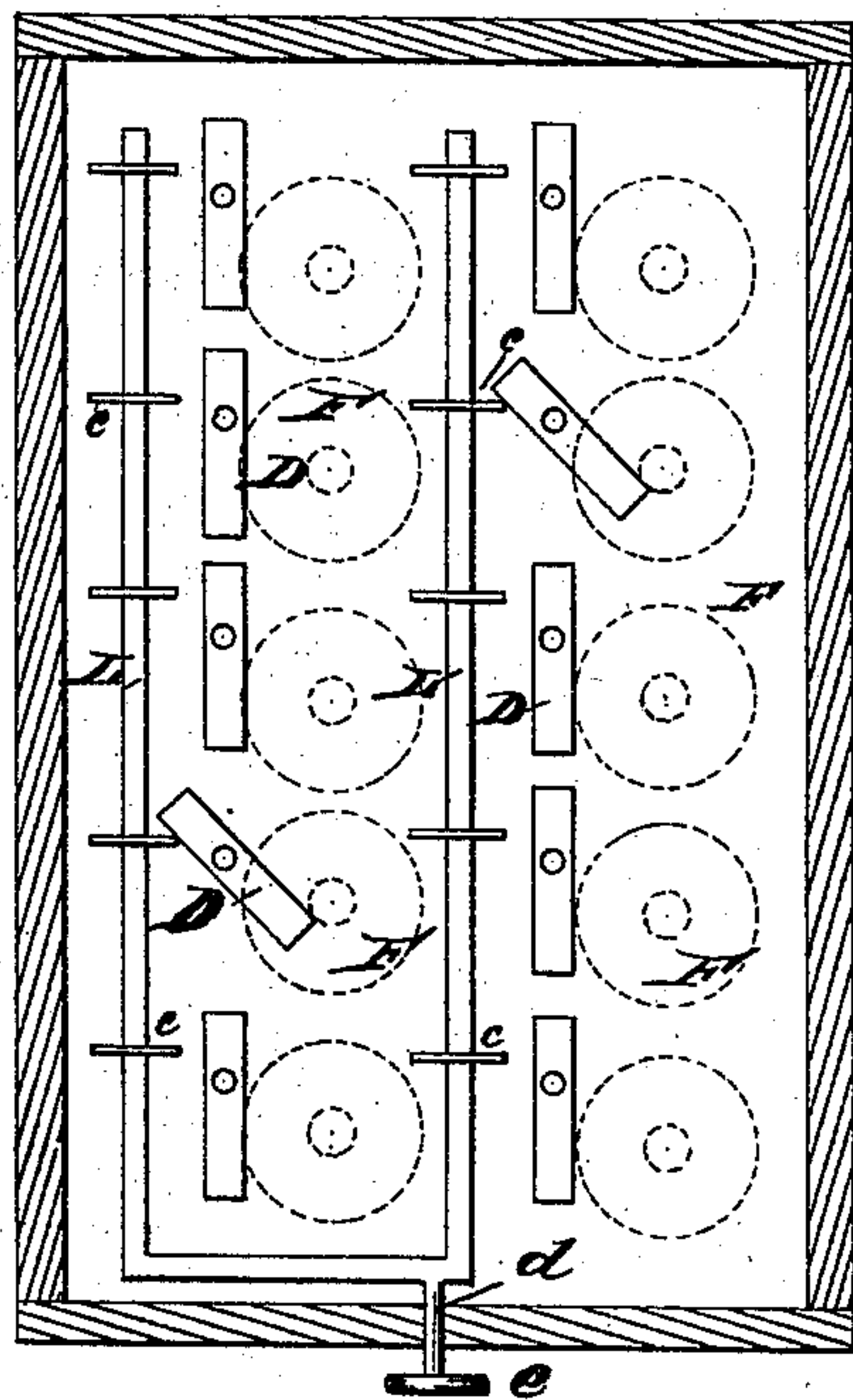
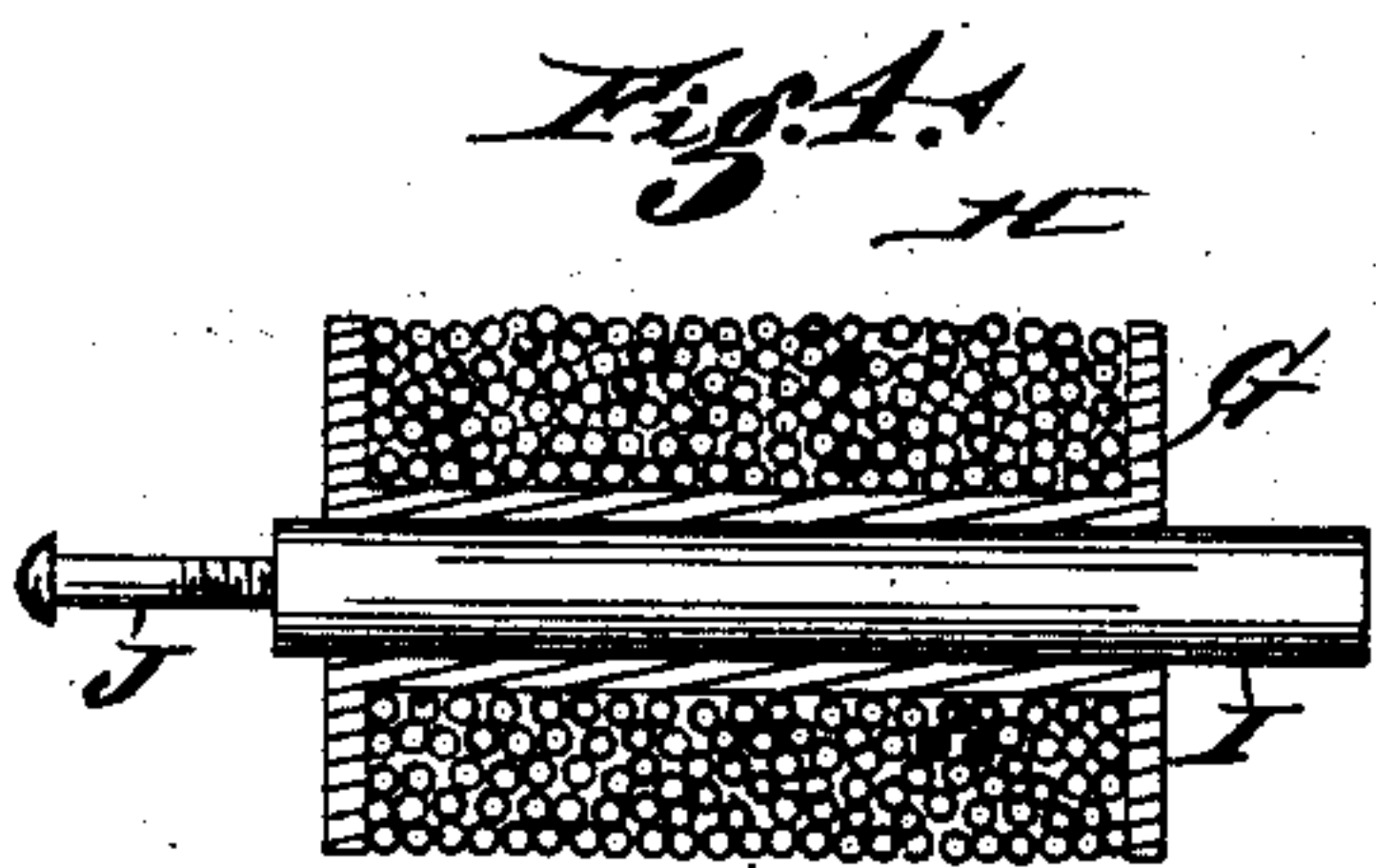
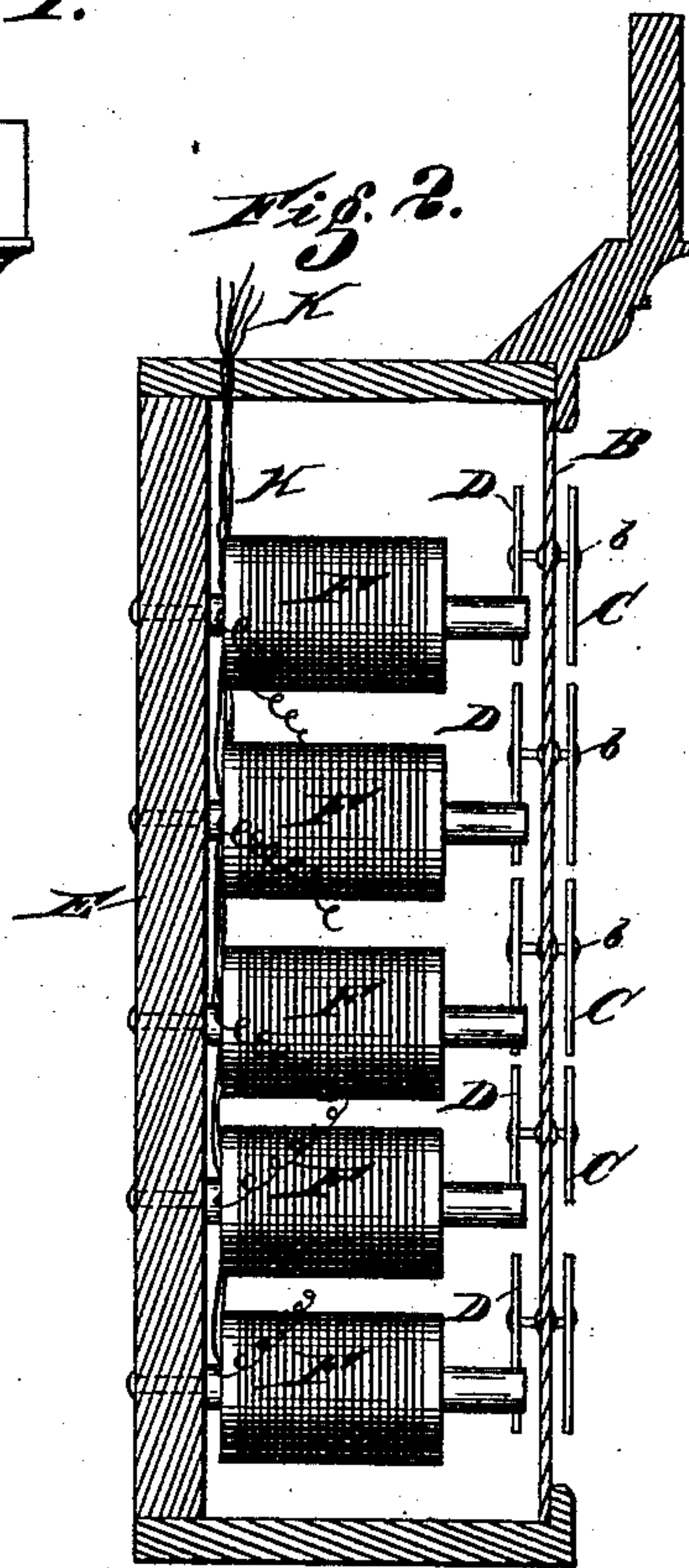
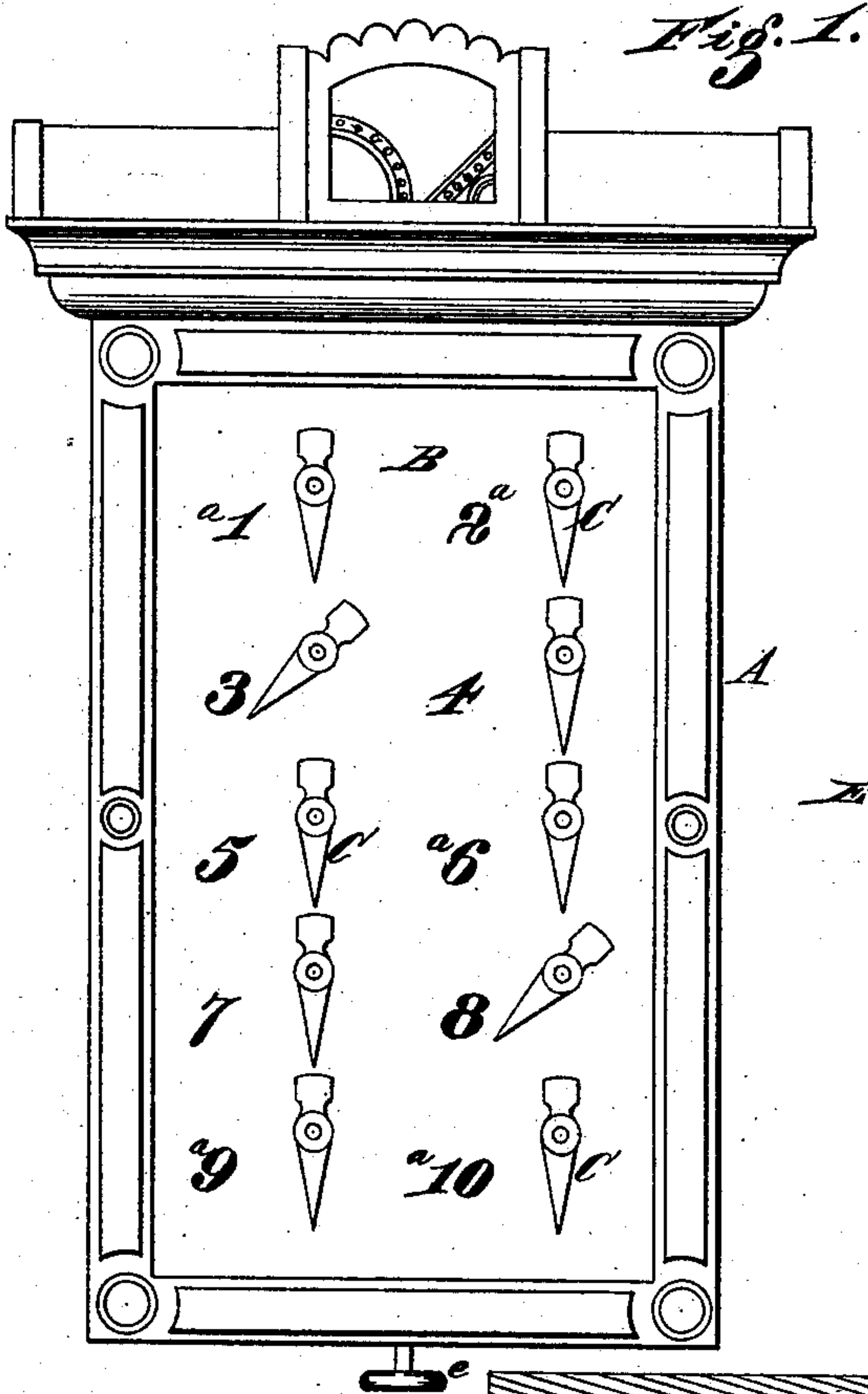


(No Model.)

A. E. LEITCH.
ELECTRICAL ANNUNCIATOR.

No. 291,063.

Patented Jan. 1, 1884.



Attest,
Geo. E. Miles
Ed. W. Rector

Inventor,
Albert E. Leitch
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his Attys.

UNITED STATES PATENT OFFICE.

ALBERT E. LEITCH, OF DAYTON, OHIO, ASSIGNOR OF ONE-HALF TO
CHARLES A. PHILLIPS, OF SAME PLACE.

ELECTRICAL ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 291,063, dated January 1, 1884.

Application filed September 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBERT E. LEITCH, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Electrical Annunciators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of electrical annunciators for use in dwellings, office-buildings, hotels, and elevators, for indicating, by means of a series of index needles and numbers, any particular room or floor to which it is desired to call assistance or attention. My object is to simplify the construction of this class of annunciators and to render the same positive in their action and reliable; and the novelty of my invention consists in the construction and combination of the parts, as will be herewith set forth and specifically claimed.

In the accompanying drawings, Figure 1 is a front elevation or face view of my improved annunciator. Fig. 2 is a side elevation of the same in section, showing the interior of the case. Fig. 3 is a rear elevation of the case with the back and electro-magnets removed. Fig. 4 is a sectional view of one of the magnets in detail.

A is any suitable case, ornamented as desired, with a face-plate, B, provided with a series of indicating-numbers, *a*, to correspond with the rooms, floors, or other parts of a building. Extending through the face-plate are as many properly-journaled short shafts or spindles *b* as there are indicating-numbers, and upon the outer ends of these spindles are secured index hands or needles C. Upon the inner ends of these spindles, within the case, are attached a series of permanent magnets, D, which are of about the same size as the index-hands, with which they are coincident in direction. Upon the back E of the case, which is preferably of hard rubber or some other good non-conducting material, are fastened in any suitable manner a series of electro-magnets, F, one for each needle.

By reference to Figs. 2 and 3, the relative arrangement of the electro-magnets F and per-

manent magnets will be seen. The construction of each electro-magnet may be that in general use, or it may be that shown in Fig. 4, where G is the spool containing the helix H, which is slipped over the soft-iron core I, which latter is attached to the back of the case by the screw J, passed through the back of the case and entering its tapped end, as shown. The usual wires, K, with the ordinary electric connections, are employed and extend to the different points from which it is desired to operate the annunciator by pressing a button in the customary way. The usual or any suitable alarm-bell (not here shown) may be applied upon the circuit, so as to be rung every time it is desired to call attention to the annunciator. Within the case are as many properly-supported vertical and gravitating rods L as there are rows of permanent magnets, provided with detents or shoulders *c*, one for each permanent magnet. Where there are more than one of these tripping-rods, their lower ends are suitably united, and are connected to a stem, *d*, extending through an aperture in the bottom of the case, and provided with a head or push-button, *e*, on its outer end. These tripping-rods, with their shoulders *c*, should be of brass or other diamagnetic material. From this simple construction it will be seen that whenever a current of electricity is sent through any of the electro-magnets its corresponding permanent magnet will be attracted, and the index-needle attached thereto will be made to point to its number upon the face of the case, and thereby indicate at what point the button was pressed. The needle will continue to point to the number after the current is cut off, as the permanent magnet will adhere to the core of the electro-magnet. In Figs. 1 and 3 two of the needles are thus shown pointing to their numbers and with their permanent magnets in contact with the electro-magnets.

To reset the needles it is only necessary to push up the button *e*, which, lifting the tripping-rods, causes their detents or shoulders *c* to come in contact with the upper ends of the permanent magnets, and, turning them on their pivots, break their magnetic contact with the cores of the electro-magnets.

If desired, the tripping-rods may be dis-

pensed with, and by means of a reverse current sent through the electro-magnets repulsion would take place, and the needles be thus reset.

5 Having thus fully described my invention, I claim—

1. The combination, in an electrical annunciator, of a series of electro-magnets with suitable electric connections and a series of corresponding pivoted permanent magnets within
10 the case, to which are attached a corresponding series of index-needles and a series of numbers upon the face of the annunciator, substantially in the manner and for the purpose
15 specified.

2. The combination, in an electrical annunciator, of a series of magnets with suitable electric connections, a series of corresponding pivoted permanent magnets within the case, to which are attached a corresponding series
20 of index-needles upon the face of the annunciator, a series of numbers upon the face of the annunciator, and one or more diamagnetic gravitating tripping-rods, substantially as and for the purpose specified.

ALBERT E. LEITCH.

Witnesses:

QUINCY CORWIN,
J. A. WORTMAN.