

No. 13,110. Improvements on Fire Pots for soldering Irons. (*Perfectionnements aux pots à feu pour les fers à souder.*)

John B. Robertson, Toronto Ont., 16th July, 1881; for 5 years.

Claim.—A fire pot when constructed with an annular flue F provided with a perforated bottom D, damper H and fire box A.

No. 13,111. Refrigerating Room. (*Chambre frigorifique.*)

Moses Kimball, Montreal, Que., 16th July, 1881; (Extension of Patent No. 6,373.)

No. 13,112. Sub-aqueous Drilling Apparatus. (*Appareil de forage sous-marin.*)

Ebenezer E. Gilbert Montreal, Que., 16th July, 1881; (Extension of Patent No. 6,395.)

No. 13,113. Improvements on Skates. (*Perfectionnements aux patins.*)

Charles Brewster, Montreal, Que., 16th July, 1881; (Extension of Patent No. 6,327.)

No. 13,114. Improvements in Reaping Machines. (*Perfectionnements aux moissonneuses.*)

Isaac Mills, Hamilton, Ont., 16th July, 1881; (Extension of Patent No. 6,314.)

No. 13,115. Improvements on Dynamo-Electric Machines. (*Perfectionnements aux machines electro-dynamiques.*)

Hiram S. Maxim, Brooklyn, N. Y., U. S., 18th July, 1881; for 15 years.

Claim.—1st. The combination of a dynamo-electric machine and a similar auxiliary machine used for exciting the main field magnets, with commutator brushes mounted so as to turn freely and revolving automatically relatively to the points of maximum and minimum current on the commutator of the auxiliary machine, in response to variations of tensions in the main current. 2nd. A dynamo-electric machine having its field magnets excited by a similar auxiliary machine, in combination with mechanism for revolving the commutator brushes of the auxiliary machine, to and from the neutral points of its commutator, and an electro-magnet for controlling the direction of such revolution, which magnet is thrown into and out of an electrical circuit by a shunt operated by an electro-magnet in the main circuit or a branch thereof. 3rd. The sector J carrying the brushes H H, in combination with the pinion K, the movable disks L L, and the friction wheel N, the said wheel N revolving continuously in the same direction. 4th. The combination of the electro-magnet *h* with the electro magnet T, the said magnet *h* being of high resistance and placed in a branch of the main circuit, and its armature lever controlling the admission of an electrical current to the magnet T, and the said magnet T being of low resistance, and operating mechanism for increasing and diminishing the amount of electricity generated by the main dynamo-electric machine. 5th. The combination, in a dynamo-electric machine, of the electro-magnet *h* and adjustable spring *a*, or equivalent device, for regulating the normal tension of the current with commutator brushes revolved automatically to and from the maximum current on the commutator by mechanism controlled by said electro-magnet.

No. 13,116. Improvements on Armatures for Dynamo-Electric Machines. (*Perfectionnements aux armatures des machines electro-dynamiques.*)

Hiram S. Maxim, Brooklyn, N. Y., U. S., 18th July, 1881; for 15 years.

Claim.—1st. An armature, for a dynamo-magneto-electric machine, composed of a series of annular plates separated by air passages from each other, and from the armature shaft, the said plates having outer and inner projections, so constructed as to keep the coils separated from each other, and leave air passages between them. 2nd. An armature, for a dynamo-magneto-electric machine, composed of a series of thin annular plates separated by air passages from each other and from the armature shaft, a part of said plates being of the form shown at A, and the remainder being of the form shown at B. 3rd. An armature, for a dynamo-magneto-electric machine, composed of annular plates with air passages between them, projections upon both the outer and inner circumferences of such plates, so constructed as to keep the coils separated from each other, and leave air passages between them. 4th. The combination of one or more of the coils C with an armature composed of a series of annular plates, separated by air passages from each other and from the armature shaft, the said plates, or a part of them, having outer and inner projections so constructed as to keep the said coils separated from each other, and leave air passages between them. 5th. In an armature composed of disks or annular plates, the combination, with such plates, of two or more similarly shaped plates of insulating material so constructed as to project slightly beyond said metallic parts, and support the coils free from contact therewith. 6th. The combination, in an armature, of two or more annular plates open about the armature shaft, and having inner and outer projections, to keep the coils separated from each other, with the rods H H and washer on said rods, interposed between the plates.

No. 13,117. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Hiram S. Maxim, Brooklyn, N. Y., U. S., 18th July, 1881; for 15 years.

Claim.—1st. An electric lamp having its light giving part inclosed in a sealed globe, a hydro-carbon vacuum or highly rarified hydro-carbon vapour. 2nd. In an electric lamp, a continuous conductor of carbon ad-

apted to be rendered incandescent by the passage of a current of electricity, in combination with a sealed globe enclosing such conductor, in a hydro-carbon vacuum or highly rarified hydro-carbon vapor. 3rd. The process of producing a vacuum in the globe of an electric lamp, which consists in displacing the air contained in it with a liquid hydro-carbon, expelling a portion of such hydro-carbon by heat, and exhausting the remainder. 4th. The combination, in an electric lamp, of the plug R, the base V, the globe M and the cock Q with the wax or pitch S T.

No. 13,118. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Hiram S. Maxim, Brooklyn, N. Y., U. S., 18th July, 1881; for 15 years.

Claim.—1st. The combination, in an electric lamp, of a continuous carbon conductor, metallic electrical connections for the same, and one or more washers of soft carbon interposed between said conductor, and each metallic connection. 2nd. The combination of the carbon conductor B, the support C having the flattened end *l*, the washers *m m k* and the pin *o*, and nut *t*.

No. 13,119. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Hiram S. Maxim, Brooklyn, N. Y., U. S., 18th July, 1881; for 15 years.

Claim.—The combination of the globe A with the platinum connections C C, and the capillary spaces *a* filled with gum or wax. 2nd. The combination, with the globe of an incandescent electric lamp, of glass tubes extending up into said globe and surrounding the supporting conductors of the incandescent part of the lamp, the spaces in the said tubes being packed with a solid sealing substance. 3rd. The combination of the base E carrying the plug K with sub-base I and the ring R. 4th. In an electric lamp, the combination on a continuous incandescent conductor mounted upon electrical connections of platinum, with a globe of glass inclosing such conductor and sealed directly to said electrical connections, and wax or gum applied to said globe, where the electrical connections pass through it.

No. 13,120. Process of Manufacturing Carbon Conductors for Electric Lamps. (*Procédé pour faire des conducteurs de carbone pour les lampes électriques.*)

Hiram S. Maxim, Brooklyn, N. Y., U. S., 18th July, 1881; for 15 years.

Claim.—1st. The process of carbonizing carbonaceous substances by exposing them to a high temperature, while surrounded by hydro-carbon gas or vapour. 2nd. The process of making carbon conductors for electric lamps, by carbonizing forms of carbonaceous material in a vessel heated to a high temperature, and supplied with hydro-carbon gas or vapour.

No. 13,121. Process of Removing Atmospheric Oxygen from the Globes of Electric Lamps. (*Procédé pour enlever l'oxygène atmosphérique des globes de lampes électriques.*)

Hiram S. Maxim, Brooklyn, N. Y., U. S., 18th July, 1881; for 15 years.

Claim.—First, exhausting or otherwise removing the greater part of the air contained in such globe and, then, admitting thereto and exhausting therefrom a hydro-carbon vapour or gas.

No. 13,122. Improvements on Devices for Equalizing the Arcs of Electric Lamps. (*Perfectionnements aux appareils pour égaliser les arcs des lampes électriques.*)

Edward Weston, Newark, N. J., U. S., 18th July, 1881; for 15 years.

Claim.—1st. An electric circuit including one or more electric lamps and a circuit breaker, in combination with a resistance circuit, the ends of which are respectively connected with the main circuit, on opposite sides of the circuit breaker, whereby the resistance circuit affords a path for the current, parallel with the path afforded by that part of the main circuit which includes the circuit breaker. 2nd. The combination, in an electric circuit, of one or more electric lamps having magnetic regulators, with a continuously operating periodic circuit breaker. 3rd. The combination, in an electric circuit, of one or more electric lamps having magnetic regulators, with a circuit breaker consisting of the metallic cylinder F having the gap *f* in its periphery, and being electrically connected with one end of a break in the main circuit, and the revolving brush D₂ electrically connected with the other end of the break in the main circuit. 4th. In a circuit breaker, the adjustable cylinder F in combination with the revolving brush D₂ deriving its support from the counter shaft D and whereby it is free to hang downward, under the influence of its own gravity, except when lifted by the rotation of the stud *e* on the ratchet wheel *e*.

No. 13,123. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Edward Weston, Newark, N. J., U. S., 18th July, 1881; for 15 years.

Claim.—1st. An electro-magnet and an armature, the opposed parts of which are respectively in the form of a cone and of a hollow cylinder, the armature having a range of motion permitting the cone to enter the hollow cylinder when the armature yields to the attraction of the magnet. 2nd. An electro-magnet having a longitudinally hollow core, in combination with a conically pointed movable armature having a range of motion permitting its conical point to enter the tubular pole of the magnet. 3rd. In combination with an electro-magnet provided with a hollow core, and a conically pointed movable armature and adjusting device, by means of which the range of movement of the lever to which the armature is attached may be adjusted. 4th. The combination of a main circuit of small resistance, which includes the carbons and the principal coil surrounding the electric magnet with a