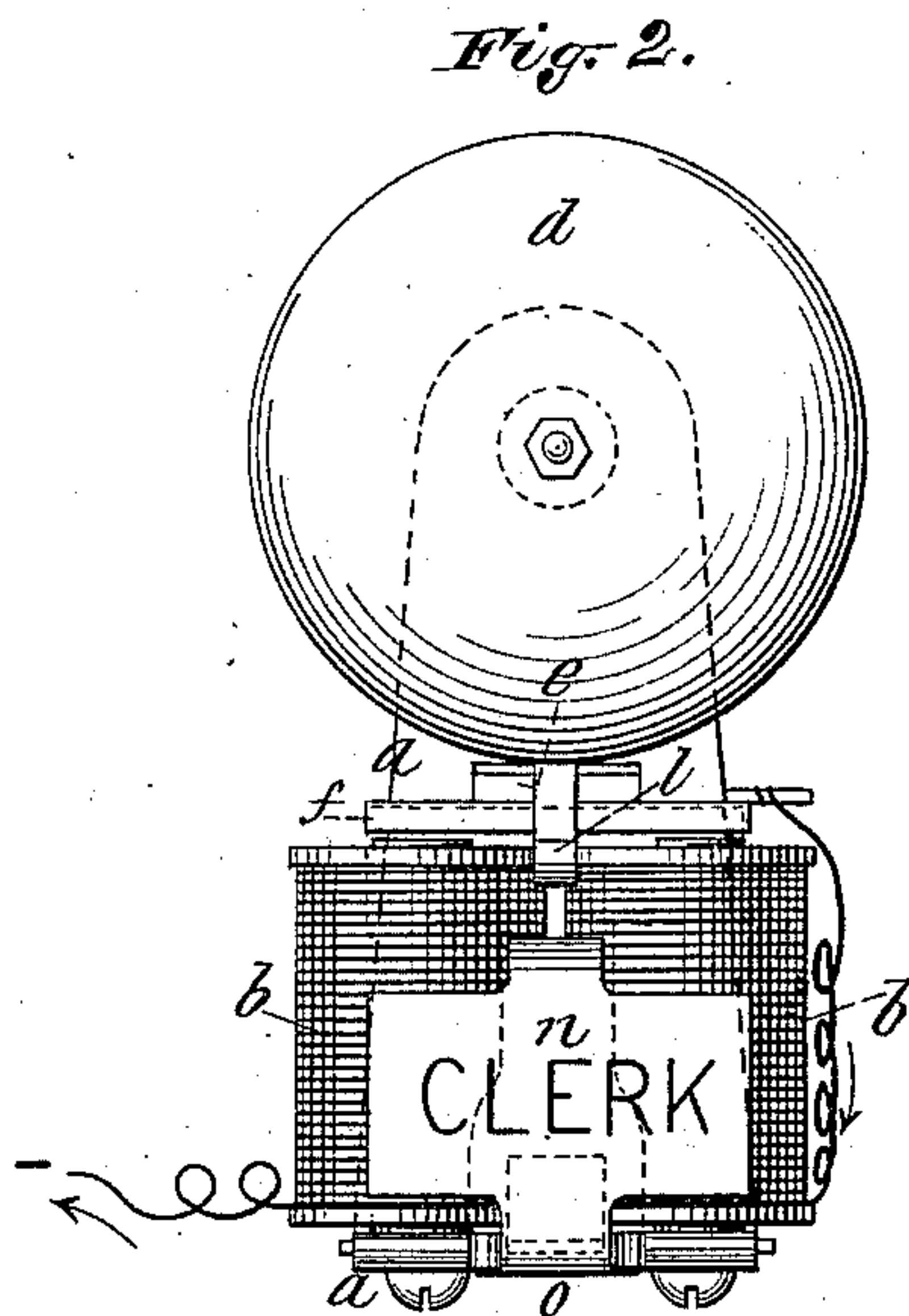
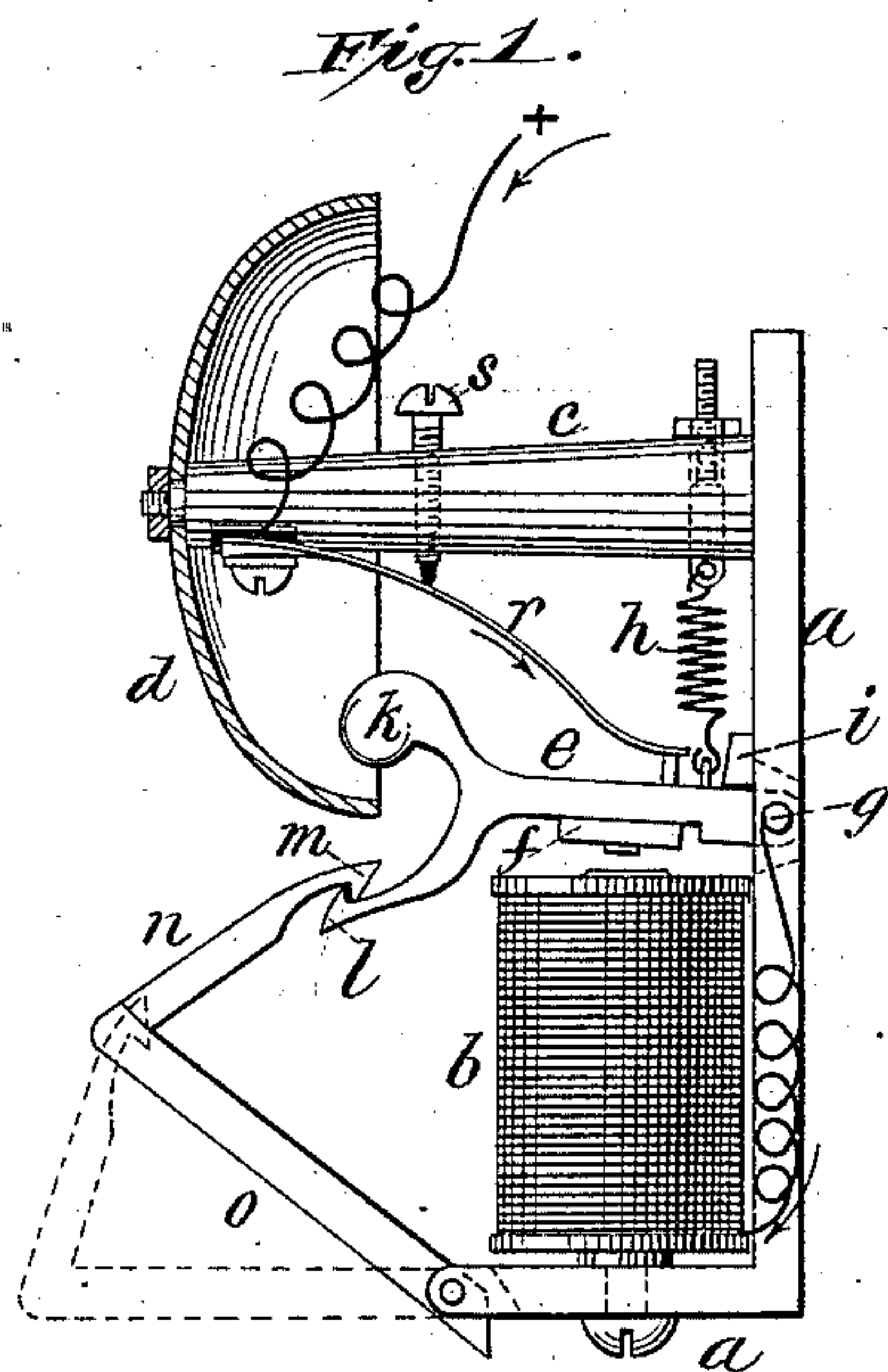


(No Model.)

D. ROUSSEAU.
ELECTRIC BELL AND ANNUNCIATOR.

No. 300,134.

Patented June 10, 1884.



Witnesses:
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UNITED STATES PATENT OFFICE.

DAVID ROUSSEAU, OF NEW YORK, N. Y.

ELECTRIC BELL AND ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 300,134, dated June 10, 1884.

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To all whom it may concern:

Be it known that I, DAVID ROUSSEAU, of New York city, New York, have invented certain new and useful Improvements in Electric Bells and Annunciators, of which the following is a specification.

My invention aims to provide a simple and efficient call-bell which may be also used for a single annunciator; and it has relation to that class of bells in which the action of the ringing-armature also serves to drop an annunciator-tag, showing that a call has been made after the bell ceases to sound.

The invention consists, mainly, in the special construction and arrangement of the several parts of the instrument, as hereinafter set forth.

Figure 1 of the drawings annexed presents a side elevation of my improved bell, shown partly in section; and Fig. 2 shows a front elevation thereof.

The base of the instrument is indicated by *a*, and is preferably cast in one piece in the L form shown in Fig. 1 and the triangular shape shown in Fig. 2. This base may be screwed directly to the wall or other fixed support; but it is preferably fixed to a neatly-turned wooden base, from which project the binding-posts to which the circuit-connections extend in the usual manner of electrical instruments. To the elbow or bend of this L-shaped base is fixed the magnet *b*, which is preferably of the ordinary double-bobbed or horseshoe form, as shown, the cores of which are screwed directly to the bend of the base, as shown in Figs. 1 and 2, which thus serves as the neutral section of the magnet. At the top end of the plate projects the post *c*, on the extremity of which is fixed the bell *d*, as illustrated, and this post may be formed separately from the base and riveted thereto, or it may be cast solid therewith. About midway between the post and the magnet is arranged the armature-lever *e*, to which is fixed the armature-plate *f*, which closely overlies the magnet-poles. The pivotal end of this lever projects into an opening in about the middle of the base-plate, and is there pivoted on a pin, *g*, driven through the base-plate, as illustrated. The armature is normally retracted in the usual manner by an adjustable spring, *h*, which constantly tends to lift the armature against the stop or lug *i*

on the base-plate. The outer end of the armature-lever is formed with a knob, *k*, which enters the mouth of the bell and approaches the edge thereof in the manner of a bell-hammer, and this end of the lever is also provided with a pendent hook or pawl, *l*, which hangs below the edge of the bell, as best shown in Fig. 1. This hook is adapted to engage with a similar hook, *m*, on an annunciator plate or tag, *n*, which is fixed on the end of a lever-arm, *o*, pivoted at its lower extremity in a recess or notch on the elbow or bend of the base-plate, as shown in Figs. 1 and 2. The tag-plate and lever-arm are preferably made in one piece in the form of an elbow-lever, as shown, either of cast or sheet metal. The face of the tag-plate is inscribed with any desired word, name, or other mark, to indicate either the person who is called or the source of the call where the circuit has been closed, as will be readily understood. This name or mark may be made directly on the surface of the plate, but is preferably inscribed or printed on a card affixed thereto in the usual manner of annunciator-tags.

It will be observed that the described parts are so formed and disposed that when the tag-plate is raised and engaged with the hook of the armature-lever, the plate will be thus upheld while the armature remains retracted, as shown in full lines in Fig. 1, and will be released and allowed to fall as soon as the armature is depressed or attracted, as shown by dotted lines in Fig. 1 and full lines in Fig. 2.

It will also be seen that the relative position of parts is such that the line of engagement of the tag-hook with the armature-hook is practically parallel with the armature, so that the weight of the tag-plate has little or no tendency to depress the armature, and at the same time the center of gravity of the tag-plate is quite eccentric to its pivot-point, so that it will fall with force and certainty as soon as released.

It will be further observed that when the tag is raised it assumes an inclined position, where its announcing-face is visible, but not conspicuously so below the bell; but when the tag is allowed to fall this face becomes thrown out and down in full and conspicuous view of the observer, so as to at once attract attention.

It will now be readily understood that with

the parts in the position shown in Fig. 1, the magnet being inactive, the armature retracted, and the tag raised and engaged with the armature, the instrument will thus remain in its quiescent position while the circuit remains broken with it. As soon, however, as the circuit is closed on the magnet—say by pressing a finger-knob at the distant point from which it is operated, or by other circuit-closing action—the magnet will then at once attract and depress the armature, and in so doing will force the hammer-knob *k* against the edge of the bell, and depress the hook *l* from the tag-hook *m*, thus sounding the bell and dropping the tag-plate at the same time. The sound of the bell will at once call the attention of the person for whom it is intended, and direct him to respond to the call; but should he be momentarily absent the fallen position of the tag-plate will conspicuously announce when he returns that he has been called, and then lifting the tag-plate and engaging it he responds to the call. Hence, by the general construction set forth, a simple and efficient call-bell is produced which performs two results at one action, and provides for all contingencies. The instruments will thus be found specially adapted for large offices, factories, or other establishments, whereby any clerk or employé may be called by pressing a circuit-closing knob corresponding to the particular bell and to the individual identified therewith on the desk of the manager. These instruments may also be very readily used to form an annunciator when only a few sections are desired, as they may be readily grouped together upon the wall without requiring any case, and will serve the purpose of an expensive annunciator in a most convenient and efficient manner at much less cost; and, furthermore, the number of the "sections" may be easily increased by simply adding the single instruments as they may be required.

It may be observed that the general disposition of the parts—that is to say, the L-shaped iron base *a* with the tag-plate pivoted on the foot of the L, the magnet fixed to the foot in the angle of the L, and the armature and bell fixed to the base beyond the magnet—is very compact, simple, and efficient, and forms one feature of my invention.

The circuit-connections may be so made with the magnet, as presumed by the operation already described, that the armature will be attracted and retracted only as the circuit is opened or closed by the operator, so that he can control the tolls of the bell as he may desire. Instead of this, however, the connections may be arranged as shown in Figs. 1 and 2, in the manner of an ordinary vibrating bell, in which the current to the magnet is established through the armature and a spring, *r*, against which it retires, as shown best in Fig. 1. The spring *r* is fixed to the post *c*, but insulated, as illustrated, and it is adjusted by the screw *s* working through the post, but having an insulating-tip to bear upon

the spring. The positive circuit-wire may connect to this spring, and the circuit thence flows through the armature and through its pivot-pin to the positive end of the magnet-coils, as seen in Fig. 1, and thence off at the negative end of the coils, as seen in Fig. 2, to the negative circuit-wire, as will be understood.

Instead of a regular bell, any other sounding device may of course be used, and where a number of instruments are grouped together the several bells or sounders may be of distinct tones.

What I claim is—

1. In an electric bell and annunciator, the combination, with an electric magnet, a bell or sounder, and an annunciator drop or tag, of an armature bar or lever, *e*, formed with the hammer-knob *k* and pawl-hook *l* on the same extremity, substantially as and for the purpose shown and described.

2. In a combined electric bell and annunciator, the armature-bar *e* projecting across the edge of the bell with a hammer-knob, *k*, arranged on one side of the edge to sound the bell, and a catch-hook, *l*, arranged on the other side to engage or release the annunciator-drop, substantially as herein shown and described.

3. In a combined electric bell and annunciator, the combination, with a suitable base, of a bell or sounder arranged at one end of the base, an electric magnet arranged at the opposite end of the base, and an armature tag or drop pivoted at one side of the bell with an armature bar or lever, *e*, projecting between the magnet and bell, with its free extremity formed with a hammer-knob to sound the bell, and a pawl-hook to engage or disengage the drop, substantially as herein shown and described.

4. An electric bell constructed with the L-shaped base *a*, with the magnet fixed to the bend or foot of the L, with its axis parallel with the body of the L, and the armature and bell supported on the body of the L beyond the magnet, substantially as herein shown and described.

5. An electric bell constructed with the L-shaped iron base *a*, having a horseshoe-magnet fixed to the bend or foot of the L, with its cores in metallic contact therewith and projecting therefrom parallel with the body of the L, with the armature and bell supported on the body of the base beyond the magnet, substantially as herein shown and described.

6. In an electric bell, the L-shaped base *a*, in combination with an annunciator-tag pivoted on the end of the foot or bend of the L, a magnet arranged in the angle or corner of the L, and an armature and bell supported on the body of the L, beyond the magnet, substantially as herein shown and described.

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