driven therein, and the conical-headed screw *g* and lever *f*, combined with a screw-setting device *m*, to hold the said screw *g* in adjusted position, substantially as described.

No. 18,561. Telegraphic Insulator.

(*Isoloir Télégraphique.*)

Charles C. Hinsdale, Cleveland, Ohio, U. S., 25th January, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a telegraph insulator constructed of paper pulp, or a pulp of other fibrous material, substantially as herein set forth and for the purpose specified. 2nd. A telegraph insulator constructed of a composition of paper pulp, or a pulp of other suitable material, and liquid silica or silicon, or other equivalent cementing agents, substantially as set forth and for the purpose specified. 3rd. A telegraph insulator consisting of an insulating head C, and supporting stem or holder B, formed in one piece and constructed of the same material, *viz.*, paper pulp, substantially as set forth and for the purpose specified.

No. 18,562. Electric Motor. (*Moteur Electrique.*)

Levi W. Stockwell, Cleveland, Ohio, U. S., 25th January, 1884; 15 years.

Claim.—1st. The combination, substantially as set forth, of the opposite adjacent field magnet poles, the armature magnets arranged transversely to each other and rotating between said poles, the field on each side of the armature being of uniform polarity, the armature coils wound parallel with the poles of the field magnet and with their axis of rotation, and at right angles to their plane of rotation, the commutator contacts with which the armature coils are connected, and the brushes bearing on said contacts and connected with the source of electric energy. 2nd. The combination, substantially as set forth, of the opposite adjacent poles of the field magnet, the armature magnets arranged transversely to each other and rotating between the opposite effective faces of said poles, the polarity of the field on each side of the armatures being uniform, the commutator contacts with which the armature coils are connected, the brushes bearing on said contacts, and an electric circuit common to said brushes. 3rd. The combination, substantially as set forth, of the field magnet having elongated radially projecting poles, the armature magnets which rotate centrally between the poles, and are arranged transversely to each other and have their coils wound with the greatest length parallel with the elongated poles of the field magnet, the commutator contacts and the brushes bearing thereon, and arranged to send the current successively first through one of the armature coils, then through both of the coils, and then through the other armature coil, according to their positions relatively to the field magnet, as described. 4th. The combination, substantially as set forth, of the field magnet, the armature coils, a single commutator ring, the commutator contacts with which the coils are connected, and the commutator brushes arranged in pairs, one pair on each side of the commutator ring to give an extended or double point of contact on each side of the commutator ring to make connection with one contact before connection with the adjacent one is broken. 5th. The combination, substantially as set forth, of the field magnet, the armature coils, the commutator ring, and the commutater brushes arranged to make contact first with the contact plates with which one armature coil only is connected, and then with both sets of contact plates, for the purpose described. 6th. The combination, substantially as set forth, of the field magnet poles, the transversely arranged armature magnets and electrical connections and contacts by which each armature magnet is cut out of the circuit during a portion of a revolution. 7th. The combination, substantially as set forth, of the field magnet, the armature, the commutator ring and brushes, the switch or controlling device, and the contact buttons and plates, by which, when the switch is in one position, the current is shunted from the armature coils, and when moved in one direction from the neutral line, sends the current through the armature coils in one direction, and when set over to the opposite side sends the current in the reverse direction. 8th. The combination, substantially as set forth, of the field magnet, the armature coils, the commutator ring, a switch lever pivoted concentrically with the commutator ring, the brushes carried by said lever, the contact through which the battery is shunted from the armature coils, but still flows through the field magnet coils, and the contacts by which the direction of the current through the armature coils may be reversed by moving the switch lever to change the direction of the motor. 9th. The combination, substantially as set forth, of the field magnet, the armature, the commutator ring, the switch lever, the brushes carried thereby, and electrical contacts through which, by the movement of the lever, the commutator brushes are adjusted on the ring and the direction of the current through the armature coil simultaneously reversed. 10th. The combination, substantially as set forth, of the casing or magnet supports, the field magnet, and the supporting extensions of the magnet projecting from the neutral part. 11th. The combination, substantially as set forth, of the field magnet, the supporting projections extending from the neutral part, the supporting casing, and supporting bars of non-magnetic material extending from the poles of the magnet to the casing. 12th. The combination, substantially as set forth, of an electro-motor, and a bolt or support of non-magnetic material, connected with the pole or active part of the field magnet for attaching the motor to its support. 13th. The combination, substantially as set forth, of a commutor ring, and an endwise-moving contact brush in contact therewith. 14th. The combination, substantially as set forth, of a commutator ring, and endwise-moving contact brushes, each having two points of contact. 15th. The combination, substantially as set forth, of a commutator ring, and a sectional endwise-moving contact brush having two points of contact. 16th. The pole-piece formed wider at one part than another, for the purpose described. 17th. The combination, substantially as set forth, of a field magnet, and the armature pole of unequal width. 18th. The combination, substantially as set forth, of the field magnet having a pole widest in the central transverse line, and an armature having a pole of like shape. 19th. The combination, substantially as set forth, of the field magnet, its pole, the armature and its pole, the poles of the field magnet and armature being so shaped as to bring a relatively increasing area of the pole-pieces into proper magnetic relation as the armature-pole approaches and travels part way across the face of the field magnetic pole.

No. 18,563. Magneto and Dynamo-Electric Machine. (*Machine Magneto et Dynamo-Electrique.*)

A. de Meuron and Cuenod, (Assignees of René Thury,) Geneva, Switzerland, 25th January, 1884; 15 years.

Claim.—1st. A dynamo or magneto-electric machine having an inductor of a polygonal shape, formed of an assemblage of rectangular magnetic cores united with pole pieces, in combination with an induction armature composed of a drum upon which are disposed, parallel to the axis, coils united together by wires, which pass across the bases of the drum as a chord corresponding with a fraction of the circumference determined by the number of sides of the magnetic polygon, as above described. 2nd. A revolving induction armature or drum upon which are disposed, parallel to the axis, wires united in such a manner that the currents, generated under the influence of the magnetic poles, are parallel but alternately of a contrary direction under each of these poles, the connections taking place upon the bases of the drum and following the chord corresponding with the fraction of the circumference adapted, as above described. 3rd. A revolving armature or drum composed of an axis and disks K fastened to this axis, an insulated magnetic cylinder M upon the circumference of those disks, the induced wires disposed parallel to the axis upon the magnetic cylinder and connected together in such a manner that the generated currents are transmitted by a number of collecting brushes equal to the number of inducing magnetic poles, as above shown and described. 4th. A dynamo or magneto-electric machine or electro-motor composed of an inductor with multiple poles formed of a double series of opposite magnets, parallel to the axis of rotation of the machine, between which an induced armature moves, composed of induction wires disposed radially around an axis and united together by means of connecting wires passing partly along near the circumference exterior of the disk thus formed partly inside of it, the said wires connecting each induced wire with another induced wire placed at a fixed distance equal to a fraction of circumference determined by the number of magnetic poles, as shown and described. 5th. An induced armature in the shape of a disk composed of wires placed perpendicular to the axis, connected together in such a manner that the currents run alternately in a contrary direction upon every fraction of the armature corresponding with the poles of the inducing magnetic system, and playing the part of an inductive armature in dynamo or magneto-electric machines or electro-motors, as shown and described. 6th. The combination of a revolving induction armature drum or disc divided into sections, with a collector upon which are brushes equal in number to the number of divisions of the armature, as shown and described. 7th. The combination, with a dynamo or magneto-electric machine, or electro-motor with multiple poles, provided with an armature formed of conductors disposed as above described, of brush-bearers, which can be adjusted at will, and a movable piece around the axis, whereby their position on the surface of the collector can be changed, permitting the reversal of the current so as to render equal the wearing of the positive and negative brushes, as described and shown.

No. 18,564. Oil Can for Oiling Machinery.

(*Godet à Huile pour Graisser les Machines.*)

Octavia C. White, New Orleans, La., (assignee of James A. Campbell, Waco, Texas,) U. S., 25th January, 1884; 5 years.

Claim.—1st. In an oil-can, the combination, with the can A and nozzle B, of the wire C and the tube D, held within the can on the bottom of the same, substantially as herein shown and described and for the purpose set forth. 2nd. In an oil-can, the combination, with the can A and the nozzle B, of the wire C, the tube D provided with an apperture E, and the wire I, substantially as herein shewn and for the purpose set forth.

No. 18,565. Boiler Furnace.

(*Fourneau de Chaudière.*)

Ezra W. Van Duzen, New Port, Ky., U. S., 26th January, 1884; 5 years.

Claim.—1st. A boiler-furnace composed substantially of the furnace chamber B and the secondary furnace G, formed within the arch of the bridge-wall and provided with grate-bars H and air spaces I underneath said grate-bars, as set forth. 2nd. In a boiler-furnace, a secondary furnace G formed in the hollow bridge wall, which is provided with air openings *l*, and the perforated plate or grate-bars H, as set forth. 3rd. In a boiler-furnace, the bridge-wall E provided with the register L, and air passages *l* conveying air into the secondary furnace G, as set forth. 4th. In a boiler-furnace, the combination of the furnace B, the grate, the bridge-wall at the rear of the grate constructed with the chamber G, the grate H forming a bottom for the said chamber, a perforated ledge under the grate, and an air-space I, as set forth.

No. 18,566. Method of, and Apparatus for Utilizing an Explosive Compound. (*Méthode pour utiliser une Composition Explosible et appareil pour cet objet.*)

Robert Punshon and Robert R. Vizer, London, Eng., 26th January, 1884; 5 years.

Claim.—1st. The utilization of picric acid (pure or combined as above described) and nitric acid by enclosing them separately in cartridges, vessels or containers, in such a manner that said acids are kept apart for transit or storage, and can be liberated and combined at, or in the place where the explosive force of the compound is to be utilized, substantially as hereinbefore described. 2nd. An apparatus