

(No Model.)

2 Sheets—Sheet 1.

F. X. HOFBAUER.
MAGNETO ELECTRIC MACHINE.

No. 502,670.

Patented Aug. 1, 1893.

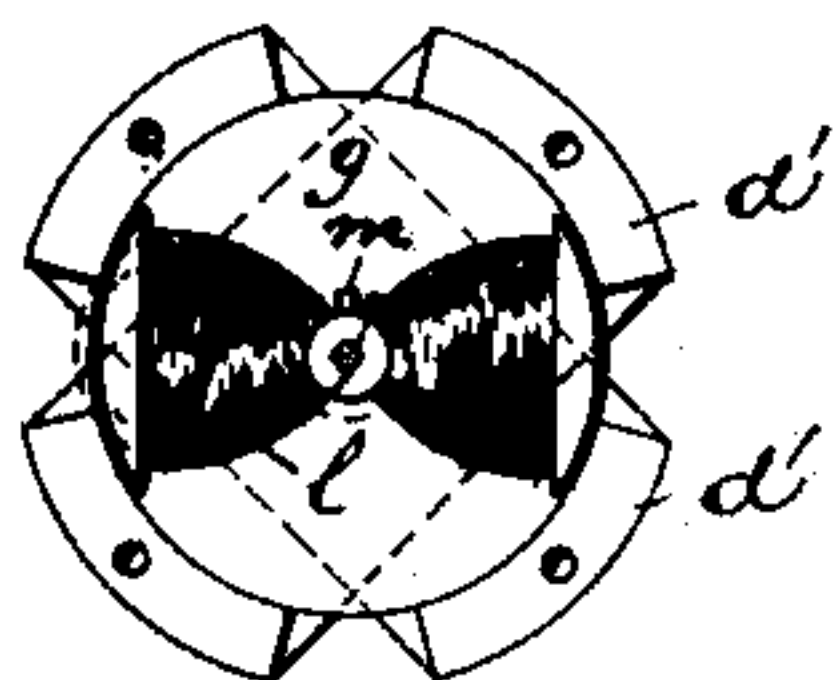


Fig. 3.

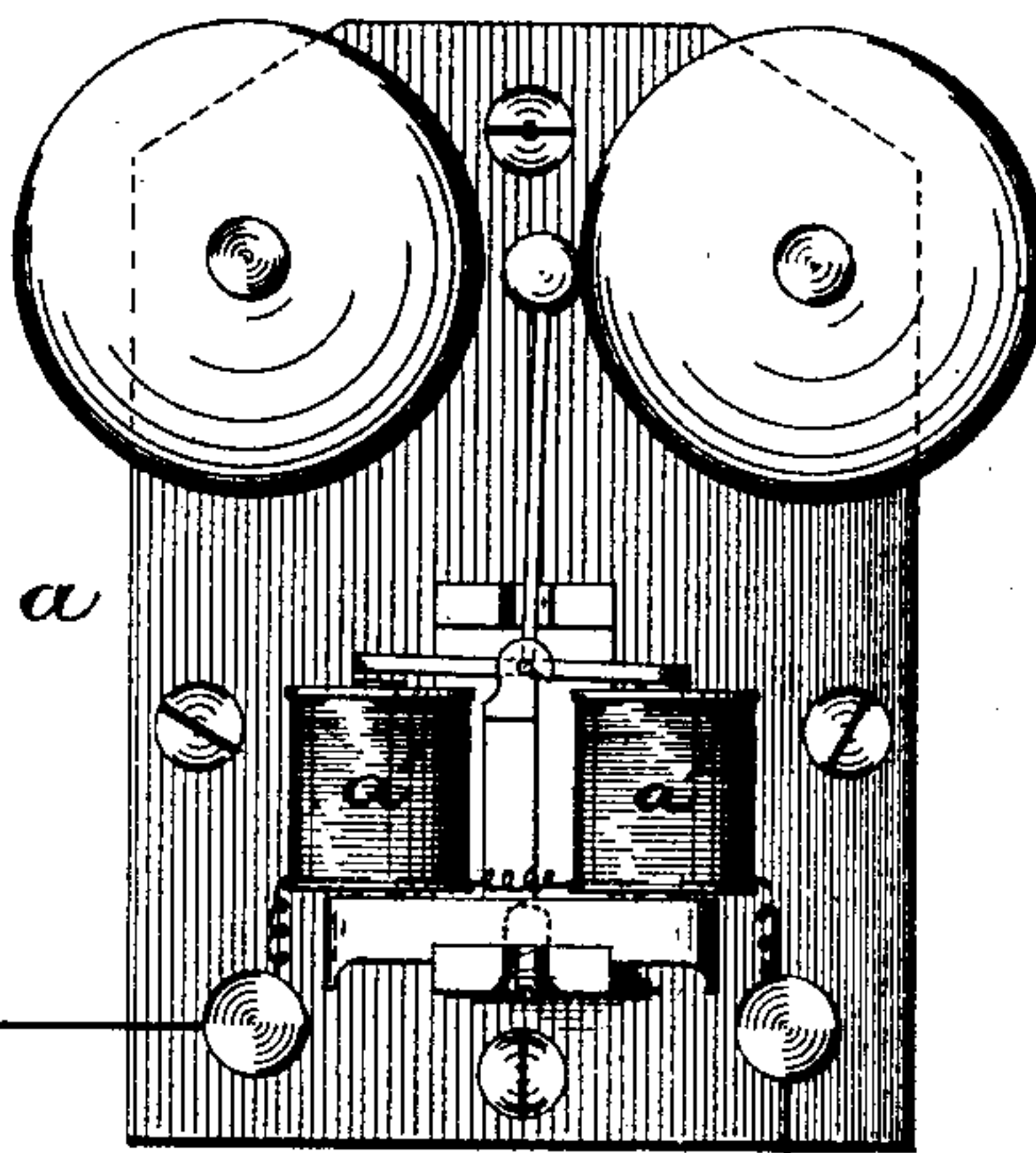


Fig. 1.

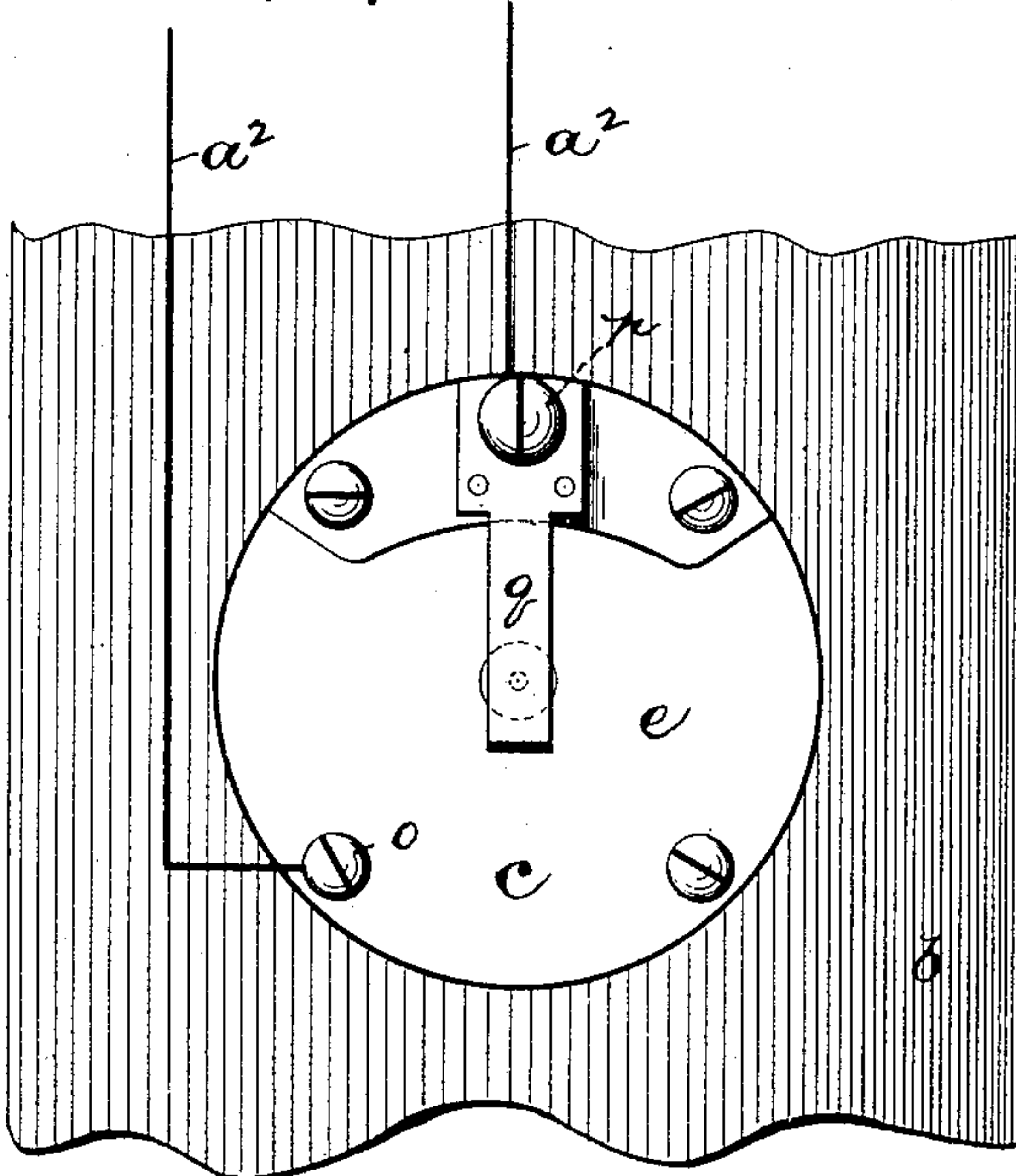
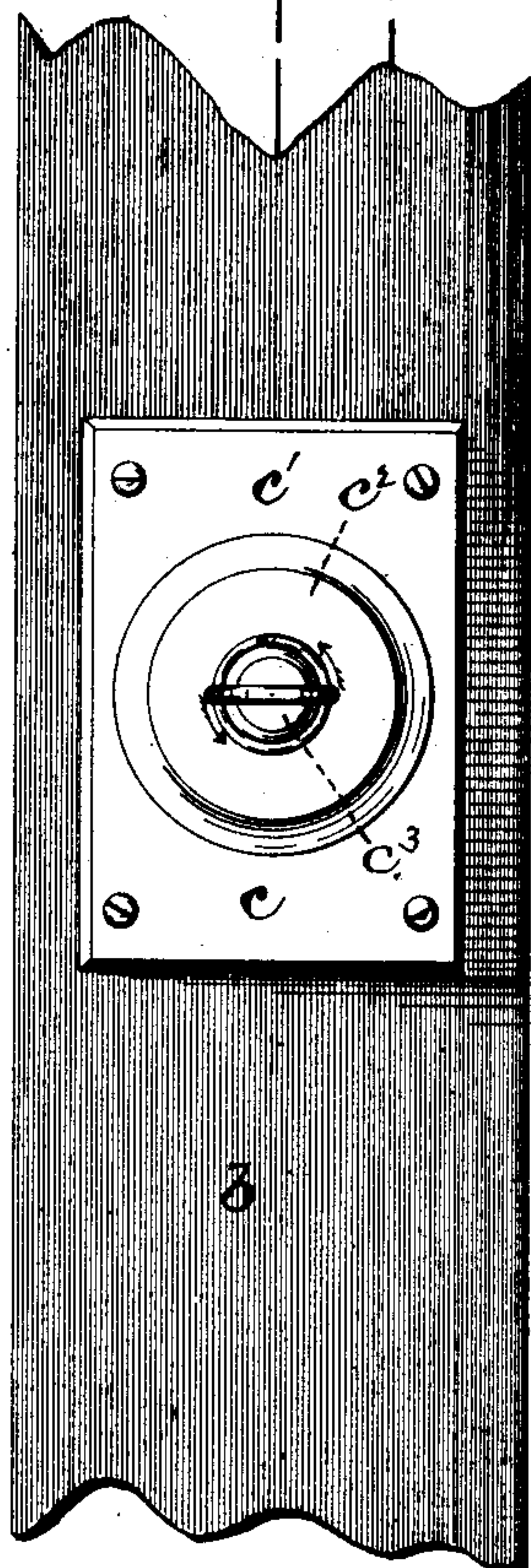


Fig. 2.

Witnesses

Inventor:

Oscar A. Michel
Jas W. Cay

Frank X. Hofbauer,

By Drake & Co. Attys.

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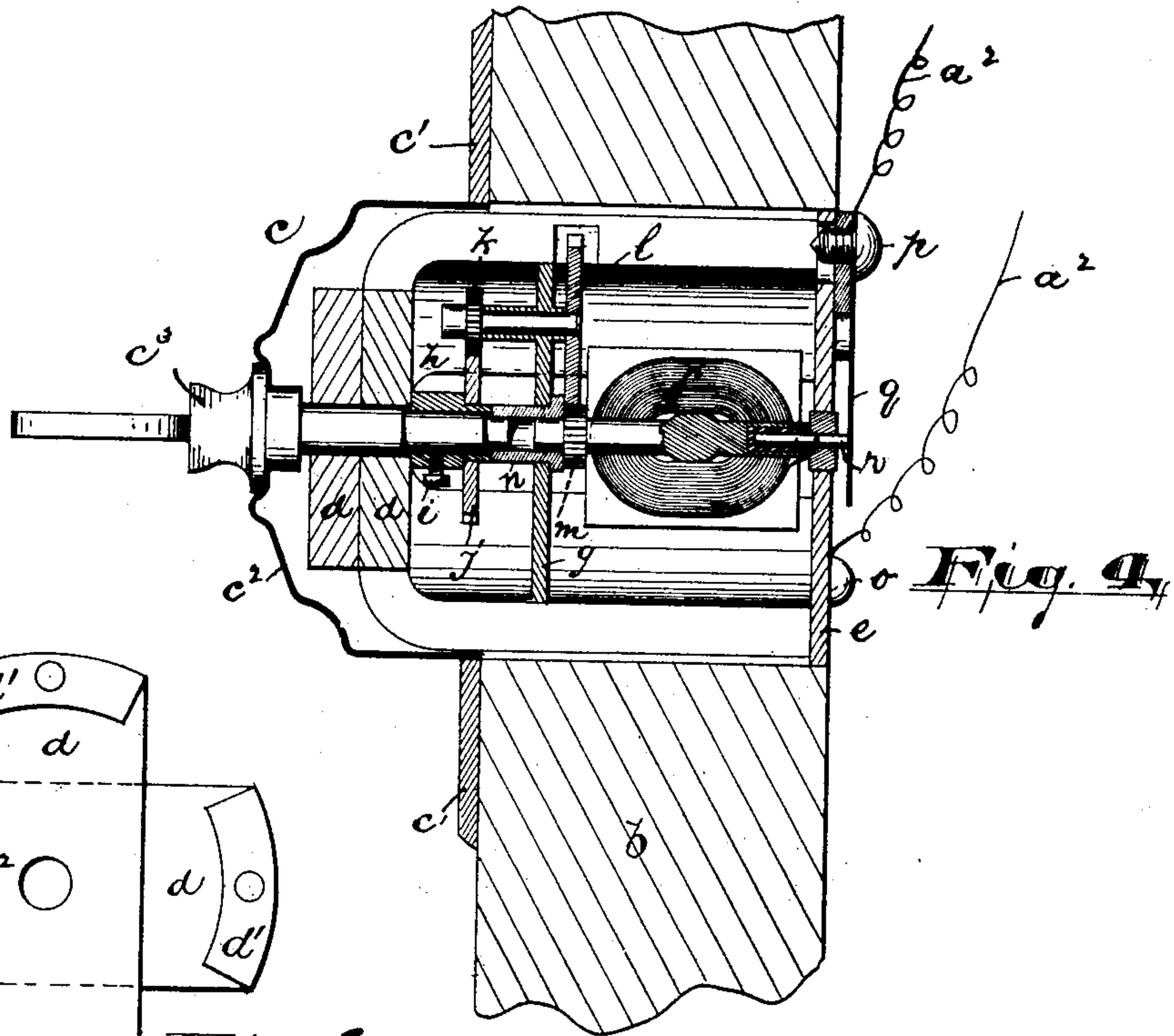


Fig. 4.

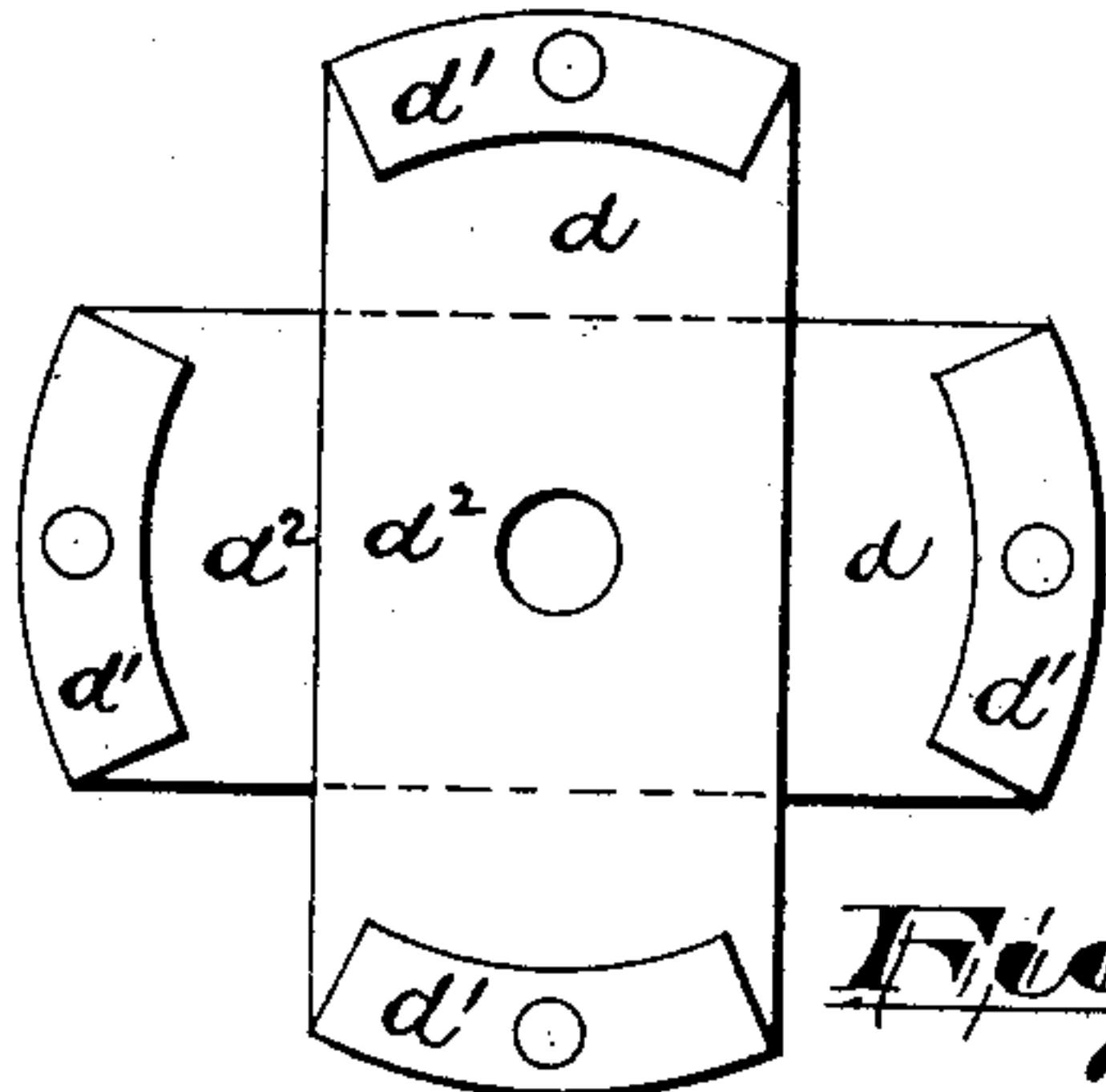


Fig. 5.

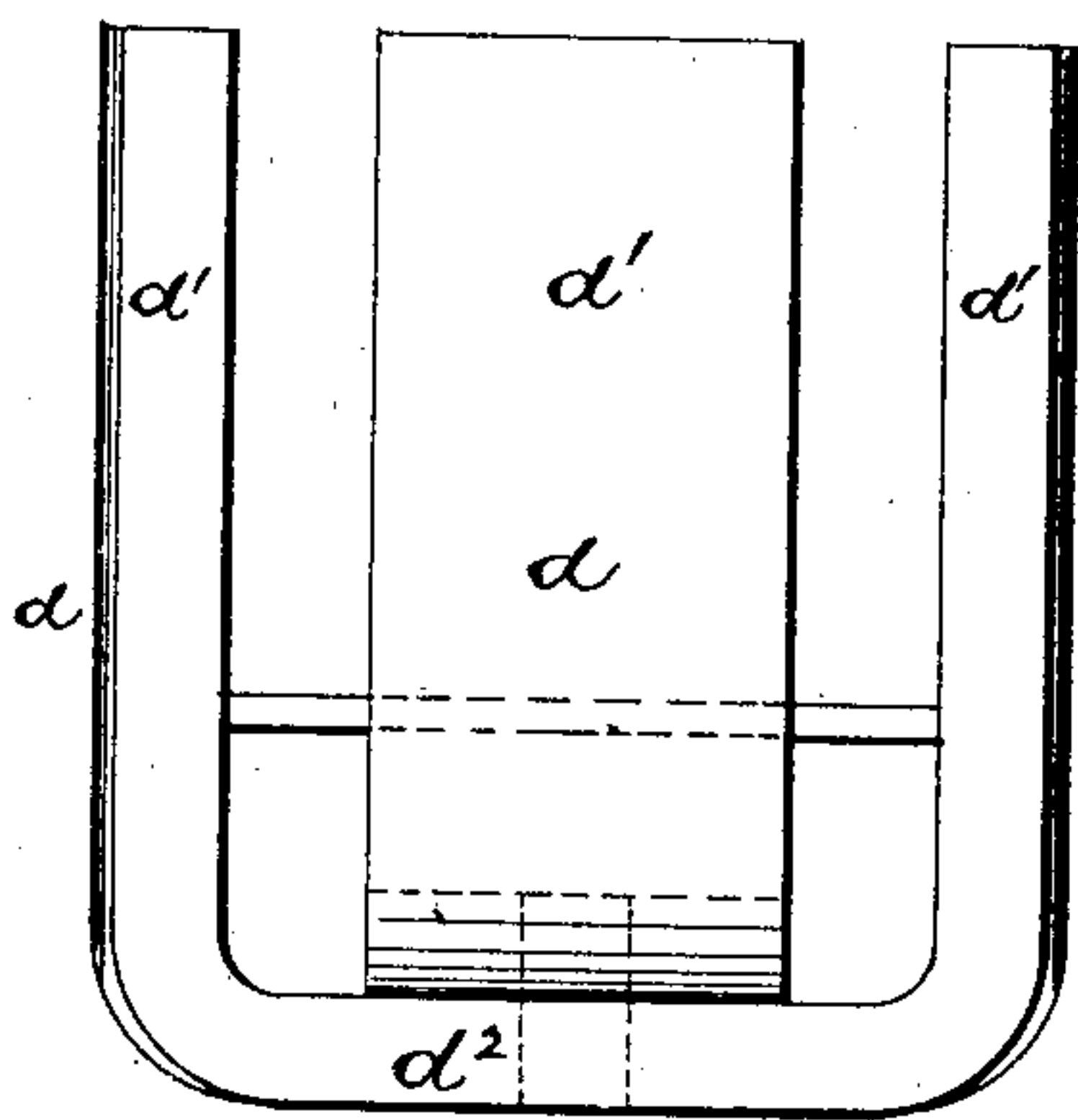


Fig. 6.

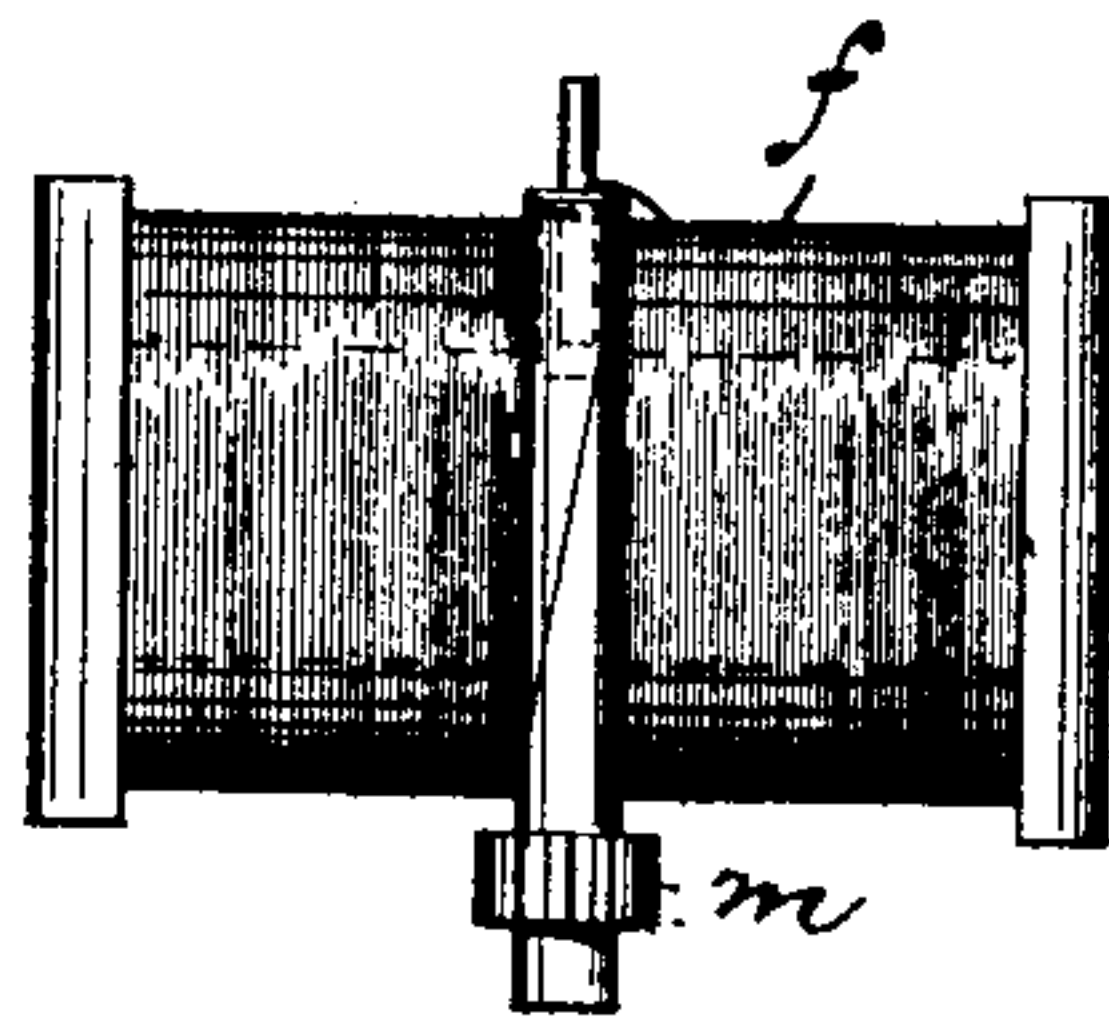


Fig. 7.

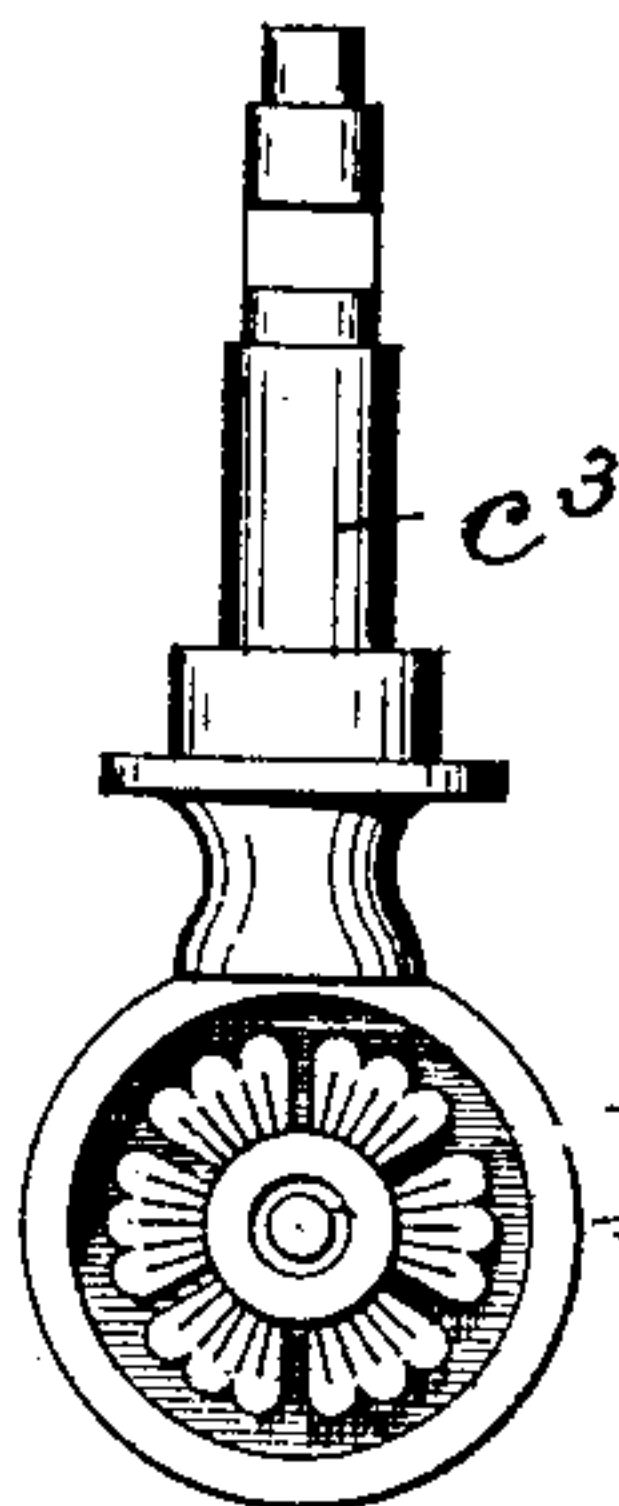


Fig. 8.

Witnesses

Oscar A. Michel.

Hubert W. Coe

Inventor

Frank X. Hofbauer.

By Draper & Co. Attys.

UNITED STATES PATENT OFFICE.

FRANK X. HOFBAUER, OF NEWARK, NEW JERSEY.

MAGNETO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 502,670, dated August 1, 1893.

Application filed October 22, 1892. Serial No. 449,586. (No model.)

To all whom it may concern:

Be it known that I, FRANK X. HOFBAUER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Magneto-Machines for Call-Bells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to secure greater economy, compactness, and convenience in electro-magnetical call-bell attachments; more particularly for residential purposes, to dispense with the use of batteries and the attention and care thereby occasioned, and to secure other advantageous results, some of which will be referred to in connection with the description of the working parts.

The invention consists in the improved magneto-generator and bell-operating device hereinafter set forth and finally pointed out in the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate corresponding parts in each of the several figures where they occur, Figure 1, is a diagram of the device showing the relation of the improvements to the bell. Fig. 2, is a rear view of the magnets. Fig. 3, is a view, on the scale of Fig. 1, showing the relation of certain permanent magnets with the magneto armature more clearly. Fig. 4, is a sectional view taken through the magnets. Fig. 5, is a plan and Fig. 6 a side elevation of the permanent magnet. Fig. 7, is a side view of the armature and Fig. 8 is a detail of a finger piece for rotating the armature.

In said drawings, *a*, indicates a suitable bell, having the ordinary electro-magnets *a'*, arranged on circuit wires *a²*, *a²*, extending to the generator or magnets, at a distance therefrom and secured to a door frame, *b*, or other fixture.

c indicates the magneto-generator and co-operating parts secured in a recess in said fixture, and in which the features of novelty exist. Of said device, *c'* is a face plate, of

brass or other non-magnetic material and *c²* is a cap which may be one with the face plate or an independent piece; the said parts providing bearings for the magnet in any suitable manner. Within said cap and face plate and the recess formed in the door frame or fixture is arranged the permanent horseshoe magnets, *d*, *d*, formed of flat metal and with curved arms *d'* *d'*, forming segments lying closely adjacent to the annular path of the rotary armature, as will be understood upon reference to Fig. 5. The heads *d²*, of the magnets cross one another at right angles and are held in this position by a non-magnetic—preferably brass—plate *e*, Figs. 2 and 4. Said plate *e* is screwed to each of the four arms of the magnet, and it also serves as a bearing for the armature *f*, and to close the opening in the frame *b*, to prevent dust entering from the rear. Another bearing plate *g*, is arranged within the arms of the magnet, in which plate certain speed gearing for giving rapid motion to the armature is secured.

At the center of the crossing heads of the magnets is a perforation to allow of the insertion of a finger-piece, *c³*, and on the inner side of the magnet heads is arranged, on said finger-piece, a collar *h*, which is fastened by a set screw *i*. On said collar is arranged a large gear or cog-wheel *j*, which forms a part of a train of speed gears, *j*, *k*, *l*, *m*, the last of the said gears being mounted upon the center shaft of the armature *f*. The said armature shaft has its inner bearing in a collar *n*, arranged in the bearing plate *g*, and abuts against the end of the collar *h* and receives the reduced extremity of the finger-piece, *c³*. By this arrangement the parts are easily assembled and held in their proper operative relation to one another. It will be seen that one of the bell wires is in metallic connection with the extremity of the magnet *d*, as at *o*, Figs. 2 and 4, and the other wire is secured upon an insulated screw *p*, in engagement with contact spring, *q*, which, latter, engages the metallic insulated journal piece *r* to which the armature wire is connected, as shown in Fig. 4.

In operating the device, the finger-piece is worked by hand; in the present case, by turning or rotating, which sets the train of gears in motion and the armature being thus

rapidly rotated, a current is generated which, passing over the wires a^2 , operates the electro-magnet, armature and bell hammer of the bell in the usual manner.

5 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A magneto-generator, such as described, combining therein the magnets d , d , having
10 the four arms curved to approach closely the annular path of the rotary armature, and said armature, operated by the finger-piece, substantially as set forth.

2. In combination, the cap c^2 , finger-piece,
15 c^3 , horseshoe magnets d , having a centrally perforated head, plates e , g , armature and speed gears arranged between the arms of

said magnet and operated by said finger piece, substantially as set forth.

3. The improved magneto-generator herein 20 described, combining therein a permanent magnet having the perforated head, a finger-piece extending through said perforated head, and an armature and speed gears arranged between the arms of the magnet and operated 25 by the finger-piece, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of October, 1892.

FRANK X. HOFBAUER.

Witnesses:

OSCAR A. MICHEL,
CHARLES H. PELL.