

J. H. GERRY.

ELECTRIC STRIKING ATTACHMENT FOR CLOCKS.

No. 393,637.

Patented Nov. 27, 1888.

Fig. 1.

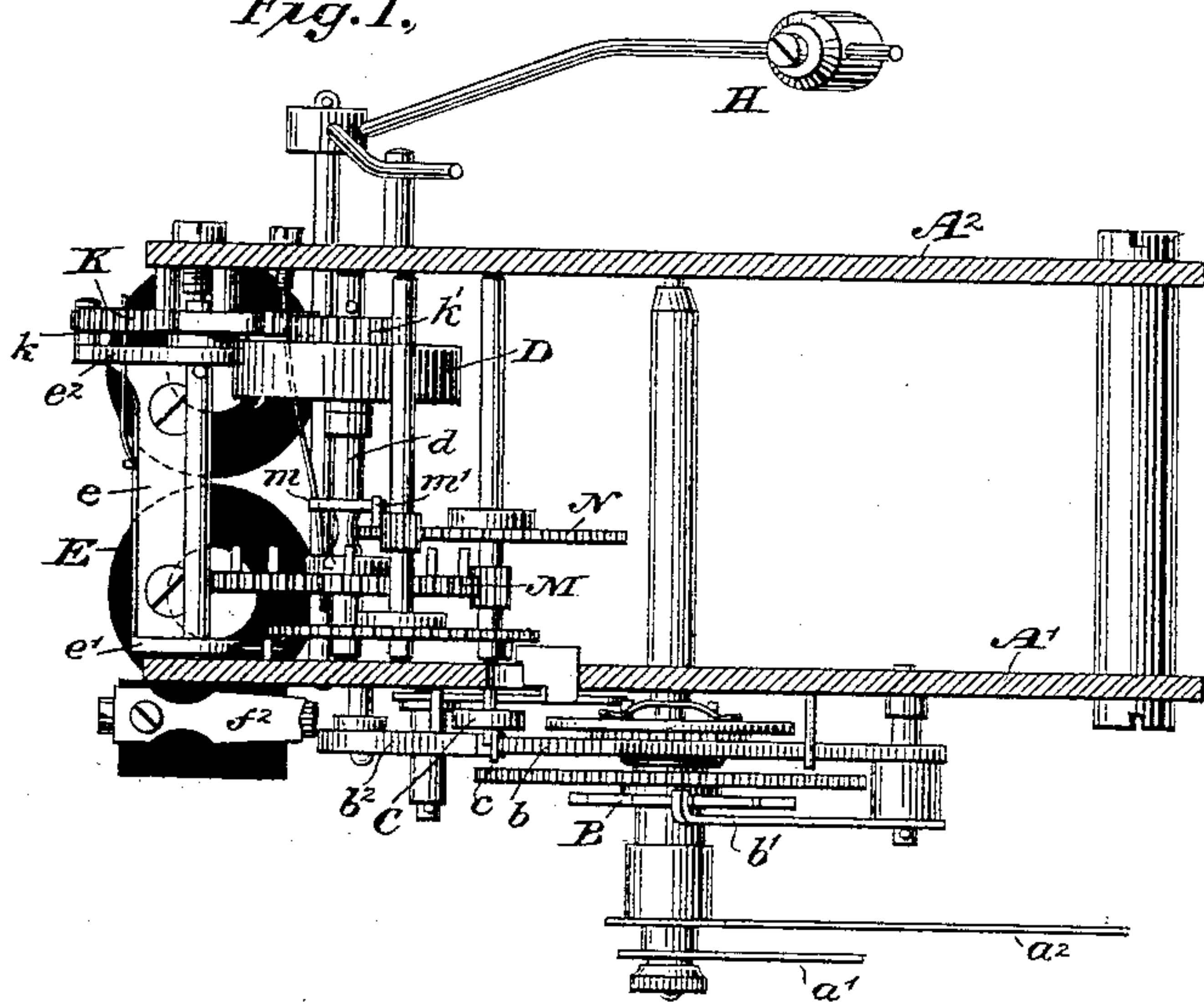
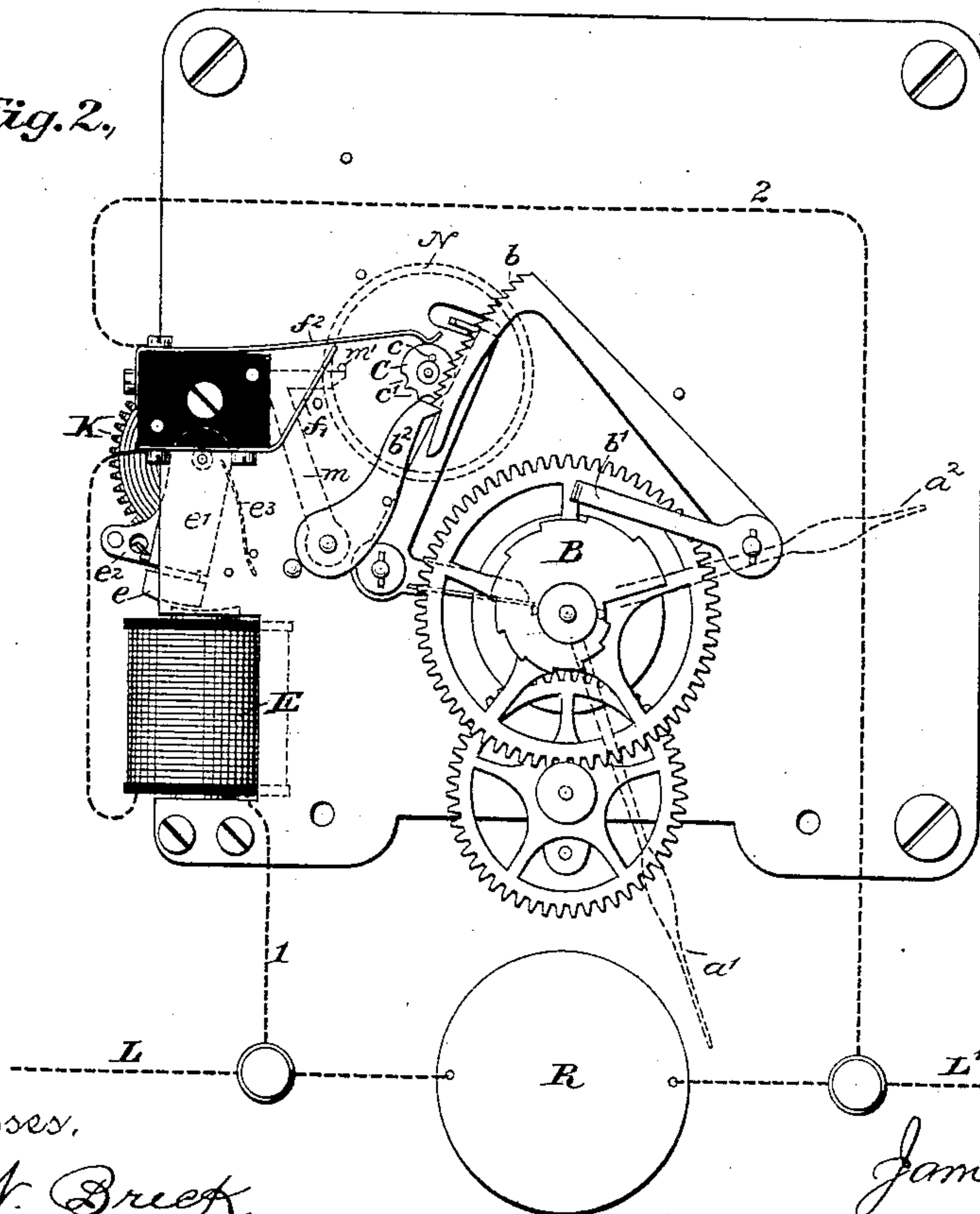


Fig. 2.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

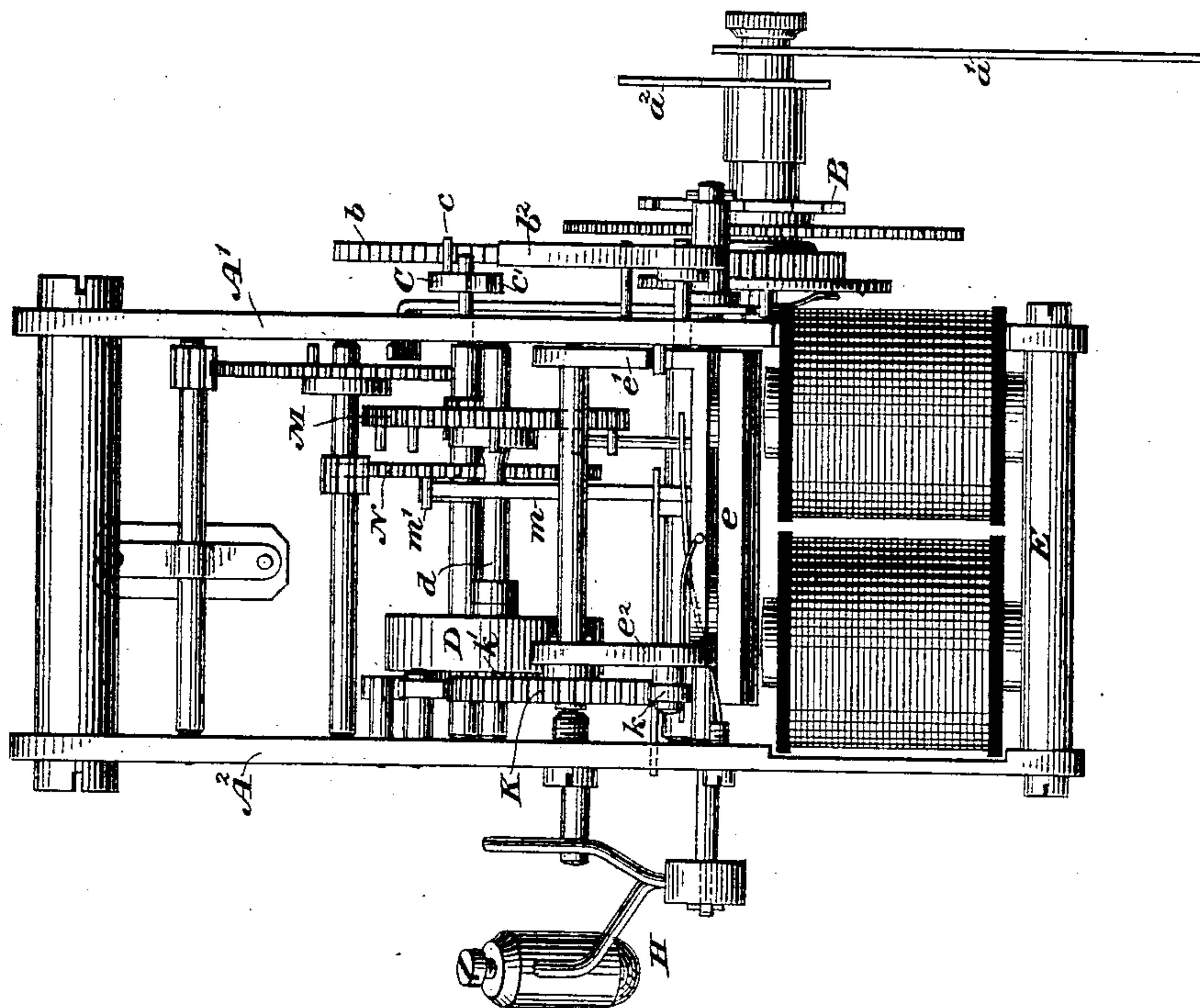
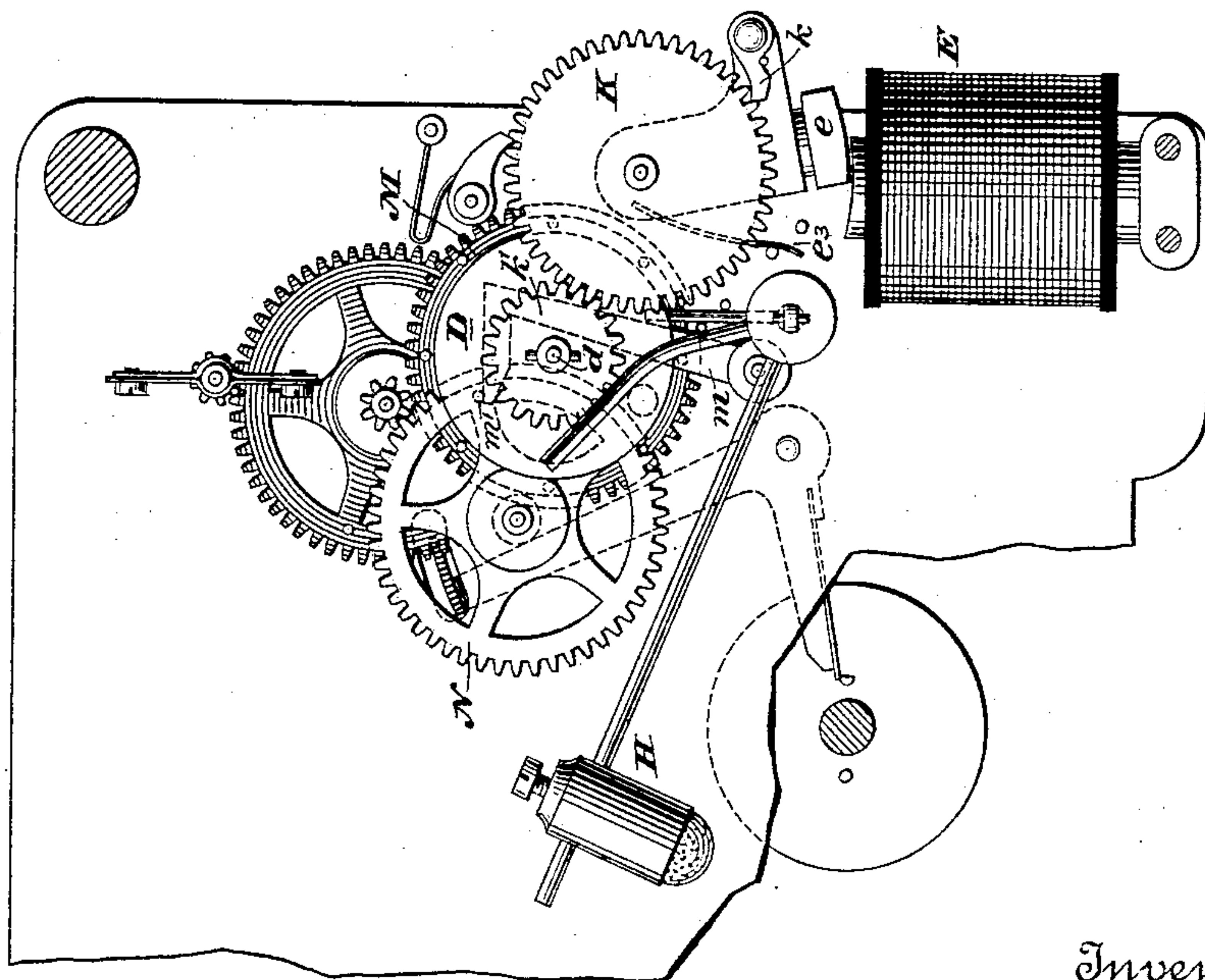


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES H. GERRY, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE SELF WINDING CLOCK COMPANY, OF SAME PLACE.

ELECTRIC STRIKING ATTACHMENT FOR CLOCKS.

SPECIFICATION forming part of Letters Patent No. 393,637, dated November 27, 1888.

Application filed June 1, 1888. Serial No. 275,740. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. GERRY, a citizen of the United States, residing in Brooklyn, in the county of Kings, in the State of New York, have invented certain new and useful Improvements in Electrical Striking Attachments for Clocks, of which the following is a specification.

The invention relates to the construction of striking devices designed to be operated through the instrumentality of electro-magnetism.

The invention consists, in general terms, in applying to a clock mechanism constructed with any suitable form of driving-train a striking device which will be operated at the proper intervals to give the necessary strokes for indicating the hour, or fractions of an hour if desired, the power being supplied by means of currents derived from a suitable source of electricity.

The invention will be described in connection with the accompanying drawings, in which—

Figure 1 is a plan of such parts of the striking-movement and applied mechanism as will serve to illustrate the invention. Fig. 2 is a front view of certain portions of the mechanism. Fig. 3 is a rear view of the mechanism, and Fig. 4 is a side elevation. Only such portions of the clock mechanism are shown as are necessary to the complete understanding of the invention.

In the drawings, A' and A'' represent the front and back plates, respectively, of the clock mechanism.

a' and a'' represent the minute and hour hands, respectively, which are mounted in the usual manner. The strike-snail B surrounds the central post and is revolved in the usual manner. The ratchet b is constructed with a rack-arm, b' , applied to the snail in a manner well understood, and to this ratchet there is applied the retaining-dog b'' and the gathering-pin c , carried upon the revolving disk C. A spring is carried in a drum, D, for driving the striking mechanism, and thus actuating the hammer H. This spring is designed to be wound by means of an electro-magnet, E, and its armature e . The circuit-connection through this electro-magnet is controlled in the follow-

ing manner: A conductor, L, is supposed to lead from a suitable source of currents to the clock. A conductor, 1, leads from this through the coils of the magnet E to an insulated contact-spring, f' . A circuit-closing spring, f'' , is applied thereto, and this spring is connected by a conductor, 2, with the return-conductor L' . The spring f'' rests upon the periphery of the disk C, and is normally held away from the arm f' . The disk C is constructed with notches or indentations c' , and as these pass beneath the end of the spring f'' the latter is allowed to fall into contact with the arm f' , thereby completing the circuit-connections. As shown in the drawings, the circuit will be thus completed three times during each revolution of the disk C; but this number may be varied as found to be desirable.

The armature e , applied to the electro-magnet E, is suspended by arms e' and e'' in such manner that it will swing toward and gradually approach the poles of the magnet when the latter is vitalized. A suitable spring, e''' , tends to hold the armature away from the poles of the magnet. The vibrations of the armature thus obtained are communicated through a pawl, k , to a wheel, K. This wheel meshes with a wheel, k' , which is carried upon the drum D, and thus serves to wind the spring contained within the drum in a well-known manner. It will therefore be seen that the spring within the drum D is maintained at the same tension, as the action of the striking mechanism itself sends regular impulses through the electro-magnet E, operating the armature e and rewinding the spring. The inner end of the spring being attached to the arbor d , which arbor also carries the striking-wheel M, the latter will be turned whenever it is released by reason of the tension exerted by the spring. The movements of the striking-wheel M are determined in the usual well-known manner, and it is arrested at the proper point by means of the arm m moving with the retaining-dog b'' , and engaging a pin, m' , upon the wheel N of the striking-train. The other portions of the striking mechanism which are shown in the drawings are well understood, and need not here be more fully described.

In practice it has been found convenient to apply the striking device here described to a self-winding clock of the character described in the patent issued to Chester H. Pond, November 25, 1884, No. 308,521. In the diagram, Fig. 2, the winding apparatus of such a clock is represented at R, and, as it will be seen, the circuit through the electro-magnet E is a shunt upon the winding device R. Other circuit-connections, however, may be adopted.

I claim as my invention—

1. An electric striking device for clocks, consisting of a hammer-stroke-controlling mechanism, a spring for actuating the striking mechanism, and an electro-magnet for winding the spring.

2. An electric striking device for clocks, consisting of a hammer-stroke-controlling mechanism, a spring for actuating the hammer and mechanism, and an electro-magnet for winding the spring, the armature of such electro-magnet having a lateral movement with reference to the poles thereof.

3. An electric striking device for clocks, consisting of a hammer-stroke-controlling mechanism, a spring for actuating the hammer and mechanism, an electro-magnet for winding the

spring, and a circuit-controller operated by the striking mechanism for determining the connections through the electro-magnet.

4. An electric striking device for clocks, consisting of a hammer-stroke-controlling mechanism, a spring for actuating the hammer and mechanism, an electro-magnet for winding the spring, and a circuit-controller for completing the connections through the electro-magnet, consisting of a disk carrying the gathering-pin, having one or more indentations or projections, a circuit-closing arm resting against the disk, and a contact-arm applied thereto.

5. In a striking attachment for clocks, an electro-magnet for winding the same, a gathering-pawl, and a circuit controller for completing the connections through the electro-magnet operated by the gathering-pawl, substantially as described.

In testimony whereof I have hereunto subscribed my name this 31st day of May, A. D. 1888.

JAMES H. GERRY.

Witnesses;

DANL. W. EDGECOMB,
CHARLES A. TERRY.