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CONTENTS.

INVENTIONS PATENTED.

No. 12,512. Improvements on Reaping Machines. (*Perfectionnements aux moissonneuses.*)

David Maxwell, Paris, Ont., 17th March, 1881; (Re-issue of Patent No. 6,772).

Claim.—1st. In a harvesting machine, a rock shaft located on the main frame in front of the driving wheel and having rigidly connected to it the tongue or pole of the machine, in combination with a lever rigidly connected to the said rock-shafts outside of the driving wheel and convenient to the operator for the purpose of tilting the cutter bar. 2nd. A rock-shaft located on the main frame in front of the driving wheel and rigidly connected to the pole or tongue of the machine, which tongue is situated between the driving wheel and cutters, in combination with oblique braces extending from the pole to the frame on the one side, and to the finger beam on the other. 3rd. The main frame supporting the main driving wheel on both sides thereof and pivoted upon the said driving wheels, revolving axle and rock-shaft located in front of the said wheel and connected to the pole of the machine, in combination with oblique braces extending from the pole to the frame on the one side, and to the finger beam on the other. 4th. A sliding post held in a suitable bearing on the main frame and connected to the finger beam at its lower end, in combination with an inclined brace connecting the top of the post to the finger beam at a point remote from the post. 5th. The rotating axle of the main driving wheel supported by a frame in bearings, on both sides of the said wheel and provided with flexible rake driving mechanism, leading off from the inner end of the said driving axle, in combination with a sliding post held in a suitable bearing on the main frame and connected to the finger beam at its lower end, 6th. The rotating axle of the main driving wheel supported by a frame in bearing, on both sides of said wheel, and connected to the finger beam and rake driving mechanism, in combination with adjustable clutch mechanism arranged to connect or disconnect the main driving wheel and its shaft, for the purpose of simultaneously starting or stopping the motion of the cutters and raking mechanism. 7th. The main frame supporting the driving wheel in suitable bearings on each side of the said wheel, its rotating shaft having on its inner end a flexible joint to connect with the rake driving mechanism, in combination with the finger beam connected to the main frame by a slide connection arranged to allow a horizontal movement of the cutter bar, when it is raised or lowered by a device on the main frame, which frame is pivoted on the rotating shaft of the driving wheel and hinged to the pole or tongue of the machine. 8th. A lever fulcrumed in the main frame and connected to the upper end of the sliding post, for the purpose of adjusting the height of the finger beam. 9th. The rotating axle of the main driving wheel having bearings on each side of said wheel, and supporting the main frame, a flexible coupling leading off from the inner end of the said axle for conveying power to the rake driving mechanism, in combination with a sliding post held in a suitable bearing on the main frame and connected to the finger beam, at its lower end, by an oblique brace extending from its top to the cutter bar. 10th. The rotating axle of the main driving wheel supported in bearings on both sides of the said wheel, the main frame pivoted on said axle, in combination with the pole hinged to the said frame, a tilting lever and a slide connection between the main frame and finger beam, for the purpose of adjusting the cutters. 11th. The moveable pipe box, in combination with the main frame having the pipe box fastened to the said frame and adjustable thereon. 12th. The combination of the main frame, the moveable pipe box fastened thereon, and the set screw for the purpose of adjusting the gear.

No. 12,513. Improvements on Harvester Rakes. (*Perfectionnements aux râteaux des moissonneuses.*)

David Maxwell, Paris, Ont,, 17th March, 1881; (Re-issue of Patent No. 7,508).

Claim.—1st. In a harvesting machine having continuously revolving reeling and raking mechanism, a rolling head held upon an arm hinged to the revolving head or crown wheel, and having an inwardly projecting arm with or without a friction roller, in combination with a downwardly inclined stationary guiding track acting against the projecting arm on the rolling head, for the purpose of imparting a positive downward movement to the rake head, as it approaches the grain side of the table. 2nd. A rolling head mounted upon an arm hinged to the revolving head or crown wheel, and having an inwardly projecting arm with or without a friction roller, in combination with a gate hinged to the guiding track at an opening made therein on the grain side of the machine, for the purpose of imparting a positive rolling movement to the rake head when the rake is to be used for reeling only. 3rd. A rolling head mounted upon an arm hinged on the revolving head or crown wheel, in combination with a spring for turning the rolling rake head at about right angles to the hinge of the rake arm and steadying it in that position, driving that part of the circuit of the revolution of the reeling and raking mechanism, where it is not governed by other means. 4th. A rolling head mounted upon an arm hinged on the revolving head, or crown wheel, and having an inwardly projecting arm with or without a friction roller, in combination with a heel or projection on the gate hinged to the stationary guiding track, for opening the said gate, when the rake passes over the table in the act of raking. 5th. A rolling head mounted upon an arm hinged on the revolving head, or crown wheel, and having an inwardly projecting arm with or without a friction roller, in combination with an inclined lug projecting below the horizontal track over the grain delivery side of the table, for the purpose of turning the rake teeth back at the point when they leave the gavel being delivered. 6th. A rolling head mounted upon an arm hinged on the revolving head or crown wheel, and having an inwardly projecting arm with or without a friction roller, a stationary guiding track having a pivoted gate sustained in a horizontal position by a spring, in combination with a latch for holding the gate when open, and removable therefrom by any suitable device under the control of the driver. 7th. A rolling head mounted upon an arm hinged on the revolving head, or crown wheel, and having an inwardly projecting arm with or without a friction roller, a stationary guiding track, in combination with an upper cam E, for guiding the arm when the rake is reeling.

No. 12,514. Improvements on Cheese Boxes. (*Perfectionnements aux boîtes à fromage.*)

Arthur W. Covell, Lombardy, Ont., 17th March, 1881; for 5 years.

Claim.—As an improved article of manufacture, in a cheese box having sides C D of uniform width, the outer side subdivided and nailed to the heads A B and telescoping over the inner side C, whereby a double sided box is constructed as set forth.

No. 12,515. Improvements on Feed Troughs for Stock. (*Perfectionnements aux auges à bestiaux.*)

John M. Irwin, Odina, Mo., U.S., 17th March, 1881; for 5 years.

Claim.—1st. The combination of the trough A, posts C C, rails D D, strips E E, tenoned dividing rails F G, base bars B having mortises and recesses H, and the binding strips I. 2nd. A longitudinally divided feed trough provided on each side with a suitable number of stalls or compartments formed by detachable dividing strips.

No. 12,516. Apparatus for Tightening Fence Posts. (*Appareil à serrer les pieux des clôtures.*)

Narcisse Demers, Chambly Basin, Que., 17th March, 1881; for 5 years.

Resumé.—Dans l'appareil à serre tel que constitué, et composé de la serre A, cadre C B, vis à manivelle D, vis à poignée E.

No. 12,517. Improvements in House Lamps. (*Perfectionnements aux lampes.*)

John Bassemir, Brooklyn, N.Y., U.S., 17th March, 1881; for 5 years.

Claim.—1st. The combination with the lamp A of the stand B and the thumb and catch screw E. 2nd. The combination of the lamp A provided with the cars D with the base B and arms C.

No. 12,518. Improvements on Pan Forming Machines. (*Perfectionnements aux machines à former les casseroles.*)

William P. Cragin, Edward F. Cragin and Charles G. Chandler, (Assignee of Charles F. Beaman), Chicago, Ill., U. S., 17th March, 1881; for 5 years.

Claim.—1st. A pan forming machine operated by a cam shaft and having a reciprocating male die, the female die having side and end wings that operate in succession upon the blank. 2nd. The combination, with the reciprocating male die, of the female die having side and end wings that operate in succession upon the blank, and corner folders that act after the end wings have operated. 3rd. The combination, with the reciprocating male die, of the stationary side wings or plates, between which the blank is forced by the male die, and the folding end wings, operated simultaneously independent of the movement of the male die. 4th. The combination, with the reciprocating male die, of the female die having stationary side wings or plates, and folding end wings which turn the ends of the blank and then fall back out of the way, and the corner folders working across the open ends of the female die, while the male die is in its lowest position. 5th. The combination, with the reciprocating male die, of the female die having stationary side wings and folding end wings and the vertically yielding plate forming the bottom of the female die. 6th. The combination, with the folding end wings of the female die, of the stationary side wings adjustably and removably secured to the bed of the machine. 7th. The folding end wings of the female die, in combination with rock bars to which such end wings are removably secured, and boxes in which the rock bars turn adjustably secured upon the frame of the machine, such rock bars being connected with the operating mechanism and working the said end wings independent of the movement of the male die. 8th. The combination, with the end wing, of rock bars upon which they are mounted, and the adjustable boxes in which said rock bars turn the cranks in the end of the rock bars, and the slotted T-slide for operating the rock bars simultaneously and permitting the adjustment of the boxes. 9th. The combination, with the end folders, rock bars, adjustable boxes, cranks and slotted T-slide, of the links connecting the T-slide with the cranks, such links being adjustable in their length. 10th. The combination, with the folding end wings, of the rock bars, the adjustable boxes, the cranks, the slotted T-slide, the adjustable connecting links, the lever pivoted to the frame and connected with such T-slide, and the pin wheel on the cam shaft which depresses the lever for operating such folding end wings. 11th. The combination, with the folding end wings of the female die, of the corner folders, adjustable with such end wings towards and away from the centre of the machine. 12th. The combination, with the folding end wings, the rock bars upon which they are mounted, and the adjustable boxes in which the rock bars turn, of the corner folders sliding as bars secured at their ends to such boxes. 13th. The combination, with the corner folders, mounted on blocks which slide on laterally adjustable cross-bars, of slotted arms, adjustably secured to rock shafts running at right angles to said cross bars and connected with such blocks, and suitable means for connecting the rock shafts with the operating shaft. 14th. The combination, with the adjustable corner folders, the sliding blocks and cross-bars, of the adjustable slotted arms, the rock shafts, the segmental gears connecting the rock shafts so that they will operate simultaneously, and suitable means for connecting the segmental gears with the operating shaft. 15th. The combination, with the adjustable corner folders, the sliding blocks, cross-bars, adjustable slotted arms, rock shafts, and connecting segmental gears, of a pivoted lever beneath the bed of the machine, connected with one of such gears and with a lever at or near the top of the machine, and a pin wheel keyed on the cam shaft, for operating such corner folders. 16th. The combination with the male die, of an edge turning frame supported on such male die and moving therewith, and pushed downward to turn the edge of the pan independent of the cam rod that works such male die. 17th. The combination, with the male die worked by a cam, of the edge turning frame surrounding the cam rod of the male die and connected with two operating rods, which are forced down by cams situated on the same shaft as the die cam and on opposite sides of such die cam. 18th. The combination, with the male die worked by a cam, of the edge turning frame, supported on the male die by springs and moving therewith, and independent cams for forcing such edge turning frame downward against the pressure of the springs, while the male die is in its lowest position. 19th. The combination, with the male die and the folding wings of the female die, of the edge turning frame operated by cams, such folding wings being raised into position before the edge turner acts. 20th. The combination of the vertically moving male die, the female die having side and end wings that operate in succession, the corner folders operating after the sides and ends of the pan have been formed, and the edge turner acting after the operation of the corner folders. 21st. A pan forming machine having, in combination, the male die having a simple vertical movement with a stop at each end thereof, the stationary side wings of the female die between which the blank is forced by the male die, the folding end wings of the female die which turn up the ends of the blank, then fall back to make room for the corner folders, and then rise up again to support the edge of the pan, the corner folders folding the corners of the pan between the movements of the end wings, and the edge turner operating after the end wings have risen the second time, all of such movements commencing with the first operation of the folding end wings being effected, while the male die is resting at the lowest limit of its movement.

No. 12,519. Improvements on Waggon Axle Cutters. (*Perfectionnements aux coupoirs pour les essieux des wagons.*)

Charles E. Pearson, Iberville, Que., (Assignee of John Harris and William Kirkpatrick, Hinesburg, Vt., U.S.), 19th March, 1881 ; for 5 years.

Claim.—1st. The chuck A provided with movable jaws *b b* adjusted by set screws and fitted to receive a removable collar *a*, in combination with the sleeve *c* and the feed wheel B screwed upon it. 2nd. The combination, with the chuck, of the face plate C, feed wheel B, sleeve *c* and removeble cutting tool, the parts being arranged to operate as shown. 3rd. The combination of the chuck A for attaching the machine to the axle, the removable collar, sleeve *c*, feed wheel and face plate, arranged as described.

No. 12,520. Improvements on Gas Heating and Cooking Apparatus. (*Perfectionnements aux appareils de chauffage et de cuisine à gaz.*)

Albanus W. Morton, Brooklyn, N.Y., U. S., 19th March, 1881 ; for 5 years.

Claim.—1st. The combination, in a gas stove or heater, of the flue B and the burners A placed to heat the said flue. 2nd. The combination of wire-netting D with the flue B, and a series of burners A placed to heat the said flue and thereby cause the upward draught of a volume of air through the flue and in contact with the heated netting. 3rd. The combination of the flue B provided with the wire-netting D, the series of burners A placed to heat the flue B and its contained wire-netting, and the studs or radiators *m* placed to communicate heat to a secondary volume of air during its passage, to unite with the primary volume of air heated by its passage through the flue B. 4th. The combination, with one or more burners A, of the gas inlet M having the nozzle *s*, and the cut off P arranged to shut off at will the inlet of air to the gas chamber. 5th. The combination in a gas stove or heater, of a gas chamber C heat radiating studs or spurs *w* springing from the plate *a*, and one or more burners placed to heat the plate *a*, thereby to heat the radiating studs or spurs, and in burning the gaseous material as it passes to the burner. 6th. In a burner for gas stoves, &c., the combination of the platinum foil, or other refractory substance, with the burners arranged in rotation with each other as described, whereby light is produced by a comparatively small portion of the caloric of the flames while the major part of said caloric is applied to heating the metal of the burners in order that heat may be radiated therefrom. 7th. A gas heater composed of a series of burners, the outlets of which are arranged to throw the flames in immediate contact with the material or substance of the burners in a horizontal direction, or at an angle below the horizontal. 8th. A gas heater composed of a series of prism-shaped burners A, the gas outlets of which are arranged to secure the contact or impingement of the flames. 9th. The combination of platinum foil A or other refractory substances, with a series of burners arranged to heat the said foil or substance. 10th. The baffle B*, in combination with the chamber C, the series of burners A and the gas inlet pipes M provided with means for the admission of atmospheric air. 11th. In a gas cooking or heating oven, a heat radiating bottom *f** and a series of gas jets placed in the top of said oven, the whole combined and arranged to permit the article to be baked to be placed between and simultaneously subjected to the action of the heat radiating bottom *f**, and of the naked flames of the gas jets or the heat directly radiated from said flame burners. 12th. The oven C* having a series of gas jets A in its upper part, and at its lower part the heat radiating bottom *f**, and in its sides the openings *a**, in combination with the jacket E* having, between it and the oven C*, the space F* and provided at bottom with the opening H*, and at top with the opening C*. 13th. The flange *b* in combination with the series of gas jets A placed in the upper part of the oven C*, the said oven being constructed with the openings *a** in its sides.

No. 12,521. Method of Packing Fish for Transportation. (*Méthode d'empaquetage du poisson pour l'exportation.*)

Enoch Piper, St. John, N.B., 19th March, 1881 : (Extension of Patent No. 5,827).

No. 12,522. Improvements on Paper Files. (*Perfectionnements aux serre-papiers.*)

Adélard F. Martel, Montreal, and François Gourdeau, Ottawa, Ont., 19th March, 1881 ; for 5 years.

Claim.—In an automatic or other file, the open box composed of the bottom A to which are fitted sides B B, and piece C to which is attached the spring E, catch G and fastener to clamping board D by fastener F.

No. 12,523. Improvements on Barrel Swings. (*Perfectionnements aux porte-barils.*)

William J. Marden, Constantine, Mich., U. S., 21st March, 1881 ; for 15 years.

Claim.—1st. In a barrel swing in which the barrel is swung from under a counter upon a swivel-post, the combination of said swivel-post, a barrel cover adapted to be raised clear of and lowered upon the barrel, and an attachment of the swivel-post, whereby the swing of the barrel raises and lowers the cover. 2nd. In combination with swivel-post, a barrel cover and a raising and lowering cord attached to said swivel-post and to the cover, to give a winding leverage as the post turns, whereby said cover is raised and lowered automatically by the swinging of the barrel. 3rd. The lower holding jaw for the barrel chime composed of the two cast plates *n o* provided with offset angles *p* having coinciding semi-circular openings *y* and fastened by a through bolt to the post. 4th. The top jaw connection with the barrel chime, consisting of the casting F provided with the open neck hook *u*, in combination with the angle wire grasp having a free movement therein, to adapt said grasp to be raised over the chime. 5th. The combination of the angle stop *f f¹* depending from the counter, with the strap *g* connecting said stop with the barrel cover and the cover raising and lowering attachment of the swivel-post, whereby to preserve the proper central rotation of said cover with the barrel.

No. 12,524. Improvements on Billiard Cue Tips. (*Perfectionnements aux procédés des queues de billards.*)

George C. Barney, Detroit, Mich., U. S., 21st March, 1881 for 5 years.

Claim.—A composition of matter, made up of chalk, whiting, emery sand, pulverized glass or stone with liquified India rubber, in equal proportions, so as to render the substance of sufficient hardness to be used as a billiard cue tip.

No. 12,525. Improvements on Ore Concentrators. (*Perfectionnements aux concentrateurs des minerais.*)

Judson J. Embrey, Fredericksburg, Va., U. S., 21st March, 1881 ; for 5 years.

Claim.—1st. The combination of a shaker A suspended from the main frame of the machine, means for imparting longitudinal movement of the shaker, and an endless travelling ore bed B which works in contact with, and has movement on, and is driven by a roller secured to said main frame. 2nd. A water distributor R² and means for vibrating it, independent of the shaker A, in combination with ore bed B, whereby, when the machine is in operation, the water shall be distributed crosswise of and over the bed.

No. 12,526. Hay Rake. (*Râteau à foin.*)

Onézime I. Bergeron, La Rochelle, Que., 21st March, 1881 ; for 5 years.

Résumé.—Le système d'elever on de baisser les blocs A A A A A qui permet d'ajuster les râteaux sur des roues de différente hauteur, la manière

d'enlever le rateau avec le pied par le levier B B, la poulie D, le support E E, le boulon F et le crochet G.

No. 12,527. Stove Base Plate. (*Plaque inférieure de poêle.*)

John W. Elliott, Toronto, Ont., 21st March, 1881; (Extension of Patent No. 5,882.)

No. 12,528. Improvements on Spring Tooth Harrows. (*Perfectionnements aux herses à dents élastiques.*)

James B. Crosby, (Assignee of Samuel C. Cobb,) Janesville, Wis., U. S., 21st March, 1881; for 5 years.

Claim.—1st. In tooth bars hinged or pivoted to the frame so as to be adjustable, in combination with elastic teeth attached to the bars by devices which permit them to be adjusted thereon, and which secure them rigidly in any position to which they may be adjusted, whereby the teeth may be either adjusted independently on their respective bars, or in a series by adjusting said bars themselves. 2nd. The inclined tooth bars A, adjustable axially in bearings as described, in combination with curved elastic teeth attached to said bars and arranged at an angle to the axis thereof. 3rd. The inclined tooth bars, in combination with a series of elastic teeth, arranged thereon at an angle to the axis of the bars, and adjustable angularly on their seats. 4th. In combination with the tooth bar set at an angle, the bracket G set at an angle to the axis of said tooth bar, the longitudinally adjustable elastic tooth, and the stop g^1. 5th. The combination, with adjustable tooth bars, of a bracket secured to the upper side of the tooth bar having a concave face, to receive a circular elastic tooth, said tooth having openings to permit of its adjustment by a bolt passing through such tooth and bracket, and securing both to the tooth bar. 6th. In combination with the inclined tooth bars working in bearings in cross bars, as described and secured together in pairs, so as to be independently adjustable, the curved teeth set at an angle to the axis of such tooth bars, a bracket for holding such teeth, and means for longitudinally adjusting the teeth upon such bracket. 7th. A tooth bar A, in combination with a bracket provided with a circular seat to receive the tooth, and elastic tooth curved or coiled at its upper end to fit the bracket seat around which it may be moved, and a fastening device for rigidly securing the tooth in any position to which it may be adjusted, whereby the tooth may be readily adjusted in the direction of its length by turning it around its seat and fixed in its adjustment. 8th. The tooth bar, in combination with a flat elastic tooth F coiled at its upper end, the bracket G^2 mounted on the bar and provided with a convex seat g^3 for the tooth, having a longitudinal slot i therein and a fastening bolt h^2, whereby the tooth may be adjusted by turning it around its seat and secured in its adjusted position. 9th. The tooth bracket G^2 provided with a circular seat g^3 having serrations g^6 on its opposite side and a longitudinal slot i therein, in combination with the fastening bolt h^2 and a washer r having a convex serrated face fitting the serrated surface of the bracket. 10th. The tooth bar A, in combination with the curved elastic tooth F provided with a hook f^1 at its upper end, the plate M having transverse slots m and a fastening hook or staple h^3.

No. 12,529. Method of, and Apparatus for Manufacturing and Purifying Gas for Preserving Purposes. (*Méthode et appareil pour produire et épurer le gaz pour la conservation alimentaire.*)

Charles F. Lawton, Arthur W. Lawton and Albert L. Lawton, Rochester, N. Y., U. S., 23rd March, 1881; for 5 years.

Claim.—1st. The method of generating and purifying mixed carbonic oxide and nitrogen gases, which consists in first subjecting hard coal, coke or charcoal to fire in a closed retort, and blowing air therein from a bellows, then passing the generated gases through a purifier packet with coarse material, through which passes water in fine streams for the purpose of washing the gases, then passing them through a second purifier having a solution of caustic lime, ferrio-proto-sulphate, sulphite or bisulphite of lime or soda, for the purpose of removing any carbonic acid sulphuretted and phosphoretted hydrogen, and any free or loosely combined oxygen from the gases, then passing them through a third purifier filled with coarse material, through which passes sulphuric acid for the purpose of removing ammonia and weak ammonia compounds, and finally passing them through a fourth purifier filled with dry calcined asbestos and magnesia, or magnesia and bone black, for the purpose of neutralizing acid vapours, absorbing odours and for filtering the gases. 2nd. As a step in the purification of mixed carbonic oxide and nitrogen gases, the subjecting of the gases, in their passage to a solution of caustic lime, ferrio-proto-sulphate and sulphite or bisulphite of lime or soda, for the purpose of removing carbonic acid, sulphuretted or phosphoretted hydrogen and oxygen. 3rd. As a step in the purification of mixed carbonic oxide and nitrogen gases, the subjecting of the gases in their passage to a compound of dry calcined asbestos and magnesia, or magnesia and bone black, for the purpose of neutralizing acid vapours absorbing odours and filtering the gases. 4th. In an apparatus for generating and purifying carbonic oxide and nitrogen gases, the retort A inclosed or incased in a gas tight casing C having a dome over the retort, and with an exterior casing C, the spaces between the retort and inner casing, and between the inner and outer casing being packed with non-conducting packing. 5th. The combination, with the closed purifying case G, of the bent induction pipe g and the bent eduction pipe h, respectively at top and bottom, said pipes allowing automatic entrance and exit of the liquid and serving as traps to pervent escape of the gas from the purifier. 6th. The combination, with the purifying receptacle H, of the revolving brush I revolving within the receptacle and provided with spines or paddles for the purpose of raising the liquid and presenting the same to the contact of the gas, as it passes through the receptacle. 7th. The combination, with the waste pipe E and the gas pipe F, of the valve f covered with asbestos paper and capable of being shifted from one pipe to the other to cover either exit.

No. 12,530. Apparatus for Transmitting Motion. (*Appareil de transmission du mouvement.*)

Stephen Dennis and Antonio Samper, Paris, France, 23rd March, 1881; for 5 years.

Claim.—1st. The mode of winding the bands or ropes over the guide rollers. 2nd. The mode of winding the bands or ropes with four guide rollers. 3rd. The mode of transmitting motion from a horizontal to a vertical shaft by means of an endless chain, rope, or band. 4th. The mode of guiding the bands or chains wound in close coils, by means of single guide rollers acting laterally on the cord, which is tangential to their circumference. 5th. The mode of guiding the bands or chains wound in open or separate coils, by means of loose tubes or rollers. 6th. The mode of winding in close coils and of guiding a band or rope having its ends free (for raising or lowering loads and other purposes). 7th. The employment, for the transmission of motion by endless chains or ropes, of cylindrical and conical drums. 8th. The arrangement of screw tension device acting on the guide rollers. 9th. The arrangement of screw tension pulley for bands or ropes wound in close coils.

No. 12,531. Improvements on Bottle Stoppers. (*Perfectionnements aux bouchons des bouteilles.*)

Charles G. Hutchinson, Chicago, Ill., U. S., 23rd March, 1881; for 5 years.

Claim.—In the flat or disk-shaped valve B, the laterally elongated eye E, and the centrally contracted spring loop F having an open lower end and upper and lower enlargements, both adapted to enter the neck of a bottle, and both lower ends of the wire of the said loop having therein eyes or openings for freely receiving and suspending the cross bar of the eye E, all combined and constituting an internal bottle stopper adapted to be held in its open and closed positions alternately by means of the said loop.

No. 12,532. Improvements on Rail Joint Fish Plates and Nut Locks Combined. (*Perfectionnements aux éclisses des joints des rails et arrête-noix combinés.*)

Peter McGregor and Alexander McLean, Ottawa, Ont., 23rd March, 1881; for 5 years.

Claim.—In combination with the rails A A, fish plate B, bolts C and nuts D, the fish plate B having longitudinal slotted bolt holes, and recesses F or projections H to stop against a side of the nut, when the plate is moved endwise, for locking the nut simultaneously.

No. 12,533. Improvements in the Method of Ornamenting Furs. (*Perfectionnements dans la méthode d'orner les fourrures.*)

Lucinius Havasy, New York, U. S., 23rd March, 1881; for 5 years.

Claim.—1st. In attaching the stems of feathers directly to the pelt and allowing the feathered tips to project over the surfaces of the fur. 2nd. As a new article of manufacture in furs ornamented, as described, by attaching the stems of feathers to the pelt of the fur, and allowing the feather tips to project over the surface of the fur.

No. 12,534. Improvements on Coffins. (*Perfectionnements aux cercueils.*)

John L. Wood, Maitland, Ont., 23rd March, 1881; for 5 years.

Claim.—1st. A pottery coffin, or burial casket composed of pulverized granite and clay tempered, moulded and baked. 2nd. In combination, with the pottery coffin or burial casket, of the metallic sectional band E for the attachment of handles F and securing the cover B by the jointed connection of the sections, provided with sleeves or shields G.

No. 12,535. Improvements on Spark-Arresters. (*Perfectionnements aux arrête-flammèches.*)

Rufus S. Craig and Greenlief G. Wyman, Dover Plains, N. Y., U. S., 23rd March, 1881; for 5 years.

Claim.—1st. The combination of a blast pipe C consisting of a series of short pipes or cutters, increasing in diameter toward the top and having an intervening space between them, with the tube E made of wire netting, perforated sheet metal or sectional cones. 3rd. The combination of a blast pipe C and wire netting or perforated sheet metal tube E, extending from the exhaust tips to the top of the stack if desired, with a vertical series of cutters arranged on the outside of the tube E. 3rd. The combination of a blast pipe C and tube E with a series of cutters, reducing pipe D and exhaust tips a. 4th. The combination of a blast C, wire netting or perforated sheet metal E, rings and exhaust tips a with the adjustable pipes c c^1. 5th. The combination of a blast pipe C consisting of a series of short pipes or cutters extending nearly the entire distance to the top of the smoke stack. 6th. In a spark arrester and pulverizer the tube E extending from the exhaust tips to the top of the stack if desired, and provided with perforations and ring cutters, having roughened surfaces, secured on the outside of the pipe. 7th. The detachable rings o r^1 provided with cutting edges and arranged on the outside of the tube E, or between the blast pipe and tube E or smoke stack, in combination with perforations f^1. 8th. The wire netting ring p, in combination with the projections o^1 and perforations f^1 in the tube E extending from the exhaust tips to the top of the stack if desired. 9th. In combination with the spark arrester and pulverizer, the plate F. 10th. The spark arrester, consisting of the lift pipe c in combination with the pipe E having perforations f^1 and projections o^1, rings o h^1, wire netting p^1 p^{11} and cutters s, and extending from the exhaust tips to the top of the stack, if desired.

No. 12,536. Improvements on Car Unloaders. (*Perfectionnements aux décharge-chars.*)

George P. Merrill, George G. Hadley, Frank W. Stewart and Brooks W. Gossage, Toledo, Ohio, U. S., 23rd March, 1881; for 5 years.

Claim.—1st. A device constructed as described, whereby the gravel, dirt or other material upon the platform of the car is discharged from one side only thereof, by the movement of the device along and over the platform. 2nd. A device for unloading cars having anti-friction rollers connected to the side thereof and adapted to bear against a rail connected to the platform of the car. 3rd. A device for unloading cars having anti-friction rollers connected to side thereof, and vertically adjustable rollers, for raising the device off the platform of the

car. 4th. The combination, with a device for unloading cars, of a jack connected thereto for elevating it above the platform of the car. 5th. A device for unloading cars from one side only, the same being provided with a suitable nose casting at its forward end. 6th. The combination, with a device for unloading cars from one side only at a time, of a rail detachably connected to the side of the car platform, to form a track for such device. 7th. The combination, with a device for unloading cars, of a rail secured to the platform thereof, the same having at its ends.

No. 12,537. Improvements on Mining Machines. (*Perfectionnements aux machines à miner.*)

Francis M. Lechner, Waynesburg, and Joseph A. Jeffry, Columbus, Ohio, U.S., 23rd March, 1881; (re-issue of Patent No. 7,092.)

Claim.—1st. A rotating horizontal cutter shaft mounted at a right angle, in front of a sliding supporting frame, whereby said cutter shaft is placed upon a line parallel with the breast of coal, and may be advanced into said breast of coal upon a path made by said cutter shaft, at a right angle thereto. 2nd. A rotating horizontal cutter shaft arranged at a right angle to its supporting frame, in combination with a driving chain arranged on a line parallel with the sliding carriers. 3rd. A rotating horizontal cutter shaft mounted at the front end of a sliding carrier frame, which is advanced into the coal with the cutter shaft, in combination with shoes attached to the sliding carrier frame to support the cutters and frame against downward thrust. 4th. A rotating horizontal cutter shaft, provided with cutting teeth, and mount d as the front end of a sliding carrier frame, in combination with shoes arranged to support the front end of the carrier frame against downward thrust. 5th. The combination, with a rotating horizontal cutter shaft and its sliding carriers, of guides attached to the carriers to support them against the upward thrust produced by the cutters. 6th. The combination, with a rotating horizontal cutter shaft and its carriers, of cutting spurs attached to the carriers, to cut out the coal in front of the shaft bearings. 7th. The combination, in a mining machine, of the posts B_2 B_2, sliding frame G, shafts E F and chain F_1. 8th. The combination, with the bed frame and the sliding carriers, of the feeding screw shaft N, block N_1 and driving chain M, operated from the main driving shaft. 9th. The combination of the cutter shaft C, shafts E T and chains F_1 and E_2. 10th. The combination of the stationary frame, the sliding carriers supporting the cutting apparatus and its driving mechanism, and a feeding device for advancing the cutters into the coal. 11th. The combination of the adjustable frame G and the feeding screw A having one end adjustable upon the bed frame.

No. 12,538. Improvements on Windows.

(*Perfectionnements aux croisées.*)

William West, sr., and John Lord, Toronto, Ont., 23rd March, 1881; (Extension of Patent No. 5,875).

No. 12,539. Improvements on Combined Harrows and Clod Crushers. (*Perfectionnements aux herses brise-mottes.*)

Frederick Niskwitz, Millington, N. J., U. S., 23rd March, 1881; for 5 years.

Claim.—1st. The combination of the leveller, or clod crusher, the rigid tongue, the gang bar with cultivating devices in rear of the leveller, and the drivers seat mounted on the leveller or tongue, and overhanging the gang-bar. 2nd. The combination of the leveller or clod-crusher, the rigid tongue, the hinged gang bar or cultivator frame provided with the cultivating devices and hinged in rear of the leveller, the driver's seat overhanging the gang-bar, and supported on a standard secured to the leveller, or tongue and means for adjusting the gang-bar and leveller relatively to each other and for securing them as adjusted.

No. 12,540. Improvements on Potato-Diggers. (*Perfectionnements aux arrache-patates.*)

Garret Seger and Bernhart Bernet, Buffalo, N.Y., U. S., 23rd March, 1881; for 5 years.

Claim.—1st. The combination of the frames A A, open digger frames *a a*, point a^1, fingers *b b b* and supplementary forked frame *c c c*, fingers b^1 b^1 b^1. 2nd. In combination with a potato-digger, the swinging vine catching hook D D pivoted to the beam or front part of the digger frame. 3rd. The combination of the frames A A, open fingers b^1 b^1 b^1 and pivoted vine catcher, D D.

No. 12,541. Improvements on Grain-Binders.

(*Perfectionnements aux lieuses à grain.*)

D. M. Osborne and Company, Auburn, N.Y., (Assignee of Andrew C. Miller, Sparta, Ill.), U.S., 26th March, 1881; for 5 years.

Claim.—1st. The combination of the knotting devices supported on a vertically pivoted, horizontally oscillating arm. 2nd. The knotting devices supported on the vertically pivoted, horizontally oscillating arm, in combination with a vertically oscillating and swinging cord carrying arm. 3rd. The knotting devices carried on the vertically pivoted horizontally oscillating arm, the vertically oscillating and swinging cord carrying arm, in combination with a horizontal slotted grain receiving table. 4th. The knotting devices carried on the vertically pivoted horizontally oscillating arm, the vertically oscillating and swinging cord carrying arm, the slotted grain receiving table, in combination with the inclined way on the surface of the table. 5th. The knotting devices carried by the vertically pivoted horizontally oscillating arm, in combination with the fixed switch frame having a segment gear for imparting rotary motion to the knotters spindle. 6th. The knotting devices carried by the vertically pivoted, horizontally oscillating arm, in combination with a fixed switch frame having a cam way for imparting a vertical up-and-down movement to the cord-holder carried on the horizontally oscillating arm. 7th. The combination of the knotting devices carried on the vertically pivoted, horizontally oscillating arm, the cord-holder pivoted to and receiving its horizontal movements from the arm, and its vertical movements from the switch frame, a vertically pivoted switch for opening the jaws of the cord-holder, and a spring for closing the same. 8th. The cord holder pivoted to the horizontally oscillating arm by one end, so as to admit of a vertical movement of its other end, in combination with a fixed vertically slotted guide piece for its moving end. 9th. The combination of the vertical hollow knotter spindle and its horizontally hinged hook with the vertically pivoted cord frame. 10th. The combination of the vertical hollow knotter spindle and its horizontally hinged hook with the vertically carrying arm. 11th. The combination of the vertical hollow knotter spindle, the hook hinged thereto, the cord finger and the vertically oscillating cord-holder. 12th. In combination with the hollow knotter spindle and its hook, the connecting rod pivoted to the hook and united by trunnion connections with its operating devices. 13th. The combination of the hollow knotter spindle and its hook connecting rod, and its trunnion connections with the double armed pivoted lever X^1 and roller Y supported on the horizontally oscillating arm, a cam way or track *e e* on the fixed switch frame, for operating the hook *r*. 14th. The hollow knotter shaft and its pinion knotter hook connecting rod and its operating devices, and the intermediate gear wheels supported by the horizontally oscillating arm, in combination with the sector gear on the fixed switch frame. 15th. The hollow knotter shaft, its hook and operating devices, the cord finger l^1, lever m_1, link *n*, lever n^1 and pivoted switch *o* for operating the same, the whole arranged and combined as described. 16th. The cord-holder, its movable jaw, the knife with the link *b* having a cross-head b_1 with the link *e*, pivoted lever *f* and pivoted switch i^1, arranged and combined as described. 17th. The pressure plate, in combination with the bail on the cord-holder, for holding the cord when released by the jaws of the cord-holder. 18th. The combination of the cord finger, the pressure plate and the bail on the cord-holder. 19th. The combination with the grain elevating and discharging aprons, a horizontal slotted grain receiving table located outside of, and below the discharging ends of the aprons, a vertically pivoted horizontally oscillating arm arranged below said platform and carrying a hollow vertically rotating knotter spindle and hook, a vertically oscillating card-holder controlled, in its vertical movements, by a fixed cam-way, a vertically oscillating and swinging cord carrying arm hinged to the axis of the horizontally oscillating arm, the whole being arranged by joint operation. 20th. The combination of the vertically rotating knotter, the vertically oscillating cord holder and the oscillating take-up. 21st. The combination of the vertically rotating knotter shaft supported by an arm oscillating on a horizontal axis, a vertically oscillating and swinging cord carrying arm hinged to the same axis, a vertically oscillating cord-holder, and the take up K supported in the extension J^1 of pitman H^1. 22nd. The combination of the knotter plate O, the horizontal knotter carrying arm, the vertically oscillating and swinging cord carrying arm, the vertically oscillating cord-holder, and the vertically pivoted cord finger l^1. 23rd. The knotting devices mounted on a horizontally oscillating arm supported on a vertical axis, the vertically oscillating and swinging cord carrying arm hinged to the upper end of the same axis, the lever hinged to the lower end of the same axis, its other end pivoted radially to rotating gear wheel R and connected by pitman H_1 to cord carrying arm G, the whole combined for joint operation. 24th. The combination of the take-up K supported on the pitman extension, the sheaves K^1 L M M_1, with the cord carrying arm and cord-holder V. 25th. The combination of the intermediate gear wheels on a stud, and their mutilated hub with the ribs on the switch frame as a stop and holder for the same. 26th. The knotter shaft and its pinion, the intermediate gear wheels on a stud, and the sector gear on the switch frame, and ribs and stops for holding the same arranged and combined for joint operation. 27th. The removable knotting devices and the removable switch frame and its devices so combined with the horizontally oscillating knotter carrying arm, binder frame and their operating mechanism, that the same may be removed, and a wire twisting and holding and cutting mechanism substituted in the place of the knotting mechanism, and a switch frame carrying a different mechanism for operating the wire twisting, holding and cutting devices substituted in place of switch frame carrying the operating devices for the knotter, the whole being arranged and combined for the purpose of changing the binder from a cord tying to a wire twisting machine.

No. 12,542. Improvements in Ladders.

(*Perfectionnements aux échelles.*)

William A. Boyd, Strathroy, Ont., 26th March, 1881; for 5 years.

Claim.—The ladder *v v k k d d k k* combined or detached by means of adjustable hinges *n n* when each ladder is divided into upper and lower sections *v v* A A A A K K *d d* A A K K A A fitting into one another by tongues and grooves for the purpose of lengthening or shortening the ladder combined with the windlass "C" and its connections *c h h*, and the ratchets and dogs *o o*, the movable and adjustable platform F, the base stays *i i* and the wheels S S attached to the front ladder for detached use.

No. 12,543. Improvements on Grinding Mills.

(*Perfectionnements aux moulins à moudre.*)

Théodule Michaut, St. Paul, Minn., U.S., 26th March, 1881; for 5 years.

Claim.—1st. The combination with the grinders B C, of the board N, hoods O, spring P, perforated board G and lever T. 2nd. The combination, with the runner C having openings, and the perforated steel plates G, of the top board N forming an air chamber, and the plates O having springs P, and racks and spring pawls Q R S.

No. 12,544. Improvements on Plastic Compounds. (*Perfectionnements aux composés plastiques.*)

Arthur T. Woodward, New York, U.S., 26th March, 1881; for 5 years.

Claim.—The plastic compound composed of pulverized silica, such as flint, glass or sand, and a mineral or vegetable resin or pitch intimately mixed therewith, either with or without boiled linseed oil, or other drying oil, or turpentine or benzine, and in the approximate proportions specified.

No. 12,545. Medicine for the Cure of Diphtheria. (*Medécine pour la guérison de la diphthérie.*)

Henry W. Leeson, Normandy, Ont., 26th March, 1881; for 5 years.

Claim.—A composition of matter composed of gold thread, lobelia, red pepper and bonesett, soaked in malt whiskey or other liquor, and strained for use.

No. 12,546. Improvements in Platform Scales. (*Perfectionnements aux balances-plateformes.*)

William E. Tate, Parrsboro, N.S., 26th March, 1881; for 5 years.

Claim.—1st. The combination of lever A and levers B B B B 2nd. The sling bar I with socket plates H H, with socket J and combined pivot K, and socket N.

No. 12,547. Improvements on Saws. (*Perfectionnements aux scies.*)

Amos A. Burr and Joseph H. Powers, Rockdale, N. Y., U. S., 26th March, 1881; for 5 years.

Claim.—The combination, with the pairs of cutting teeth B B having chisel points and forwardly inclined lower edges, of a tooth guard C made blunt or mounted at the point, reaching only to the plane to which the cutting teeth extend into the wood, and arranged between each pair of cutting teeth.

No. 12,548. Improvements on Corsets. (*Perfectionnements aux corsets*).

Isaac Newman, New Haven, Ct., (Assignee of Abraham L. Zorkowski, New York), U.S., 26th March, 1881; for 5 years.

Claim.—1st. A corset provided at its sides with vertical cords extending from top to bottom, and transverse cords crossing said vertical cords at right angles or nearly so. 2nd. A corset provided at its sides with vertical groups of cords with intervening spaces extending from top to bottom and separated groups of cords crossing the said vertical groups at right angles, or nearly so, the respective vertical and horizontal groups of cords being stitched to separate bands or strips of cloth, and the outer strips being stitched to the under strips, and both stitched to or joined with the front and back sections of the corset. 3rd. A corset provided with groups of cords extending in vertical and horizontal directions, and crossing each other at the sides of the corset, the said groups, one or both sets, being stitched to bands or strips of cloth somewhat separated, and the said bands stitched to the corset.

No. 12,549. Rivet Setting Machine. (*Machine à poser les rivets.*)

Mellen Bray, Newton, Mass., U.S., 26 March, 1881; (Extension of patent No. 5,922.)

No, 12,550. Drilling Machine for Tubular Rivets. (*Machine à forer pour les rivets en tube*)

Mellen Bray, Newton, Mass, U.S., 26th March, 1881; (Extension of patent No. 5,923)

No. 12,551. Improvements on Harvester Rakes. (*Perfectionnements aux râteaux des moissonneuses.*)

David Maxwell, Paris, Ont., 26th March 1881; (Extension of patent No. 7,509.)

No. 12,552. Improvements on Harvester Rakes. (*Perfectionnements aux râteaux des moissonneuses.*)

David Maxwell, Paris, Ont., 28th March, 1881; (Extension of patent No. 7,509.)

No. 12,553. Furnace for Heating Wheel Tires. (*Four à chauffer les bandages des roues.*)

Louis Bredannaz, Montreal Que., 28th March, 1881; for 5 years.

Résumé.—L'emploie d'un four circulaire et plat comme combinaison nouvelle pour chauffer les bandages de roues sans les déformer, et dont A est la grille circulaire, B la muraille extérieure garnie d'une enveloppe en tôle ou non, avec ouverture H du garde-cendres, et siège circulaire E. C la muraille intérieure, D le chapeau a couvercle postiche C et à poignée G.

No. 12,554. Improvements on Car-Coupling. (*Perfectionnements aux accouplages des chars.*)

David Murray, Jarvis, Ont., 28th March, 1881; for 5 years.

Claim.—An automatic locking device or keeper D, to prevent clevis B from uncoupling, and operated by the motion of the cars. 2nd. The combination of the automatic keeper D, clevis B, drawhead hooked plate C, the same being automatically coupled and locked by contact of cars.

No. 12,555. Water Heater for Steam Boilers. (*Chauffeur d'eau pour les chaudières à vapeur.*)

Robert McMaugh, St. Catharines, Ont., 28th March, 1881; for 5 years.

Claim.—A water heater and sediment collector composed of a water tight casing A, having a perforated plate D situated below the point at which the cold water is admitted, in combination with an exhaust pipe B leading from the engine to the inside of the casing where it discharges the exhaust steam against the bottom side of the perforated plate, thereby imparting heat to the cold water percolating therethrough, an auxiliary exhaust pipe C extending within the casing, to a point below the mouth of the main exhaust pipe B, carrying off the steam not condensed by the water.

No. 12,556. Improvements on Force Pumps. (*Perfectionnements aux pompes foulantes.*)

William W. Mallory, Holland Patent, N. Y., U. S., 28th March 1881; for 5 years.

Claim.—The cylinder A having a ball valve B C at its lower end, the piston and piston rod E F, the inclined discharge pipe H, connected at its lower end with the lower part of the cylinder A and having a ball valve I J, at its lower end, the curved nozzle M and the elbow pipe N having a tapering overflow pipe O attached to its outer end. 2nd. The combination, with the upper end of the cylinder A and the piston rod F, of the elbow pipe N and the inwardly inclined tapering pipe O, to serve as a guide to the piston rod, a handle to the pump, and to guide the overflow back to the reservoir.

No. 12,557. Improvements on Elevating Apparatus. (*Perfectionnements aux monte-charges*)

George W. Wood, (Assignee of Charles H. Smith,) Faribault, Min., U.S., 28th March, 1881; for 5 years.

Claim.—The combination, in apparatus for raising coal, of a bucket frame with a cylinder which admits of being revolved on a supporting structure, and to which said bucket frame is pivoted, so that the said cylinder may receive the contents of the buckets. 2nd. The combination of the bucket frame and its endless chain of buckets, with the cylinder or receiver B_2 and the cylinder B_1 with its adjustable spout, the said cylinders admitting of being turned independently of each other and of the structure which supports them. 3rd. The combination of the vertically adjustable sliding frame B, the cylinder B_1 admitting of being turned on the said frame and provided with a spout, the cylinder or receiver B_2 admitting of being turned on the said cylinder B_1, and the bucket frame with its endless chain of buckets. 4th. The combination of a main frame A, a frame B arranged to slide vertically therein, the cylinders B_1 B_2, the shaft H carried by the upper cylinder, the central vertical shaft F and gearing whereby motion may be imparted from the said shaft F to the seaft H. 5th. The combination of the cylinder B_2, the opening in the side of the same and wings *t t* projecting from the edges of the said opening, with the chain barrel shaft having its bearing in the side wings. 6th. The combination of the cylinder B_1, its outlet, and the inclined plate K, permanently fixed in the cylinder in respect to the outlet, with the spout F having a funnel-shaped end riveted to the cylinder at the outlet. 7th. The combination of the cylinder B_2, the flanged cylinder B_1 and the plates K, secured to the said cylinder B_2 and carrying roller J adapted to the flange of the lower cylinder. 8th. The combination of the bucket frame L, the endless chain J, the buckets M and the aprons Z.

No. 12,558. Railway Track Lifter. (*Appareil à relever les voies de fer.*)

Donald B. McDonald, Aylmer, Que., 29th March, 1881; (Extension of patent No. 5,889.)

No. 12,559. Improvements on Harvesters. (*Perfectionnements aux moissonneuses.*)

George Pye, Ottawa, Ont., 30th March 1881; for 5 years.

Claim.—The combination of the drag bar O, spring down holding arm x, end wheel T, axial coupling pin or bolt S hinged to the shoe R, tilting lever Z_1, and lever V fulcrumed to the platform C and connecting with the cutter bar V_2 by chain W, whereby the cutter bar can be tilted endwise or rocked without raising the drag bar, which has an independent motion to allow the cutting apparatus to conform to the sinuosity of the ground. 2nd. In combination with the wheel E having peripherally graduated concave cams, the rocker arm having prolongation I_1 adjustably connecting with lever M, whereby the stroke of the knife bar V_3 can be regulated. 3rd. The combination of the coupling bolt P, push bar O and elbow lever N, with the platform C, whereby the drag bar and lever have an independent motion at a right angle to one another. 4th. The spring arm X, attached to the drag bar O, in combination with the platform C. 5th. The cam shaft J, provided with cross head K to rock the shaft by the foot of the driver. 6th. The combination of the drag bar O, wheel T and shoe R, connected by rocking arm or bolt S_1. 7th. The knife bar V_3 operating on top of the cutter bar V_2 whereby the knife sections will lay flat on the guard plates R_2 secured to the cutter bar V_2. 8th. In the ball joint, consisting of the head 1, ball 2, nut 3 and jam nut 4.

No. 12,560. Improvements on Reaping Machines. (*Perfectionnements aux moissonneuses.*)

David Maxwell, Paris, Ont., 30th March, 1881; (Extension of patent No. 6,772.)

No. 12,561. Improvements in Reaping Machines. (*Perfectionnements aux moissonneuses.*)

David Maxwell, Paris, Ont., 31st March, 1881; (Extension of patent No. 6,772.)

No. 12,562. Load Lifters. (*Monte-charge*)

William Sargent, Holland, Ont., 31st March 1881; for 5 years.

Claim.—The combination of the spring board *e*, and support of spring board *h h* which holds bull wheels *a a*.

No. 12,563 Improvements on Stave Knives. (*Perfectionnements aux couteaux à douves.*)

Robert Craig, Blythe, Ont., 31st March, 1881; for 5 years.

Claim.—A stave knife having equalizers or cutters *d d f f* inserted in the stave knife or fastened thereto with set screws or bolts, or made solid with the knife at any desired distance apart, at right angles with the convex side of knife, at any desired level with the convex side of knife.

No. 12,564. Sliding Door. (*Porte en coulisse.*)

George R. Kidder Arnads, Mich., U. S., 31st March, 1881; Re-issue of patent No. 8,990.

Claim.—1st. In a sliding door or gate, the combination of the hangers B B with the door or gate A pulleys C C and elevated track or platform *a*. 2nd. The door or gate *a*, platform *a*, hangers B B pulleys C C and bent or angular bar D, provided with a frictional roller *d*, in combination as set forth. 3rd. A door or gate hanger composed of a bracket adapted to be secured to the

face of a door, which bracket has an arm upon which is pivoted a flat faced wheel or pulley which supports and carries the door, and has also an arm with a guide or roller adapted in connection with a suitable groove or guide in the underside of the track, to prevent the door from displacement at right angles to the track. 4th. In combination with a hanger provided with a vertical flat faced bearing wheel and a guide, the platform or plate *a* provided with a groove in its under side to receive the guide.

No. 12,565. Improvements on Journal Bearings. (*Perfectionnements aux coussinets des tourillons.*)

The Granular Metal Company, Nashua, N. H., (Assignee of Benjamin J. Downs, Cambridge, Mass.), U.S., 31st March, 1881; for 5 years.

Claim.—An improved shell for journal bearing having a solid unperforated back stiffened internally by transverse ribs which are adapted to be covered and embraced by the metallic compound forming the bearing. 2nd. An improved shell for journal bearing, internal ribs transverse to the axis at points between the ends of the shell, and made open or without barriers at the ends. 3rd. The combination, with a shell having a solid back, transverse internal ribs and open ends as described, of a continuous or homogenous anti-friction metallic bearing secured in position within said shell.

No. 12,566. Improvements on Vehicle Springs. (*Pefectionnements aux ressorts des voitures.*)

Edwin J. Saylor, (Assignee of James N. Rice,) Pittston, Pa., U. S., 31st March, 1881; for 5 years.

Claim.—1st. A waggon spring composed of a spiral portion, a straight portion, forming a bearing, and an arm for attachment to a clip shackle. 2nd. The combination, with the body of a vehicle, of two springs of spiral form on their inner ends and having straight bearing portions and arms provided with eyes for attachment to clip shackles. 3rd. The combination, with a bearing plate attached to the underside of the body or box of a vehicle, said bearing plate having a horn or bar secured thereto, of two spiral springs, the inner and adjacent ends supported upon the opposite ends of said horn or bar. 4th. The combination, with a bearing plate, a bar or horn and wide pendent spiral springs supported on the opposite ends of said bar or horn, of set screws connected with the ends of said spiral springs. 5th. The combination, with the body or box of a vehicle, of independent springs provided with spiral portions secured beneath the body, and straight bearings secured in boxes attached to the vehicle body or box, said springs being provided with arms which are pivoted or hinged to clip shackles attached either to the axle or bolster. 6th. The combination, with a suitable bearing attached to the underside of the body of a vehicle, of a spring having a spiral portion supported on said bearing, a straight portion supported in a bearing attached to the waggon-body, and an arm hinged or pivoted to the axle or bolster.

No. 12,567. Improvements on Dynamo-Electric Machines. (*Perfectionnements aux machines électro-dynamiques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 31st March, 1881; for 15 years.

Claim.—1st. The combination, with the brush holder of a magneto or dynamo-electric machine, of means for giving adjustable pressure of the brush upon the commutator. 2nd. The combination, with a commutator, of a series of brushes, each mounted independently upon a common supporting shaft or bar and independently adjusted. 3rd. The combination, with a commutator, of a series of brushes and holders, each mounted independently upon a common bar or shaft and arranged so that each brush takes obliquely upon the commutator. 4th. A brush holder formed of two parts, the one for fixed seating upon a proper support, the other connected thereto by an adjustable spring union. 5th. A magneto or dynamo-electric machine, consisting of a series (two or more) of independent field of force magnets, and a single armature or bobbin common to them all. 6th. The combination of a magneto or dynamo-electric machine, a steam engine connected thereto by a counter balanced connection, a governor, and variable cut off automatically controlled thereby, and an armature or bobbin, serving both as an armature or bobbin, and as a fly or balance wheel. 7th. The combination, with a common base, of an automatically controlled engine. A magneto or dynamo-electric machine, and non magnetic supports placed between the generator and the base. 8th. The combination, with the polar extensions, of a series of independent electro-magnets forming, with a bobbin common to them all, a generator of a non magnetic plate or brace uniting and supporting the polar extensions. 9th. The combination of a generator, a high speed steam engine, and a variable cut off and governor, so that the speed of the engine, and the power or pressures of current are automatically regulated. 10th. A governor for an electric engine arranged to break the circuit at regular definite intervals. 11th. A governor for an electric engine arranged to break the circuit once in every revolution of the governor at a point, and for a fraction of the revolution dependent upon the speed of the engine or amount of load. 12th. The method of reducing speed between an electric engine and the machinery driven thereby by first converting the rotary motion of the armature into oscillatory motion, and then re-converting the oscillatory motion into rotary motion. 13th. The combination, with the rotary armature of an electric engine, of an oscillating pawl carrier, and a friction wheel actuated thereby. 14th. The combination of a rotating armature, an oscillating pawl carrier, a pitman and an adjustable connection, so that the throw and speed of the pawl carrier may be varied. 15th. The combination of a rotating armature, an adjustable double pawl carrier, an adjustable connection between them and means for determining which pawl shall be kept in operation at any one time. 16th. The combination of an electric engine, a machine driven thereby and a pitman for connecting the two directly, without the intervention of gearing or belts. 17th. The combination of a magneto or dynamo-electric machine and an electric engine, constructed relatively to each other, so that the engine must run a much greater speed than the magneto or dynamo-electric machine, to produce a counter electro motive force equalling the electro motive force of the dynamo or magneto-electric machine. 18th. The combination of a battery of magneto or dynamo-electric machine and a battery of electric motors or engines, arranged differently relatively to each other as described. 19th. The method of transferring power into electricity, and reconverting the electricity into power consisting in generating the current in dynamo or magneto electric machines, or in a battery thereof, giving a certain speed, a certain electro motive force transmitting the current to an electric engine or motor, or series thereof arranged to give the same electro motive force, only at a much higher rate of speed. 20th. The combination, with the main circuit of a series of battery of magneto or dynamo-electric machines used either as generators or receiving machines, of a shunt circuit to the bobbin or armature of one of the machines, which shunt passes around, and energizes all the field of force magnets of the battery. 21st. The method of generating currents, by the use of a water wheel, as a prime motor, consisting in using two wheels, the first and larger pumping water to a height, then using the water so pumped with its greater head to actuate a smaller wheel at a greater rate of speed, the second wheel being connected to the generator. 22nd. A revolving armature for magneto or dynamo-electric machines having its ends formed of radial plates suitably connected. 23rd. The combination, in an armature for magneto or dynamo-electric machines, of radial plates, and circular connecting plates. 24th. The combination, with the armature of a magneto or dynamo-electric machine provided with a series of coils or bars, of a commutator and connections, arranged to retain all the coils constantly in the circuit. 25th. An armature for dynamo or magneto electric machines, having its active or generative portions made of naked bars or ribbons of metal. 26th. An armature for dynamo or magneto electric machines in which the active or generative portions may be removed without disturbance of the end or inert portions. 27th. A rotating armature having its ends composed of discs to which are united the active coils or bars. 28th. The combination, with the commutator, of an armature end composed of discs having tongues integral therewith for electrical union with the commutator. 29th. The combination, in a revolving armature, of a series of discs and bars, the discs connecting electrically the bars in couples. 30th. The discs for the commutator end of a revolving armature, provided with a tongue.

No. 12,568. Improvements in Electro-Magnetic Railways. (*Perfectionnements dans les chemins de fer électro-magnétiques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 31st March, 1881; for 15 years.

Claim.—1st. A system of electrical railroading, in which a road is divided into electrical sections, the rails forming the conductors, each section provided with a central station at which is located a suitable engine, a generator of electricity, and means for controlling and completing the circuits to trains and to switches, cars which are electrically divided, so that the motors thereon are insulated from the track, and means for completing the circuit from line of rails through the motor. 2nd. The combination, with a track switch, of an electric motor and circuit for operating the switch. 3rd. The combination, with a cars frame insulated from the track, of an electric motor, an electric traction device and lamps, or of any two of them, when they are arranged on multiple arc or derived circuits. 4th. The combination, with a car frame, of an electric engine for actuating the car, and having its inducing and field of force magnets in separate, derived or multiple arc circuits. 5th. The combination, with an electric engine mounted upon and actuating a car, of a circuit reverser and means for operating the reverser from a distant station. 6th. The combination, with an electric engine mounted upon and actuating a car and the main driving axle, of a governor receiving motion from the latter and operating to break the circuit of the engine upon the attainment of a predetermined rate of speed. 7th. The combination, with a main electrically connected rail section, of a short section connected to the main section by conductors arranged to change the polarity of the current traversing each line of rail. 8th. A car wheel constructed of a metallic hub and a metallic centre, united by a wooden or insulating web. 9th. A car in which an insulation is so applied that the body is electrically insulated from the flanges of the wheels. 10th. The combination, with an electric engine mounted upon and actuating a car and the main driving axle, of a loose and flexible connection for conveying motion from one to the other. 11th. The combination, with a car, of a magnet or magnets operating upon closure of circuit, to increase the traction of the car upon the track by their magnetic influence. 12th. The combination, with the insulated flange and the contact spring for conveying the current therefrom, of several multiple arc circuits, each containing a device used in running, controlling or lighting a car. 13th. The combination, with a car, of an additional groove faced wheel mounted in an adjustable bearing, means for elevating or depressing the wheel and its bearing, and a loose or flexible connection therefrom to the main driving axle. 14th. The combination of a loose friction pulley on the main driving axle, a friction pulley on the motor shaft, and a swinging or movable pulley for connecting the two, a sprocket wheel on the loose pulley, a sprocket wheel on the shaft of the grooved wheel and a sprocket chain. 15th. The combination, with the operating lever of a circuit reverser, of a cam plate nominally holding the swinging levers of the reverser out of contact with their anvils, and always opening one circuit before closing another. 16th. The combination, upon one car, of an electric engine for actuating the car, circuit reverser, a centrifugal governor acting to make or break the circuit, and a magnet or magnets operating to increase the traction of the car upon the track. 17th. The combination, with the main driving and ordinary wheels of a car, of a wheel adapted to grasp the track and to be brought into operation as desired. 18th. The combination, with the main track section, of the section M T S W and circuit connections, and switch motors, whereby trains may be passed by each other. 19th. In an electro-magnetic railway engine, the combination with the motor and the driven axle, of a series of variable gears, and a clutch for varying the relation of the speed and power as desired. 20th. The combination, with an electro-magnetic railway engine, of a creeper or creepers propelled along the track in one direction by the electric motor, and locking against movement in the other direction. 21st. The combination, with an arm reciprocated from the prime motor, of a frame or casing and gripping devices therein, capable of sliding along a rail in one direction, but gripping and locking thereto in the opposite direction. 22nd. The method of propulsion, consisting of first sliding forward a mobile portion of the gear, then locking the same to the track and causing the load to approach such portion. 23rd. The method of obtaining increased traction without increase of weight, consisting in positively locking the motor to the track. 24th. The combination, with an electro-magnet, of polar extensions mounted upon or attached to the cores of the magnet so as to have movement thereon to and from each other. 25th. The combination of a disc rigidly mounted upon an axle and an electro-magnet, with movable polar extensions, between which the disc rotates. 26th. An electro-magnetic railway brake, consisting of an electro-magnet constructed to grasp between its poles a rotating portion of, or attached to the running gear. 27th. The combination of a series of insulated wheels and commutator brushes on different cars of a train and circuit connections through all, upon each side re-

spectively to the motor. 28th. The combination of an extra rail connected electrically in sections, and an extra wheel or wheels upon the car frame or car frames, but insulated therefrom for completing the circuit. 29th. The combination of an extra insulated rail, electrically connected in sections, and connected to one pole of the source of electricity, with the ordinary or traffic rails, one or both connected to form the other terminal of the source of electricity or ground or part of the return circuit therefor. 3 th. The combination, with the rail, of a glass or insulating shoe. 31st. The combination, with the rail and a metallic shoe, of glass insulating plates interposed between the rail and shoe. 32nd. The combination, with the rails of a track forming an electric circuit of an insulating cushion or shoe placed between the rails and the ties. 33rd. The combination, with the insulating cushion or shoe interposed between the rails and the ties, of a solid washer or piece placed between the spike and the cushion or shoe for protecting the latter. 34th. A line of rail electrically connected to form a circuit, or part of a circuit, and having the foot and web of the rails covered with an electric insulating composition.

No. 12,569. Self-Discharging Ballasting Car.

(*Char-tombereau à gravier.*)

James W. McDonald, Campbellton, N. B., 4th April, 1881; (Extension of Patent No. 6,130.)

No. 12,570. Improvements on Manufacturing Paper Pulp from Wood. (*Perfectionnements dans la fabrication de la pâte à papier de bois.*)

George D. King, Oswego, N. Y., U. S., 4th April, 1881; for 5 years.

Claim.—1st. Reducing the wood to a coarse fibrous state by saws, or other equivalent instrumentalities, and subsequently grinding said fibrous wood, in either a dry or wet state, by passing it between emery or corundum faced grinding stones. 2nd. In a wood pulp grinding mill, the grinding stones *c e* constructed and arranged to operate together so as to present emery or corundum faced grinding surfaces only to the wood while being ground.

No. 12,571. Improvements in Steam Actuating Valves and Valve Gear for Direct Acting Engines. (*Perfectionnements aux tiroirs de vapeur et aux garnitures, pour les machines à simple effet.*)

George H. Reynolds, Thomas J. Rider, Cornelius H. Delamater and George H. Robinson, New York, U. S., 4th April, 1881; for 15 years.

Claim.—1st. The combination, in a direct acting engine, of a main valve auxiliary pistons for moving said main valve, an auxiliary cylinder containing both said main valve and said pistons, and an auxiliary valve adapted to be turned or oscillated to admit steam to act upon said piston. 2nd. The combination of a main valve auxiliary cylinder, auxiliary pistons for moving said main valve, and an auxiliary valve adapted to be turned or oscillated to admit steam to act upon the auxiliary pistons, and arranged with its axis in line with said pistons. 3rd. The combination of a main valve, an auxiliary cylinder, auxiliary pistons for moving said main valve, an auxiliary valve to admit steam to act upon said auxiliary pistons, and an auxiliary valve chest arranged at the end of said cylinder and forming a head therefor. 4th. The combination of an auxiliary cylinder C, a main valve D, auxiliary pistons D_1, an oscillating auxiliary valve E_1, an auxiliary valve chest E comprising steam and exhaust chambers *d e* and the ports $d_1 e_1 f_5 f_6 f_7 f_8$. 5th. The combination of a main valve, an auxiliary cylinder having an exhaust port at some distance from its end, and an auxiliary piston constructed with an annular groove near its end and with a port or passage leading from said annular groove through the end of the piston, whereby said piston is cushioned by the exhaust steam at the termination of the stroke. 6th. The combination of a main valve, an auxiliary cylinder having an exhaust port at some distance from its end, an auxiliary piston constructed with an annular groove near its end and with a port or passage leading from said annular groove through the end of the piston, and a plate or washer having a hole or aperture corresponding to said port or passage and adapted to be adjusted to more or less close said port or passage. 7th. The combination of a main valve, an auxiliary piston or pistons, for moving the same, an independent auxiliary valve for admitting steam to act upon said piston or pistons, a valve stem for said auxiliary valve, a reciprocating piston rod, a bar attached to said valve stem and constructed with a slot, having a cam like face at each end, and an arm fixed to said piston rod and engaging with the slot in said bar. 8th. The combination of a piston rod, a stationary rack and a hand lever having a pivotal connection with said piston rod, which forms a fulcrum for said lever and comprising a toothed sector for engaging with said rack. 9th. The combination of a piston rod B_1 having a projecting pin or stud *i*, a stationary rack H_2 and a lever H comprising a toothed sector H_1, and having an opening *i* and a pin i_2 inserted transversly across said opening.

No. 12,572. Hay Press. (*Presse à foin.*)

Louis H. Hébert, Grande Ligne, Que., 4th April, 1881; for 5 years.

Claim.—1o. Une chèvre ou machine à presser les tiges de suspension *b* attachées directement aux boulons, essieux ou pivots fixés dans les extremités des étais B. 2o. La crémaillere à double face D placée de manière à s'engager entre les deux sections de pignons dentés *c* et guidée par les glissières *d* ainsi que le couperet E.

No. 12,573. Improvements in Apparatus for Heating, Pickling and Swilling Metal Plates and other Wares. (*Perfectionnements aux appareils à chauffer, décaxer et rincer les plaques métalliques et autres objets.*)

Richard J. Hutchings, William Trick, Swansea, S. W., and John W. Hughes, London, Eng., 4th April, 1881; for 5 years.

Claim.—1st. In a pickling and swilling machine, the employment of an open frame-work or cradle revolving continuously, reciprocally or intermittently, in conjunction with a pickling or swilling bath rotated continuously or otherwise, provided with ribs or projections, and supported by friction wheels. 3rd. The construction and employment of a frame work or cradle, made of brass and preferably in one casting, whether rotary or stationary, and capable of being easily removed with the contained plates from one bath to another by hydraulic or other suitable appliances. 4th. The employment of baths for pickling and for swilling arranged side by side on a platform, the said baths being provided with a central sleeve which forms a jacket for the central shaft and clutch gear working the cradles, in combination with intermittently rotating cradle carrying arms actuated and operating as set forth. 5th. In combination with single or double vats and their cradle, or cradles, a single or double throw crank which, by connecting rod, spring buffer, and arm on a central shaft, imparts to the cradle or cradles an oscillating movement around a vertical centre, the cradle being geared or clutched to the shafts. 6th. In combination with single or double vats and their reflective cradles, the employment of a cross head connected by rod to the arms on the central shafts, the said cross head traversing slide bars, being driven direct from a cylinder, or through gearing for imparting the oscillating motion to the cradles at the desired speed. 7th. Imparting the oscillating or reciprocating motion to the central shaft, or shafts, direct from a stationary or oscillating cylinder. 8th. One or more incline pickling or swilling baths provided with rails and at the summit a turn table, by which the cradles, which have wheels and run on the rails, are directed into the desired vat and actuated therein by a steam cylinder or in any convenient manner. 9th. The employment of two or more cradles working in opposite directions, either vertically, horizontally, or rocking in one bath either for pickling or swilling. 10th. The formation of one or more cam tracks, or equivalents, on the bath or baths, for giving a raising, falling or screw like movement to the cradles when in work.

No. 12,574. Improvements on Telegraphy. (*Perfectionnements à la télégraphie.*)

Orazio Lugo, New York, U. S., 4th April, 1881: for 5 years.

Claim.—1st. In the art of transmitting intelligible signals by electricity, the method set forth of preventing induction which consists in passing the direct current through the axial conductor of a solenoid, the return current traversing the helix, or vice versa. 2nd. An electric telegraphic or telephonic circuit composed of a solenoid. 3rd. In a solenoid, the helix of which is of equal resistance with the axial conductor per unit of length of the latter. 4th. In combination with the transmitting and receiving devices of an electric telegraphic or telephonic circuit, the line wire or cable, in the form of a solenoid. 5th. A compound electric conductor consisting of two or more parallel single conductors formed into a helix and united in multiple arc, at their extremeties, with a single electric conductor, placed in the longitudinal axis of said helix, the simple and compound conductors forming respectively, the direct and return portions of an electric circuit. 6th. The combination of an electric conductor in the form of a helix, a second electric conductor placed in the longitudinal axis of the said helix, an apparatus for transmitting electrical pulsations, placed between and connected with the respective terminals of said conductors at one station, and an apparatus for producing physical effects by means of electrical pulsations, placed between and connected with the respective terminals of said conductors, at another station. 7th. The combination of the direct and helical conductors with signalling apparatus forming a portion of each conductor, a short circuiting switch to throw the instrument in or out of circuit, rheostat to compensate variations in the resistance of the conductors occasioned by switching the instruments into or out of circuit. 9th. The combination of the direct and helical conductors, signalling apparatus forming a portion of each conductor, a shunt and a switch to throw a portion of the apparatus into or out of circuit. 10th. The combination of the direct and helical conductor signalling apparatus forming a portion of each conductor, a shunt, a switch and rheostat. 11th. The combination of the direct and return conductor signalling apparatus forming a portion of each conductor, a rheostat in each conductor, a switch and a shunt.

No. 12,575. Instrument for Measuring Lines. (*Instrument pour mésurer les lignes.*)

François P. d'Opdorp, Brussels, Belgium, 4th April, 1881; for 5 years.

Claim.—1st. The combination, with an instrument for measuring curved or irregular lines, of a pin or pencil attached to a spring rod in the handle of the instrument, for the purpose of making marks at measured distances on a curved or irregular line. 2nd. The combination, with the crutch D to disk A and the screw threaded shaft B, of the pin or pencil L, the arm of rod G and spring H.

No. 12,576. Process for Preparing Tan Bark. (*Procédé pour préparer l'écorce à tan.*)

Jonathan Sherman, Chicago, Ill., U. S., 14th April, 1881; (Extension of Patent No. 6,122.)

No. 12,578. Improvements in the Art of Extracting Copper from Ore. (*Perfectionnements dans l'art d'extraire le cuivre du minerai.*)

Thomas S. Hunt, Montreal, Que., and James Douglas, jr., Phoenixville, Pa., U. S., 4th April, 1881; for 5 years.

Claim.—1st. The method of separating copper from its chloride solution and of simultaneously generating hydrochloric and sulphuric acids, whichf consists in adding to such solution sulphurous acid, whereby dechloride o copper is thrown down in the solid form to be subsequently reduced to th metallic state and hydrochloric and sulphuric acids are set free, and in add ing the acid liquor so obtained as a solvent to oxidized compounds of copper, whereby chloride of copper is again formed and separated in solution from insoluble metals, and the process of copper extraction and precipitation thus rendered continuous with the same liquors.

No. 12,578. Improvements in Spring Tooth Harrows. (*Perfectionnements aux herses à dents élastiques.*)

Thomas Gray, Oshawa, Ont., 4th April, 1881; for 5 years.

Claim.—1st. The combination, with the frame, of tooth supporting bars

provided with tilting and fastening lugs and adapted to turn or rock so as to adjust the angle of the teeth to the ground. 2nd. The combination of the bars supporting the spring teeth, lugs D D1, bolts *d d1* and frame A. 3rd. The combination, with the spring teeth provided with an offset at the butt end, and the tooth bar, of the recessed socket and fastening wedges.

No. 12,579. Boot and Shoe Sewing Machine.

(*Machine à coudre les chaussures.*)

Charles Goodyear, jr., (Assignee of Christian Dancel,) New York, U. S., 4th April 1881; (Extension of Patent No. 6,164.)

No. 12,580. Boot and Shoe Sewing Machine.

(*Machine à coudre les chaussures.*)

Charles Goodyear, jr., (Assignee of Christian Dancel,) New York, U. S., 4th April, 1881; (Extension of Patent No. 6,168.

No. 12,581. Improvements in Pantaloon Suspenders. (*Perfectionnements aux bretelles.*)

William Turner and Henry Turner, Montreal, Que., 4th April, 1881; for 5 years.

Claim.—The combination of the fork B provided with pulley block C, the shoulder strap A having the cords G H attached thereto.

No. 12,582. Improvements in Machines for Converting Reciprocating Motion into Rotary Motion. (*Perfectionnements aux machines à convertir le mouvement de va-et-vient en mouvement rotatoire.*)

Frederic B. Nichols and Cathcart Thomson, Halifax, N. S., 4th April, 1881; for 5 years.

Claim.—1st. The toothed wheels D X with their pawl carriers and pawls, in combination with the reciprocating toothed rack H or its equivalent, and the intermediate toothed wheel I, 2nd. The combination of a reciprocating piston rod, or its equivalent, with a toothed rack and two toothed wheels carrying pawls that work alternately into ratchets, one of the said wheels X being connected with the rack by the intermediate toothed wheel I. 3rd. The spring F attached to the pawls. 4th. The pawl spring F in combination with the ring-shaped cams M M and cam springs *b b1*, or their equivalents. 5th. The substitution of smooth faced wheels and rack, or friction gearing, for toothed wheels and racks in the combination specified.

No. 12,583. Improvement in Bed Bottoms.

(*Perfectionnement des sommiers des lits.*)

David Duncan, Simcoe, Ont., (Assignee of Charles W. Purcell and Samuel Purcell, Lundy's Lane, Pa., U. S.,) 6th April, 1881; (Extension of No. 5,943.)

No. 12,584. Improvements on Milk Pans.

(*Perfectionnements aux boîtes à lait.*)

Henry A. Hannum, Cazenovia, N. Y., U. S., 6th April, 1881; (Extension of Patent No. 5,896.)

No. 12,585. Improvements in Sap Buckets.

(*Perfectionnements aux seaux à sève.*)

Elijah E. Spencer, St. Armand East, Que., 6th April, 1881; (Extension of Patent No. 5,910.)

No. 12,586. Fastener for Sidewalks. (*Crampon pour les trottoirs.*)

William Brisley, Toronto, Ont., 6th April 1881; Extension of Patent No. 5,913.)

No. 12,587. Improvements on Horse Powers.

(*Perfectionnements aux manéges.*)

John H. Elward, Stillwater, Min., U. S., 6th April, 1881; (Extension of Patent No. 11,174.)

No. 12,588. Improvements on Horse Powers.

(*Perfectionnements aux manéges.*)

John H. Elward, Stillwater, Min., U. S., 7th April, 1881; (Extension of Patent No. 11,174.)

No. 12,589. Improvements on Core Augers.

(*Perfectionnements aux tarières à âmes.*)

Owen W. Townsend, Fond du Lac, Wis., U. S., 7th April, 1881; (Extension of Patent No. 6,038.)

No. 12,590. Improvements on Water Filters.

(*Perfectionnements aux filtres à eau.*)

John A. Savage, Toronto, Ont., 7th April, 1881; for 5 years.

Claim.—1st. The construction and combination of the tube C and the cup D of the inner vessel, so as to secure the use of two separate filtrates and double filtrations, first downwards, then upwards. 2nd. The construction and combination of the tube C with the cup D of the inner vessel, in such a manner as that they may be easily detached from each other, in order to have the filtrates removed therefrom to be properly cleansed when required.

No. 12,591. Improvements on Gas Producers.

(*Perfectionnements aux générateurs à gaz.*)

Quentin L. Brin and Arthur Brin, Paris, France, 7th April, 1881; for 5 years.

Claim.—1st. The employment of compressed air in a retort containing barytic, or other oxygen absorbent material, for the purpose of obtaining a uniform and perfect oxidation of all the said material, and subsequently withdrawing the oxygen therefrom. 2nd. The combined method for the production of oxygen and nitrogen according to which air is firstly passed into one or more heated retorts containing barytic, or other oxygen absorbent material, the nitrogen being liberated and, secondly, the oxygen is drawn off from the absorbent material by a partial vacuum, the temperature of the retorts during the said two stages being automatically regulated by means of any suitable pyrometer appliance. 3rd. The combined method for the production of oxygen and nitrogen according to which atmospheric air, after having been first deprived of its carbonic acid and rendered suitably moist, is forced through barytic or other oxygen absorbent material contained in one or more retorts, heated to a dull red heat, the nitrogen being liberated and, secondly the oxygen is drawn off from the absorbent material by a partial vacuum, while the retort is kept at a sensibly brighter red heat, the temperature, during the said two stages, being automatically regulated by means of any suitable pyrometer appliance. 4th. The mode and means for automatically regulating the air supply to the retorts and to the retort furnaces. 5th. The combination of the barometric pump with a clock work appliance, pyrometer appliances and electro-magnetic appliance, for the purpose of automatically regulating and determining the air admission to the retort, the time of the oxygen absorbtion by the barytic or other absorbent material, the time of its extraction therefrom, and the required temperatures of the retort. 6th. The combination of parts forming the improved apparatus for the production of oxygen and nitrogen, as described with reference to the drawings.

No. 12,592. Improvements on Ice Creepers.

(*Perfectionnements aux crampons à glace.*)

Charles E. Friel, Fredericton, N. B., 7th April, 1881; for 5 years.

Claim.—The combination of the plate A B, sliding latch C, crank D and spur or creeper F.

No. 12,593. Improvements in Baby Jumpers.

(*Perfectionnements aux escarpolettes.*)

Charles H. Land, Detroit, Mich., U. S., 7th April, 1881; for 5 years.

Claim.—1st. A base board and a spring board united directly together at their front ends at an acute angle and supported by a wedge-shaped block. 2nd. The combination of a base board, a spring board and a sliding crib having two openings for the passage of the child's lower limbs, the crib being adapted to slide forward upon the spring board to close the openings and form a crib for the child to lie in. 3rd. The combination, with a base board, a spring board and a crib, of pivoted supports or props for sustaining the jumper in one upright or inclined position. 4th. The combination, with a base board, a spring board and a crib, of pivoted supports or props, and a cross bar attached in rear of pivoted supports.

List of Patents issued up to 26th April, 1881, but not yet Officially published in the Patent Office Record.

No. 12,611. Joseph Kieffer, Montreal, "Kieffer's Counter Machine," (Extension of 2nd Patent from 5,955 for 5 years, 11th April, 1881.

No. 12,612. Melville Clemens, City of Worcester, Mass., U. S. A., "Clemens Controlling Nozzle," (Extension of 2nd Patent No. 6,046, for 5 years. (Assignee to The Eaton Cole and Burnham Company 11th April, 1881.)

No. 12,613, St. G. L. Fox, London Eng., "Lane Fox's system of Electric lamps and electric lighting," 11th April, 1881.

No. 12,614 Ed. Keeler, Boston, Mass., U.S.A., "Anderson's Improved Netting Machines," 11th April 1881.

No. 12,615. Arch. Filshie, Elora, Ont., "Filshie's Improvements on Threshing Machines," 11th April, 1881.

No. 12,616. Ed. Lane, New Perth, Prince Edward Island "Common Sense Potato Digger," 11th April, 1881.

No. 12,617. G. Smith, Astoria, N. Y., U.S.A., "Smiths Duplex Telegraph," 11th April 1881.

No. 12,618. J. Danner, Canton, Ohio, U.S.A.. "Danner's Revolving Bookcase," (Re-issue) 11th April, 1881.

No. 12,619. J. H. Elward, Stillwater, Minnesota, U. S. A., "Elward's Threshing machine," 13th April 1881.

No. 12,620. P. de Villiers, St. Leonards, England, de Villiers Mirium Silver," 13th April, 1881.

No. 12,621, J. W. Meaker, Auburn, N. Y., U.S.A., "Meaker's Coin Pocket Book," 13th April 1881.

No. 12,622. Jas. Dunn, Port Hope, Ont., "Dunn's Eave Trough Former," 13th April 1881.

No. 12 623. J. Gladstone, Salem, Ont., The Elora Improved Grain Saving machine," 13th April, 1881.

No. 12,624. F. Patrick, Brownville, N. Y., U.S.A., "Patrick's Improved Hay unloader," 13th April 1881.

No. 12,625. J. A. Rafter, Montreal, Que., "The Defiance Smoke Consumer," 13th April, 1881.

No. 12,626. A. J. Nellis, Pittsburg, Penn., U.S.A., "Nellis' Electric Spring Agitator," 13th April, 1881.

No. 12,627. J. E. Curd, Charleston, Ill., U.S.A., "Curd's Splicing Device," 13th April, 1881.

No. 12,628. H. K. Porter, Boston, Mass., U.S.A., "Porter's Easy Bolt Clipper," 13th April 1881.

No. 12,629. C. Heinzeirling, Frankfort on the Maine, Germany, "Heinzeirling Tanning Process," 13th April, 1881.

No. 12,630. E. Warren, Jackson, Michigan, U.S.A., "Warren's Improved Whiffletree," 13th April 1881.

No. 12,631. H. A. Clark, Boston, Mass., U.S. A., Clark's Process of Restoring Waste Vulcanized India Rubber, and Gutta Percha." 13th April, 1881.

No. 12,632. W. Chisholm Cleveland, Ohio, U.S.A., "Chisholm's Shovel Spade and Fork," 13th April, 1881.

No. 12,633. C. S. Dean, Crowland, Ont., "Dean's Improved Sawing machine," 15th April, 1881.

No. 12,634. H. A. Gouge, New Rochelle, N. Y., U. S. A., "Gouge's Car Heater and Ventilator," 15th April, 1881.

No. 12,635. G. F. Harris, New York, U.S.A., "Harris' Construction Car," 15th April 1881.

No. 12,636. J. W. Ricker, Chelsea, Mass., U.S.A., "Ricker's Improved Corn Sheller," 15th April, 1881.

No. 12,637, J. E. Winner and H. K. Fox, Philadelphia, Penn, U.S.A., Winner's Protector," (Extension of Patent No. 5,958), 18th April, 1881.

No. 12,638. C. C. Bradley, Syracuse, N. Y., U.S.A., "Christopher C. Bradley's Harvester," (Extension of Patent No. 6,605), 18th April, 1881.

No. 12,639. J. Brown, Lancaster, Ohio, U.S.A., "Brown's Improved Bed Bottoms," 18th April, 1881.

No. 12,640. C. Hooper, Caro, Michigan, U. S. A., "Hooper's Door Check," 18th April, 1881.

No. 12,641. H. Frasch, Clevland O., U.S.A., "Frasch's Apparatus for the Fractional Distillation of Petroleum," 18th April, 1881.

No. 12,642. M. Birmingham O'Neill, Halifax N.S., "O'Neill's Ash Pan for Locomotive Engines," 18th April, 1881.

No. 12,643. J. Ross, London, Ont., "Ross' Triumph Fruit Picker," 18th April, 1881

No. 12,644. W. Ross, Toronto, Ont., "Robertson's Cross-Cut Saw Handle." 18th April, 1881.

No. 12,645. L. D. Goodwin, Sweetsburg, Que., "The Farmers Favorite Butter Tub," 18th April, 1881.

No. 12,646. I. S. Davis, Detroit, Mich., U.S.A., "The Union Spring," 19th April, 1881.

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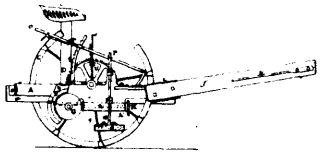

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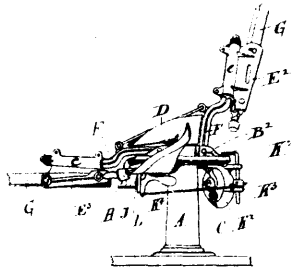

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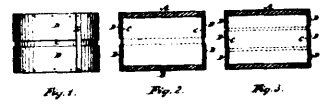

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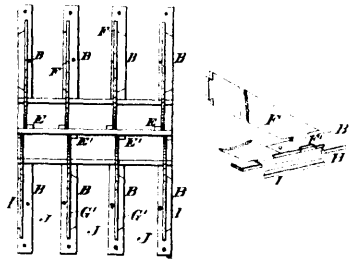

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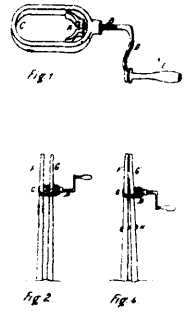

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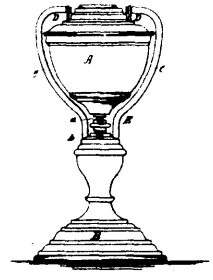

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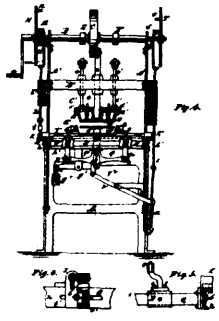

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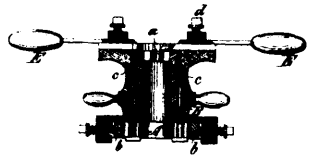

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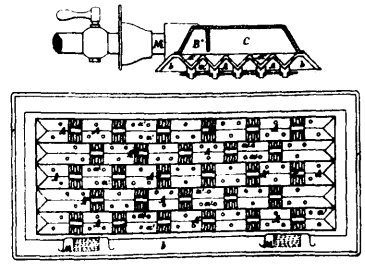

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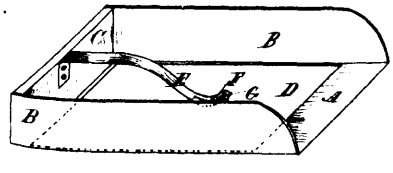

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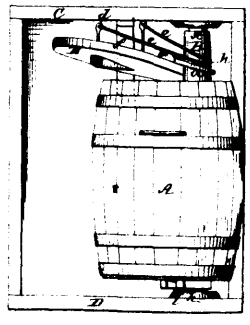

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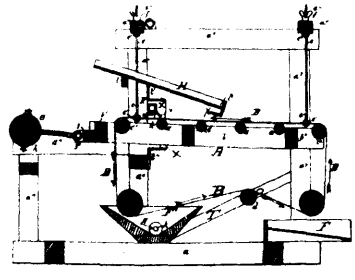

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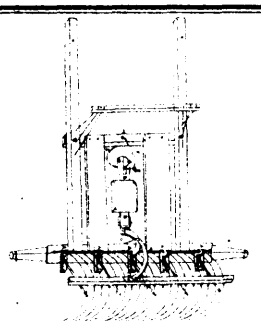

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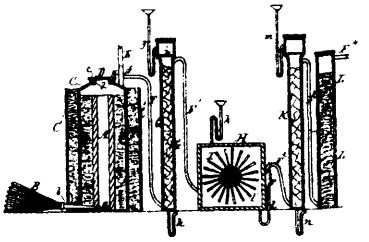

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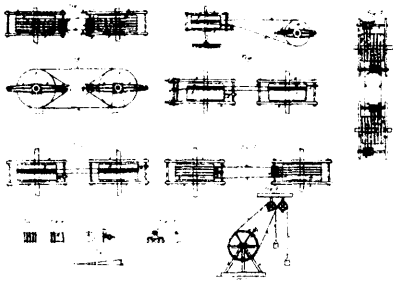

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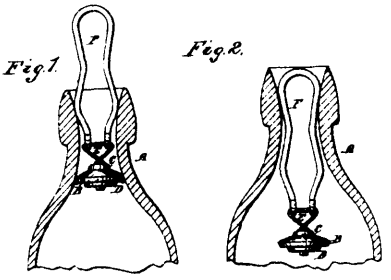

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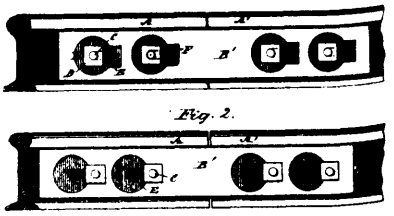

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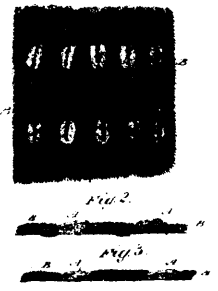

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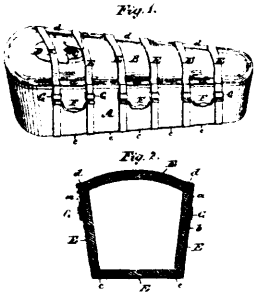

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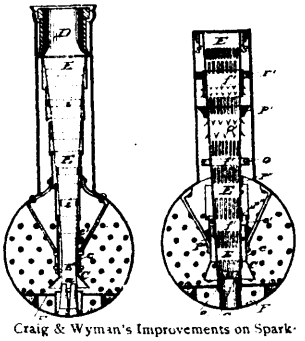

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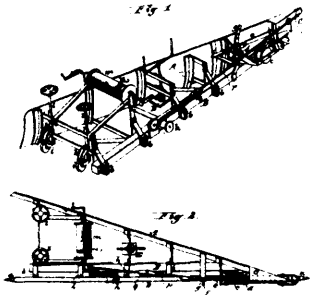

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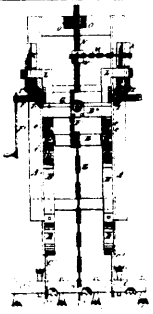

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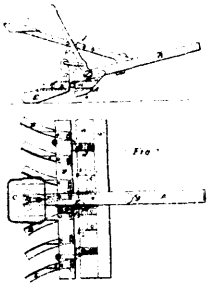

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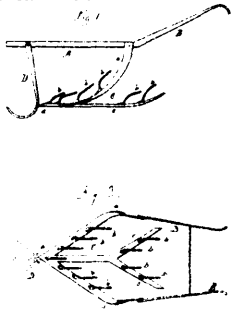

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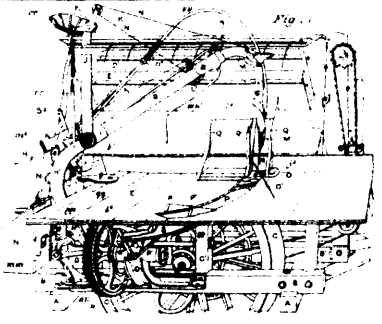

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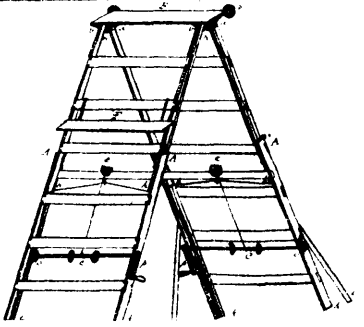

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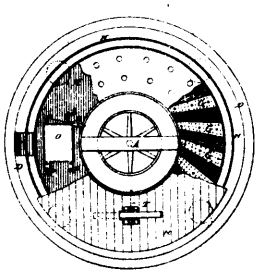

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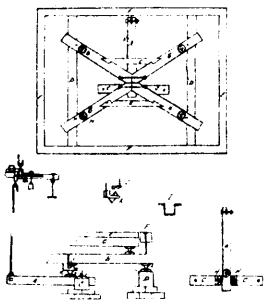

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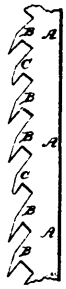

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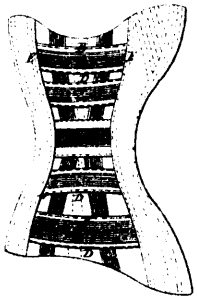

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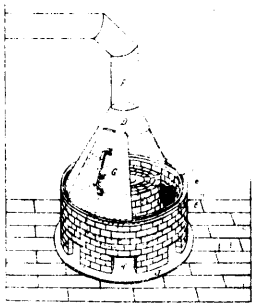

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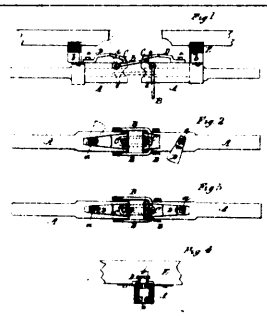

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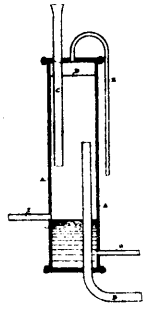

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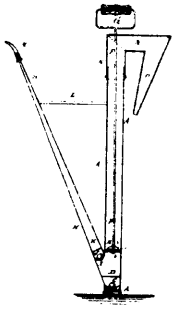

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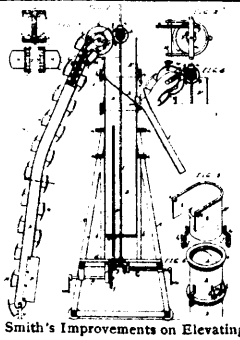

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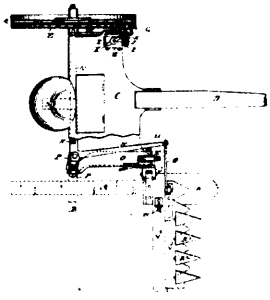

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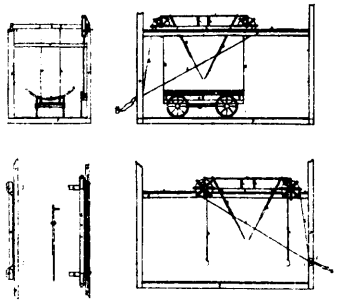

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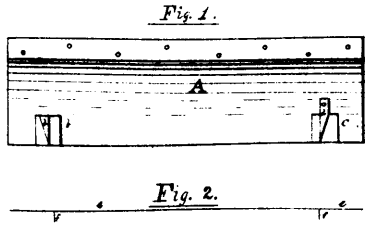
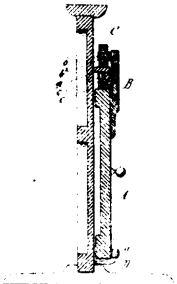
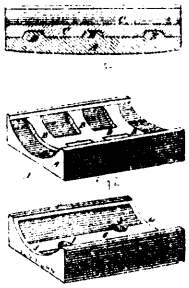


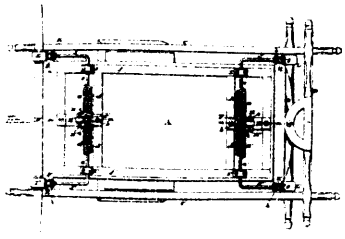
12563 Craig's Improvements on Stave Knives.



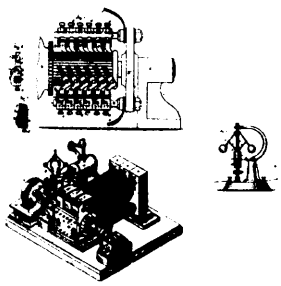
12564 Kidder's Sliding Door.



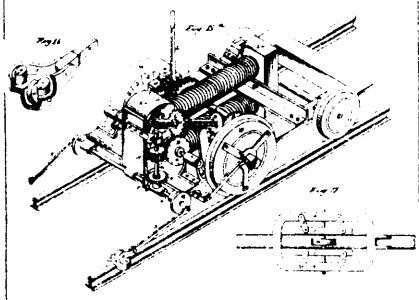
12565 Downs' Improvements on Journal Bearings.



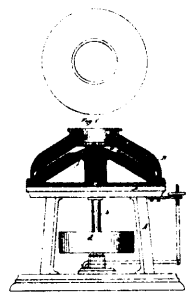
12566 Rice's Improvements on Vehicle Springs.



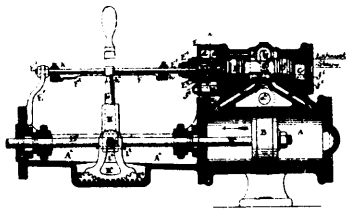
12567 Edison's Improvements on Dynamo-electric Machines.



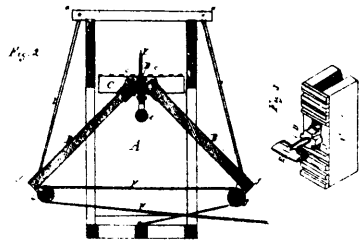
12568 Edison's Improvements on Electro-magnetic Railways.



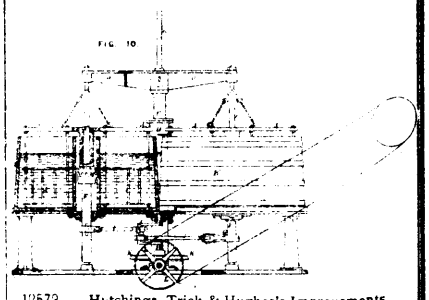
12570 King's Improvements on Manufacturing Paper Pulp from Wood.



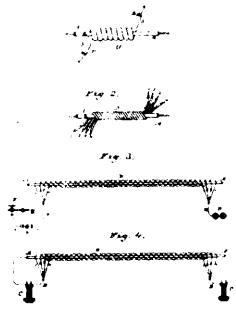
12571 Reynolds & Rider's Improvements in Steam Actuating Valves and Valve Gear for Direct-acting Engines.



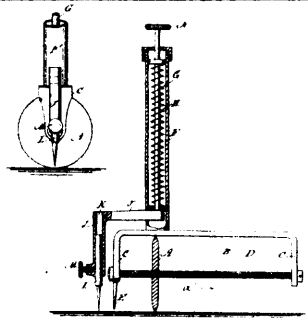
12572 Hébert's Hay Press.



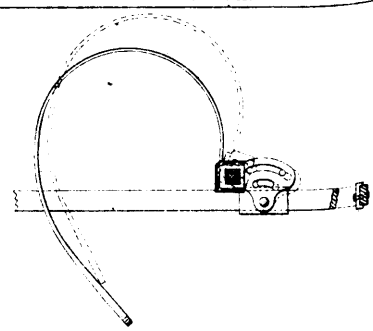
12573 Hutchings, Trick & Hughes's Improvements in Apparatus for Heating, Pickling and Swilling Metal Plates and other Wares.



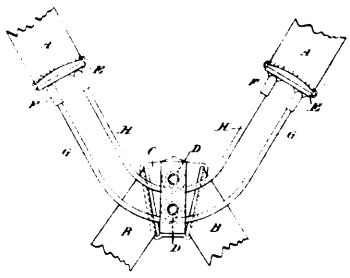
12574 Lugo's Improvements on Telegraphy.



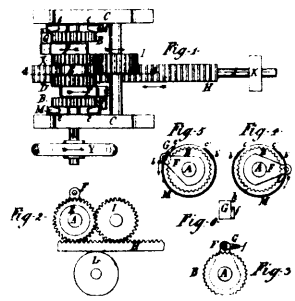
12575 D'Opdorp's Instrument for Measuring Lines.



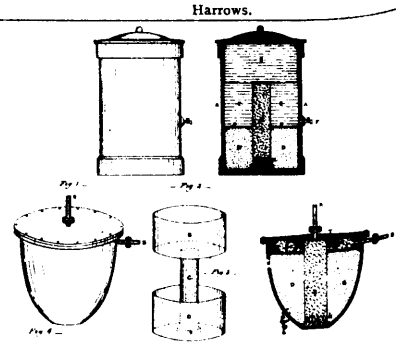
12578 Gray's Improvements in Spring Tooth Harrows.



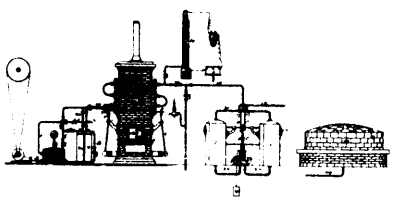
12581 Turner's Improvements in Pantaloon Suspenders.



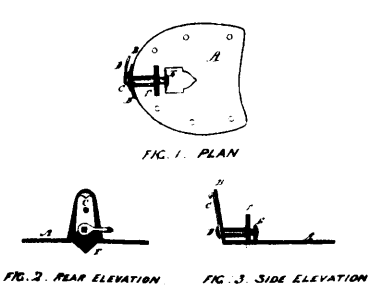
12582 Nich[illegible] Improvements in Machines for Converting Reciprocating Motion into Rotary Motion.



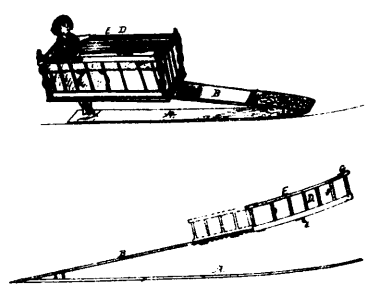
12590 Savage's Improvements on Water Filters.



12591 Brin's Improvements on Gas Producers.



12592 Friel's Improvements on Ice Creepers.



12593 Land's Improvements in Baby Jumpers.