No. 721,669. PATENTED MAR. 3, 1903.

W. T. CLARK.

ELECTRIC ENGINE.

APPLICATION FILED OCT. 1, 1902.

NO MODEL.

Fig. 1

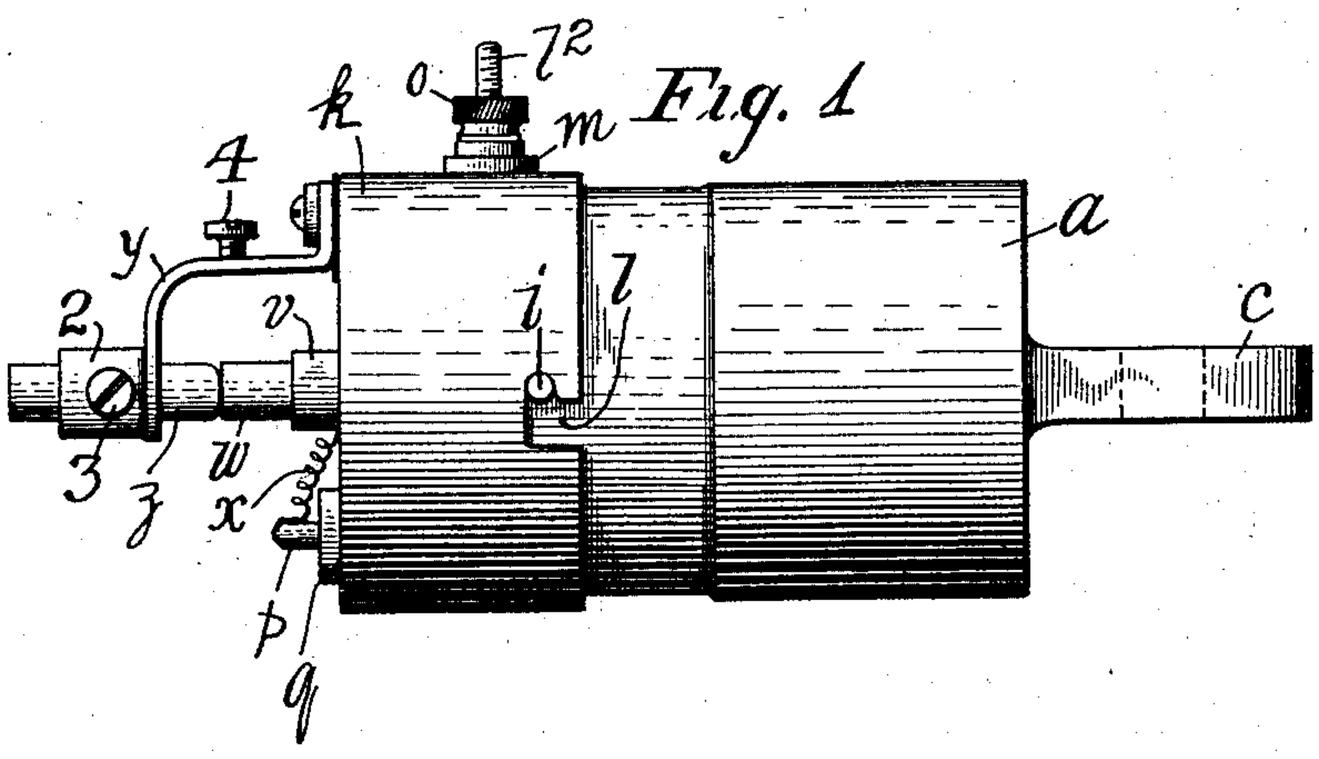


Fig. 2.

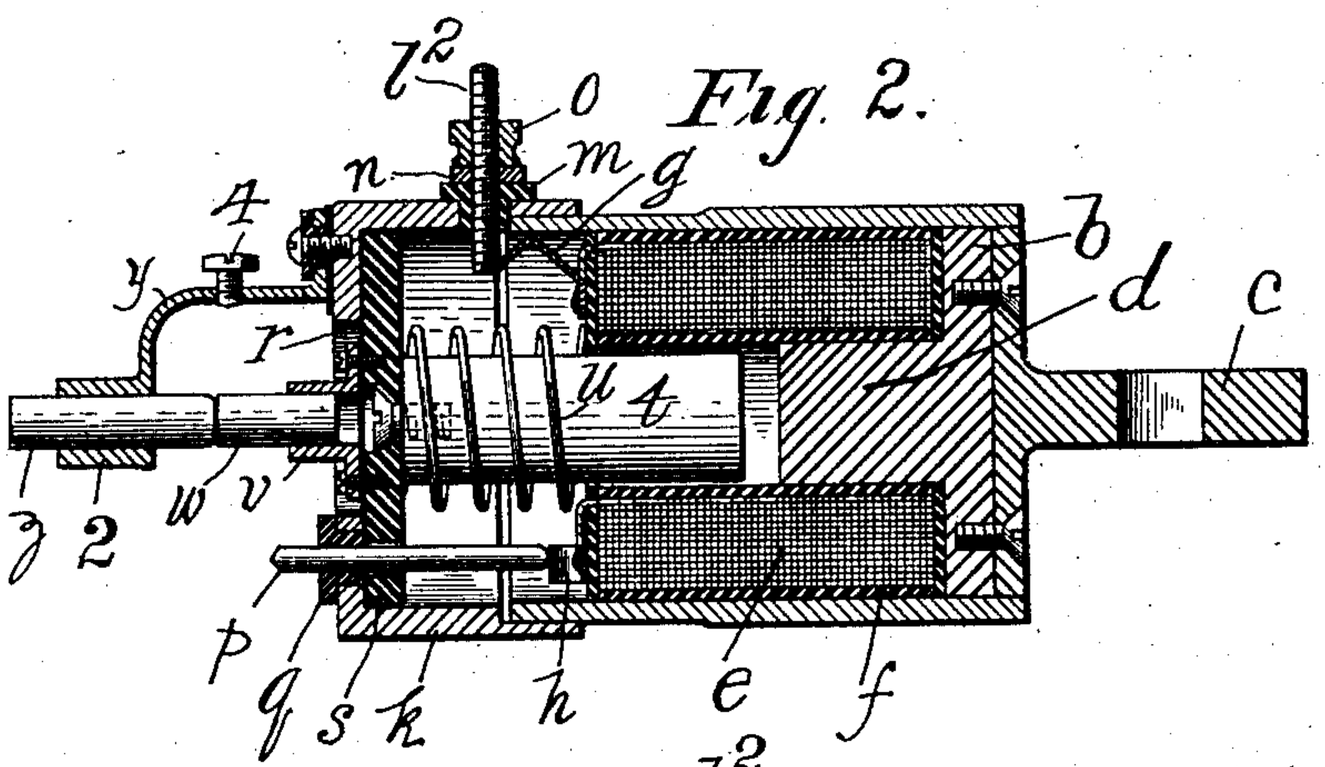
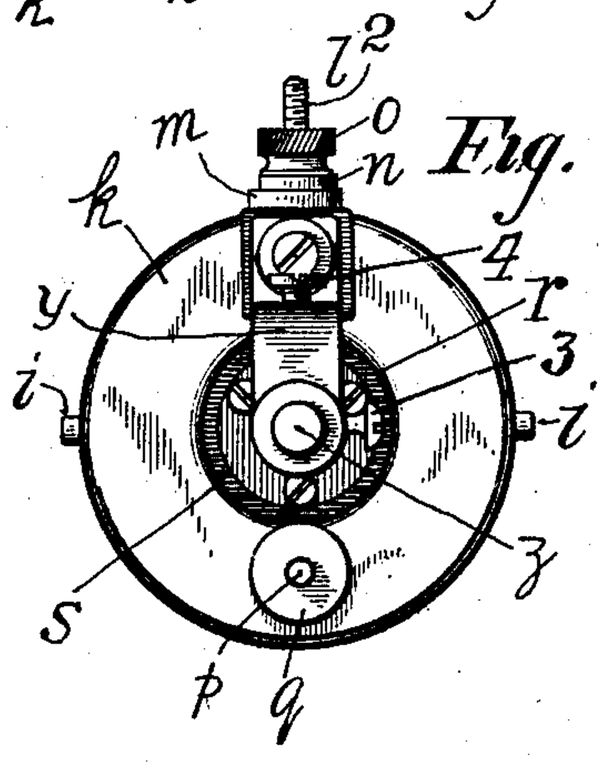


Fig. 3.



Witnesses
J. B. McGirr.
Geo. C. Henning.

Inventor
Wm. T. Clark,
by Richard W. Barkley,
his atty.

UNITED STATES PATENT OFFICE.

WILLIAM THOMAS CLARK, OF SCHENECTADY, NEW YORK, ASSIGNOR TO TABOR MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

ELECTRIC ENGINE.

SPECIFICATION forming part of Letters Patent No. 721,669, dated March 3, 1903.

Application filed October 1, 1902. Serial No. 125,488. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM THOMAS CLARK, a citizen of the United States, and a resident of Schenectady, in the county of Schenectady and State of New York, have invented a certain new and useful Improvement in Electric Engines, of which the following is a specification.

The present invention (Case A) relates to vibrator-engines primarily intended for use in connection with molding-machines of the class shown in Letters Patent of the United States granted January 29, 1895; May 11, 1897, and July 24, 1900, and respectively bearing numbers 533,401, 582,325, and 654,292.

One object is to employ the electric current as the motive force for operating the hammer.

Other objects will appear hereinafter.

The invention consists of features of construction and combinations of devices hereinafter described, and more particularly pointed out in the appended claims.

The preferred form of the invention is illustrated in the accompanying drawings, forming part hereof, in which—

Figure 1 is a side elevation. Fig. 2 is a longitudinal sectional view, and Fig. 3 is an end view from the left in Fig. 1.

In the drawings reference a marks a tube, preferably of iron, which has one end closed by a disk b, to which an eye c is attached. On the inner side of the disk b there is by preference a cylindrical core-piece d, and surrounding and extending beyond the core d is the electromagnet-core e, which is incased, preferably, in insulation f. The coil e does not extend quite to the open end of tube a.

The references g h mark metallic springs on the end of casing f, which form the terminals of the coil e.

The tube a has pins i at opposite sides thereof.

Reference k marks a cap which has L-shaped slots l therein to slip over pins i and to engage with such pins to lock tube a and cap k together on relative circular motion thereof.

l^2 is a screw contact-piece which engages with an insulating-bushing m in the side of cap k in position to press upon spring g when cap k and tube a are locked together, and n o are jam and binding nuts on screw l^2, whereby the same is held in place firmly, and a wire may be connected with said screw to supply current.

Reference p designates a metal rod capable of being moved in or through the insulating-bushing q into contact with spring h. The web of cap k has an opening r therethrough, and s is a disk, of insulating material, fitting in but free to move inside the cap, endwise thereof.

Reference t marks a rod or plunger, of iron, which is attached to disk s by a screw or the like, and u is a spring bearing against disk s and the end of casing f and tensioned to move rod t and disk s away from coil e.

v is a flanged tube attached by screws to disk s, and w is a contact-piece fixed in said tube v. A wire x connects tube v with rod p.

z marks a contact-piece adjustably held in a sleeve 2 at the end of the bracket, a set-screw 3 being shown for this purpose.

4 is a screw whereby a wire for supplying current is attached to bracket y.

The operation is as follows: When current is turned on, the circuit is complete through screw o, spring g, coil e, spring h, rod p, wire x, contacts v w z, and bracket y, and the rod t is drawn farther into coil e until it strikes core d, (or disk b, if no core d be provided.) In this case rod t is made longer than shown. The described motion of rod t breaks the contact between rods w z, and so opens the circuit. Spring u returns rod t to normal position, thus reëstablishing the circuit, whereupon the described operations are repeated. The jarring force of the blows is transmitted by eye c to the pattern, pattern-carrier, vibrator-frame, or other part to which eye c is attached or against which it may be held.

The invention may be embodied in forms other than that shown in the drawings and above described.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an electric engine, a frame, a coil, a plunger-striker, a spring for moving said plunger outward, a blow-transmitter rigidly con-

nected with the frame and against which the coil draws the plunger, and a circuit-breaker operated by said plunger.

2. In an electric engine, a coil, a metal casing therefor, a short core rigidly connected with said casing, a plunger-striker for coaction with said core, a spring for moving said plunger outward, and a circuit-breaker operated by said plunger.

3. In an electric engine, a coil, a metal casing therefor closed at one end, a short core rigidly connected to and extending inwardly of the coil from said closed end, a cap detachably secured to said casing, terminals from said coil extending outside said cap, a spring-actuated plunger-striker for coaction with said core, and a circuit-breaker actuated by said plunger.

4. In an electric engine, a coil, a metal casing therefor closed at one end, a short core rigidly connected to and extending inwardly of the coil from said closed end, a cap detachably secured to said casing, terminals from said coil extending outside said cap, a spring-actuated plunger-striker for coaction with said core, a contact carried by but insulated from said cap, and a contact moved by but insulated from said plunger.

Signed at Schenectady, in the county of Schenectady and State of New York, this 8th day of September, A. D. 1902.

WILLIAM THOMAS CLARK.

Witnesses:
J. H. V. WEMPLE,
DELLA VEDDER.