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### CONTENTS.

INVENTIONS PATENTED.....	227
INDEX OF INVENTIONS.....	CCXLV
INDEX OF PATENTEES.....	CCXLVI
ILLUSTRATIONS.....	251

### INVENTIONS PATENTED.

**No. 13,306. Gas Motor Engine.** (*Machine à gaz.*)  
Nicholas A. Otto, Dentz, Germany, 23rd August, 1881; (Extension of Patent No. 6,479.)

**No. 13,307. Gas Motor Engine.** (*Machine à gaz.*)  
Nicholas A. Otto, Dentz, Germany, 24th August 1881; (Extension of Patent No. 6,479.)

**No. 13,308. Improvements on Axle Boxes.**  
(*Perfectionnements aux boîtes à graisse.*)

Joseph N. Smith, Jersey, N. J., U. S., 24th August, 1881; (Extension of Patent No. 9,173.)

**No. 13,309. Stove Grate.** (*Grille de poêle.*)  
George H. Hansbury, Milwaukee, Wis., Alfred S. Hubbell and Henry S. Hubbell, Buffalo, N. Y., U. S., 24th August, 1881; (Extension of Patent No. 6,603.)

**No. 13,310. Stone Extractor.** (*Charriot épierreur.*)  
Joseph Filion, St. Eustache, Que., 24th August, 1881; (Extension of Patent No. 6,614.)

**No. 13,311. Improvements on Stand Boilers.**  
(*Perfectionnements aux chaudières verticales.*)

William W. Austin, Lowell, Mass., U. S., 24th August 1881; for 5 years

*Claim.*—1st. The combination of a stand boiler shell A, a cold water induction pipe B entering said shell A, pipe C to carry the cold water from the bottom of the boiler, and a hot water induction pipe D<sup>1</sup> entering the upper end of the boiler, with a deflector g adapted to direct the hot water nearly horizontally in the upper portion of the boiler. 2nd. The combination of a stand boiler shell A, a hot water carrying pipe D on the outside of said shell, having an induction pipe at d in the side of the boiler pipe D<sup>1</sup> entering the top of the boiler, and three way cock f. 3rd. The combination of a stand boiler shell A, a pipe B to admit cold water entering through the bottom of said boiler shell A, a pipe B to admit cold water entering through the bottom of said boiler, and a pipe D<sup>1</sup> to admit hot water entering the upper part of said boiler, with a coil D. 4th. The combination of stand boiler shell A, a pipe D<sup>1</sup> entering the upper part of said boiler and provided with a deflector g, or its equivalent, with the perforated plates L secured in the interior of said boiler. 5th. The combination of a stand boiler shell A, a pipe B to admit cold water entering through the bottom of said boiler, and extending upward a short distance within the interior of said boiler, and a pipe C leading from the interior of the boiler to the range passing through the bottom of the boiler, its upper end within the boiler being above the inner end of the pipe B, and a sediment discharging pipe E extending from the lower end of the boiler.

**No. 13,312. Improvements in Hand Power.**  
(*Perfectionnements aux machines à bras.*)

Joseph Ouellet, Jonction de la Chaudière, and Paul E. Grandbois, Fraserville, Que., 24th August 1881: 1881; for 5 years.

*Claim.*—1st. The combination of a shaft provided with two oppositely projecting cranks and operating lever, and two pitmen extended from opposite ends of said lever to the respective cranks. 2nd. In combination with the lever and its movable guide, the shaft provided with two cranks and the pitman connecting the respective cranks with the opposite end of the levers. 4rd. The combination of a lever, a movable or yielding guide to prevent end motion of the lever, a shaft

provided with two oppositely projected cranks, and two pitmen extended from the cranks to opposite ends of the lever. 4th. The combination of the base frame, the vertically slotted standard C, lever B, trunnions h, shaft A having cranks a b, and the pitman c d.

**No. 13,313. Improvements on Snow Clearing Machines.** (*Perfectionnements aux machines à nettoyer la neige.*)

John W. Close Buffalo, N. Y., U. S., 24th August 1881: for 5 years.

*Claim.*—1st. In a snow clearer with hollow walls A A and steam spaces C, an arrangement for receiving and distributing steam or other heat, in combination with receptacle B for melted snow, and devices for throwing or conducting it to either side of the road or track. 2nd. In combination with the snow receptacle in the bottom B of the snow clearer, the ejectors K L and the ejection pipe M connected with any suitable pump I, also the steam heated wheel for the purpose of throwing melted, or partially melted snow from the receptacle to the side of the track or road.

**No. 13,314. Improvements on Snow Ploughs.**  
(*Perfectionnements aux charrues à neige.*)

Patrick H. Mentzer, Thomas J. Mentzer and John Mentzer, (Assignee of William W. Button), Shenandoah, Iowa, U. S., 24th August 1881; for 5 years.

*Claim.*—1st. The snow plough composed of the turntable B, pivoted beam C, ways D, pin E, cutter F, wings J, chains K and windlass M provided with ratchet wheel O and pawl N. 2nd. The combination, with the beam C, of the wings J hinged to the rod H and chains K, whereby when the plough moves forward the wings are shut, and when backward the wings are opened and the snow drawn backward and discharged upon either side. 3rd. The combination, with the beam C, bolt e and turntable B, of the pin E and perforated ways D, whereby the plough may be turned to either side and fixed in position. 4th. The combination, with the beam C, wings J and chains K, of the windlass M provided with ratchet wheel O, pawl N and handles P, whereby the wings may be adjusted when the plough is about to be backed.

**No. 13,315. Improvements on Electric Arc Lights.** (*Perfectionnements aux lumières électriques en arc.*)

Thomas A. Edison, Mento Park, N. J., U. S., 26th August 1881: for 15 years.

*Claim.*—1st. The method of producing a steady arc and insuring the smooth consumption of the carbons in an electric arc light employing carbon pencils or rods, consisting in revolving one or both of such carbon pencils or rods. 2nd. The combination of the carbon pencils or rods with a motor or mechanism, for revolving either or both of such carbon pencils or rods. 3rd. The combination of the motor or mechanism for revolving either or both of the carbon pencils or rods, with a guide or guides, near the point of the revolving carbon or carbons. 4th. The combination, with the carbon pencils or rods, of an electro motor, for revolving either or both of the carbon pencils. 5th. The combination, with a motor or driving mechanism, of a carbon holding rod, sliding freely through a part revolved by the motor, but connected so as to turn with such part, and mechanism for controlling the longitudinal movement of such rod. 6th. The combination with the carbon holding rod, of the armature lever, playing between two magnets, and governing the feed of the carbon carried by such rod. 7th. The combination carbon holding rod, of the armature lever controlled by two magnets connected in multiple arc, such lever being connected with the holding rod so as to govern its movement. 8th. The combination, with the rod D, of the armature lever G controlled by magnets H I, and carrying pawls o k having arms l m, and the stops n o.

**No. 13,316. Improvements on Composite Roofs.** (*Perfectionnements aux toitures composites.*)

John Brokenshire, Kingston, Ont., 26th August 1881. for 5 years.

*Claim.*—1st. A roof constructed by laying felt over flat strips of wood running up and down from ridge to eaves, and in covering the same with cement. 2nd. Tapping the edges of the next felt roll over the sides of the previous one, and tacking the same on the strips of wood over which the felt is laid, thus permitting freedom of movement in the felt

between the strips, in order to prevent the roof from cracking and covering the whole with cement.

**No. 13,317. Improvements in the Manufacture of Gas.** (*Perfectionnements dans la fabrication du gaz.*)

John Dixon, Liverpool, Eng., 16th August 1881; for 5 years.

*Claim.*—1st. In generating illuminating gas from metals, earths, earthy bases, acids, carbon and hydrocarbon substances, or liquids and other chemicals such as herein defined, by subjecting such materials or some of them, to a cherry-red heat in closed retorts, and intermittently injecting mixtures such as are above mentioned conveyed in solution by kerosine, or other equivalent, as a vehicle. 2nd. Generating illuminating gas from hydrocarbon liquids such as kerosine, in combination with certain metals, earths, earthy bases, acids, carbon or other chemicals, such as herein defined, by the chemical heat resulting from the combining of such ingredients, or some of them, in closed retorts, subjected to a cherry-red heat. 3rd. The use, in the manufacture of gas, of the several mixtures for the primary charge of the retorts. 4th. The use, in the manufacture of gas, of the secondary charge. 5th. Recovering the vehicle such as kerosene used in the generation of illuminating gas by extraction such kerosene from the gas in the hydraulic or first main and afterwards distilling and re-using the vehicle and the residuary products. 6th. The construction and arrangement of retorts used for generating gas. 7th. The construction and arrangement of retort supplier cisterns and the connection and combination of such retort supplier cisterns with the retorts.

**No. 13,318. Improvements on Flying Targets.** (*Perfectionnements aux cibles volantes.*)

George Ligowski, Cincinnati, Ohio, U. S., 26th August 1881; for 5 years.

*Claim.*—1st. A concave or dish-shaped "flying target" composed of a suitable fragile material and having a tongue permanently attached to its exterior. 2nd. The tongue C glued or cemented to the exterior of a "flying target" and strengthened by a slotted washer D E or its equivalent. 3rd. A concave or dish-shaped flying target having attached to it a tongue or equivalent device that ensures an axial rotation of said target, when it is thrown from a trap. 4th. A dish or concave target adapted to be rotated axially by a force applied to its periphery when projected from a trap or sender.

**No. 13,319. Improvements on Saw Gauges.** (*Perfectionnements aux calibres des scies.*)

John Gives, Galt, Ont., 26th August 1881; for 5 years.

*Claim.*—1st. In a saw dressing device composed of a file holder formed by back A, top B and flange C, a gauge for the cutting and clearing teeth formed by the recess D in top B and back A, a saw set formed by the nicks E in back A, and a setting gauge formed by the recesses F. 2nd. The plate A with recess in top B having ribs *h*. 3rd. The gauge recess D for jointing clearing teeth of saws, in combination with the file holder formed by top B and flanges C for jointing cutting teeth, and gauge recess F for regulating set of cutting teeth and saw set nick E. 4th. The file holder formed by back A, top B and flanges C, in combination with the saw set E and gauge F for setting saws. 5th. The saw-set E, in combination with setting gauge F.

**No. 13,320. Improvements on Door Springs.** (*Perfectionnements aux ressorts des portes.*)

Theodore Butler and Hugh McConnell, Cleveland, Ohio, U. S., 26th August, 1881; for 5 years.

*Claim.*—1st. The combination of a shaft A having in four opposite sides thereof, a groove, oblong socket C in which the said shaft is inserted and secured, having a lug projecting from the inner side thereof corresponding to the grooves, for locking the shaft by its engagement with the said grooves or groove, and a bracket for attaching the spring to the door.

**No. 13,321. Improvements on Berth Locks for Sleeping Cars.** (*Perfectionnements aux serrures des lits des chars doratoires.*)

James L. Howard and Charles P. Howard, Hartford, Ct., U. S., 26th August, 1881; for 5 years.

*Claim.*—1st. One or more spring car-berth latches combined with a handle, and with means whereby the latches are held positively out of operation when the berth is in use, and thrown into operative position when the berth is being moved out of use. 2nd. In a lock for the hinged berths of railway cars, the combination of the handled spindle *h j*, provided with a cross arm or arms *l* and having both a turning and a longitudinal movement within fixed bearings on the berth frame, with a fixed ratchet plate or cap *k m*, which forms a lock for the cross arm or arms *l* and means for connecting said arm or arms with the latch or latches of the berth. 3rd. The combination of the handle spindle *u j*, provided with a cross arm or arms *l* and having both a turning and a longitudinal movement within fixed bearings on the berth frame, a fixed ratchet plate or cap *k m*, which forms a lock for the cross arm or arms *l*, a spring *q* adapted to control the inward longitudinal movement of said handle spindle, and means for connecting said arm or arms with the latch or latches of the berth. 4th. The combination of the handled spindle *n j*, provided with a cross arm or arms *h z* and having both a turning and a longitudinal movement within fixed bearings on the berth frame, a fixed ratchet plate or cap *k m*, which forms a lock for the cross arm or arms *h z*, the stops *t t* on the fixed ratchet plate, which limit the throw of the arms *l*, and means for connecting said arm or arms with the latch or latches of the berth. 5th. The combination, with the latch or latches of the berth, of a locking and unlocking device connected with the said latches by means of a connecting contrivance *d p w* or its equivalent, whereby the latches are caused to move with the locking device when they are to be locked in or back, and are allowed a movement independent of the locking device when they are not locked in or back. 6th. The combination of pivoted swing latches, draw bars having pivoted connections with the free or swing ends of said latches, springs *f* for projecting said latches,

and a spring *u* interposed between the latch and its pivoted draw-bar connection. 7th. The handle spindle *h j* provided with arms *l l*, a fixed locking plate or cap *k m* and the spring *q*, in combination with the latch connecting rods *u u* and the spring draw-bar connections of the latches, the said connecting soas having swivelled or pivoted boss connections with the arms *l l*, and the throw of the arms being limited by the stops *t t* on the fixed locking plate. 8th. The combination, with the berth frame, of a safety locking device centrally located therewith, and consisting of a handled spindle provided with cross arm, an interior fixed ratchet plate, an exterior sunken or cap plate for said handle, and a spring adapted to control the inward longitudinal movement of said handle spindle, the said locking device being connected with, and actuating latches which, at times, have movements independent of said lock connections. 9th. The handle spindle *h j*, provided with arms *l* and having both a turning and a longitudinal movement, a fixed bearing cap *k* having locking teeth *m* and forming a guard for the arms *l*, in combination with rods *u u*, pivoted latches *a a* and draw-bars *d* having pivoted connections with the swing or free ends of said latches, and adapted for independent movement therewith upon the lock connecting rods *u u*.

**No. 13,322. Improvements on Street Connections for Hydrants.** (*Perfectionnements aux tuyaux de raccordement pour les bornes-fontaines.*)

Michael Folliard, Brooklyn, N. Y., U. S., 26th August, 1881; for 5 years.

*Claim.*—1st. The combination of a return bend with the sheet main B and with the hydrant A situated either on the sidewalk or inside of a building, said return bend being formed in the manner described. 2nd. The combination of the street main, the pipe D, the bell E, the stop valve in said pipe beneath the bell and the hydrant. 3rd. The combination of the street main, the return bend C C, the pipe D rising from said return bend, the bell E, the stop valve in said pipe beneath the bell and the hydrant.

**No. 13,323. Improvements on Baling Presses.** (*Perfectionnements aux presses d'empaquetage.*)

David Z. Seely, Albany, (Assignee of Alexander Buckman, Schodrack,) N. Y., U. S., 26th August, 1881; for 5 years.

*Claim.*—1st. The combination, with the press-box A and reciprocating plunger B, of a double acting toggle joint for imparting motion to said plunger, composed of the lever C arranged to vibrate on the main centre pin *e*, and the connecting bar C<sub>1</sub> pivoted to the plunger B and lever C, and the sweep D, the said toggle joint being adapted to move in such manner that the knuckle at *e* will, at each alternate motion, protrude at opposite sides of the press. 2nd. The combination, with the centre pin *e* for the plunger moving mechanism, having its lower end secured to the bed of the press, of one or more detachable braces E secured to the head of the pin *e* and to the upper side of the press-box A. 3rd. The combination, with the baling chamber of the press and the plunger B, of the retaining device consisting of the spring *u* provided with the roller *g* and serrated cross bar *g z*, and the springs *g<sub>1</sub> g<sub>2</sub>*. 4th. The retainers H provided with angle pieces *h z*, in combination with the plunger B provided with the hook pieces *h* adapted to cooperate with the angle pieces *h z* and move the retainers H with a positive motion. 5th. The combination, with the reciprocating plunger B, of a toggle joint composed of the lever C arranged to vibrate on the centre pin *e*, and connecting bar C<sub>1</sub> pivoted to the plunger B and lever C, and the detachable sweep D adapted to connect to the lever C. 6th. The separators J having slot channels *j* provided with spurs *j* and the tie grooves *z*. 7th. The detachable auxiliary baling chamber K adapted to receive a compressed and tied bale from a baling press.

**No. 13,324. Improvements on Combined Fish and Animal Traps.** (*Perfectionnements aux pièges combinés pour les bêtes et le poisson.*)

John S. Simpson, Nashville, Ten., U. S., 29th August, 1881; for 5 years.

*Claim.*—1st. In a fish and animal trap, the combination, with a plate D having projecting prongs *d*, of the separate sharp pointed blades or prongs E suspended from the laterally adjustable shaft E in an inclined position, and the intermediate spring coils *e* also mounted on said shaft E. 2nd. The combination, with the side frame A<sub>1</sub> A<sub>2</sub> and shelves *e e*, of the removable partitions *i i*, rods *l l* and gates L L. 3rd. The combination, with the side frame A<sub>1</sub> A<sub>2</sub> and end inlet doors, of the shelves *e e e*, central glass bait-box C and compartments I I K provided with suitable doors or gates. 4th. In a combined fish and animal trap having perforated sides A<sub>1</sub> A<sub>2</sub>, perforated lids B B, transparent bait-box C, inwardly swinging gates composed of separately pivoted rods E<sub>1</sub> and compartments I I K provided with removable partitions *j e*, gates L L and doors J J.

**No. 13,325. Paint Brush Handle.** (*Manche de pinceau.*)

The Napanee Brush Company, Napanee, Ont., (Assignee of Frederick W. Smith, Napanee, Ont., the Assignee of George W. Schermerhorn, East Limington, Me., U. S.) 26th August, 1881; (Extension of Patent No. 6,485.)

**No. 13,326. Improvements in Shoes.** (*Perfectionnements dans les souliers.*)

Edwin Adams, East Salisbury, Mass., U. S., 26th August, 1881; for 5 years.

*Claim.*—1st. The improvement in the manufacture of turned shoes with spring heels, which consists in stitching the upper and counter, wrong side out, to the inner surface of the sole as for turned work, connecting the same together from end to end, then turning the shoe, disconnecting the heel end of the sole from the counter and counter stiffener, inserting a heel lift or piece between the heel end of the sole and the counter, and securing the heel end of the sole, the said lift and the counter, and counter stiffener together by means of fastenings inserted through and through the said parts. 2nd. A turned shoe hav-

ing the flanged part of its counter and counter stiffener laid flat on the lift *e* inserted between the counter and sole, and nailed or pegged thereto, while the upper of the shoe, from the shank forward, is secured to a wale or ridge of the sole by stitches which do not penetrate the entire substance of the sole as common in turned work.

### No. 13,327. Hammock Chair. (*Chaise-hamac.*)

Samuel R. Robinson. Antrim, N. H., U. S., 24th August, 1881; for 5 years.

*Claim.*—1st. The sack bottom *A*, back bars *a*, leg bars *e*, connecting links *b* *c* pivoted between them, and rounds or bars *g* *f* *d* combined with the suspension ropes *l* *m* connected with the said back bars and connecting links, whereby the parts supported by the suspension ropes are held in balanced position, when the back pieces and sack bottom are in position for a chair and for a hammock. 2nd. In a swinging chair convertible into a hammock by the horizontal extension of the back bars and leg bars of the chair, the foot rest and its flexible suspension cords supported with relation to the round *f* which serves as the joint between the arm links and leg bars to permit the foot rest to move longitudinally in the direction of the length of the leg bar, when the chair is converted into a hammock. 3rd. A swinging chair convertible into a hammock, and its suspension ropes provided with loops *m*, combined with the tripod having hooks or projections to support the chair.

### No. 13,328. Improvements in Hose Couplings. (*Perfectionnements aux manchons des boyaux.*)

Peter Lord, Eusébe Mignault and Jean B. Vinet, Montreal, Que., 29th August, 1881; for 5 years.

*Claim.*—1st. The combination of the bush *A* having flange *E*, with the bush *B* having groove *F*, and flange *G*. 2nd. The combination of the bush *A* having flange *E*, with bush *B* having groove *F*, flange *G* and collar *I* with nut *H*.

### No. 13,329. Improvements in Ironing Boards. (*Perfectionnements aux planches à repasser.*)

Richard Troy and George O. Roberts, Oshawa, Ont., 29th August, 1881; for 5 years.

*Claim.*—1st. The combination of the board *A* with the arms *C*, lever *I*, set screw *J* and cross rails *E* *F*. 2nd. The combination, with the vertical legs *O* and notches *n*, of the pressing board *N* with the slot *B* in the board *A*.

### No. 13,330. Process for Refining Sugar, Saccharine, Oil, &c. (*Procédé pour raffiner le sucre, les matières sucrées, l'huile, &c.*)

Bernhard H. Remmers and John Williamson, Glasgow, Scotland, 29th August, 1881; for 5 years.

*Claim.*—The treatment of sugar, liquors and oils, with pulverized vegetable charcoal.

### No. 13,331. Improvements in Barrel Hoops. (*Perfectionnements aux cercles des barils.*)

James Naylor, Jr., Rochester, N. Y., U. S., 29th August, 1881; for 5 years.

*Claim.*—1st. The method of dressing hoop blanks, which consists in cutting off the stock to form the level and round the corners from the same side of the blank, and at one and the same operation. 2nd. The method of forming a barrel hoop from a cut blank, which consists in cutting the level on the checked side, and coiling the same with the checked side out. 3rd. As an improved article of manufacture, in a barrel hoop formed of a cut blank coiled with the checked side out, and having the whole bilge thereon upon the inside thereof.

### No. 13,332. Improvements on Flower Stands. (*Perfectionnements aux jardinières.*)

William D. McCallum, Truro, N. S., 29th August, 1881; for 5 years.

*Claim.*—1st. In a flower stand made with an outwardly projecting bevelled flange along its edges, and with a series of shelves' hangers and pedestals. 2nd. The combination, with the flower stand *A*, of the outwardly projecting flange *R* along the upper edges. 3rd. The combination, with the flower stand *A*, of the shelves *S* and the upright rods *H* having ornamental arms *E* at the top. 4th. The combination, with flower stand *A*, of the shelves *S*, the rods *H* having ornamental arms *E*, and the pedestals *L*. 5th. The combination, with the shelves *S*, of the rod *L*, the plate *Z* and the binding screw *Q*. 6th. The combination, with the flower stand *A*, of the pans or vessels *Z* and the sides of the pan or vessel provided with flanges overlapping the upper edges of the vessels.

### No. 13,333. Improvements on Hoop Coiling Machines. (*Perfectionnements aux machines à rouler les cercles.*)

Alexander F. Ward, Chatham, Ont., 29th August, 1881; for 15 years.

*Claim.*—1st. In a hoop coiling machine and as a means of giving an intermittent motion thereto, the combination of a pulley *D*, counter shaft *E* and friction wheel *H*, oscillating box *F*, spring *b*, connecting rod *J* and treadle *I* with the main driving pulley *C* of the machine. 2nd. In combination with the coiling disk *K* and its holding dog *L*, the spider *N* sleeved on the main shaft *B* and provided with a hub *l* and adapted to simultaneously push the hoop coil off the disk and release the dog by means of a counter balanced treadle lever *R*, and the connecting levers between the same and the spiders. 3rd. In combination with the rotating coiling disk *K*, the strap *U* pivotally secured to the plate *T* (which is provided with the adjustable nipper *b*), and to the counter balanced lever *V* and the guard *Y*. 4th. As a means of projecting and retracting the spider *N* and its attachments, and adjusting the guard

finger *P*, the weighted treadle lever *R*, rock shaft *A*, crank arms *s*, lever *u* *p* and bell crank *o* pivotally secured to the frame. 5th. The swinging plate *T* provided with an adjustable pivot *u*, for the purpose of regulating the distance between it and the guide bar *Y* to the relative width of different hoops operated upon, and to guide them properly in the act of coiling.

### No. 13,334. Combined Harrow, Seeder and Roller. (*Herse, semoir et rouleau combinés.*)

Robert Lang and James B. Lang, Lindsay, Ont., 29th August, 1881; for 5 years.

*Claim.*—1st. The combination, with the rotary harrows *I* *J*, of the runners *L* attached, at their front and rear ends, to pivoted frame *H*, the forward part of the runners being made sharp and thin, to enter the ground and allow the harrow teeth to operate. 2nd. The combination, with the hinged frame *II* and the rotary harrow *I* *J*, of the bar *W* carrying the drill teeth *V* and the draw rods *X*, whereby the seed will be deposited in soil mellowed by the harrow. 3rd. The combination, with the roller *A*, the top frame *S* and the seed hopper *R*, of the friction wheels *Z*, the cone pulleys and band *Y* *a* *b*, the pulleys and band *e* *g* *f*, the grooved sub-dropping cylinder *h* and the slotted apron *i*, whereby the seed is taken from the seed hopper, and discharged into the conductor tubes by the advance of the roller.

### No. 13,335. Improvements in Wash Basins. (*Perfectionnements aux cuvettes de toilette.*)

Charles H. Moore, Yonkers, N. Y., U. S., 29th August, 1881; for 5 years.

*Claim.*—1st. The combination, with a wash basin, of a float operating loosely in an enlarged float chamber, and arranged to a valve having a conical or flat seat, by means of a spindle, or its equivalent, in a manner to lift said valve when water increases in the basin above a certain height. 2nd. In a wash basin, bath tub or water closet, a float fitted loosely to a spindle and arranged to open a valve to permit the escape of any accidental accumulation of water. 3rd. The combination, with a wash basin, of a water retainer fitted upon the spindle of the outlet valve, and provided with a small aperture at or near the bottom.

### No. 13,336. Improvements on Harvesters. (*Perfectionnements aux moissonneuses.*)

Samuel D. Maddin, St. Paul, Min., U. S., 29th August, 1881; for 5 years.

*Claim.*—1st. In a mower or reaper, a frame supported by the wheels, a frame *A* carrying the cutter bar, and centrally pivoted, at the rear, to the main frame, and a driving crank arranged upon the shaft concentric with the pivot, and connected to the cutter bar to operate the same. 2nd. The combination of the frame *J* carried by the wheels, the frame *A* centrally pivoted to the frame *J*, the crank wheel *C*, a side crank shaft *H* and rods or links connecting the cranks of said shaft to the cutter bar and to the driving wheel. 3rd. The combination of the frame *J*, frame *A* and appliances for raising and depressing the rear bar of the frame *A*. 4th. The combination of the frame *J*, the frame *A* having a shank *A'* with bars *c* *c'* fitting in sockets of said shank, bearing wheels at the forward end of the frame *A* and appliances for raising and depressing the rear bar of said frame. 5th. The combination, with the frame *A* pivoted as set forth, of the independent crank shafts *M* *M'* connected each to the rear bar and frame, and devices for adjusting said shafts separately or together. 6th. The combination of the crank shafts *M* *M'* having notched hubs *e* *e'*, the notched bracket *e*, slides *e* *e'*, pawl *e* and cranks *e* *e'*. 7th. The combination, with the frame *A*, of bearing wheels *3* arranged back of the cutters, and appliances for raising and depressing the rear portion of the frame. 8th. The combination of the frame *A* and the guards *15*, and jointed shields and gathering plates *16* *17*. 9th. The frame *A* consisting of tubes and corner pieces *d* *d'* *d''*, the latter provided with appliances for securing the bars of the frame after adjustment. 10th. The combination of the pivoted frame *A*, frame *J* and diagonal stays *h*. 11th. The combination of the guards, a knife in two sections and rock frames at each side of the frame, each connected to the adjacent knife section, and with the driver from a central wheel *C*. 12th. The combination of the rope or cord *X*, the standard *f* having eyes for the passage of the cords below the line of horizontal draft, and the whiffletrees *X* *X'* secured to the ends of the cords. 13th. The combination of the elbows *d* *d'* or their equivalent tubular bar *e*, and guards *e* secured to the same, with means for turning the bar *e*. 14th. The combination of the bars *e*, crank shafts *H* *H'*, cutters and appliances, whereby each cutter is driven through two fingers or guards at each stroke. 15th. The combination, with the jointed and pivoted frames, of the balanced seat *J*.

### No. 13,337. Improvements on Car Replacers. (*Perfectionnements aux remplaceurs des chars.*)

Johnson Bremer, Bloomfield, Ont., 29th August, 1881; for 5 years.

*Claim.*—The sectional platforms 3 3 3 3 having diagonal rails 4 and a front incline, the outer portion of the platforms level with the top of the rails of the track, and the inner portion below the same, the platforms having a plate iron covering forming a flange 5, whereby the displaced car is mounted to the level of the rails by the incline of the platform and swung into position on the rails by the diagonal rails 4.

### No. 13,338. Improvements on Locks. (*Perfectionnements aux serrures.*)

George M. Hathaway and Benjamin S. Taylor, Jersey, N. J., U. S., 29th August, 1881; for 5 years.

*Claim.*—1st. The spring hasp having lock chamber and keeper chamber combined with a permutation lock and keeper. 2nd. The hasp *B* having figures *C* and circular recess *G*, surrounded by the surface *H* having figures thereon, combined with the shank *E*, plate *F*, hinged plate *F'* and lock mechanism. 3rd. The combination of the disks *D* *D'* having pins *d* *d'* and recess *d* *d'*, with the pivoted pawl *K* *K'*, and bolt *L* having the arm *L* and recess *l*. 4th. The single spring *J* formed at one extremity into independent spring arms *J* which bear upon the disks, and the other extremity bearing against the shoulder *K*, of the pawl combined with the disks *D*, pawl *K* and lock bolt *L* *L'*. 5th.

The combination of the hasp B having recess G, figured surface H and lock chamber A, the shank E, plate F and hinged plate F', the disks D D' having pins and recess, the spring J, pawl K and lock bolt L L', 6th. The combination of the locking bolt P having the pawl arm S formed in one piece therewith, the disk O' operating disk O and a proper spring. 7th. The combination of the compound spring Q socketed at q and having the arms q', the stud R, lock bolt P and pawl arm S formed in one piece, and the operating disks and shank.

**No. 13,339. Improvements on Military Accoutrements.** (*Perfectionnements aux accoutrements militaires.*)

William S. Oliver, Halifax, N. S., 29th August, 1881. (Extension of Patent No. 6,781.)

**No. 13,340. Improvement on Water Lifters.** (*Perfectionnements aux éleveurs d'eau.*)

Benjamin B. Brewer, Sacramento, Cal., U. S., 30th August, 1881; for 5 years.

*Claim.*—1st. A submerged tank with a supply pipe and supply valve. 2nd. The submerged tank A with supply pipe B, discharge pipe C, supply valve D and supporting rods E E, in combination with a steam boiler or air pump.

**No. 13,341. Improvements on Stigmographs.** (*Perfectionnements aux stigmographes.*)

John Gast, Brooklyn, N. Y., U. S., 1st September, 1881; for 5 years.

*Claim.*—The stigmograph composed of rubber, sulphur, zinc white and soapstone.

**No. 13,342. Improvements on Saw-Mills.** (*Perfectionnements aux scieries.*)

William M. Wilkin, East Saginaw, Mich., U. S., 1st September, 1881; for 5 years.

*Claim.*—1st. The gate or saw frame, pivoted at top and bottom in sliding blocks, which move in slides set at an angle to each other, said slides being attached to cheek, which vibrate like a pendulum. 2nd. The gate or saw frame, pivoted at top and bottom in blocks which slide in guides set at different angles, and attached to cheeks pivoted so as to vibrate horizontally, in combination with an eccentric on the drive shaft, and a rock shaft and proper connection for giving to said cheeks the said vibrations. 3rd. The combination, with the vibrating cheeks pivoted at their upper ends to the main frame, provided with rearwardly projecting ears b and having guides m n, of the shaft E, eccentric h and suitable connecting mechanism. 4th. The combination, with the vibrating cheeks F pivoted at their upper ends to the main frame, and carrying two sets of guides m n arranged at different angles to a vertical line, of the shaft E carrying the eccentric h, rod i, crank k, rock shaft c, cranks d and rod e.

**No. 13,343. Improvements in Log Canters.** (*Perfectionnements aux coins.*)

Robert Weir and Loftus N. Keating, Muskegon, Mich., U. S., 1st September, 1881; for 5 years.

*Claim.*—1st. In combination with the moving bar of an apparatus for canting logs, the shaft K and double incline L mounted in brackets J J, and the means for imparting to said shaft and incline a semi-rotating and swinging movement. 2nd. In an apparatus for canting logs, the toothed bar F provided with brackets M and friction roll b, in combination with the swinging double incline L, for the purpose of imparting an oscillatory movement to said bar. 3rd. In combination with the moving bar of an apparatus for canting logs, the shaft K and double incline L mounted in brackets J J, the segment wheel N, pulleys c c', and rope d having weight O, for imparting a swinging movement to said shaft and incline and an oscillatory movement to the bar. 4th. In an apparatus for canting logs, the combination of the toothed bar F pivoted to the sliding cross head E between the upright guides D D' and provided below its fulcrum with the bracket M and friction roll b, the shaft K and double incline L mounted in brackets J J, the segment wheel N, pulleys c c' and weighted rope d, for imparting an oscillating movement to said bar, or leaving it free to move in a vertical direction.

**No. 13,344. Improvements on Hat Felting Machines.** (*Perfectionnements aux machines à feutrer les chapeaux.*)

William A. Baglin and John Gray, Brooklyn, N. Y., U. S., 1st September, 1881; for 5 years.

*Claim.*—1st. The method of felting hat bodies, by placing them within the perforated flexible tubes and mechanically subjecting said tubes, while carried around and rolled within a surrounding casing, to alternating squeezing action. 2nd. In combination with the drum, the case which encloses said drum, the annular space between the case and the drum, the elastic felting tubes, and mechanism for imparting motion to the drum. 3rd. The combination of the drum, the case which encloses said drum, the annular space between the case and the drum, the elastic felting tubes, the feed apron, and mechanism for imparting motion to the drum and the feed apron. 4th. The combination of the drum, the case which encloses said drum, the annular space between the case and the drum, the elastic felting tubes, the hot water tank, and mechanism for imparting motion to the drum.

**No. 13,345. Improvements in the Manufacture of Hollow Ingots or Tubes of Cast Steel.** (*Perfectionnements dans la fabrication des lingots creux ou tubes en acier coulé.*)

Cyrus B. Morse, Blunback, N. Y., U. S., 1st September, 1881; for 5 years.

*Claim.*—1st. As a new article of manufacture, a cast steel ingot or tube, which is produced as described. 2nd. The peculiar construction and arrangement of mould and its appurtenances. 3rd. The method of reducing and elongating tubular, annular or hollow cylindrical bodies of cast steel, by operating upon them at three equi-distant points under the same blow. 4th. The recessed anvil having two faces inclined at an angle of about sixty degrees, whereby a blow from a hammer upon a body in the recess will affect the body at three equi-distant points simultaneously, in the swaging operation. 5th. The seamless wrought hollow metal axle or body, the interior wall of which conforms in general outline with its exterior shape.

**No. 13,346. Improvements on Machines for Polishing Buttons.** (*Perfectionnements aux machines à polir les boutons.*)

Dilman B. Shantz, Berlin, Ont., 1st September, 1881, for 5 years.

*Claim.*—In a button machine, the combination of a centrally bored die or chuck O, piston Q and spring S.

**No. 13,347. Improvements on Hand Trucks.** (*Perfectionnements aux camions à bras.*)

William H. B. Morgan, Bridgetown, Ont., 1st September, 1881; for 5 years.

*Claim.*—The combined attachment of carriage A A A with the roller chains and shaft.

**No. 13,348. Improvements in Carpet Stretchers.** (*Perfectionnements aux tendeurs des tapis.*)

Alexander Mitchell, Frederickton, N. B., 1st September 1881; for 5 years.

*Claim.*—The combination of the parallel bars A A perforated at f and having solid cross head B, and re-enforcing strap C, hinged block or shoe D armed with spur or spurs d, adjustable fulcrum pin e and lever E having head J, and toothed plate G.

**No. 13,349. Improvement in the Manufacture of White Lead.** (*Perfectionnements dans la fabrication du blanc de plomb.*)

William Thompson, Lime House, L. E., Eng., 1st September 1881; for 5 years.

*Claim.*—1st. The process of converting metallic or blue lead into white lead, that is to say, submitting metallic lead in a closed chamber to the combined action of acetic acid, vapour and atmospheric air, in a temperature ranging from 30° to 120° Fahrenheit, or thereabouts, for one sixth to one fourth of the time required for completing the conversion of the lead, and subsequently supplying to the closed chamber, in addition to the acetic acid vapour, carbonic acid gas and atmospheric air, and maintaining the supply until the conversion is completed, the admission of the air and gas being so controlled as to provide for their diffusion through the chamber without the creation of disturbing currents. 2nd. The arrangements of apparatus consisting of the pipes D D' and the globes or chamber D, for supplying atmospheric air and carbonic acid gas to the converting chamber, and diffusing the same through the chamber in a heated state. 3rd. In combination with the converting chamber, the apparatus for clearing, by the aid of an exhaust or partial vacuum, the converting chamber of gas and vapours, and condensing the same preparatory to opening the chamber for the removal of the white lead.

**No. 13,350. Improvements on Sewing Machines.** (*Perfectionnements aux machines à coudre.*)

Joseph Bond, jr., Philadelphia, Penn., U. S., 1st September, 1881; for 5 years.

*Claim.*—1st. A sewing machine in which the following elements are combined, namely: first, a fixed shuttle or spool case, second, uniformly rotating hook for carrying the needle thread round the spool case, third, a reciprocating needle, fourth, mechanism whereby the hook is turned to the extent of one revolution, while the needle makes one complete up and down movement, and fifth, a device for taking up the needle thread, tightening the stitch, and releasing the said thread during one revolution of the hook. 2nd. The combination of the fixed spool case and rotating hook of a sewing machine, with thread guides and rotating hook a for taking up and releasing the needle thread, said hook having an inclined back, whereby the automatic casting off of the loop is effected as the hook rotates. 3rd. The combination of reciprocating needle, a hook rotating in a circular path and a spool case held in a position eccentric, in respect to the said circular path of the hook. 4th. The combination of the rotating hook a, the thread guide d and a device c for automatically releasing and retaining the thread controlled by the hook. 5th. The combination of the fixed shuttle or spool case, the rotating hook b and rotating thread controlling hook a with the adjustable thread guiding plate G. 6th. The combination of the slotted needle bar B, the driving shaft having a disk O and the crank pin J projecting through the slot of the needle bar and beyond the same, for receiving the disk A. 7th. The combination of the head N of the stationary arm of the machine, and a detachable plate N' with the slotted needle bar, the rotating hook a attached to a disk or arm situated outside the detachable plate and secured to the pin through the medium of which the driving shaft operates the needle bar. 8th. The combination of the shaft J K with a rod D connecting cranks on the two shafts together, and with a laterally sliding guide L adapted to the said rod. 9th. The combination of the presser bar with an elastic rod or shaft, provided with an eccentric or cam adapted to the upper end of the said presser bar, and serving as a medium through which the bar may be operated, and of imparting pressure to the bar. 10th. The combination of the presser bar with an elastic rod or shaft having a cam or eccentric adapted to the said bar and two bearings for the said shaft or rod, one bearing being adjustable for causing the shaft to exert more or less pressure on the presser bar. 11th. A feeding device consisting of a bar

V having a portion *q* on a level with or slightly above the cloth plate, and a pivoted arm *s* carrying the feed point or points, with mechanism whereby both bar and arm are intermittently reciprocated horizontally, and whereby the arm is made to intermittently vibrate vertically. 12th. The combination of the bar V, the arm *s* pivoted to the same, the vibrating feed lever T adapted to slots in the said bar and arm and having an adjustable pivot. 13th. The combination of the counter shaft K and its two cams *p p*, the feed lever T and its adjustable fulcrum, the arm U loosely connected to the bed plate and serving as a medium through which the movements of the feed arm are determined. 14th. The combination of the rotating hook *b* with a fixed shuttle having a nose grooved for the reception of the hook. 15th. The combination of a spool case, a spool and a spring acting on one end of the spool and tending to force the opposite end of the same against a face formed in the case, with thread guides which direct the spool thread between the end of the spool and said face. 16th. The combination of the shaft J, the clutch disk D<sup>1</sup> secured thereto, the loose pulley E<sup>1</sup> having a belt wheel *r* and peripheral driving flange *d*<sup>1</sup> means for clutching the pulley to the disk, and a hand wheel, whereby the shaft J may be turned when the disk D<sup>1</sup> is released from the pulley E<sup>1</sup>. 17th. The combination of the shaft J, the driving pulley E<sup>1</sup> loose thereon, the disk D<sup>1</sup> secured to the shaft and having a flange *a*<sup>1</sup>, the lever M<sup>1</sup> hung to the pulley E<sup>1</sup> and having a short arm *s*<sup>1</sup> with eccentric face and means for operating said lever. 18th. The combination of the shaft J, the driving pulley E<sup>1</sup> loose thereon, and having a hub *e*<sup>1</sup> with annular recess *g*<sup>1</sup>, the disk D<sup>1</sup> secured to the shaft and having a flange *a*<sup>1</sup>, the lever *m* hung to the wheel E<sup>1</sup> and having a short arm *s*<sup>1</sup> with eccentric face, and long arm *s*<sup>2</sup> with bent end, the spring *r*<sup>1</sup>, the sleeve F<sup>1</sup> adapted to the recess *g*<sup>1</sup> and having a conical end, and means for reciprocating said sleeve. 19th. The combination of the clutch actuating sleeve F<sup>1</sup> having an arm J<sup>1</sup> and a V-shaped recess *m*<sub>3</sub>, the frame B<sup>1</sup> having a V-shaped plate *n*<sup>1</sup> and a spring *h*<sup>1</sup> for maintaining the sleeve in contact with said plate. 20th. The combination of the clutch actuating sleeve F<sup>1</sup> having an arm J<sup>1</sup> a shallow recess *m*<sup>2</sup> and a deep recess *m*<sub>3</sub>, the V-shaped plate *n*<sup>1</sup> and the spring *h*<sup>1</sup>.

### No. 13,351. Improvements in Lamps. (*Perfectionnements dans les lampes.*)

The Compagnie Générale Belge de Lumière Electrique, (Assignee of Antoine Bureau), Brussels, Belgium, 1st September 1881; for 5 years.

*Claim.*—The improved sun lamp, composed of a grooved refractory block. 2nd. In an electric lamp, the arrangement of the carbons in the block. 3rd. In an electric or other lamp, the block formed totally or partially of refractory material, and of one or several pieces, in combination with the box or shell. 4th. The improved arrangement of parts forming the lamp.

### No. 13,352. Improvements on Hoof Expanders. (*Perfectionnements aux appareils à ouvrir les sabots des chevaux.*)

David Roberge, New York, N. Y., U. S., 1st September 1881; for 5 years.

*Claim.*—A hoof expander composed of a single length of spring wire or other suitable material having formed thereon one or more bows or eyes *a*, together with two legs *b b* provided with prongs or pins *d d*.

### No. 13,353. Improvements on Journal Bearings for Car Axles. (*Perfectionnements aux coussinets des tourillons pour les essieux des chars.*)

David A. Hopkins, Park Ridge, N. J., U. S., 1st September 1881; for 5 years.

*Claim.*—1st. A journal bearing constructed on its journal side with tapering ridges and contiguous cavities, said ridges being made so weak as to be readily crushed down into, and turned or spread out in said grooves. 2nd. A journal bearing having contiguous grooves or cavities and tapering ridges, in combination with a stiff lubricating material placed in said grooves, all arranged so that the lubricating material will be expelled from said cavities by the metal of said ridges being crushed into, and spread out in them. 3rd. A pendant lip *d* and the recess *c* and the aperture *g* leading from the front upper part of said upper lip at or near where it is joined to the bearing, into said recess. 4th. A journal bearing constructed on its wearing surface with alternate grooves and weak ridges, and provided with cross ridges *a*. 5th. A series of bands of soft metal projecting beyond the hard metal surface of the journal side of the bearing. 6th. A bearing having its journal side provided with ridges of such construction, composition and nature that by the operation of load pressure applied to the bearing, and the revolution of the journal they will be crushed down and spread.

### No. 13,354. Improvements in Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Leonidas G. Woolley, Union, Ind., U. S., 2nd September 1881; for 5 years.

*Claim.*—1st. The combination of a hollow carbon holder and a regulating mechanism, the moving parts of the mechanism being placed in the carbon holder. 2nd. The combination of a helix or axial magnet, a core, a hollow carbon holder, and a regulating mechanism, the moving parts of which are placed in the holder and operated by the core and helix. 3rd. The combination of the hollow carbon holder, a dash or plunger and a regulating mechanism the moving parts of which are placed therein the distance that the regulating mechanism shall move being controlled by the dash. 4th. The regulating mechanism or device composed of a frame and a pivoted lever, in combination with a core which raises the mechanism and carbon holder upward, the carbon holder and helix. 5th. The combination of the tube C having the axial magnet applied to its upper end, a hollow carbon holder which forms a dash pot, the core N having the rod O fastened to it, and a clamping

device which is placed in the dash pot and which is operated by the core so that, when the core is raised upward, the clamp will engage with the inner side of the dash pot and raise the carbon holder upward. 6th. The combination of a stem having a hole through its end and provided with a set screw, with a carbon or electrode holder made in two parts which are united by a solder, or other substance, which fuses at a low temperature, and a chain for holding the carbon-holder when detached from the stem. 7th. A carbon-holder made in two parts which are connected together by solder, or other substance which will fuse at a low temperature, so that, in case the holder should become heated, the two parts will separate. 8th. The combination of a carbon or electrode holder, which is made in two parts and united together by a substance which fuses at a low temperature, with a chain which is fastened to both parts. 9th. The combination of the stem A<sup>1</sup> having a non-conducting substance secured to its lower end, with a carbon or electrode holder made in two parts, which are secured together by a substance which is fusible at a low temperature, and a chain which is fastened to both parts for the purpose of preventing one of them from falling. 10th. A carbon-holder or guide composed wholly or partly of a metal which fuses at a low temperature. 11th. A carbon-holder made in two or more parts which are united together by a solder, or made wholly of a metal which fuses at a low temperature, in combination with a chain or other suitable device, for preventing the carbon or its holder from falling.

### No. 13,355. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

Lansing Onderdonk, Adams Station, Campbell C. Brown and Henry P. Wells, New York, N. Y., U. S., 2nd September, 1881; for 10 years.

*Claim.*—1st. In a gathering and plaiting attachment, a bed plate adapted to be secured to the cloth plate of a sewing machine, said bed plate being provided with an extension forming a recess in which a carrying slide and cloth carrying slides may be reciprocated, and a standard serving as a support for actuating levers and double pawl. 2nd. In combination with the actuating levers, one of which is adapted to be attached to the needle bar of a sewing machine, and to engage with the other, of the double pawl having reversely inclined bearing surfaces and the spring K adapted to bear against either of said surfaces of said pawl, for the purpose of holding the pawl in position to operate in either direction, a rack bar provided with a series of teeth, the intermediate ones of which are rectangular, and the teeth of the extremities triangular and sloping toward each other. 3rd. A rack bar having a series of teeth, the intermediate one of which are rectangular in form, and the teeth at one or both end triangular in form, whereby the bar is adapted to be operated by a suitable pawl in either direction for a portion of its length, and in one direction only for the other portion of its length. 4th. The combination of three slides, wherein one slide is moved continuously backward and forward by any suitable mechanism, and transmits its motion by any device suitable to the purpose alternately, first to one and then to the other, or simultaneously to both, or continuously to either of the slides acting directly on the cloth to be operated on. 5th. The combination, with the bed plate A and its extension A<sup>1</sup>, of the rack bar and cloth carrying slides, the friction spring adapted to bear on said rack bar, and the loose friction guides or pads, one of which is located between the rack bar and upper slide, and the other between the upper and lower slides, whereby the pressure of said spring may be transmitted through said rack bar, guides and slides to the bottom of the recess of extension A<sup>1</sup>. 6th. The combination of the rack bar provided with a series of teeth rectangular in the middle of said bar, and inclined in opposite direction at opposite ends, the double pawl mechanism for operating said pawl and devices connected to, and moving with said rack bar for tripping said pawl, whereby the said pawl will slip and be prevented from feeding the rack bar beyond a certain point in one direction, and upon being reversed move the same in an opposite direction. 7th. In combination with the rack bar provided with a series of teeth, the intermediate one of which are rectangular in form and the teeth of the extremities triangular or sloping toward each other, and mechanism for imparting motion to the same, the pivoted trip L adapted to trip the pawl to reverse the motion of the rack bar. 8th. In combination with the rack bar, the lever carrying the double pawl, and the fulcrum pin of said pawl, the pivotal trips L the longer arm of which is provided with a hook adapted to engage the fulcrum pin of the double pawl, whereby the attachment may be made to ruffle or gather as desired. 9th. The combination, with the rack bar and mechanism for reciprocating said rack bar, of the cloth carrying slides provided with engaging hooks, the shifting device or tumbler N pivoted to the rack bar and provided with a pin N<sup>1</sup>, the switch lever V and its spring V<sup>1</sup>, and the auxiliary springs T U whereby the tumbler is shifted, so that its pin N<sup>2</sup> may be alternately engaged by the hooks of the respective slides. 10th. In combination with the cloth carrying slide and the rack bar having the shifting device or tumbler provided with pin N<sup>2</sup>, a yielding hook secured to the end of said slide, whereby the said pin N<sup>2</sup> may be restored to its proper position. 11th. The tooth lever P in combination with the shifting device or tumbler N having the pin N<sup>1</sup> and the rack bar, whereby the pin on the tumbler adapted to be locked by said latch and the tumbler prevented from oscillating. 12th. A carrying slide, in combination with a shifting device or tumbler hinged thereto, whereby through oscillations of said shifting device, the carrying slide is locked alternately with, and transmits its motion alternately to the slides acting directly on the cloth to be operated upon. 13th. The combination of an oscillating lever, a spring and a friction clutch provided with clamping pins at its lower extremity, and having its upper edge terminating in a double incline with a slide or bar, wherein said slide or bar is to receive from said clutch a reciprocating motion, for the purpose of operating said attachment. 14th. The combination of an oscillating lever, a spring, a friction clutch provided with clamping pins near its lower extremity and having its upper edge terminating in a double incline, and a slide or bar provided with a safety notch or notches. 15th. The combination of an oscillating lever, a spring, a friction clutch provided with clamping pins near its lower extremity and having its upper edge terminating in a double incline, a slide or bar, and a trip or trips attached to the said bar, for the purpose of tripping and reversing said friction clutch. 16th. A rack bar having shifting device or tumbler provided with pins n<sup>2</sup>, hinged to each side thereof, combined with cloth carrying slides having the hooks O<sup>1</sup> O<sup>2</sup>, and the pawls or latches T.

**No. 13,356. Improvements on Car Door Hangers.** (*Perfectionnements aux peures des portes de chars.*)

Dennis F. Van Liew, Aurora, Ill., U. S., 2nd September 1881: for 5 years.

*Claim.*—1st. The combination with the car and its door, of the ball or balls confined in sockets equal, or essentially equal, in length to the distance travelled by the balls in the operation of the door. 2nd. The combination with the door sliding upon rollers or balls confined in long sockets, of the support *c c'*, one or both, for supporting the edges of the door. 3rd. The combination of the door and its supporting rollers the projection *c'* upon the inner side of the carrier, for forcing the door against the car side.

**No. 13,357. Improvements on Shoe Button Fasteners.** (*Perfectionnements aux machines à poser les boutons des chaussures.*)

Alexander G. Wilkins, Cooperstown, Pa., U. S., 2nd September 1881: for 5 years.

*Claim.*—The combination tool described, composed of the pivoted jaws having bifurcated gripping openings *d* arranged at right angles to each other, the pivoted awl provided with a stop *a* and the telescopic button hook sliding in and out of the hollow handle portion.

**No. 13,358. Improvements in Exhaust and Blowing Fans.** (*Perfectionnements aux aspirat. des ventilateurs.*)

William W. Green and Lewis G. Stark, Chicago, Ill., U. S., 2nd September 1881: for 5 years.

*Claim.*—1st. A double fan having the wings or blades forming the fan wheels proper placed on the same shaft and arranged alternately in the plane of revolution relative to each other, combined with an inclosing case which has a central air inlet common to both of said fans. 2nd. In a double fan, the blades whereof are arranged in alternate planes described, the combination, with two or more fan wheels located on the same shaft, of the central inlet or receiving passage *a*, and the outlet or discharge passages *a'* *a''*. 3rd. In combination with the cylindrical casing *A* provided with the central receiving inlet *a* and the discharge outlets *a'* *a''*, the shaft *B*, the arms *a a'* and the series of fan wings *D D*.

**No. 13,359. Improvements on Spark Arresters.** (*Perfectionnements aux arrête-flammèches.*)

Hugh McKenzie, Caro, Mich., U. S., 2nd September 1881: for 5 years.

*Claim.*—1st. In combination with the smoke stack *H* and the hood *B* tightly fitting the stack *A* at its lower end, the enclosed double deflector *c* provided with two separate curved passages *a a'* and having straight flat sides. 2nd. The combination, with the stack *A*, hood *B* and inclined deflector *C* having separate passages *a a'*, of the curved incline inlet pipe *D* adapted to cause the water to flow around the smoke stack and the outlet *E*.

**No. 13,360. Improvements in the Manufacture of Wood Pulp.** (*Perfectionnements dans la fabrication de la pâte à papier.*)

Stephen M. Allen, Duxbury, Mass., U. S., 2nd September, 1881: for 5 years.

*Claim.*—1st. The method of preparing pulp for transport by crimping and filling the sheets as they come from the machine, and afterwards drying the same. 2nd. A crimped or filled sheet of paper pulp made from pure wood, or wood mixed with other fibre and dried. 3rd. In dried porous paper-pulp of wood fibre, or wood and other fibre mixed, said pulp containing the gelatinous or albuminous matter in a soluble condition, and being capable of ready disintegration.

**No. 13,361. Improvements on Revolving Nets.** (*Perfectionnements aux filets tournants.*)

Thornon F. Williams, Lower Cascades, W. T., U. S., 2nd September 1881: for 5 years.

*Claim.*—1st. In a revolving dip net, the box nets *I* constructed with holes *M* at their inner ends, whereby the fish are discharged. 2nd. The nets *I* secured to arms of shaft *E* having an opening at the front except at the inner part, for the inlet of the fish, and at the rear an opening for their outlet. 3rd. The combination, with a rotary wheel having nets *I* with discharge openings *M* near the hub, and having the inner part inclined toward said openings, of a receptacle *J*.

**No. 13,362. Improvements on Catapults for Seal Fishing.** (*Perfectionnements aux catapultes pour la pêche du phoque.*)

William Munsie, Victoria, B. C., 2nd September, 1881: for 5 years.

*Claim.*—The combination of the stock *A*, rubber *B*, cross bar *C*, trigger *D*, spring *E*. The combination of the lance *G*, jointed barbs *H H*, shaft *F* with socket.

**No. 13,363. Improvements in Telephones.** (*Perfectionnements aux téléphones.*)

The Canadian Telephone Company, Montreal, Que., (Assignee of George L. Anders, Boston, Mass., U. S.) 2nd September, 1881: for 5 years.

*Claim.*—1st. The method of producing, in a conductor, electrical undulations corresponding in form to sound waves by vibrating, by said sound waves in proximity to said conductor, a body charged with electricity, whereby the electricity of the conductor is caused to be redistributed. 2nd. The method of producing, in a conductor, electrical undulations corresponding in form to sound waves by vibrating a conductor in the presence of an insulated charged conductor, whereby a redistribution of electricity is caused in said conductors and in others

in inductive proximity thereto. 3rd. The combination of a metallic plate *A* charged to a constant potential and capable of being vibrated by sound waves, a metallic plate *B* in proximity to said plate *A*, but electrically insulated therefrom, a conductor connected to the plate *B*, and a telephonic receiver, or other apparatus capable of being affected by electrical undulations and reproducing sound waves corresponding in form to said electrical undulations connected to the conductor. 4th. The combination of the case *E*, the diaphragm *H*, the series of metallic plates *a a'* separated from one another by the insulating plates *b b b'*, said metallic plates being connected in alternate series and having one series charged to a constant potential, and the other series connected to the line, and means for compressing said plates to a greater or less degree. 5th. A telephonic receiver composed of a case *E*, a diaphragm *H*, two or more metallic plates, each insulated from the one next to it and having one plate or series connected to a conductor, whose potential is varied and the other plate or series connected to earth.

**No. 13,364. Improvements on Carriage Springs.** (*Perfectionnements aux ressorts des voitures.*)

Edward Spaulding, Brooklyn, N. Y., U. S., 2nd September, 1881: (Extension of Patent No. 9,886.)

**No. 13,365. Improvements on Carriage Springs.** (*Perfectionnements aux ressorts des voitures.*)

Edward Spaulding, Brooklyn, N. Y., U. S., 3rd September, 1881: (Extension of Patent No. 9,886.)

**No. 13,366. Improvements on Overshoes.** (*Perfectionnements aux souliers pardessus.*)

John H. McMechan, London, Ont., 4th September, 1881: (Extension of Patent No. 6,493.)

**No. 13,367. Improvements on Drill Chucks.** (*Perfectionnements aux mandrins des forets.*)

Augustus E. Ellinwood, Akron, Ohio, U. S., 4th September, 1881: for 5 years.

*Claim.*—1st. The combination of the screw-threaded and longitudinally slotted stock, the clamping jaws working loosely therein and having the outwardly projecting shoulders and the two screw-threaded rings working on the stock between and against the shoulders of the jaw. 2nd. The combination of the screw-threaded and slotted stock, the clamping jaws working loosely therein and provided with springs for forcing them outward, and the two screw-rings working between and against the shoulders of the jaws. 3rd. The combination of the screw-threaded and slotted stock, the jaws and the clamping screws, when said jaws are formed with the cutting points. 4th. The combination of the screw-threaded and slotted stock, the jaws having the cutting or counter-sinking points, with the drill clamped by said jaws and the clamping screw-rings.

**No. 13,368. Improvements on Hydrocarbon Burners.** (*Perfectionnements aux foyers à hydrocarbures.*)

Charles Holland, Chicago, Ill., U. S., 4th September, 1881: for 5 years.

*Claim.*—1st. In an apparatus for burning fluid hydrocarbons with steam and air, the combination of two or more pairs of separate retorts so connected by tubes with a hydrocarbon fluid and water supply, and with jet tubes from which the resultant gases or vapours and steam are burned that one retort of each pair shall be supplied with water or steam, and the other retort of each pair shall be supplied with hydrocarbon fluid, and the gas or vapour and steam generated in the other pair or pairs of retorts, shall heat the furnace. 2nd. The combination of separate retorts, connected in pairs and delivering steam and hydrocarbon gas or vapours into the same pipe, and a series of jet-tubes delivering jets of mixed steam and gas or vapour through conical air tubes leading into an inclosed combustion chamber. 3rd. In an apparatus for burning hydrocarbon fluids in combination with steam and air, the combination of jet tubes delivering jets of mixed steam and gas or vapour in a heated state with distributing-pipes protected by troughs and extending into conical air tubes leading into an inclosed furnace. 4th. The construction and form of retorts, adapted to be arranged in pairs and held in position in a furnace by supporting pillars and lugs. 5th. The combination, with a series of separate retorts arranged in pairs, for the burning of hydrocarbon fluid with the steam and air, a priming or starting pan located under one of the retorts, the pair of retorts supplying the heating jets to the retorts.

**No. 13,369. Improvements on Friction Gears.** (*Perfectionnements aux appareils de friction.*)

James Herron, Philadelphia, Pa., U. S., 4th September, 1881: for 5 years.

*Claim.*—1st. In combination with a drum mounted loosely upon a driving shaft, the fixed disk *E* and the movable disk *F*, said disks being provided with the frictional surfaces. 2nd. In combination, the drum having wooden faced wheels or flanges *4*, the fixed disk *E*, the movable disk *F* and means for locking said movable disk and driving shaft and maintaining it in frictional contact with the drum. 3rd. In combination, with the drum and the movable disk *F* adapted for frictional contact therewith, and provided with a slot *7*, the key *10* working in the slot *8* in the driving shaft, and means in engaging such key, with said slot *7*. 4th. In combination with the driving shaft having the slot *8* and central bore *9*, the key *10* working in such slot, and pin *12*, and the lever *13*.

**No. 13,370. Improvements on Rails and Railway Telegraphs.** (*Perfectionnements aux rails et aux télégraphes des rail-roads.*)

Peter Bargion, Black Diamond, Cal., U. S., 4th September, 1881: for 5 years.

*Claim.*—1st. The combination, in a compound rail, of the lower sections *A* secured centrally to the sleepers, and upper sections *B*, each

bolted positively at one point to the section below, and having slots *e* for the passage of bolts, securing it to the section A below the upper and lower sections being arranged to break joint. 2nd. The combination of the sections A B of a two part rail constructed and arranged to form a recess H. 3rd. The combination of the sections A B constructed to form an inner chamber, and cables laid in said chamber.

### No. 13,371. Improvements in Hoisting Machines. (*Perfectionnements aux ascenseurs.*)

Albert C. Foster, Lake, Ill., U. S., 4th September, 1881: for 5 years.

*Claim.*—1st. A hoisting apparatus in which the winding drum is actuated by an endless screw or worm meshing into a cog wheel secured to the shaft which carries the drum, and serving the double purpose of rotating the winding drum in either direction and locking it in any desired position. 2nd. The combination of the shaft H having the sleeve K secured thereto by screw bolts O with the friction wheels A B, the lever L, the friction wheel C on the shaft F, and a winding drum. 3rd. The combination of the friction wheels A B rotating in the same direction on the shaft H, friction wheel C placed between wheels A B, shaft F having worm G, cog wheel D and shaft E carrying the winding drum L. 4th. The combination of the friction wheels A B secured to the sleeve K, so that they will rotate with the shaft H and, at the same time, can be moved longitudinally on said shaft, lever L and friction wheel C mounted on, and secured to a shaft carrying mechanism for actuating the winding drum.

### No. 13,372. Improvements in Steam Engines. (*Perfectionnements aux machines à vapeur.*)

Barton B. Ward, Kingston, Ont., (Assignee of Addison G. Waterhouse and Benjamin B. Brewer, Sacramento, Cal., U. S.), 4th September, 1881: for 5 years.

*Claim.*—1st. The separately constructed valve consisting of the valve chamber B, two ports *e h* and valve *v* operated through the rod K, and arm O screwed or bolted to, and in combination with the engine cylinder C. 2nd. The combination of the eccentric E, short connection *e*, guide bearing *g*, pump rod *f*, pump P with rod K, arm O, separately constructed valve chamber B and single acting engine C.

### No. 13,373. Improvements on Spring Motors. (*Perfectionnements aux moteurs à ressort.*)

James H. Harper and John B. Powell, Philadelphia, Penn., U. S., 4th September, 1881: for 5 years.

*Claim.*—1st. A spring motor in which a series of barrels and shafts, each barrel connected to one shaft by a spring, and the barrel of one shaft being coupled to the shaft of the adjoining barrel so as to rotate therewith, are combined with a fixed frame affording separate bearings, and supports for the several barrels. 2nd. The combination, in a spring motor, of a barrel D and shaft E connected together by a coiled spring, the shaft having one bearing in a fixed frame and the other in the said barrel, and the barrel having a journal adapted to a bearing in, and supported by the said fixed frame and means for coupling the said barrel to the shaft of an adjoining barrel. 3rd. The combination of the system of barrels, springs and shafts, with a supporting structure composed of a base, one or more frames, and a series of pillars, each consisting of sections of tubes and a confining bolt. 4th. The top frame F having an overhanging bearing N for the winding shaft *o*. 5th. The combination of the top frame F and the multiplying gearing, with a frame bolted to said frame F and comprising the two arms J M.

### No. 13,374. Improvements on Saccharated Extracts. (*Perfectionnements aux extraits saccharifiés.*)

C. Gilbert Wheeler, (Assignee of Charles S. Hallberg,) Chicago, Ill., U. S., 4th September, 1881: for 5 years.

*Claim.*—A soluble medicinal preparation consisting of the soluble matter of a vegetable therapeutic agent, mixed with precisely the amount of sugar equal to the insoluble constituents of the plant employed.

### No. 13,375. Improvements on Apparatus in Dissolving and Filtering and for Effecting Chemical Reactions, in Chemical and Metallurgical Processes. (*Perfectionnements aux appareils à fondre et filtrer et à produire des réactions chimiques, dans les procédés chimiques et métallurgiques.*)

Juan F. N. Macay, Charapoto, Ecuador, 4th September, 1881: for 5 years.

*Claim.*—1st. A rotary decanting filter constructed of an inner and outer barrel or shell with an intervening annular space, the inner shell being perforated and covered with filtering material. 2nd. A rotary decanting filter constructed of an outer barrel or cylinder, and an inner perforated shell covered with filtering material, the intervening space being divided into segmental compartments. 3rd. A rotary decanting filter constructed and provided with means for forcing in, or drawing off steam or air gases or liquids, through the filtering material and through the contents of the apparatus, or not, as may be required. 4th. The rotary decanting filter.

### No. 13,376. Improvements on Tops for Spice Cans. (*Perfectionnements aux couvercles des bidons à épices.*)

Louis Stemmler, Victoria, B. C., 4th September, 1881: for 5 years.

*Claim.*—The combination of the rivetted top swinging on or off the holes perforated in the can lid.

### No. 13,377. Improvements on Clothes Driers. (*Perfectionnements aux séchoirs à linge.*)

William A. Brown, Norwich, Ont., 4th September, 1881: for 5 years.

*Claim.*—1st. The spring pawl J socketed in the top of head B, in combination with ratchet hub F mounted on arm C, fulcrumed to the head, whereby the hub is held when casted to revolve in one direction only. 2nd. The combination, with the pawl A, of the slotted arm K, arm C provided with button M, and locking pin N.

### No. 13,378. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

John K. Harris, Springfield, Ohio, U. S., 4th September, 1881: for 15 years.

*Claim.*—1st. The combination, with an oscillating cloth clamp, of a stop, stationary in relation to said cloth clamp, and a single device adapted to engage said cloth clamp, and to impinge against said stationary stop, whereby the oscillating movement of the cloth clamp is directly converted into a progressing right line movement. 2nd. The combination of a bed plate, an oscillating cloth clamp, a lever pivoted at its rear end to the bed plate and arranged longitudinally above the cloth clamp for connecting with the needle bar, and devices located at the rear end of the cloth clamp and lever for connecting said lever with the cloth clamp to oscillate it, the said cloth clamp having a centre of oscillation between the needle hole and the said oscillating devices. 3rd. The combination, with the cloth clamp having bar F, of means for oscillating it, a friction clutch embracing said bar, springs arranged upon the opposite sides of said friction clutch, and a stop or resistance adapted for contact with the friction clutch, to cause the same to feed the cloth clamp in either direction through its oscillation. 4th. The combination, with an oscillating cloth clamp of a stop stationary in relation to said cloth clamp, and a friction clutch adapted to engage said cloth clamp, and to impinge against said stationary stop. 5th. The combination, with the bed plate and the cloth clamp, of the transversely adjustable strip-over slide J, and the guide plate B for the cloth clamp pivoted to the strip-over slide for a centre of oscillation and adjustable with said slide. 6th. The combination, with the cloth clamp bar F and the friction clutch I arranged thereon, of an adjustable lever provided with slot *o*. 7th. The combination, with the cloth clamp having bar F and the friction clutch I, of a ship-over device and a stop adapted to be simultaneously adjusted for shifting the goods and reversing the feed. 8th. The devices for oscillating the guide plate consisting of the pivoted piece *c* operated by the needle bar lever, the lever *d* having lugs *e e* and pivoted to the guide plate, and inclines *g g* arranged to have the same movement as the guide plate.

### No. 13,379. Improvements on the Process of Treating Dates and Apparatus Therefor. (*Perfectionnements au procédé de traitement des dattes, et appareil pour cet objet.*)

Thomas F. Henley, London, Eng., 4th September, 1881: for 15 years.

*Claim.*—1st. The new and improved process or method of treating the entire date fruit, that is to say, both flesh and seeds, by the appliances described. 2nd. The production of the lye products of essential oil and acid liquor during the process of treatment of the dates. 3rd. The construction, arrangement and employment of the close oven or retort, for the purpose of drying and roasting the flesh of the date fruit.

### No. 13,380. Improvements on Hydro-Carbon Furnaces. (*Perfectionnements aux foyers à hydrocarbures.*)

Charles Holland, Chicago, Ill., 4th September, 1881: for 5 years.

*Claim.*—1st. In an apparatus for burning hydro-carbon fluids with steam and air, the combination of two or more pairs of separate pairs heated by gases generated therein, so connected by tubes with a hydro-carbon fluid and water or steam supply, and with jet tubes from which the resultant gases or vapours and steam are burned, that one retort of each pair shall receive a supply of steam or water and shall, after superheating such steam therein, discharge it with hydro-carbon fluid into the other retort of the pair, from which the resultant heated gases or vapours pass to the jet tubes, at the points of combustion in the furnace. 2nd. An apparatus for burning hydro-carbon fluids with steam and air, the combination of two or more pairs of separate retorts so connected with each other, and the steam or water supply and the hydro-carbon fluid supply, and with the gas distributing pipes and jet tubes or burners, that the steam superheated in one retort of one pair shall enter the second retort of said pair, and the gases or vapours, or a portion thereof, generated in such second retort, shall supply the heating jets under both sets of retorts.

### No. 13,381. Improvements on Anchors. (*Perfectionnements aux ancres.*)

John J. Moule, Fishkill on the Hudson, N. Y., U. S., 4th September, 1881: for 5 years.

*Claim.*—1st. An anchor having the shank A with rigid end flukes *a a* at one end, an eye *c* at the other end, an eye to receive the stock B and between said eyes the flukes *b b*. 2nd. The pivoted clevis *d* combined with the anchor shank A, provided with rigid flukes *b b*. 3rd. The combination, with an anchor provided with a stock, of a rigid shackle bar connected to the shank by a double joint, and of a length equal to, or greater than the arms of the stock, whereby the chain is prevented from becoming entangled with the stock. 4th. The rigid shackle bar C provided with the lugs or extensions *e*, and the eye or ring *f* connected to anchor shank A by a double joint. 5th. The combination, with the shank A provided with the stock *a*, of the clevis *d* pivoted to the said shank, and the rigid shackle bar C pivoted to the clevis.

### No. 13,382. Improvements on Jar Covers. (*Perfectionnements aux couvercles des jarres.*)

Samuel Marrotte, Montreal, Que., 8th September, 1881: for 5 years.



*Claim.*—1st. The self-sealing cover for jars made up of a stamped metal cover, an intermediate plate and a washer. 2nd. In combination with a self-sealing cover for jars, a loose plate of metal, or other substance, of a configuration corresponding to the cover, placed between said cover and the rubber washer. 3rd. In combination with the stamped metal cover A and a projection or groove on the neck of the jar, wires *a* with points *a'*.

**No. 13,383. Combined Shirt Front and Cuffs.**  
(*Devant et manchettes de chemise combinés.*)

George P. Warner, New York, N.Y., U.S., 8th September, 1881; for 5 years.

*Claim.*—1st. A cuff provided with button holes D D<sup>2</sup> and E E<sup>2</sup>, the latter being placed exactly opposite to the former, curved extension A, slit B and curve C. 2nd. A combined shirt front and cuffs, in conjunction with dotted lines G, whereby the same may be reversed when serving as front or bosom.

**No. 13,384. Improvements in Cooking Stoves.**  
(*Perfectionnements aux fourneaux de cuisine.*)

Dennis Moore and William A. Robinson, Hamilton, (Assignees of James Norris, St. Catharines,) Ont., 8th September, 1881; (Extension of Patent No. 6,533.)

**No. 13,385. Improvements on Heating Boilers.**  
(*Perfectionnements aux calorifères à vapeur.*)

William B. Malcolm, Toronto, Ont., 13th September, 1881; for 5 years.

*Claim.*—1st. A boiler A for water or steam heating purposes, composed of the stand E on which the boiler is placed, provided with the appliances for supporting the grate D<sub>1</sub>, and with the necessary doors for getting access to the interior thereof, and of four or more water and flue sections A B C D placed one above the other and having a self-feeding coal chamber A<sub>4</sub>, a fire chamber D<sub>1</sub>, traverse flues A<sub>10</sub> B<sub>1</sub> B<sub>2</sub> C<sub>2</sub> D<sub>2</sub>, the vertical flues A<sub>2</sub> B<sub>3</sub> D<sub>3</sub>, the water spaces A<sub>0</sub> B<sub>0</sub> C<sub>0</sub> C<sub>3</sub> D<sub>3</sub>, and water ports W<sub>1</sub> W<sub>2</sub> W<sub>3</sub> W<sub>4</sub> W<sub>5</sub> A<sub>8</sub>. 2nd. In combination with the boiler A, the cone-shaped grate D<sub>2</sub> and swivelled cross bar *u*.

**No. 13,386. Improvements on Water Tubing.**  
(*Perfectionnements aux tuyaux hydrauliques.*)

William F. Moulton, Jericho, Vt., U.S., 13th September, 1881; for 5 years.

*Claim.*—The internal enlargement of the extremities of each section of a water-pipe or tubing, so as to avoid the possibility of any objectionable contraction of the channel or bore of the tubing, caused by the expansion or swelling of the pipe at its ends or tenons.

**No. 13,387. Improvements on Pruning Shears.**  
(*Perfectionnements aux sécateurs.*)

Joseph L. Haycock, Cataragui, Ont., 13th September, 1881; for 5 years.

*Claim.*—The steel plate H, in combination with the concave jaw B of the shears, said plate extending from the front or outer end of the jar, to rearwardly of the pin G.

**No. 13,388. Improvements on Sewing Machines.**  
(*Perfectionnements aux machines à coudre.*)

George W. Darby, Hamilton, Ohio, U.S., 13th September, 1881; for 5 years.

*Claim.*—1st. The combination with the frame spring J of the check shoulder K upon the upper surface thereon. 2nd. The combination of the motion lever B having the tail piece C, and the ruffler lever D having the rigid stop E and adjusting stop screw F. 3rd. The combination of the motion lever B, its tail piece C, the ruffler lever D, its stops E F, and the rearward projection G of the ruffler I.

**No. 13,389. Improvements on Life Rafts.**  
(*Perfectionnements aux radeaux de sauvetage.*)

Charles W. Woolsey, Jersey, N.J., U.S., 13th September, 1881; for 5 years.

*Claim.*—The combination, in a life-raft, of the buoyant elongated ring A, the frames B B clamping said ring firmly between their ends, and the tie bolts C incased in wood and serving to connect said frames.

**No. 13,390. Improvements on Swinging Gates.**  
(*Perfectionnements aux barrières tournantes.*)

Nathan H. Long, Muncie, Ind., U.S., 13th September, 1881; for 5 years.

*Claim.*—1st. In an automatic gate hinge mechanism, an intermediate bar I between the two halves of the upper hinge, said bar being constructed by means of an opening larger than the pivot on which it rests, to recede when the mechanism is operated and engage with catches upon the gate post. 2nd. The combination of the vertical rod E having horizontal stud *e* thereon. 3rd. An automatic gate hinge mechanism, in which a pivot passes through a heart-shaped or elongated slot in a bar I, a projection upon the rear gate upright A, which comes in close proximity to said pivot. 4th. An intermediate bar I, between the two upper hinge parts, having a heart-shaped orifice therein, through which the stud in which it moves passes. 5th. The combination of the trip rods H, rods G, vertical rod E, hinge parts *a* and *b*, intermediate piece I and catches *i*. 6th. The combination of the trip rods H, rod G, vertical rod E, hinge parts *a*, *b*, and horizontal stud *e* working between the parts *a* and *b*.

**No. 13,391. Improvements on Treadles.**  
(*Perfectionnements aux marches.*)

Francis M. Weaver, William A. Hance, Springfield, James B. Lewis and Joseph H. Neily, Belleville, Ohio, U. S., 13th September, 1881; for 15 years.

*Claim.*—1st. The combination, in a hanging swinging treadle, of the crank arm C with the bearing arms A and the supporting hangers D

therefor, the said parts having the relation to each other and to the treadle plate or foot rest B. 2nd. In a sewing machine treadle, the combination, with the lower frame bracing rod *a*, of the treadle supporting parts consisting of the bearing arms A mounted upon, and extending forward of and above said frame rod, the hangers D supporting said bearing arms upon the end frames, and the separate crank arms C adapted to carry said treadle plate free of said frame rod. 3rd. The treadle plate of a hanging swinging treadle for sewing machines having the slots *g g* and the side-shouldered recesses or guides *i i*, in combination with separate cranked arms *c c* carrying the treadle plate B and secured thereto by the screw bolts *h h*, and the said shouldered guides. 4th. The combination, with a sewing machine treadle and the pitman rod, of the pitman connection consisting of the bent arm E and the adjustable wrist pin section *r r*. 5th. As a means for connecting the treadle with the pitman rod of a sewing machine, the bent arm E having a rib or bead *e* fitting into a corresponding groove *m* in the treadle plate and secured thereto by a screw bolt, the bent part of said arm being formed with a slot *n* and an under groove, and an adjustable wrist pin attachment *r r* clamped within said groove. 6th. As a means for adjusting the relation of the treadle connection with the pitman rod of the balance wheel, the hangers D D provided with perforations *f*, in combination with the bearing arms A A and the bolts *c*, the said hangers having a fixed relation with the end frame, and the said bearing arms being adjusted vertically, and in such adjustment turning with the frame rod *a* upon which they are secured. 7th. The bearing arms A having the perforations *f*, and adapted for adjustment upon the end frames. 8th. In combination, a laterally adjustable treadle, means for effecting its vertical adjustment in relation to the throw of the crank pin of the balance wheel, and means for effecting the adjustment of the treadle wrist pin connection with the pitman rod. 9th. A hanging swinging treadle for sewing machines consisting of the treadle plate B having slots *g g* and shouldered guides *i i*, the separate crank arms C C *c c* secured in said treadle plate guides, the bearing arms *a a* fixed upon and projecting from the lower frame rod *a*, the hangers D D having a fixed relation with the end frames and adjustable connections with said bearing arms, an adjustable wrist pin connection *r r* for the pitman rod, and the springs.

**No. 13,392. Improvements on Evaporators for Fruit and Vegetables.**  
(*Perfectionnements aux séchoirs pour les fruits et les légumes.*)

Edgar Ker, Pelham, Ont., 13th September 1881; for 5 years.

*Claim.*—1st. The arrangement of the drawers B B C composed of wood and metal, in a rectangularly shaped frame made of wood and cased with metal, and glass and wood to which is attached a furnace of peculiar construction, and a heat regulator which occupies a place in the front elevation *e* as a drawer and does, in connection with the sliding or swinging doors *g g*, give the operator full control over the workings of the evaporator, the whole being covered with a peculiarly shaped cover A.

**No. 13,393. Improvements on Type Writing Machines.**  
(*Perfectionnements aux machines à écrire en caractères d'imprimerie.*)

Thomas Hall, Brooklyn, N. Y., U. S., 13th September 1881; for 5 years.

*Claim.*—1st. A plate A adapted to move intermittently, a type form attached thereto, and movable to bring any given letter into alignment and mechanism for moving said plate and type form. 2nd. An elastic type form in combination with a plate having an opening therein, said form being movable to bring any given letter into alignment with the opening and permitting any given letter to be pressed by a suitable plunger upon the paper through the openings. 3rd. The combination of the movable type form, the plate having openings therein, the ink cushion and mechanism for pressing the type upon the ink cushion and paper. 4th. The combination of the elastic type form, the plate having an opening therein and the stud J. 5th. A vertically movable plate *a*, provided with an index plate upon its upper surface, in combination with a type form attached to its underside and movable thereon, to bring any given letter into alignment, mechanism for moving said type form and for directing said movement in connection with said index plate, and means for pressing the type upon the paper by the depression of said plate. 6th. The hinged plate A carrying stud J, having a movable type form carried upon its under surface and an index plate upon its upper, in combination with an arm P connected to said type form and adapted by means as described, in connection with the index plate, to bring any given letter into alignment and also adapted to depress said plate A and force the type upon the paper. 7th. In combination with the type form and with the plate A, the link mechanism H H M M, and the intermediate frame K. 8th. The combination of the plates A B on the rod R, adapted to slide thereon, said plates carrying the printing mechanism. 9th. The combination of plates A B, the upper carrying the movable type form and having a spring between said plates. 10th. The combination of the independently hinged plates A B, rod R and spacing mechanism operated by the movement of the upper plate. 11th. In combination, the rod R having a cylindrical surface and teeth, the plate A hinged thereon, and the barrel pivoted on said plate and provided with a spring, the said barrel having cogs to mesh with the teeth upon the rod, whereby vertical motion is permitted to said plate without interfering with the action of the spring. 12th. The combination of the adjustable bar N, of the plate B, and the bar *g*. 13th. The combination of the levers L Y and the spring X, with its adjustable stop. 14th. The combination of a movable flexible type form, the hinged perforated plate B, the bar *g*, roller *a* and spring clip *b*, said roller and clip being arranged in front of the bar *g*, whereby the plate B may be lifted and the paper removed. 15th. An elastic type plate in combination with a platin and with means for bringing the letters on said plate into alignment, and means for pressing said letters upon the paper. 16th. An elastic type form, in combination with a rigid frame, fixed to the edge of said type form and adapted to be used in connection with the moving mechanism, and a perforated inking plate of the type writer. 17th. The combination, with the feed roller *a* of the clip *b*, pivoted independently of the roller and adapted to press upon it to hold the paper, and also adapted to be raised from the roller to admit the paper.

**No. 13,394. Package for Fruit Boxes.** (*Colis pour les boîtes à fruits.*)

John Cross, Oakville, Ont., 13th September 1881; for 5 years.

*Claim.*—As a new article of manufacture, a fruit box package formed by the strips of veneer A B, held together by the hoop C and having a handle E with a cover G, and piece of veneer J provided with cross cleats or slats H, arranged to fit over the edges of the fruit boxes I.

**No. 13,395. Improvements on Signal Fuses.** (*Perfectionnements aux fusils à signaux.*)

Samuel Jackson, Philadelphia, Penn., U. S., 13th September 1881; for 5 years.

*Claim.*—The combination of the tube A and caps G made separately from, but attachable to each other, and each provided with materials which will not of themselves ignite or explode by friction, impact or fracture, but which, by their joint action, will effect the ignition of the signal.

**No. 13,396. Improvements on Nut Crackers.** (*Perfectionnements aux casse noixelles.*)

Mitchell Renz, Bridgeport, Ct., U. S., 13th September 1881; for 5 years.

*Claim.*—1st, A nut cracker constructed of two movable jaws, joined together at their outer ends, and of fulcrumed jaws which are jointed to the opposite ends of the movable jaws. 2nd. The combination of the movable jaws which are jointed together at their outer ends, with fulcrumed handles, which are pivoted to the opposite inner ends, of the movable jaws and provided with smaller inside jaws below the fulcrum. 3rd. The combination of two movable jaws, which are pointed together at one end, with fulcrumed handles, which are provided with lugs to which the opposite ends of the movable jaws are pivoted, and with a spiral or other spring interposed between the jaws, and handles after the pressure therein is released.

**No. 13,397. Apparatus for Expelling Volatile Matter from the Refuse from Rendering Tanks and from other Substances.** (*Appareil à rejeter les matières volatiles des rebuts des réservoirs à gobetage en brique et des autres substances.*)

Robert D. Fowler and Robert Neill, Chicago, Ill., U. S., 13th September 1881; for 5 years.

*Claim.*—1st. The cylinder B, the shaft C, the arms d in combination with an apparatus for expelling volatile matter from refuse, hair or other substances, by forcing the same through pipes containing superheated steam. 2nd. The cylinder B, the shafts C, the arms d, the pulley e, the steam escape pipe h, the feed opening f, the opening g into the superheated steam pipe. 3rd. The cylinder I, the shaft J, the arms K, in combination with an apparatus for expelling volatile matter from refuse hair or other substances, by forcing the same through pipes containing superheated steam. 4th. The cylinder I, the shaft J, the arms K, the pulley o, the opening p into the discharge wheel cylinder, the discharge opening q.

**No. 13,398. Improvements on Horse Collars.** (*Perfectionnements aux colliers de cheval.*)

William J. Thorn, Ottawa, and Neil McIntyre, West Winchester, Ont., 13th September, 1881; for 5 years.

*Claim.*—1st. A horse collar composed of wooden sections A B C bent and formed as described. 2nd. The combination, with the collar sections, of the flexible connection D and clamp screws E. 3rd. The combination, with the collar halves composed of sections A B C, of the bolt F, boxing G, spiral spring I and catch H. 4th. The draft loops K attachable to the collar, the lugs attachable thereto, and passing to the rear of the outer end of the loop whereby a counteracting strain is produced to prevent a rolling movement to the collar.

**No. 13,399. Improvements in Wire Stretchers.** (*Perfectionnements aux tr. filières.*)

Martin A. Howell, Chicago, Ill., U. S., and Hubert R. Ives, Montreal, Que., 13th September 1881; for 5 years.

*Claim.*—1st. A wire stretcher consisting of the jaws A B having eyes or ring d, handles at their rear ends, into which a ring E plays freely, said jaws A B being pivoted at their front ends, the movable jaws B having a recess into which is fitted an independent toothed segment or lug D. 2nd. A stationary jaw A provided with a shoulder and a projecting or hooked lip C, and a movable jaw B eccentrically pivoted to said stationary jaw. 3rd. In combination with an eccentric constructed of malleable or soft metal, having a recess as at D an independent or movable segment or lug of hard metal.

**No. 13,400. Improvements on Churns.** (*Perfectionnements aux barattes.*)

Benjamin B. Prentice, Osgood, Ont., 13th September 1881; for 5 years.

*Claim.*—The hangers 5 having knife edges bearing in A-grooved steel blocks 7, on the bottom of the cream chambers and suspended from a frame 3 by studs 6 having knife edges, said hangers provided with loop terminations bearing on the studs.

**No. 13,401. Improvements on Fire Proof Safes and Fire Proof Materials.** (*Perfectionnements aux coffres forts et aux matériaux réfractaires.*)

Elizabeth A. Fowler, (Assignee of Nathaniel C. Fowler,) Boston, Mass., U. S., 13th September 1881; for 5 years.

*Claim.*—1st. An improved fire proof composition of non-combustible fire and magneto calcite, or silicate of soda and silicate of magnesia. 2nd. A fire-proof box or safe, lined with the improved fire-proof composition, either with or without intervening air spaces. 3rd. A fire-proof cement consisting either of silicate of magnesia and silicate of

soda, or of magneto-calcite. 4th. A fire-proof box of asbestos board in which the board is saturated with silicate of soda, and surface finished with silicate of magnesia compressed or rubbed into the asbestos board. 5th. A fire-proof box of asbestos board in which the joints and corners are rendered less susceptible to the influence of high temperatures, by the presence of powdered silicate of magnesia in silicate of soda used as cementing material.

**No. 13,402. Improvements in Harvesters.** (*Perfectionnements aux moissonneuses.*)

Christopher C. Bradley, (Assignee of Robert D. Warner,) Syracuse, N. Y. U. S., 13th September 1881; (Extension of Patent No. 6,572.)

**No. 13,403. Improvements on Steam Engines.** (*Perfectionnements aux machines à vapeur.*)

William Monk, Henry Monk, Hadlow Cove, and Charles W. Carrier, Levis, Que., 14th September 1881; (Extension of Patent No. 13,176.)

**No. 13,404. Improvements on Steam Engines.** (*Perfectionnements aux machines à vapeur.*)

William Monk, Henry Monk, Hadlow Cove, and Charles W. Carrier, Levis, Que., 14th September 1881; (Extension of Patent No. 13,176.)

**No. 13,405. Car Wheel.** (*Roue de char.*)

Charles W. Carrier, Levis, (Assignee of Adolphus Davis, Montreal, Que., 14th September 1881; (Extension of Patent No. 12,961.)

**No. 13,306. Car wheel.** (*Roue de char.*)

Charles W. Carrier, Levis, (Assignee of Adolphus Davis, Montreal, Que., 15th September 1881; (Extension of Patent No. 12,961.)

**No. 13,407. Safety Electric Railway Signal.** (*Signal électrique de sûreté pour chemin de fer.*)

David Rousseau and William C. Smith, New York, N. Y., U. S., 15th September 1881; (Extension of Patent No. 6,537.)

**No. 13,408. Improvements in Water Pipes.** (*Perfectionnements dans les tuyaux hydrauliques.*)

Joseph Archer, Quebec, Que., 15th September 1881; (Extension of Patent No. 1,153.)

**No. 13,409. Improvements on Automatic Cradles.** (*Perfectionnements aux berceaux automatiques.*)

Henry I. Hotchkins, Berlin Falls, N. H., U. S., 1881; for 5 years.

*Claim.*—1st. The combination of main spring P, winding arbor D, escapement wheel E having each heel F with pawl G, double pawl I J having stubs K engaging with fixed cams L, rock shaft H carrying said pawls, and having arm M rigidly secured to pendulum rod O, connecting rod Q and post C provided with V-slot N applied to the cradle A.

**No. 13,410. Improvements in Drilling Machines.** (*Perfectionnements aux machines à forer.*)

Henry F. Parsons, San Francisco, Cal., U. S., 17th September, 1881; for 15 years.

*Claim.*—1st. A machine for drilling in rock or other hard substances having a tool holder, for holding the drilling tool, a hammer operated by a spring for striking the tool holder, a mechanism for drawing back the hammer, and then releasing it to cause the spring to throw it against the end of the tool holder, and a steady bar by which the machine is held, and guided to its work, and upon which it is fed forward as the drilling progresses. 2nd. A spring hammer operated by mechanism to strike a succession of blows against the rear end of the tool holder and a mechanism for giving to the tool holder an intermittent rotating movement between the blows of the hammer during the operation of drilling. 3rd. In a hand operated machine for drilling in rock and other substances, a steady bar which also serves as a guide bar and support for the drilling machine. 4th. In combination with the barrel of a rock drilling machine, which is arranged to be guided and fed forward on a steady bar A, the friction brake for regulating the feed of the machine. 5th. The cam shaft D, having the two cranks E, held in the barrel C, and in the suitable bearings thereon and carrying the long arms V, in combination with the spring hammer K having the arms R, with their studs and friction rollers. 6th. The cam shaft having the two cranks E for operating it and carrying the short arms x, in combination with the cross head Y, the rear end of the tool or drill holder, and the coil spring S arranged and applied on the forward end of the drill holder. 7th. A barrel to hold and present the drilling mechanism, a tool holder to receive in its front end the drilling tool, and working in a bore or socket in the barrel, an operating shaft held in a bearing in the barrel for working the drilling mechanism that operates upon the tool holder, and the steady bar on which the barrel is supported and fed forward, and the adjustable legs and supports. 8th. The tool holder L having a socket in the forward end, to receive and hold the drilling tool, and provided with spiral grooves e in its surface, in combination with the ratchet face nut F having the spiral ribs or splines V in its fore to engage with the grooves in the tool holder, and held in an opening in the barrel of the machine and controlled in its rotation in one direction by a pawl u, but left free to rotate in the other direction. 9th. The spring hammer operated, in one direction or backward, by mechanism from a rotating shaft and, in the other direction or forward, by the reaction of the spring, to deliver a succession of blows against the end of the tool holding bar. 10th. The tool holding bar L having in one end the pocket to receive and hold the drilling tool, and at the other the detachable and removable striking pin p, against which the blows of the hammer K are applied. 11th. In a steady bar, the extensible supporting leg 234 adapted to be attached to the rear end of the steady bar. 12th. In a steady bar A, the supplemental point or bar provided with a clamp or socket by which it can be secured to the end of the steady bar for extending its length t the front.

**No. 13,411. Improvements on Mechanical Musical Instruments.** (*Perfectionnements aux instruments de musique mécaniques.*)

Hiram B. Nickerson, Orleans, Mass., U. S., 17th September, 1881: for 5 years.

*Claim.*—1st. The combination of the perforated paper C, the lever E, the latch E<sub>1</sub> having a notch E<sub>2</sub>, and the hammer H provided with a shoulder E<sub>3</sub>, with the bell G. 2nd. The combination of the perforated plate F, the perforated music paper C and the lever E. 3rd. The combination of the perforated paper C having auxiliary openings K<sub>5</sub> K<sub>6</sub> K<sub>7</sub>, the lever K<sub>1</sub> K<sub>2</sub>, link K<sub>3</sub>, and swell valve K<sub>4</sub>. 4th. The combination of the paper C having auxiliary openings L<sub>1</sub> L<sub>2</sub> with the levers E<sub>2</sub> E<sub>3</sub> E<sub>4</sub> and their latches E<sub>5</sub>, hammer H and bells G. 5th. The combination of the paper C with its auxiliary openings K<sub>5</sub> K<sub>6</sub> K<sub>7</sub> with the notch projection K<sub>1</sub> of the lever K<sub>1</sub> K<sub>2</sub>. 6th. The musical paper C provided with the ordinary reed opening perforations and the auxiliary swell opening perforations K<sub>5</sub> K<sub>6</sub> K<sub>7</sub>. 7th. The musical paper C provided with the ordinary reed opening perforations, and the auxiliary interlude perforations L<sub>1</sub> L<sub>2</sub>. 8th. The combination of the curved passage D<sub>1</sub> in the reed-board, with the reed D and valve d.

**No. 13,412. Switch for Telegraphic Signaling.** (*Aiguillière pour signaux télégraphiques.*)

Edwin Pope, Québec, Q., 17th September, 1881: for 5 years.

*Claim.*—1st. In a telegraphic switch and alarm, an armature in its normal position held up by magnets and, when released at a certain point, by the interruption of current to said magnets dropping through the periphery of a revolving wheel, or disc, into a lower position whence it is automatically restored to its normal position by the revolution of the disc or wheel. 2nd. The lever C operated by the armature to throw the instrument in and out of circuit. 3rd. The combination of the lever C, magnet M, armature A and double wheel with openings in outer rim, and indent in inner disc. 4th. The combined wheels W X with fixed opening O and varied opening I in periphery of former, and ratchet teeth and indent on latter. 5th. The combination of the wheel W with projections on periphery of same, key K and spring S. 6th. The combination of the wheel W, key K, spring S and hammer B. 7th. The disc V with perforations corresponding to openings I in the wheels W of the several stations in any circuit, and movable pin for interrupting or changing the current.

**No. 13,413. Improvements on Cheese Machines.** (*Perfectionnement aux machines à fromage.*)

Stephen B. Ferguson, Hallowell, Ont., 17th September, 1881: for 5 years.

*Claim.*—1st. The combination of the tub or vat A, lining C, pipes B, knives F H, shaft G, floater J, comb K and strainer L. 2nd. The combination of the tongue N, groove O and sleeve P, with the shaft G.

**No. 13,414. Improvements on Electric Clocks.** (*Perfectionnements aux horloges électriques.*)

Jakob Schweizer, Soleure, Switzerland, 17th September, 1881: for 5 years.

*Claim.*—1st. The improved electric clock. 2nd. An electric clock driven by a weight acting directly on the centre wheel. 3rd. A pawl moved alternately in opposite directions by a weight and by electric action, a ratchet wheel loose on the centre wheel arbor, a pin on the ratchet wheel, a spring fixed on said arbor, and a click engaging with the ratchet wheel. 4th. The combination of the weighted lever and the armature lever connected together at a variable angle and acting reciprocally the one upon the other to produce an oscillating movement on the one hand by electric action and on the other by a counterweight. 5th. The mode of regulating the angular distance between the two levers, by means of a regulating screw in order to determine the extent of upward movement on the counterweight according to the strength of the current. 6th. The mechanism for periodically making and breaking the circuit. 7th. The device for breaking the circuit when the battery is too weak to raise the counterweight, said device being operated by the depression of the armature lever by the counterweight lever.

**No. 13,415. Improvements on Car-Couplings.** (*Perfectionnements aux accouplages des chars.*)

Horace B. Howard and Aaron W. Burnside, Belvidere, Ill., U. S., 17th September, 1881: for 5 years.

*Claim.*—1st. The combination, with a draw head, of a draft hook pivotally secured to a shaft passing through the draw head, a spring encircling said shaft for retaining the draught hook in place, a shaft and mechanism for revolving the same, and a chain connecting said revolving shaft with the shaft on which the draw head is pivoted. 2nd. The combination, with a spring pressed draft hook pivotally secured in the draw head, of a hand wheel provided with a ratchet wheel, and a pawl engaging therewith, and a rod extending to the top of the car, said rod adapted to actuate the pawl. 3rd. The combination, with a coupling link and a draw head, of a lever and chain located within the latter and adapted by depressing the inner to raise the outer end of the coupling link. 4th. The combination, with a draw head, of a pivoted plate having a rubber spring secured thereto, and a lever chain and shaft for raising the outer end of the connecting link. 5th. The combination, with a draw head, of a plate pivoted at its outer end to the upper face thereof, the rear end of said plate being connected with a shaft by a chain, said shaft formed with an eye hook joint and adapted to be revolved by a hand wheel located at the side of the car, thereby allowing the chain to be wound upon or unwound from it. 6th. The combination, with a draw head, of a plate pivoted at one end thereto, and a protecting rubber spring secured to the under face of the plate, said spring operating to depress the inner end and raise the outer end of the connecting link, when the chain attached to the rear end of the plate is wound upon the shaft.

**No. 13,416. Improvements in Metallic Fencing.** (*Perfectionnements aux clôtures métalliques.*)

Edward Steer and John Sheldon, Birmingham, Eng., 17th September, 1881: for 5 years.

*Claim.*—1st. The improvement in constructing and fixing the barbs of metallic fencing described, that is to say, making the same barbs from pieces of wire preferably, nearly of a semi-circular figure in cross section, pointed at their ends, and bending the middle of the wire into a nearly circular loop or eye, also fixing the said barbs to the wire fencing, by compressing the nearly circular loops or eyes of the barbs upon flattened parts of the wire fencing, or upon parts bent or cranked into a nearly semi-circular or other figure, or upon plain wire fencing. 2nd. The improved fastenings for joining wires and strips or bands for metallic fencing, and for other purposes, that is to say, making of two similar cranked wires or strips, one end of each part being furnished with a loop or eye, the two parts of the fastening being passed through loops in the ends of the lengths of wires, strips or bands and the said two parts of the fastenings engaged together.

**No. 13,417. Improvements in Boot and Shoe Lasts.** (*Perfectionnements aux formes des chaussures.*)

Léon O. Dion, Natick, Mass., U. S., 17th September, 1881: for 5 years.

*Claim.*—1st. A last for a boot or shoe having a portion of its lower or "sole" surface composed of a series of points, ridges or projections made of metal, or similar hard material and adapted to support the inner sole of a boot or shoe being pegged thereon, against the action of the awl, and allow the awl to pass between them. 2nd. A last for a boot or shoe, having a portion of its lower or "sole" surface composed of a series of metallic points, ridges or projections, which are so elastic as to be capable of resuming the position from which they may be bent by the action of the awl or pegs, as used in pegging a boot or shoe sole thereon, when such awl or pegs are withdrawn. 3rd. A last for a boot or shoe, having a portion of its sole surface cut away, and having substituted therefor a series of upright wires or pins, made of metal or other hard material and adapted to support the inner sole of a boot or shoe being pegged thereon, against the action of the awl, and allow the awl to pass freely between such wires or pins. 4th. A last for a boot or shoe, having a groove in its sole surface containing a strip of leather, rubber or similar flexible material, in which are set upright nails or wires.

**No. 13,418. Improvement on Boiler Grates.**

(*Perfectionnements aux grilles des chaudières.*)

William B. Malcolm, Toronto, Ont., 17th September, 1881: for 5 years.

*Claim.*—1st. A cone-shaped grate A, with a dead centre piece B, and bars radiating from this centre piece to the periphery of the grate, having strengthening rib pieces D D, a strengthening ring E and cross bar E<sub>1</sub>, with pivot c. 2nd. The cone-shaped grate A, in combination with the bottom G, with cross bar K and sockets f, fire chamber I and notched ring L.

**No. 13,419. Improvements in Machines for Punching Metal Plates.** (*Perfectionnements aux machines à poinçonner les plaques métalliques.*)

John B. Armstrong, Guelph, Ont., 17th September, 1881: for 5 years.

*Claim.*—1st. In connection with a punching machine, a punch A having a conically-shaped punching and in combination with a punch block B, sufficiently large to admit the punch and around it the punch carried by the punch from the hole it forms in the plate. 2nd. In punching holes through metal bars or plates, the forming around each hole of a solid projecting sleeve out of the stock punched from the hole, for the purpose of strengthening the metal at the point which would otherwise be weakened by the said hole, and also to constitute a projection which may be used for holding the plate in position.

**No. 13,420. Improvements in Vehicles.** (*Perfectionnements dans les voitures.*)

John B. Armstrong, Guelph, Ont., 17th September, 1881: for 5 years.

*Claim.*—1st. As a new article of manufacture, a steel axle tempered between the shoulders formed on the inside of the journals and flattened in the centre, to form a bearing for the heel plate. 2nd. A tempered steel axle flattened in the centre to form a bearing, in combination with a tempered steel head plate having a downwardly projecting sleeve, formed by the stock punched from the king bolt hole and fitting into a hole made in the axle or metal head plate, when used for the purpose of sustaining the lateral strain which would otherwise be exerted on the king bolt. 3rd. A buggy or carriage gear having tempered steel axles, and a metal or tempered steel head plate pivoted upon the front axle, the tempered steel reaches C rigidly connected at one end to the hind axle B, and at the other to the head plate D, the C-springs E situated at the ends of the reaches C and provided with the free shackles H, in combination with the single plate tempered steel side springs G, carried by the shackles and supporting the spring bars I. 4th. In a buggy or carriage gear made entirely of metal, a single plate tempered steel reach provided with C-shaped springs at each end, the combination of a brace M rigidly fastened to the axle and extending therefrom to the reach, where it is secured by a bolt passing through a sleeve formed by the stock punched from the hole, to receive the connecting bolt, the said sleeve projecting into the hole made in the stay, for the purpose of relieving the bolt from the lateral strain which would otherwise be exerted against it. 5th. In a buggy or carriage gear, the metal saddle plate having semi-circle recesses, to hold in position the round clips F forming a finish on either side thereof.

**No. 13,421. Improvements on Vehicles.** (*Perfectionnements aux voitures.*)

John B. Armstrong, Guelph, Ont., 17th September, 1881: for 5 years.

**Claim.**—1st. In a carriage or buggy gear in which the axles are made of tempered steel, a metal head plate having a sleeve *f* formed by the stock punched out of the hole made to receive the king bolt and fitting into a recess made in the axle or axle plate, the said head plate being connected to the hind axle, by the tempered steel reaches *C* clamped and stayed thereto, in combination with elliptic springs clipped and supporting the spring bar plates *M*, the ends of which are supplied with free shackles *N* to carry the body loops. 2nd. In a buggy or carriage gear made entirely of metal, a head plate *F* having a sleeve *f* formed in its centre by the stock punched from the hole to receive the king bolt, the said sleeve fitting into a recess made in the axle or axle plate and forming the pivoted bearing point, in combination with the metal spring block *I* resting on the head plate *F* and supporting the elliptic spring *J*. 3rd. A projecting sleeve or teat formed by the stock punched out of the plate, at the connecting points of the gear, for the purpose of sustaining the lateral strain which would otherwise be exerted on the connecting bolts or clips. 4th. In a buggy or carriage gear having elliptic springs, the spring bar plates *M* attached to the top of the spring, in combination with the free shackles *N* attached to the ends of the bars *M* and arranged to support the body loops *L*, so that the body supported thereon shall have a free swinging movement.

**No. 13,422. Improvements on Clothes Wringers.** (*Perfectionnements aux essoreuses à linge.*)

Charles J. Shirreff, Brockville, Ont., 17th September, 1881; for 5 years.  
**Claim.**—1st. The combination of the main frame having curved ends *A A* carrying the journals of the top roller *C* at their upper extremity, provided with a screw *D* or other clamping device at the lower extremity, and curved springs *F F* carrying on their upper extremity the journals of lower roller *G*, said springs having a rocking or pivoted connection with the end *A A* above the lower or straight extremity, whereby the wringer is clamped to the tub, and the rollers compressed simultaneously. 2nd. The combination of the curved ends *A A* connected together and carrying the upper roller *C*, curved springs *F F* carrying the lower roller *G* and having terminations to clamp against the tub, and the apron *K* supported by the ends *A A*.

**No. 13,423. Improvements on Electro-Magnetic Motors.** (*Perfectionnements aux moteurs électro-magnétiques.*)

Moses G. Farmer, Newport, R. I., U. S., 17th September, 1881; for 15 years.  
**Claim.**—1st. The method of neutralizing or destroying the induced current generated in the helix of an electro-magnet, upon the cessation of the primary current traversing the same, which consists in uniting with each other the respective opposing terminals of the two sections of the divided helix and thereby forming a closed circuit, immediately upon the disconnection of the generator. 2nd. The combination of two helices included in the same circuit and acting in unison upon the same core or armature, a commutator automatically operated by the movement of said core or armature and circuit connections, whereby the connections of the terminals of the respective helices are reversed, so that the current is made to traverse said helices alternately in the same and in an opposite direction with reference to each other. 3rd. The combination of a movable core or armature, two helices or coils arranged to act simultaneously upon said core or armature to impel it in a given direction, a commutator automatically operated by the movement of said core or armature, and circuit connections from the commutator to the helices, whereby the opposing or like terminals of said coils are united at the termination of the stroke to form a closed circuit, before the disconnection of the generator.

**No. 13,424. Improvements on Paper Machines.** (*Perfectionnements aux machines à papier.*)

John H. Henry, Hinsdale, N. H., U. S., 17th September, 1881; for 5 years.  
**Claim.**—1st. The combination, with the cylinder of movable covers and means for adjusting the same upon the cylinder without stopping its rotation. 2nd. The combination, in a cylinder paper making machine, of the rotating cylinder, the non-rotating ring, its packing and the case attached to the end of the vat within which the rings slide. 3rd. The combination of a rotating cylinder provided with sliding covers at each end, the cover receiving cases attached to the pulp vat, and means for preventing leakage of fibre from the vat. 4th. The cylinder *C* sliding heads *F F*, racks *e e* and pinions *h*, in combination with the carrier *H*, screw *F* and nut *J*. 5th. The ring *K* provided with lugs *o o*, in combination with packing *P* and heads *F*. 6th. The semi-cylindrical cases *B B* provided with the bearings for the shaft *D*, in combination with the pulp vat *A*.

**No. 13,425. Improvements on Coffee Roasters.** (*Perfectionnements aux torréfacteurs à café.*)

Peter Pearson, Manchester, Eng., 17th September, 1881; for 5 years.  
**Claim.**—1st. The combination of a slowly revolving screw or worm and semi-cylindrical trough with a curved metal plate above heated by gas, or other analogous means. 2nd. The combination with a slowly revolving screw or worm (in a semi-cylindrical trough) of a quickly revolving cage or wire gauze enclosing the same, also with a curved metal plate above heated by gas, or other analogous means.

**No. 13,426. Improvements on Ruling Pens.** (*Perfectionnements aux plumes à régler.*)

Edward W. Blackhall, Toronto, Ont., 17th September, 1881; for 5 years.  
**Claim.**—1st. The reservoir or fountain *A* with aperture *D*, rubber valve *F* and spring *C*. 2nd. The rolling pen *E* with channels *G* cut in the solid metal and spring end or top *e d*. 3rd. The reservoir of fountain *A* with aperture *D*, self-regulating lip or valve *F* and spring *C*, in combination with the pen *E* the whole being applicable to ruling machines.

**No. 13,427. Improvements on Spark-Arresters.** (*Perfectionnements aux arrête-flammèches.*)

Alexander M. Kerr, Westminster, Ont., 17th September, 1881; for 5 years.  
**Claim.**—1st. In creating a return current down the tube *A* by steam or air. 2nd. The tube *A* with a conical end. 3rd. The semi-cylindrical ring *E* connected to the smoke stack or furnace top.

**No. 13,428. Improvements in Doors.** (*Perfectionnements dans les portes.*)

William F. Sexton, Sr., and William F. Sexton, Jr., Toronto, Ont., 17th September, 1881; for 5 years.  
**Claim.**—1st. A hinged door *A* having a spindle *B* extending from its pivotal point, a pulley or level pinion *D* fastened to the said spindle, in combination with a weight *J* connected to and arranged to operate through the pulley or pinion *D* upon the door *A*. 2nd. A hinged door *A* having a spindle *B* extending from the pivotal point and adjustably supported on the bracket *C*, a pulley *D* fastened to the spindle *B*, in combination with an endless strap *E* passing around the pulleys *D F G* and weighted by the weight *J*. 3rd. A hinged door having a spindle extending from its pivotal point, a pulley fastened to the spindle, in combination with a strap adjustably fastened to the pulley on the said spindle and weighted so as to exert a counterbalancing power over the hinged door. 4th. A hinged door having a spindle extending from its pivotal point, a bevel spur wheel *D* fastened to the spindle and meshing with a bevel spur wheel *M*, in combination with a weight connected to the bevel spur wheel *M* and arranged to exert a counterbalancing power over the hinged door.

**No. 13,429. Fabric for the Lining of Overcoat Sleeves.** (*Etoffe à doublure pour les manches des patetots.*)

Thomas Houston, Toronto, Ont., 17th September, 1881; for 5 years.  
**Claim.**—As a new article of manufacture, a fabric, one side of which is composed of fine highly polished cotton thread, and the other side of dry finished cotton thread, the former being woven so as to produce a smooth surface, which will be found equal to satin de chine or silk, while the later is woven so as to form a strong backing for the smooth surface.

**No. 13,430. Improvements on Writing Charts.** (*Perfectionnements aux cartes d'écriture.*)

John H. Reed, Lancaster, Wis., U. S., 17th September, 1881; for 5 years.  
**Claim.**—The combination, with the chart, of a series of covers having parts of letters written on one side. The method of illustrating in penmanship, consisting of forming and illustrating letters by means of covers, which cover parts of letters on a chart and have parts of letters written on their rear side.

**No. 13,431. Improvements on Engine Governors.** (*Perfectionnements aux gouverneurs des machines.*)

Benjamin B. Brewer, (Co-inventor with Addison G. Waterhouse,) and Barton B. Ward, Sacramento, Cal., U. S., 17th September, 1881; for 5 years.  
**Claim.**—1st. The frame carrying the valve working mechanism of a governor valve adapted to move in a vertical direction by means of a pin *o* and a recessed slot in the frame, and thereby close the valve when the spring belt becomes inoperative. 2nd. In a steam governor, the valve shell *V* provided with the cylindrical chamber or dome *D*, having the stop *O*, in combination with the sleeve *H*, having recessed slot *r*, the frame *F*, the pulley *P* and belt, whereby the belt tends to hold up the frame by pressing the recess of the slot against the stop. 3rd. In a governor, the spiral spring *C* and rod *r*, provided with a head *a*, a hollow governor stem *P*, an adjustable bushing *b*. 4th. The cylindrical sleeve *H*, a governor valve provided with a cylindrical dome *D* and a pulley *P*. 5th. The sleeve *H* held adjustable on the dome *D* by pointed screws *Q* to diminish frictional contact.

**No. 13,432. Improvements on Metallic Packings.** (*Perfectionnements aux garnitures métalliques.*)

Josiah A. Osgood, Grantville, Mass., and Edwin P. Monroe, New York, U. S., 17th September, 1881; for 5 years.  
**Claim.**—1st. The improvement in metallic packing for piston and other similar rods consisting of the segments *B B* corresponding in form having parallel sides and of a width sufficiently less than the diameter of the rod with which they are to be used, to permit their contact while compensating for their wear, and at the same time practically surround the rod, in combination with the babbitt metal or soft filling *G* in the cavity. 2nd. The segments *B B* and guide blocks *C C*, having the cavities and babbitt or soft filling *G G G G* provided with springs. 3rd. The combination of packing blocks or segments, having cavities filled with babbitt or soft filling. 4th. The adjustable packing segments *B C* formed with cavities, in combination with the babbitt metal or soft filling *G*. 5th. The combination of the packing blocks or segments, having cavities filled with babbitt or other anti-friction metal, with the vibrating ring *A* and springs *F*. 6th. The combination of the stuffing box *X* or case *X*, and the compound packing blocks or segments, filled with anti-friction metal or soft filling, with the rod *Y*.

**No. 13,433. Improvements on Car Couplings.** (*Perfectionnements aux accouplages des chars.*)

James McCree, Lansing, Mich., U. S., 17th September, 1881; for 5 years.  
**Claim.**—1st. A draw-bar for railway cars, pivotally supported and adapted to have a vertical radial movement. 2nd. As a means for pivotally supporting a draw-bar and providing for the necessary spring

thereof, the recess *d* and bearings *D*, in combination with the plates *F* attached to the proper timbers under the car. 3rd. The combination of the dog *I*, link *J* and bolt *K*. 4th. The pin *L* bent back upon itself with a longer and a shorter arm, in combination with the shelf *d*. 5th. The recess *c* adapted to receive and retain the link *J* when concealed within said draw-bar. 6th. The internally pivoted dog *I*, the hand hole *b*. 7th. The placing of the follower bars or plates *E* edgewise to the line of impact, thus receiving greater strength.

### No. 13,434. Improvements on Churns.

(*Perfectionnements aux barattes.*)

George A. Conover, Trafalgar, Ont., 17th September, 1881; for 5 years.

*Claim.*—A barrel *C* provided with trunnions *B* secured at the centre of the bulge of the barrel and resting in bearings, made on the ends of the standards, or the frame *A*, a suitable handle *D* being secured to one of the trunnions, in combination with the loose head *E* bound by an iron ring *F* and provided with adjustable bars *J*, connected to the disk *K*, secured to the same centre bolt *L* as the handle *M*, by which the bars *J* are simultaneously thrown into slots made in the lugs *I*.

### No. 13,435. Improvements on Refrigerators.

(*Perfectionnements aux garde-manger.*)

Judson A. Baldwin, Shelburne, Vt., U. S., 17th September, 1881; for 5 years.

*Claim.*—1st. The combination of the door, a movable shelf and an inside door which is attached to the shelf, the inside door being made to close the opening in the side of the refrigerator when the shelf is drawn out. 2nd. The combination of the door *B* and cleats *a* having the track *d* upon them, the shelf *C* provided with wheels and, having attached to its inner end, the track *c*.

### No. 13,436. Improvements on Grain Elevators.

(*Perfectionnements aux elevateurs a grain.*)

George A. Stewart, Toronto, Ont., 17th September, 1881; for 5 years.

*Claim.*—1st. The placing of the bins in the basement of the building. 2nd. The bottoms of the bins formed of joists and flooring, and sloping at such an angle as will allow of a free discharge of the grain. 3rd. The mode of discharging the grain through a valve into the lower conveyor, and the wire and spring attachment for opening and shutting the same.

### No. 13,437. Improvements on Apparatus for Treering Boots.

(*Perfectionnements aux appareils a emboucher les bottes.*)

Frank P. Simonds, Natick, Mass., U.S., 17th September, 1881; for 5 years.

*Claim.*—1st. In an apparatus for treering boots, a flexible rubbing belt or strap, and means to cause it to reciprocate longitudinally, in combination with movable grinding mechanism, whereby the said rubber may be presented to different parts of the boot being treered. 2nd. The rubbing strap and means to reciprocate and guide it, combined with a guide supporting frame having a swinging movement to carry the said strap longitudinally over the surface of the boot. 3rd. The rubbing strap and its actuating mechanism, combined with a swinging frame, and strap sustaining plate or carriage having a sliding movement in the said frame. 4th. The combination with the strap and mechanism to actuate it, of the pivoted strap guiding arms arranged to embrace the boot, and bring the strap into contact with the surface thereof. 5th. The strap and sliding plate to support it, combined with the take up or tension levers automatically operated by the said plate, in its movement to maintain the proper tension for the said strap. 6th. The strap and its actuating mechanism, combined with the swinging supporting frame therefor, the plate or carriage adapted to slide in the said frame, and the strap guiding frame pivoted on the said plate, and forked to embrace the boot being treered. 7th. The combination with the rubber and its actuating mechanism, of the swinging supporting frame therefor, and its counter-balancing mechanism to maintain it in equilibrium. 8th. In combination with the swinging frame having mounted thereon the mechanism for rubbing the boot, the toggle jointed levers connected with the said frame, and the counter-balancing weight hung thereon. 9th. The combination of the swinging frame, and the sliding strap supporting plate thereon, with a treadle and suitable connections for moving said sliding plate, and a weight for counter-balancing the same. 10th. The combination of the swing frame *C*, the sliding plate *A*, pivoted frame *T*, pivoted levers *J*, take up levers *F*, flexible rubbing strap *G* and connections *E*, guiding shears or pulleys therefor, and mechanism for imparting to said rubbing strap an endwise reciprocating motion. 11th. The combination of the swinging frame *C*, sliding plate *H*, take up levers *F*, the links connecting the said levers and plate, the flexible rubbing strap *G*, suitable pulleys for guiding said strap, and mechanism for imparting to said strap a reciprocating endwise motion.

### No. 13,438. Improvements in Washing Machines.

(*Perfectionnements aux lavuses mecaniques.*)

Isidore Gérard and Peter Tremblay, Newton, Ks., U. S., 17th September, 1881; for 5 years.

*Claim.*—1st. The adjustable washboard *n*, hinged in the reservoir, in combination with the rock shaft *P* provided with the horizontal arm *p* and the vertical arm *p'*, and the operating rod *R* and rack *T*. 2nd. The adjustable washboard formed with the concave portion, in combination with the revolving cylinder having pivoted rollers. 3rd. The crank shaft *D*, journalled in the sides of the reservoir, and carrying the cylinders formed of the disks *F* and the pivoted rollers *ff*, in combination with the adjustable washboard, and means for revolving the shaft and roller.

### No. 13,439. Improvements on Corn Husking Machines.

(*Perfectionnements aux machines a eplucher le ble d'inde.*)

Hugh Sells, Vienna, Ont.; 17th September, 1881; for 5 years.

*Claim.*—1st. The narrow bands or collars *B* at or near ends of rollers as applied to husking machines. 2nd. The set screws *C*, for adjusting the picking rollers, the shell boxes *I* and the extension of the fly wheel shaft *D* across frame, in combination with the bands or collars *B*, as applied to husking machines, and producing new results.

### No. 13,440. Improvements on Car-Couplings.

(*Perfectionnements aux accouplages des chars.*)

Elijah Hickman, Red Bluff, Cal., U. S., 17th September, 1881; for 5 years.

*Claim.*—1st. The draw-bars *B* with their shoulders *f*, extensions *g* and wedge-shaped hook *p*, said draw-bars having their rear ends attached to sliding blocks *D*, while their opposite or outer ends pass through enlarged openings *l* against the bottoms of which they are pressed by spring *h*, so that the hooks *p* will over-ride each other, and couple by lifting vertically. 2nd. The backward pointing hooks *p* made wedge-shaped towards their outer or back edges, and attached to draw-bars, which are capable of lifting vertically, so that the hooks will over-ride each other in coupling and uncoupling.

### No. 13,441. Improvements on Cattle Stanchions.

(*Perfectionnements aux etançons a bestiaux.*)

Mills H. Barnard and Albin Taplin, Forestville, Ct., U. S., 17th September, 1881; for 5 years.

*Claim.*—1st. The combination of the stanchion frame, neck bars, cross pieces and cranks. 2nd. The combination of the stanchion frame, neck bars and cross pieces, with the spring *c* and transverse arm *p*. 3rd. The combination of the stanchion frame, neckbars, one cross piece and crank *p* hanging it, the opposite cross piece and the mechanism for hanging it to the frame, so as to allow free play of the crank at the other end.

### No. 13,442. Improvements on Fanning Mills.

(*Perfectionnements aux tarares-cribleurs.*)

James Cavers, North Dunfries, Ont., 17th September, 1881; for 5 years.

*Claim.*—A fine sieve *E* provided with a chess board *F*, in combination with a supplementary sieve *E'* connected to the chess board *F* by the tube *G*, and provided with a chess board *H*.

### No. 13,443. Improvements on Pipe Couplings.

(*Perfectionnements aux manchons des tuyaux.*)

Henry G. Dennis, New Bedford, Mass., U.S., 17th September, 1881; for 5 years.

*Claim.*—1st. In combination with the pipe *A* having an annular head *B* near the end, and with the pipe *E*, the collar or bell *C*. 2nd. In combination with the pipe *A* provided with an annular head and swayed outwards at the end, and the pipe *E* contracted at the end of a collar or bell *C*. 3rd. A removable bevelled bell or collar *C* made with a rebate *D*, and an aperture *F* extending from the outer to the inner surface.

### No. 13,444. Improvements on Refrigerators.

(*Perfectionnements aux garde-manger*)

John Alexander, Toronto, Ont., 18th September 1881; (Re-issue of Patent No. 12,928.)

*Claim.*—1st. The vertical ventilating flue *H* leading from a point, at or near the bottom of the cooling chamber *B*, to the exit *K* outside the refrigerator, at or near its top. 2nd. The vertical ventilating flue *H*, in combination with the ventilator or ventilators *L* over the warm air passage *D* into the ice chamber. 3rd. The vertical ventilating flue *H*, in combination with a cold air passage or passages *G* from the sides of ice chamber, with a guard or guide *m* directing cold air from side passage or passages to the centre of cooling chamber. 4th. The vertical ventilating flue *H*, in combination with an open rack *F* and water sheds *C*, and trough *C'*. 5th. The cold air passage *G* from sides of ice chamber *A*, in combination with open ice rack *F* and water sheds *C*, and troughs *C'*. 6th. A warm air passage or passages *D*, in combination with the open ice rack *F* and water sheds *C*, and troughs *C'*. 7th. The standing bottom *N* in a refrigerator, falling towards, and in combination with the receiving chamber *I* and the vertical ventilating flue *H*. 8th. The receiving chamber *I* cut through the inner skin of the refrigerator and properly incased, so as to direct the draught towards the ventilating flue *H*. 9th. The combination of the vertical ventilating flue *H*, ventilators *L* at the top of warm air passage *D* into the ice chamber, cold air passages *G* from sides of ice chamber, the guard or guide *m* directing cold air to centre of cooling chamber, open ice rack *F*, water sheds *C*, troughs *C'*, slanting bottom *E* of the cooling chamber, and receiving chamber *I* at the rear of said bottom.

### No. 13,445. Improvements on Car-Couplers.

(*Perfectionnement aux accouplages des chars.*)

Auguste M. Béchar, Richard D. Morkill, jr., and James R. Woodward, Sherbrooke, Que., 18th September 1881; (Re-issue of Patent No. 11,352.)

*Claim.*—1st. The combination with a draw-bar head provided with a coupling pin of a weighted pendulous trip pivoted in said draw-bar head, to hold a coupling link between said trip and the coupling pin on a more or less downward incline from the draw-bar head, so that the said link will enter the mouth of a lower opposite draw-bar head. 2nd. The combination, with a draw-bar head provided with pin receiving openings, and a coupling pin of a pendulous trip, pivoted in said draw-bar head and having a bulge or convex portion on its outer surface, or face to

hold the coupling link between said pin and pendulous strip, and above the budge of said trip on a downward outwardly incline therefrom, and to retain the link in such position by which the said link will enter the mouth of a lower opposite draw-bar head. 3rd. The combination, with a draw-bar head having the upper rear surface of its interior bevelled, of a weighted pendulous trip pivoted in said draw-bar head and having its bottom bevelled, by which the said trip, when swung back, engages with the bevelled surface of said draw-bar head, to prevent undue strain on the pivoted bearings of said trip. 4th. The combination, with a draw-bar head having the upper rear surface of its interior bevelled, of a pendulous trip pivoted in said draw-bar head and having a bulge or convex portion in its outer surface, or face, and provided with a bevelled bottom, by which the said trip, when swung back, engages with the bevelled surface of said draw-bar head to prevent undue strain on the pivoted bearings of said trip. 5th. A weighted pendulous trip hung in a draw-bar head, and adapted to hold a coupling pin in an elevated position to permit the entrance of a link in said draw-bar head, or to hold a coupling link against the coupling pin so as to project on a more or less downward incline from said draw-bar head by which it will enter the mouth of a lower opposite draw-bar head. 6th. The combination with a draw-bar head, provided with pin receiving openings, a coupling pin and an upwardly and outwardly inclined link seat, of a weighted pendulous trip pivoted in said draw-bar head and having a bulge, or convex portion on its outer surface or face, by which the coupling link may be held in such position as to enter the mouth of a draw-bar head, higher or lower than the one containing the coupling link. 7th. The car-coupling consisting of the draw-bar head having the pin receiving openings, a coupling pin, the bevelled upper rear surface, the inclined link seat and the weighted pendulous pin support or trip, said support pivoted on opposite sides, at right angles to, and in line with the axis of said pin receiving openings, and provided with the pin rest, the bulge or convex portion and the bevelled bottom.

**No. 13,446. Composition for Colouring and Preserving Butter.** (*Composé pour colorer et conserver le beurre.*)

Lucy A. Bailey, Morrisville, Vt., U. S., 20th September 1881; for 5 years.

*Claim.*—A compound composed of saffron, curcuma, annatoine, butter or lard oil and salicylic acid.

**No. 13,447. Improvement in the Method of Heating Freight Cars.** (*Perfectionnements dans le mode de chauffage des chars à marchandises.*)

William E. Eastman, Charles H. Kimball and Charles H. Murch, Boston, Mass., U. S., 20th September 1881; for 5 years.

*Claim.*—1st. The heater *h*, in combination with the air spaces at the bottom and sides of the car, arranged so that it can be forced without entering the car. 2nd. The box forming support for the heater *h*, a hot air chamber and fuel. 3rd. The thermometer *t*, in combination with a heating apparatus. 4th. The smoke stack *r*, in combination with heater *h*, box *c*, lining *a a*, ceiling *e* and thermometer fastened to the outside of car. 5th. The opening *d p* for producing an air current from heater, towards the car ends. 6th. The box opening *u* through floor into box *c*, in combination with the same.

**No. 13,448. Improvements on Guide Rein Turrets.** (*Perfectionnements aux clés des sellettes de haruais.*)

Tristram S. Lewis, Saco, Me., U. S., 20th September 1881; for 5 years.

*Claim.*—In combination with the driving rein turrets provided with the rockets *A* of the driving reins provided with bubbs *B*, whereby the check rein and water hook may be dispensed with.

**No. 13,449. Improvements in File Cutting Machines.** (*Perfectionnements aux machines à tailler les limes.*)

Alfred Weed, Philadelphia, Pa., U. S., 20th September 1881; for 10 years.

*Claim.*—1st. The combination, with the swinging chisel carrier, of an actuating cam whose axis coincides with the axis of oscillation of the carrier. 2nd. The combination of a swinging chisel carrier, a sleeve upon which said carrier oscillates, and an actuating cam whose shaft passes through said sleeve. 3rd. The combination of the V-shaped sliding bed piece with the correspondingly formed ways of the bed plate.

**No. 13,450. Improvements in Brushes.** (*Perfectionnements dans les pinceaux.*)

George Gruber, Detroit, Mich., U. S., 20 September 1881; for 5 years.

*Claim.*—1st. The process of manufacturing brushes by the means described. 2nd. As a new article of manufacture, a brush wherein the bristles are secured within the head in grooves of a circular and rectangular form, by means of a suitable cement.

**No. 13,451. Improvements on Submarine and Surface Walls.** (*Perfectionnements aux murs sous-marins et extérieurs.*)

David A. Dyer, Ferndale, Cal., U. S., 20th September 1881; for 5 years.

*Claim.*—A wall or other structure composed of wooden boxes *a b c d*, filled with cement, gravel, or other heavy substance, and provided with interlocking projections or ribs *e*, which also form guides for sending the boxes into place.

**No. 13,452. Improvements in Saw Handles.** (*Perfectionnements aux manches des scies.*)

Emanuel Andrews, Williamsport, Penn., U. S., 20th September 1881; for 5 years.

*Claim.*—1st. The auxiliary or supplemental attachable or detachable saw handle *C* adapted to be attached, by its upper arm, to the permanent handle of a cross cut saw, and having its lower arm passed through the loop of said saw handle, whereby said saw may be used with the permanent handle alone, or with both handles. 2nd. In combination with a saw handle having a clamping ferrule, and a saw plate loop, the auxiliary or supplementary saw handle *C*, secured in an attachable and detachable manner to said clamping ferrule and loop, whereby said saw may be used with the permanent handle alone or with both handles.

**No. 13,453. Improvements on Bale Band Fastenings.** (*Perfectionnements aux joints des cercles de ballots.*)

Granville Nicholson, (Assignee of Theodore A. Weber.) New York, N. Y., U. S., 20th September 1881; for 5 years.

*Claim.*—1st. A bale band fastening composed of a link having in it two holes or openings and a band, one end of which is inserted through one hole or opening only of said link and formed into an open loop, and the other end of which is adapted to be inserted through the other hole or opening in said link and through said loop, and to come to a bearing *a* upon the end of the loop, opposite said link, and upon the side of the loop, opposite to that on which said link projects. 2nd. A link having in it two holes or openings and twisted or bent, near the middle of its length, and a band one end of which is inserted through one of said holes or openings, and formed into a loop, and the other end of which is inserted through the other hole or opening and through the loop.

**No. 13,454. Improvements in the Method of Stitching.** (*Perfectionnements dans la manière de piquer.*)

The Morley Sewing Machine Co'y (Assignee of James H. Morley.) Holyoke, Mass., U. S., 20th September 1881; for 5 years.

*Claim.*—The method of sewing stitches in fabrics, by passing the needle thread up through the fabric at *c*, then from *c* carrying a double thread across the fabric passing said double thread down through the fabric at *d*, interloping said thread and forming upon the underside of said fabric, under the ends of said cross stitches, two parallel lines of stitches, one of said parallel lines consisting of a single thread intermediate between said cross stitches, and the second line of said stitches consisting of double threaded loops interloped one with the other.

**No. 13,455. Improvements on Nut Locks.** (*Perfectionnements aux arrêto-écrous.*)

Adelard F. Martel, Montreal, Que., 20th September 1881; for 5 years.

*Claim.*—1st. In a nut lock, the wire *D* passing under the nut *E* having the depression *F*, and coiled up over through the slot *C*, in the top of the bolt *C*. 2nd. The nut *E* having a semi-circular or other shaped depression *F* across its face, the bolt *C* having a slot *C* in its point, and the wire *D*. 3rd. The bolt *C* having a slot *C* in its point, the nut *E* having a depression *F* in its underside, and the wire nut lock *D*.

**No. 13,456. Machine for Making Metal Screws.** (*Machine pour faire des vis métalliques.*)

Albert W. Gifford, Worcester, Mass., U. S., 20th September 1881; (Extension of Patent No. 6,600.)

**No. 13,457. Improvements on Roofs.** (*Perfectionnements aux toitures.*)

Cyrus M. Warren, Brookline, Mass., U. S., 20th September 1881; (Extension of Patent No. 6,606.)

**No. 13,458. Improvements on Roofs.** (*Perfectionnements aux toitures.*)

Cyrus M. Warren, Brookline, Mass., U. S., 21st September 1881; (Extension of Patent No. 6,606.)

**No. 13,459. Vehicle Springs.** (*Ressort de voiture.*)

Abel A. Crosby, (Assignee of Sebastian Gilzinger.) Rondout, N. Y., U. S., 22nd September, 1881; (Extension of Patent No. 6,575.)

**No. 13,460. Vehicle Spring.** (*Ressort de voiture.*)

Abel A. A. Crosby, (Assignee of Sebastian Gilzinger.) Rondout, N. Y., U. S., 23rd September 1881; (Extension of Patent No. 6,575.)

**No. 13,461. Improvements in Temporary Binders.** (*Perfectionnements aux reliures mobiles.*)

Charles Sneider and Daniel Slote, New York, N. Y., U. S., 23rd September 1881; for 5 years.

*Claim.*—1st. In a temporary binder, the cover *D D'* provided with metal plates *F F'*, shoulders or offsets *b b*, a series of stationary hooks *h* in one plate, and a series of movable hooks *h'* in the other plate. 2nd. The series of stationary hooks *h* and the series of movable hooks *h'*, and a sheet metal clamp attached to each hook, for the purpose of binding or holding single sheets. 3rd. The series of stationary hooks *h* and the series of movable hooks *h'*, with the sheet metal attachment to be inserted in album leaves. 4th. The double back and interposed hooks and their bearings. 5th. The combination of the cover *D D'* provided with flaps *D*, shouldered plates *F F'* having respectively stationary and movable hooks *h h'* and forming flanges *d d*, and the exterior cover *A* with the plate *C* forming grooved projections *a a*.

**No. 13,462. Improvements on Coffee Pots and Urns.** (*Perfectionnements aux urnes-cafétières.*)

Edgar Robinson and Amadeus N. Detmer, Cincinnati, Ohio, U. S., 23rd September 1881; for 5 years.

*Claim.*—1st In a coffee pot, a water seal arranged upon the underside of the lid composed of the orifice C, tube D and the swinging suspended vessel E. 2nd. The movable coffee rack composed of the hoops O P supported by suitable legs, and a sack of coffee holder attached to the annular hoops. 3rd. A coffee pot composed of the cylindrical boiler vessel A, the swinging water seal D D and the coffee rack holder.

### No. 13,463. Improvement on Belt Fasteners.

(*Perfectionnement aux joints des courrois.*)

William F. Wilkins, Adamsville, Que., and John Wilkins, Toronto, Ont., 23rd September 1881: for 5 years.

*Claim.*—1st. The toothed or serrated metallic plate A having the V-shaped teeth B on each of its ends, which teeth are bent to a right angle from the plane of the plate. 2nd. The toothed or serrated plate A, in combination with any of the means of fastening the plate to belt C. 3rd. The toothed or serrated plate A as a new article of manufacture.

### No. 13,464. Improvements on Ironing Boards.

(*Perfectionnements aux planches à repasser*)

George A. Schram, St. Thomas, Ont., 23rd September 1881: for 5 years.

*Claim.*—The side bars A and end bars A' mortised freely together, controlled by studs D, and coil spring C contained in angularly disposed slots d, for clamping the board B on which the garment is stretched.

### No. 13,465. Improvements on the Manufacture of Articles of Steel.

(*Perfectionnements dans la fabrication des objets en acier.*)

Elbridge Wheeler, Philadelphia, Pa., U. S., 23rd September 1881: for 5 years.

*Claim.*—1st. A box or case, for piling iron or steel scrap, consisting of suitable top, bottom and sides plates and flanked pieces. 2nd. The method of working cast malleable metals, by casting the same into a close malleable mould or casing (either empty or partially filled with solid malleable metal), and then reheating the close casing and contents until the latter is brought wholly, or in part, to a fluid or semi-fluid condition and uniting and working down the case and contents under pressure. 3rd. A compound ingot composed of a mould or case of malleable metal closed on all four sides and two ends, and filled wholly or in part with other malleable metal poured in while in a state of fusion. 4th. A wrought metal ingot mould or casing, made close or tight at all points except at the pouring opening or gate, in combination with a cover or cap adapted to be applied to, and permanently close such opening or gate. 5th. The process of producing steel surfaced, topped edged rails bars, rods, etc., consisting in rolling a pile having a steel interior, plastic from heat, to expose the steel interior. 6th. The process of producing steel surfaced, topped, edged, or ended bars, rods, etc., consisting in rolling a pile or ingot containing steel disposed therein and plastic from heat, into a plate and then dividing the plate into bars or rods by slitting, sawing or shearing. 7th. The process of producing steel surfaced, topped, edged, or ended bars or rods, etc., consisting in slitting or sawing a bloom, billet, or plate containing steel disposed therein, and then rolling the severed portions thereof, to expose the steel interior, and dispose it in relation to the exterior body as may be desired. 8th. As a new article of manufacture, a steel surfaced, topped, edged or ended roll, bar or rod made from a pile or ingot consisting of an interior steel of high carbon and an exterior metallic envelope, by rolling while hot, by rolling and severing, or by severing and then shaping.

### No. 13,466. Improvements in Electric Lamps.

(*Perfectionnements aux lampes électriques.*)

Nicholas E. Reynier, Paris, France, 23rd September 1881: for 15 years.

*Resume.*—Le genre de conducteurs sectionnés transversalement à la direction du courant électrique, pour lampes électriques en vase clos, les dits sectionnements ayant pour but de fournir des contacts multiples qui augmentent utilement la résistance électrique effective des conducteurs. 2o. Le genre de conducteurs multiples pour lampes électriques fonctionnant à l'air libre ou en vase incomplètement clos, les dits conducteurs formés de plusieurs baguettes dont les extrémités convergentes serrées les unes contre les autres entre deux pièces de contact, reçoivent le courant transversalement, c'est-à-dire dans les mêmes conditions que ci-dessus. 3o. La nouvelle disposition décrite et représentée pour guider les extrémités de plusieurs baguettes dans une fente commune limitée à chaque extrémité par des pièces de contact, cette disposition permettant à chaque baguette d'exécuter individuellement dans le sens de la longueur de la fente les déplacements commandés par les flexions, le tassement, etc., sans leur permettre de fuir latéralement. 4o. Les conducteurs multiples composés de plusieurs baguettes cylindriques ou prismatiques, pleines ou creuses, semblables ou différentes, dont les queues sont reliées à distance convenable par une attache souple qui permet aux extrémités de converger jusqu'au contact, les dits conducteurs multiples étant destinés à des lampes fonctionnant à l'air libre ou en vase imparfaitement clos. 5o. L'application des dits conducteurs multiples ou sectionnés transversalement à tous genres de lampes électriques fonctionnant en vase clos ou en air libre. 6o. Les diverses variantes de dispositions sus-indiquées et notamment celle représentée, pour permettre et faciliter l'application de notre nouveau genre de conducteurs à contacts multiples ou sectionnés transversalement.

### No. 13,467. Improvements on Commutators for Dynamo or Magneto-Electric Machines.

(*Perfectionnements aux commutateurs pour les machines électro-magnétiques ou dynamiques.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 23rd September, 1881: for 15 years.

*Claim.*—1st. The method of reducing the spark at the commutators of dynamo or magneto-electric machines, which consists in breaking the circuit at a number of points simultaneously. 2nd. A series of com-

mutator brushes, one of which is set noticeably behind the others. 3rd. The combination, with the commutator brush or brushes of a magneto or dynamo-electric machine, of two or more circuit bearing points arranged in series, and breaking circuit simultaneously with the breaking of the circuit at the commutator. 4th. A commutator cylinder at one end of which the conducting spaces are narrowed and the insulating spaces widened. 5th. The combination, with the commutator cylinder and its brushes, of a breaking cylinder mounted on the same shaft, and provided with means for breaking the circuit at several points, simultaneously with the breaking of the circuit at the commutator. 6th. The breaking cylinder, whose surface is composed of alternate metal and insulation, provided with a number of brushes which make and break circuit simultaneously during the revolution of the cylinder. 7th. The combination, with the "insulated brush" of the commutator, of two or more brushes on the breaking cylinder, which break circuit simultaneously with the "insulated brush."

### No. 13,468. Improvements on Knitting Machines.

(*Perfectionnements aux machines à tricoter.*)

Richard I. Creelman and Robertson Creelman, Georgetown, Ont., 23rd September, 1881: for 15 years.

*Claim.*—1st. In a knitting machine provided with a revolving or reciprocating cam plate, stationary cams attached thereto, in combination with adjustable cams *k* held by vertical slots made in the cam plate, and so arranged, in connection with the stationary cams *g*, that the vertical adjustment of the cams *k* is effected upwardly by the heel of the passing needles, and downwardly by their own weight. 2nd. Two or more yarn feeders adjustably held on a spindle suspended over the centre of the cylinder and revolving therewith, the said yarn feeders receiving the thread from a point over the centre of the cylinder, in combination with circular grooves or guides in the face of a stationary disk suspended over the centre of the cylinder, the said grooves being connected by a slot provided with an adjustable gate or gates arranged to throw the yarn feeders from one groove to the other, for the purpose of throwing the thread carried by them in and out of action. 3rd. In two or more revolving yarn feeders, the combination of one or more circular guides or grooves arranged to hold the yarn feeders in and out of action as desired, and provided with a passage way or ways leading from the groove and having an adjustable gate or gates arranged to move one yarn feeder out of action, while simultaneously throwing into action another to take its place. 4th. In an arm extending over the centre of the cylinder, the combination of a bobbin frame having a central hub or boss pierced with a hole and pivoted in a hole, through the arm over the centre of the cylinder, and revolving with the cam cylinder, cog ring or needle cylinder, for the purpose of delivering the yarn from the centre of the machine without allowing the yarn leading from the different bobbins to twist. 5th. In knitting machines in which the needles are held and work longitudinally within slotted passage ways in the needle cylinder or bed, the combination of a cylindrical enlargement made in the top of each slotted passage way, the necessary depth without enlarging the slot on the outside surface of the cylinder or bed. 6th. The stitch regulated by the adjustment of the needle cylinder, the adjustment of the cam cylinder or adjustment of the cams, the combination of the adjustable tension support connected to a post held in the bearing or bearings, which will permit of its longitudinal adjustment, and through it a vertical adjustment to the needle cylinder, cam cylinder or cams, by which the length of the stitch may be regulated, while the machine is in operation. 7th. In combination with a knitting machine, an oil cup arranged for the purpose of lubricating the yarn while it passes from the bobbin to the needles. 8th. In reversing cams, treadle mechanism arranged to impart a rotary movement to the machine, in combination with adjustable stops, by which the stroke of the treadle may be shortened, and a consequent oscillating movement imparted to the machine is required when operating heel and toe work. 9th. In reversing cams, provided with a spur wheel keyed to its main driving shaft, the combination of a pitman, driving motion from treadle or other power and having formed, on one of its sides, a rack arranged to gear with the said spur wheel, for imparting an oscillating movement to the main driving shaft, and through it to the machine as required, when operating it for heel and toe work. 10th. In stripping and ribbing attachments, the combination of the pivoted arms H I, for carrying the said attachments and so arranged, in connection with the cylinder of the machine, that either one may be brought separately into action therewith or both thrown out of its way. 11th. In mechanism for feeding two or more colours, the combination of longitudinally adjustable yarn feeders W placed at an angle to each other, so that the point occupied by the feeder directing the yarn to the needles will be instantly occupied by the other feeder as the first one is withdrawn. 12th. In mechanism for feeding two or more colours, the combination of longitudinally adjustable yarn feeders arranged at such an angle to the cylinder needles, that the one thrown forward to feed the yarn to the needles will be below their points, while the other is located above their points. 13th. In an arm extending over the centre of the cylinder, the combination of a bobbin frame pivoted over the centre of the cylinder, and revolving with any rotating part of the machine, the bobbin frame being pierced with a hole to permit the yarn to pass from the centre of the machine to the needles, without allowing the yarn from the different bobbins to twist. 14th. As a new article of manufacture, a knitting machine needle in which the heel or projecting end is formed by a fold having an open space between the material. 15th. In a machine in which the main driving wheel has more or less teeth than the cog ring with which it meshes, the combination of a pattern ring 7, for the purpose of indicating the number or rounds knitted. 16th. A spindle 13 geared to the main driving shaft so as to move one tooth at each revolution of the main shaft, in combination with an indicating ring 11, extending around the base of the machine and operating in conjunction with a pointer 8. 17th. In an indicating ring 11 placed on top of the cog ring, the combination of a hold fast ring 15, arranged to hold the indicating ring and cog ring in position. 18th. In reverse knitting cams, the combination of cam pieces operated by the heel of a passing needle, for the purpose of throwing the said needle in and out of action. 19th. In a projection or arm to engage with the ribbing dial, the combination of a thumb screw connected with and arranged to operate the projection or arm for the purpose of adjusting the needles in the ribbing dial. 20th. In a revolving bobbin

frame held over the centre of the machine, a yarn feeder S attached to the cog ring or cam cylinder, and having the eyes *u* *v*, for directing the yarn to the needles, connected together by a slot *t*, the eye *v* being protected by a hook *s* to hold the yarn in position, after having been slipped through the slot in the eyes *u* *v*. 21st. In an arm extending over the centre of the machine for holding the ribbing or striping attachment, a head Q1 connected to the revolving portion of the said attachment and provided with a slot *Q2*, in combination with a hinged arm attached to the cog ring or other revolving portion of the machine. 22nd. In an arm extending over the centre of the needle cylinder, the combination of the yarn feeder F having the revolving pattern wheel *u*, and provided with the feeding eyes *v* *v*, for feeding coloured yarn to produce longitudinal stripes. 23rd. Two or more yarn feeders adjustably held on a spindle suspended over the centre of the needle cylinder, the said yarn feeders receiving the thread from a point over the centre of the cylinder, in combination with circular grooves or guides supported over the centre of the cylinder, the said grooves or guides being connected by a slot or slots provided with an adjustable gate or gates, arranged to throw the yarn feeders from one groove to the other, for the purpose of throwing the thread carried by them in and out of action.

**No. 13,469. Improvements on Sole Edge Burnishing Machines.** (*Perfectionnements aux machines à brunir les tranches des semelles.*)

James W. Maloy, Somerville, Mass., U.S., 25th September, 1881; for 5 years.

*Claim.*—1st. In a sole edge burnishing machine, two reciprocating burnishing tools adapted to operate simultaneously on one edge of a sole, and to move simultaneously in opposite directions, whereby the tendency of each tool to displace the sole is neutralized, in a machine in which the sole is held by the operator, and the tendency of each tool to shake or jar the head and its handle is neutralized in a machine in which the head is flexibly supported. 2nd. The combination of an internally curved guide or holder, two slides adapted to reciprocate in a curved path in said holder, each carrying a burnishing tool, and mechanism for reciprocating said slides simultaneously in opposite directions. 3rd. A flexible supported head or holder adapted to be moved by the operator and curved as described, combined with two slides adapted to reciprocate in said head, each carrying two burnishing tools located at opposite sides of the head, and mechanism for reciprocating said slides simultaneously in opposite directions. 4th. The combination of the movable head A having the hollow handle A1, the burnishing tools *a* *a*, the slides *b* *b* and mechanism supported by said head and handle for reciprocating the tools simultaneously in opposite directions. 5th. The combination of the movable head A, two slides adapted to reciprocate in said head, and burnishing tools carried by said slides, each tool having a yielding movement.

**No. 13,470. Improvements on Water Heaters and Purifiers.** (*Perfectionnements aux chauffeurs-épureurs d'eau.*)

Gustavus H. Zschech, Indianapolis, Ind., U.S., 25th September, 1881; for 5 years.

*Claim.*—1st. The alternately reversed cones K L, in combination with each other and with the casing A, having connections for the receipt and discharge of steam and water. 2nd. The tops E and the cones L, arranged as shown, to lead the steam upward without distributing the descent of the water around it. 3rd. The rims K1 K3 and ledges K2 L2, adapted to serve either alone or with contained gravel, or the like. 4th. The combination of the cones K K1 K2 K3 L L1 L2 L3 with each other, the inclosing case B of large diameter, and with the steam induction pipe H and shield or cone I, arranged for joint operation. 5th. The two annular chambers *g* *f*, one above the other, the arrangement of the conducting pipe M, on the interior of the main casing A.

**No. 13,471. Improvements in Cigar Lighters.** (*Perfectionnements aux allume-cigars.*)

Charles H. Vibbard, Aurora, and John D. Brooks, Albany, N. Y., U.S., 25th September, 1881; for 5 years.

*Claim.*—1st. A case provided with a hinged cover B and a spring catch C, a tube F provided with a spiral spring H and a tubular cap I, a slotted and curved partition having a correspondingly curved spring L attached to it, a four-armed wheel M, a curved arm N attached to the rear end of the cover, a curved arm O attached to the forward part of the cover, and a curved spring P, whereby a fuse will be ignited and a candle lighted, by opening the cover of the case. 2nd. In combination with the case A and cover B, of the slotted and curved partition J, the curved spring L and the curved arm O, whereby a fuse will be ignited to light a candle by opening the cover of the case. 3rd. In combination with the case A, the cover B, the slotted and curved partition J, and the curved spring L, the four-armed wheel M and the curved arm N, whereby the fuse will be raised into position for being ignited by closing the cover of the case.

**No. 13,472. Improvements on Electric Lamps.** (*Perfectionnements aux lampes électriques.*)

St. George L. Fox, London, Eng., 25th September, 1881; for 5 years.

*Claim.*—1st. The mode of connecting the platinum wires *a* *g* and the bridge *i* by means of cylinders or blocks *h* of carbon or plumbago, into which the ends of the wires and the ends of the bridge are thrust, and in which they are cemented by Chinese ink or otherwise. 2nd. The enlargements or bulbs *b* *b*1 at the bottom of the mercury tubes *b* *b*1. 3rd. The employment of sticks of plumbago in lieu of the platinum wires in electric lamps, the said sticks being secured to the glass by melting in. 4th. The manufacture of electric bridges for lamps from the roots of French whisk (Andropogon isehamum or Chrysopogon griffalus), or from other grasses or fibres, by boiling the fibres in caustic soda or caustic potash, then scraping off the outer skin, afterwards boiling the fibres in water and then raising them to a white heat. 5th. The two electro-magnets *m* *m* connected in joint circuit with a third electro-

magnet *m* (or connected respectively with two other electro-magnets), the armature *m*2 of the magnet *m*1, when caused to vibrate, imparting rotation to a wheel *m*5, which rotation is transmitted by suitable gearing to the part or device to be controlled or regulated. 6th. The magnets *m* *m* connected in joint circuit with a third magnet *m*3, the spring armature *m*2, click *m*4, ratchet wheel *m*5, bevel wheels *m*6 *m*7 *m*8, shaft *m*9, lever *m*10 and armature *m*11.

**No. 13,473. Compound for Curing Cancers.**

(*Composé pour guérir les cancers.*)

Henry Edwards, Lobo, Ont., 25th September, 1881; for 5 years.

*Claim.*—A compound composed of zink, arsenic, corrosive sublimate, antimony, sanguinarian and chloride of gold in about the proportions specified, or parts thereof, according to the kind of cancer.

**No. 13,474. Improvements in Grain Gatherers and Binders.** (*Perfectionnements aux engerbeuses-lieuses.*)

James B. Lamb, Ottawa, Ont., 25th September, 1881; for 5 years.

*Claim.*—1st. The portable grain gathering and binding device, for hand use, composed of a series of gathering fingers provided with a handle and with devices for carrying the binding cord and retaining the same in an extended position, as the fingers are passed beneath the grain. 2nd. The combination of a series of gathering fingers, a handle, a cord carrying device *c* or its equivalent, located at the inner ends of the fingers, and a cord holding device *d* located at the outer ends of the fingers. 3rd. A hand binding implement composed of a series of teeth or fingers attached to a handle, the cord carrying device, a cord retaining device at the forward ends of the teeth, and a knife or blade. 4th. In a binder, the cord retaining device consisting in the finger provided with the central tooth *a*.

**No. 13,475. Composition for the Cure of Diphtheria.** (*Composé pour la guérison de la diphthérie.*)

Richard E. Birch, Templeton, Que., and John R. Fleming, Ottawa, Ont., 25th September, 1881; for 5 years.

*Claim.*—A medicine composed of sweet flag root, gold thread, red pepper, aaron's rod, peppermint, dandelion root, juniper berries and alcohol.

**No. 13,476. Improvements on Electric Signals.** (*Perfectionnements aux signaux électriques.*)

Theodore A. Putnam, New York, N. Y., U. S., 25th September, 1881; for 5 years.

*Claim.*—1st. A locomotive provided with a partial electric circuit including a generator, and the electric magnet controlling an alarm and terminating in two conductors arranged in the electrical contact with the rail, whereby the circuit is normally completed between said conductors through the rail. 2nd. A locomotive provided with an electro-magnetically controlled alarm adapted to operate and signify "danger" to the engineer, whenever the circuit, which includes its electro-magnet, is broken, an electric generator designed to maintain a constant electric current, two conductors arranged, one in advance of the other and both in electrical contact with one rail, and circuit connection from one conductor to the generator, thence to the electro-magnet of the alarm, and thence to the other conductor, whereby the circuit will be completed through the rail between the two conductors, except when the latter are passing over a break or insulation between two adjoining rails. 3rd. A railway track having rails H I insulated from each other, electrical conductors adapted to form an electrical connection between them, and means of breaking and closing said connection, in combination with a locomotive carrying an electric generator and an alarm, both included in an incomplete circuit which terminates in two conductors, arranged one in advance of the other and both in contact with one rail. 4th. The combination of rails H I insulated from each other, partial circuit 56 connecting them, circuit breaking device *a* *b* interposed in said circuit, and means for operating the said device to break the said circuit, in case a danger alarm is to be given to the engineer of a passing train, in combination with a locomotive provided with a partial electric circuit, including a generator and an electric-magnetic alarm, and terminating in two conductors arranged one in advance of the other, in electrical contact with the rail. 5th. A railway track having rails H I insulated from each other, a partial circuit connecting them, a circuit breaking device included in said circuit and operated by the armature of an electro-magnet D, and the said magnet D included in a partial circuit connecting rails I J insulated from each other, in combination with a locomotive provided with a partial circuit including a generator and electro-magnetic alarm, and terminating in two conductors arranged one in advance of the other and both in electrical contact with the rail. 6th. In a railway track having rails H I insulated from each other, a partial circuit connecting them and including a circuit breaking device, which is operated to close the circuit by the attraction of the armature of an electro-magnet S, and said electro-magnet included in a partial circuit connecting rails I J, which are insulated from each other. 7th. The railway track provided, at a signalling point, which rails H I insulated from each other, a partial circuit connecting said rails and including a circuit breaking device, which is arranged to be operated to break said circuit by the charging of an electro-magnet D and to close it by the charging of an electro-magnet S, said magnet D included in a partial circuit connecting two rails I and J, which are insulated from each other, and said magnet S included in another partial circuit connecting two other rails I and J, which are also insulated from each other. 8th. In a block signalling system for railways, a railway track provided with rails H I J at each of the dividing points between the several blocks or sections, said rails being insulated from each other, a partial circuit connecting rails H I and including a circuit breaking device controlled by oppositely acting electro-magnets D S and another partial circuit connecting the rails I and J at each point, and including the magnet D at that point, and the magnet S at a remote point, or vice versa. 9th. The combination of rails H I insulated from each



other, partial circuit 5 6 connecting them, a contact point and contact lever or key interposed in said partial circuit, an armature in connection with said key, two electro-magnets arranged to act oppositely to each other on said armature, a spring tending to pull said key against said contact point, and a spring latch adapted to engage said lever when drawn away from said point, and hold it against the pull of said spring. 10th. The combination, on a locomotive, of a partial electric circuit terminating in rail conductors B R and including generator G and electro-magnet C, with an alarm consisting of said magnet C, lever *n* bearing armature *m* and hammer *o*, gang *t*, retracting spring *p*, tending to draw armature from magnet and hammer toward gang and resetting rod *v*. 11th. The combination, on a locomotive, of a partial electric circuit terminating in rail conductors B R and including generator G and electro-magnet C, with an alarm consisting of said magnet C, lever *n* bearing armature *m* and hammer arm *o*, gang *t*, spring *p*, reciprocating shoulder or hook *l* or its equivalent, adapted to engage said lever *n* when moving in one direction and thereby to draw the hammer away from the gang and to release the same, and thereby permit the hammer to fly back and strike the gang and, upon its return stroke, to re-engage said lever *n* with mechanism interposed between said shoulder *l* and some moving part of the locomotive, whereby the shoulder is caused to reciprocate with a speed proportioned to the speed of the locomotive. 12th. The combination, on a locomotive, of a partial electric circuit terminating in rail conductors B R and including generator G and electro-magnet C, with the armature *m* normally attracted thereto, armature lever *n* and retracting spring *p* with a recording device consisting of a lever *v* bearing marking point *st* and tending to press said point against a graduated strip *g*, feeding rollers *x x* adapted to move said strip past said point, and a suitable clock-work to rotate said rollers, whereby, when the armature is adjacent to the magnet, the point *st* is retracted from said strip, and when the armature is drawn away from the magnet, the said point marks said strip. 13th. In combination with successive adjoining rails H and J insulated from each other, and arranged at a point remote from a switch or draw-bridge, partial circuit 5 6, extending thence to said switch or bridge, and there including circuit breaking device *ab* in operative connection with said switch or bridge, whereby, when said switch or bridge stands at danger, said partial circuit is automatically broken. 14th. A railway switch provided with a locking device by which it may be fastened in its position of safety, an electro-magnet which, when charged, applies said lock arranged in circuit connection with a remote signalling point on the track, whereby, when an approaching train reaches said point, the switch becomes locked, and another electro-magnet which when charged, withdraws said lock arranged in circuit connection with a signalling point adjacent to the switch, whereby, when the train passes the switch, the latter is automatically unlocked.

**No. 13,477. Device for Elevating and Weighing on Board of Vessels.** (*Ascenseur-pesée à bord des navires.*)

George Milsom, Buffalo, N. Y., U. S., 28th September, 1881; (Extension of Patent No. 6,596.)

**No. 13,478. Horse Shoe Nail Machine.** (*Machine à clou à cheval.*)

Joseph Varney, Montreal, Que., 28th September, 1881; (Extension of Patent No. 6,596.)

**No. 13,479. Improvements in Pails and Tubs.** (*Perfectionnements dans les seaux et cuvettes.*)

Valency E. Fuller, Hamilton, (Assignee of James S. McMurray, Toronto,) Ont., 29th September, 1881 (Extension of Patent No. 6,827.)

**No. 13,480. Improvements on Hoisting Machines.** (*Perfectionnements aux ascenseurs.*)

William H. Lotz, Chicago, Ill., U. S., 29th September, 1881; for 5 years.

*Claim.*—1st. In an automatic hoisting machine, the hoisting drum mounted on an independent shaft and driven by friction wheels on the driving shaft. 2nd. The combination of the driving shaft having friction wheels, of a swinging frame above such driving shaft, and the hoisting drum mounted in such swinging frame and driven by the friction wheels on the driving shaft. 3rd. A hoisting machine wherein the hoisting drum is thrown automatically into and out of contact with friction wheels on the driving shaft, the cam lever connected by a rod with a crank operated by the drum shaft. 4th. The hoisting drum shaft having screw threaded end, the crank nut travelling on such screw thread, the cam lever connected by a rod with such crank nut, and a clutch secured to, and turning with the drum shaft for giving the crank nut a partial revolution. 5th. The combination, with the screw threaded end H of the hoisting drum shaft, of the crank nut M connected with the cam lever, and the nut O clamped adjustably to the screw thread, said nuts having chuck teeth or shoulders *h h*. 6th. An idler roller travelling against the hoist rope, and controlling the devices for locking the hoisting drum in an elevated position. 7th. The latch P having shoulder *m*, in combination with the turning hub Q, over which such shoulder catches. 8th. The combination of the idler roller running against the hoist rope, with the crank hub connected with such idler roller, the latch and the cam lever. 9th. The brake for resisting the reverse movement of the hoisting drum. 10th. The brake shoe pivoted to the swinging frame, in combination with a rod for supporting the brake shoe out of contact with the hoisting drum when such hoisting drum is dropped upon the friction wheels.

**No. 13,481. Improvements on Pen-Holders and Pens for Use Therewith.** (*Perfectionnements aux porte-plumes et aux plumes.*)

Joseph G. Hester, Washington, D. C., U. S., 29th September, 1881; for 5 years.

*Claim.*—1st. In combination with a pen holder open or bored cen-

trally from end to end, a reciprocating ejector B C adapted to confine the pen at one end, and extended at the opposite end beyond the end of the holder. 2nd. In combination with the holder A bored or open from end to end, and the ejector B C arranged therein and adapted to be operated positively to eject the pen, a spring D arranged externally or internally to return the ejector to its normal position. 3rd. In combination with the pen-holder A and ejector B, the telescopic cap E for concealing and protecting the upper end of the ejector. 4th. The ejector head C adapted, at its outer end, to confine the pen in place, against the barrel of the holder, and having its inner end tapered to insure the release of the pen. 5th. The head C of the injector having its outer end formed with one or more radial projections or arms *e*, to limit the return movement of the head, and to form spaces for the reception of pens. 6th. The pen having, formed in its body, a hole or orifice adapted to receive and surround one of the radial arms *e* on the ejector head.

**No. 13,482. Improvements on Fanning Mills.** (*Perfectionnements aux tarare-viblateurs.*)

William McKenzie, Morrisburgh, Ont., 29th September, 1881; for 5 years.

*Claim.*—1st. The shaker B having the hole *e* for the hook C, at a point in a line on the shaker, drawn through the centre of its axis, when in the middle of a vibration, at right angles with the side of the mill, for the purpose of shaking the shoe A twice as fast as the shaker B shakes, as well as having the usual hole *d* in the arm *f*, at an angle with the arm *g*, for the purpose of shaking the shoe A at the same speed as the shaker B shakes. 2nd. The combination of the shoe A, the shaker B, the hook C and the two sets of holes *a d* and *b c* at the same distance apart, when the shaker is in the middle of a vibration, for the purpose of making the hook C be the right length, for connecting the shoe and shaker in both sets of holes. 3rd. The combination of the vibrating rod D to the hook G or its equivalent, and the hammer F or its equivalent, for the purpose of giving the shoe or screen, sharp, quick raps or blows to keep it clean.

**No. 13,483. Improvements on Electrical Conductors.** (*Perfectionnements aux conducteurs électriques.*)

Samuel D. Strohm, Philadelphia, Penn., U. S., 29th September, 1881; for 5 years.

*Claim.*—1st. The sections A<sup>1</sup> A<sup>2</sup> having external longitudinal flanges *a a* and internal flanges *a<sup>2</sup> a<sup>2</sup>*. 2nd. In combination with sections A<sup>1</sup> A<sup>2</sup> having internal flanges or ribs *a<sup>2</sup>*, the diaphragms B having peripheral grooves *b<sub>1</sub>*, for the reception of the ribs *a<sup>2</sup>*. 3rd. The combination, with the external casing A made in longitudinal sections the diaphragms B having opening *b<sub>2</sub>* and longitudinally divided pipes or tubes C C supported on said diaphragms. 4th. The internal pipes or tubes C C made in longitudinal sections, and having their upper halves divided in cross section, to permit of access to the interior of said tubes. 5th. The combination of external casing F formed in longitudinal sections having internal lugs *f<sub>1</sub>*, diaphragms G having notches *g* in their upper section, and passages *g<sub>1</sub>* in their lower section, with internal pipes H also formed in the longitudinal sections, affording conduits for conductors therein. 6th. The diaphragms G having notches and openings *g g<sub>1</sub>*, for the reception of conduits or cables, in combination with the external casing F having lugs *f<sub>1</sub>*, said lugs being adapted to prevent the diaphragms G from turning in the case. 7th. The combination, with the frangible conduits H, of elastic rings or clamps forming bearings for said conduits, and moisture excluders for their joints. 8th. The combination of the external sectional casing with internal sectional conduits, said internal conduits being formed with curved connections. 9th. A conduit for electrical conductors consisting of two sections having their opposite sides respectively grooved, whereby, when two or more of said sections are brought together with their grooved sides opposing, they will form orifices or passages for conductors. 10th. A conduit for electrical conductors composed of the two sections L L<sup>1</sup> L<sup>2</sup> L<sup>3</sup>, having their opposing sides respectively grooved or channelled, to form passages, said sections having transverse and longitudinal flanges, whereby they are bolted together. 11th. The chambered sections having longitudinal channels with fluted sides forming bearings for tubes or cables, and spaces for the reception or injection of insulating fluid or material. 12th. The method described of insulating a wire or cable or tube containing conductors by injecting an insulating fluid or plastic composition into a chamber after such wire, cable or tube has been introduced into the same, such fluid or plastic composition being of a character which is fluid or semi-fluid while cold, and which will harden or solidify at the same temperature.

**No. 13,484. Process of, and Apparatus for Making Drop Shot from Iron.** (*Procédé et appareil pour faire du menu plomb avec du fer.*)

Hans J. Wintherlick and Waldemar T. Wintherlick, Chicago, Ill., U. S., 29th September, 1881; for 5 years.

*Claim.*—1st. The process of producing drop shot from iron by first melting the iron, then gradually pouring the molten iron upon a moving brush or broom composed of parallel fibres that are continually wet with water, which separates the molten iron into numerous solid globules that then fall into water and are cooled. 2nd. As a new article of manufacture, sporting shot made of iron. 3rd. In a machine for producing drop shot from molten iron, the combination of a pot or crucible C containing the molten metal, a movable broom or brush D and means to supply said broom with moisture.

**No. 13,485. Improvements in Wood Grinders for Making Paper Pulp.** (*Perfectionnements aux cylindres pour faire la pâte à papier de bois.*)

Stephen M. Allen, Duxbury, Mass., U. S., 29th September, 1881; for 5 years.

*Claim.*—1st. A grinder composed of disk sections overlapping at the edges, so as to break points. 2nd. A grinder of artificial stone, emery

or cordum, composed of sections or disks, secured upon a shaft, so that the lines of junction between said sections or disks around said grinder are oblique to planes perpendicular to the axis.

**No. 13,486. Improvements on Time Pieces and Clocks.** (*Perfectionnements aux chronomètres et aux horloges.*)

Henry J. Davies, Brooklyn, N.Y., U.S., 29th September, 1881; for 5 years.

*Claim.*—1st. The combination, with a time piece or clock, of a musical device for producing a tune, and mechanism for actuating said device, deriving motion from said time piece or clock. 2nd. The combination, with a time piece or clock, of a musical device for producing a tune, consisting of a barrel provided with pins and a series of spring tongues, and mechanism deriving motion from said time piece or clock, for actuating said barrel. 3rd. The combination, with a clock movement and a clock case constructed with a closed hollow base, of a musical device arranged upon said closed base, and mechanism for actuating said device deriving motion from the clock movement. 4th. The combination, with a clock movement and a case constructed with a hollow base having an opening in its top, of a musical device arranged over and closing said opening, and mechanism for actuating said device deriving motion from the clock movement. 5th. The combination, with a clock comprising a time train and an alarm train, of a musical device deriving motion from said alarm train. 6th. The combination of the spring barrel D, the barrel arbor a, the wheels D, F, the arbor c carrying the pinion b and wheel i, the barrel H, the spring tongues H and the wheel h upon the arbor of the barrel, engaging with the wheel i.

**No. 13,487. Improvements on Lifting Jacks.** (*Perfectionnements aux crics.*)

Hiland W. Goodwin, Mair, Mich., U.S., 29th September, 1881; for 5 years.

*Claim.*—1st. The combination of the adjustable post B having projections b and forked end b, and provided with the roller b<sub>2</sub>, with the standards a secured to the base A and the lever C operating therewith. 2nd. The spring catch or lock b<sub>5</sub> secured to the post B, and having a perforation b<sub>6</sub> in its free end for engagement with the pin c on the lever C, whereby said lever and the post are locked to one another. 3rd. The spring catch or lock b<sub>5</sub> secured to the post B and operating automatically with the pin c, the rod c<sub>2</sub> provided with the spring c<sub>3</sub> for operating the same, in combination with the standards a a a, post B, roller b<sub>2</sub> and lever C.

**No. 13,488. Improvements on Barley Beard-ers.** (*Perfectionnements aux ébarbeurs d'orge.*)

Francis W. Brenton, Foxboro, Ont., 29th September, 1881; for 5 years.

*Claim.*—The case or chest A C provided with the spikes E and F.

**No. 13,489. Improvements on Magneto-Electric Machines.** (*Perfectionnements aux machines électro-magnétiques.*)

Richard R. Moffatt and Sylvester Chichester, Brooklyn, N.Y., U.S., 29th September 1881; for 5 years.

*Claim.*—An armature or iron in the form of a ring or endless band, having its greatest length of cross section parallel with its axis, said armature built of sectional pieces B secured together and held to the central hub C, and provided with lugs, ribs or filets i. A magneto-electric machine having an armature in the form of a ring or endless band, with its greatest length of cross section parallel with its axis, and the magnet poles inclosing the armature externally, and having branches extending within at both ends.

**No. 13,490. Improvements on Reaping Machines.** (*Perfectionnements aux machines à moissonner.*)

George Beatty, Fergus, Ont., 30th September, 1881; for 5 years.

*Claim.*—1st. The crank A extending across the frame G and secured to the same by two journal boxes and covers and bolts a a, the shaft B of the spur pinion B<sub>1</sub> passing through and rotating in the same, the arm A<sub>2</sub> passing through the driving wheel Z and sustaining on its outer end at D, the seat E secured by a clamp on foot of standard E<sub>1</sub>, which embraces the said arm A<sub>2</sub>. 2nd. The frame G as constructed with journal for arm A<sub>1</sub>, and also the journal for small crank shaft b which drives the knives, and having two flanges underneath, for receiving the tongue movably attached to the same. 3rd. In combination with the frame G, the raising and lowering gear comprising the lever A<sub>3</sub>, handle r, pawl r<sub>1</sub>, ratchet with pulley forming a part thereof r<sub>2</sub>, spring r<sub>3</sub>, rod r<sub>4</sub>, chain r<sub>5</sub>, dog r<sub>6</sub>, spring r<sub>7</sub> and rod r<sub>8</sub>. 4th. In combination, the seat E as secured in position on the end of arm A<sub>2</sub> with standard E<sub>1</sub>, and brace E<sub>2</sub> connected with standards E<sub>1</sub> and bar F. 5th. The cross shaft H with two journals, and passing through the rake head S with rake pinion J on end of same next to knife. 6th. The chain pulley B on end of cross shaft H secured on its place between two flanges, one of which with notch in hub, in front, is keyed on shaft H, the other flange with projecting fitting said notch being held close to the first by a nut, which is screwed on the end of shaft, the wheel being secured from turning by a wooden pin passing through it and the two flanges, which wooden pin, in the case of obstacles, will break and allow the pulley B to revolve and save the machinery. 7th. The plate K which controls the cam M in this rake is disconnected from trip L, so as to allow the cam M to be set to any required position without affecting the trip, the plate K being adjusted by ratchet N between said plate K and rake stand, the cam being shifted to give a greater dip to the rake for lodged or laying grain. 8th. Staple O cast in rake head stand, through which cross shaft H passes, and a rod P hooked to staple passes through plate K to top of cam and is held by nut, which keeps the cam secure to rake stand. 9th. In combination, the trip L connected to rake stand at Q, and moved in or out by a small crank, shown by dotted lines at R, with a stud passing up through a slot in trip therein, to and fro, by

a rod P attached to lever in frame F, and a spiral spring U from crank, to rake stand at v, the crank being adjustable outwardly by slot in stand. 10th. The grain divider Y hinged to the side of grain table at W with a bolt and nut, and connected with an arm at a point above, to allow of the elevation and depression of the same between the points d d.

**No. 13,491. Improvements on Self-Levelling Berths and other Articles on Board of Ships.** (*Perfectionnements aux lits et autres objets suspendus à bord des navires.*)

John C. Thompson, Brooklyn, N.Y., U.S., September, 1881; for 5 years.

*Claim.*—The combination, with self levelling berths and other articles on board ships, of automatic locking means.

**No. 13,492. Improvements in Pulverizing Machines.** (*Perfectionnements aux machines à broyer.*)

John Foster, St. Simon d'Yamaska, Que., 30th September, 1881; for 5 years.

*Claim.*—1st. The combination of the cylinder A provided with bolts or beaters E having their heads to the outside of the said cylinder, with the cylinder B provided with bolts or beaters E having their heads to the inside of said cylinders. 2nd. The combination of the cylinders H B having beaters, and adjustable journal and bearing: O M. 3rd. The combination of the pulverizing machine revolving sieve S, hoppers P B and elevator C.

**No. 13,493. Improvements on Bicycles, Tricycles, &c.** (*Perfectionnements aux velocipèdes.*)

Joseph Dutton, Bermondsey, Eng., 30th September, 1881; for 5 years.

*Claim.*—1st. As a means for imparting rotary motion to a driving shaft, spindle or axle, the combination, with a gear wheel mounted on such spindle, of a gear intermeshing with same and rotated by a ratchet wheel secured on same, and pawl operated by a treadle or lever. 2nd. In combination with the gear a and gear b, rotating same by means of treadle pawl and ratchet, the lever h. 3rd. The combination, with the gear a, of gear b driving same, operated by treadle pawl and ratchet and adjustable in rigid curved arm c.

**No. 13,494. Improvements on Stovepipe Collars.** (*Perfectionnements aux douilles des tuyaux de poêle.*)

George Blair, Prescott, Ont., 30th September, 1881; for 5 years.

*Claim.*—1st. A sheet metal strip having transverse corrugations, which are deepest at the inner edge. 2nd. A stove pipe collar formed of a corrugated sheet metal strip, whose ends are respectively constructed with a hook and a slit, whereby they are adapted to be easily connected and disconnected.

**No. 13,495. Improvements on Safety Locks.** (*Perfectionnements aux serrures de sûreté.*)

Joseph Savoie, St. Germain de Grantham, Que., 30th September 1881; for 5 years.

*Résumé.*—1o. Dans une serrure de porte, le pêne horizontal A muni des épaulements a. 2o. La combinaison des ressorts G G avec les pénes BB, projetant en haut et en bas, dont l'extrémité inférieure est biseautée et ayant des prolongements b et des tiges de connection c. 3o. Le verrou transversal C supporté par les coussinets d d, et arrangé de manière à être poussé par le ressort e dans la cavité f, dans le pêne horizontal A. 4o. Le verrou d'arrêt D muni de l'épaulement k, et dont l'extrémité extérieure est biseautée. 5o. La combinaison du ressort j, avec le verrou d'arrêt D, et l'épaulement k. 6o. Le repousseur C, mis en mouvement par le ressort i, et muni du bras h. 7o. L'arrangement et la combinaison du moyeu de pivot E, avec le bras m portant dans une retraite pratiquée dans le pêne horizontal A, et servant à repousser ce pêne à l'extérieur, lorsqu'on ferme la porte à clef.

**No. 13,496. Improvements on Belt Fasteners.** (*Perfectionnements aux joints des courroies.*)

Abner Johnston, Ives P. Hoff and Irving L. Pruyn, Bainbridge, N. Y., U.S., 30th September 1881; for 5 years.

*Claim.*—The plates B B having eyes b and adapted to be connected to the belt, in combination with the coupling C, the ends thereof adapted to pass through the eyes b and through the belt, and to be bent down against the underside of the same.

**No. 13,497. Improvements on Car Axle Boxes.** (*Perfectionnements aux boîtes à graisse des chars.*)

Edgar Robinson, Cincinnati, and Ira A. Hutchinson, Columbus, Oh io U.S., 30th September, 1881; for 5 years.

*Claim.*—1st. The combination with the transverse bearing B and its catch a, of the sliding cover C and its catch lug b. 2nd. The combination, with a car axle box and its wedge bearing s, of the transverse lifting wedge L adapted to bear on the axle. 3rd. The combination, with the side walls having slots for a wedge over the inner journal aperture, the sliding top or cover C and the oil chamber F in the bottom part of the semicircular oil flange m extending upward to the journal, serving to transfer the bearing from the upper to the under side of said journal, when the brasses are to be removed, and to prevent the undue escape of oil. 4th. The removable splash box G under the journal, and having an opening l, in combination with the sliding oil roller k and its spring bearing. 5th. The combination, with the top of an axle box and the sliding gate E, of the angular spring catch e extending by its free end through the gate, and serving to hold the latter either down or in the raised position.

**No. 13,498. Improvements on Root Forks.***(Perfectionnements aux fourches à racines.)*

Robert Law, Waterloo, Ont., 30th September 1881; for 5 years.

*Claim.*—The arrangement of the forks A A B B C C with the fork D D, and common centre H H H.**No. 13,499. Improvements on Churn Motors.***(Perfectionnements aux moteurs des barattes.)*

George W. Flood, Clay Bank, and William B. O. Sands, Pentwater, Mich., U. S., 30th September 1881; for 5 years.

*Claim.*—In a churn motor, the combination with suitable uprights of a pair of adjustable clamps and a sliding recessed floor, all combined to operate so as to hold the churn body detachably.**No. 13,500. Improvements on Hay Rakes and Loaders.***(Perfectionnements aux râteliers charge-foin.)*

Christian Naffziger, (Assignee of John S. Hewitt and Joseph S. Naffziger.) Wheatland, Mo., U. S., 30th September 1881; for 5 years.

*Claim.*—1st. The combination, in a hay rake and loader, of the elevating apron, the side delivery chute or apron, and the rake. 2nd. The rake teeth H provided with a flat web or fin I on the curved back. 3rd. The caster wheel C travelling centrally in front of the main frame A and provided with an arm S, whereby the rim of the wheel is set from the true line of draft, to cause the machine to close against the side of the waggon. 4th. The arms Q R pivoted adjustably to the side of the main frame A and extending therefrom laterally, to connect with the side or sills of a waggon. 5th. The hood P, in combination with the elevating apron D and chute M having apron N.**No. 13,501. Improvements on Vessels and Means for their Propulsion on Water and Land.***(Perfectionnements aux vaisseaux et aux moyens de propulsion par mer et par terre.)*

Robert M. Fryer, New York, U. S., 30th September 1881; for 5 years.

*Claim.*—1st. A buoyant paddle wheel or propeller of spherical form composed of two forms, one within the other, jointed together by inter-

mediate girders or ties radiating from the axis, the spaces so formed being provided with outlets through the outer shell, near the axis of the wheel for the purpose of discharging any water which may accumulate between these shells from leakage or any other cause. 2nd. In a buoyant propeller vessel, the combination of three revolving spheres arranged in triangular form, relatively to each other, and operated by separate engines, said spheres being provided upon their outsides with paddles or floats and central keels in their plane of rotation, the said keels being grooved on the faces to follow a track, whereby the vessel is adapted to be used either upon water or a land railway. 3rd. A buoyant paddle wheel or propeller internally divided or subdivided into compartments, and each compartment provided with an opening or outlet through the side of the wheel, for the purpose of discharging during the rotation of the same any water that may accumulate therein from leakage or other causes. 4th. A buoyant paddle wheel or propeller of substantially spherical form, provided with a series of internal hollow cones, one within the other, their bases joined together in a plane, at right angles to its axis, the spaces between said cones subdivided by partitions arranged in the plane of their axis. 5th. The combination, with three buoyant paddle wheels arranged two side by side and the other one in front of them, of the hull or vessel body consisting of three water tight domes or wheel houses and connected by an arch located between the two rear domes or wheel houses and forming stays or supports for the same, and extending longitudinally forward to the forward dome or wheel house to support the same, such arch being subdivided into water tight compartments, and the said domes or wheel houses and arch being supported upon a bottom or frame work provided with suitable bearings, for the journals of the wheels, and made water tight.

**No. 13,502. Improvements on Draughting Instruments.***(Perfectionnements dans les instruments de dessin.)*

Cyrus R. Howard, Huntingdon, Pa., U. S., 30th September 1881; for 5 years.

*Claim.*—1st. The combination in a draughting instrument, of a post carrying figure plates, a pencil arm hung to revolve on the post, and a finger hung on the pencil arm and engaging either figure plate on the post. 2nd. The combination of post A provided with figure plates *d*, marking arm B, slotted cylinder C, slide *h*, arm *i* and finger *l*. 3rd. The screw *f*, slide *h* provided with nut *h*, finger *l*, spring *m* arm *i*. fixed post A, carrying plates *d* and the marking arm B.



Reaping machines, G. Beatty.....	13,490	Austin, W. W., stand boilers.....	13,311
Refining sugar, B. H. Remmers et al.....	13,330	Baglin, W. A., et al., hat felting machines.....	13,344
Refrigerators, J. Alexander.....	13,444	Baily, L. H., butter colouring composition.....	13,446
"    J. A. Baldwin.....	13,435	Baldwin, J. A., refrigerators.....	13,435
Rein turrets, guide, T. S. Lewis.....	13,448	Bargion, P., rails and telegraphs.....	13,370
Replacers, car, J. Brewer.....	13,337	Barnard, M. H., et al., cattle stanchions.....	13,441
Roasters, coffee, P. Pearson.....	13,425	Beatty, G., reaping machines.....	13,490
Roller, R. and J. B. Lang.....	13,334	Béchar, A. M., et al., car couplers.....	13,445
Roofs, C. M. Warren.....	13,458	Birch, R. E., et al., composition for diphtheria.....	13,475
"    composite, J. Brokenshire.....	13,316	Blackhall, E. W., ruling pens.....	13,426
Saccharated extracts, C. G. Wheeler.....	13,374	Blair, G., stove-pipe collars.....	13,494
Safes, fire-proof, E. A. and N. C. Fowler.....	13,401	Bond, J., sewing machines.....	13,350
Saw gauges, J. Gives.....	13,319	Bradley, C. C., harvesters.....	13,402
"    handles, E. Andrews.....	13,452	Brenton, F. W., barley bearders.....	13,488
"    mills, W. M. Wilkin.....	13,342	Brewer, B. B., et al., water lifters.....	13,340
Screws, metal, A. W. Giffard.....	13,456	"    "    engine governors.....	13,431
Seeder, R. and J. B. Lang.....	13,334	"    "    steam engine.....	13,372
Sewing machines, G. W. Darby.....	13,388	"    "    J., car replacers.....	13,337
"    "    J. Bond, jr.....	13,350	Brokenshire, J., composite roofs.....	13,316
"    "    J. K. Harris.....	13,378	Brooks, J. D., et al., cigar lighters.....	13,471
"    "    L. Onderdonk et al.....	13,355	Brown, C. C., et al., sewing machine.....	13,355
Shears, pruning, J. L. Haycock.....	13,387	"    "    W. A., clothes driers.....	13,377
Shoes, E. Adams.....	13,326	Buckman, A., baling presses.....	13,323
Shot, drop, H. J. and W. T. Wintherlick.....	13,484	Bureau, A., lamps.....	13,351
Signal, electric, D. Rousseau et al.....	13,407	Burnside, A. W., et al., car couplings.....	13,415
"    fuses, S. Jackson.....	13,395	Butler, T., et al., door spring.....	13,320
"    electric, T. A. Putnam.....	13,476	Button, W. W., snow ploughs.....	13,314
Signalling, telegraphic, E. Pope.....	13,412	Canadian Telephone Co'y., The, telephones.....	13,363
Sleeve lining, T. Houston.....	13,429	Carrier, C. W., car wheel.....	13,405
Snow clearing machine, J. W. Close.....	13,313	"    "    C. W., et al., steam engine.....	13,403
Sole edge burnishing, J. W. Maloy.....	13,469	Cavers, J., fanning mills.....	13,442
Spark arresters, A. M. Kerr.....	13,427	Chichester, S., et al., magneto-electric machine.....	13,489
"    "    H. McKenzie.....	13,359	Close, J. W., snow clearing machine.....	13,313
Springs, carriage, E. Spaulding.....	13,365	Compagnie Générale Belge de Lumière Electrique, The, lamps.....	13,351
"    door, T. Butler et al.....	13,320	Conover, G. A., churns.....	13,434
"    vehicle, A. A. Crosby.....	13,459	Creelman, R. I. & R., knitting machine.....	13,468
Stanchions, cattle, M. H. Barnard et al.....	13,441	Crosby, A. A., vehicle springs.....	13,459
Stands, flower, W. D. McCallum.....	13,332	Cross, J., package for fruit boxes.....	13,394
Steel articles, manufacture of, E. Wheeler.....	13,465	Darby, G. W., sewing machines.....	13,388
Stigmographs, J. Gast.....	13,341	Davies, H. J., clocks and time pieces.....	13,486
Stitching method, The Morlay Sewing machine Co'y.....	13,454	Davis, A., car wheel.....	13,405
Stone extractor, J. Fillion.....	13,310	Dennis, H. G., pipe couplings.....	13,443
Stove pipe collars, G. Blair.....	13,494	Detmer, A. N., et al., coffee pots.....	13,462
"    cooking, D. Moore et al.....	13,384	Dion, L. O., boot and shoe lasts.....	13,417
Stretchers, carpet, A. Mitchell.....	13,348	Dixon, J., manufacture of gas.....	13,317
"    wire, M. A. Howell et al.....	13,399	Dutton, J., tricycles.....	13,493
Sugar refining, B. H. Remmers et al.....	13,330	Dyer, D. A., sub-marine walls.....	13,451
Switch, telegraph, E. Pope.....	13,412	Eastman, W. E., et al., car heating.....	13,447
Tanks, expelling matters from, R. D. Fowler et al.....	13,397	Edison, T. A., commutators.....	13,467
Targets, flying, G. Ligowski.....	13,318	"    "    electric arc light.....	13,315
Telegraphs and rails, P. Bargion.....	13,370	Edwards, H., compound for cancer.....	13,473
Telephones, The Canadian Telephone Co'y.....	13,363	Ellinwood, A. E., drill chucks.....	13,367
Time pieces and locks, H. J. Davies.....	13,486	Farmer, M. G., electro-magnetic motors.....	13,423
Tops, can, L. Stemmler.....	13,376	Ferguson, S. B., cheese machines.....	13,413
Trap, fish and animal, J. S. Simpson.....	13,324	Fillion, J., stone extractor.....	13,310
Treadles, F. M. Weaver et al.....	13,391	Fleming, J. R., et al., composition for diphtheria.....	13,475
Treeing apparatus, boot, F. P. Simonds.....	13,437	Flood, G. W., et al., churn motors.....	13,499
Tricycles, J. Dutton.....	13,493	Folliard, M., hydrants.....	13,322
Trucks, hand, W. H. B. Morgan.....	13,347	Foster, A. C., hoisting machines.....	13,371
Tubes, cast steel, C. B. Morse.....	13,345	"    "    J., pulverizing machines.....	13,492
Tubing, water, W. F. Moulton.....	13,386	Fowler, E. A. & N. C., fire proof safes.....	13,401
Tubs and pails, V. E. Fuller.....	13,479	"    "    R. D., et al., expelling matter from tanks.....	13,397
Turrets, guide rein, T. S. Lewis.....	13,448	Fox, St. G. L., electric lamps.....	13,472
Type writing machines, T. Hall.....	13,393	Fryers, R. M., vessels.....	13,501
Urns, coffee pots and, E. Robinson et al.....	13,462	Fuller, V. E., pails and tubs.....	13,479
Vehicles, J. B. Armstrong.....	13,420	Gast, J., stigmographs.....	13,341
Vessels, R. M. Fryer.....	13,501	Géard, I., et al., washing machines.....	13,438
Walls submarine, D. A. Dyer.....	13,451	Gifford, A. W., screw machine.....	13,456
Wash basins, C. H. Moore.....	13,335	Gives, J., saw gauges.....	13,319
Washing machines, I. Gérard et al.....	13,438	Goodwin, H. J., lifting jacks.....	13,487
Water lifter, B. B. Brewer.....	13,340	Grandbois, P. E., et al., hand powers.....	13,312
Weighing device, G. Milsom.....	13,477	Gray, J., et al., hat felting machine.....	13,344
Wheel car, C. W. Carrier.....	13,406	Green, W. W., et al., exhaust and blowing fans.....	13,358
Wire stretchers, M. A. Howell et al.....	13,399	Gruber, G., brushes.....	13,450
Wringers, clothes, C. J. Shirreff.....	13,422	Hall, T., type writing machines.....	13,393
Writing machines, type, T. Hall.....	13,393	Hallberg, C. S., saccharated extracts.....	13,374
		Hance, W. A., et al., treadles.....	13,391
		Harper, J. H., et al., spring motors.....	13,373
		Harris, J. K., sewing machines.....	13,378
		Hathaway, G. M., et al., locks.....	13,338
		Haycock, J. L., pruning shears.....	13,387
		Henley, T. F., process of treating dates.....	13,379
		Henry, J. H., paper machines.....	13,424
		Herron, J., friction gear.....	13,369
		Hester, J. G., pen-holders and pens.....	13,481
		Hewitt, J. S., et al., rakes and holders.....	13,500
		Hickman, E., car coupling.....	13,440

INDEX OF PATENTEES.

Adams, E., shoes.....	13,326
Alexander, J., refrigerators.....	13,444
Allen, S. M., wood grinders.....	13,485
"    "    wood pulp.....	13,360
Andrews, E., saw handles.....	13,452
Archer, J., water pipe.....	13,408
Armstrong, J. B., punching machines.....	13,419
"    "    vehicles.....	13,420

Hoff, I. P., et al., belt fasteners.....	13,496	Prentice, B. B., churns.....	13,400
Holland, C., hydrocarbon burners.....	13,368	Pruyn, I. L., et al., bell fasteners.....	13,496
“ “ furnaces.....	13,380	Putnam, T. A., electric signals.....	13,478
Hopkins, D. A., journal bearing.....	13,353	Reed, J. H., writing charts.....	13,430
Houston, T., sleeve lining.....	13,429	Remmers, B. H., et al., sugar refining.....	13,330
Howard, C. R., draughting instruments.....	13,502	Renz, M., nut crackers.....	13,396
“ H. B., et al., car coupling.....	13,415	Reynier, N. E., electric lamps.....	13,466
“ J. L. & C. P., berth locks.....	13,321	Koberge, D., hoof expanders.....	13,352
Howell, M. A., et al., wire stretcher.....	13,399	Roberts, G. O., et al., ironing boards.....	13,329
Hotchkiss, H. I., automatic cradles.....	13,409	Robinson, E., et al., car axle boxes.....	13,497
Hubbell, A. S. & H. S., et al., stove grate.....	13,309	“ “ coffee pots.....	13,462
Hutchinson, I. A., et al., car axle boxes.....	13,497	“ S. R., hammock chair.....	13,327
Ives, H. R., et al., wire stretcher.....	13,399	“ W. A., et al., cooking stoves.....	13,384
Jackson, S., signal fuses.....	13,395	Rousseau, D., et al., electric signals.....	13,407
Johnston, A., et al., belt fasteners.....	13,496	Sands, W. B. O., et al., churn motors.....	13,499
Keating, L. N., et al., log canters.....	13,343	Savoie, J., safety locks.....	13,495
Ker, E., evaporators for fruit and vegetables.....	13,392	Schermerhorn, G. W., brush handle.....	13,325
Kerr, A. M., spark arrester.....	13,427	Schweizer, J., electric clocks.....	13,414
Lamb, J. B., grain binders and gatherers.....	13,474	Schram, G. A., ironing boards.....	13,464
Lang, R. & J. B., harrow.....	13,334	Seeley, D. Z., baling presses.....	13,323
Law, R., root forks.....	13,498	Sells, H., corn husking machines.....	13,439
Lewis, J. B., et al., treadles.....	13,391	Sexton, W. F., doors.....	13,428
Lewis, T. S., guide rein turrets.....	13,448	Shirreff, C. J., clothes wringers.....	13,422
Ligowski, G., flying targets.....	13,318	Simonds, F. P., boot treeing apparatus.....	13,437
Long, N. H., swinging gates.....	13,390	Simpson, J. S., fish and animal traps.....	13,324
Lord, P., et al., hose coupling.....	13,328	Slote, D., et al., temporary binders.....	13,461
Lotz, W. H., hoisting machine.....	13,480	Smith, F. W., brush handle.....	13,325
McCallum, W. D., flower stands.....	13,332	“ J. N., axle boxes.....	13,308
McCree, J., car couplings.....	13,433	“ W. C., et al., electric signal.....	13,407
McIntyre, N., et al., horse collar.....	13,398	Snider, C., et al., temporary binders.....	13,461
McKenzie, H., spark arrester.....	13,359	Spaulding, E., carriage springs.....	13,364
“ W., fanning mills.....	13,482	“ “ “.....	13,365
McMechan, J. H., over shoes.....	13,366	Stranbury, G. H., et al., stove grate.....	13,309
McMurray, J. S., palls and tubs.....	13,479	Stark, L. G., et al., exhaust and blowing fans.....	13,358
Macay, J. F. N., filtering apparatus.....	13,375	Steer, E., et al., metallic fencing.....	13,416
Maddin, S. D., harvesters.....	13,336	Steamler, L., can tops.....	13,376
Malcolm, W. R., boiler grates.....	13,418	Stewart, G. A., grain elevators.....	13,436
Malay, J. W., burnishing machines.....	13,469	Strohm, S. D., electrical conductors.....	13,483
Marrotte, S., jar covers.....	13,382	Thompson, J. C., self-levelling berths.....	13,491
Martel, A. F., nut locks.....	13,455	“ W., white lead.....	13,349
Mentzer, P. A., T. J. & J., snow plow.....	13,314	Thorn, W. J., et al., horse collars.....	13,398
Mignault, E., et al., hose coupling.....	13,328	Tremblay, P., et al., washing machines.....	13,438
Milson, G., elevating device.....	13,477	Troy, R., et al., ironing board.....	13,329
Mitchell, A., carpet stretcher.....	13,348	Taplin, A., et al., cattle stanchions.....	13,441
Moffatt, R. R., et al., magneto-electric machine.....	13,489	Taylor, B. S., et al., lock.....	13,338
Monk, W. & H., et al., steam engine.....	13,403	Van Liew, D. F., car door hangers.....	13,356
Monroe, E. P., metallic packings.....	13,432	Varney, J., horse shoe nail machine.....	13,478
Moore, C. H., wash basins.....	13,335	Vibbard, C. H., et al., cigar lighters.....	13,471
“ D., et al., cooking stoves.....	13,384	Vinet, J. B., et al., hose couplings.....	13,328
Morgan, W. H. B., hand trucks.....	13,347	Ward, A. F., hoop colling machines.....	13,333
Morkill, R. D., et al., car couplers.....	13,445	“ B. B., steam engines.....	13,372
Morley, J. H., stitching method.....	13,454	“ “ et al., engine governors.....	13,431
Morley Sewing Machine Co'y, The, stitching method.....	13,454	Warner, G. P., shirt front and cuffs.....	13,383
Morse, C. B., tubes of cast steel.....	13,345	“ R. D., harvesters.....	13,402
Moule, J. J., anchors.....	13,381	Warren, C. M., roofs.....	13,457
Moulton, W. F., water tubing.....	13,386	“ C. M., “.....	13,458
Munsie, W., catapults.....	13,362	Waterhouse, A., et al., steam engines.....	13,372
Naffziger, C., rakes and loaders.....	13,500	“ A. G., engine governors.....	13,431
“ J. S., et al., rakes and loaders.....	13,500	Weaver, F. M., et al., treadles.....	13,391
Napanee Brush Co'y, The, brush handle.....	13,325	Weber, T. A., bale band fasteners.....	13,453
Naylor, J., barrel hoops.....	13,331	Weed, A., tile cutting machine.....	13,449
Neill, R., et al., expelling matter from tanks.....	13,397	Weir, R., et al., log canters.....	13,343
Neiley, J. H., et al., treadles.....	13,391	Wells, H. P., et al., sewing machines.....	13,355
Nicholson, G., bale band fastening.....	13,453	Wheeler, C. G., saccharated extracts.....	13,371
Nickerson, H. B., musical instruments.....	13,411	“ E., manufacturer of steel articles.....	13,465
Norris, J., cooking stoves.....	13,384	Wilkin, W. M., saw mills.....	13,342
Oliver, W. S., military accoutrement.....	13,339	Wilkins, A. G., shoe button fasteners.....	13,357
Onderdonk, L., et al., sewing machines.....	13,355	“ W. F. & J., belt fasteners.....	13,463
Osgood, J. A., et al., metallic packings.....	13,432	Williams, T. F., revolving nets.....	13,361
Otto, N. A., gas motor engine.....	13,306	Williamson, J., et al., sugar refining.....	13,330
Ouellet, J., et al., hand powers.....	13,312	Winterlick, H. J. & W. T., drop shot.....	13,484
Parsons, H. F., drilling machines.....	13,410	Woodward, J. R., et al., car couplers.....	13,445
Pearson, P., coffee roasters.....	13,425	Woodley, L. G., electric lamps.....	13,354
Pope, E., telegraph switch.....	13,412	Woolsey, C. W., life raft.....	13,389
Powell, J. B., et al., spring motors.....	13,373	Zschech, G. H., water heaters.....	13,470

## Patents issued up to 31st October, 1881, Claims and Drawings of which will appear in a subsequent number of the Patent Record.

- No. 13,503. John Harris, Brantford, Ont., "Reaper," October 1st, 1881.
- No. 13,504. Carleton Brown Hutchins, Ann Arbor, Mich., U.S.A., "Refrigerator Car," October 1st, 1881.
- No. 13,505. Ellen Canterbury Furney, (Assignee of Elliot Emerson Furney), St. Louis, Missouri, U.S.A., "Apparatus for Checking the Waste of Water," October 1st, 1881.
- No. 13,506. William Lawrence Eveland, Port Stanley, Ont., "Plumb Level," Oct. 1st, 1881.
- No. 13,507. C. H. Pond, New York, "Indicator," Oct. 1st, 1881.
- No. 13,508. William Plumer, Lexington, Mass., U.S.A., "Apparatus for the Manufacture of Fertilizers," Oct. 1st, 1881.
- No. 13,509. Henry Wurtz, New York, N.Y., "Method of Making Sulphuric Acid from Pyrites," Oct. 1st, 1881.
- No. 13,510. G. A. Schram, St. Thomas, Ont., "Automatic Gate Lock," Oct. 1st, 1881.
- No. 13,511. V. B. Southard, Fenelon, Ont., "Dominion Grain Fork," Oct. 1st, 1881.
- No. 13,512. C. H. Helms, Poughkeepsie, N.Y., "Edge Trimming Machine for Boots and Shoes," Oct. 1st, 1881.
- No. 13,513. W. H. Payzant, Canning, Nova Scotia, "Silvering Blind," Oct. 1st, 1881.
- No. 13,514. S. F. Roop, Middleton, N.S., "Seat Valve," Oct. 1st, 1881.
- No. 13,515. A. Fleck, Ottawa, Ont., "Polygonal Lathe." (Extension of Patent No. 6,644), Oct. 4th, 1881.
- No. 13,516. W. Lawrence, London, Eng., "Heater and Refrigerator," (Extension of Patent No. 6,749), Oct. 5th, 1881.
- No. 13,517. J. S. Ste. Marie, Montreal, Que., "Spittoon," (Extension of Patent No. 6,640), Oct. 11th, 1881.
- No. 13,518. G. W. Batchelder, Boston, Mass., "Baling Press," Oct. 12th, 1881.
- No. 13,519. P. Mayrand, Three Rivers, Que., "Railway Crossing Gates," Oct. 12th, 1881.
- No. 13,520. J. Bain and W. C. Wallace, Hamilton, Ont., "Slide Valve Gear," Oct. 12th, 1881.
- No. 13,521. J. Chase, Rochester, N.Y., "Chandelier," Oct. 12th, 1881.
- No. 13,522. T. Wire, Lenox, Ohio, "Cheese Vat," Oct. 12th, 1881.
- No. 13,523. J. E. Myrick, Cleveland, O., "Feed Water Heaters," Oct. 12th, 1881.
- No. 13,524. D. B. Kendall, Howland Flat, Cal., "Hose Coupling," Oct. 12th, 1881.
- No. 13,525. H. Fairbanks and H. Paddock, St. Johnsbury, Vt., "Scale Beam Marker," Oct. 12th, 1881.
- No. 13,526. J. Hugill and A. G. Smyth, Hamilton, Ont., "Improved Metal Fence Post," Oct. 12th, 1881.
- No. 13,527. J. W. Langley, Ann Arbor, Mich., "Electrical Regulator," Oct. 12th, 1881.
- No. 13,528. A. Samper, Paris, France, "Transmission of Movement," Oct. 12th, 1881.
- No. 13,529. C. Sandford, Madoc, Ont., "Horse Power," Oct. 12th, 1881.
- No. 13,530. W. J. Lane, Millbrook, N.Y., "Horse Hay Rake," Oct. 12th, 1881.
- No. 13,531. G. Bower and A. S. Bower, St. Neots, Eng., "Protection of Iron and Steel and Furnace Thamer," Oct. 12th, 1881.
- No. 13,532. J. M. Jos. Wernet, Paw Paw, Mich., "Improved Stool or Chair," Oct. 12th, 1881.
- No. 13,533. E. H. Chadwick, Louisville, Kentucky, "Lightning Stove Pipe Cleaner," Oct. 13th, 1881.
- No. 13,534. E. W. Grant, Ipsilanti, Mich., "Automatic Car Coupling," Oct. 12th, 1881.
- No. 13,535. E. B. Butterworth, Ottawa, Ont., "Heating Apparatus," Oct. 12th, 1881.
- No. 13,536. N. P. Chaney, Potsdam, N.Y., "Feather Renovator," (Extension of Patent 6,663), Oct. 12th, 1881.
- No. 13,537. W. W. Fairbairn, Boston, Mass., "Grate Bars," Oct. 13th, 1881.
- No. 13,538. G. S. Cranson, Silver Creek, N. Y., "Buckwheat Hulling Machine," Oct. 13th, 1881.
- No. 13,539. O. B. Van Veehten, Brooklyn, N. Y., "Mouth Bag Closing Machine," Oct. 13th, 1881.
- No. 13,540. S. Hussey, Gonanda, N. Y., and G. B. L. Wilson, Buffalo, N. Y., "Rock Drill," Oct. 13th, 1881.
- No. 13,541. S. Shaw, Boston, Mass., "Ship Berth or Live Stock Pen," Oct. 13th, 1881.
- No. 13,542. C. Detrich, Philadelphia, Penn., "Underground Pipe," Oct. 13th, 1881.
- No. 13,543. N. J. Waterman, Binghamton, N. Y., "Hand Truck," Oct. 13th, 1881.
- No. 13,544. J. M. Stebbins, New York, "Battery," Oct. 13th, 1881.
- No. 13,545. C. LaDow, Albany, N. Y., "Spring Tooth Harrows," Oct. 13th, 1881.
- No. 13,546. W. Sauer, Guelph, Ont., "Smoothing Iron," Oct. 13th, 1881.
- No. 13,547. A. C. Gibson, W. W. Gibson, Toronto, Ont., "Window Blind," Oct. 13th, 1881.
- No. 13,548. J. M. Downing, Bristol, Penn., "Electro Magnetic Battery," Oct. 13th, 1881.
- No. 13,549. R. Cook, Sheffield, Eng., "Pulverizing Machine," Oct. 19th, 1881.
- No. 13,550. A. Merner, Waterloo, Ont., "Plow Beam," Oct. 19th, 1881.
- No. 13,551. J. Kinney, Detroit, Mich., "Cemetery Fence," Oct. 19th, 1881.
- No. 13,552. J. H. Mitchell, Philadelphia, Penn., "Cake and Confectionary Machine," Oct. 19th, 1881.
- No. 13,553. C. Héme, South Bay City, Mich., "Tubing Clamps," Oct. 19th, 1881.
- No. 13,554. C. Tidey, Norwich, Ont., "Carriage Abluent," Oct. 19th, 1881.
- No. 13,555. J. Kingly, Montreal, Que., "Fibre and Steel Car Wheel," Oct. 19th, 1881.
- No. 13,556. S. Paradis, Ottumwa, Iowa, "Force Pump," Oct. 19th, 1881.
- No. 13,557. J. P. Rothwell, Lytham, Eng., "Horse Shoes," Oct. 19th, 1881.
- No. 13,558. C. M. Clancey, Wallaceburg, Ont., "Hop Lapping Machine," Oct. 19th, 1881.
- No. 13,559. H. N. Baker, Binghamton, N. Y., "Windmill," Oct. 19th, 1881.
- No. 13,560. S. J. Plant, Township York, Ont., "Brick Kiln," October 19th, 1881.
- No. 13,561. G. S. Agee, Mint Hill, Missouri, "Plow," October 19th, 1881.
- No. 13,562. J. F. Phillips, Georgetown, Colorado, "Pipe Wrench," October 19th, 1881.
- No. 13,563. F. W. Hofde, Brooklyn, N. Y., "Telescopic Ladder," October 19th, 1881.
- No. 13,564. S. L. Worsley, Buffalo, N. Y., "Treading Screws Machine," October 19th, 1881.
- No. 13,565. S. L. Worsley, Buffalo, N. Y., "Screw Blanks Feeder," October 19th, 1881.
- No. 13,566. L. H. Tourville, St. Henri, Que., "Hiuleur pour Essieux," October 19th, 1881.
- No. 13,567. C. R. Ellacott, Montreal, Que., "Horse Shoe Nail Forging Machines," October 19th, 1881.
- No. 13,568. J. C. Baumgartner, Fraser, Mich., "Gate Hanging," October 19th, 1881.
- No. 13,569. J. Burns, Hamilton, Ont., "Wrought and Cast Wheel," October 19th, 1881.
- No. 13,570. J. Laurie, (Assignee of G. Wells), both Montreal, Que., "Water Engine," October 19th, 1881.
- No. 13,571. G. H. P. Flagg, (Assignee of F. W. Coy.), both of Boston, Mass., "Globe Roll," October 19th, 1881.
- No. 13,572. G. H. P. Flagg, (Assignee G. A. Fullerton and F. W. Coy.) all of Boston, Mass., "Globe Shank Wheel," October 19th, 1881.
- No. 13,573. A. H. Hebard, Cambridge, Mass., "Stringing Pianofortes," October 19th, 1881.
- No. 13,574. W. P. Widdifield and A. T. Button, Uxbridge, Ont., October 19th, 1881.
- No. 13,575. A. Wittamer, Antwerp, Belgium, "Gas Apparatus," October 19th, 1881.
- No. 13,576. G. S. Strong, Philadelphia, Penn., "Feed Water Heater," October 19th, 1881.
- No. 13,577. T. A. Edison, Menlo Park, N. J., A. Kenny, N. Y., "Fac-Simile Telegraph," October 19th, 1881.
- No. 13,578. A. Porteous, W. Murchey, Galt, Ont., "Car Coupler," October 19th, 1881.
- No. 13,579. J. T. Gurney, S. Whittier, Boston, Mass., "Sleds," October 19th, 1881.
- No. 13,580. C. Dion, New York, N. Y., "Electro-Magnets, etc.," October 19th, 1881.
- No. 13,581. J. Gives, Shakespeare, Ont., (Extension of Patent No. 6,715), October 19th, 1881.
- No. 13,582. V. H. Tisdale, Hamilton, Ont., "Churn Power," (Extension of Patent No. 6,696), October 19th, 1881.
- No. 13,583. F. G. Altinnann, F. Pommer, Edina, Missouri, "Sewing Machine," October 20th, 1881.
- No. 13,584. A. M. Burritt, Waterburg, Connecticut, "Fire Extinguisher," October 20th, 1881.
- No. 13,585. R. Morris, Lewisham, Eng., "Control Apparatus for Rifle Practice," October 20th, 1881.
- No. 13,586. W. Gillett, Ypsilanti, Mich., "Telephone," October 20th, 1881.
- No. 13,587. A. E. Choquette, Milwaukee, Wis., "Sewing Machine," October 20th, 1881.
- No. 13,588. E. Julien, B. Baker, Montreal, Que., "Bedstead," October 20th, 1881.
- No. 13,589. W. H. Bramhall, Brooklyn, N. Y., (Assignee of L. B. Berrien.) Galesbury, Illinois, "Plaiting Machine," October 20th, 1881.
- No. 13,590. G. Chapleau, Montreal, Que., J. Desantels, St. Vincent de Paul, Que., "Cries," October 20th, 1881.
- No. 13,591. J. W. Chisholm, (Assignee of W. H. H. Lisum.) all of

Brooklyn, N. Y.. "Running Gear for Railway Cars," October 20th, 1881.

No. 13,592. J. Best, J. A. Bell, both of Montreal, Que., "Diagonal Electric Lamp," October 20th, 1881.

No. 13,593. A. L. Testor, Hagerstown, Indiana, "Millstone Dresser," October 24th, 1881.

No. 13,594. W. A. Bickford, Hamilton, Ont., "Submerged Force Pump," October 24th, 1881.

No. 13,595. J. J. Magne, Lilas, France, "Autographic Process," October 24th, 1881.

No. 13,596. H. A. Davis, London, Eng., "Compactum Umbrella," October 24th, 1881.

No. 13,597. J. W. Sharrett, Portsmouth, Virginia, "Fair Leader for Ropes and Chains," October 24th, 1881.

No. 13,598. G. Liedman and C. Beger, Berlin, Germany, "Apparatus for Imparting Motion to Carriages, etc.," October 24th, 1881.

No. 13,599. W. Lea, Watford, Ont., "Portable Fence," October 25th, 1881.

No. 13,600. F. H. Moore, Holbrook, Mass., "Shutter Worker," October 26th, 1881.

No. 13,601. S. M. Silver, Auburn, Maine, "Tricycles," October 26th, 1881.

No. 13,602. A. G. Wilkins, Cooperstown, Penn., "Shoe Button Fastener," October 26th, 1881.

No. 13,603. F. Stone, Worcester, Mass., "Musical Instruments," October 26th, 1881.

No. 13,604. H. S. Maxim, Brooklyn, N. Y., "Electric Lamp," October 26th, 1881.

No. 13,605. K. McDonald, Portland, Maine, "Water Heater," October 26th, 1881.

No. 13,606. W. Gillett, Brooklyn, N. Y., "Telephone," October 26th, 1881.

No. 13,607. B. F. Sweet, Fond du Lac, Wis., "Sleigh," (Extension of Patent No. 6,710,) October 26th, 1881.

No. 13,608. B. F. Sweet, Fond du Lac, Wis., "Sleigh," (Extension of Patent No. 6,710,) October 27th, 1881.

No. 13,609. J. Varney, Montreal, Que., "Dodd Machine," (Extension of Patent No. 6,599,) October 27th, 1881.

No. 13,610. D. L. Lawson, Fryeburgh, Maine, "Heaters," October 27th, 1881.

No. 13,611. J. M. Laughlin, Boston, Mass., "Nail Plates," (Extension of Patent No. 6,719,) October 28th, 1881.

No. 13,612. E. A. Waterhouse, Chatham, Ont., "Corsets," (Extension of Patent No. 6,724,) October 29th, 1881.

No. 13,613. W. Muir, Montreal, Que., (Assignee of D. M. C. Smith,) Lynn, Mass., "Variable Cam Feed," (Extension of Patent No. 6,708,) October 29th, 1881.

No. 13,614. J. W. Dodge, Malden, Mass., D. C. Knowlton, J. Hitchcock, both of Boston, Mass., "Edge Trimmer," October 31st, 1881.

No. 13,615. J. H. Blanchard, Boston, Mass., H. E. Waite, Newton, Mass., "Car Coupling," October 31st, 1881.

No. 13,616. W. Malloy, Toronto, Ont., (Assignee of A. F. Wright,) Toronto, Ont., "Stock Gates," October 31st, 1881.



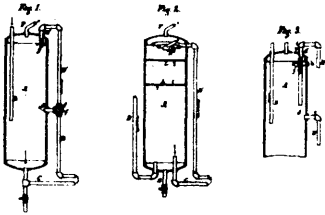


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 ILLUSTRATIONS.

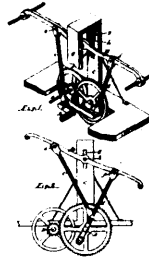
Vol. IX.

OCTOBER, 1881.

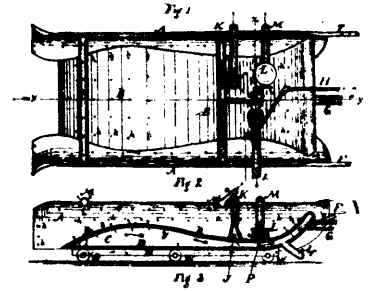
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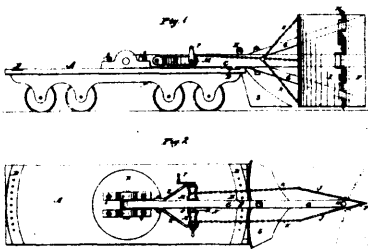
13311 Aestin's Improvements on Stand Boilers.



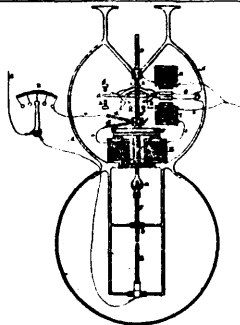
13312 Ouellet's Improvements in Hand Powers.



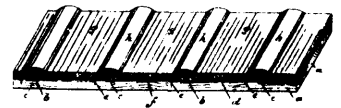
13313 Close's Improvements on Snow Clearing Machines.



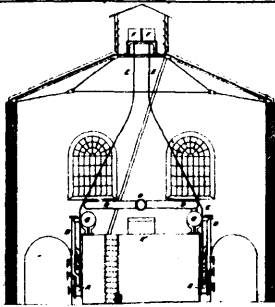
13314 Button's Improvements on Snow Ploughs.



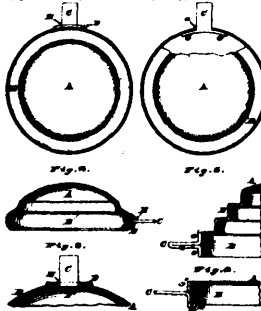
13315 Edison's Improvements on Electric Arc Lights.



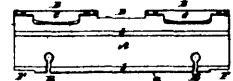
13316 Brokenshire's Improvements on Composite Roofs.



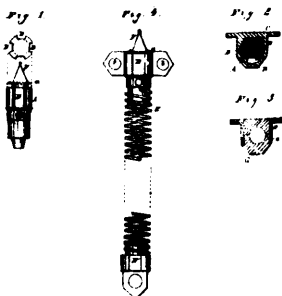
13317 Dixon's Improvements in the Manufacture of Gas.



13318 Ligowski's Improvements on Flying Targets.



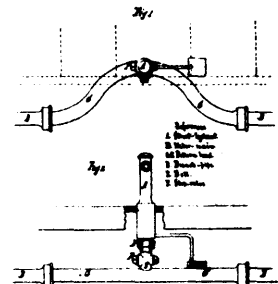
13319 Gives's Improvements on Saw Gauges.



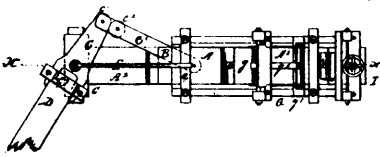
13320 Butler's Improvements on Door Springs.



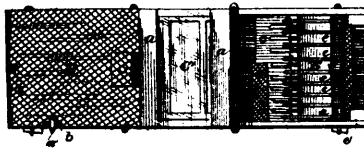
13321 Howard's Improvements on Berth Locks for Sleeping Cars.



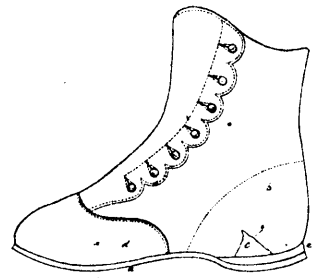
13322 Felliard's Improvements on Street Connections for Hydrants.



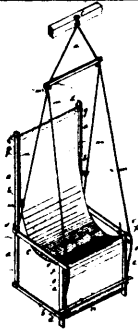
13323 Buckman's Improvements on Baling Presses.



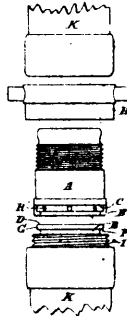
13324 Simpson's Improvements on Combined Fish and Animal Traps.



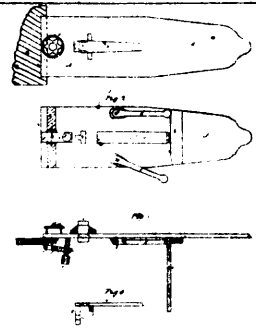
13326 Adams's Improvements in Shoes.



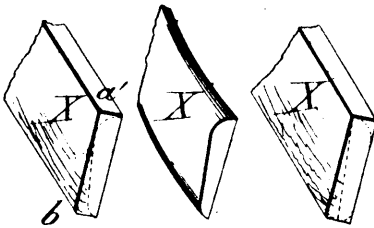
13377 Robinson's Hammock Chair.



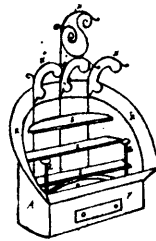
13328 Lord's Improvements in Hose Couplings.



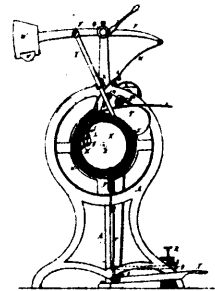
13329 Troy's Improvements in Ironing Boards.



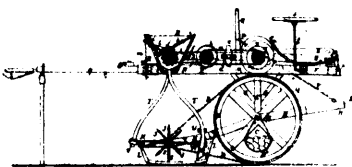
13331 Naylor's Improvements in Barrel Hoops.



13332 McCallum's Improvements on Flower Stands.



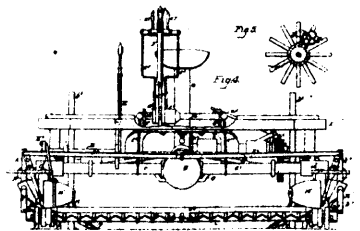
13333 Ward's Improvements on Hoop Colling Machines.



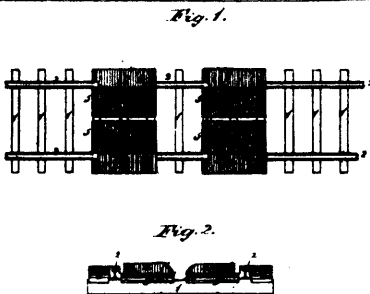
13334 Lang's Combined Harrow, Seeder and Roller.



13336 Moore's Improvements in Wash Basins.



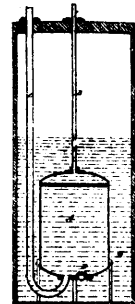
13336 Maddin's Improvements on Harvesters.



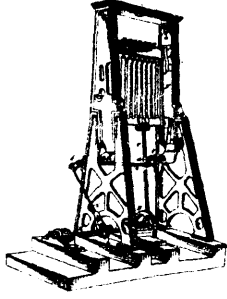
13337 Brewer's Improvements on Car Replacers.



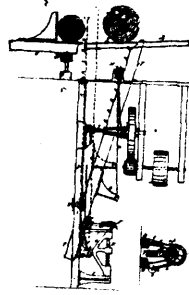
13338 Hathaway & Taylor's Improvements on Locks.



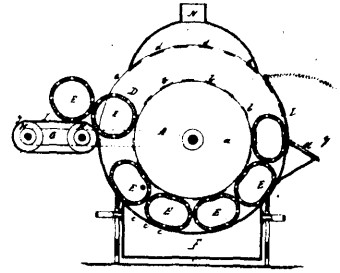
13340 Brewer's Improvement on Water Lifters.



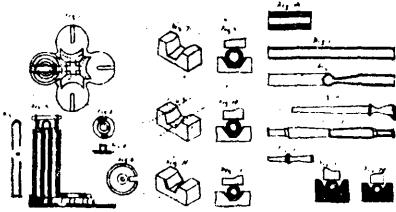
13342 Wilkin's Improvements on Saw-mills.



13343 Weir's Improvements in Log Canters.



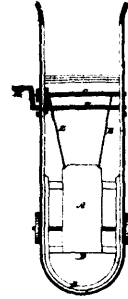
13344 Baglin's Improvements on Hat Felting Machines.



13345 Morse's Improvements in the Manufacture of Hollow Ingots or Tubes of Cast Steel.



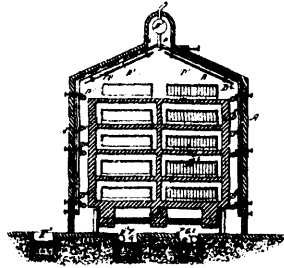
13346 Shantz's Improvements on Machines for Polishing Buttons.



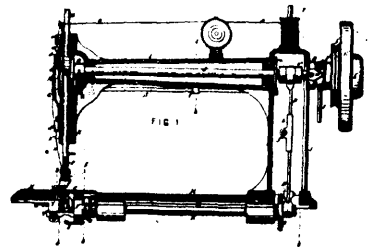
13347 Morgan's Improvements on Hand Trucks.



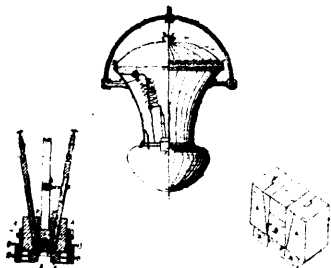
13348 Mitchell's Improvements in Carpet Stretchers.



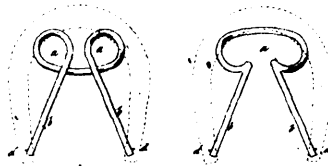
13349 Thompson's Improvements in the Manufacture of White Lead.



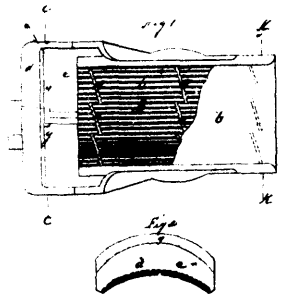
13350 Bond's Improvements on Sewing Machines.



13351 Bureau's Improvements in Lamps.



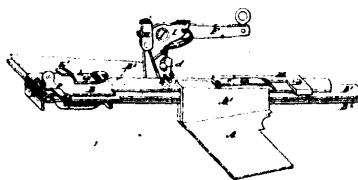
13352 Roberge's Improvements on Hoof Expanders.



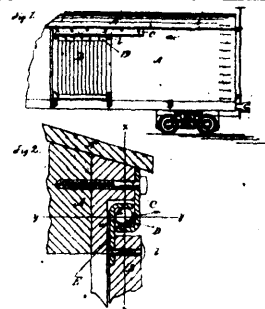
13353 Hopkins's Improvements on Journal Bearings for Car Axles.



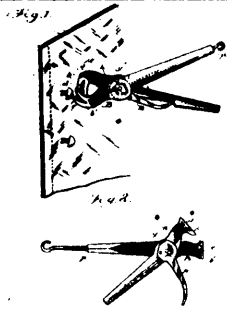
13354 Woolley's Improvements in Electric Lamps.



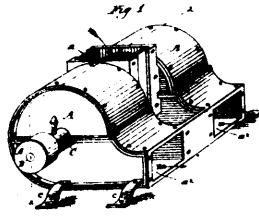
13355 Onderdonk's Improvements on Sewing Machines.



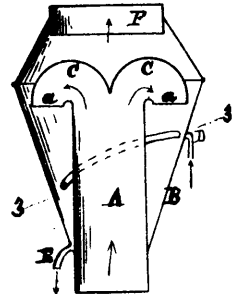
13356 Van Liew's Improvements on Car Door Hangers.



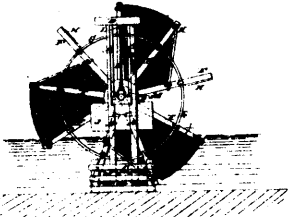
13357 Wilkins's Improvements on Shoe Button Fasteners.



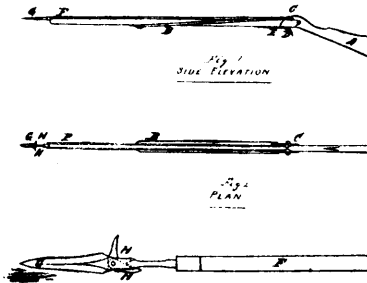
13358 Green & Stark's Improvements in Exhaust and Blowing Fans.



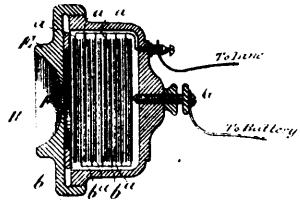
13359 McKenzie's Improvements on Spark Arresters.



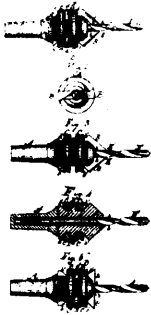
13361 Williams's Improvements on Revolving Nets.



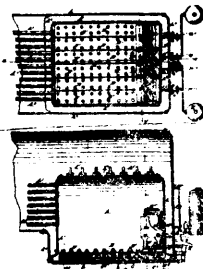
13362 Mansie's Improvements on Catapults for Seal Fishing.



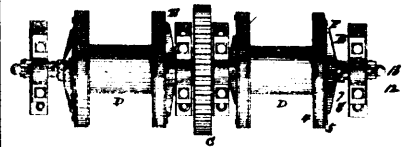
13363 Anders's Improvements in Telephones.



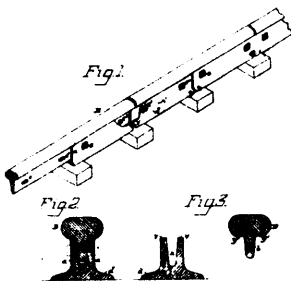
13367 Ellinwood's Improvements on Drill Chucks.



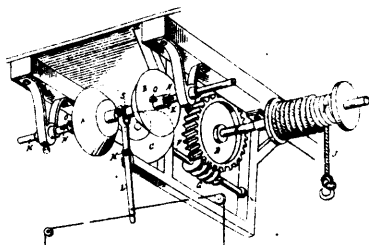
13368 Holland's Improvements on Hydro-carbon Burners.



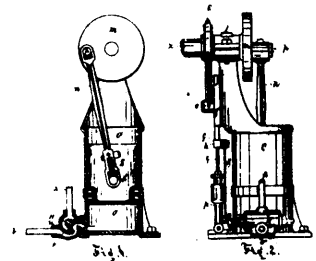
13369 Herron's Improvements on Friction Gears.



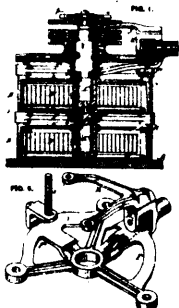
13370 Bargion's Improvements on Rails and Railway Telegraphs.



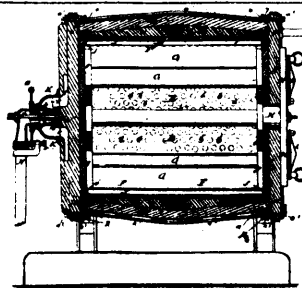
13371 Foster's Improvements in Hoisting Machines.



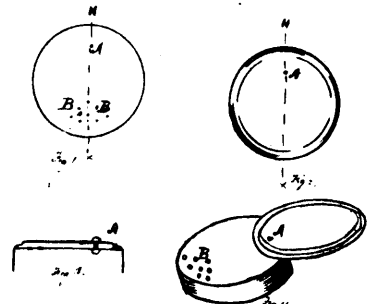
13372 Waterhouse & Brewer's Improvements in Steam Engines.



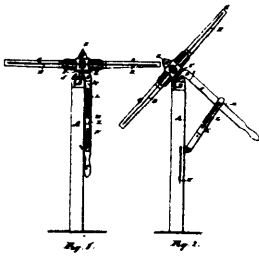
13373 Powell's Improvements on Spring Motors.



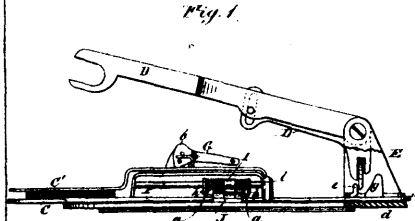
13375 Macay's Improvements on Apparatus in Dissolving and Filtering and for Effecting Chemical Reactions, in Chemical and Metallurgical Processes.



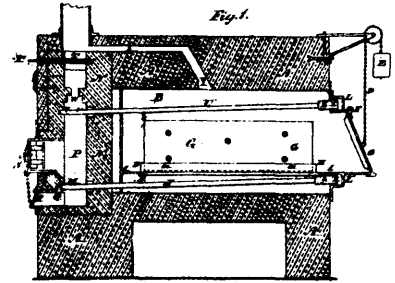
13376 Stemmler's Improvements on Tops for Spice Cans.



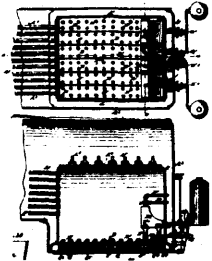
13377 Brown's Improvement on Clothes Driers.



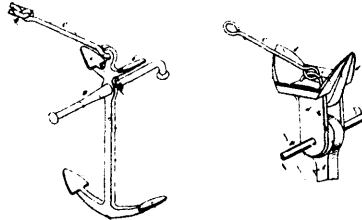
13378 Harris's Improvements on Sewing Machines.



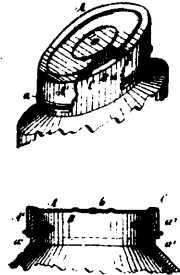
13379 Henley's Improvements on the Process of Treating Dates, and Apparatus Therefor.



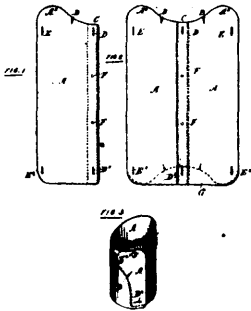
13380 Holland's Improvements on Hydro-carbon Furnaces.



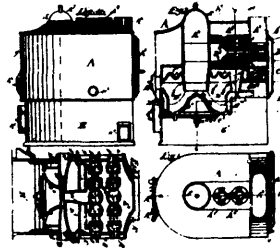
13381 Moule's Improvements on Anchors.



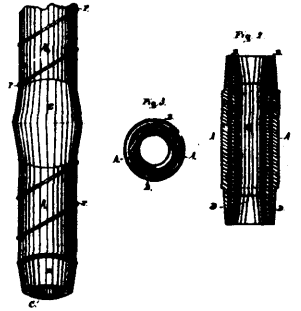
13382 Marrotte's Improvements on Jar Covers.



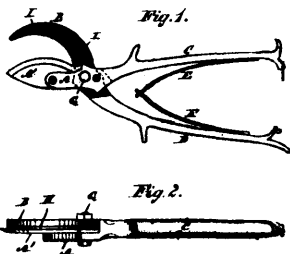
13383 Warner's Combined Shirt Front and Cuffs.



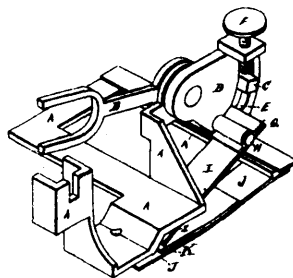
13385 Malcolm's Improvements on Steam Boilers.



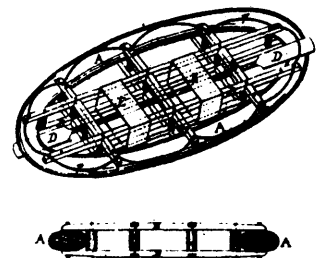
13386 Moulton's Improvements on Water Tubing.



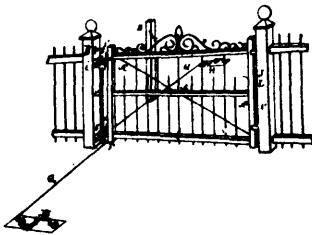
13387 Haycock's Improvements on Pruning Shears.



13388 Darby's Improvements on Sewing Machines.



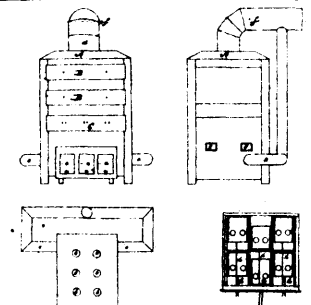
13389 Woolsey's Improvements on Life Rafts.



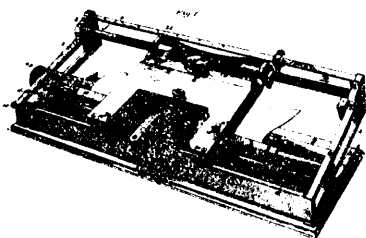
13390 Loeg's Improvements on Swinging Gates.



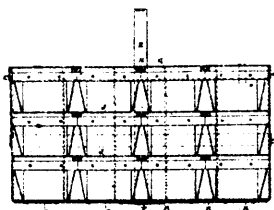
13391 Weaver's Improvements on Treadles.



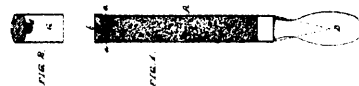
13392 Ker's Improvements on Evaporators for Fruit and Vegetables.



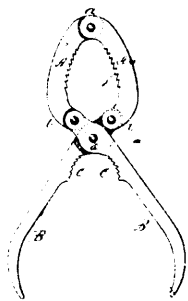
13393 Hall's Improvements on Type Writing Machines.



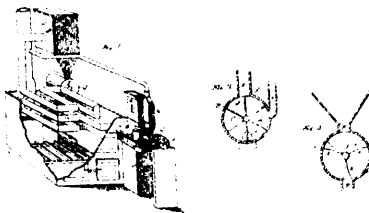
13394 Cross's Package for Fruit Boxes.



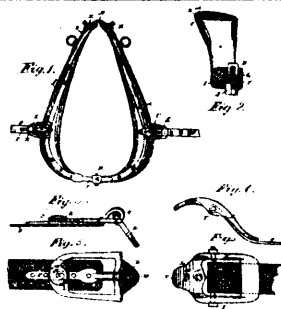
13395 Jackson's Improvements on Signal Fuses.



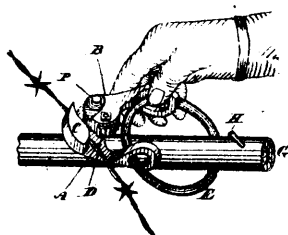
13396 Renz's Improvements on Nut Crackers.



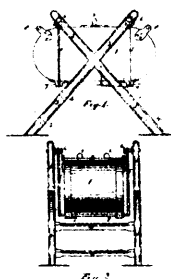
13397 Fowler & Neill's Apparatus for Expelling Volatile Matter from the Refuse from Rendering Tanks and from other Substances.



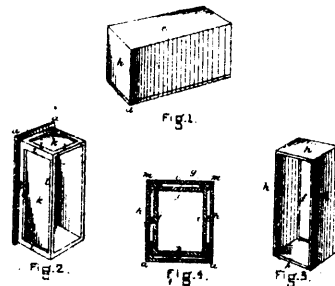
13398 Thorn's Improvements on Horse Collars.



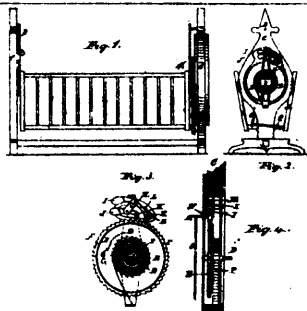
13399 Howell & Ives's Improvements in Wire Stretchers.



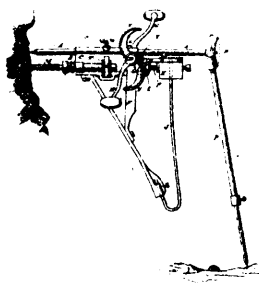
13400 Prentice's Improvements on Churns.



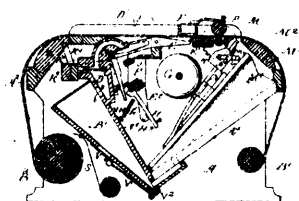
13401 Fowler's Improvements on Fire Proof Safes and Fire Proof Materials.



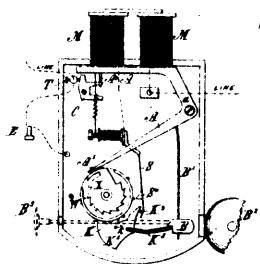
13413 Hotchkiss's Improvements on Automatic Cradles



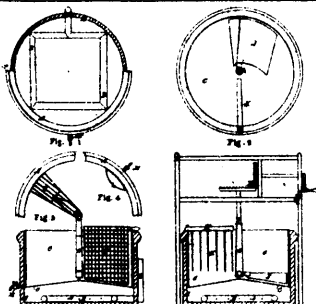
13410 Parsons's Improvements on Drilling Machines.



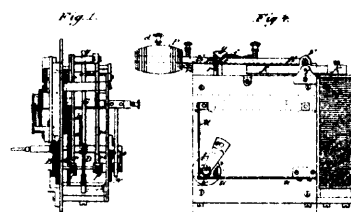
13411 Nickerson's Improvements on Mechanical Musical Instruments,



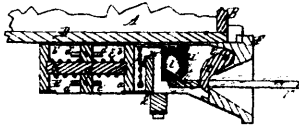
13412 Pope's Switch for Telegraphic Signalling.



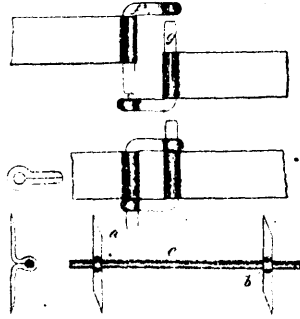
13413 Ferguson's Improvements on Cheese Machines.



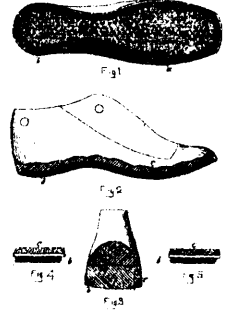
13414 Schweizer's Improvements on Electric Clocks.



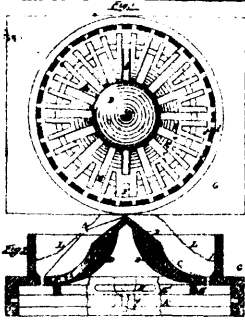
13415 Howard's Improvements on Car-couplings.



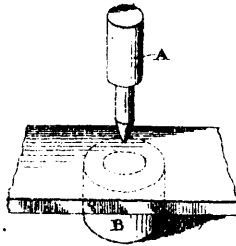
13416 Steer & Sheldon's Improvements in Metallic Fencing.



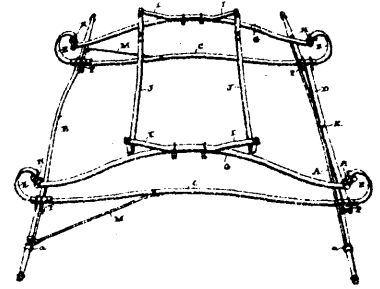
13417 Dion's Improvements on Boot and Shoe Lasts



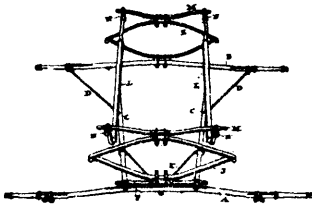
13418 Malcolm's Improvements on Grates.



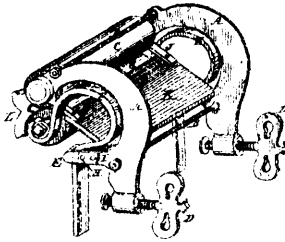
13419 Armstrong's Improvements in Machines for Punching Metal Plates.



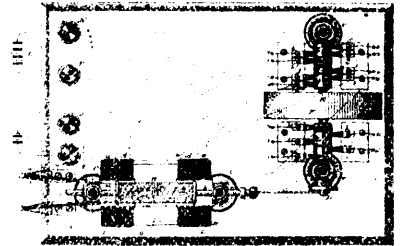
13420 Armstrong's Improvement in Vehicles.



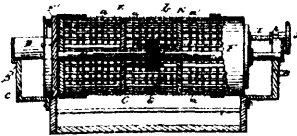
13421 Armstrong's Improvements on Vehicles.



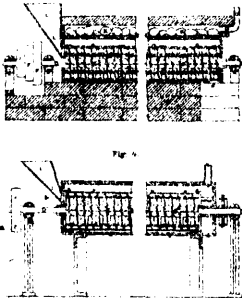
13422 Shirreff's Improvements on Clothes Wringers.



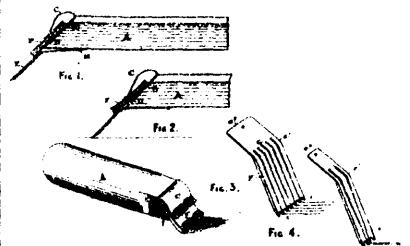
13423 Farmer's Improvements on Electro-magnetic Motors.



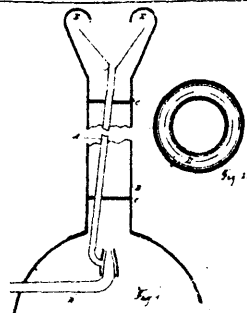
13424 Henry's Improvements on Paper Machines.



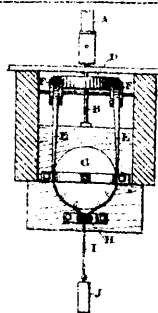
13425 Pearson's Improvements on Coffee Roasters.



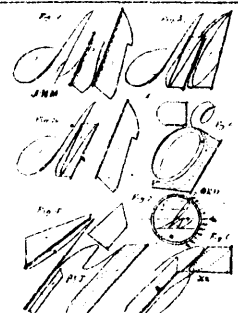
13426 Blackhall's Improvements on Ruling Pens.



13427 Kerr's Improvements on Spark-arresters.

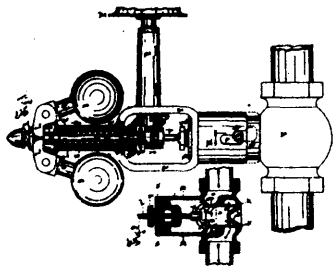


13428 Sexton's Improvements in Doors.

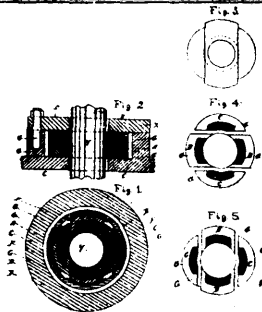


13430 Reed's Improvements on Writing Charts.

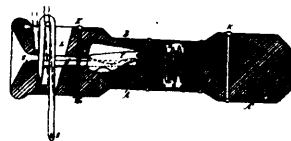




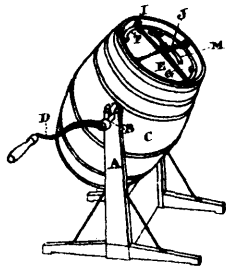
13433 Waterhouse & Brewer's Improvements on Engine Governors.



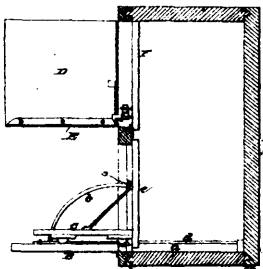
13432 Osgood & Monroe's Improvements on Metallic Packings.



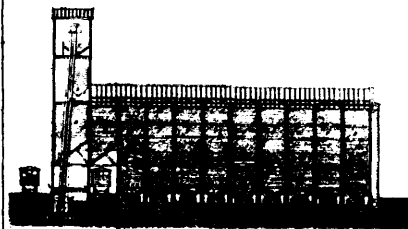
13433 McCree's Improvements on Car Couplings.



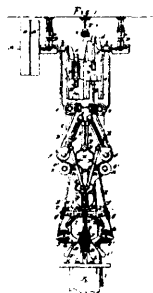
13434 Conover's Improvements on Churns.



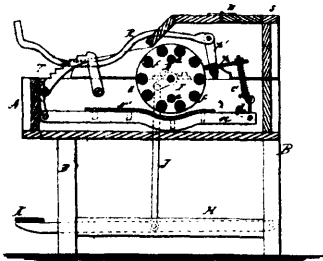
13435 Baldwin's Improvements on Refrigerators.



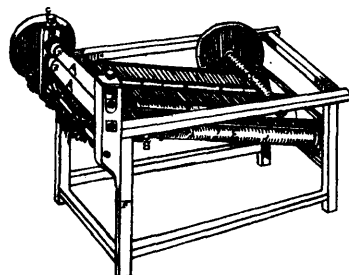
13436 Stewart's Improvements on Grain Elevators.



13437 Simonds's Improvements on Apparatus for Treecing Boots.



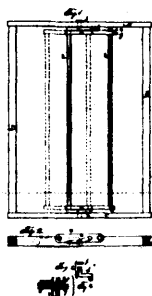
13438 Gérard & Tremblay's Improvements in Washing Machines.



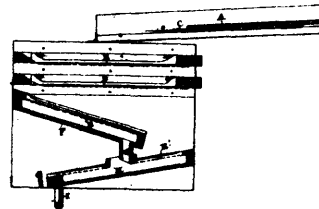
13439 Sells's Improvements on Corn Husking Machines.



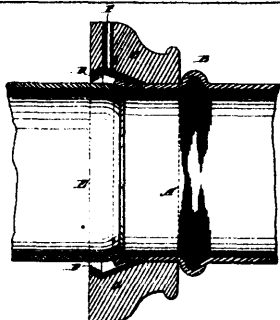
13440 Hickman's Improvements on Car-couplings.



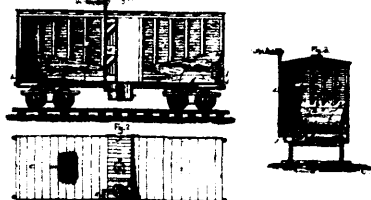
13441 Barnard's Improvements on Cattle Stanchions.



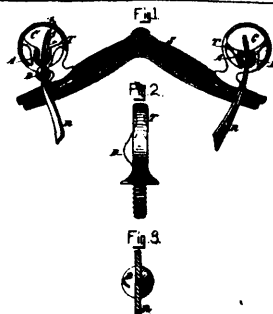
13442 Cavers's Improvements on Fanning Mills.



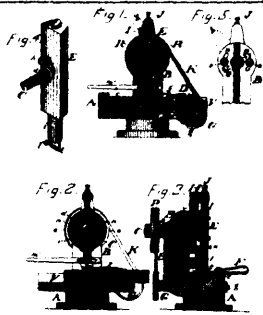
13443 Dennis's Improvements on Pipe Couplings.



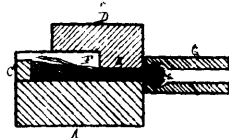
13447 Eastman, Kimball & Murch's Improvement in the Method of Heating Freight Cars.



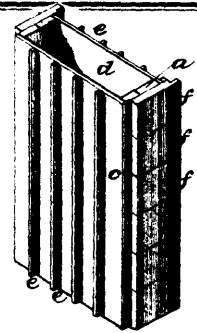
13448 Lewis's Improvements on Guide Rein Turrets



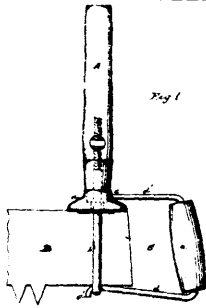
13449 Weed's Improvements in File Cutting Machines.



13450 Gruber's Improvements in Brushes.



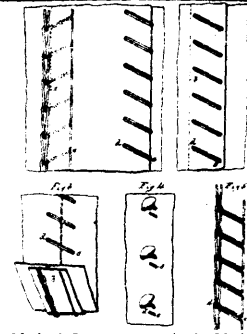
13451 Dyer's Improvements on Submarine and Surface Walls.



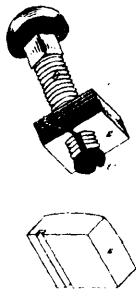
13452 Andrews's Improvements in Saw Handles.



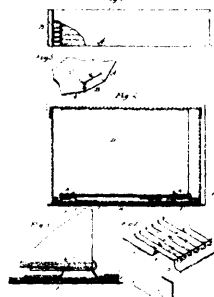
13453 Weber's Improvements on Bale Band Fastenings.



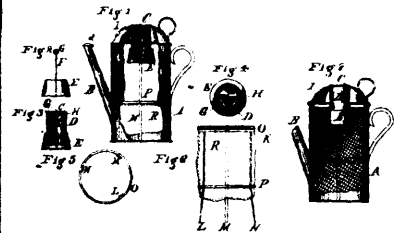
13454 Morley's Improvements in the Method of Stitching.



13455 Martel's Improvements on Nut Locks.



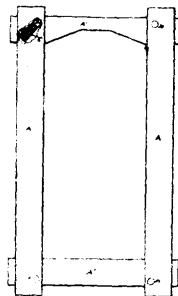
13461 Sneider's Improvements in Temporary Binders.



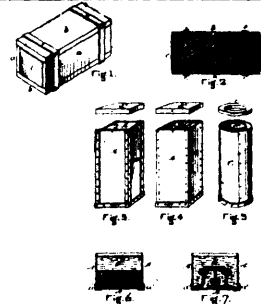
13462 Robinson's Improvements in Coffee Pots and Urns.



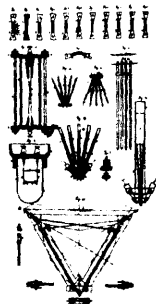
13463 Wilkins's Improvement on Belt Fasteners.



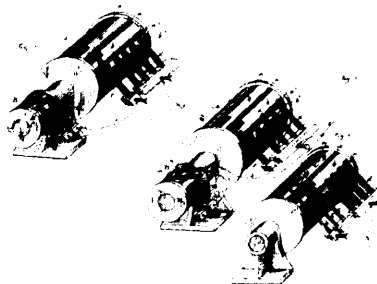
13464 Schram's Improvements on Ironing Boards.



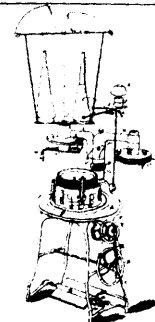
13465 Wheeler's Improvements on the Manufacture of Articles of Steel.



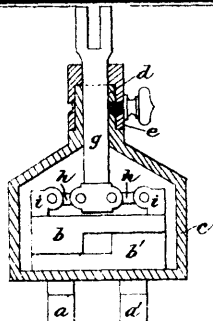
13466 Reynier's Improvements in Electric Lamps.



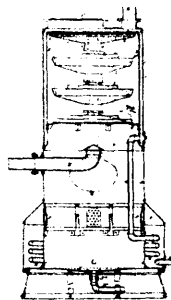
13467 Edison's Improvements on Commutators for Dynamo or Magneto-electric Machines.



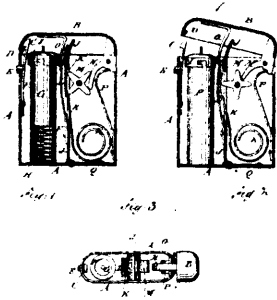
13468 Creelman & Kay's Improvements on Knitting Machines.



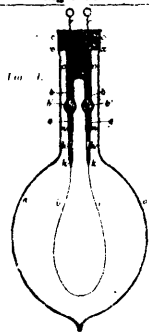
13469 Maloy's Improvements on Sole Edge Burnishing Machines.



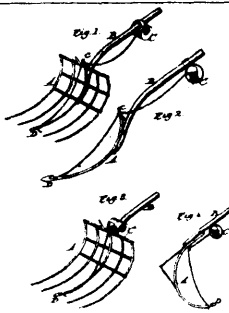
13470 Zschech's Improvements on Water Heaters and Purifiers.



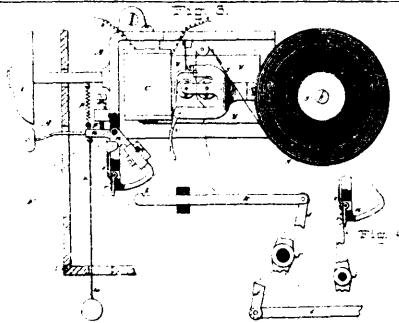
13471 Vibbard's Improvements on Cigar Lighters.



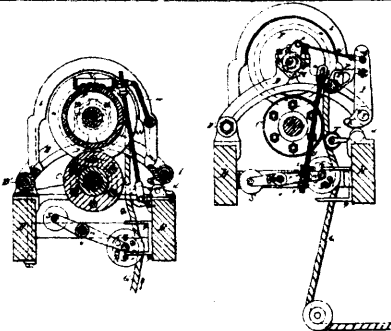
13472 Fox's Improvements on Electric Lamps.



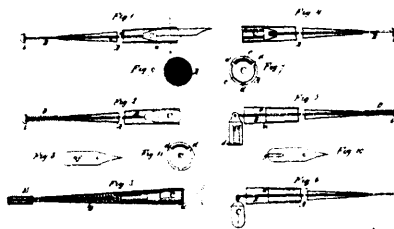
13474 Lamb's Improvements in Grain Gatherers and Binders.



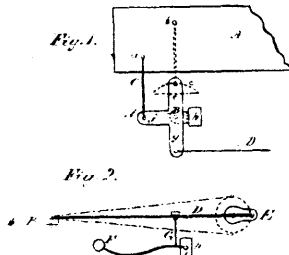
13476 Putnam's Improvements on Electric Signals.



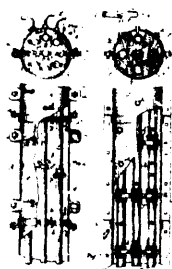
13480 Lotz's Improvements on Hoisting Machines.



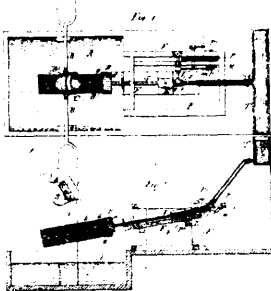
13481 Hester's Improvements on Pen Holders and Pens for use therewith.



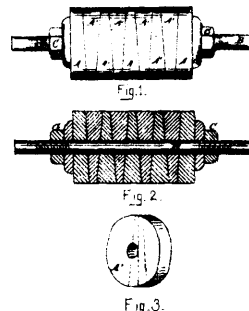
13482 McKenzie's Improvements on Fanning Mills.



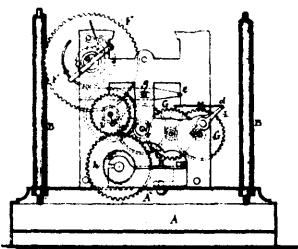
13483 Strohm's Improvements on Electrical Conductors.



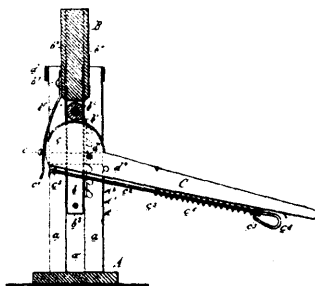
13484 Wintherlich's Process of, and Apparatus for Making Drop Shot from Iron.



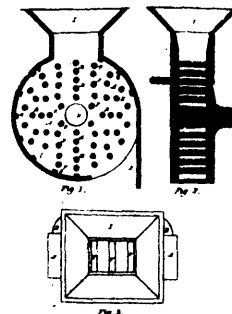
13485 Allen's Improvements in Wood Grinders for Making Paper Pulp.



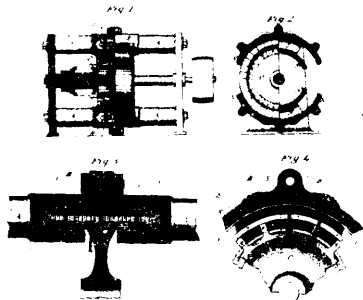
13486 Davies's Improvements on Time Pieces and Clocks.



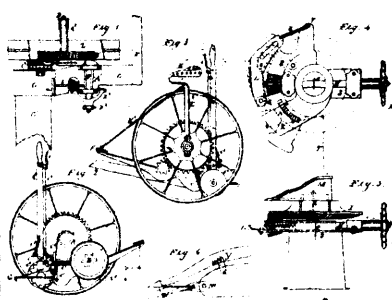
13487 Goodwin's Improvements on Lifting Jacks.



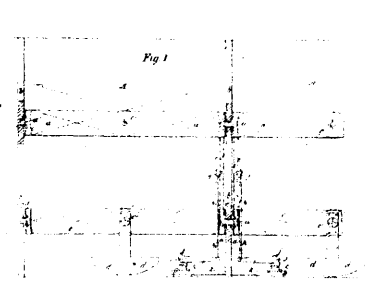
13488 Brenton's Improvements on Barley Bearders.



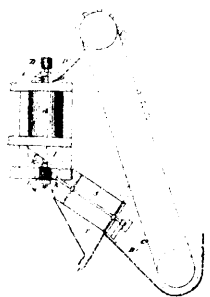
13489 Moffatt & Chichester's Improvements on Magneto-electric Machines.



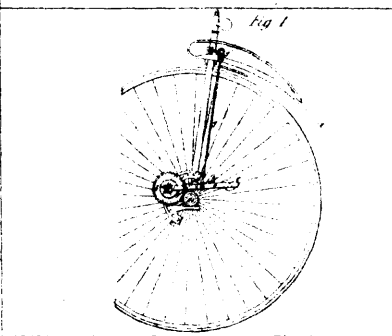
13491 Beauty's Improvements on Reaping Machines.



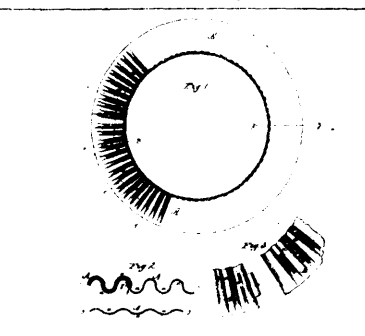
13491 Thompson's Improvements on Self-levelling Berths and other Articles on Board of Ships.



13492 Foster's Improvements in Pulverizing Machines.



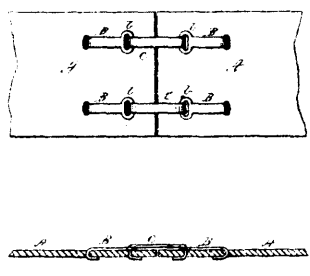
13493 Dutton's Improvements on Bicycles, Tricycles, &c.



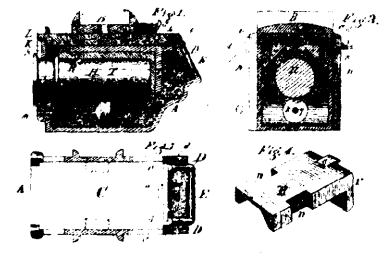
13494 Blair's Improvements on Stovepipe Collars.



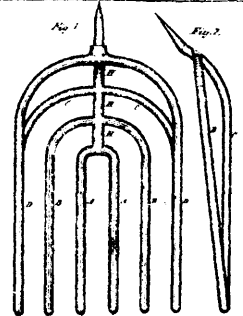
13495 Favio's Improvements on Safety Locks.



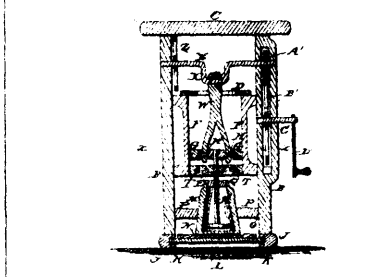
13496 Johnston's Improvements on Belt Fasteners.



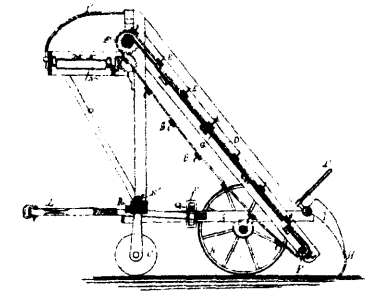
13497 Robinson's Improvements on Car Axle Boxes.



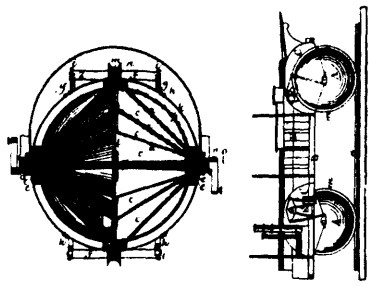
13498 Law's Improvements on Root Forks.



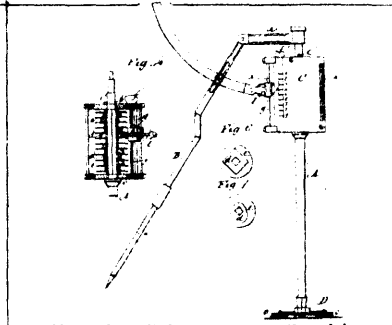
13499 Flood's Improvements on Churn Motors.



13500 Hewitt & Naffziger's Improvements on Hay Rakes and Loaders.



13501 Fryer's Improvements on Vessels and Means for their Propulsion on Water and Land.



13502 Howard's Improvements on Draughting Instruments.