam chamber $D^1$, holes $i$ and cover $g$, substantially as shown and described. 5th. In combination with a vessel A, Fig. 2, disk $c$, partition $f$ or $f^1$, forming steam chamber D or $D^1$, holes $i$ or $i$ and cover $g$, substantially as shown and described.

## No. 19,645. Feed Hopper for Roller Reduction Mills and Middlings Purifiers. (*Trémie pour moulins à Blé à Cylindres et pour Epurateurs des Gruaux.*)

William J. Mitchell, Hespeler, Ont., 25th June, 1884; 5 years

*Claim.*—1st. The combination of a feed hopper B, a feed board G extending its entire length, and a roller C fitting its outlet, having an axial movement in a direction reverse to the feed of the material, as set forth. 2nd. The combination of a feed hopper B, a feed board G extending its entire length, a roller C fitting its outlet, having an axial movement in a direction reverse to the feed of the material, and a brush D in contact with the feed roller, as set forth.

## No. 19,646. Speed Gauge for Locomotives.

(*Jauge de Vitesse pour Locomotives.*)

Edward R. E. Cowell, Detroit, Mich., U. S., 25th June, 1884; 5 years.

*Claim.*—1st. A speed gauge consisting of a vessel G provided with an index tube T, the ends of which are provided with tubes O, P, communicating respectively with the bottom and top of the vessel G, within which an archimedian screw or other suitable wheel is arranged to operate substantially in the manner and for the purposes described. 2nd. In a speed gauge, the combination of the vessel G provided with a proper screw or wheel M, and a tube O carrying an index tube T, with the return bend tube P affording communication between the upper end of the tube T and the top of the vessel G, substantially as and for the purposes specified.

## No. 19,647. Manufacture of Drawers, Pantaloons and Overalls. (*Fabrication des Caleçons, Pantalons et Pardesus.*)

James C. Tracy, Baltimore, Md., U. S., 25th June, 1884; 5 years.

*Claim.*—1st. The herein-described method of cutting drawers, pantaloons and overalls consisting in cutting the part comprising the one-half of the body and one leg so as to have from the waist to the ankle a continuous straight front edge *b*, and taking said edge from one selvage of the goods, taking the same edge of the other half-body and other leg from the same selvage, the waist edge of the two halves abutting, taking the straight front edges of the next pair of drawers from the other selvage of the goods and extending the tapering back edge *f* of the leg, whose front is cut from one selvage along the tapering back edge of the leg, which has its front cut from the other selvage, and finally cutting all the other parts necessary to complete one pair of drawers, pantaloons, or overalls from that portion of the goods between the back body-seams *e* of the two halves and the selvage, as shown and described. 2nd. In a pair of drawers, a continuous seamless crotch-piece L having a straight front edge *n* widest at the crotch or centre, and one of the tapering points extending down each drawer-leg, in combination with front facings I on each side of the fly-opening having their lower points *h* attached directly to the said seamless crotch-piece, as set forth.

## No. 19,648. Car Axle Truss.

(*Armature d'Essieu de Wagon.*)

Charles E. Eaton, Chelsea, Mass., U. S., 25th June, 1884; 5 years.

*Claim.*—1st. A car axle truss formed in two sections C, C, each being a unitary casting and having an abutting flange *b* adapted to be bolted together, and a smaller flange or hub *e* with rods or stays *f* uniting the two, and arranged obliquely to the axis, substantially as specified. 2nd. The sections B of the axle formed with groove *t*, the sectional flanged ring *s* and the enclosing ring *u*, and a recess in flange *b* to receive said rings, substantially as specified. 3rd. In an axle truss formed with flange *b*, rods *f* and hub *k*, the radial stays *l* uniting said hub and rods *f*, substantially as specified. 4th. In an axle truss and in combination with hubs *e*, *k*, chambered as shown, the flange collars *n* and ring packing *p*, substantially as specified. 5th. In a car axle truss, the outer hub *k* formed with a chambered enlargement *g* to receive the hub of wheel B, and a ring packing *h* arranged in said chamber, substantially as specified. 6th. In an axle truss, the hubs *e*, *k* formed to receive the axle B, and with an annular recess to receive the oil-packing *j*, with a radial opening to afford access thereto, substantially as specified. 7th. The hubs *e*, *k* formed with annular recesses, toothed as shown, and adapted to receive the anti-friction metal *i* therein, to serve as the journal bearings of axle B, substantially as specified. 8th. The sections C, C of an axle truss, formed with abutting flanges *b* respectively, formed with concentric recess *c* and projection *d* fitting therein, substantially as specified.

## No. 19,649. Soldering Tool. (*Outil de Souleur.*)

Raoul Girouard, Quebec, Que., 24th June, 1884; 5 years.

*Claim.*—A soldering-tool constructed of a handle A, hollow stem E provided with conical tube F, hollow soldering tip H having radial bores J, gas pipe B provided with a gas burner G, and having a screw adjustment in the handle longitudinally, to approach and recede the gas burner from the conical tube at will, and thereby regulate the intensity of flame and concentrate it to enter the hollow tip, as set forth for the purpose described.

## No. 19,650. Machine for Sharpening Saw Blades. (*Machine pour Rémouler les Lames des Scies.*)

Emil Mossberg, Elfkarloo, Sweden, 25th June, 1884; 5 years.

*Claim.*—1st. A grinding tool composed of a stock and handle, a grinding or abrading body and a driving pulley for rotating said body, supported from stock and handle, said parts constituting a grinding tool, as described. 2nd. A grinding tool composed of a stock and handle, a grinding or abrading body, a driving pulley and a friction gear connecting said pulley with the grinding body to rotate the same, said parts constituting a portable grinding tool, as described. 3rd. A grinding tool composed of a stock and handle, a grinding or abrading body and a pulley, for rotating said abrading body, in combination with a driving pulley and a flexible connection between said pulley and the driven pulley of the tool, whereby said tool may be guided relatively to the body operated upon, as described. 4th. A grinding tool composed of a stock and handle, a grinding body and a driven pulley supported from said stock, and in combination therewith, of a driving pulley and a flexible connection between said pulley and the driven pulley, of the tool for rotating the grinding body, substantially as described and for the purpose specified. 5th. A grinding tool composed of a stock and handle, a grinding or abrading body, a driving pulley, a friction gear for transmitting the rotation of the pulley to the grinding body, and means for regulating the frictional contact of said friction gear, and said parts being supported from said stock and handle, substantially as described and for the purpose specified. 6th. A grinding tool composed of a stock and handle, a grinding or abrading body, a driving pulley, a fricton gear for transmitting the rotation of the pulley to the grinding body, and means for regulating the frictional contact of said friction gear, and said parts being supported from said stock and handle, and in combination therewith, of a driving pulley and a flexible connection between said pulley and the driving pulley of the tool, substantially as described and for the purpose specified. 7th. The herein described grinding mechanism, consisting of a stock and handle, a grinding or abrading body and a driving pulley by rotating said grinding body, in combination with a driving pulley supported from an oscillating, counterbalanced frame, and a flexible connection between said driving pulley and the driving pulleys, substantially as described and for the purpose specified. 8th. The combination, in a grinding, abrading or polishing tool, of a stock or support, and grinding, abrading or polishing bodies of various forms or dimensions or both adapted to be interchangeably connected with and rotated on said stock, as described for the purpose specified. 9th. The combination, in a grinding, abrading or polishing tool, of a stock or support, an arbor rotatably mounted therein and grinding, abrading or polishing bodies of various forms or dimensions or both adapted to be interchangeably connected with said arbor, substantially as described and for the purpose specified. 10th. The herein described grinding tool, composed of a stock and handle *a a*$^1$ *a*$^2$, the arbor *a e*, the pulleys B, C and the grinding or abrading body E, said parts being arranged for operation, substantially as described. 11th. The herein described grinding tool, composed of the stock and handle *a a*$^1$ *a*$^2$, a grinding or abrading body *e a*, driving pulley for rotating said body, and a guide adapted to guide the grinding body and maintain the same in proper position on the body acted upon said parts, being supported from the stock and handle and arranged for cooperation, substantially as described and for the purpose specified. 12th. The combination, with the stock and handle *a a*$^1$ *a*$^2$, the grinding body E and a pulley for rotating said grinding body, said parts being supported from the stock and handle, of the frame G, the slotted hanger F, pulley *g*, and appliances, substantially such as described, to transmit power to pulley *g* and through the latter to the grinding body E, substantially as described. 13th. The combination, with the stock and handle *a a*$^1$ *a*$^2$, the grinding body E and appliances, substantially such as described, for rotating said body, said parts being supported from the stock and handle, of the frame G, slotted hanger F, pulleys *g*, *g*$^1$, *h*, friction gear *h*$^2$, *i* and a clutch coupling for throwing said gearing in and out of gear, substantially as described. 14th. The mode of producing abrading bodies which consists in moulding a mixture of finely divided grinding or abrading substance, gum, lac and a resinous or bituminous binding substance, in or about in the proportions set forth, around a socketed core and subjecting the mixture to heat and pressure, as described for the purpose specified.

## No. 19,651. Miner's Squib. (*Pétrolle de Mineur.*)

George Hayes, Girardville, Penn., U.S., 26th June, 1884; 5 years.

*Claim.*—An improved miner's squib, consisting of the tube A having an inner integral match *a*, coated or saturated with some rapidly-burning substance, and an outer match B secured to the tube over the match, substantially as herein shown and described.

## No 19,652. Bundle Carrier for Grain Binding Harvester. (*Porte-Gerbe pour Moissonneuses-Lieuses.*)

William Collins, Perham, Minn., U.S., 26th June, 1884; 5 years.

*Claim.*—1st. The combination, with a grain binder, of a swinging sheaf carrier secured to the same in such a position to receive the bundles as they fall from the binder table, and devices for discharging the bundles from the carrier. 2nd. The combination, with a grain binder, of a bundle carrier composed of a suitable number of curved fingers secured to the rock shaft, an abutment for holding the grain within the carrier and devices for dumping the carrier. 3rd. The combination, with a grain binder, of a rock shaft, curved fingers secured to the rock shaft and so situated as to receive the bundles of grain as they fall from the binder table, a suitable trip mechanism and an abutment for holding the grain within the carrier. 4th. The combination, with a grain binder, of a rock shaft, curved fingers secured to the rock shaft and adapted to receive the bundles of grain, a strengthening brace secured to the curved fingers, rods connecting said brace to the rock shaft and an abutment against which the grain rests. 5th. The combination, with a grain binder, the grain table of which is provided with a gate and guards secured to the lower face of said gate, of a rock shaft, curved fingers secured to the rock shaft and an abutment secured to the binder table below the gate, substantially as set forth. 6th. The combination, with a binder table and upright standards, of the rock shaft having the curved fingers secured thereto, and the depending bearings, one of which is elongated substantially as set forth. 7th. The combination, with a grain binder, of a rock shaft, an arm secured to the rock shaft, a suitable rope or equivalent secured to the arm, curved fingers depending from said rock shaft and an abutment against which the grain rests, substantially as set forth. 8th. The combination, with a grain binder, provided with a gate and guards secured to the gate, of the rock shaft, curved fingers brace rods connecting the brace and crank shaft and an abutment, all of the above parts combined, constructed and

adapted to operate as described. 9th. The combination, with the binder table gate and sleeve surrounding the binder shaft, of a standard secured to the frame of the machine, a standard secured to the sleeve, and a bundle carrier the rock shaft of which is provided with the depending bearings, substantially as set forth.

## No. 19,653. Mechanical Power.

(*Force Mécanique.*)

Nicholas J. Rice, Vernon, Pa., U.S., 26th June, 1884; 5 years.

*Claim.*—1st. The combination, with the frame having suitable fixed die or tool, of the eccentric B provided with a handle, the eccentric C pivoted on sliding bolt, the tool holder connected also to said bolt and suitable connecting devices, whereby the holder and eccentric C are drawn back, all substantially as described. 2nd. The combination, with the frame having suitable die or tool G, of the eccentric B having handle eccentric C pivoted with holder D on sliding bolt, the levers E and connecting bar F, all substantially as described.

## No. 19,654. Apparatus for Treating Fermented, Fermentable and Distilled Liquids. (*Appareil pour le Traitement des Liquides Fermentés, Fermentables et Distillés.*)

Charles W. Ramsay, Brooklyn, N.Y., U.S., 26th June, 1884; 5 years.

*Claim.*—1st, A converting or treating chamber, or a series of two or more thereof having parallel ends, and helical, or nearly helical sides, in combination with rotary distributors or beaters, all arranged and operating substantially as and for the purpose set forth. 2nd. A converting or treating chamber, or a series of two or more thereof having parallel ends, and helical, or nearly helical sides, provided with corrugations for a part of, or for the entire working distance between the induction and eduction ports of each chamber, in combination with rotary distributors or beaters, all arranged and operating, substantially as and for the purpose set forth. 3rd. A converting or treating chamber, or a series of two or more thereof having parallel ends and helical, or nearly helical sides, in combination with rotary distributors or beaters constructed with curved arms or blades, all arranged and operating substantially as and for the purpose set forth. 4th. A converting or treating chamber, or a series of two or more thereof having parallel ends and helical, or nearly helical sides, provided with corrugations for a part of, or for the entire working distance between the induction and eduction ports of each chamber, in combination with rotary distributors or beaters, constructed with curved arms or blades, all arranged and operating substantially as described. 5th. The distributors or beaters $B_2$, $C_2$, $D_2$, when they are constructed with arms or blades, which are curved in such manner as to operate substantially as described. 6th. The combination of two or more converting chambers arranged in a series and provided with rotary beaters, an induction pipe at one end of the series, an eduction pipe at the other end of the series, and connecting pipes or passages between the chambers, each successive chamber of the series being larger than the preceding chamber, substantially as described. 7th. The combination of two or more connecting chambers arranged at different heights relatively to each other, rotary beaters within said chambers and downwardly inclined pipes connecting the chambers, substantially as described. 8th. An air or gas compressor, in combination with one or more converting chambers B, C, D, either with or without corrugations, substantially as described. 9th. The discharge or eduction apertures or ducts in the converting chamber or chambers, so located or arranged as to take the exhaust from such chamber or chambers at as low a point as possible, and thereby to enable the fluids or vapours under treatment to be discharged downwardly, substantially as and for the purpose set forth. 10th. The combination of a series of connecting chambers, each chamber having parallel ends, and helical, or nearly helical sides, rotary beaters in said chambers, and pipes or passages connecting the chambers, substantially as described. 11th The combination of a series of treating chambers having parallel ends, and helical, or nearly helical sides, provided with corrugations between the induction and eduction ports, rotary beaters within said chambers and pipes connecting the chambers, substantially as described.

## No. 19,655. Dynamo-Electric Machine.

(*Machine Dynamo-Electrique.*)

Nathan H. Edgerton, Philadelphia, Pa., U. S., 26th June, 1884; 5 years.

*Claim.*—1st. In a dynamo-electric machine, the combination, with a fixed commutator composed of minor segments electrically connected together, and of major segments to which the wires of field circuits are connected, of a revolving armature composed of the following elements, to wit: a series of bobbin spools assembled in cylindriform relationship, a series of coils forming armature bobbins and being composed of wires wound upon said bobbin spools, and a series of bobbin terminals, contacts or brushes to which the terminal extremities of the wires of said coils are connected, substantially as hereinbefore set forth. 2nd. In a dynamo-electric machine, the combination, with a fixed commutator composed of minor segments electrically connected together, and of major segments to which the wires of field circuits are connected, of a revolving armature consisting of the following elements, to wit: first, a series of bobbin spools assembled in cylindriform relationship; second, a series of coils forming armature bobbins and being composed of wires wound upon said bobbin spools; third, a series of bobbin terminals, contacts or brushes to which the terminal extremities of the wires of said coils are connected, and, fourth, a head plate or equivalent contrivance for carrying and insulating the bobbin terminals formed of, or provided with, insulating material and adapted to rotate in fixed connection with the spools, substantially as set forth. 3rd. In a bipolar dynamo-electric machine, the combination of two oppositely placed semi-cylindric or segmental pole-pieces of soft iron, each provided as to its exterior surface with three radial cores, with two oppositely placed semi-cylindric shells of iron, which form the casing of the apparatus, are concentric with the pole pieces and to which said pole pieces are connected and supported through the instrumentality of their cores, substantially as and for the purposes set forth. 4th. In a dynamo-electric machine, a fixed commutator composed of minor segments electrically connected together, and of major segments to which the wires of field circuits are connected, substantially as described. 5th. In a dynamo-electric machine, the combination, with a fixed commutator composed of minor segments electrically connected together, and of major segments to which the wires of field circuits are connected, of two field magnets provided with semi-cylindric magnetic pole pieces set so as to leave between their adjacent sides open spaces which constitute the neutral zone of the machine, the arrangement being such that the minor segments in the set up of the machine register within the area of the neutral zone, while the major segments register within the area of influence of the field magnets, substantially as hereinbefore set forth. 6th. In a dynamo-electric machine, the combination, with a fixed commutator composed of minor segments electrically connected together, and of major segments to which the wires of a field circuit are connected, of a revolving armature composed of a series of separate coils suitably connected for the formation of separate armature or interior circuits, the terminal extremities of which coils are connected with bobbin terminals, contacts or brushes adapted to revolve with the armature, and in contact with both the major and minor segments of the commutator, substantially as and for the purposes hereinbefore set forth. 7th. In a dynamo-electric machine, the combination, with a fixed commutator composed of minor segments electrically connected, and of sets of major segments assembled together with the minor segments in suitable relationship preferably cylindriform, and as to the respective sets separately connected with the terminal extremities of the wires of separate field circuits, of a revolving armature composed of a series of separate coils suitably connected for the formation of separate armature or interior circuits, the terminal extremities of which coils are connected with bobbin terminals, contacts or brushes adapted to revolve with the armature and so respectively disposed as to travel in opposite pairs upon different sets of major segments and upon the minor segments of the commutator, substantially as and for the purposes hereinbefore set forth. 8th. In a dynamo-electric machine, a fixed commutator composed of minor segments electrically connected by a wire of any desired length to form an exterior circuit, not being a field circuit, but being employed for useful work, and of sets of major segments electrically connected with the terminal extremities of the wires of separate exterior field circuits and assembled in suitable relationship preferably cylindriform, with the minor segments, in combination with a revolving armature in which are disposed the wires of separate armature of interior circuits, the terminals of which revolve with the armature in separate pairs connected with separate armature circuits, and in contact by sets with both the different sets of major segments and with the minor segments of the commutator, all substantially as and for the purposes hereinbefore set forth. 9th. In a dynamo-electric machine, the combination, with a fixed commutator composed of minor segments electrically connected together, and of major segments to which the wires of field circuits are connected, of an armature composed of a series of bobbins, the terminals contacts or brushes of which revolve fixedly with said bobbins and are controlled by spring or kindred cushioning devices, to tread upon both the major and minor segments of the fixed commutator, substantially as set forth. 10th. In a dynamo-electric machine, the following instrumentalities in combination: two oppositely placed field magnets, the pole-pieces of which are semi-cylindric, a fixed commutator composed of two segments electrically connected by a wire of any desired length, and of two segments insulated from the two first named, but electrically connected by a wire forming a circuit, of the field magnets, a cylindriform armature revolving within the pole-pieces of the field magnets and provided with coils forming the armature circuits, and a series of pairs of terminals or contacts for the wires of the armature circuits, each pair connected with an armature circuit revolving as a fixed whole with the armature, and disposed so as to travel in contact with the segments of the commutator, substantially as hereinbefore described. 11th. The method of demagnetizing the bobbins of a given armature circuit, of a dynamo-electric machine, at the moment when said bobbing register within the area of the neutral zone of the machine, at which moment no current is being generated in said bobbins by either magnetic field, which consists in bringing the terminals of said bobbins momentarily in contact with each other through the medium of an intermediate electrical connection not being a field circuit, and in discharging the residual magnetism from said armature bobbins through said electrical connection, the operation taking place successively as to all the bobbins, whereby not only is the meximum magnetization secured to the bobbins, but a subsidiary current also set up in said connection, which can be utilized for useful work, substantially as hereinbefore set forth. 12th. In combination with a dynamo-electric machine, a wire, the terminals of which are respectively in opposite major segments of the commutator which is carried in coils around the spools of the field magnets, and carried off or prolonged to form on exterior main or lamp circuit, and a wire, the terminals of which are in the minor segment of the commutator and which is not connected with the field magnets but which constitutes a subsidiary circuit, substantially as set forth. 13th. In a system of producing electrical currents by means of a single bipolar dynamo-electric machine, the combination of one field circuit employed for the running of lamps or the doing of other work, a second field circuit employed for the running of separate series of lamps or the doing of other work, and a third or subsidiary circuit employed not only for the demagnetization of the armature bobbins and for the consequent securing of a maximum energy in all the currents, but also for the running of a third separate series of lamps or the doing of other work, all of said circuits having their terminals in said machine. 14th. The method of demagnetizing the armature bobbins of a dynamo-electric machine, which consists in passing each of the demagnetizing armature currents in turn through a circuit connecting such portions of the commutator as are not in connection with the field circuits. 15th. In a system of producing electrical currents by means of a single bipolar dynamo-electric machine, the combination of one field circuit employed for the running of one series of lamps, a second field circuit employed

for the running of a separate series of lamps, and a third or subsidiary circuit, not being a field circuit, employed for the demagnetization of the armature bobbins and for the consequent securing of a maximum energy in all the currents, all of said circuits having their terminals in said machine. 16th. In a dynamo-electric machine, a fixed commutator composed of minor segments electrically connected together, and of major segments to which the wires of field circuits are connected, the said major circuits being divided into sets, whereby any desired number of said wires may be connected with the machine.

## No. 19,656. Ore Amalgamator.

(*Amalgamateur de Minerai.*)

Henry Moon, Thomasville, N. C., U. S., 26th June, 1884; 5 years.

*Claim.*—In an amalgamator, a longitudinally-reciprocating amalgamating pan having at one end thereof an inwardly curved wave-plate, the free end of which extends downward or toward the surface of the amalgam in the said pan, substantially as specified.

## No. 19,657. Sulky Plough. (*Charrue à Siège.*)

John W. Bartlett, Moline, Ill., U. S., 26th June, 1884; 5 years.

*Claim.*—1st. In a sulky plow, the beam A of solid metal bent at the rear, downward and forward, to carry the rear furrow wheel, and connect pivotally with the heel of the landside or standard, as set forth for the purpose described. 2nd. The lever Q, fulcrumed to beam A rearward of the mold-board, and carrying the rear furrow wheel R, for the purposes described and as set forth. 3rd. The plow standard C, the upper end straddling beam A and the lower end secured to the landside of the plow, and connected by rod or bar D to lever E journalled to crank axle I, in combination with rack G secured to beam A to tilt the point of the plow upward or downward, as described, for the purpose set forth. 4th. The plow landside having a pivotal connection at the heel or standard C, with the downward termination of beam A, to allow of the point of the plow being adjusted to level with the furrow wheel, as described. 5th. The coupling U connected by king-bolt V to forward end of beam A, and having a lateral and downward arm X carrying the front furrow wheel W, and having a sleeve I and quadrant bar $Z^1$ and clevis Z hung by king-bolt V, in combination with beam A, the whole constructed and operating substantially as described for the purpose set forth. 6th. The pole rod Q inserted in sleeve I, and having an endwise adjustment therein, as set forth for the purpose described. 7th. The combination, with the crank axle I carrying land wheel M, of the levers F, M, racks G, O, connecting rod D and tilting standard C, as set forth, for the purposes described. 8th. In combination with beam A, the rack G having slots near the end and secured by bolts H, $H^1$, whereby the rack may be tipped forward or rearward as required, as set forth for the purpose described.

## No. 19,658. Sheet Metal Cans.

(*Boîte Métallique.*)

William Wilson, ir., and Charles Green, Greenville, Del., U. S., 26th June, 1884; 5 years.

*Claim.*—1st. The method of manufacturing a sheet metal can, which consists, first, in forming a side body proper, then in striking from a blank of predetermined contour and proportions a saucer-shaped form, then in striking the bottom from said saucer-shaped form to form the bottom of the side body, then in connecting the flanged rim, remaining after striking the bottom from the saucer-shaped form, with the side body by means of a ripping wire and solder, and then in double seaming a top with the flanged rim, all substantially as hereinbefore set forth. 2nd. As a new article of manufacture, an uncovered sheet metal can, the side body of which is provided with a flanged rim secured thereto by solder and a ripping wire, substantially in the manner and for the purposes hereinbefore set forth. 3rd. As a new article of manufacture, an uncovered sheet metal can, the side body of which is provided with a flanged rim secured thereto by solder and a ripping wire, and the bottom of which is composed of a blank struck out from the blank from which the flanged rim is formed, substantially as described. 4th. In combination, with the side body of a sheet metal can, and with a flanged rim secured to said side body by solder and a ripping wire, a top adapted to be double seamed with the flange of the solder-secured rim, substantially as described. 5th. The combination to form an hermetically-sealed slip-cover wire rip can of the side body, the flanged rim, the ripping wire, the solder and the top double seamed with the flanged rim, substantially as described. 6th. As a new article of manufacture, a slip cover for a can, the top and the rim of which are united by a double seam. 7th. In combination, with the body of a sheet metal can, a slip cover, the top and the rim of which are formed of separate pieces united by a double seam, substantially as set forth.

## No. 19,659. Quilting Frame. (*Métier à Piquer.*)

Henry T. Davis, New York, N. Y., U. S., 26th June, 1884; 5 years.

*Claim.*—1st. An adjustable weight P, in combination with a quilting attachment having guide rail and its supports, and adapted to be supported at one side on the sewing machine table. 2nd. In combination with a quilting attachment having guide-rail and its supports, and adapted to rest at one side on a sewing-machine table, the weights P adjustable on the transverse bars of the attachment, as set forth.

## No. 19,660. Neck Yoke. (*Joug.*)

Elias H. Haight, Rockford, Ill., U. S., 26th June, 1884; 5 years.

*Claim.*—In a neck yoke coupling, the eye-pieces *c* extending from the yoke, and forming bearings for the pivot bar *k* having an annular bearing *l*, in combination with the pole-ring *m* having the pivot-post *p* fitting into said bearing, as set forth.

## No. 19,661. Press for Sacking Bran, &c.

(*Presse pour Ensacher le Son, &c.*)

Arthur L. Battson, Morrisburg, Ont., 26th June, 1884; 5 years.

*Claim.*—1st. A sacking press, constructed substantially as herein shown and described, and consisting of the receiving case having hinged rear plate, the sack case, the sack-holding mechanism, the screw and follower for compressing the material, a screw-driving mechanism and mechanism for throwing the driving mechanism into and out of gear, as set forth. 2nd. In a sacking-press, the combination, with the receiving-case D, of the hinged rear plate F having top flange G, the rear brackets $C^2$, the pivoted bars K, L, P, and the shaft S having rigid arms R, and lever T, substantially as herein shown and described, whereby the material can be admitted and shut off by adjusting the said plate, as set forth. 3rd. In a sacking press, the combination, with the receiving case D having catches $D^1$, $G^1$, of the outer skeleton case $M^1$ $N^1$ $O^1$ having hinged sides, substantially as herein shown and described. 4th. In a sacking-press, the combination, with the driving gear-wheel 15 and its shaft 16, and the screw *t*, of the sliding bearing 17, the cord or chain 19, the shaft 20 having cam 21 and lever and cord 27, 28, the trip lever and its spring 22, 24, and the collar 26, substantially as herein shown and described, whereby the driving gearing will be thrown out of gear automatically and can be readily thrown into gear, as set forth. 5th. In a sacking-press, the combination, with the casing D and the ends of the hoop bar $C^1$, of the spring catches $D^1$ $G^1$, substantially as herein shown and described, whereby the sack cover plate, when forced down by the follower will be caught and held as the inner case, hoop, top plate and package are dropped away from pressure, as set forth. 6th. In a sacking-press, the combination, with the bottom plate $B^1$ and the bent bar $C^1$, of the inner case $J^1$ having hinged sides, and the outer skeleton case $M^1$ $N^1$ $O^1$ having hinged sides, substantially as herein shown and described, whereby the sack will be securely held while being filled, as set forth. 7th. In a sacking-press, the combination, with a side plate top, the inner case $J^1$ having recesses or slots $J^2$ and an arm, of the bent bar $C^1$, of the free hinged straps $K^1$ having offsets $K^2$, and the bottom $L^1$, substantially as herein shown and described, whereby the said case will be securely fastened, shut and held in place, as set forth. 8th. In a sacking-press, the combination, with the skeleton case $M^1$ $N^1$ $O^1$ having hinged sides, of the series of cams $P^1$ and their connecting rods $Q^1$, substantially as herein shown and described, whereby the case can be readily locked and released, as set forth. 9th. In a sacking press, the combination, with the base plate $R^1$, of the bars $S^1$, the connecting bars U, Z, the bent bar V having roller W and slot X and the lever *a*, substantially as herein shown and described, whereby the said toggle bars can be readily opened to raise the plate, as set forth. 10th. In a sacking press, the combination, with the toggle bars $S^1$, of the bars U, *b*, the connecting bar *c* having slot *e*, and the lever *f*, substantially as herein shown and described, whereby the said toggle bars can be readily closed to lower the base plate of the press, as set forth.

## No. 19,662. Spark-Arrester. (*Arrête-Flammèche.*)

Alexander Mitchell, Wilkes' Barre, Pa., U. S., 26th June, 1884; 5 years.

*Claim.*—1st. In a spark-arresting device, the combination, with the smoke box, of a grating or screen, a bar or receptacle for sparks, a duct or pipe connecting the smoke box and receptacle, and a pipe leading from said receptacle to the stack, whereby a vacuum is created in the receptacle by the exhaust, substantially as set forth. 2nd. In a spark arresting device, a grating or screen within the smoke-box, a box or receptacle for sparks, and a duct or pipe connecting the smoke-box and receptacle, combined with a vacuum pipe connecting the receptacle with the stack, and a pipe uniting with the vacuum pipe for forcing live steam into said pipe, substantially as set forth. 3rd. In a spark-arresting device, the combination of a screen within the smoke-box, a box or receptacle for sparks placed exteriorly of the smoke-box, a duct or pipe connecting the smoke-box and receptacle, and a pipe for conveying water to said receptacle, substantially as set forth. 4th. In a spark-arresting device, the combination of a spark-box or receptacle and a vacuum-pipe leading therefrom to the stack, and presenting an extended perforated area within the spark-box or receptacle, substantially as set forth. 5th. In a spark-arresting device, a spark box or receptacle and a vacuum pipe leading thereto from the stack, combined with a water supply pipe and an overflow valve, substantially as set forth.

## No. 19,663. Crate for Dairy Products, &c.

(*Manne pour Produits de Laiterie, &c.*)

David Holland, Carlisle, Ont., 26th June, 1884; 5 years.

*Claim.*—The combination of the perforated sides C and ends B checked together, the trays *e* with wire trellis bottoms, the whole being constructed to be taken apart and packed in the lid *a*, substantially as and for the purpose hereinbefore set forth.

## No. 19,664. Waggon Jack. (*Chèvre de Carrosserie.*)

Joseph F. Lindsey, Marion, Ohio, U.S., 26th June, 1884; 5 years.

*Claim.*—1st. The combination, in a waggon-jack, of the parallel notched standards having side openings E, notched plates F inserted into said openings, so as to leave a narrow slot H opening into the notched bearings G, lever I having fulcrum-bolt K adapted to slide up and down in the slot H and to engage the bearings G, and brace-rod N having cross-head O at its free end, substantially as and for the purpose shown and set forth. 2nd. The combination, in a waggon jack, of the parallel standards A, A having wedge-shaped notches C, *c* and notched bearing plates F, lever I having fulcrum bolt K, and rod N having the wedge-shaped cross-head O at its free end, adapted to be wedged into the notches C, *c* and held in place therein, substantially as and for the purpose shown and set forth.

## No. 19,665. Roller Mill. (*Moulin à Cylindres.*)

Daniel W. Marmon, Indianapolis, Ind., U. S., 26th June, 1884; 5 years.

*Claim.*—1st The combination, in a roller-mill, of the supporting frame work, the roll shafts, a counter-shaft extending from end to end of the machine, substantially parallel with said roll shafts, pul-

leys on the several shafts, belts connecting the same and means for adjusting both ends of said counter-shaft simultaneously, whereby the belts at both ends of the machine are tightened or loosened at one operation, substantially as set forth. 2nd. In a roller-mill, the combination of the frame, the roll shafts, the counter-shaft M extending from end to end of the machine, pulleys on said sh fts, belts connecting said pulleys and the simultaneously adjustable boxes N for supporting the counter-shaft, substantially as described and for the purposes specified. 3rd. The combination, in a roller mill, of the frame A supporting the rolls and roll shafts, and having a tunnel through or under the same said roll shafts, a counter-shaft passing through said tunnel from end to end of the machine, pulleys on said shafts, belts for driving the same, and means for adjusting both ends of said counter shaft simultaneously, whereby the belts on both ends of said counter-shaft are tightened or loosened at one operation, substantially as set forth. 4th. The combination, in a roller mill, of the frame, the roll shafts, the counter-shaft pulleys on said shafts, belts connecting said pulleys, the rods O, the cross shaft P having arms P1, and means for operating the same. 5th. The combination, in a roller mill, of the frame, the roller shafts, counter-shaft, pulleys on said shafts, belts connecting said pulleys, the boxes N, the rods O, cross-shaft Q and means for connecting said rods and cross shaft, whereby said counter-shaft is rendered adjustable from the sides of the machine, substantially as set forth. 6th. The combination, in a roller mill, of the frame, the roll shafts, the counter-shaft, pulleys on said shafts, belts connecting said pulleys, the shaft P, rods connecting the boxes of said counter-shaft to arms on said shaft P, the shafts Q and a worm gear connecting said shafts P and Q, substantially as described and for the purposes specified. 7th. The combination of the bars L having lugs *l*, *l*, the shafts K having arms K2 and pinions or segments K1, and the feed gates J having upwardly-projecting rack-arms *j*, all substantially as shown and specified. 8th. The combination of the feed-gates I having arms *i*, the rocking devices I1 to which said arms are attached, and stops *i4*, substantially as shown and specified. 9th. The combination, in a roller mill, of the journal boxes, supports therefor, and means of adjusting and securing said boxes, consisting of the togales and securing-bolts, substantially as set forth. 10th. The combination of the swinging arms D, boxes E, toggles and bolts *e2*, *e3* and securing bolts *e1*, substantially as shown and specified.

## No. 19,666. Package for Currency.

(*Enveloppe à Monnaie.*)

Charles A. Ball, Delphos, Ohio, U.S., 26th June, 1884; 5 years..

*Claim.*—1st. The metal strap A provided with the longitudinal slot B, and at one end with a cross piece C having a slot D at right angles to the slot B, substantially as herein shown and specified. 2nd. A metal strap A provided with a longitudinal slot B, and at one end with a cross piece or head C, provided with a slot D at right angles to the slot B and with the tongues D1, substantially as herein shown and described. 3rd. The combination, with a pack of bills, notes, etc., of a metal strap passed around them and of boards M placed between the strap and the pack, which boards have bevelled edges or grooves *m* in their side edges, substantially as herein shown and described. 4th. The combination, with a series of bank notes, bills, etc., forming a pack, of a slotted strap for holding them together, and of a covering or wrapper for the pack, which wrapper has an opening over the slotted part of the strap to expose part of the edges of all the bills, etc., in the pack, substantially as herein shown and described. 5th. A wrapper for packages of notes, etc., having a slot G on the edges of which a piece of prepared fabric O is secured, substantially as herein shown and described. 6th. The combination, with a pack of bills, of the metal strap A having a longitudinal slot B and a transverse slotted head C, and of the boards M held between the strap and the package, substantially as herein shown and described.

## No. 19,667. Car Wheel. (*Roue de Char.*)

The Atwood Hemp Car Wheel Company, New York, N. Y., U. S., (assignee of Anson Atwood, Dunellen, N. J., U. S.,) 26th June, 1884; 5 years.

*Claim.*—1st. The combination of an elastic packing K, with the tire A and rim D having corresponding corrugations or roughenings upon their adjacent faces, so shaped as to lock the tire against both lateral and rotary slip on the wheel, substantially as described. 2nd. The combination of the rim D, tire A and elastic packing with their circumferential corrugations, with the loosely-engaging tongue and groove upon the tire and flange or ring, and with suitable means for preventing rotary slip, substantially as described. 3rd. The combination of the tire A, rim D, packing K, flange F or ring or rings F1, loose tongue-and-groove lock E and bolts G having no metallic contact with tire or rim, substantially as described. 4th. The combination of the tire A, rim D, packing K, flange F or rings F1, lock E and bolts G passing through grooves in the rim, with the lip *g*, substantially as described. 5th. The combination of the tire A, rim D, packing K, rings or flanges F, F1, lock E, bolts G and keys H, substantially as described. 6th. The compound of fibre and vaseline for packing railway-car wheels, substantially as described. 7th. A car wheel having the separate tire and a body cast in one piece consisting of the hub and rim, with the intermediate double arched portion having sand holes from the inner arch through the hub, and from the outer arch through the rim, and with unperforated sides, substantially as described. 8th. In a wheel having a tire A capable of yielding radially to thrust or jar, the combination of the body tire and a loose tongue-and-groove lock E connecting the tire to the body, substantially as and for the purpose described.

## No. 19,668. Bee Hive. (*Ruche.*)

Thomas P. McCormick, Rexville, N.Y., (assignee of James H. French, Elizabethtown, Ky.,) U. S., 26th June, 1884; 5 years.

*Claim.*—1st. The combination, with compartment C having opening *f* and the drop-bottom F, of the compartment B, and the division board E having glass panel *e* and opening *a* with cover *b*, said compartment and division-board being pivotally connected to the compartment C, substantially as and for the purpose set forth. 2nd. A bee-hive consisting of compartment B having a removable top *g*, and compartment C having drop-bottom F and opening *f*, comb frames D, division-board E having glass panel *e* and opening *a* with cover *b*, substantially as shown and specified.

## No. 19,669. Burnishing Machine for Boots, Shoes, &c. (*Astic de Cordonnerie, &c.*)

Steilman A. West, Racine, Wis., U. S., 26th June, 1884; 5 years.

*Claim.*—1st. In combination with a burnisher for the soles of shoes, drive-shaft provided with an adjustable eccentric bearing-head for the bale of the sliding stem of the cylindrical burnisher-shaft, whereby said burnisher is oscillated in a spherical bearing of said stand, substantially as set forth. 2nd. In a burnisher for the soles of shoes, the stand A having box bearings B, B and F, in combination with the shaft C having pulley D, head *b* with slot *b1*, eccentric bearings-plate D1 with flanges *a2* and *c*, socket *d* and locking-plate *d1*, and burnisher having cylindrical shaft and sliding stem provided with ball *e*, substantially as shown and described and for the purposes set forth. 3rd. In a burnisher for the soles of shoes, the eccentric bearing-plate D1 having flanges *a2* and *c*, socket *d* and locking-plate *d1*, in combination with shaft E having ring *e2* with slot *h* for pin *g*, sliding-stem E1 with ball *e*, and stem E2 for burnishing-tool F, substantially as shown and described and for the purposes set forth. 4th. In a burnisher for the soles of shoes, the burnisher F and shaft or holder E having ring *e2* with slot *h*, in combination with spherical bearings F1 having pin *g* and mechanism, substantially as described, for operating the burnisher, substantially as described and for the purpose set forth.

## No. 19,670. Drawbridge Signal.

(*Signal de Pont-lévis.*)

James N. Williams, Mobile, Ala., U. S., 26th June, 1884; 5 years.

*Claim.*—1st. The arm B1 having roller B journalled thereto, and the upper frame of a drawbridge, in combination with lever *h* and rod *g* having latching mechanism, and gate E, as set forth. 2nd. The forked lever C, rod *d* and gate E, in combination with the forked arm D1 having roller D journalled thereto, as set forth. 3rd. In a drawbridge gate, the lever *h*, in combination with the rod *g* having hooks *i*, as described and for the purposes set forth. 4th. In a drawbridge, the gate E having signal *a*, in combination with rod *d* and forked lever C and forked arm D1 having roller D journalled thereto, as set forth. 5th. In a drawbridge, the posts S, S1, the cross-bar *t*, the rod *g* having hooks *i*, in combination with gate E having catches *b*, *b*, substantially as as set forth.

## No. 19,671. Treatment of Cotton Seed.

(*Traitement de la Graine du Coton.*)

Joshua J. Green, Jackson, Miss., U. S., 26th June, 1884; 5 years.

*Claim.*—The described improvement in the art of removing lint from cotton seed consisting in subjecting the seed to the action of dilute sulphuric acid and heat, adding water to the heated mass to complete the carbonizing operation, and subsequently washing the seed free from the acid and burnt lint, all substantially as hereinbefore set forth.

## No. 19,672. Adjustable Saw Tooth.

(*Dent de Scie Mobile.*)

George W. Stinebring, Shreve, Ohio, U.S., 26th June, 1884; 5 years.

*Claim.*—1st. The combination, with the saw blade having the recess B1 and *d1*, of the tooth C formed of the segment of a circle and adjustable in a circular path in the recess B1, the expansion-fastener A having a slot *a* and a key *b* adapted to move in the slot, to expand the fastener and engage the recess *d1* in the blade, substantially as described. 2nd. The combination, with the saw blade having the recess B and projection *d*, of the segmental tooth C adjustable in a circular path in the recess, and the expansible fastener A having grooves *c* in the end into which fit the projections on the blade, substantially as described. 3rd. The combination, with the saw-blade having the recesses B1 and *d1* and projections *d*, of the segmental saw-tooth C adjustable in a circular path in the recess B1, the slotted expansion fastener A having the end grooves *c* into which the latter fit, the projections on the blade, and the key *b* in the slot for expanding the fastener, and adapted to enter the recess *d1* in the blade, substantially as described. 4th. The combination, with the saw-blade B having the recess B1, of the saw tooth C formed of the segment of a circle and adjustable in a circular path in the recess, and the expansible fastener A having a segmental edge bearing upon the segmental edge of the tooth, the expansion of the fastener causing to bind the tooth in place, substantially as described. 5th. The combination, with the blade B having the recess B1, of the saw tooth C formed of the segment of a circle and adjustable in a circular path in the recess, the slotted expansible fastener having a segmental edge bearing upon the segmental edge of the tooth and bearing against the saw blade, and a key in the slot of the fastener for expanding the same to bind the tooth in place, substantially as described.

## No. 19,673. Stenographic Printing and Writing Machine. (*Machine Sténographique Imprimant et Ecrivant.*)

George R. Anderson, Memphis, Tenn., U.S., 26th. June, 1884; 5 years.

*Claim.*—1st. In a machine for recording speech or language, the combination of a series of keys adapted to print characters, which, singly or jointly, represent consonants and figures, and keys bearing distinctive marks to indicate to which of the three classes the accented vowel of the word belongs. 2nd. In a stenograpic printing or writing machine, two groups of keys, each provided independently with a special character or mark, and having their finger buttons arranged in curved lines corresponding to the positions of the fingers and thumbs of the two hands as held in the act of striking the keys, whereby any or all of the keys may be struck at a time without shifting the hands or fingers. 3rd. In combination with a group of print-

ing, punching or embossing keys adapted to be simultaneously or separately struck or depressed by the ends of the fingers and thumb of the hand, a separate key adapted to be depressed by the knuckle of the thumb simultaneously with the depression of the keys of the group, substantially as set forth. 4th. In combination with a group of keys adapted to be depressed by the fingers and thumb, a key located in rear of the group and adapted to be depressed by the body of the hand or by the wrist, substantially as set forth. 5th. In a stenographic machine, the combination of two groups of keys arranged in curved lines corresponding to the positions of the fingers and of the two hands, a key or keys in rear of, and between the group in position to be actuated by the joint or knuckle of the thumb, and two keys in positions to be actuated by the body of the hand or wrist, without shifting the hands, whereby any or all the keys may be operated at a time. 6th. In a stenographic printing machine, the combination of a series of keys, which, separately or in combination, serve to produce marks representing all the consonants figures, and various combinations of consonants and other keys succeeding and following the first series, but capable of being simultaneously struck therewith, which do not thus combine with the first series, but which produce individually characters representing in the order named the letters B, L, N, T or D and S or Z following the series, and the letters S and Z preceding the first series, as and for the purpose explained. 7th. In combination with a series of keys, which, singly or in combination, represent the various consonants and their combinations, a series of independent keys representing respectively and independently the letters S, L, R, N, T, S. 8th. In combination, with a paper feed roll C having a ratchet wheel $a$, a pivoted yoke or frame E carrying a pawl D, and an arm G attached to said frame and serving to actuate the frame or yoke and thereby to rotate the feed roll. 9th. In combination with a feed roll and a ratchet wheel connected therewith, a series of key bars and a swinging frame overhanging the key bars at the inner sides of their pivots and provided with a pawl to engage with the ratchet wheel, whereby the depression of any key of the series is caused to move the frame and pawl and thereby to operate the feed-roll. 10th. In combination with a feed roll provided with a ratchet wheel, a series of key bars, a movable bar overhanging the key bars and carrying a spring pawl having a limited forward movement and adapted to engage with the ratchet, whereby the depression of a key causes the pawl to rotate the roll and then withdraw from the ratchet and thereby to permit the key bar to make a short and sudden stroke, substantially as and for the purpose set forth. 11th. In combination with one or more of the keys indicating the letters R, L, N, T, S, a set of four keys, which, independently and in combination, represent the different consonants and keys bearing marks to indicate the class to which the accented vowel belongs, all arranged substantially as described and shown to be struck simultaneously.

## No. 19,674. Waggon Running Gear.

(*Train de Voiture.*)

William H. Fanning. Lapeer, Mich., U.S., 26th June, 1884; 5 years.

*Claim.*—1st. In a waggon, the combination, with the axles C, D and the sand boards E, of the body supporting frames consisting of the bars G secured to the ends of the sand boards, the inclined bars H secured to the bars G and the brace bars I passing around the axles and having their ends secured to the said bars G, H, substantially as herein shown and described and for the purpose set forth. 2nd. In a waggon, the rear frames G, H, J, made with a forward extension J1 of their top bars, substantially as herein shown and described, whereby the waggon body will receive a firm support, as set forth. 3rd. In a waggon, the combination, with the front frame G H I, the platform bars M and the body L, of the plate N having grooved blocks O, the plate Q having rounded blocks P, the fifth wheel R S and the jointed king bolt T and its long pivot U, substantially as herein shown and described, whereby the forward and rear parts of the running gearing can rock independently and without straining the waggon body, as set forth. 4th. In a waggon, the combination, with the forward axle D and the tongue V and its braces X, of the three clips W, Y, Y, substantially as herein shown and described, whereby the said tongue is securely hinged to the said axle, as set forth.

## No. 19,675. Cigar Wrapper Cutting Machine. (*Machine pour Tailler la Chemise des Cigares*)

Henry Grunhagen, St. Paul, Minn., U.S., 26th June, 1884; 5 years.

*Claim.*—1st. In a cigar wrapper cutting machine, the combination of a fixed cutting knife, a piston in the knife having a downward intermittent movement therein, and adapted to be held stationary after each downward movement, and a shell or block having up and down reciprocating movement for pressing the successive wrappers upon the knife, substantially as and for the purpose set forth. 2nd. The combination of a stationary cutting knife, a reciprocating shell or block which presses the wrappers upon the knife, a spring depressed piston within the said shell or block, and means for locking and then releasing the piston in its raised position, substantially as described. 3rd. The combination of the stationary knife G1, reciprocating piston G3 in the said knife, reciprocating shield or block E1, reciprocating piston H1 therein, means for retaining the piston G3 after each intermittent downward movement, means for raising the piston H1 in the shell block and means for locking and again releasing the same in its raised position, substantially as specified. 4th. The combination of the lever D1, "mallet" or "block" F1 attached to, and operating with, said lever, plunger H1, piston H2, spring H3, cord $e_3$, rod L1 and pin L2 and knife G1, substantially as set forth. 5th. The combination of the pivoted lever D1, means for depressing one end thereof, bearing the head D3, counter-weight D2 upon its other end, shell or block E1 carried by the said lever head and stationary knife G1, substantially as described. 6th. The combination of the lever D1, piston H1, piston rod H2, spring H3, stationary pulley $C_2$, cord $e_3$, pulley $e_4$ carried by the said lever, and fixed pin $e_5$, substantially as and for the purpose herein specified.

## No. 19,676. Dynamo-Electric Machine.

(*Machine Dynamo-Electrique.*)

William Hochhausen, New York, N.Y., U.S., 26th June, 1884; 15 years.

*Claim.*—1st. In a dynamo-electric machine, a conducting armature plate having radial portions $c$ and alternate interior and exterior connecting portions $e$, $d$, as and for the purpose described. 2nd. The combination, with the armature shaft $a$, of a conducting sheet metal plate stamped or formed in the shape described, with radial portions $c$ and connecting portions $e$, $d$. 3rd. The combination, with the armature shaft $a$, of a conducting sheet metal plate $c$ $e$ $d$ and a series of fixed magnets, as and for the purpose described. 4th. The combination, with a series of parallel conducting plates conducted in series, and each formed with the radial and connecting portions, as described, of a series of field magnets, between whose poles said plates are made to rotate. 5th. In a dynamo-electric machine, an armature plate composed of radial portions and alternate interior and exterior connecting portions, said plate being provided with a projecting portion $g$, as and for the purpose described. 6th. The combination, with the series of conducting armature plates having parallel radial portions $c$, of the bolts $m$. 7th. The combination of the series of plates $c$, $e$, $d$, the bolts $m$ and clamp rings or plate D, as and for the purpose described. 8th. The combination, with the radial conductors capable of rotation, of the conductors $f$, $f_2$ arranged on opposite sides of the shaft and the conducting ring between one of said conductors, and the terminal of the radial conductors, whereby the armature is balanced. 9th. The combination, with the parallel conducting plates $c$, $e$, $d$ electrically connected in series, of the bolts $m$ insulated from said plates, and two circular ranges of magnets between which the radial portions of said plates are made to pass. 10th. The armature plate, as described, made with connecting portions $d$, $e$, larger in cross-section than the radial portions $c$ which they unite. 11th. The armature plate $c$ $e$ $d$, having portions $e$ and $d$ wider than the radial portion $c$. 12th. The combination, with the two circular ranges of magnets C, $C_2$, of a series of conducting plates formed as described, and having their radial portions in the same lines parallel with the armature shaft, said plates being bolted together and adapted to rotate in the interpolar space between the two ranges of magnets.

## No. 19,677. Creamer. (*Boîte à Lait.*)

Charles B. Thompson, New Glasgow, N.S., 27th June, 1884; 5 years.

*Claim.*—1st. In a creamer, the cover B having a central ventilating hole surrounded by an upwardly turned flange I, and provided externally with a ventilating cap J, as set forth. 2nd. The creamer A having an inverted cone bottom with a centre vertical outlet provided with semi-tubular cap H, combined with discharge tube F provided with gate G, as set forth for the purpose described. 3rd. The combination, with can A, of the ears D having pins D1 and cover B notched at the edge, coincidingly for the purpose described. 4th. The casing L having perforations M enclosing the observing glass to prevent breakage, as set forth.

## No. 19,678. Railroad Spike and Rolled Metal Bar for the same. (*Chevillette de Chemin de Fer et Barre de Métal Laminé pour cet objet.*)

James P. Perkins, Pullman, Ill., 28th June, 1884; 5 years.

*Claim.*—1st. A headed spike having a short square portion adjacent to its head, and having its four corners below said square portion replaced or cut off by four opposite faces, and terminating in a chisel-point in the plane of two opposite edges or ribs, substantially as and for the purpose set forth. 2nd. A spike provided with a suitable head, and a short square portion below the same, and having its corners below the said square portion replaced by concave faces, whereby intermediate longitudinal ribs are formed on opposite sides of the spike, substantially as and for the purpose set forth. 3rd. A spike having longitudinal ribs on its four opposite faces, and a cutting edge C extending the full width of the spike and located in the same plane with the ribs upon the sides of the spike, substantially as and for the purpose set forth. 4th. A spike having ribs at its sides continued to the extreme point of the spike, and ribs on its front and back portion terminating in bevelled surfaces $c_1$, whereby a chisel-point is formed in the plane of the lateral ribs, substantially as described. 5th. A rolled bar adapted to form spike blanks consisting of alternating rectangular portions, and portions having faces $f$ which cut off or replace the angles of the rectangular portions, substantially as described and for the purpose set forth. 6th. A bar adapted to form spike-blocks consisting of rectangular portions alternating with portions having concave faces, which replace the angles of the square portions, substantially as and for the purpose set forth. 7th. A rolled bar adapted to form spike-blanks consisting of rectangular portions, alternating with portions having concave faces $f$ which intersect the faces of the square portions in or near the median lines of the several faces so as to form opposite ribs, substantially as and for the purpose set forth.

## No. 19,679. Watch Movement Box.

(*Boîte à Mouvement de Montre.*)

Charles W. Harmon and Horace G. Skidmore, Cincinnati, Ohio, U.S., 28th June, 1884; 5 years.

*Claim.*—1st. A movement-holding ring for watches adapted to be held from movement in the case-center, and having the bezel and back secured to it by being turned on as by a screw or bayonet-joint connection, so that access can be had to the movement without removing it from the case-center, said ring being adapted for use as a movement-holding box, as set forth. 2nd. A movement-holding ring for watches adapted to be held from movement in the case-center, and whose back is secured to the ring-body by being turned on to it as by a screw or bayonet-joint connection, so that access can be had

to the movement without removing it from the case-center, said ring being adapted for use as a movement-holding box, as set forth. 3rd. The watch-movement box or receptable in three parts consisting of annular body B having $b$, $b^{II}$, $b^{III}$, the spiral grooves $b^{I}$, the hole $b^{IV}$ and the stud $b^{V}$, in combination with the separately attached screw C D and $C^{I}$ having inwardly-extending studs $c$, as and for the purpose set forth. 4th. The combination of a watch-case center A having recess $a^{I}$ and lip $a$, a movement box or receptacle in three pieces consisting of annular body B having rabbets $b$, $b^{II}$, $b^{III}$, the spiral grooves $b^{I}$, the hole $b^{IV}$ and the stud $b^{V}$ and the screw covers C, D and $C^{I}$ turned thereon independently of the case-center, having studs $c$ to engage in the spiral grooves, as set forth.

## No. 19,680. Overshoe for Horses.

(*Fer Pardessus pour Chevaux.*)

James W. Smith, Jersey, N. J.. U. S,, 28th June, 1884 ; 5 years.

*Claim.*—1st. The combination, with a horse-shoe plate having an upwardly projecting flange on its rim, calks at the front and rear of arms pivoted to the plate, and of a strap passed through openings in, or apertured lugs on the flange, and through openings in the free ends of the arms, substantially as herein shown and described. 2nd. The combination, with the horse-shoe plate A having the flange B and the calks C, $C^{I}$ and raised parts G at the rear end of arms pivoted to the front of the plate, and a strap passing through openings in the flange or lugs on the flange and through loops in the free ends of the pivoted arms, substantially as herein shown and described. 3rd. The combination with the horse-shoe plate A having a front opening D and the openings D at the rear ends, and having a transverse calk $C^{I}$ behind the openings D, and calks C behind the openings D, of means for holding the said plate on the horse's hoof, substantially as herein shown and described. 4th. The combination, with the horse-shoe plate A having calks at the front and rear, and having the front opening $D^{I}$ at the rear openings D, and jaws J at each end of the opening $D^{I}$, of the arms K held in the jaws and provided at their free ends with loops, and of a strap passed through openings in the flange or through lugs on the flange and through the loops on the free ends of the pivoted arms, substantially as herein shown and described.

## No. 19,681. Artificial Leg. (*Jambe Artificielle.*)

Samuel H. Boone and Justin S. Burt, Douglas, N. B., 28th June, 1884; 5 years.

*Claim.*—1st. The combination of the steel frame A A, with the spiral spring C and the bar passing through D and the set screw in connection therewith, substantially as and for the purpose herein before set forth. 2nd. The combination of the sole plate $f$, the ankle springs G, G and the stays F, F, substantially as and for the purpose hereinbefore set forth.

## No. 19,682. Split Ring. (*Anneau de Clés.*)

William M. Fisher, Attleborough, Mass., U. S., 28th June, 1884 ; 5 years.

*Claim.*—1st. As an improved article of manufacture, an oval-shaped split ring, as and for the purposes set forth. 2nd. As an improved article of manufacture, the herein-described oval split ring having its free ends terminating on opposite sides at one end of the ring, all substantially as shown and for the purpose set forth.

## No. 19,683. Revolving Book Stand.

(*Bois de Bibliothéque Tournant.*)

David D. Bowman, Eureka, Cal., U. S., 28th June, 1884; 5 years.

*Claim.*—1st. In a revolving book stand or support, the combination, with a series of revolving spiders and means for revolving them, of a series of shelves journalled between the arms of the spiders and adjustable weights attached to the back of the shelves, substantially as and for the purpose set forth. 2nd. In a revolving book stand or support, the combination, with the revolving spiders B and shelves A journalled between their arms, of the bracket $f$ provided with the serrated face $e$ having thumb screw $i$, and apertured face $e^{1}$ having weight $f^{1}$ attached, substantially as herein shown and described. 3rd. In a revolving book support, the shaft C provided with the spiders B B, in combination with the pivoted and weighted shelves A, lever J, weight K, cord H and suitable pulleys arranged for turning the shaft A, substantially as described. 4th. In a revolving book stand or support, the combination, with the case E, the shaft C journalled therein and provided with the spiders B and the pivoted and weighted shelves A, of the pulleys G, $g$, $h$, $h^{1}$, the weight K, the cord H, the lever J and means for locking said lever in position, substantially as herein shown and described. 5th. In a revolving book stand or support, the combination, with the case E having the hinged lid or shelves E, and a series of revolving shelves journalled in said case, of the operating lever J made in two parts hinged together within the case, substantially as and for the purpose set forth.

## No. 19,684. Feed Water Heater and Purifier. (*Réchauffeur et Epurateur de l'Eeau d'Alimentation.*)

Alexander F. Ward, Detroit, Mich., U. S,. 28th June, 1884; 15 years.

*Claim.*—1st. In a feed-water heater, a series of pans each, provided with an open convolute water-way, which conducts the water alternately from the periphery towards the center in one pan, and from the center towards the periphery in the next pan, and so on, all arranged and combined to form a continuous water-way through the whole series, with steam passages between the individual pans and their convolute ways, substantially as herein set forth. 2nd. In a feed-water heater, an open convolute water way or trough with steam passages between its convolutions, which latter are so inclined as to either lead the water from the periphery towards the center or from the center to the periphery, and have a bottom discharge for the water at the lowest point thereof, substantially as described. 3rd. In a feed-water heater, a pan having an open convolute water-way inclined so as to lead the water through its whole length, and provided with a bottom discharge opening at its lowest ends and dams along the bottom of the water-way to retard the flow of the water, substantially as described. 4th. In a feed water heater, a series of pans having open convolute water-ways which are alternately oppositely inclined, with a discharge opening in the bottom of each pan, so arranged as to form a continuous water-way through the whole series, in combination with steam passages provided between the open convolutions of the water-ways, whereby the water is kept from the direct course of the moving steam, substantially as and for the purpose described. 5th. In a feed-water-heater, a settling chamber formed by the inverted conical bottom of the heater, in combination with the peforated ring-plate H, and centrally perforated partition plate F, substantially as described. 6th. In a feed-water heater, the funnel-shaped partition plate E, provided with the discharge opening $a$, with the feed outlet G, arranged in relation thereto, as described, for the purpose of withholding the oil and scum on the surface of the feed-water. 7th. In a feed-water heater, the annular feed-water chamber B, formed above the settling chamber from which it is separated by the ring-plate H, carrying a filtering medium, in combination with the partition plate F, centrally perforated, all so arranged that the feed-water enters the settling chamber centrally with a downward course and then flows to the water chamber B with an upward course, whereby the separation of the solid precipitations is greately assisted, substantially as described. 8th. In a feed-water heater, the overflow bucket M, counter-balanced and swung on the lever N, and suitably connected with the valve P in the supply pipe, in combination with the waste pipe K, in the bucket open on top and having a waste opening C near the bottom, all so arranged that the overflow will swing the bucket and thereby regulate the admission of supply water into the heater, substantially as described. 9th. In a feed-water heater, an automatic regulator for the admission of supply water into the heater, the same consisting of a bucket counter-balanced and swung on a lever and having waste ports at different heights in the bucket, all so arranged that the overflow from the heater into the bucket swings the same at intervals depending on the amount of overflow and thereby operates the valve in the supply pipe by means of suitable connection, substantially as described. 10th, In a feed-water heater, the combination of a settling chamber and filter abstracting the said precipitations, with a pulsating overflow for carrying off the oil and scum floating upon the surface of the feed-water, substantially as described.

## No. 19,685. Car Axle Die.

(*Etampe pour Essieu de char.*)

James Smith, Boston, Mass., U.S., 28th June. 1884; 5 years.

*Claim*—1st. As a means for forging the journals of car axles, the dies $e$, $e$ having faces $e^{1}$, $e^{1}$ of less than the length of the completed journal, jointly with dies $f$, $f$ having faces $f^{2}$, $f^{2}$ of substantially the same length as the completed journal, the hammering portions of said dies $f$ forming arcs of a circle, whose center is in the plane of the meeting faces of the die blocks, whereby the journal is forged to a substantially perfect cylindrical form with a predetermined diameter, as set forth. 2nd. The dies $f$, $f$ in the blocks $a$, $a^{1}$ for forming the arms of axles, each die presenting a hammer face that is a short arc only less that the half of a circle drawn from a point in the parting line of the dies, and the two dies jointly having such configuration indicated by $f$ $f^{1}$ $f^{2}$ and $f^{3}$ as would mould the axle arm $r$, its journal. shoulders and wheel seat to the finished form represented by Fig 3 of the drawings.

## No.19,686. Sawing Machine. (*Machine à Scier.*)

William Lucas, Markdale, O, 28th, June. 1884; 5 years.

*Claim*—1st. The leg E connected to the saw-handle I and pivoted on the bracket H attached to the bar G, in combination with a curved spring F arranged to support the upper end of, and actuate the leg E, substantially as and for the purposes specified. 2nd. The saw I attached to the handle T and deriving a reciprocating motion, as specified, in combination with the triangular frame N pivoted to the main frame of the machine and provided with a friction roller O for resting on top of the saw L, as specified. 3rd. The frame B provided with a spike R and a dog T for holding the log S, in combination with the saw L and bar guided by the frame B, as specified, and operated by the leg E, substantially as and for the purpose specified.

## No. 19,687. Bill and Letter File. (*Serre-Papier.*)

Michael B. Hurly. Quebec, Que., 28th June, 1884; 5 years.

*Claim.*—1st. A paper or letter file consisting of the case or stand B carrying in an erect position a spring wire A bent to an approximately oavl or ring form, the extremities of the wire suitably pointed to coincidingly join tensionally together and be held from slipping apart laterally when in use, substantially as set forth. 2nd The combination, with the base or stand B having a ring wire A erectedly sustained thereon, of the spring lever G provided with pin or piercer G and jury spring H perforated to receive the piercer, as set forth, to puncture a paper before filing, in the manner described.

## No.19,688. Eye-Glass. (*Lunette.*)

Ivan Fox, Philadelphia, Pa., U S., 28th June 1884 ; 5 years.

*Claim*—1st. In eye-glasses, the springs extended over the lens or frames thereof, and a yoke having its ends attached to the ends of said springs, the connected end of the springs and yoke constituting an abutment for the lenses or frames at the top thereof. 2nd. The combination, in a pair of eye-glasses, of nose pieces B, each consisting of the inclined bar A having the arm B integral therewith and projecting from a point near its middle, substantially as and for the purpose set forth. 3rd. The combination, in a pair of eye-glasses, of nose pieces B formed of comparatively soft metal, each having the

inclined bar A and curved arm B integral therewith and projecting from a point near its middle, substantially as and for the purpose set forth.

## No. 19,689. Gland. (*Chapeau de Boîte à Etoupes.*)

John S. Park, John W. Graham, Ferdinand Weil, Rockport, and Charles Welker, Indianapolis, Ind., U. S., 28th June, 1884; 5 years.

*Claim*—1st. The combination of a glan, with an oil cup which is applied thereto and a regulating screw or device, substantially as shown. 2nd. The combination of a gland having the the chamber B formed in its outer end, the cap C, an oil cup and the regulating screw, the parts being arranged to operate, substantially as set forth.

## No. 19,690. Dumping Car. (*Char à Dasenlet.*)

Sidney D. King, Pittston, Pa., Robert C. Blackhall and Isaiah Page, Albany, N. Y., U. S., 28th June, 1884; 5 years.

*Claim*—1st. The combination, with a car body divided transversely into two compartments, each provided with an inclined hopper arranged beneath the car, or doors, and mechanism whereby said doors are opened by the weight of the contents of the car, and closed by gravity. 2nd. The combination, with a car body divided transversely into two compartments, each provided with a hopper, of doors pivotably secured at their upper ends for closing said hoppers, arms hinged at one end to the doors and at the other end hinged to the cross bar, being provided at each end with a trunnion and depending slotted stands adapted to guide said cross-bar in its movements, and measure whereby said cross bar may be raised or lowered. 3rd. The combination, with a car body divided transversely into two compartments, each provided with a hopper, of doors pivotably secured at their upper ends for closing said hoppers, arms hinged at one end to the lowest sides of the said doors, and at the other end hinged to a cross-bar provided at each end with a trunnion, depending slotted standards adapted to guide said cross-bar in its movements, and a horizontal shaft and intervening mechanism, whereby said doors may be opened or closed simultaneously, substantially as set forth. 4th. The combination, with a car body divided transversely into two compartments, each provided with a hopper, of doors pivotably secured at their upper ends for closing said hoppers, arms hinged at one end to the lower side of said doors, and at the other end hinged to a cross-bar provided at each end with a trunnion adapted to travel guides formed in depending standards, and a horizontal shaft provided on its inner end with a pinion adopted to mesh with rack bar secured to said cross bar substantially as set forth. 5th. The combination, with a car body divided transversely into two compartments, each provided with a hopper, of doors pivotably secured at their upper ends for closing said hoppers, arms hinged at one end to the doors, and at the other end to a cross-bar provided at each end with a trunnion adapted to travel in guides formed in depending standards; and a horizontal shaft provided on its inner end with a pinnion adapted to mesh with a rack bar secured to the cross bar, and provided on its outer end with a ratchet adapted to be engaged by a pawl, as set forth. 6th. The combination, with a car body divided transversely into two compartments, each provided with a hopper, of doors pivotably secured at their upper ends for closing said hoppers, a horizontal shaft and intervening mechanism whereby said doors may be opened or closed simultaneously, and a plate secured to car frame, provided near one end with a pawl to engage with a ratchet secured to the outer end of said shaft, and a cam to lock said pawl in position; said plate being also provided near its opposite end with a second pawl to engage with said ratchet, and a stop against which the latter pawl rests when not in engagement with said ratchet, substantially as set forth. 7th. The combination, with a car body divided transversely into two compartments each provided with a hopper, of doors pivotably secured at their upper ends, arms hinged at one end to the lower side of said doors, and their inner cuts hinged to a cross bar, and shaft provided on its inner end with a pinion adapted to mesh with a rack bar secured to said cross bar; said shaft being provided on its outer end with a ratchet adapted to be engaged by pawls, substantially as set forth.

## No. 19,691. Mercantile Elevator.

(*Monte Charge.*)

Charles A. Hoffnagle and Frederick W. Coe, Vergennes, Vt., U.S., 28th June, 1884; 5 years.

*Claim.*—1st. The brakes D, D having oval bevelled slots, substantially as and for the purpose hereinbefore set forth. 2nd. The tension springs E, E, in combination with the beam $B_1$, and brakes D, substantially as and for the purpose hereinbefore set forth. 3rd. The perpendicular additions F, F, $F_1$, $F_1$, and $F^2$, $F^2$ to the elevator car, in combination with the brakes D, D, substantially as and for the purpose hereinbefore set forth. 4th The trigger L, in combination with the brake D, sliding bar L and bell crank lever H, substantially as and for the purpose hereinbefore set forth. 5th. The transverse bearing bar R and loop O, in combination with the hoisting beam $B_1$, chain M, and brakes D, D, substantially as and for the purpose hereinbefore set forth. 6th. The governor S and friction pulley $T_1$, in combination with the elevator car and brakes D, D, substantially as and for the purpose hereinbefore set forth. 7th. The combination of the brakes D, D, the elevator car, the perpendicular additions F, F, $F_1$, $F_1$, $F_2$, $F_2$, the chain X, and hoisting rope P, substantially as and for the purpose hereinbefore set forth.

## No. 19,692. Hose Reel or Carriage.

(*Voiture à Tuyau Elastique.*)

David S. Loomis (Assignee of Henry L. Gardner), Springfield, Mass., U.S., 28th June, 1884; 5 years.

*Claim.*—1st. A hose reel, consisting of two wheels connected by bent bars secured to the rims of the wheels, substantially as shown. 2nd. A skeleton hose reel consisting of two rims without spokes or hubs, rigidly connected together by bent bars, substantially as shown and described. 3rd. As a new article of manufacture, a hosecarriage or reel consisting of two wheels connected by bent bars, bail or loops, substantially as described. 4th. A hose carriage or reel, consisting of two side pieces connected by inwardly projecting bails or loops, having their ends rigidly fixed to the side pieces, substantially as and for the purposes set forth. 5th. A hose carriage or reel having the hose supporting parts *b* depending inwardly, and secured to the side portions, substantially as shown. 6th. A hose carriage or reel having the hose supporting parts *b*, depending inwardly and secured to the side portions at or near their peripheries, substantially as described.

## No. 19,693. Car-Coupling. (*Accouplage de Chars.*)

James L. Bias and John Burns, Guyandotte, W. V., U. S., 28th June, 1884; 5 years.

*Claim*—1st. The combination, with the draw-head having the longitudinal slot and a coupling hook pivoted in said slot, of the rod E, pivoted to the upper end of said hook, and pivoted to the lower end of a rod G, said rod being secured in a bracket *g*, and provided with a coil spring $g_1$, whereby the coupling hook is held in position, and the accidental displacement of the link prevented, substantially as set forth. 2nd. The combination, with a draw-head having the longitudinal slot *a*, and a coupling hook pivoted therein, of a rod E, pivoted to the upper end of said hook, a lever F, secured in brackets to the front of the car, its lower end together with the arm *f* of the lever F, being pivoted to the upper end of the rod E, as set forth. 3rd. The combination, with a draw-head having the longitudinal slot *a*, and a coupling-hook pivoted therein, of a rod E pivoted to the upper end of said hook, a lever F secured in brackets to the front of the car, and provided with the central arm *f*, a rod G secured in a bracket to the front of the car, its lower end, together with the arm *f*, being pivoted to the upper end of the rod E, and a coil spring mounted on said rod G, its upper end bearing against the bracket *g*, and its lower end against the burr or washer $g^2$, as set forth.

## No. 19,694. Lawn Mower. (*Faucheuse de Gazon.*)

George Campbell and John Ritchie, Jr., Toronto, Ont., 28th June, 1884; 5 years.

*Claim*—1st. In a mowing machine the frame A, substantially of the shape shown, supporting and being braced at its forward ends by the knife or knife guard *c* as shown and for the purpose specified. 2nd. The peculiar arrangement of the knives, whereof three are used, and which are driven by a right and left motion, as shown. 3rd. In a mowing machine, the three knives shaped as shown, and having back and front shark teeth, of a square instead of a bevelled edge, whereby said knives sharpen each other, as in the manner shown. 4th. The arrangement of the jointed levers, actuating the knives, whereby the said knives are made to deliver four cuts to one revolution of the crank, as shown. 5th. The method of hanging the lower knives from the upper knife, by the bolts *t*, in the slots T, whereby the knives are compelled to follow a parallel motion, and their distance from each other is suitably adjusted and by which means the lower knives can be removed and reversed as required, in the manner shown and for the purpose specified. 6th. The guard W, in combination with the said knives, as shown and for the purpose specified. 7th. The combination of the levers O, P and R, and pins S, N, Q, with the said knives, whereby the centre pin N is riveted to the top knife, the pin S to the second knife, a slot being made in the top knife for its passage, and the pin Q is riveted to the bottom knife with similar slots in the top and middle knives, as and for the purpose specified. 8th. The combination of the said levers wi h the connecting rod L, crank K, and driving mechanism, as shown and for the purpose specified. 9th. The combination of the bevel wheels X and Y, shaft Z, universal joint *e* and handle N, with the driving wheels D and pinion F, for the purpose of altering the method of driving the knives, as shown and for the purpose specified.

## No. 19,695. Car-Coupling Link.

(*Maillon d'Accouplage de Chars.*)

John Warren and Edmund Burritt, Easton's Corners, Ont., 28th June, 1884; 5 years.

*Claim.*—In combination with a car-coupling link, the sliding block D to adjustably support the link horizontally or inclinedly in a draw-head, as set forth.

## No. 19,696. Weather Strip. (*Bourrelet de Porte.*)

David Gibbons, Joppa, Ind., U.S., 28th June, 1884; 5 years.

*Claim.*—The combination, with the door sill having a metal facing, and provided with the extension C on the inner side thereof, near the hinged side of the door, of the door and weather strip, consisting of the upper section having the straight portion *h*, the oblique portion *k* and the inward hook *z*, and the lower section having the upper outward hook *m*, and the lower outwardly concave portion F, the said lower section being prevented from lateral displacement with the upper hooked section by means of the pins *i*, *i*, which are driven in the door at the respective ends of the strip-hinge, substantially as set forth.

## No. 19,697. Paper File. (*Serre Papier.*)

Luther A. McCord, Clinton, S.C., U.S., 28th June, 1884; 5 years.

*Claim.*—1st. In a paper file, the combination, with a sectional bracket provided with tubular bearings, of a spring roller having pins for holding paper, substantially as specified. 2nd. In a paper file, the combination, with the sectional bracket having tubular bearings provided with notches, of the roller having pins and a wire for holding the paper, and the springs adapted to be inserted in the tubes being provided with disc heads to engage the ends of the roller, substantially as set forth.

## No. 19,698. Hay Carrier. (*Charriot à Foin.*)

Abner J. Burbank, Harvard, Ill., U.S., 28th June, 1884 ; 5 years.

*Claim.*—1st. In a hay carrier having hooks *a*, *b* to hold the shaft of the fork sheave, and levers *g*, *h* to lock and trip the hook and the carrier, the hooks *a* having the locking notch K and shoulder S located on its top, and the levers *g*, *h* located above the hooks and connected together over the fork shaft, with the locking stud *b* of lever *g* about midway between the pivot J and the hook *m* of said lever, substantially as described. 2nd. The combination of the catch studs *u* and pivoted trip dogs *t*, with the carrier *i*, provided with the pivoted levers *g*, *h* connected at *o*, and having the hooks *m*, on their adjacent and their outer ends *u* adjusted to engage said trip dogs the said lever *g* being further provided with a stud *l* for holding in open or closed position the pivoted hooks *a*, *b*, substantially as set forth.

## No. 19,699. Art or Process of Perforated Stencil Painting and Printing.

(*Art ou Procédé de Coloration et d'Impression au Patron Perforé.*)

John J. C. Traher, London, Ont., 28th June, 1884 ; 5 years.

*Claim.*—One or more stencil die plates D, provided with perforations P and P1 of different sizes or of the same size, placed at the same or different distances apart to represent the different shades, or different tints of different colors of a picture, substantially as shown and described.

## No. 19,700. Wire Fence Stretcher and Splicer. (*Machine pour Poser et Hanter les Clôtures en Fil Métallique.*)

Jonathan E. Pierce, Denning's Bridge, Texas, U.S., 28th June, 1884 ; 5 years.

*Claim.*—1st. The combination, with the open box *a*, stationary right angular pieces *g*, *g* secured thereto, spring pressed clamping levers K, K having serrated ends *m* and notched lever *n*, of the reciprocating block *q* having slot *n2*, and provided with a projection *r* having a threaded orifice *s*, spring-pressed levers *u*, having serrated ends, screw *p* and bevelled pinion *c*, *d*, substantially as shown and described. 2nd. The combination, with the open box *a* provided with the arms *v*, of the arms *w* pivoted to the latter and provided with the slot *z*, each having an opening *z1*, substantially as shown and described. 3rd. The combination, with the box *a*, of the folding arms *w*, one of which is bevelled at its end, and the other arm provided with the bevelled piece W1, substantially as shown and described.

## No. 19,701. Excavator and Dredge.

(*Fouilleur-Dragueur.*)

Ralph R. Osgood, Albany, N.Y., U.S., 28th June, 1884 ; 5 years.

*Claim.*—1st. In a dredging or excavating machine, the combination of a main engine with its adjuncts, a hoisting drum with operative connecting mechanism, a turn-table having mounted thereon an independent engine and a drum for a dipper thrusting chain, a boom supporting a dipper-handle carrying a dipper, a hoisting cable and an A-frame with connecting means leading to the boom, substantially as described. 2nd. In a machine of the class described, the combination, with a turn-table, having mounted thereon a driving engine and a drum operated directly by said engine, of the boom provided with the intermediate sheaves M, M1, and dipper-handle with the chains L, L1 passing over and around the said sheaves and drum, the combination and mode of operation being substantially as described. 3rd. In a machine of the character herein set forth, having an A-frame for sustaining the boom, the combination, with the platform, of the side arms for receiving the jack-screws and the inclined braces connecting the A-frame and the side arms, substantially as and for the purpose set forth. 4th. The combination, as before set forth, of the platform, the A-frame mounted thereon, the side arms connected with the platform at or near the bases of the A-frame, the inclined braces connecting the A-frame and side arms and the jack-screws passing through the outer ends of said arms, substantially as and for the purposes explained. 5th. The combination of the jack-screw mounted in the side arm, the broad foundation therefor provided with a suitable cap and the connecting rod passing through the body of the screw and secured at top and bottom, substantially as shown and described. 6th. In a machine of the class described, the combination, with the body of the machine having side-arms through which are passed jack-screws, of the A-frame having bracing rods connected to the jack-stay arms, substantially as described.

## No. 19,702. Hose Cart. (*Voiture à Tuyau Elastique.*)

John The Noble, St. Louis, Mich., U.S., 28th June, 1884 ; 5 years.

*Claim.*—1st. In a hose cart, the combination of the two separate and distinct reels C and C1, mounted on one and the same axle B of the cart, with their adjacent ends separated by the collar *b* and within the cart frame A, each reel being provided with an independent brake composed of a shoe D working on the rim of the reel-wheel, the link *d2* and lever D1 pivoted on the tongue of the cart and provided with spring-pawl *d* and rack *d1*, whereby either a single or double length of hose may be at pleasure unreeled from the cart at a single operation as an emergency may require, and substantially as specified. 2nd. In a hose-cart, the combination, with the distinct reels *c* and *c1* working on the single axle B of the cart, and having the separating collar *b* and provided with the independent brakes D, D, controlled by levers D1, D1 pivoted on the tongue of the cart, of the hose end hooks E, composed of a piece of rod or strap-iron doubled and looped around the reel-axle with the ends thereof in the form of parallel hooks, all substantially as and for the purpose specified.

## No. 19,703. Car Spring. (*Ressort de Char.*)

George F. Godley, Philadelphia, Penn., U.S., 28th June, 1884 ; 5 years.

*Claim.*—1st. A car-spring provided with a clamp bolt or locking device for maintaining said spring or springs in a state of compression, substantially as shown and for the purpose set forth. 2nd. A car-spring provided with mechanism for holding it in a compressed condition, said mechanism being designed and adapted to be operated to release said spring and allow it to expand when placed between its bearings, substantially as shown and described. 3rd. A car-spring composed of spirals arranged in cases or placed between plates connected together by mechanism for locking the spirals in a compressed condition, the exterior bearing surfaces of said cases or plates being formed with corrugations or series of projections, substantially as shown and described. 4th. The case or follower E having skeleton or recessed portion *e1*, substantially as shown and for the purpose set forth. 5th. In combination with the car-springs and casing therefor, substantially as shown and described, the double pins D2, and for the purpose set forth.

## No. 19,704. Gas Engine. (*Machine à Gaz.*)

Cyrus W. Baldwin, Chicago, Ill., U. S., 28th June, 1884 ; 5 years.

*Claim.*—1st. The combination of the working and compressing cylinders A, D of a gas engine, the latter being shorter and of greater diameter than the former, and an eccentric connected to operate the compression piston, substantially as set forth. 2nd. The combination, in a gas engine, of the main cylinder A and an independent compression cylinder D of greater area, and pistons B, E and connections, whereby the compression piston is brought to the end of its stroke after the main piston begins its forward movement, and passages and valve *f*, arranged as described, whereby the connection is closed between the two cylinders prior to the explosion, substantially as set forth. 3rd. In a gas engine, a compression cylinder provided with gas and air-receiving openings *j*, *k1*, at one end, communicating with the working-cylinder at the other, and provided with a channel *g g* for transferring the gases from one side of the piston to the other, whereby their through mixture is insured before the charge is expelled, substantially as set forth. 4th. The combination of the main cylinder and piston with a compression-cylinder having air and gas inlets *k1*, *j*, at the forward end, and provided with a piston E having a passage closed by a check-valve and a port *i* extending to the end and side of the piston, substantially as set forth. 5th. The compression-cylinder E provided with a circulating passage, a valve *y* in said passage, and connection for operating the valve by the varying speed of the engine and air and gas inlets, substantially as set forth. 6th. The combination, in a gas engine, of appliances, substantially as described, for arresting the motion with the parts always in the same position, and hand devices for forcing a charge of gases into the main cylinder and there exploding it without any movement of the main engine, substantially as set forth. 7th. The combination of the arresting devices, constructed substantially as described, to always stop the engine with a charge in the compression-cylinder, and appliances for expelling said charge into and exploding it in the main cylinder without first operating the main piston, substantially as set forth. 8th. The combination of the main cylinder A, and piston having an igniting-opening and constant flame or its equivalent, and the charging-cylinder B and appliances, substantially as described, whereby the engine is automatically arrested with a charge in the charging-cylinder and with the main piston at the rear of the igniting opening, substantially as set forth. 9th. The combination, with the charging-cylinder and appliances for operating its piston, of an intermediate connection, constructed substantially as described, to permit the piston to be thrown out of control of such appliances after the charge is in the cylinder, and to expel said charge by the act of restoring such parts to position, substantially as set forth. 10th. The combination of the charging-cylinder D, piston and piston-rod E, the pitman E2 driven from the main engine and intermediate link-connections E4 or I, constructed to permit a play of the pitman independently of the piston, as and for the purpose set forth. 11th. The combination of the cylinder D, its piston rod and link having a triangular opening, and the pin *v* extending through said opening, substantially as set forth. 12th. The combination of the charging cylinder D, pitman E2 and intermediate adjustable connection E4 or I, and a brake Z and appliances for operating it upon the change in adjustment of the said connection, whereby the brake is removed when the charge is expelled from the cylinder, substantially as set forth. 13th. The combination, with a gas engine, of a brake Z and appliances, substantially as set forth, whereby the brake is applied automatically to arrest the motion of the engine when the charging-cylinder is full, substantially as specified. 14th. The combination, with a gas-engine, of a brake device Z and appliances constructed to apply the brake when the parts are in a predetermined position, and a governor and connections, whereby the said appliances are held out of operation until the momentum of the engine is nearly exhausted, substantially as set forth. 15th. The combination of the adjustable pitman and link connection brake-lever Z, reciprocating catch-arm W suspended from the pitman and governor, and connections between the same and the arm W, substantially as set forth.

## No. 19,705. Self Car-Coupler.

(*Accouplage Automatique de Chars.*)

Robert Bigney, Copleston, Ont., 28th June, 1884 ; 5 years.

*Claim.*—The combination of the T-shaped lever A provided with stud B, bracket C provided with slot *x*, spring D, lever E provided with fingers *e2*, *e2*, bracket *e3*, coupling pin F provided with collar G, nut F1, guide H, draw bar K provided with slots K1, spring J1, bolt J provided with flange J3 and key J2, constructed substantially as shown and described and for the purpose specified.

## No. 19,706. Iron Harrow. (*Herse en Fer.*)

Austin Callander, Clinton, Ont., 28th June, 1884 ; 7 years.

*Claim.*—1st. In combination with harrow bars or braces, called in the drawings "braces A, F, bulls E and head H11," clamps G, G recessed to receive the bars or braces and having holes *h11* running at right angles with bars and braces, and the teeth *b*, *b1* having screw-threaded shanks *b*, Fig. 3, and nut *a*, and having in lower clamps sockets *h1* for receiving and holding the shoulder portion of teeth *b1*, substantially

as and for the purpose set forth and described. 2nd. In combination, with harrow bars or braces called in the drawings " braces A, F, bulls E and head H," clamps G, G recessed to received the bars or braces and having holes $h^{11}$ running at right angles with bars and braces, and the teeth $b$, $b^1$ having screw-threaded shanks $b$, Eig. 3, and nuts $a$, and having in lower clamps sockets $h^1$ for receiving the shoulder portion of teeth $b^1$, and having sockets $h$ in upper clamps for receiving an upward projection on lower clamps, as shown in Fig. 3, substantially as and for the purpose set forth and described. 3rd In combination with harrow bars or braces having locks $i$, $i$, and clamps G having recesses to receive the bars and their return ends forming the locks $i$, $i$, and having holes $h^{11}$ through upper and lower clamps at right angles with the bars or braces, and the teeth $b$, $b^1$ having screw-threaded shanks $b$ and nuts $a$, substantially as and for the purpose set forth and described.

## No. 19,707. Device for Coupling Railway Cars. *(Appareil pour Accoupler les Voitures de Chemin de Fer.)*

Jacob N. Best, Denver, Col., U. S., 28th June, 1884 ; 5 years.

*Claim.*—1st. The shield A1, the guard G, the lifting-arm M as a part of the long arm of the handle H, the opening and rest $o$ in the cover O, the short swinging arm $h$, the loose joint J with its various grooves and openings, in combination with the short handle $H^2$, the automatic dog $r$, in combination with the hole $r^1$ in the bumper-head, the semi-circular opening N, and the curved shoulder $d$ of the coupling-pin. 2nd. The draw-head of a car-coupling constructed with the slotted side guard G, $g$, in combination with the right angled lifting-arm $m$ M, the coupling-pin D, the tripping prop E, a suitable rest $m^1$ for said arm when elevated, and means, substantially such as described, whereby the lifting arm is operated, vertically, with said coupling-pin and tripping-prop, and, horizontally, independently of these parts in relation to the rest for said arm, substantially as described for the purpose specified. 3rd. The combination, in a car-coupling, of the coupling-pin D and the tripping-prop E with the right angled lifting arm $m$ M, the draw-head provided with a suitable rest $m^1$ for said arm $m$ M when lifted, the operating-rods H, $H^2$, and means, substantially such as described, whereby said rods are loosely connected to each other, loosely supported at such connection, and adapted to be moved upon such loose support to conform to the vertical movement of the coupling-pin, and the horizontal movement of the draw-head. 4th. The combination, in a car-coupling, of the coupling-pin D, the tripping prop E, the right angled lifting-arm $m$ M, and the draw-head constructed with a suitable rest $m^1$ for said arm when lifted, with the handle-rods H, $H^2$ therefor, the coupling J and the pivoted support $h$ loosely connected with the coupled operating-rods, substantially as described for the purpose specified. 5th. The combination, in a car-coupling, of the pin D and the pivoted prop E with the lifting-arm M having a right angled end $m$ and a handle $H^1$, the sectional grooved coupling J, the separate handle rod $H^2$, the swinging link $h$ and a draw-head provided with an interior rest $m^1$ for the bent end of said lifting-arm, substantially as described. 6th. The flat coupling-pin D provided with the curved shoulder $p$, in combination with the tripping-prop E pivoted at $b$, the right angled lifting-arm M $m$, the handle-rods H, $H^2$, a suitable rest $m^1$ in the draw-head for the said arm $m$, and the opening for the coupling pin enlarged at N, all constructed as shown and for the purpose described.

## No. 19,708. Sleeping Head Rest for Railway Chairs. *(Appui-Tête pour Banquettes de Chemin de Fer.)*

George A. Kennedy, Coaticooke, Que., 28th June, 1884 ; 5 years.

*Claim.*—The bed-piece A, with the padded head-rest B, with the hook $c$, also the elastic wire D and the lower elastic wire E. I also claim the sockets F and the adjustable wire G, with the hinge H, as shown, with the wire and veil I, all in combination, as and for the purposes set forth and described.

## No. 19,709. Anchor. *(Ancre.)*

William Levis, St. John, N. B., 28 June, 1884 ; 5 years.

*Claim.*—The combination, with a frame or yoke A having pockets B, of the rod E, the flukes F mounted loosely on the same and having the pivoted end bevelled, substantially as herein shown and described. 2nd. The combination, with the frame or yoke A having pockets B, of the rod E, the flukes F mounted loosely on the rod E and having the pivoted ends bevelled, and of the projections H on the flukes, substantially as herein shown and described.

## No. 19,710. Shepherd's Crook. *(Houlette de Berger.)*

Edward E. Deland, Brady, Texas, U. S., 30th June, 1884 ; 5 years.

*Claim.*—1st. A shepherd's crook having a tapering and balanced staff, a slender neck near the head, broad bearings on the sides of the head and in the crook cleft, and an outwardly turned rounded guard-knob on the end of the reversed portion of the crook, substantially as specified. 2nd. A shepherd's crook having a flexible neck portion and broad head formed of two parts rivetted together and provided with a metal lieguard strip or tire, substantially as specified.

## No. 19,711. Car-Coupler. *(Accouplage de Chars.)*

James Hartley, Arkona, Ont., 30th June, 1884 ; 5 years.

*Claim.*—1st. The four springs $c$, $c$, $c$, $c$, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the slide D with the spring E, substantially as and for the purpose hereinbefore set forth.

## No. 19,712. Lubricator. *(Graisseur,)*

John C. Thayer. Chicago, Ill., U. S., 30th June, 1884 ; 5 years.

*Claim.*—1st. The combination, in a lubricator, of a sight-feed tube filled with alternately arranged portions of oil and water during the operation of the lubricator, and means for supplying said oil and water to the slight feed, substantially as described. 2nd. The combination of the sight feed of a lubricator, with oil passages leading from the reservoir, and a water eduction passage intersecting with said oil passages, substantially as and for the purpose described. 3rd. The combination of the sight-feed of a lubricator, with intersecting oil and water educting passages, and a valve controlling one of said passages, substantially as described. 4th. The plug B provided with passages 3, 4 and a water cut-off passage, in combination with an oil reservoir and means for conducting the oil and water to said passages and the device to be lubricated, substantially as described. 5th. The combination, with the sight-feed and the oil passage leading thereto, of the angular passages 15 and 18 and a valve working in said passages at their intersection, substantially as described. 6th. The reservoir, the casting D provided with passages 24 and 25, valve 27, induction-pipe 26 and eduction-pipe 30, in combination with plug B, cut-off passage 29, passage 4, valve 6 and sight feed tube C, substantially as described. 7th. The casting D provided with the passages 24, 25 and 15, 18, induction-pipe 26, valve 27 and the reservoir, in combination with the plug B provided with passages 3 and 4, cut-off 29, eduction pipe 30 and a sight feed tube, substantially as described. 8th. The reservoir, the casting D and plug B constructed as described, induction pipe 26, eduction pipe 30 and valves 6 and 27, in combination with the sight feed C, condensing pipe G, ste m pipe H, and nipple 21, substantially as described. 9th. The described method of lubricating the same, consisting in continuously feeding a stream composed of alternate portions of oil and water through a passage or passages leading to the devices to be lubricated. 10th. The described method of lubricating the same, consisting in continuously feeding a regulated stream composed of alternate portions of oil and water in desired variable proportions through a passage or passa.es leading to the device to be lubricated.

## No. 19,713. Folding Centre-Board. *(Semelle de Dérive Brisée.)*

William Childs, Brooklyn, N. Y., U. S., 30th June, 1884 ; 5 years.

*Claim.*—1st. The combination, with a centre-board composed of a number of pivoted sections, as 2, of a rod as 6, secured to one of said sections and extending upward through the bottom of the boat and a stuffing-box, as 8, for forming a water tight joint around said rod, substantially as described. 2nd. The combination, with a centre-board composed of a number of sections, as 2, pivoted at one end beneath the hull or body of the boat, of a rod, as 6, attached to the other end of one of said sections and extending upward through a stuffing-box, as 8, located in the bottom of the boat, substantially as described. 3rd. The combination, with a centre-board composed of a number of sections, as 2, pivoted at one end beneath the hull or body of the boat, of the stuffing-box 8 and the jointed rod 6 attached to the outer end of one of said sections, substantially as described. 4th. A centre-board composed of a number of pivoted sections, as 2, provided with interlocking flanges, as 5, on their contiguous edges, substantially as described.

## No. 19,714. Bleaching of Paper Pulp. *(Blanchiment de la Pâte à Papier.)*

Eugène Hermite, Rouen, France, 30th June, 1884 ; 5 years.

*Claim.*—1st. In bleaching paper pulp or other fibrous or textile materials, or fabrics, decomposing chlorides of sodium or potassium by an electric current and in the presence of a metal, so as to obtain an alkali (caustic soda or potash), and a metallic chloride for subsequent use in bleaching, substantially as hereinbefore described. 2nd. In bleaching paper pulp or other fibrous or textile materials, or fabrics, decomposing a metallic chloride by electrolysis in the presence of the materials that are to be bleached, substantially as hereinbefore described. 3rd. A process of bleaching paper pulp wherein there are simultaneously effected the electrolysis of the metallic chloride, the bleaching of the pulp and the recovering the precipitated metal in a receptacle which also acts as the receptacle of a machine for preparing the paper pulp, substantially as hereinbefore described.

## No. 19,715. Machine for Grading, Scraping and Working Roads. *(Machine pour Niveller, Gratter et Travailler les Chemins.)*

George H. Waldo, Detroit, Mich., U.S., 30th June, 1884 ; 5 years.

*Claim.*—1st. In a grading machine, the combination of a carrying frame adapted to turn freely on a front running gear, to any desired angle to the central line of draft, and a vertically adjustable scraper-bar with a rear running-gear adapted to be turned at any angle to the said central line of draft, and thus to change the angle and lateral position of said scraper-bar with respect to the direct line of draft, substantially as set forth. 2nd. In a grading machine, the combination, with a supporting frame carrying one or more scraper-bars, of a turning and supporting bearing adapted to be detachably secured to the front running-gear of an ordinary farm waggon by the removal therefrom of the bolster and reach, substantially as set forth. 3rd. In a grading machine, the combination, with the front running gear of an ordinary farm waggon, of a detachable device for connecting a grader with said running gear consisting essentially of the described bearing circle and stub-reach and supports for the forward and rear portion of the circle, these supports being removably mounted on the said running gear, substantially as set forth. 4th. In a grading machine, the combination, with a supporting frame, an oblique scraper and curved arms attached to each side of the front end of the frame, and curved forward to form an arched front frame, of the front running gear of an ordinary farm waggon, and the described double turning circle, to the upper portion of which the forward ends of the curved arms are rigidly secured, the curved arms and turning circle being arranged and adapted to permit the running gear to be turned freely and to form a broad bearing for the grader-frame, which is thereby pre-

vented from tipping under the influence of the oblique scraper, substantially as set forth. 5th. In a grading machine, the combination of a front running gear, carrying frame and scraper-bar having forward support on the axle of said running gear, with a king-bolt free to move up and down in its socket, and the broad turning bearing on either side of said king-bolt or other suitable devices, substantially as set forth. 6th. In a grading machine, the combination, with the main oblique scrapers, of an auxiliary scraper having its front end independently adjustable and operating on the opposite side of the central line of draft from the front end of the main oblique scraper, while its rear end is attached and adjustably pivoted to the main scraper, substantially as set forth. 7th In a grading machine, the combination of a plowing attachment and scraper-blade, with n elevated front frame and front running gear capable of running under said front frame, whereby the line of draft on said front running gear may be brought to a right angle (more or less) to a line drawn lengthwise through said frame, in order to plow a gutter across the roadway, and, if desired, place the earth broken up, directly or diagonally across the roadway to form a ridge for a water-stop, substantially as set forth. 8th. In a grading machine, the combination, with a supporting frame carrying a scraper suspended between the front and rear axles, and means for vertically adjusting it and for locking it in any of its adjustments, of bearings associated with the supporting frame and located before and behind the scraper and running gear, on which said bearings rest, said bearings and running gear being arranged and adapted to maintain the supporting frame and scraper in a plane, practically parallel with the general contour of the surface immediately behind the scraper, substantially as set forth. 9th. In a grading machine, the combination, with a supporting frame having an oblique scraper-bar adapted to use in connection with a plowing attachment, and means to impart adjustment thereto and rigidly lock the same in such adjustment, of such plowing attachment and front carrying wheels forming a front running gear, and a carrying frame adapted to permit said wheels and frame to be turned to apply the draft at a right angle, or more than a right angle to the direct line of draft, substantially as set forth. 10th. In a grading machine provided with a scarifier having its ends independently vertically adjustable, one or more supporting cross-bars and cutting-spades, secured thereto in such a manner as to admit of said spades being independently vertically adjusted on said bars, substantially as set forth. 11th. In a grading machine, the combination, with the main frame and broad bearings in front and rear, as described, of a vertically adjustable scraper-bar, its rear end extending beyond and outside of the path of the rear running gear, and devices for adjusting and rigidly locking said scraper-bar to a firmly-held carrying frame so that a path for the rear running gear may be levelled and the work of levelling and grading be done more smoothly and evenly, substantially as set forth. 12th. In a grading machine, a scarifier provided with a series of adjustable, reversible, interchangable cutting-teeth removably attached to an independently vertically adjustable supporting frame, substantially as set forth. 13th. In a grading machine, a scarifier and means to impart independent vertical adjustment to its ends, substantially as set forth. 14th. In a grading machine, the combination, with a scarifier and means for imparting independent vertical adjustment to its ends, of independently vertically adjustable scarifying blades, substantially as set forth. 15th. In a grading machine, the combination, with a scraper carried by said machine, of a scarifier provided with devices for vertically adjusting either end independently of the other, substantially as set forth. 16th. In a grading machine, the combination, with a scraper carried by said machine, of a vertically-adjustable scarifier supported between guide-bars in front of said scraper and means for locking the same, substantially as set forth. 17th. The scarifier, provided with horizontal notched supporting-bars and a series of adjustable reversible spades, substantially as set forth. 18th. In a scarifier, the combination, with the notched supporting cross-bar, of the spades pointing forward and downward, and hook-bolts embracing said spades and inserted through said bar, substantially as set forth. 19th. The combination, with a scarifier of the slotted guide-bars, guides for said bars, stationary projections in front of the slots of said bars and the stop-blocks arranged for adjustment by means of said slots and suitable holding screws, substantially as set forth. 20th. In a grading machine, the combination, with one or more endwise unyielding scarifiers, of means for adjusting the same endwise, substantially as set forth. 21st. In a grading machine supported on two carrying axles, the combination of a vertically-adjustable scarifier operated between said axles, with a carrying-frame, whose supporting sides, one or both, are arranged horizontally between the ends of said scarifier and the direct central line of draft of said machine, according to the endwise adjustment of said scarifier, substantially as set forth. 22nd. In a grading machine, the combination of a scraping blade, with a scarifier adjustable endwise to adapt it to cut outside the line of track of its carrying-wheels, substantially as set forth. 23rd. In a grading machine, the combination of a scarifier vertically adjustable at either or both ends with one or more scraping-blades, substantially as set forth. 24th. In a grading machine, the combination, with the main supporting frame and scraper-bar, and means for adjusting the same vertically and endwise, of anti-friction devices mounted in a frame rigidly secured to the main frame and arranged to relieve the friction resulting from direct resistance to the scraper-bar, substantially as set forth. 25th. In a grading machine, the combination, with one or more vertically-adjustable scrapers, of devices to prevent endwise yielding of said scraper, and means for adjusting the same endwise, substantially as set forth. 26th. In a grading machine, the combination, with rods for vertically adjusting the scraper-bar, of one or more scrapers provided with means for endwise adjustment upon said rods, substantially as set forth. 27th. The combination, with a main supporting frame and a scraper of a grading machine, of a single iron guide-rod attached to said scraper guides for said rod, supported by the frame, and a friction-wheel, mounted on the frame and having its periphery projecting into the concavity of said guide-rod, substantially as and for the purposes set forth. 28th. In a grading machine, the combination, with an elevated supporting frame carrying one or more oblique scrapers attached to said frames, in front of the rear carrying axle, and means to impart independent vertical adjustment to its ends, and provided with locking devices to secure said scraper in such adjustments, of front running gear adapted to be turned freely to apply the draft at about ninety degrees (more or less) to the direct line of draft of said frame, substantially as set forth. 29th. In a grading machine, the combination of a plowing attachment and an oblique scraper bar independently vertically adjustable at its ends, with devices for changing the angle of said scraper-bar to the line of draft to enable it to scour and run free in the various soils in which it may be used, substantially as set forth. 30th. In a grading machine, the combination of one or more plows, with a series of removable cutting blades attached to one or more scrapers vertically adjustable at either or both ends, and means for locking said parts in their adjusted positions, substantially as set forth. 31st. In a grading machine, the combination of one or more vertically adjustable plowing attachments adapted to be adjusted toward or from the central line of draft of said machine, with one or more scraper-blades, and devices to prevent endwise and lateral yielding of said attachments, substantially as set forth. 32nd. In a grading machine, the combination, with one or more scraper-bars, of one or more vertically-adjustable landsides, adapted also to be adjusted toward or from the central line of draft of said machine, and devices to secure it in such adjustments with respect to said central line of draft, substantially as and for the purposes set forth. 33rd. In a grading machine, carrying one or more scraper blades, two or more plowing attachments independent of each other adapted to operate on opposite sides of the central line of draft, either independently or at the same time, substantially as and for the purposes set forth. 34th. In a grading machine, the combination, with the main oblique scraper of an auxiliary scraper located in front of the oblique scraper and to the rear of its forward end, and arranged to collect and stop more or less earth, according to its position, the inner end of said auxiliary scraper being secured to the main oblique scraper, so that the said auxiliary scraper can be vertically adjusted independently of the main scraper, substantially as set forth. 35th. In a grading machine, the combination, with the main supporting frame and a vertically-adjustable scraper-bar, and means for supporting the same against deflection from direct resistance, of guides attached to the main frame and arranged to embrace said supporting devices, whereby said scraper-bar is held against forward endwise movement and horizontal vibratory movement, substantially as set forth. 36th. In a grading machine, the combination of a scraper, with means for holding it from forward movement endwise, and horizontal vibrating movement with respect to its supporting frame, substantially as set forth. 37th In a grading machine, the combination, with a scraper-bar, its carrying frame and devices for vertically adjusting it, of antifriction devices which support it in the same vertical plane in its various positions, and bearings therein which hold the scraper against forward endwise and horizontal vibratory movement, substantially as set forth. 38th. In a grading machine, the combination, with an oblique main scraper-bar, of an auxiliary scraper and plowing attachment arranged at an angle to the main scraper-bar adjacent to, and intermediate between its ends, and vertically adjustable independent of said main scraper-bar, substantially as set forth. 39th. The combination, with an oblique scraper-bar supported on a wheeled frame, of an auxiliary scraper at an angle thereto, and arranged adjacent to the front side of said oblique scraper, and operating at a point in front of the pivotal turning point of said oblique scraper when turned by said machine, substantially as set forth. 40th. In a grading machine, the combination, with the main oblique scraper, of an auxiliary scraper adapted to stop more or less of the earth being acted upon by the main scraper, and having its ends vertically adjustable independently of each other, substantially as set forth. 41st. The combination, with the main oblique scraper, of an adjustable earth stop, one end of which is pivoted to the front face of said scraper, the other end being free, substantially as set forth. 42nd. In a grading machine carrying an oblique scraper-bar, the combination of an earth-stop pivoted to said machine and adapted to stop the earth being acted upon by said scraper-bar, and means of locking said stop above its pivotally-hinged point of attachment, substantially as set forth. 43rd. In a grading machine, the combination, with an oblique scraper-bar and a carrying frame, of an earth-stop located in front of said scraper-bar and so arranged as to stop the earth which is being acted upon by said scraper-bar and carry it ahead, and means to elevate said stop above the upper edge of said scraper-bar, and means of adjusting and locking said stop between the lower edge of said scraper-bar and its upper edge, substantially as set forth. 44th. In a grading-machine supported on running gear, the combination of an oblique scraper, an earth stop and an adjustable rear axle, substantially as set forth. 45th. The combination, with an oblique scraper-bar supported upon a wheeled frame, of an earth-stop arranged adjacent to said scraper-bar and wholly in advance of the rear axle, substantially as set forth. 46th. In a grading-machine, the combination, with a main scraper bar, of an earth-stop and means for holding it down into operative position, by the act on of the earth which presses against it, substantially as set forth. 47th. In a grading-machine, the combination, with an oblique scraper supported on two axles, of an earth-stop in front of the rear axle adapted to stop the side movement of the earth being acted by said oblique scraper and carry it directly ahead, substantially as set forth. 48th. In a grading-machine, the combination, with the main supporting frame and scraper-bar, and means for adjusting the same, of anti-friction devices arranged and adapted to relieve the friction resulting from lateral as well as direct resistance to said scraper-bar, substantially as set forth. 49th. In a grading-machine, the combination, with the main supporting-frame and scraper-bar and rods for adjusting the same, of anti-friction devices associated with the adjusting-rods, said rod and devices being arranged and adapted to relieve the friction resulting from lateral as well as direct resistance to the scraper-bar, substantially as set forth. 50th. In a grading-machine, the combination, with the main supporting-frame and scraper-bar, and angle-iron rods for adjusting the same, of bevelled anti friction wheels mounted in rigid frames and fitting into the concavities of the rods, substantially as set forth. 51st. In a grading-machine, the combination of an oblique scraper, an earth-stop, and front and rear running-gear supporting a carrying frame, the latter being capable of turning freely to any desired angle on said front running-gear, and also of being set at an angle on said rear running gear with respect to the central line of draft, substantially as set forth. 52nd. In a grading-machine, the combination of

one or more oblique and vertically adjustable scraping-bars and a scarifying-bar, with anti-friction devices mounted on a fixed supporting-frame rigidly secured to the main frame, and arranged to relieve the friction resulting from the resistance of said bars while being adjusted, substantially as set forth. 53rd. In a grading machine, the combination, with a supporting-frame of a scraper-bar and means to impart independent vertical adjustment to its ends, of a plow and a series of blades secured to said scraper-bar and arranged to form continuous linear cutting edge and adapted to be reversed edge for edge, substantially as set forth. 54th. In a grading-machine, the combination, with a scraper-bar and means to impart independent vertical adjustment to its ends, of a plow and a series of blades secured to said scraper-bar and arranged to form a continuous linear cutting edge and adapted to be interchangeable plate for plate, substantially as set forth. 55th. In a grading-machine, the combination, with a supporting-frame of a scraper-bar, and means to impart independent vertical adjustment to its ends, of a series of blades secured to said scraper-bar and arranged to form a continuous linear cutting edge and adapted to be independently vertically adjusted, substantially as set forth. 56th. In a grading-machine, the combination, with a scraper-bar, of a series of interchangeable and vertically adjustable cutting-blades attached to said scraper-bar, and arranged to form a continuous linear cutting-edge, substantially as set forth. 57th. In a grading-machine, the combination, with a scraper-bar, of a series of reversible and vertically adjustable cutting-blades secured to said scraper-bar and arranged to form a continuous linear cutting-edge, substantially as set forth. 58th. In a grading-machine, the combination, with a scraper-bar whose ends are vertically adjustable independently of each other, of a series of cutting-blades, reversible edge for edge and face for face on said scraper-bar, substantially as set forth. 59th. In a grading-machine, the combination of a scraper-bar, with a series of reversible interchangeable and vertically adjustable cutting-blades, substantially as set forth. 60th. In a grading-machine, the combination of a scraper-bar whose ends are vertically adjustable independently of each other, with a series of cutting-blades that are reversible face for face on said scraper-bar, substantially as set forth. 61st. In a grading-machine, the combination, with a scraper-bar, of a plow and a series of reversible aad interchangeable cutting-blades forming a substantially continuous and rectilinear cutting-edge, substantially as set forth. 62nd. In a grading-machine, the combination, with a scraper bar and means to impart independent vertical adjustment of its ends, of friction clutch devices associated with said adjusting devices, substantially as set forth. 63rd. The combination, with the lifting-lever, of the friction-clutch device consisting essentially of the segments, the inclined lugs, the roller interposed between said segments and lugs and means to move the roller simultaneously with the lever, substantially as set forth. 64th. The combination, with the lifting-lever, of the friction-clutch device composed of the segments, inclined lugs, roller arranged between the segments and lugs mounted in movable bearing attached to a rod, arranged along the lifting-lever in position to be grasped in the hand at the same time with said lever, substantially as and for the purposes set forth. 65th. In a grading-machine, the combination, with a scraper, and a rod for lifting the same, of the described friction-clutch attached to the said rod, and means to lock the scraper in any desired position to prevent it and its adjusting-rod from being elevated and throwing down the clutch, substantially as set forth. 66th. In a grading-machine having one or more vertically adjustable oblique scraper-bars, the combination of an adjusting-lever and means of attaching it, at various distances from its fulcrum, to said scraper-bar, with a friction device for locking said lever in such adjustments thereby varying the resisting strain on said cluch according to the condition of the soil being operated upon, and the varying strain and downward tendencies of said scraper-bar according to its endwise adjustment, substantially as set forth. 67th. In a grading-machine, carrying vertically-adjustable operative parts, and devices constructed to afford a variable leverage to impart variable adjustments to such parts, the combination, therewith, of means for supporting and locking such operative parts while the adjusting devices are being detached and attached in varying positions better adapted to operate and be operated upon, substantially as set forth. 68th. In a grading-machine, the combination of a friction-clutch and devices for rigidly locking the same, with the operative adjustable parts of said machine, substantially as set forth. 69th. In a grading-machine, the combination, with the main oblique scraper and means to impart independent vertical adjustment to its ends, of a transverse scraper, and means to impart independent vertical adjustment to its ends, substantially as set forth. 70th. The combination, with a scraper adapted for oblique arrangement with respect to the line of draft in a grading-machine, and having its front end provided with a plow-point and landside, of a pivoted guard-bar and shoe arranged relatively to said plow-point, substantially as set forth. 71st. In a grading-machine, the combination, with a supporting-frame and an obliquely-arranged scraper attached thereto, of a dragging shoe arranged to enter the earth and brace the machine against lateral severing and provided with elevating devices independently of the scraper. 72nd. In a grading machine supported on carrying-wheels, the combination of an oblique scraper with a pivoted dragging runner adapted to penetrate the surface being acted upon and held in such contact by the weight of some portion of said machine to prevent lateral swerving, substantially as set forth. 73rd. In a grading-machine, the combination of an oblique scraper with a laterally-adjustable guide-bar and dragging-shoe, substantially as and for the purpose set forth. 74th. In a grading-machine, the combination, with the main frame and rear runnning-gear, as described, of the cross-bar provided with a series of perforations to admit of an adjustable connection with the hounds of said running-gear, substantially as set forth. 75th. In a grading-machine supported on carrying-axles and wheels, the combination of one or more plowing attachments with one or more vertically-adjustable oblique scraper-bars, adapted to plow and scrape either out or inside the line of the track of said wheels, as desired, by adjusting the rear axle, substantially as set forth.

## No. 19,716. Flexible Air-Tight Eye-Guard.

*(Louchette Flexible Imperméable à l'Air.)*

David Genese, Baltimore, Md., U. S., 30th June, 1884; 5 years.

*Claim.*—1st. A flexible air-tight eye-guard consisting of a frame of flexible metal having plane lenses of mica or other transparent and flexible substance, and an elastic marginal body secured to said frame, in the manner and for the purpose substantially as described. 2nd. The combination, with the frame, of lenses composed of laminal of mica laid between the frame plates, rivets uniting the parts, and raw rubber or similar material sealing the joint between them, substantially as described. 3rd. The combination, with the frame composed of two plates lying one upon the other, with the lenses interposed as described, of an elastic margin secured to a strip which is attached to the frame by bending the edges of the plates over the margins of the strip, substantially as described. 4th. The combination, with the frame composed of the plates A1, A2 having milled edges *d*, *d*, of the elastic margin C mounted upon a strip D, the parts being united substantially as described. 5th. The combination, with the eye-guard having the marginal elastic tube C secured thereto, of the nipple *e* entering said tube, substantially as described. 6th. The combination of the plate A, the plate A1 formed with a continuous opening for the two lenses, the mica lens interposed between the two plates and the intermediate plate for the attachment thereto of the inner ends of the lenses, substantially as described. 7th. The combination, with the two plates composing the frame, and the lens of the tubes connected to the frame and having openings for the admission of air to the space between the guard and eyes, substantially as described. 8th. The combination, with the frame composed of two plates lying one upon the other, with the lenses interposed as described, and the elastic margin secured to the strip of the loops at the ends of the frame, for the attachment thereto of means for securing the guard to the head, substantially as described.

## No. 19,717. Machine for Manufacturing Barbed Wire. (*Machine à faire le Fil de Fer Barbelé.*)

John D. Curtis, Worcester, Mass., U. S., 30th June, 1884; 5 years.

*Claim.*—1st. In a machine for manufacturing barbed fence wire, means for supporting and feeding the main wire or wires, and means for supporting and feeding the barbed wires, in combination with the coiling spindle and means for operating the same, all arranged and operating substantially as described, whereby the barbed wire is coiled upon the main wire or wires by the rotary movement of the coiling spindle in each direction, substantially as shown and described. 2nd. In a machine for making barbed fence wire, the combination, with the coiling spindle, of alternately acting barb wire feeding devices placed on opposite sides of the coiling spindle, substantially as shown and described. 3rd. In a machine for making barbed fence wire, the combination, with the coiling spindle, of movable and stationary cutters placed on opposite sides of the coiling spindle for cutting off the barbed wires working alternately, substantially as shown and described. 4th. In a machine for barbing fence wire, the combination, with the coiling spindle, of alternately acting barbed wire feeding devices placed on opposite sides of the coiling spindle, and alternately working movable and stationary cutters placed on opposite sides of the coiling spindle, substantially as shown and described. 5th. The process of manufacturing barbed wire by utilizing in a machine for making barbed fence wire, the coiling motion of the coiling spindle in each direction to coil on a barb, substantially as shown and described.

## CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO THE FOLLOWING PATENTS.

221. C. M. MAHLE, 2nd 5 years of No. 10,143, from the 24th day of June, 1884. Improvements in Brush Block Boring Machines, 2nd June, 1884.

222. THE ONTARIO CANOE CO. (assignee), 2nd 5 years of No. 10,063, from the 7th day of June, 1884. Improvements in the Construction of Boats, 4th June, 1884.

223. J. ABELD. 2nd 5 years of No. 10,056, from the 7th day of June, 1884. Spark Extinguisher for Boilers and Furnaces, 4th June, 1884.

224. A. McDONALD, 2nd 5 years of No. 10,069, from the 7th day of June, 1884. Improvements on Piston Packing. 6th June, 1884.

225. W. T. DINGLE (assignee), 2nd 5 years of No. 10,101, from the 13th day of June, 1884. Improvements on Fanning Mills, 9th June, 1884.

226. W. BUCK, 2nd 5 years of No. 10,140, from the 24th day of June, 1884. Improvements in Sad Irons, 11th June, 1884.

227. J. GOODRICH, 2nd 5 years of No. 10,172, from the 26th day of June, 1884. Improvements on Tools for Grasping and Holding Fast Articles to be Operated With or Upon, 14th June, 1884.

228. L. HENKLE, 2nd and 3rd 5 years of No. 18,789, from the 6th day of March, 1879. Improvements in Street Lamps, 14th June, 1884.

229. C. GOODYEAR (assignee), 2nd 5 years of No. 10,137, from the 23rd day of June, 1884. Improvement on Sole Sewing Machines, 16th June, 1884.

230. S. J. INGALLS, 2nd 5 years of No. 10,116, from the 23rd day June, 1884. Improvements on Apparatus for Assisting the Separation of Cream from Milk, 16th June, 1884.

231. H. E. FRUE (executrix), 2nd and 3rd 5 years of No. 3,974, from the 26th day of October, 1884. Improvements in Machines for Washing or Separating the Heavier Ores or Metals, 17th June, 1884.

232. J. H. W. BIGGS, 2nd 5 years of No. 10,129, frem the 23rd day of June, 1884. Improvements in the Manufacture Salt, and Plant Therefor, 20th June, 1884.

233. J. FORBES and J. F. THOMAS, 2nd 5 years of No. 10,118, from the 23rd day of June, 1884. Improvements on Row Locks, 20th June, 1884.

234. T. W. KIRBY, 2nd 5 years of No. 10,138, from the 24th day of June, 1884. Improvements on Concave Key Nail Fastening for Ships, 20th June, 1884.

235. S. JOHNSTON, 2nd 5 years of No. 10,601, from the 30th day of October, 1884. Improvements in Harvesting Machines, 20th June, 1884.

236. H. FLOWERS. 2nd 5 years of No. 10,153, from the 24th day of June, 1884. Improvements in the Form and Construction of Sails, both for Square Rigged and Fore and Aft Vessels, and in Apparatus for Setting, Reefing and Furling the Same, 21st June, 1884.

237. J. R. HEYWOOD, 2nd 5 years of No. 10,163, from the 26th day of June, 1884. Improvements on Ovens, 21st June, 1884.

238. W. H. HART, 2nd 5 years of No. 10,134, from the 23rd day of June, 1884. Improvements on Hinges, 23rd June, 1884.

239. T. C. MOSS (assignee), from the 24th day of June, 1884. Improvements in Heel Stiffeners, 24th June, 1884.

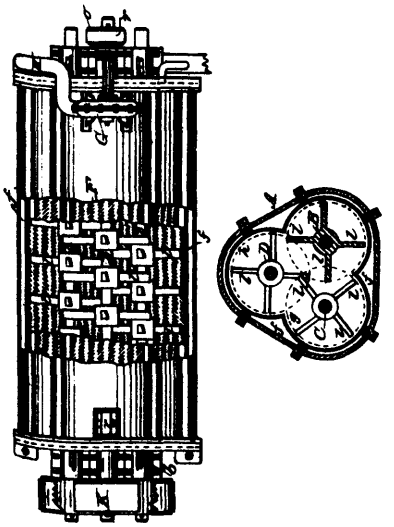
240. M. C. EVARTS and S. A. EVARTS (assignees), 2nd 5 years of No. 10,227, from the 11th day of July, 1884. Improvements in Machines for Hulling Buck Wheat, 26th June, 1884.

THE

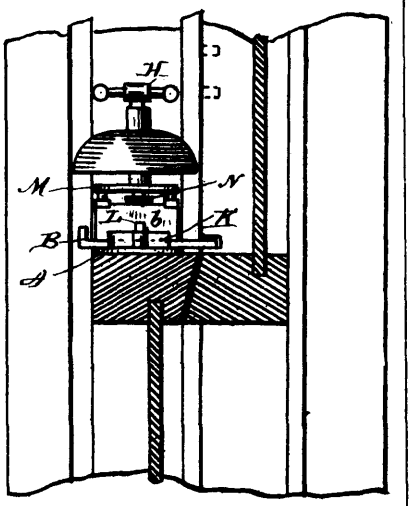
# CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

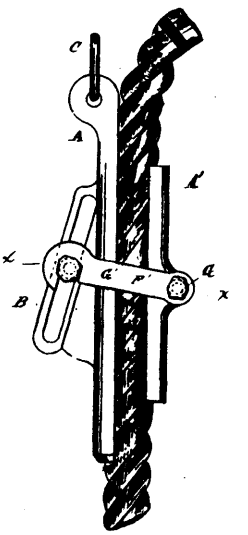
Vol. XII. JULY, 1884. No. 7.



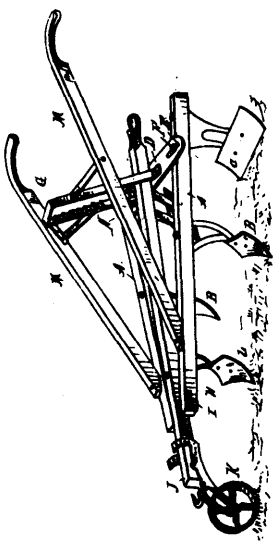
19500 Curtis & Eifrich's Grain Cleaning Machine.



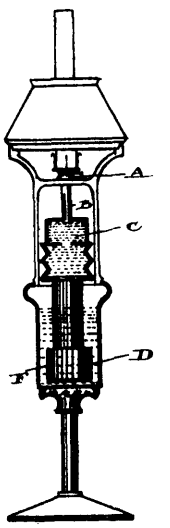

19501 Vassar's Burglar Alarm Catch.



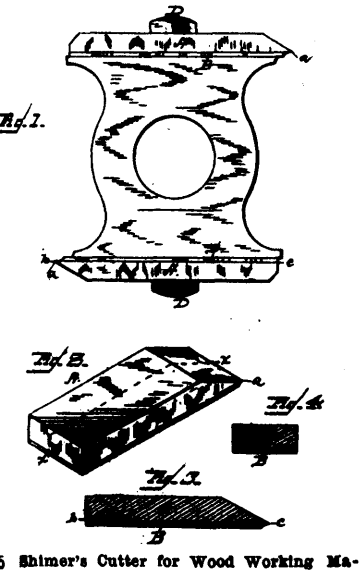

19502 Littlefield's Rope Holder, or Clamp.



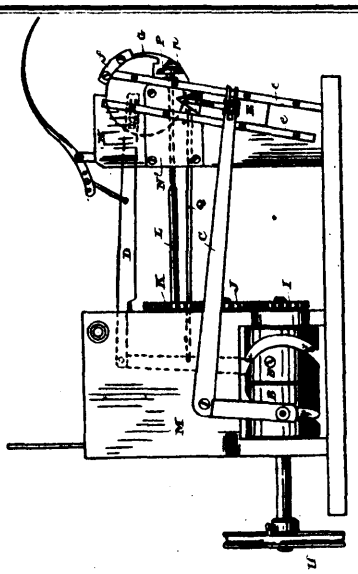
19503 Smith's Cultivator.



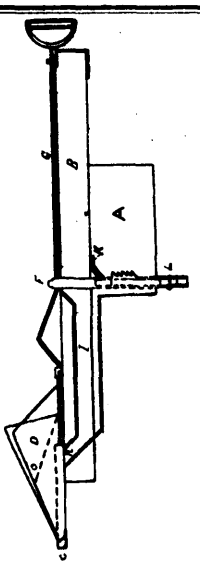

19504 Matthew's Fluid Burning Lamp.



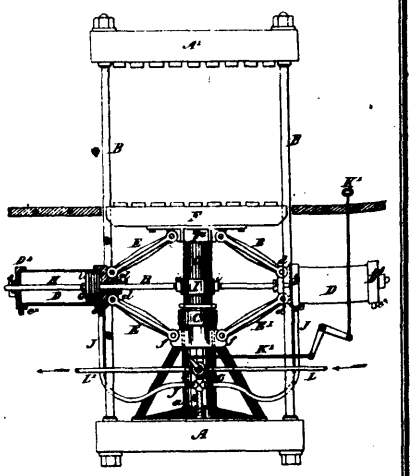

19505 Shimer's Cutter for Wood Working Machines.



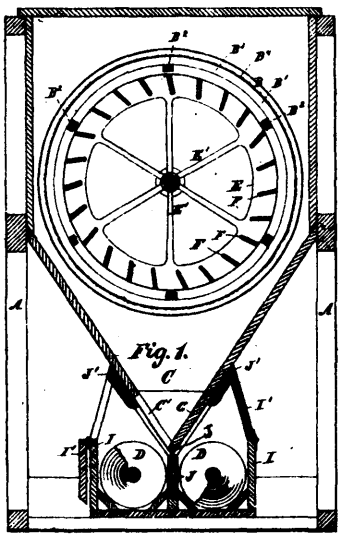
19506 Culley's Sewing Machine.



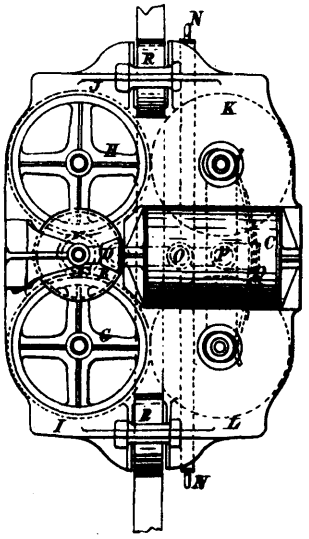
19507 Warner's Machine for Planting Corn



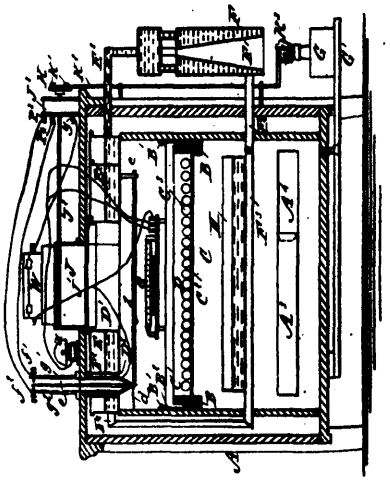
19508 Fitts, Rice & Blanchard's Press for Baling Goods.



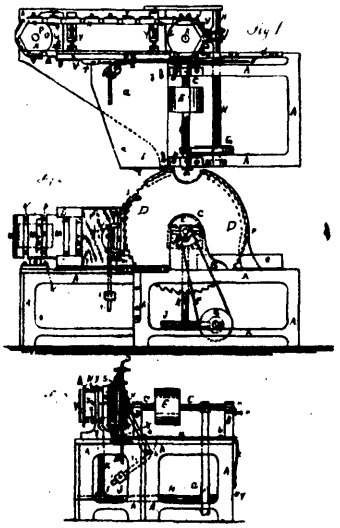

19509 Wilson's Flour Dressing Machine.



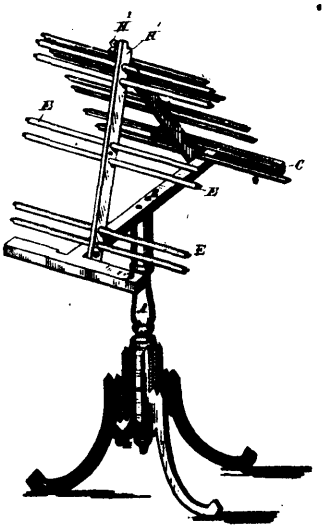
19510 Ayrton & Perry's Electrical Haulage System and Apparatus therefor.



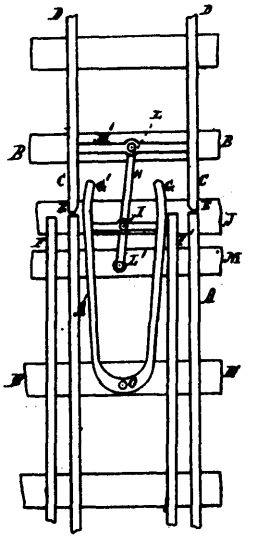
19511 Rosebrook's Electric Regulator and Alarm for Incubators.



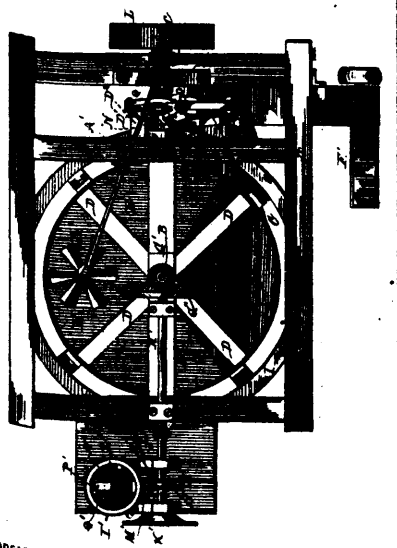
19512 Dake & Seek's Shingle and Heading Sawing Machine.



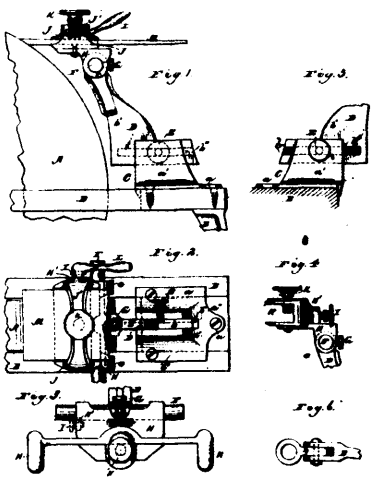
19514 Bates' Combined Table and Clothes Dryer.



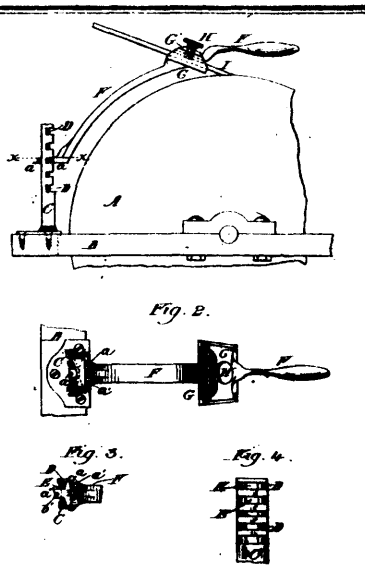
19515 Howell's Automatic Railway Switch.



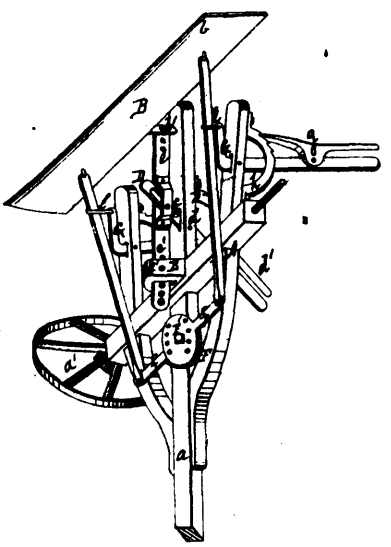
19516 Nafziger's Automatic Grain Measuring Machine.



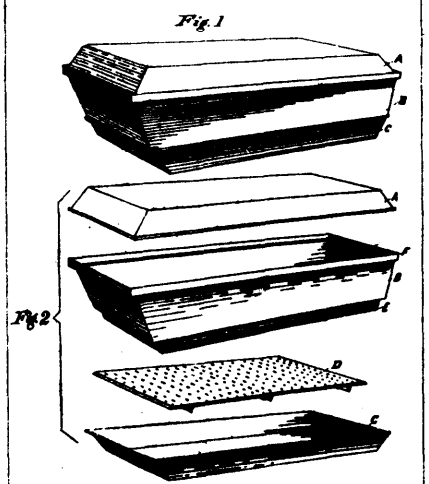
19517 Carr & Strong's Tool Holder for Grind-stones.



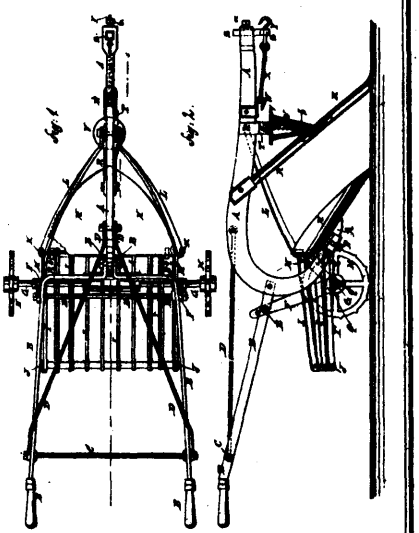
19518 Carr's Tool Holder for Grind-stones.



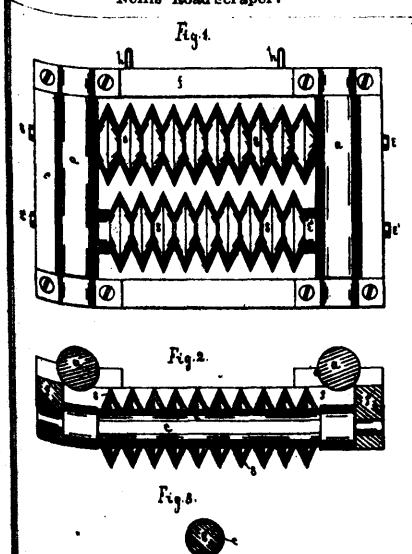
19519 Nellis' Road Scraper.



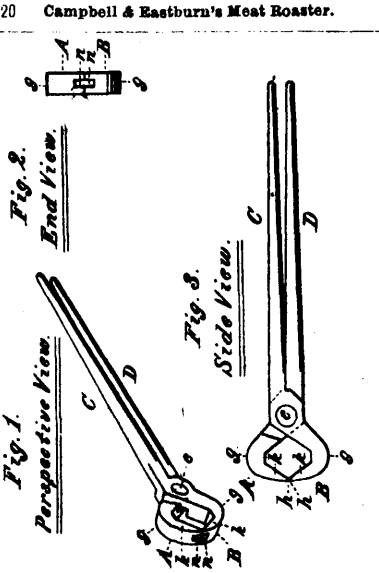
19520 Campbell & Eastburn's Meat Roaster.



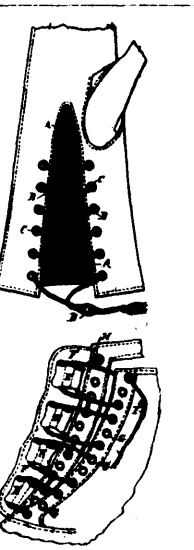
19521 Nelson's Potato Digger.



19522 Peterson's Clod Crusher.



19523 Hubbell's Staple Extractor.



19524 Mather's Lace for Gloves and Boots.

FIG. 1.

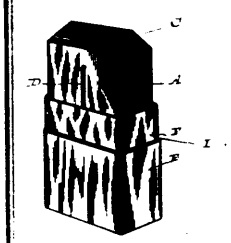


FIG. 2.

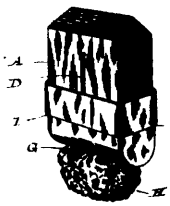


FIG. 3.

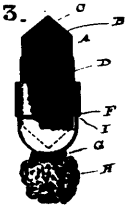
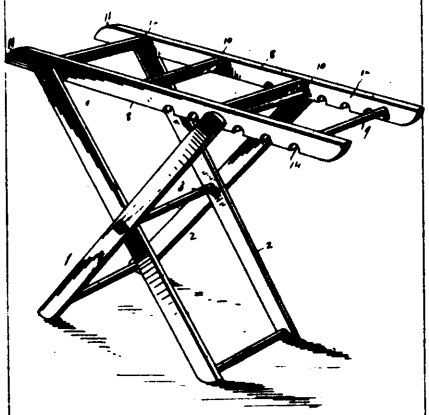
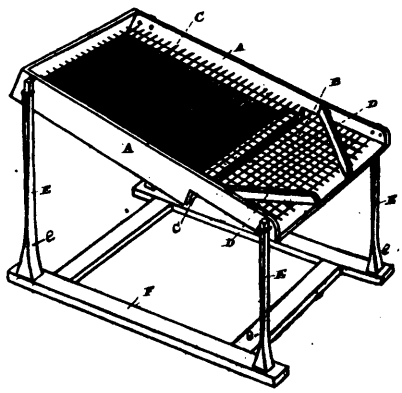


FIG. 4.

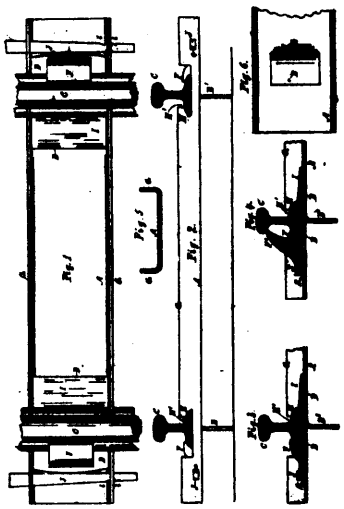
19525 Weed's Slate Washer.



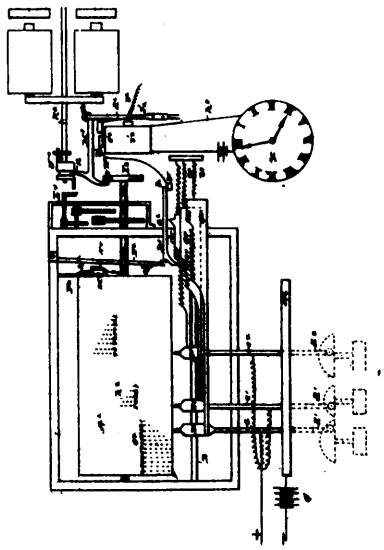
19526 Nelson's Combined Wash Bench and Step-Ladder.



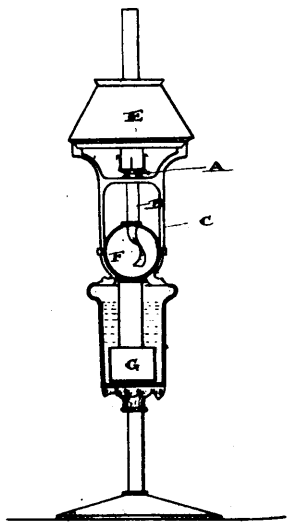
19527 Bellamy's Machine for Separating Potatoes.



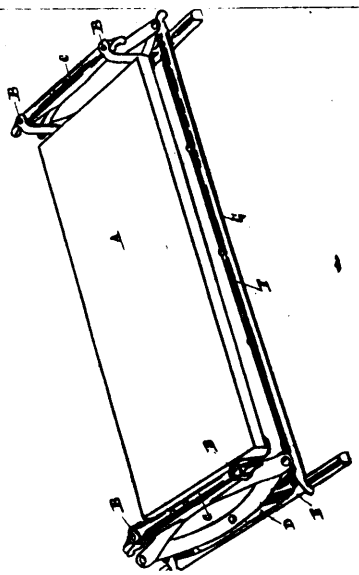
19528 Hungerford's Railway Tie.



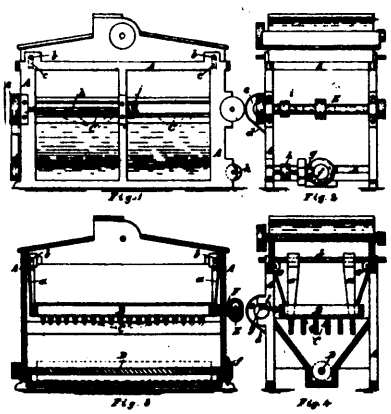
19529 Oram's Telephone Time Signal System.



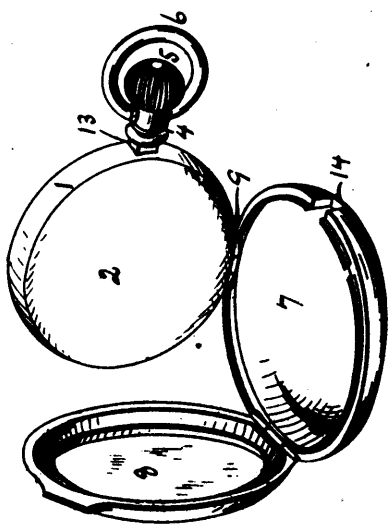
19530 Matthew's Fluid Burning Lamps.



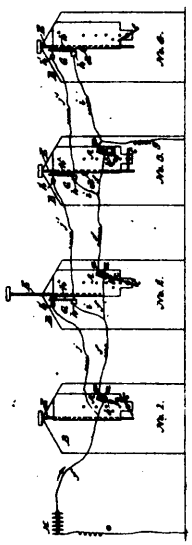
19531 McLaughlin's Spring Gear for Vehicles.



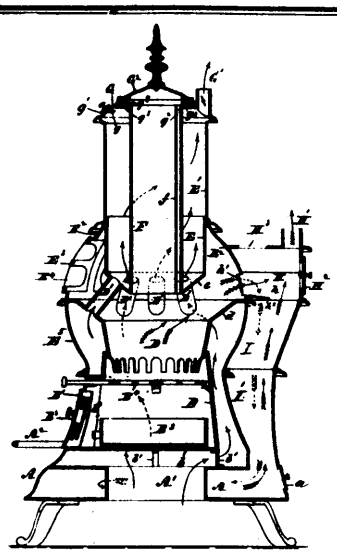
19532 Riddell's Flour Dressing Machine.



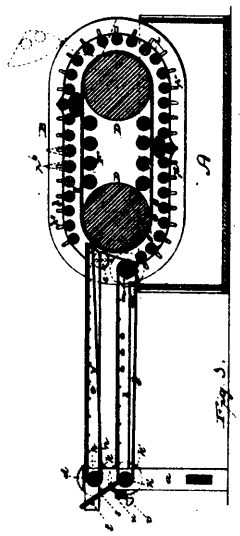
19533 Lamont's Watch.



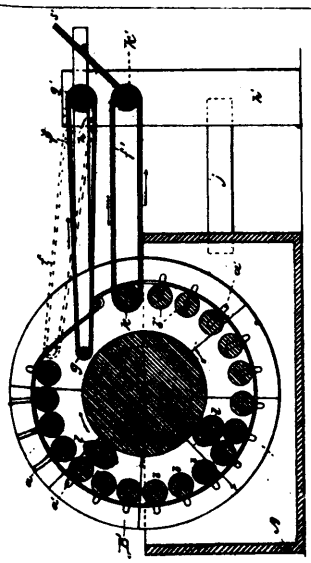
19534 Swayze & Lane's Electric Block Signal.



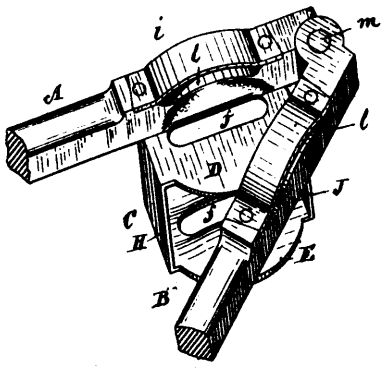
19535 Sims & Hohmeier's Hot Air Stove.



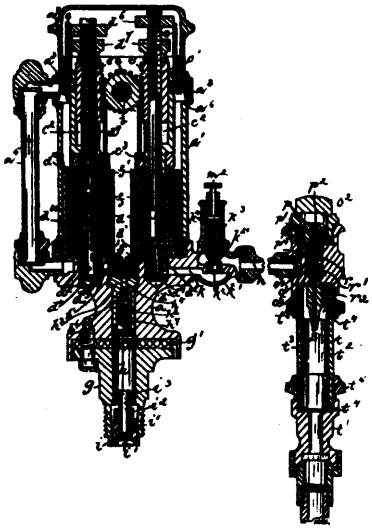
19536 Harper's Hat Sizing Machine.



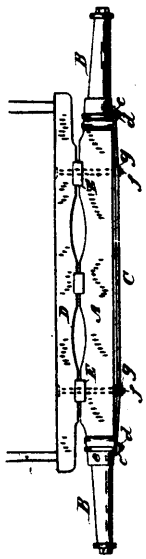
19537 Harper's Hat Sizing Apparatus.



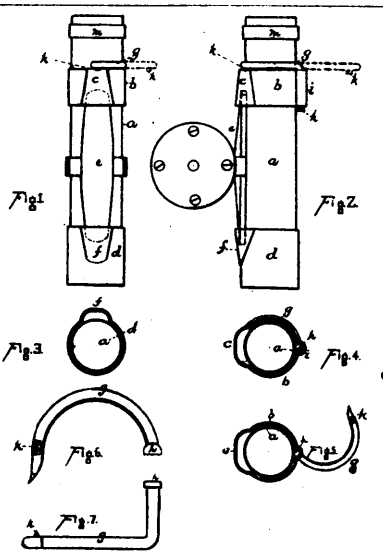
19539 Redihough's Wick Trimmer.



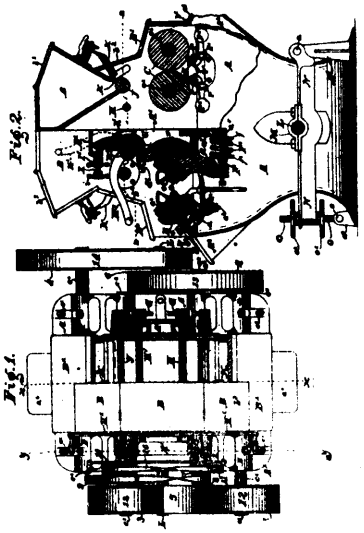
19540 Harlow's Lubricator.



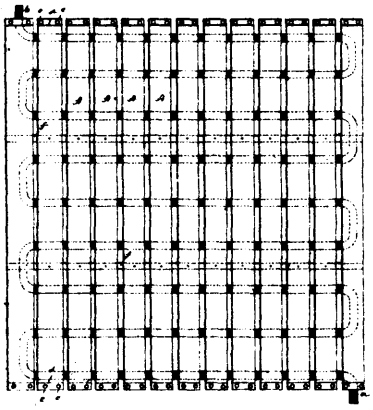
19541 Ulrich's Waggon Axle Truss.



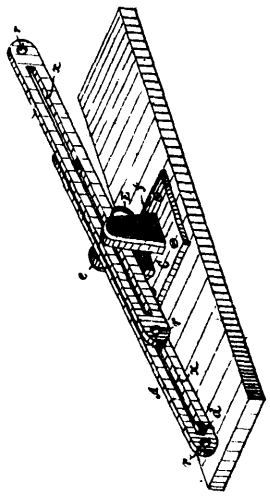
19542 Bailey's Reel Fastening for Fishing Rods.



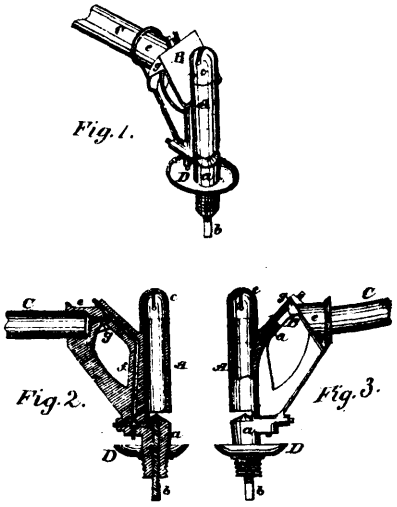
19543 Warrington's Roller Mill.



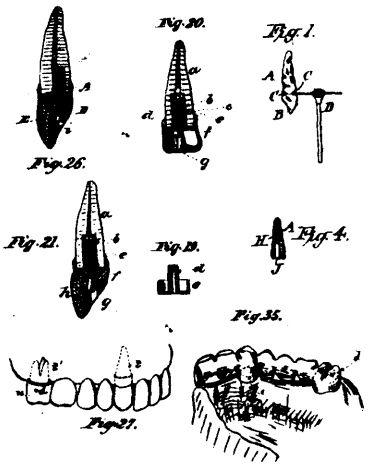
19544 Nichol's Lumber Dryer.



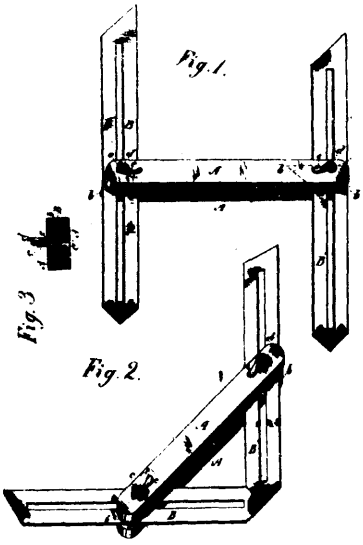
19545 Buckley's Lever.



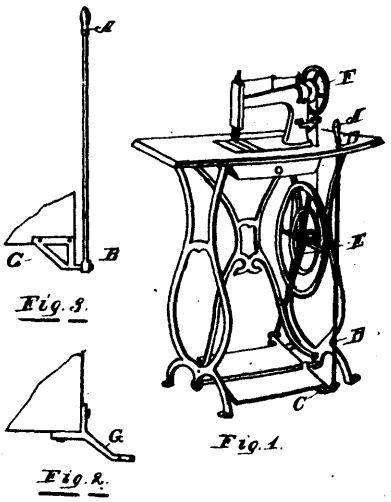

19546 Best's Vapour Burner.



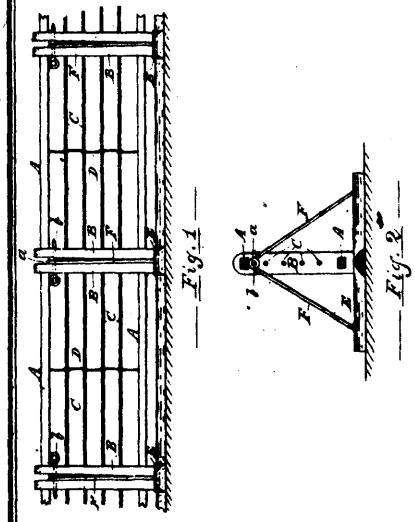

19547 Richmond's Dentistry.



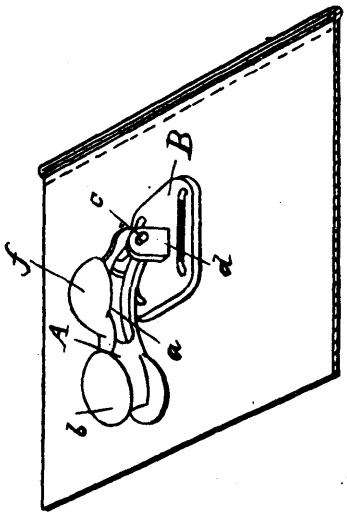

19548 Cumming's Carpenter's Bevel.



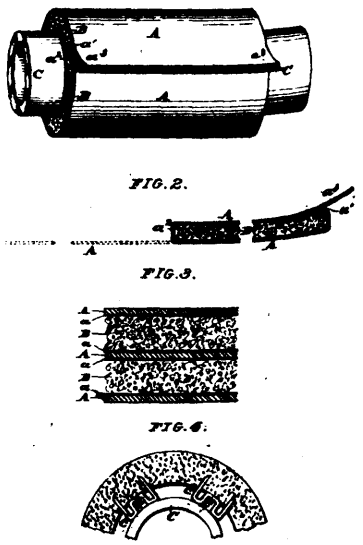

19549 Burgwyn's Hand Motive Power.



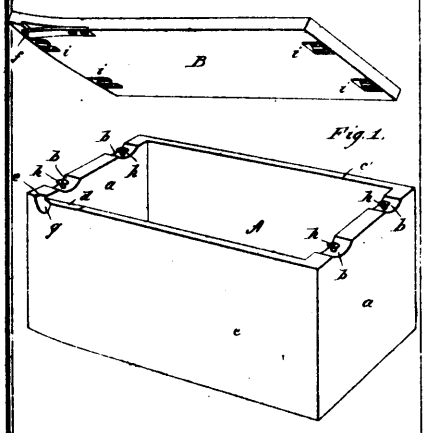

19550 Scarr's Fence.



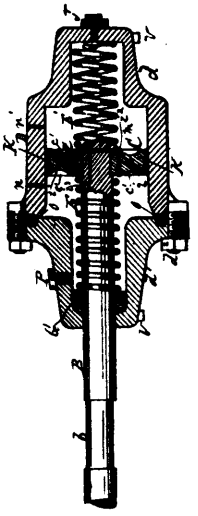
19551 Valiant's Boot or Glove Fastener.



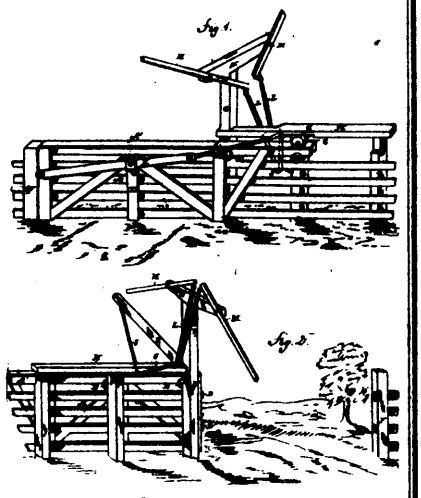

19552 Kelly's Non-Conducting Covering.



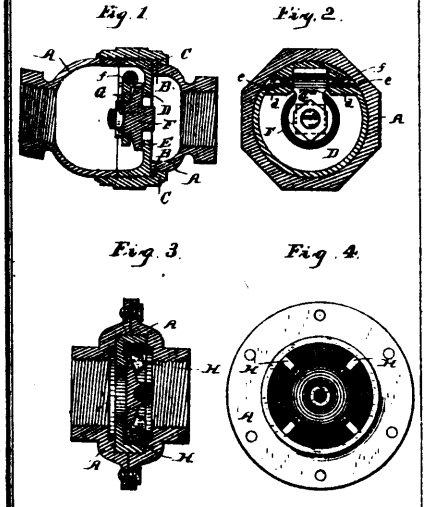
19553 Shaw & Chidley's Box.



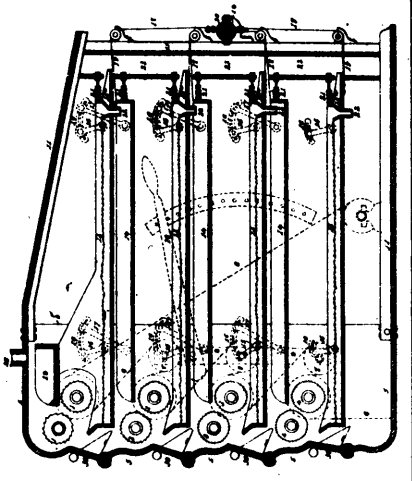
19554 Schoffer's Buffer for Railways.



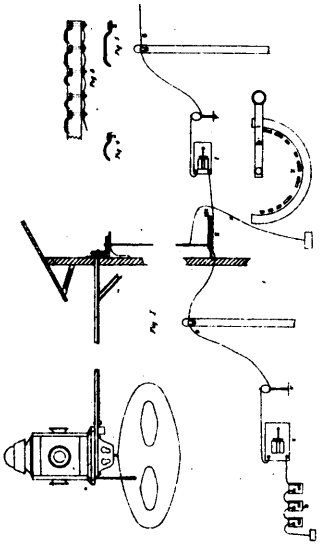
19555 Chilcott's Gate.



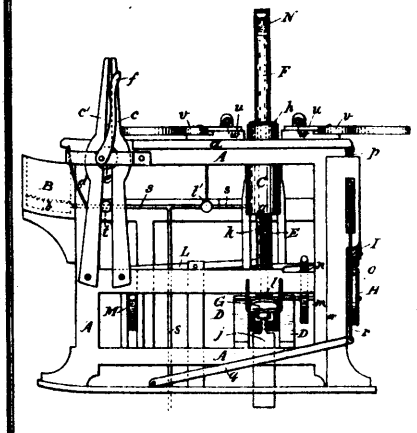
19556 Belknap & Bradley's Valve Mechanism.



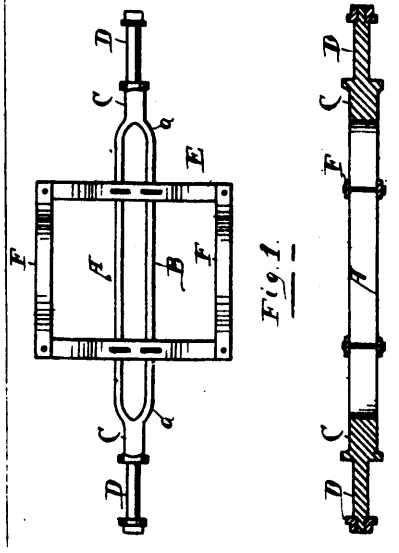
19557 Case's Gradual Reduction Machine



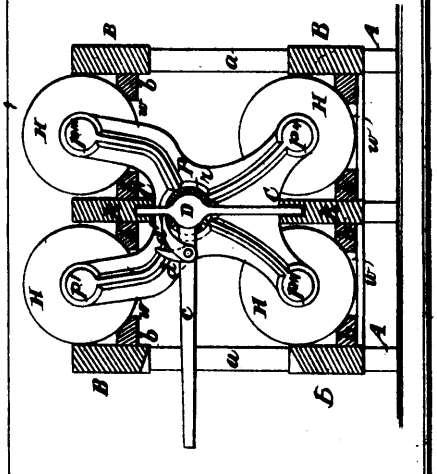
19558 Babbitt, Ellison & Bacon's Electric Railway Signal Register.



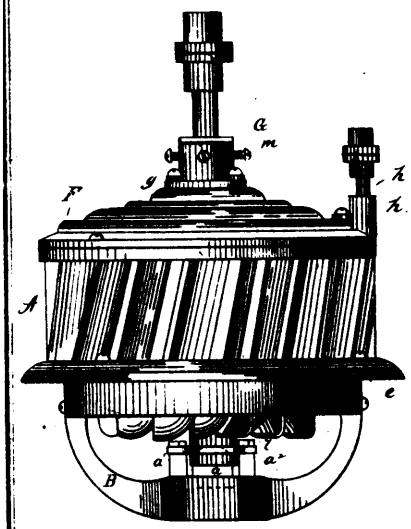
19559 Ruel's Machine for Making Felt Boots.



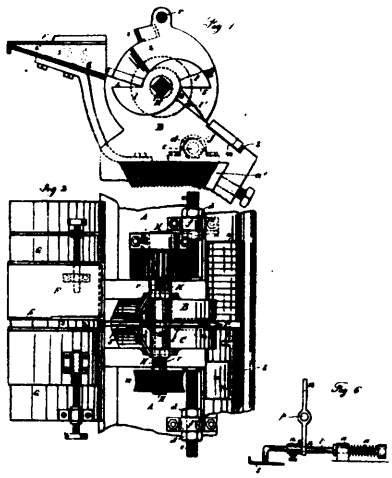
19560 Gilbert's Axle for Two-Wheeled Vehicles



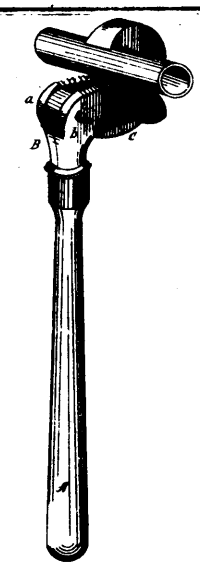
19561 Hey's Cheese Press.



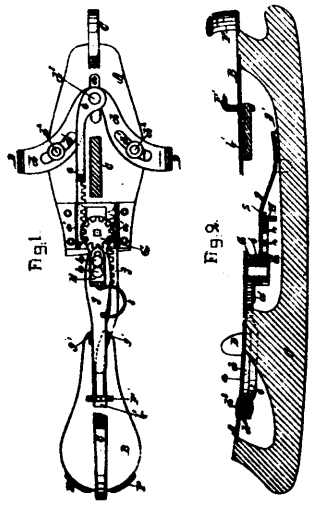
19562 Raab's Turbine Water Wheel.



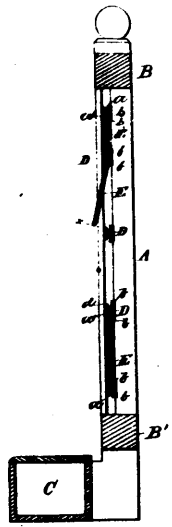
19563 Eaton's Type Rubbing Machinery.



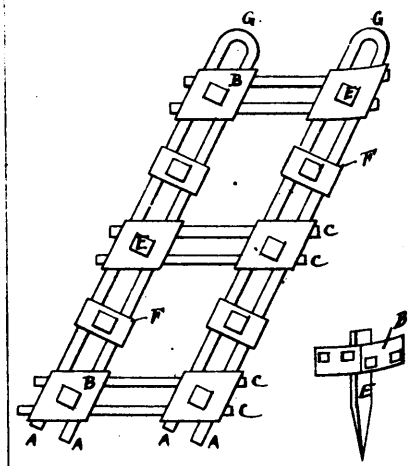
19564 Patton's Tipe Tongs or Wrench.



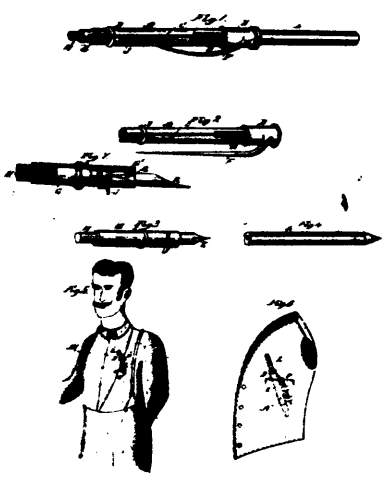
19565 Doherty's Skate.



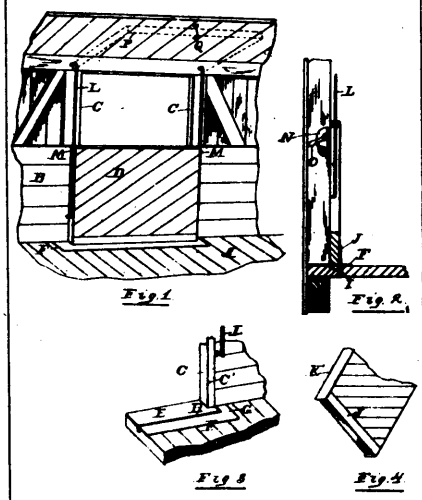
19566. Hamilton's Interchangeable Chart Frame.



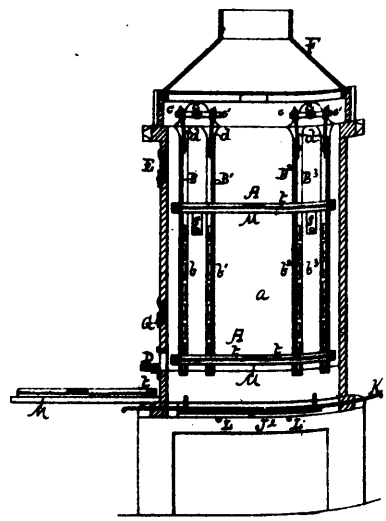
19567 Rogers' Harrow.



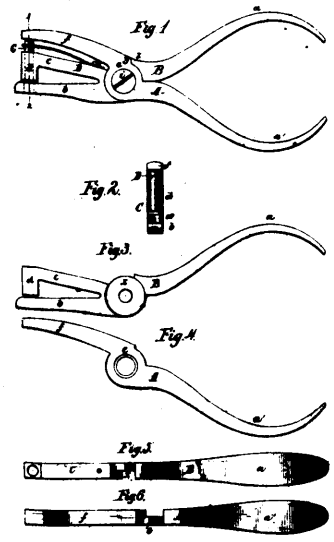
19568 Schlechter's Pencil Clasp and Pocket Holder.



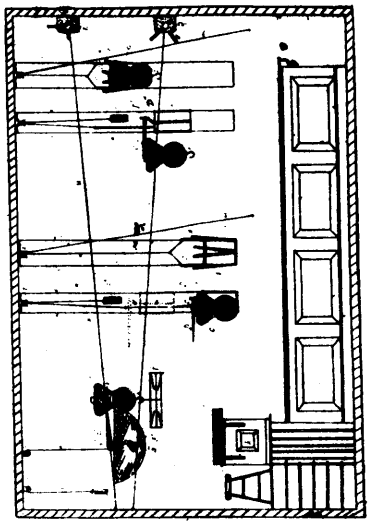
19569 Lee's Car Door.



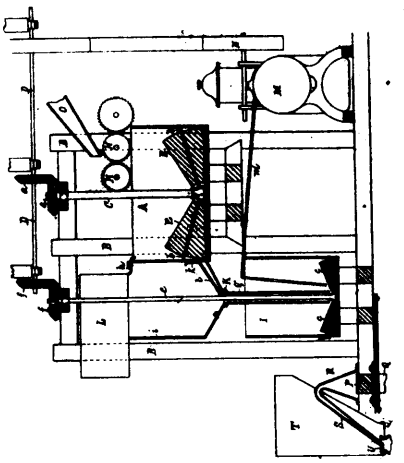
19570 Grier's Fruit Evaporator.



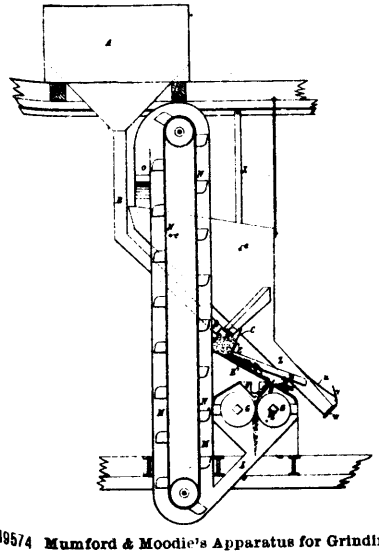

19571 Sjoberg's Ticket Punch.



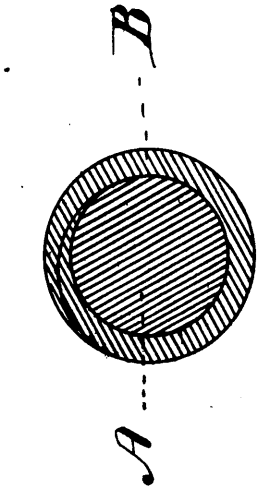
19572 Burns' Cash and Parcel Carrier.



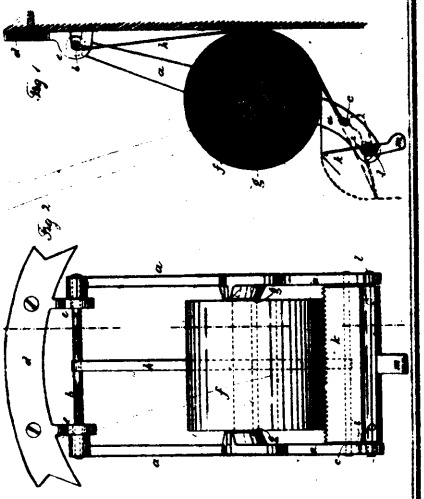
19573 Bollinger's Apparatus for Amalgamating and otherwise Treating Ores.



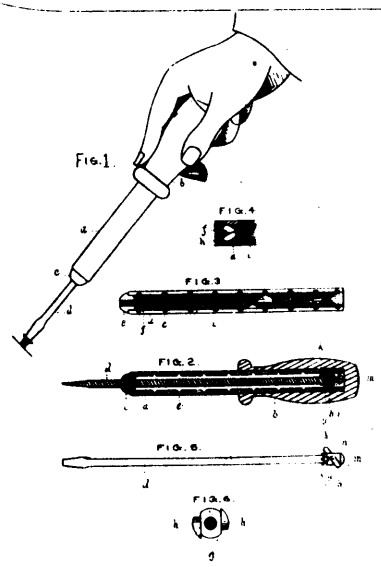
19574 Mumford & Moodie's Apparatus for Grinding Ores, Quartz, &c.



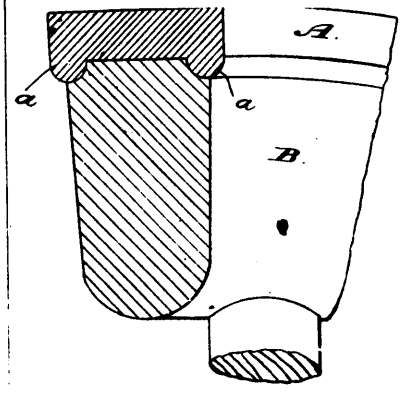

19575 McIntire's Electric Wire.



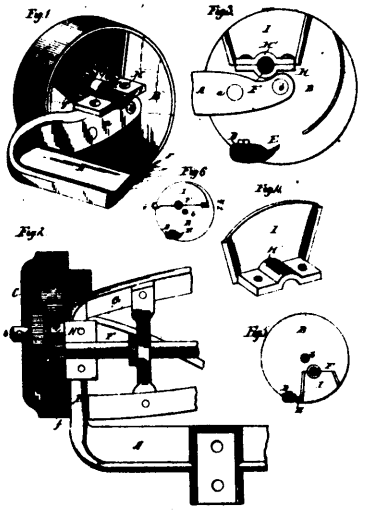
19576 Eaton's Paper Holder.



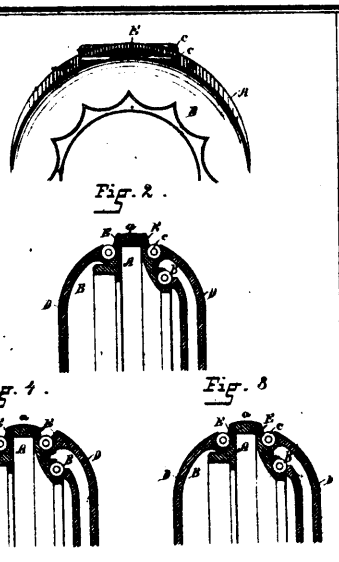

19577 Olson's Screw-Driver.



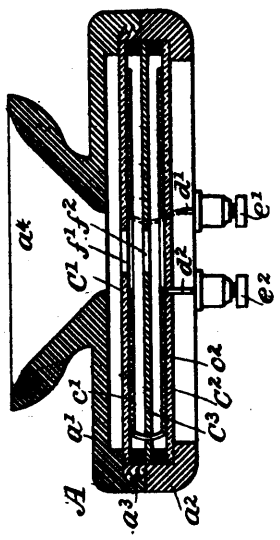

19578 Armstrong's Tire for Wheels.



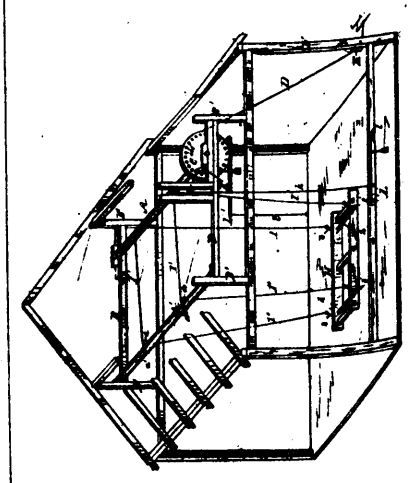

19579 Trump's Lawn Mower.



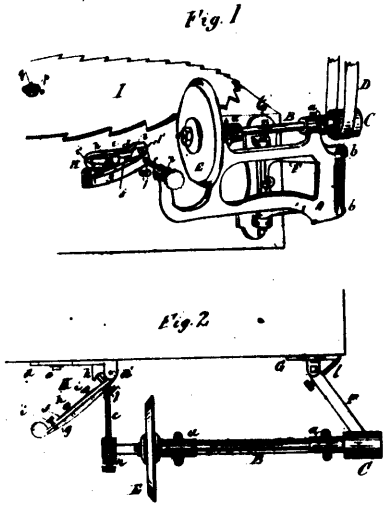

19580 Ladd's Watch Case.



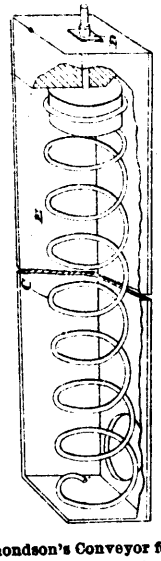
19581 Taylor's Telephone Receiver.



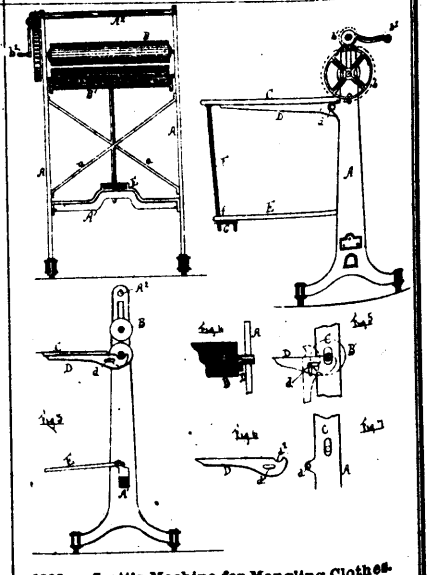
19582 Walker's Hay and Grain Rack Elevator.



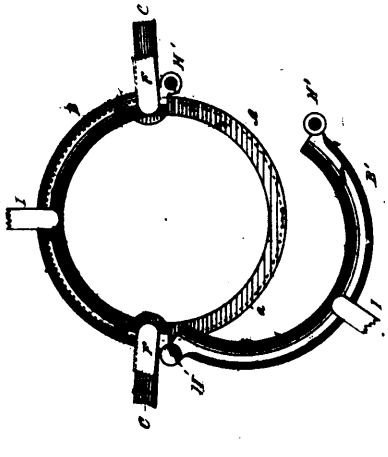

19583 Rogers' Machine for Gumming and Sharpening Saws.



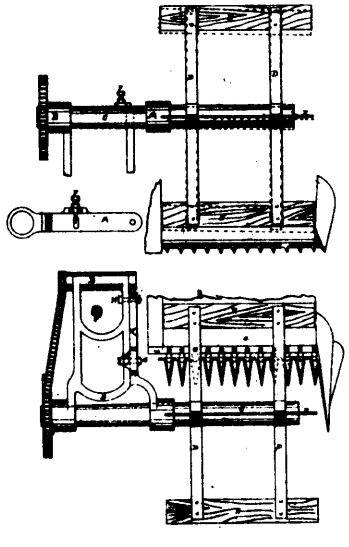
19584 Edmondson's Conveyor for Grain and Flour Machines.



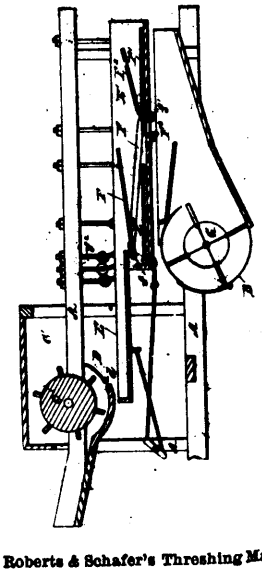
19585 Scott's Machine for Mangling Clothes.



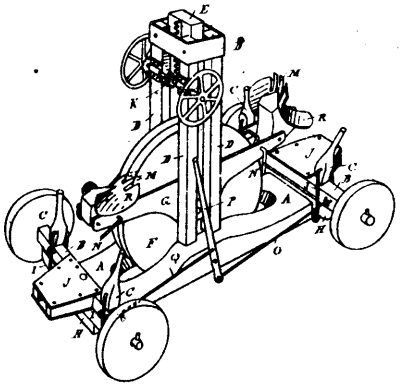
19586 Fallesen & Jensen's Fifth Wheel for Vehicles.



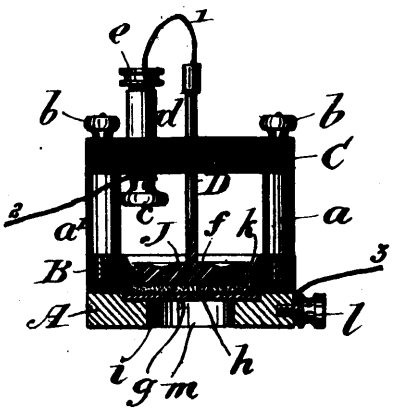
19587 Fielden's Harvesting Machine.



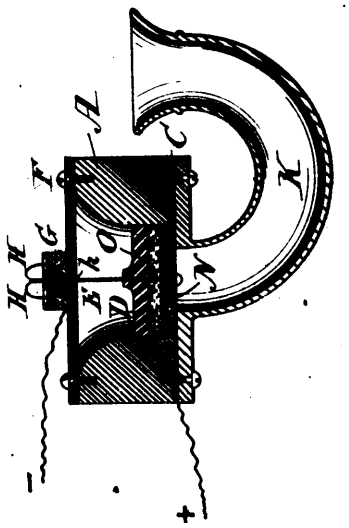
19588 Roberts & Schafer's Threshing Machine.



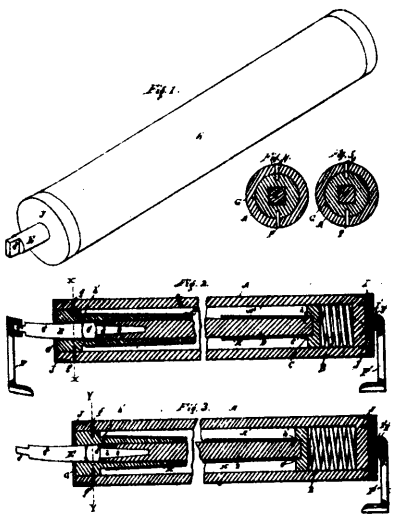
19589 Nogar's Ditching Machine.



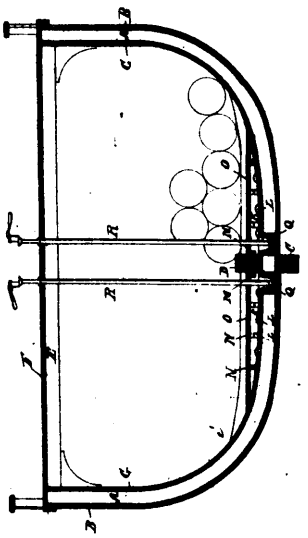

19590 Berliner's Telephone Transmitter.



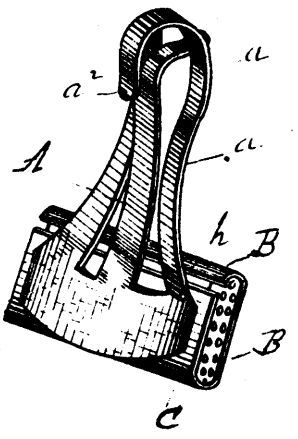

19591 Berliner's Telephone Transmitter.



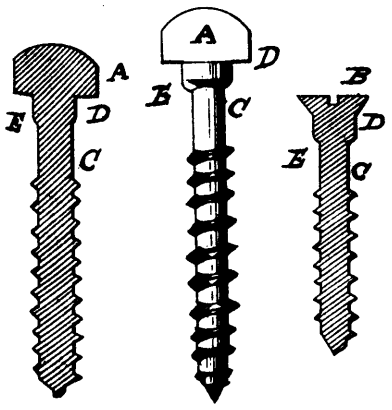

19592 Graves and Gates' Spring Shade Roller.



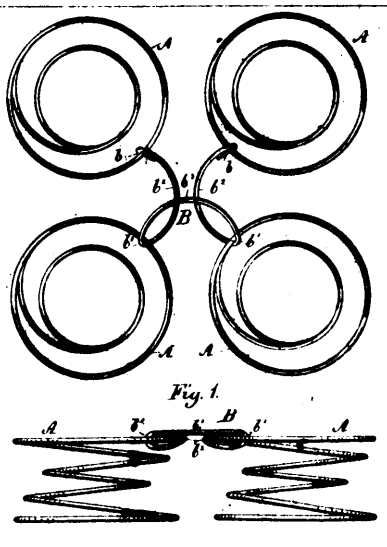
19593 Langille's Construction and Internal Arrangement of Ships.



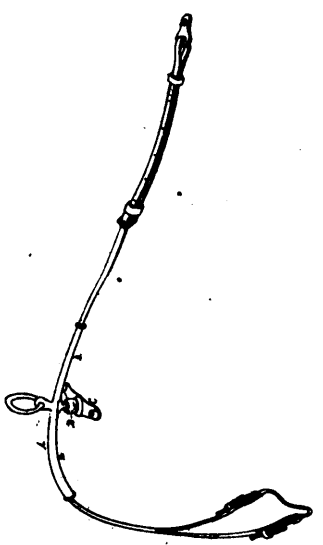

19594 Welker's Carriage Curtain Fastening.



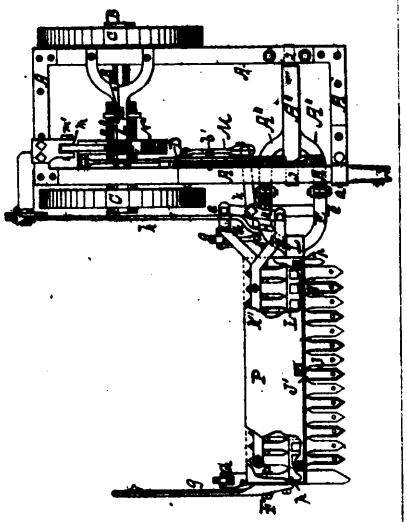

19595 Stiles' Wood Screw.



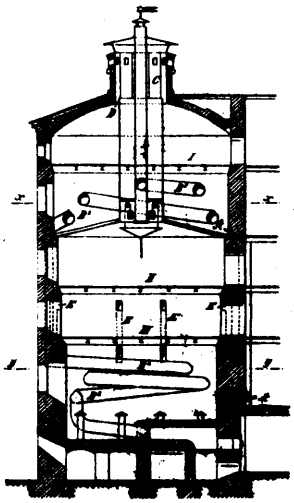

19596 Butterfield's Bed Spring Connection.



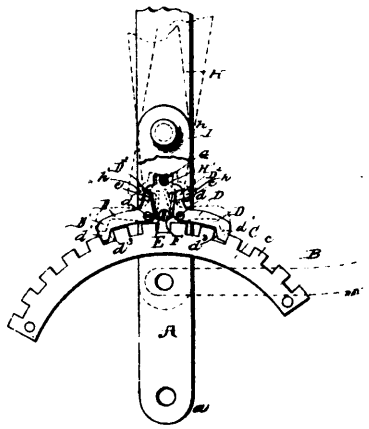
19597 Champlain's Check Rein Carrier.



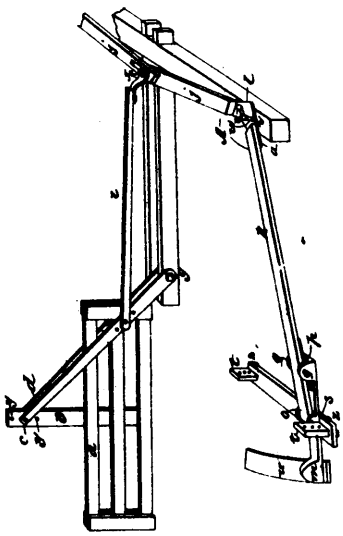
13598 Branchs' Mowing and Reaping Machine.



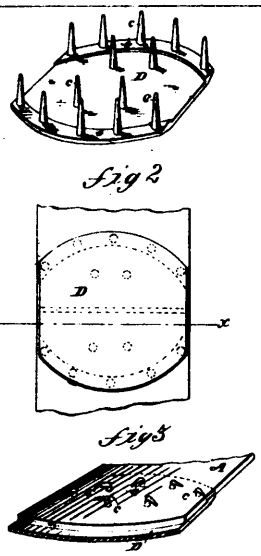
19599 Winter's Process and Means for Drying Malt in Malt Kilns.



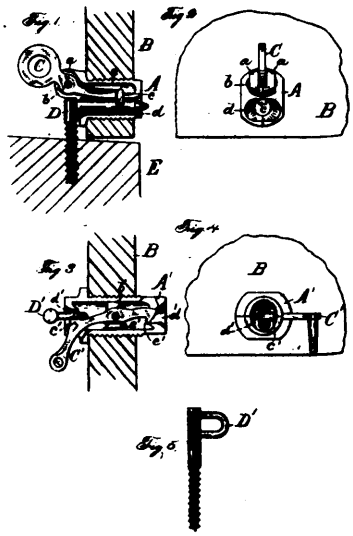
19600 Hall's Joint Lever.



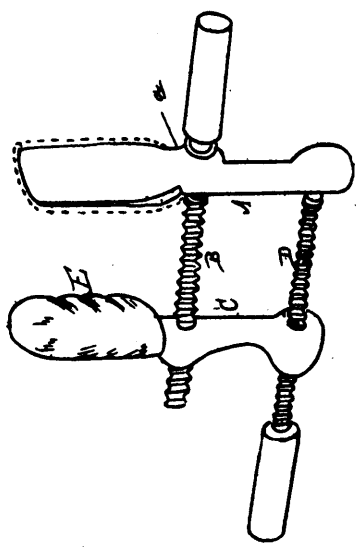
19602 Foster's Gate.



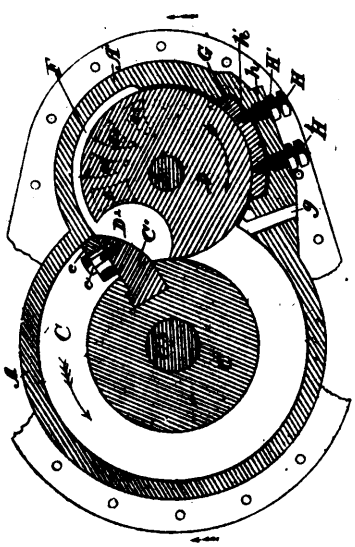

19603 Lovejoy's Belt Fastener.



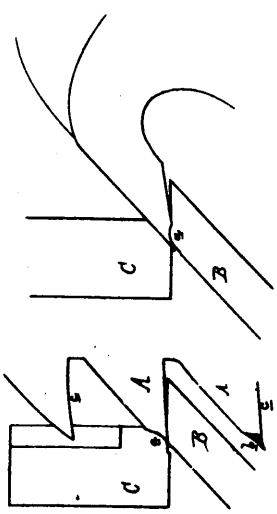

19904 Doolittle's Shutter Fastener.



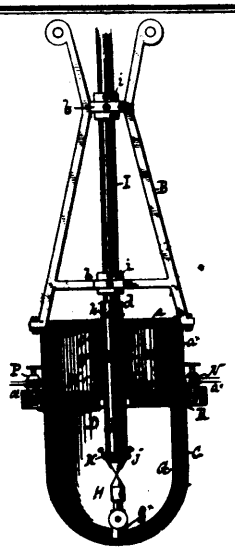
19605 Rice's Medical Manipulator.



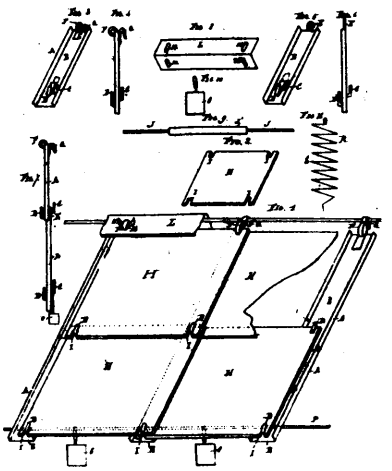
19606 Phelps' Rotary Engine.



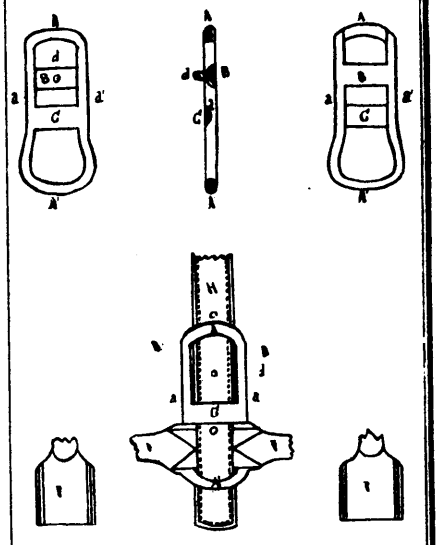
19607 Charbonneau's Saw Swaging Machine.



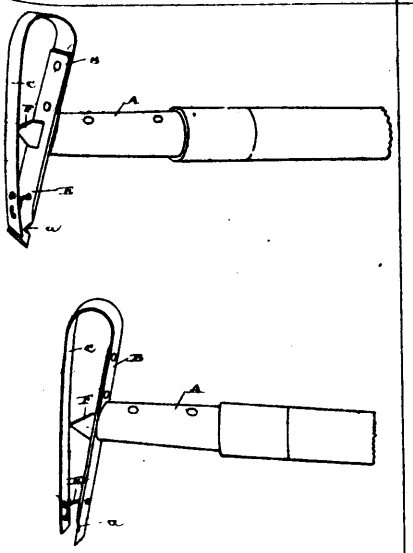
19608 Edgerton's Electric Arc Lamp.



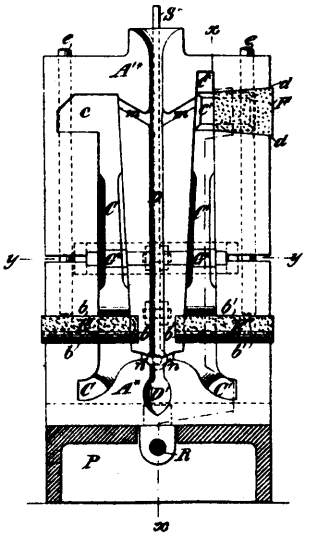
19609 Couteau's Cover for Hay or Corn Ricks.



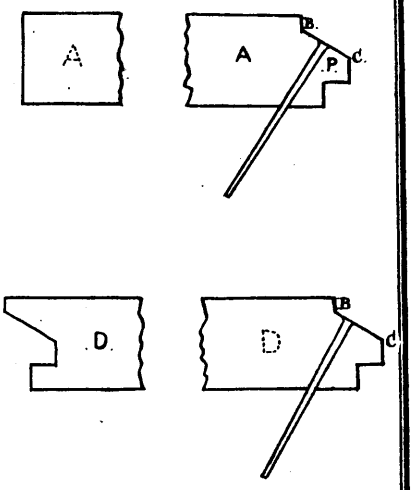
19610 Boulter's Buckle for Harness Breechings.



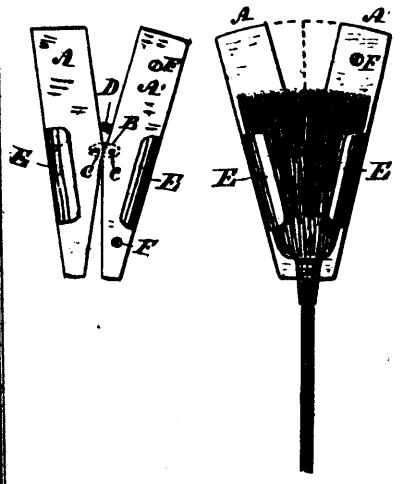
19611 Wilson's Weeding and Thinning Hoe.



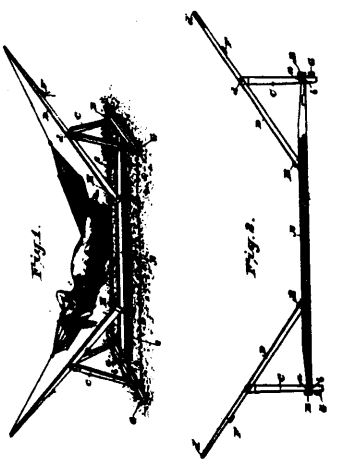
19612 Snediker's Mold for Casting Vises.



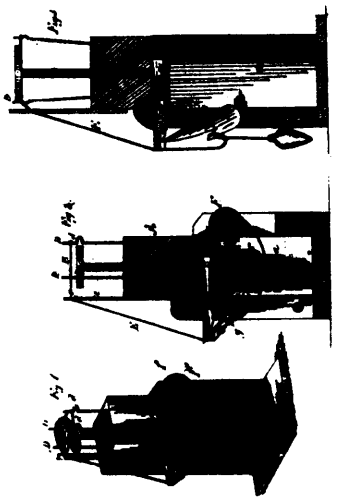
19613 Putney's Wood Flooring.



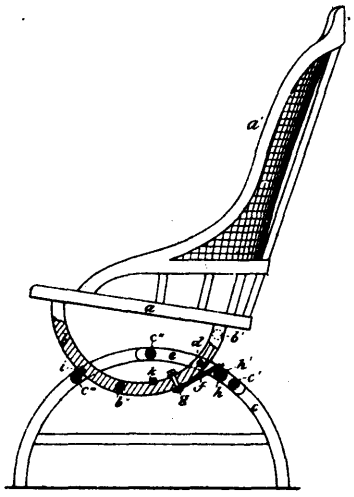
19614 Van Horn's Broom Holder.



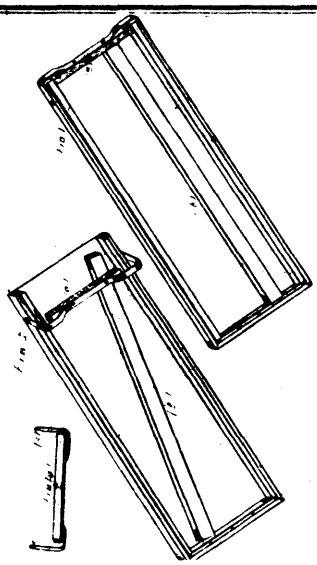
19615 Pluche's Folding Hammock Support.



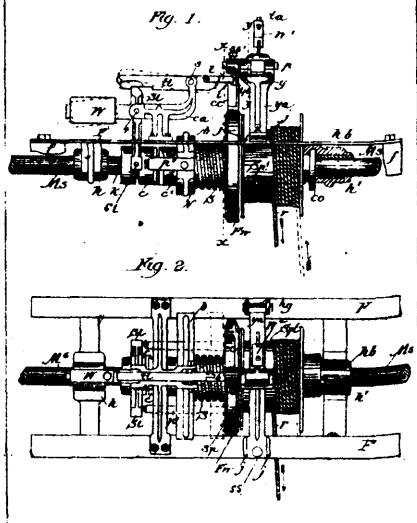
19616 Brubaker's Animal Trap.



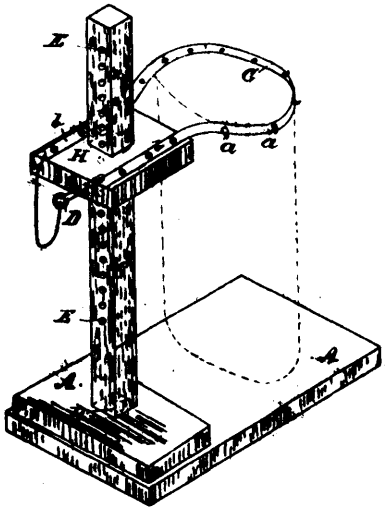
19617 Ordway's Spring Rocking Chair.



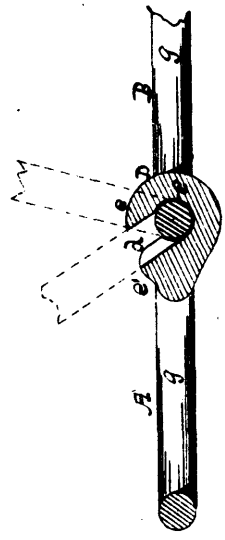
19618 Moore & Allen's Proces for Locking up Type on Galleys.



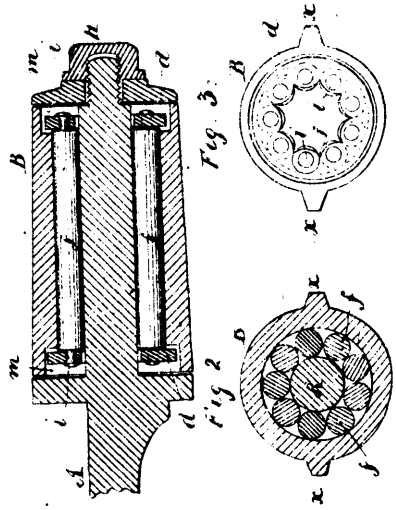
19619 Metcalf's Grain Shovel Mechanism.



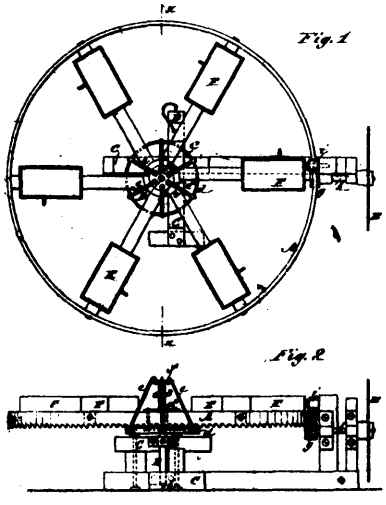
19621 O'Neill's Bag Holder.



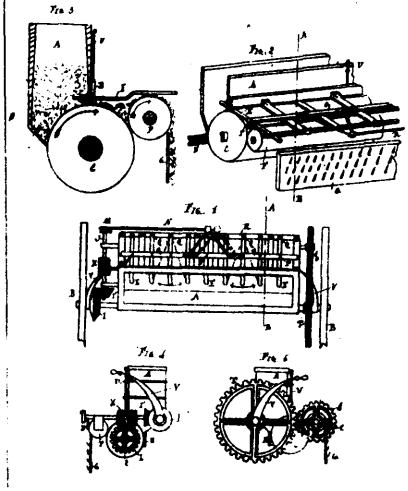
19622 Hall's Drive Chain Link.



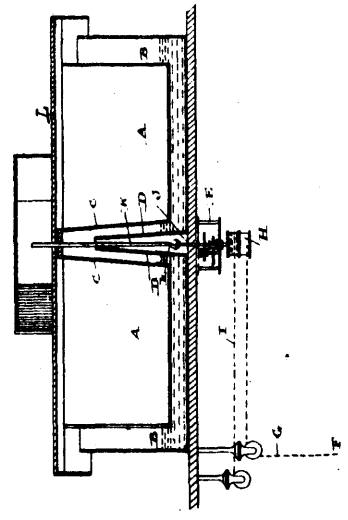
19623 Poor & Doyle's Carriage Axle Box.



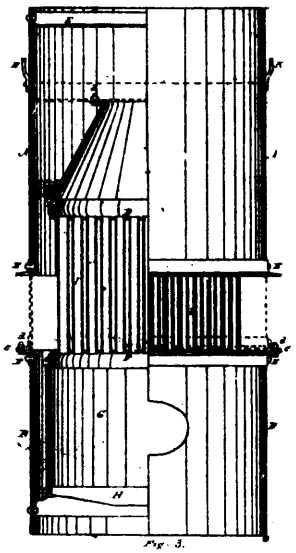
19624 Adkins' Horse Power.



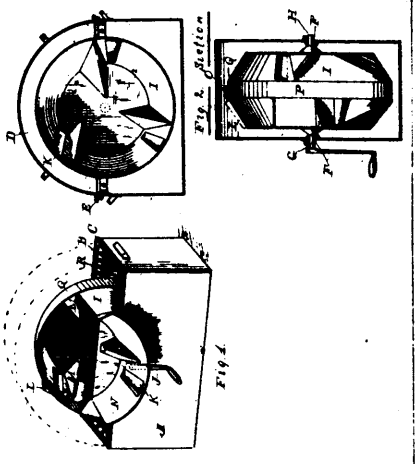
19625 Couteau's Machine for Distributing Manure.



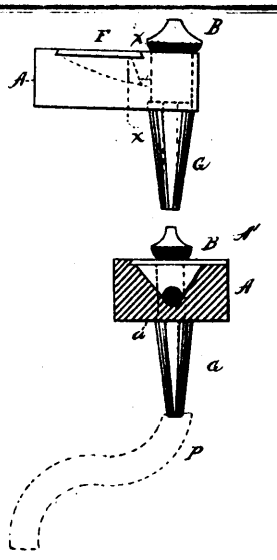
19626 Culp's Revolving Stand.



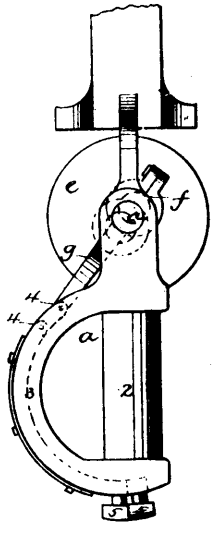
19627 Waterous' Vertical Sectional Steam Boiler.



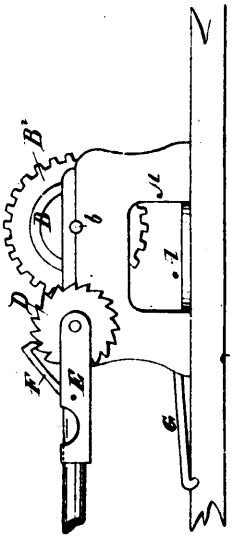
19628 Johnson's Steam Washer



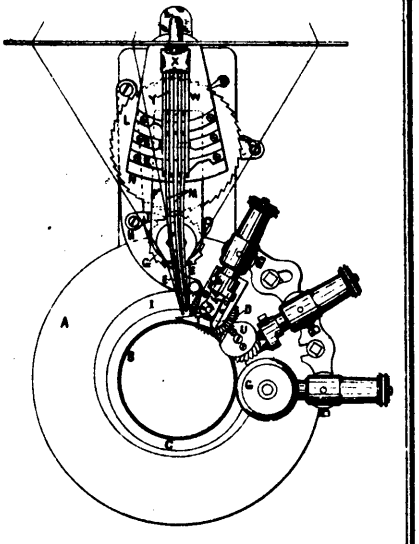
19629 Lovells' Lubricator.



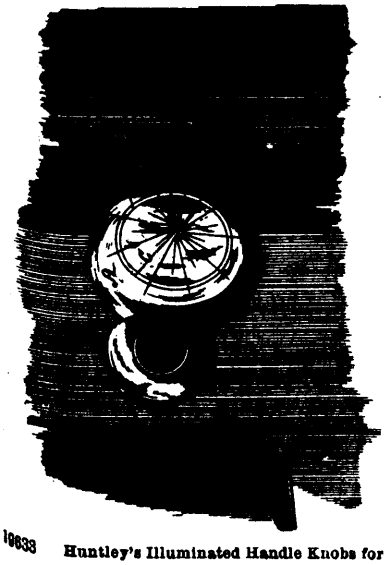
19630 Dodge's Mechanical Movement.



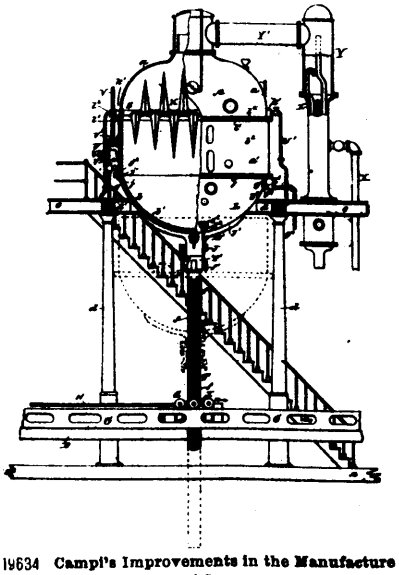
19631 Hamilton's Windlass.



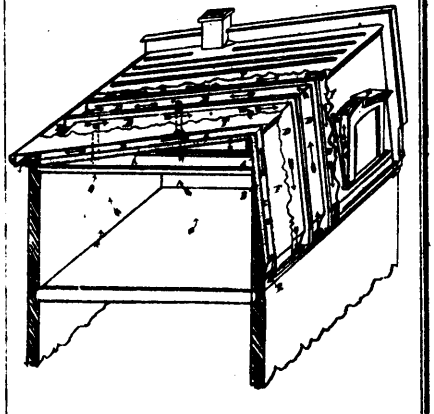
19632 Bradley's Knitting Machine.



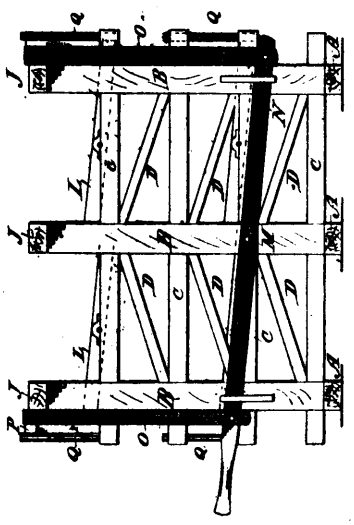
19633 Huntley's Illuminated Handle Knobs for Doors, &c.



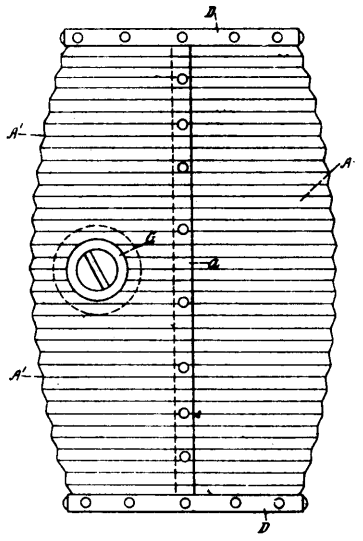
19634 Campi's Improvements in the Manufacture of Sugar.



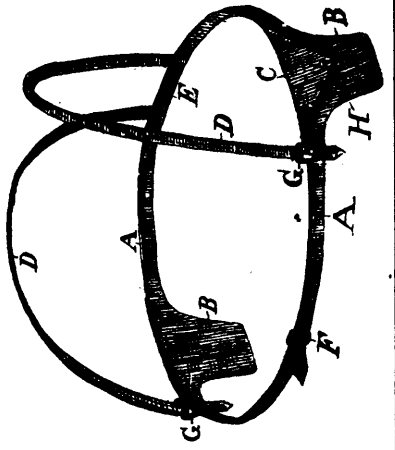
19635 Yon's Means of Ventilating Roofs and the Interior of Houses.



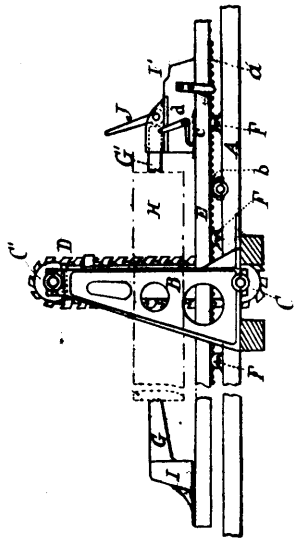
19638 Walter's Racks for Holding Barrels.



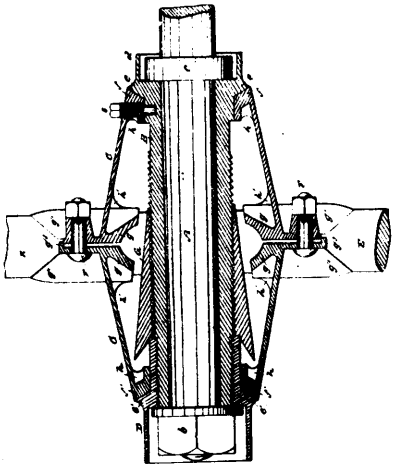
19637 Cuthbertson's Metallic Ore Barrel.



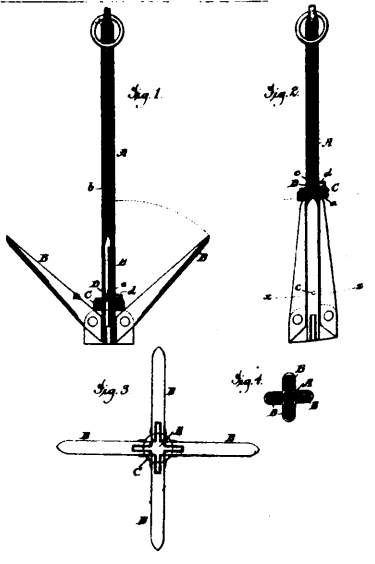
19638 Kepley's Belt for Carrying Money, Diamonds, &c.



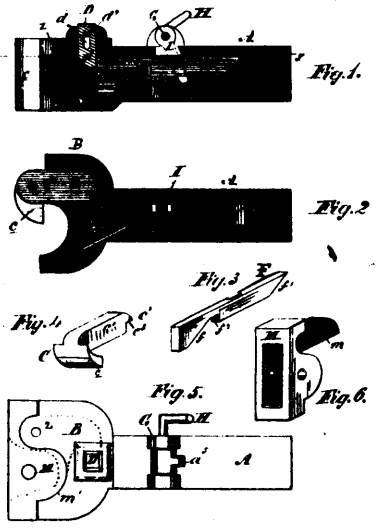
19639 Magaw's Chain Sawing Machine.



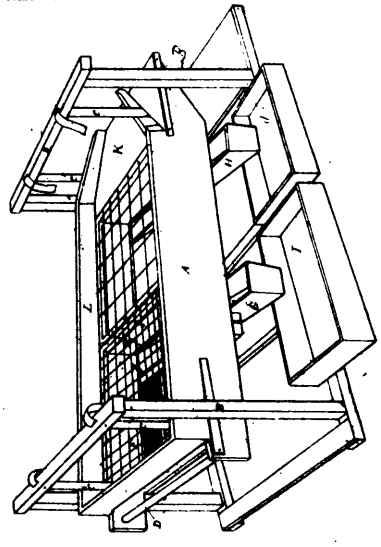
19640 Bush's Vehicle Wheel.



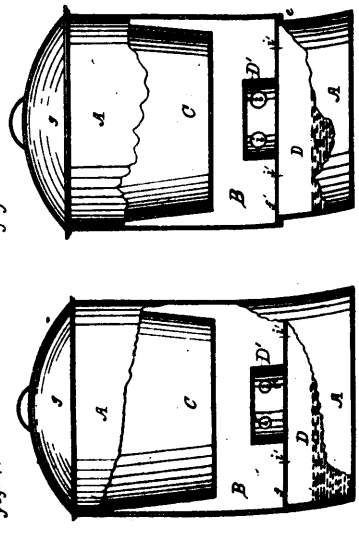
19641 Chester's Grapnel.



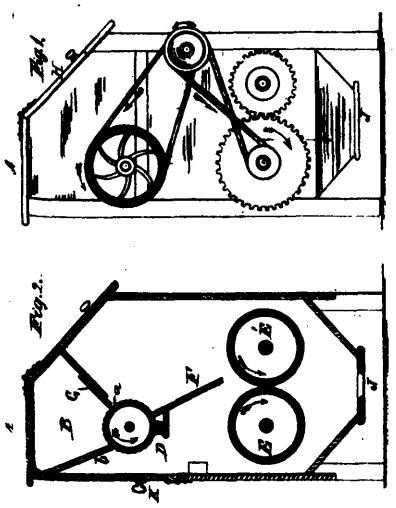
19642 Thurmond's Car Coupling.



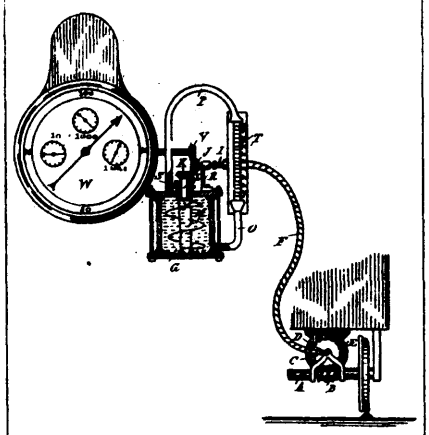
19643 Van Puterbaugh Machine for Sifting Soil from Potatoes.



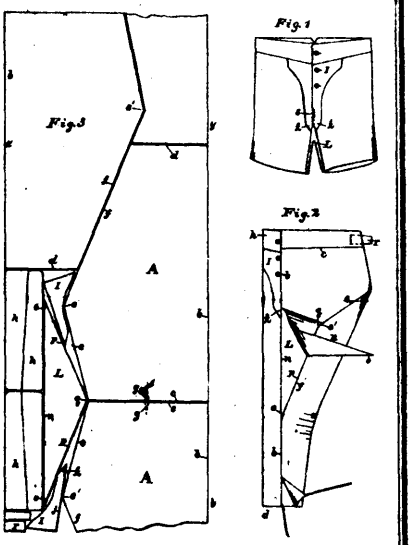
19644 Fisher's Steam Cooking Utensil.



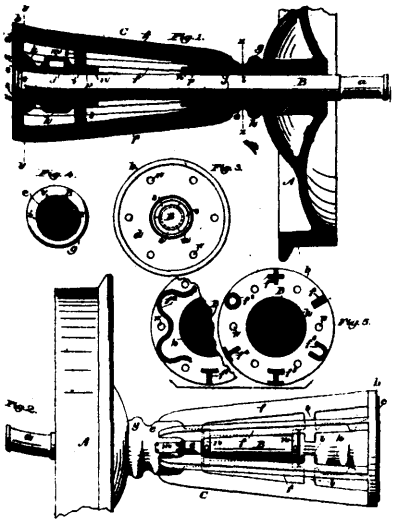
19645 Mitchell's Feed Hopper.



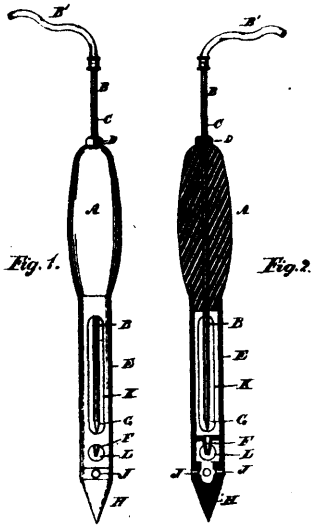
19646 Cowell's Speed Gauge for Locomotives.



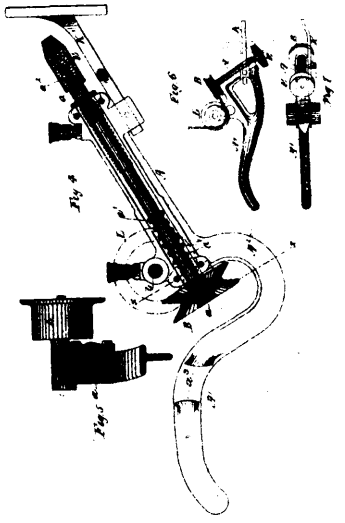
19647 Tracy's Drawers, Pantaloons and Overalls.



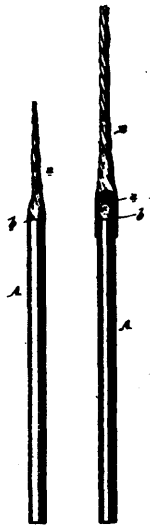
19648 Eaton's Car Axle Truss.



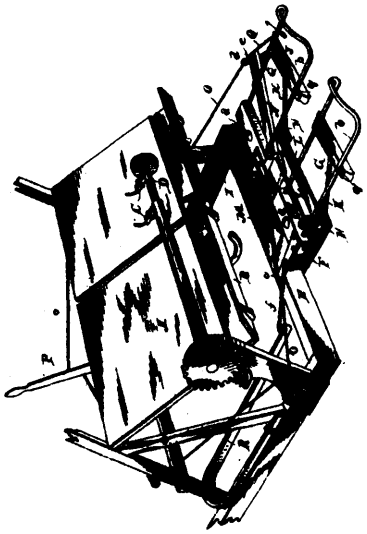
19649 Girouard's Soldering Tool.



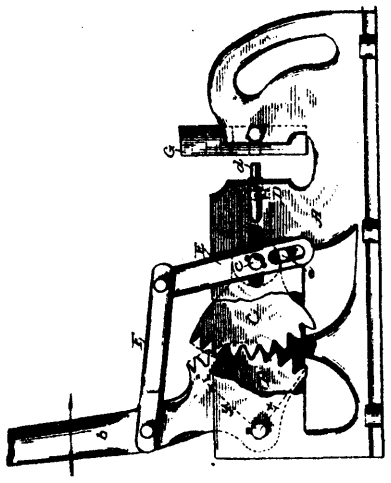
19650 Mossberg's Machine for Sharpening Saw Blades.



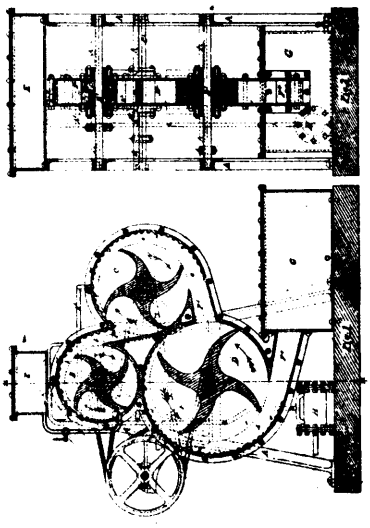
19651 Hayes' Miner's Squib.



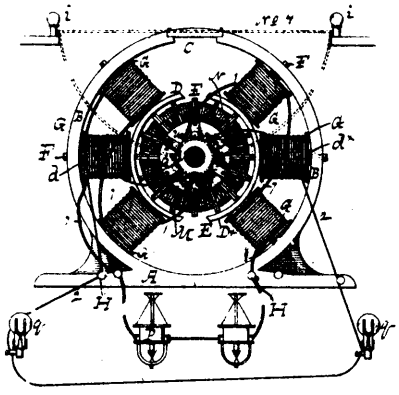
19652 Collins' Bundle Carrier for Grain Binding Harvester.



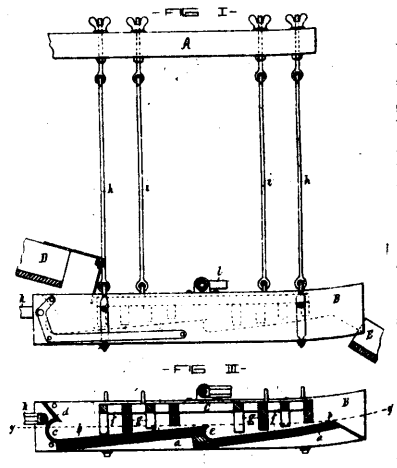
19653 Fice's Mechanical Power.



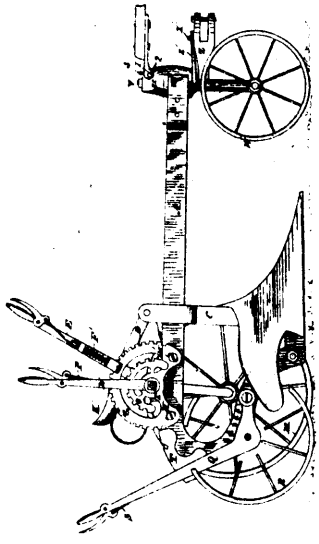
19654 Ramsay's Apparatus for Treating Liquids.



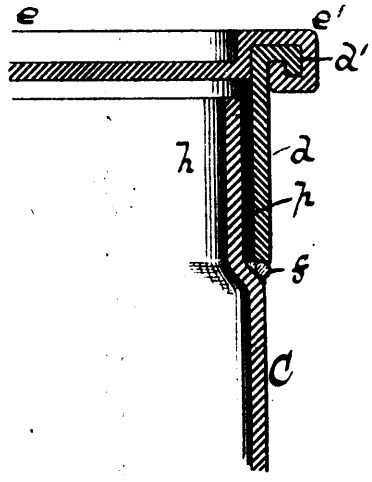
19655 Edgerton's Dynamo Electric Machine.



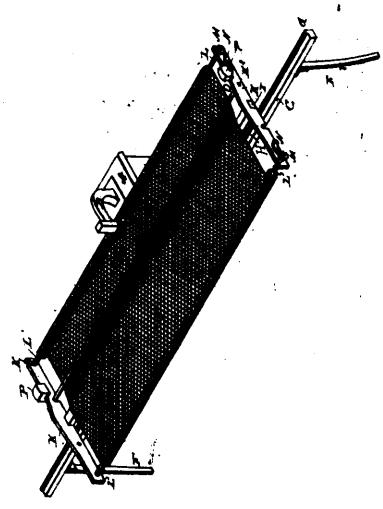

19656 Moon's Ore Amalgamator.



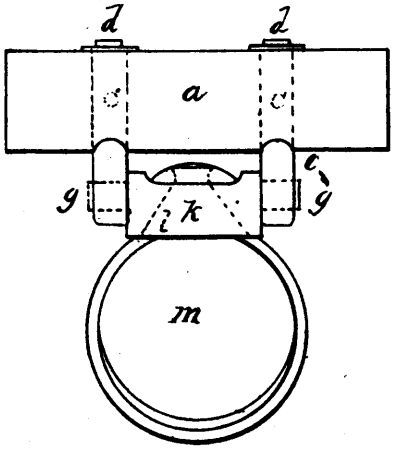
19657 Bartlett's Sulky Plow.



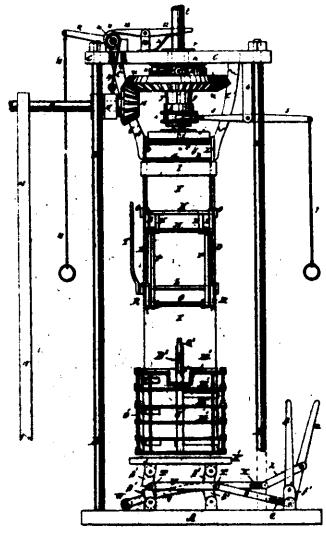

19658 Wilson's Sheet Metal Can.



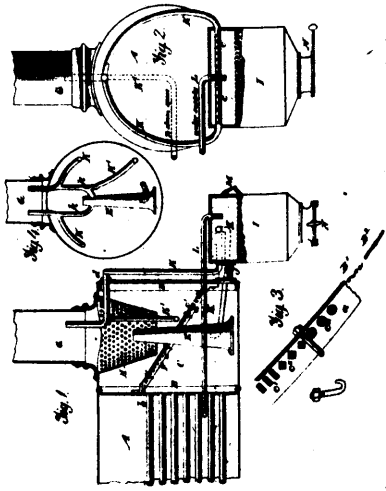
19659 Davis' Quilting Frame.




19660 Haight's Neck Yoke.



19661 Battson's Press for Sacking Bran, &c.



19662 Mitchell's Spark Arrester.

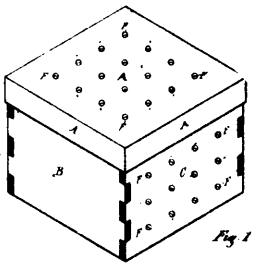


Fig. 1

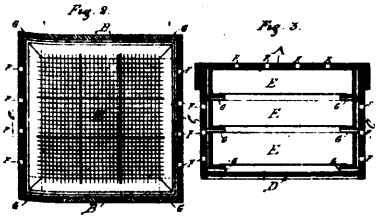
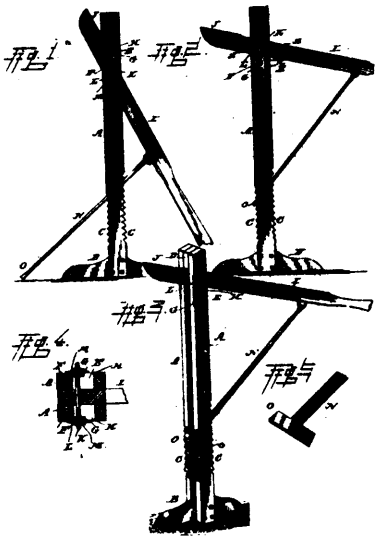
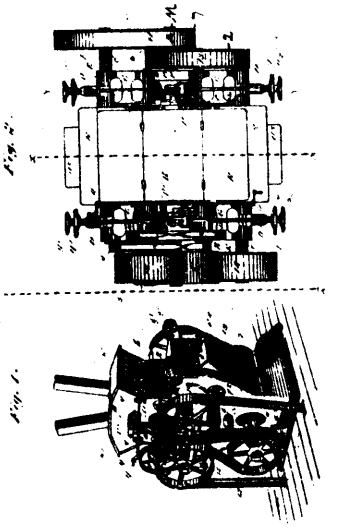


Fig. 2. Fig. 3.

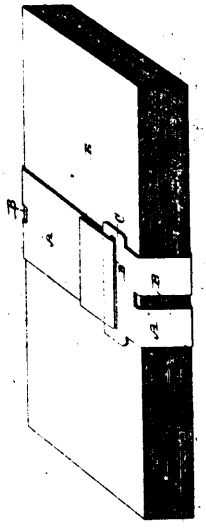
19663 HoHand's Crate for Dairy Products, &c.



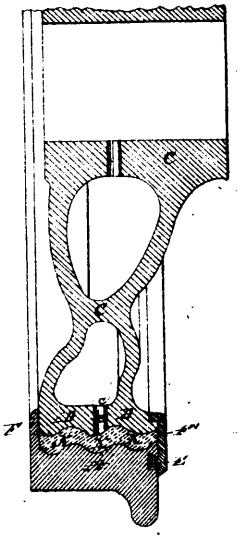
19664 Lindsey's Waggon Jack.



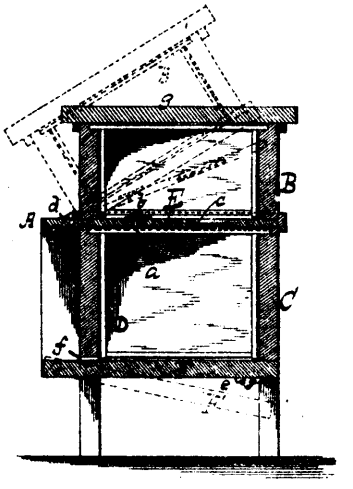
19665 Marmon's Roller Mill.



19666 Ball's Package for Currency.



19667 Atwood's Car Wheel



19668 French's Bee Hive.

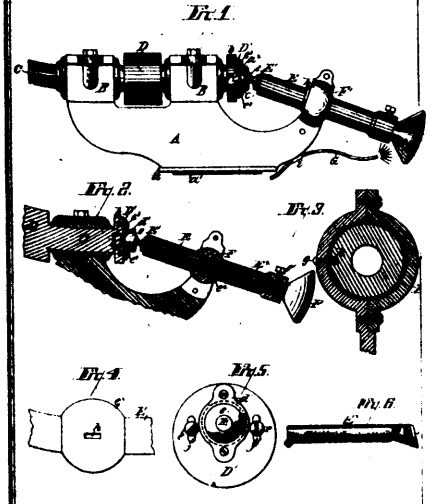
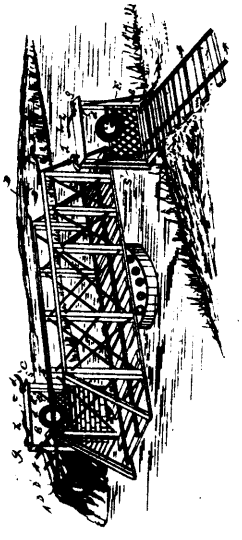
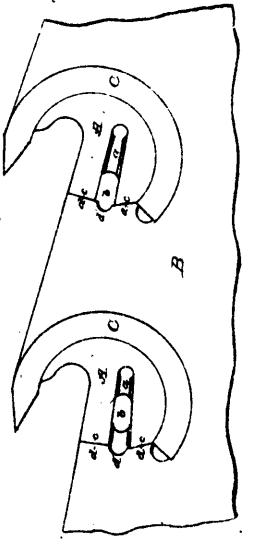


Fig. 1. Fig. 2. Fig. 3. Fig. 4. Fig. 5. Fig. 6.

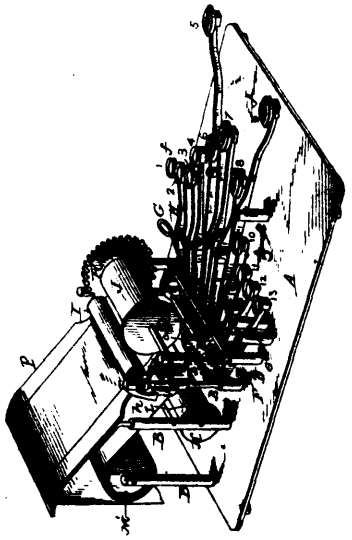
19669 West's Burnishing Machine.



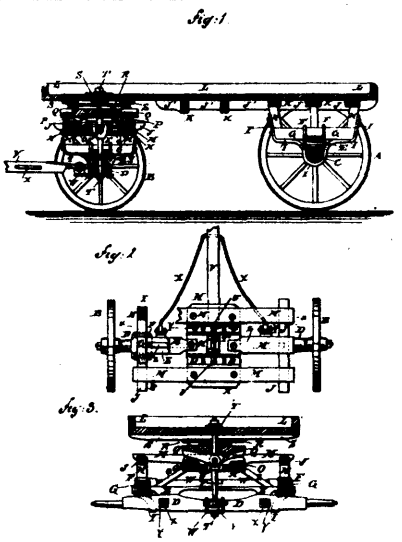
19670 Williams' Draw Bridge Signal.



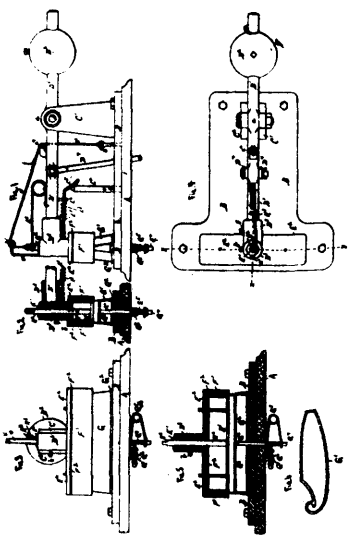
19672 Stinebring's Adjustable Saw Tooth.



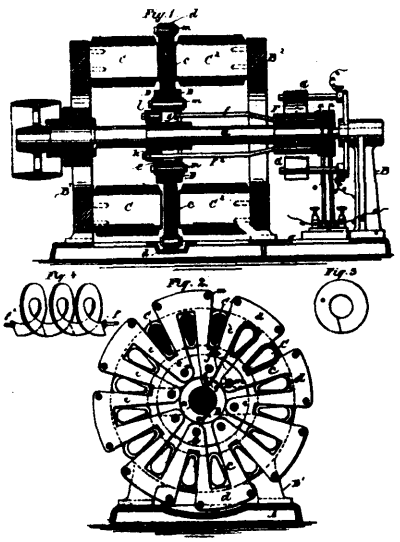
19673 Anderson's Stenographic Printing and Writing Machine.



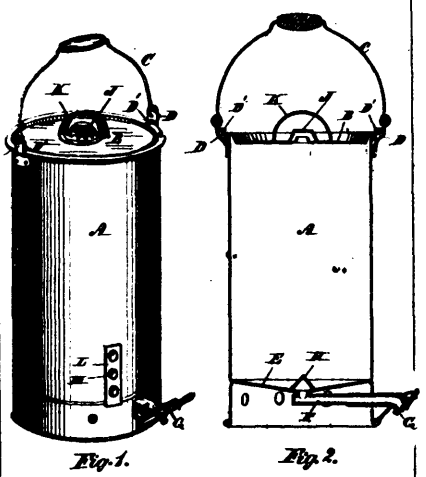
19674 Fanning's Waggon Running Gear.



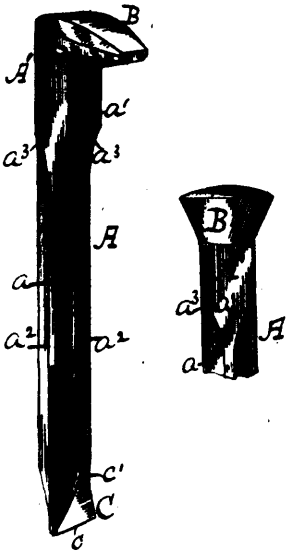
19675 Grunhagen's Cigar Wrapper Cutting Machine.



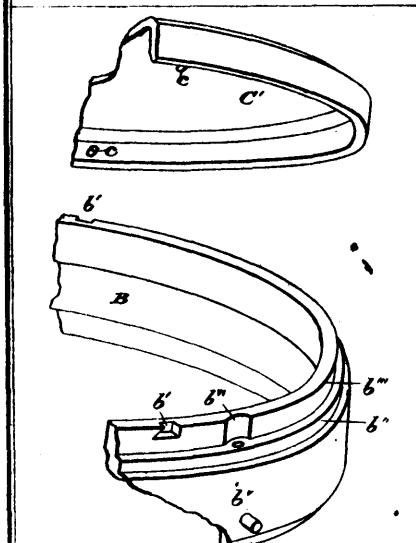
19676 Hochhausen's Dynamo-Electric Machine.



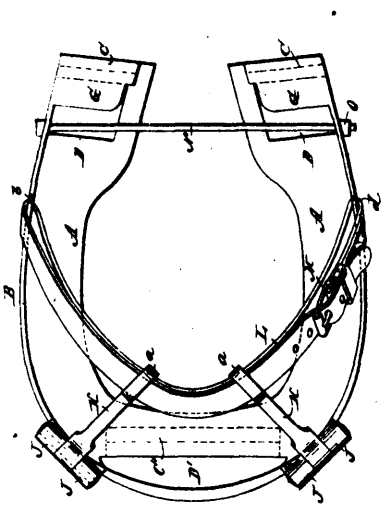
19677 Thompson's Creamer.



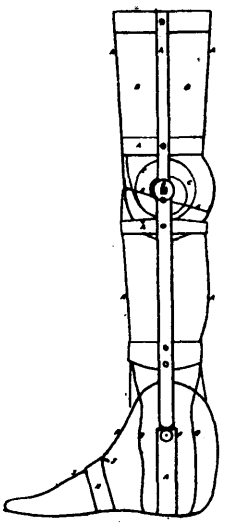
19678 Perkin's Railrord Rolled Metal Spike and Bar.



19679 Harmon & Skidmore's Watch Movement Box.



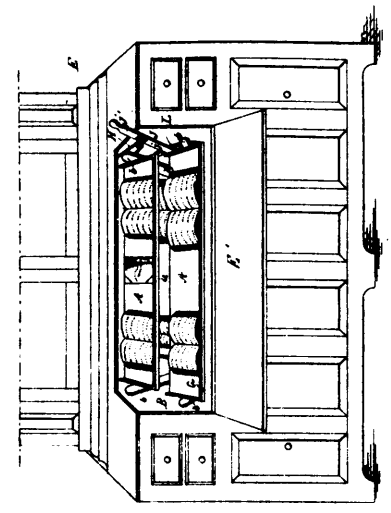
19680 Smith's Overshoe for Horses.



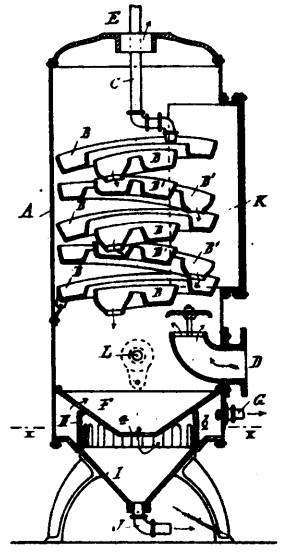
19681 Boon's Artificial Leg.

Fig. 1. Fig 2. Fig 3. Fig. 4.

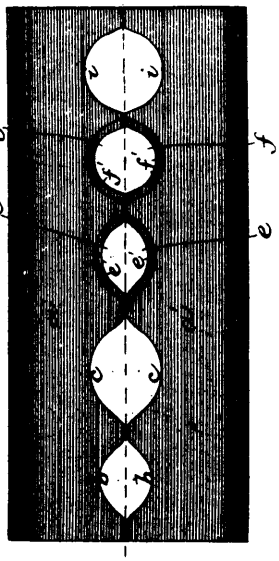
19682 Fisher's Split Ring.



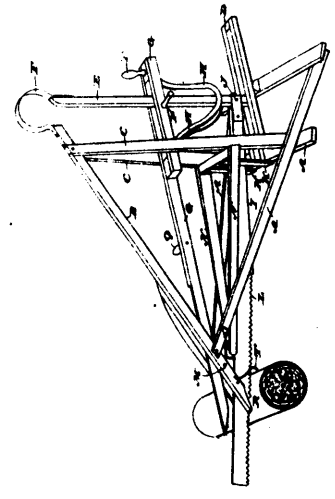
19683 Bowman's Revolving Book Stand.



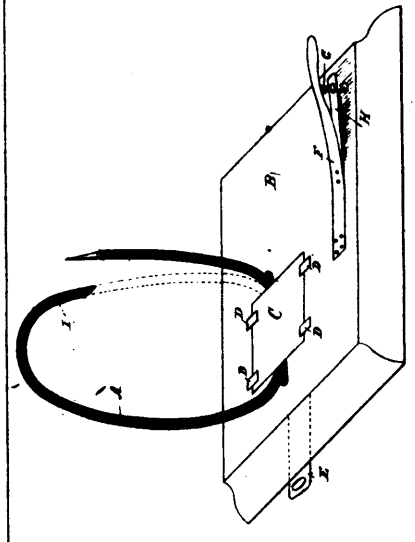
19684 Ward's Feed Water Heater and Purifier.



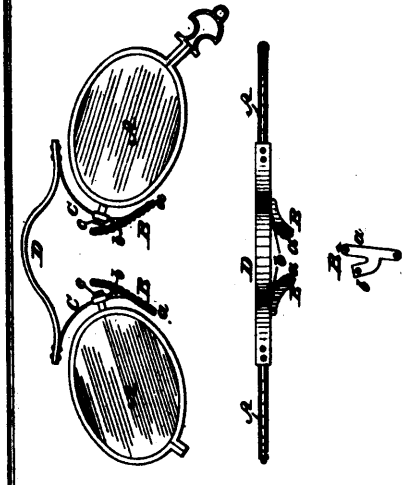
19685 Smith's Car Axle Die.



19686 Lucas' Sawing Machine.

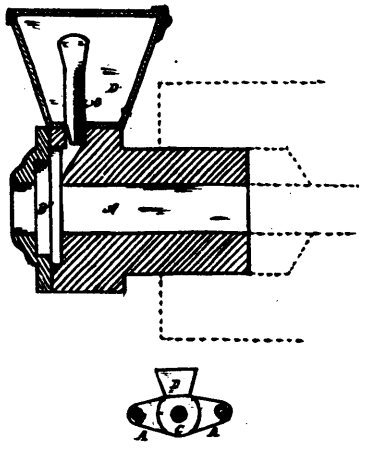


19687 Hurly's Bill and Letter File.

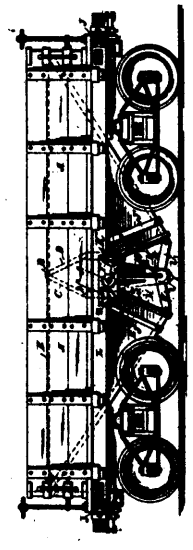


19688 Fox's Eye-Glass.

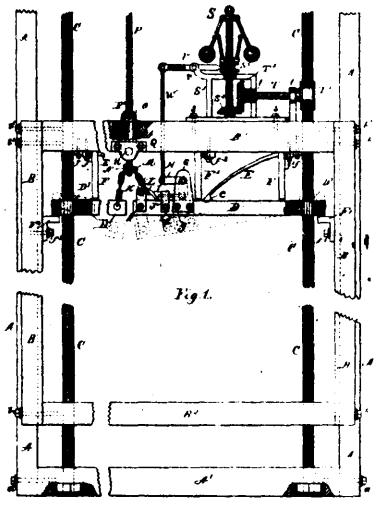
Fig. 1.



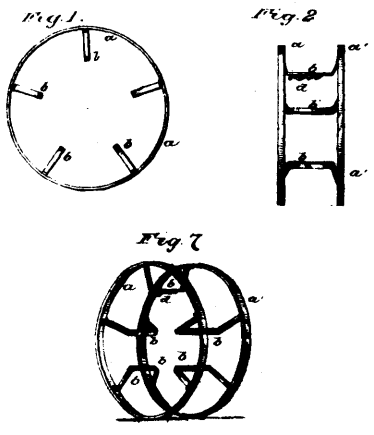
19689 Park & Graham's Gland.



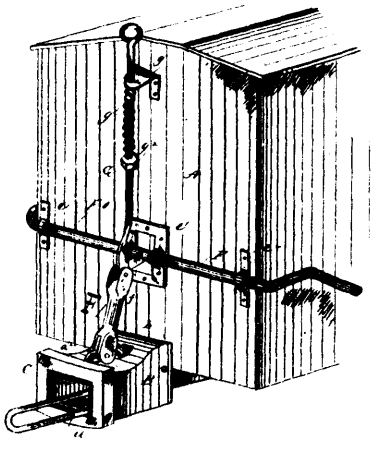
19690 King's Dumping Car.



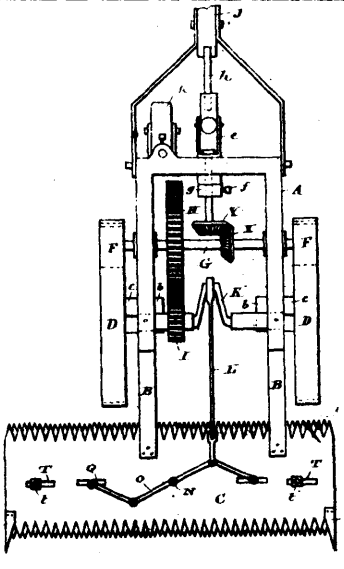
19691 Hoffmagle's Elevator.



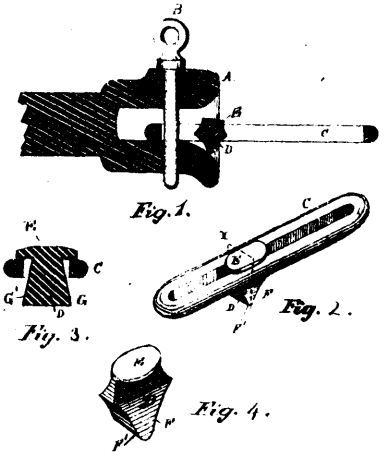
19692 Gardner's Hose Reel or Carriage.



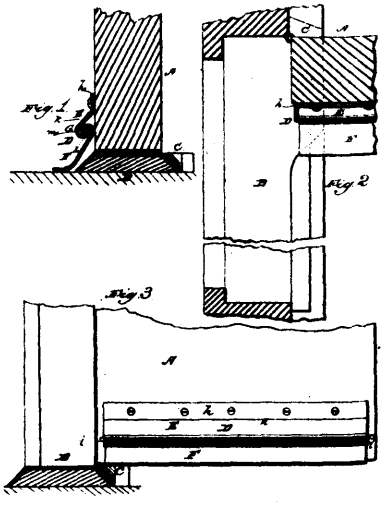
19693 Blas' Car Coupling.



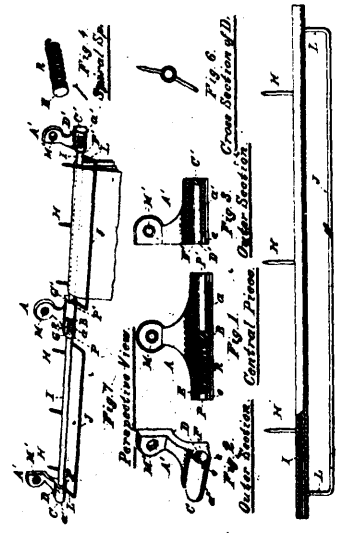
19694 Campbell's Lawn Mower.



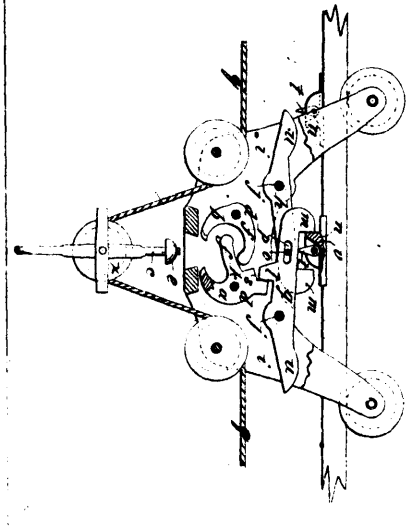
19695 Warren's Car Coupling Link.



19696 Gibbon's Weather Strip.

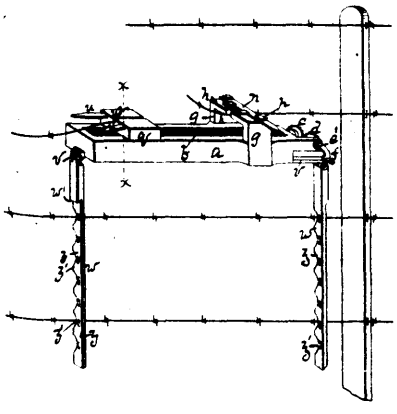


19697 McCord's Paper File.

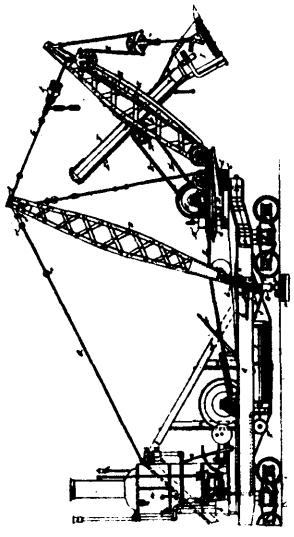


19698 Burbank's Hay Carrier.

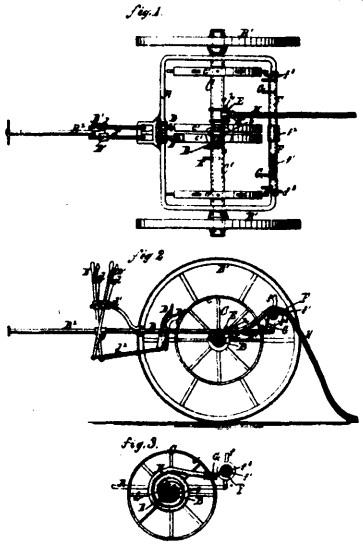
19699 Traher's Art of Perforated Stencil Painting and Printing.



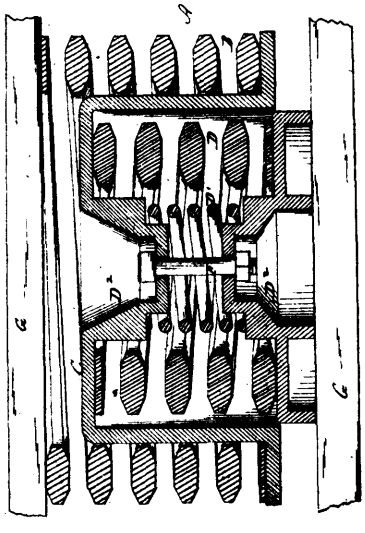
19700 Pierce's Wire Fence Stretcher and Splicer.



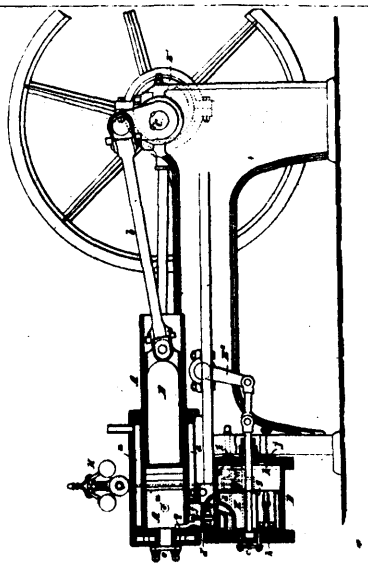
19701 Osgood's Excavator and Dredge.



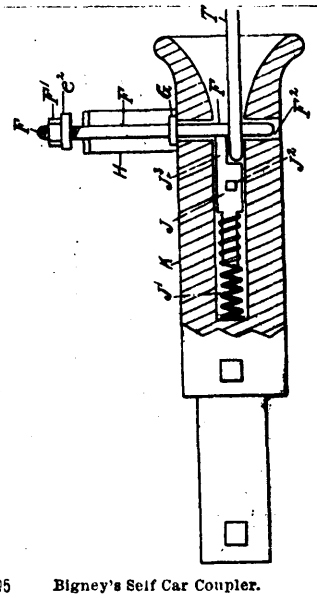
19702 Noble's Hose Cart.



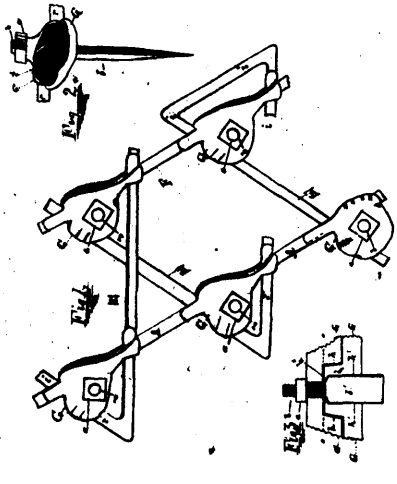
19703 Godley's Car Spring.



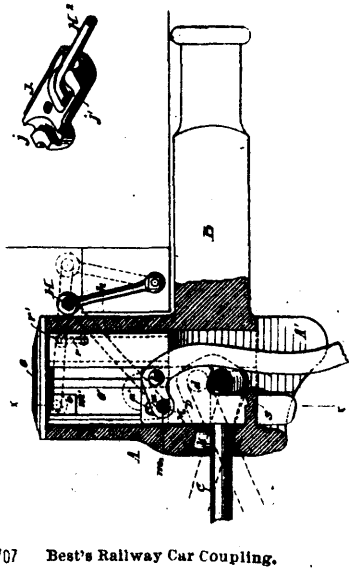
19704 Baldwin's Gas Engine.



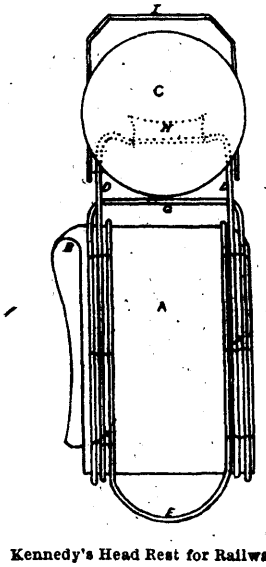
19705 Bigney's Self Car Coupler.



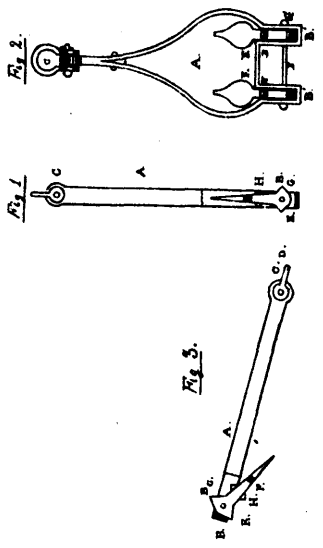
19706 Callander's Iron Harrow.



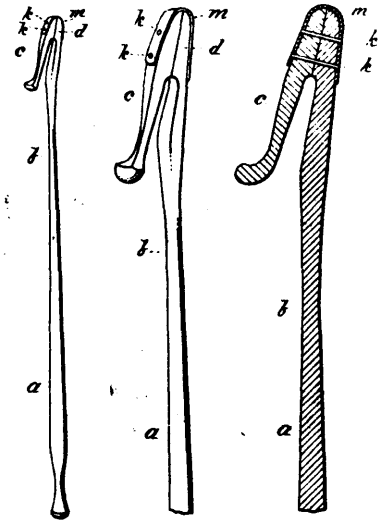
19707 Best's Railway Car Coupling.



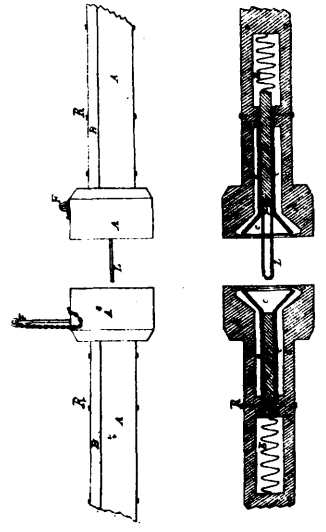
19708 Kennedy's Head Rest for Railway Chairs.



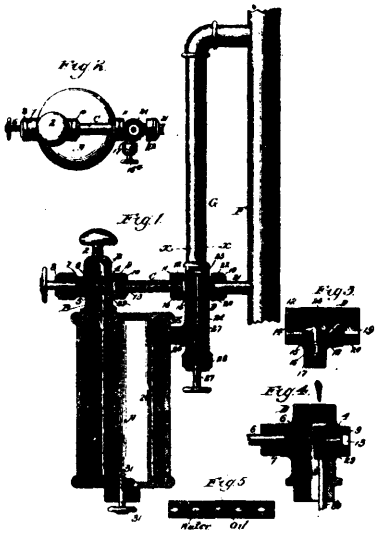
19709 Lewis' Anchor.



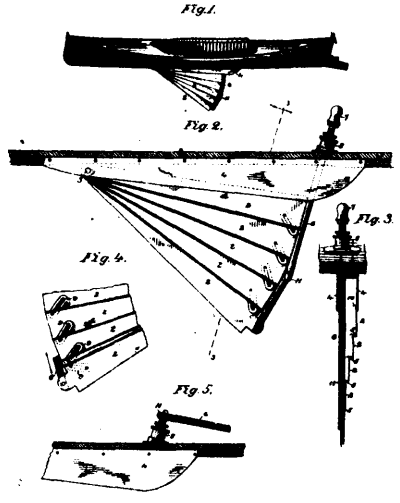
19710 Deland's Shepherd's Crook.



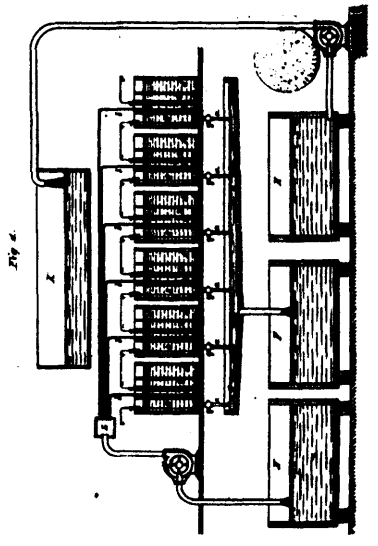
19711 Hartley's Car Coupling.



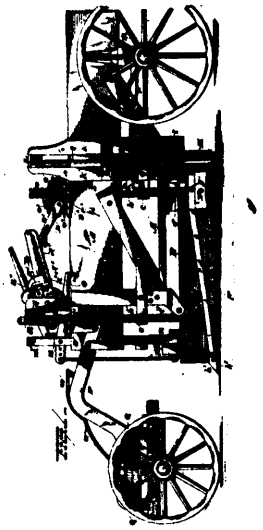
19712 Thayer's Lubricator.



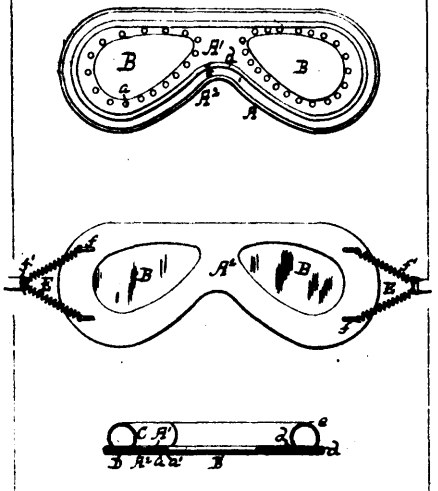
19713 Childs' Folding Centre Board.



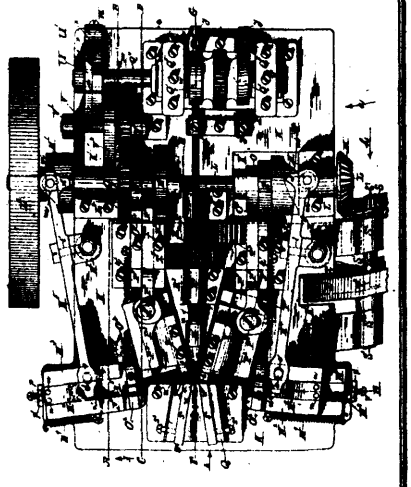
19714 Hermite's Bleaching of Paper Pulp, &c.



19715 Waldo's Machine for Grading, Scraping and Working Roads.



19716 Genese's Flexible Air-Tight Eye-Guard.



19717 Curtis' Machine for Manufacturing Barbed ire.

# INDEX OF INVENTIONS.

Saw tooth, adjustable, G. W. Stinebring ..... 19,672
Sawing machine, W. F. Dake, et al ..... 19,512
" " W. Lucas ..... 19,686
" " chain, F. L. Magaw ..... 19,639
Scraper road, A. J. Nellis, ..... 19,519
Screw driver, C. H. Olsen ..... 15,577
" wood, G. A. Stiles ..... 19,595
Sewing machine, C Culley ..... 19,506
Sheet metal can, W. Wilson, Jr., et al ..... 19,658
Ships, to save drainage, arrangement of, T. Langille, et al ..... 19,593
Shutter fastener, D. E. and W. E. Doolittle ..... 19,604
Sifting soil from potatoes, machine for, J. V. Puterbaugh ..... 19,643
Skate, P. J. Doherty ..... 19,565
Slate washer, H. L. Weed ..... 19,525
Soldering tool, R. Girouard ..... 19,649
Spark arrester, A. Mitchell ..... 19,662
Spring shade roller, The Shorey Spring Bed and Shade Roller Co ..... 19,592
Squib, miner's, G. Hayes ..... 19,651
Staple extractor, B. Hubbell, et al ..... 19,528
Steam boiler, vertical sectional, J. E. Waterous ..... 19,627
" washer, R. J. and F. M. Johnson ..... 19,628
Stove, hot air, P. H. Sims, et al ..... 19,535
Sugar, Manufacture of, L. M. Campi ..... 19,634
Table, combined, J. Bates ..... 19,514
Telephone receiver, T. F. Taylor ..... 19,581
" time signal system, J. M. Aran ..... 19,529
" transmitter, The Bell Telephone Company of Canada ..... 19,590 19,591
Thrashing machine, G. A. Roberts, et al ..... 19,588
Tire for road vehicle wheels, J. B. Armstrong ..... 19,578
Tool-holder for grindstones, J. J. Carr, et al ...19,517 19,518
Type locking, T. Moore, et al ..... 19,618
" rubbing machinery, G. S. Eaton ..... 19,563
Utensils, steam cooking, A. S. Fisher ..... 19,644
Valve mechanism, C. Belknap, et al ..... 19,556
Vapour burner, C. V. Best ..... 19,546
Vehicle spring gear, R. McLaughlin ..... 19,531
" wheel, J. J. Bush ..... 19,640
Ventilating roofs and houses, G. Yon ..... 19,635
Waggon axle, truss, F. Ulrich ..... 19,541
Watch, The Fahey's Watch Case Co ..... 19,533
Waggon jack, J. F. Lindsey ..... 19,664
" running gear, W. H. Fanning ..... 19,674
Watch case, G. S. Ladd ..... 19,580
" movement box, C. W. Harmon, et al ..... 19,679
Water wheel, turbine, J. Raab ..... 19,562
Weather strip, D. Gibbons ..... 19,696
Wick trimmer, T. Redihough ..... 19,539
Windlass, J. Hamilton, et al ..... 19,631
Wire, barbed, J. D. Curtis ..... 19,717
" fence stretcher and splicer, J. E. Pierce ..... 19,700
Wood flooring, A. Putney ..... 19,613
" pulp coating, L. Grenier ..... 19,513

## INDEX TO PATENTEES.

Graves, M. E., et al., spring shade roller ..... 19,592
Green, C., et al., sheet metal can ..... 19,658
" J. J., treatment of cotton seed ..... 19,671
Grenier, L., wood pulp coating ..... 19,513
Grier, G. S., fruit evaporator ..... 19,570
Grunhagen, H., cigar wrapper cutting-machine ..... 19,675
Hayes, G., miner's squib ..... 19,651
Haight, E. H., neck yoke ..... 19,660
Hall, T. F., drive chain link ..... 19,622
" W. B., joint lever ..... 19,600
Hamilton, J., et al., windlass ..... 19,631
Harlow, C. C., lubricator ..... 19,540
Harmon, C. W., et al., watch movement box ..... 19,679
Harper, N., hat sizing machine ..... 19,536
Hartley, J., car-coupler ..... 19,537
Hay, G. W., cheese press ..... 19,711
Heffner, T. E., et al., carriage curtain fastening ..... 19,561
Henderson, M., et al., carpenter's bevel ..... 19,594
Hermite, E., bleaching of paper pulp ..... 19,548
Hochhausen, W., dynamo-electric machine ..... 19,714
Hoffnagle, C. A., et al., mercantile elevator ..... 19,676
Hohmeier, P., et al., hot air stove ..... 19,961
Holland, D., crate for dairy products, &c ..... 19,535
Howell, H. W. Jr., automatic railway switch ..... 19,663
Hubbell, B., et al., staple extractor ..... 19,515
Hungerford, E. B., railway tie ..... 19,523
Huntley, R. D. et al., illustrated knob for doors, &c ..... 19,528
Hurly, M. B., bill and letter file ..... 19,633
Hutton & Co., lacing for gloves and boots ..... 19,687
Ives, H. R., machine for mangling clothes ..... 19,524
Jensen, J. M., et al., fifth-wheel for vehicle ..... 19,585
Johnson, R. J., and F. M., steam washer ..... 19,587
Keeler, S. C., et al., illuminated knob for doors, &c ..... 19,628
Kelly, G., non-conducting covering ..... 19,633
Kennedy, G. A., sleeping head rest for railway chairs ..... 19,552
Kepley, A. H., belt for money, &c ..... 19,708
King, S. D., dumping-car ..... 19,638
Ladd, G. S., watch case ..... 19,690
Lamont, J., watch ..... 19,580
Lane, J. C., electric block signal for railways ..... 19,533
Langille, T., et al., construction of ships to save drainage from cargoes ..... 19,534
Lee, T., car door ..... 19,593
Lewis, W., anchor ..... 19,569
Lindsey, J. F., waggon jack ..... 19,709
Littlefield, C., rope holder or clamp ..... 19,664
Loomis, D. S., hose reel or carriage ..... 19,502
Lovejoy, D., belt fastener ..... 19,692
Lovelis, W. A., et al., lubricator ..... 19,603
Lucas, W., sawing machine ..... 19,629
McCord, L. A., paper file ..... 19,686
McCormick, T. P., bee hive ..... 19,697
McCulloch, H., conveyor for grain and flour machines ..... 19,668
McIntire, C., electric wire ..... 19,584
McLaughlin, R., spring gear for vehicle ..... 19,575
McLellan, J. W., et al., staple extractor ..... 19,531
Mafziger, J. and A., automatic grain measuring machine ..... 19,523
Magaw, T. L., chain sawing machine ..... 19,516
Marmon, D. W., roller mill ..... 19,639
Marther, A. C., lacing for gloves and boots ..... 19,665
Mathews, M., fluid burning lamp ..... 19,524
Messervy, W. J., bag holder ..... 19504
Metcalf, J., grain shovel mechanism ..... 19,621
Miller, L. L. J., et al., vapour burner ..... 19,619
Mitchell, A., spark arrester ..... 19,546
" W. J., feed hopper for roller mills, &c ..... 19,662
Moodie, R., et al., crubing ores, &c ..... 19,645
Moon, H., ore amalgamators ..... 19,574
Moore, T. et al., locking type ..... 19,656
Mossberg, E., machine for sharpening saw blades ..... 19,618
Munford, T. W. B., et al., crushing ores, &c ..... 19,650
Nellis, A. J., road scraper ..... 19,574
Nelson, H. and J., potato digger ..... 19,519
" J. S., wash bench and step ladder ..... 19,521
Nichols, A. S., lumber dryer ..... 19,526
Noble, J. T., hose co ..... 19,544
Nugar, R. H., ditching machine ..... 19,703
Olsen, C. H., screw driver ..... 19 589
O'Neill, M. O., bag-holder ..... 19,577
Orun, J. M., telephone time signal system ..... 19,921
Ordeway, A. H., spring rocking chair ..... 19,529
Osgood, R. R., excavator and dredge ..... 19,617
Page, I., dumping car ..... 19,701
Park, J. S., et al., gland ..... 19,290
Parker, C. M., et al., wood screw ..... 19.689
Patton, T., pipe tongs or wrench ..... 19,595
Perkins, J. P., railroad spike and rolled metal bar for the same ..... 19,564
Perry, J., et al., electrical haulage system ..... 19,678
Peterson, A. clod crusher ..... 19,510
Phelps, J. H., rotary engine ..... 19,522
Pierce, J. E., wire fence stretcher and splicer ..... 19.606
Plucke, J. F., folding hammock support ..... 19,700
Poor, A. B., et al., carriage axle box ..... 19,615
Puterbaugh, I. V., machine for sifting soil from potatoes ..... 19,623
Putney, A., construction of wood flooring ..... 19,643
Raab, J., turbine water wheel ..... 19,613
Rambie, G. W., et al., windlass ..... 19,562
Ramsay, C. W., treatment of fermented and distilled liquids ..... 19,631
Redihough, T., wick trimmer ..... 19,654
Rice, H. M., et al., press for baling goods ..... 19,539
" J., medical manipulator ..... 19,508
" N. J., mechanical power ..... 19,605
Richardson, W., salve for the cure of piles ..... 19.653
Richmond, M., dentistry ..... 19,620
Riddell, J. and J., flour dressing machine ..... 19,547
Ritchie, J. Jr., et al., lawn mower ..... 19,532
Roberts, G. A., et al., thrashing machine ..... 19,666
Rogers, E. J., harrow ..... 19,588
" S. C., interchangeable chart frame ..... 19,667
" " machine for gumming and sharpening saws ..... 19,266
Rosebrook, F., electric regulator and alarm for incubators ..... 19,583
Ruel, L., machine for making felt boots ..... 19,511
Scarr, A. C., fence ..... 19,559
Schafer, C, et al., thrashing machine ..... 19,550
Schletchter, G. A., pencil clasp and pocket holder ..... 19,558
Schoffer, J. T., buffer for railways ..... 19,568
Scott, G., machine for mangling clothes ..... 19,554
Seek, J. H., et al., sawing machine ..... 19,585
Shiffield, L. T., dentistry ..... 19,511
Shimer, S. J., knife or cutter for wood working machine ..... 19,547
Shorey (The) Spring Bed and Shade Roller Co., spring shade roller ..... 19,505
Sims, P. H., et al., air stove ..... 19,592
Skidmore, H. G., et al., watch movement box ..... 19,535
Smith, H. L., cultivator ..... 19,679
" J., car axle die ..... 19,503
" J. W., over-shoe for horses ..... 19,685
Snediker, W. E., metal moulds for casting vices ..... 19,680
Sprott, J. D., et al., lubricator ..... 19,612
Stiles, G. A., et al., wood screw ..... 19,629
Stinebring, G. W., adjustable saw tooth ..... 19,595
Strong, G. H., et al., tool-holder for grindstones. 19,517 ..... 19,672
Swayze, S. J., electric block signal for railways ..... 19,518
Sjoberg, C. J. A., ticket punch ..... 19,534
Taylor, T. F., telepeone receiver ..... 19,571
Tayer, J. C., lubricator ..... 19,581
Thompson, C. B., creamer ..... 19,712
Thurmond, W. H., car-coupling ..... 19,677
Tracy, J. C., manufacture of drawers, pantaloons and overalls ..... 19,642
Traher, J. J. C., stencil paining and printing ..... 19,647
Trump, F., lawn mower ..... 19,699
Ulrich, F., waggon axle truss ..... 19,579
Valiant, G., boot or glove fastener ..... 19,541
Van Horn, J. M., broom-holder ..... 19.551
Vassar, R. G., burglar alarm catch ..... 19,614
Wallo, G. H., machine for grading, scraping and working roads ..... 19.501
Walker, P. G., hay and grain rack elevator ..... 19,715
Walter, W., et al., rack for holding barrels ..... 19,582
Ward, A. F., feed water heater and purifier ..... 19,636
Warner, J. M., machine for planting corn ..... 19,634
Warren, J., et al., car-coupling link ..... 19,507
Warrington, J., roller mill ..... 19 695
Watreous, J. E., vertical sectional steam boiler ..... 19.543
Weed, H. L., slate washer ..... 19.627
Weil, F., et al., gland ..... 19.525
Walker, C., et al., gland ..... 19,689
" W, " carriage curtain fastening ..... 19.689
West S. A., burnishing machine for boots and shoes ..... 19,594
Westhover, B. et al., construction of ships to save drainage from cargoes ..... 19,669
Williams, J. N., drawbridge signal ..... 19 593
Wilson, J. C., close weeding and thinning hoe ..... 19,670
" J. E., flour dressing machine ..... 19,611
" W., jr., et al., sheet metal can ..... 19 509
Winter, F., process for drying malt ..... 19,658
Yon, G., ventilating roofs and houses ..... 19,599
19,635