

provided with a chamber *b*_x divided longitudinally into two parts, a globular self-adjusting ring *b*_x mounted upon the main axle within the chamber, and bolts or set screws securing the two parts of the chamber together upon the globular ring; 20th. The tubular part *B*¹ *B*² of the frame provided with the chamber *b*_x in combination with the globular ring *b*_x, rollers *b*_{xx} and bolts or set screws securing the two parts of the chamber together upon the globular ring; 21st. The main axle *A*¹ having a collar rigidly attached thereto between the driving wheels, in combination with the main frame provided with abutments or shoulders on opposite sides of said collar, whereby the desired longitudinal position of the main frame relative to the axle may be maintained; 22nd. The main frame provided with a chamber *S* *S*¹ having abutments *z*₁ *z*₂ in combination with the axle *A*¹, collar *z*, followers *z*₁ *z*₂, keys *z*₃ *z*₄ and set screws *z*₅ *z*₆; 23rd. The part *L*¹ of the nut provided with the expanded flaring part *l* to collect and return the oil; 24th. The main frame provided with the rearwardly projecting arms or brackets *B*₃ provided with holes *u*₁ in combination with the tongue frame or draft frame provided with arms *U*¹ having pivots *u*₂; 25th. The combination of a locking latch with the arm *U*¹ and bracket *B*₃; 26th. The yoke *K* made in one piece in the form of a hook to extend in rear of the axle and rest upon the sleeve *C*, in combination with the yoke *E*¹ for actuating the segment *D*¹, and adapted to be removed from the sleeve *C* without taking off the driving wheel; 27th. The draft frame provided with the central ribs *z*₃ and the lips or ribs *z*₂ *z*₃, one upon each side of rib *z*₃ and of less height, in combination with the seat spring *X* and springs *z*₁ *z*₂ arranged in recesses formed by ribs *z*₃ *z*₄ to permit a rocking lateral motion of the seat; 28th. A guard *Y* formed of a rod or bar of metal, and provided with legs *y*₁ *y*₂ by means of which it may be mounted upon the frame of the machine, independently of the seat or seat support; 29th. The pitman or connecting bar *P* divided horizontally, the line of division at the socket being upon an angle to the line of thrust or travel of the cutters.

No. 8025. Art of Heating Sad Irons.

(*Art de chauffer les fers à repasser.*)

Holland B. Evans, (Co-inventor with, and Assignee of, Wilson Kestler,) St. Charles, Mo., U.S., 17th October, 1877, for 5 years.

Claim.—1st. The sliding board *C* whether propelled by rope and pulleys, or by wheel and cog, having the hinged bar *d*, in combination with the arm *D* hinged to the iron *F* and handles *a*¹; 2nd. The board *C* sliding in grooves in the elevated portion *m*, and having the hinged bar *d*, in combination with the hinged arm *D*, iron *F*, handle arm *a*¹ and guide rod *t*; 3rd. The iron *F* combined as set forth.

No. 8026. Improvements on Speaking

Telegraphs. (*Perfectionnements aux télégraphes parlants.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 17th October, 1877, for 5 years.

Claim.—1st. In an instrument for transmitting electric impulses by sound, a diaphragm or tympan of mica; 2nd. The combination with a diaphragm or tympan, of an electric tension regulator for varying the resistance in a closed circuit; 3rd. The combination in an electric instrument actuated by sound, of a diaphragm or tympan, a conductor and an electric tension regulator composed of elastic fibre, and electric conducting material; 4th. The combination with the diaphragm and electric conductor, of the cork-disc and tension regulator; 5th. In a telegraph operated by sound, the transmission and reproduction of the human voice, by increasing and decreasing the resistance of the circuit; 6th. The combination with a diaphragm or tympan, of electrolytic fluid and electrodes, the latter being vibrated by the diaphragm, and varying the resistance in the electric circuit; 7th. In an instrument for transmitting sounds by electricity, a resonant case having an opening or edge against which the consonant sounds act; 8th. In combination with the diaphragm or tympan, and the electric tension regulator, the adjusting screw or variable presser to regulate the resistance of the tension regulator in the electric circuit; 9th. The combination with the diaphragm in a speaking telegraph instrument, of a moving surface and a recording mechanism actuated by the diaphragm or tympan; 10th. The combination with a receiving diaphragm or tympan, in telegraph operated by sound, of a moving surface, a point or pen, and a connection from the same to the diaphragm; 11th. The combination in an instrument for receiving sounds electrically of an electro-magnet, and armature plate; 12th. The combination in the telegraphic circuit of two or more tympana, or resonant box, and one or more circuit closers to each tympan; 13th. The combination with the diaphragm of a resonant case, of circuit connections at both sides of the diaphragm and a battery; 14th. In resonant box or case, a diaphragm and flexible circuit connections, whereby the instrument is made portable and can be placed to the mouth in speaking; 15th. An electro-magnet and resonant plate, or diaphragm, provided with a handle and flexible conductors; 16th. The receiving instrument consisting of an electro-magnet, a case and a loose metallic plate, arranged and operated to act as a call, or to receive the message; 17th. One or more contact points of yielding material, that produce a rise and fall of tension proportioned to the pressure exerted by the diaphragm; 18th. A receiving instrument provided with a resonant surface, in combination with a frictional surface moved by power, and acting in connection with the electric current to vibrate such resonant receiver, and produce tones corresponding to those at the transmitting apparatus; 19th. The combination with a thermo-electric pile, of a vulcanite or hard rubber diaphragm; 20th. The method of recording the undulations of the diaphragm or yielding material, and the reproduction of sound by such material acting upon a diaphragm to communicate to the same vibrations similar to the original ones; 21st. The combination with the diaphragm and tension-regulator, of a magnetized tongue and an iron plate upon the diaphragm; 22nd. In combination with the diaphragm, operated by sound, an electro-magnet, a valve and a chamber of compressed air or gases to reproduce the sounds, in louder tones; 23rd. The method of preparing fibre for electric tension regulators, by conducting or semi-conducting material, associated intimately with such fibre; 24th. In an instrument for receiving sound telegraphically, a plate loose at its edges and supported upon a post or standard.

No. 8027. Machine for Turnip Topping and Rooting. (*Machine à émonder les navets.*)

John Leonard, Uxbridge, Ont., 23rd October, 1877, for 5 years.

Claim.—1st. The combination of the toppler *G* in connection with lever *C*, and grubber *F* in connection with screener *E*; 2nd. The combination of the potato mound toppler *J* in connection with handle *C*, and grubber *F* in connection with screener *E*.

No. 8028. Improvements on Wheeled Harrows. (*Perfectionnements aux herbes à roues.*)

Edward J. Lookwood, Danbury, Ohio, U.S., 24th October, 1877, for 5 years.

Claim.—In combination with the arrow-frame adjusted at its four corners, the perforated central bar *J*, lever *S*, chain *d*, pulleys *e* and lever *L*¹, for regulating the same.

No. 8029. Machine for Setting Seams in Pipe Elbows. (*Machine à faire les coutures des couds de tuyaux.*)

Greene Choate, East Saginaw, Mich., U.S., 24th October, 1877, for 5 years.

Claim.—The two armed standard *A*, the collars *B*, the spring *C*, the blocks and plate *D* *E*, and the threadle rods *F*.

No. 8030. Manufacture of Felted Boots and Shoes. (*Fabrication des chaussures en feutre.*)

John Batley, John Keats, and James Neil, London, Eng., 24th October, 1877, for 15 years.

Claim.—1st. The flat pliable former made with a bevelled or chamfered and thinned edge; 2nd. The pliable former made of two or more thicknesses of absorbent cloth having interposed between them a layer of india rubber or other waterproof material; 3rd. For the manufacture of shoes and other coverings for the feet of felted fibrous material, in a flat pliable former of a shape to conform or approximate to the side profile of the foot or foot and leg.

No. 8031. Improvement on Heating Stoves.

(*Perfectionnement des poêles de chauffage.*)

Jeremiah Dwyer and George H. Barbour, Detroit, Mich., U.S., 24th October, 1877, for 5 years.

Claim.—The portable culinary attachment *B* adapted to fit the back and flue case, or exit of a magazine heating stove.

No. 8032. Improvement on Turbines.

(*Perfectionnements des turbines.*)

John H. Staples, Boston, Mass., U.S., 24th October, 1877, for 5 years.

Claim.—The combination of the turbine induction ring *A* provided with flanged guides and one or more series of inducts, with the series of separate gates *f* and their supporting arms *g* and ring *h*, arranged with said ring *A* and its inducts and guides.

No. 8033. Improvement in Lubricating Compounds.

(*Perfectionnements dans les composés lubrifiants.*)

George G. Munger, Rochester, N.Y., U.S., 24th October, 1877, for 5 years.

Claim.—1st. The combination with a lubricating oil and with plumbago, soapstone or other similar solid substance therein, or with a mixture of any two or more of them of myrtle wax, or of Japan wax, either or both for the purpose of holding in suspension in, and disseminating through the oil such solid substance or substances, said materials being used with or without soda or other form of alkali, or with or without tallow, or with or without water; 2nd. The compound composed of the lubricating oil and plumbago, soapstone or other similar solid substance, or a mixture of any two or more of them and myrtle wax or Japan wax, either or both with or without soda or other form of alkali, or with or without tallow, or with or without water.

No. 8034. Improvements on Washing Machines. (*Perfectionnements aux machines à laver.*)

Martin W. Robinson, Somerville, Mass., U.S., 24th October, 1877, for 5 years.

Claim.—In combination with the tub *A* and its wash-board, or corrugated lining *B*, the notched dasher *C* and its recessed supporting arms *D* *D*, springs *e* and stops *g* *g*; in combination with the tub *A* and its wash-board, or corrugated lining *B*, and with the dasher *C* and its recessed supporting arms *D* *D*, springs *e* and stops *g* *g*, the cranks *i* *i*, connecting rods *k* *k*, fly wheel *l*¹, cranked shaft *m* and the pedal *o*.

No. 8035. Improvements on Balloons.

(*Perfectionnements aux ballons.*)

Count A. Apraxine, Saint-Petersburgh, Russia, 24th October, 1877, for 5 years.

Claim.—The adjunction to ordinary aerostats as at *a* of one or several secondary balloons as at *b*, so arranged as to be actuated by the aeronaut or by a mechanical equivalent.

No. 8036. Improvement on Curtain Cord Fasteners.

(*Perfectionnement aux arrêts-cordons de rideaux.*)

Nathan Campbell, Rochester, N.Y., U.S., 24th October, 1877, for 6 years.

Claim.—1st. The case *A*, ratchet slide *B* and key *C*, the ratchet teeth being upon one edge of the slide, and engaging with a fixed tooth or teeth on the inside of the case *A*, and the key resting between the opposite edge of the slide and the edge of the case; 2nd. The ratchet slide *B* constructed with the knob *d* forming a bearing for the curtain cord, and the side lugs *d*¹ *d*² for keeping the cord in place.

No. 8037. Improvements on Boring Machines.

(*Perfectionnements aux machines à forer.*)

James D. Shoots, Horseheads, N.Y., U.S., 24th October, 1877, for 5 years.

Claim.—1st. An auger *C* for boring the hole, and a reamer *D* *D*¹ for reaming or completing the same, when the auger projects beyond the reamer and the two parts revolve in the different directions at different rates of speed; 2nd. In combination with the table *G* provided with rack bar *d* of the feed shaft *I*, run from the auger shaft, the worm *H* secured on said shaft, and the hinged bar *J* with lever *O* for throwing the worm in and out of gear.