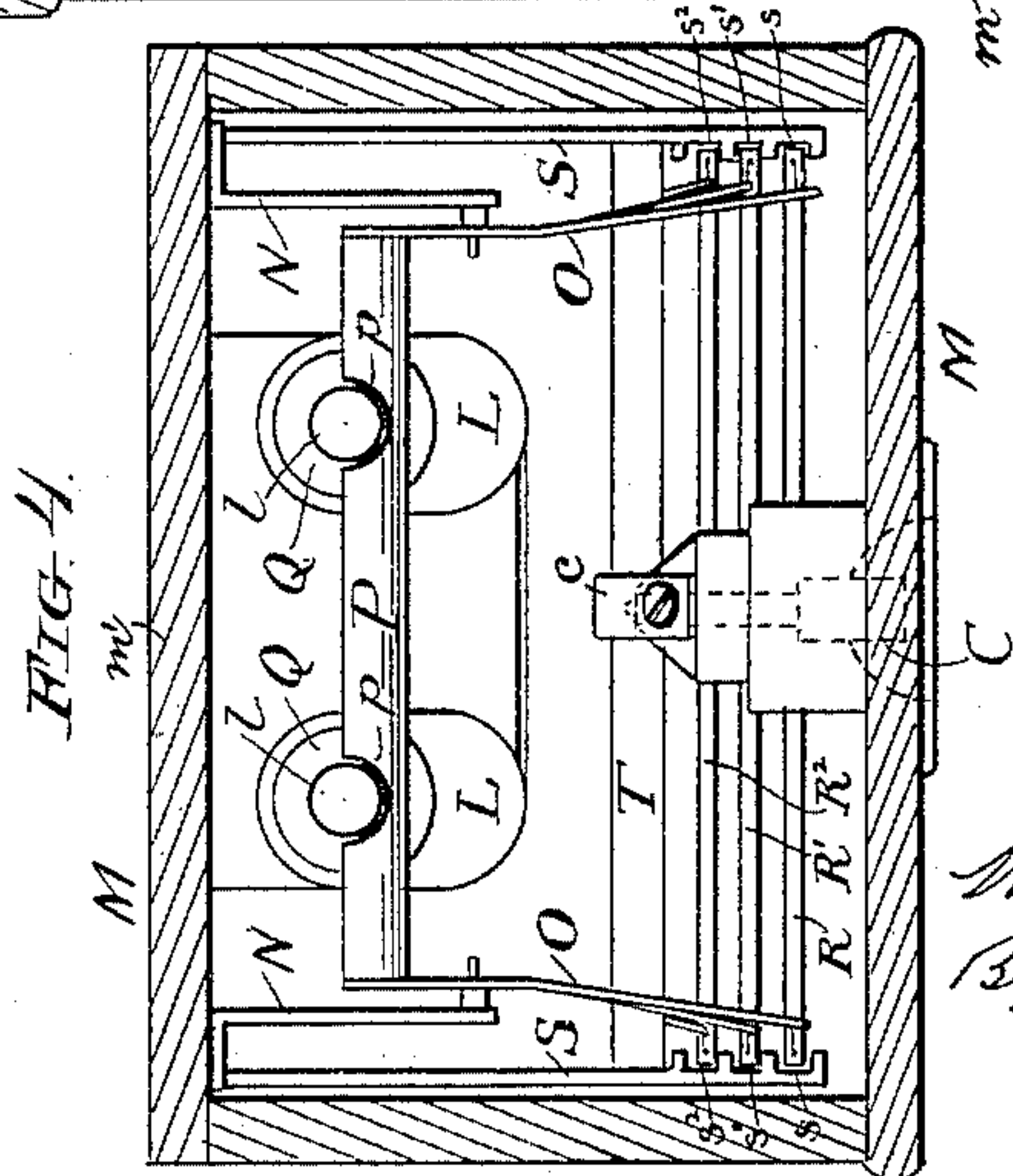
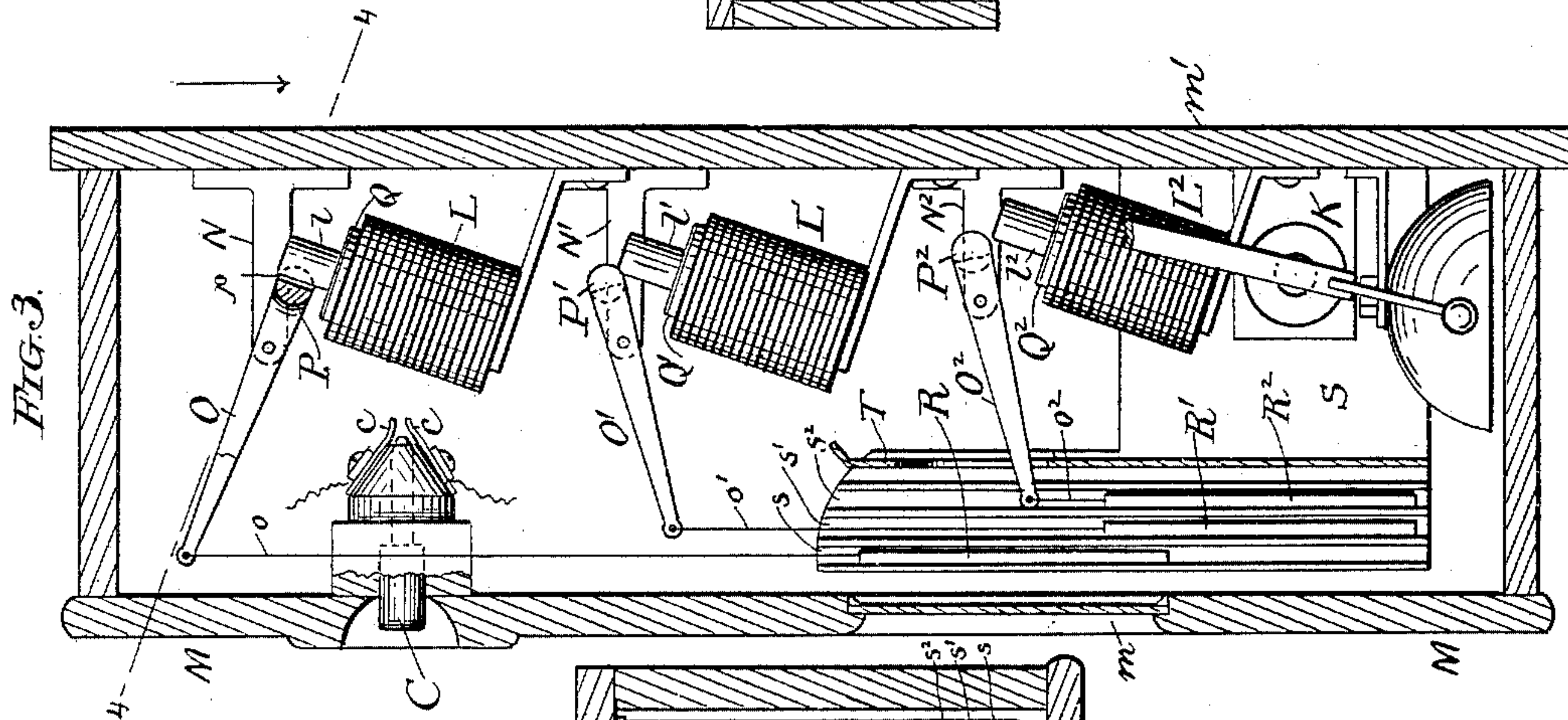
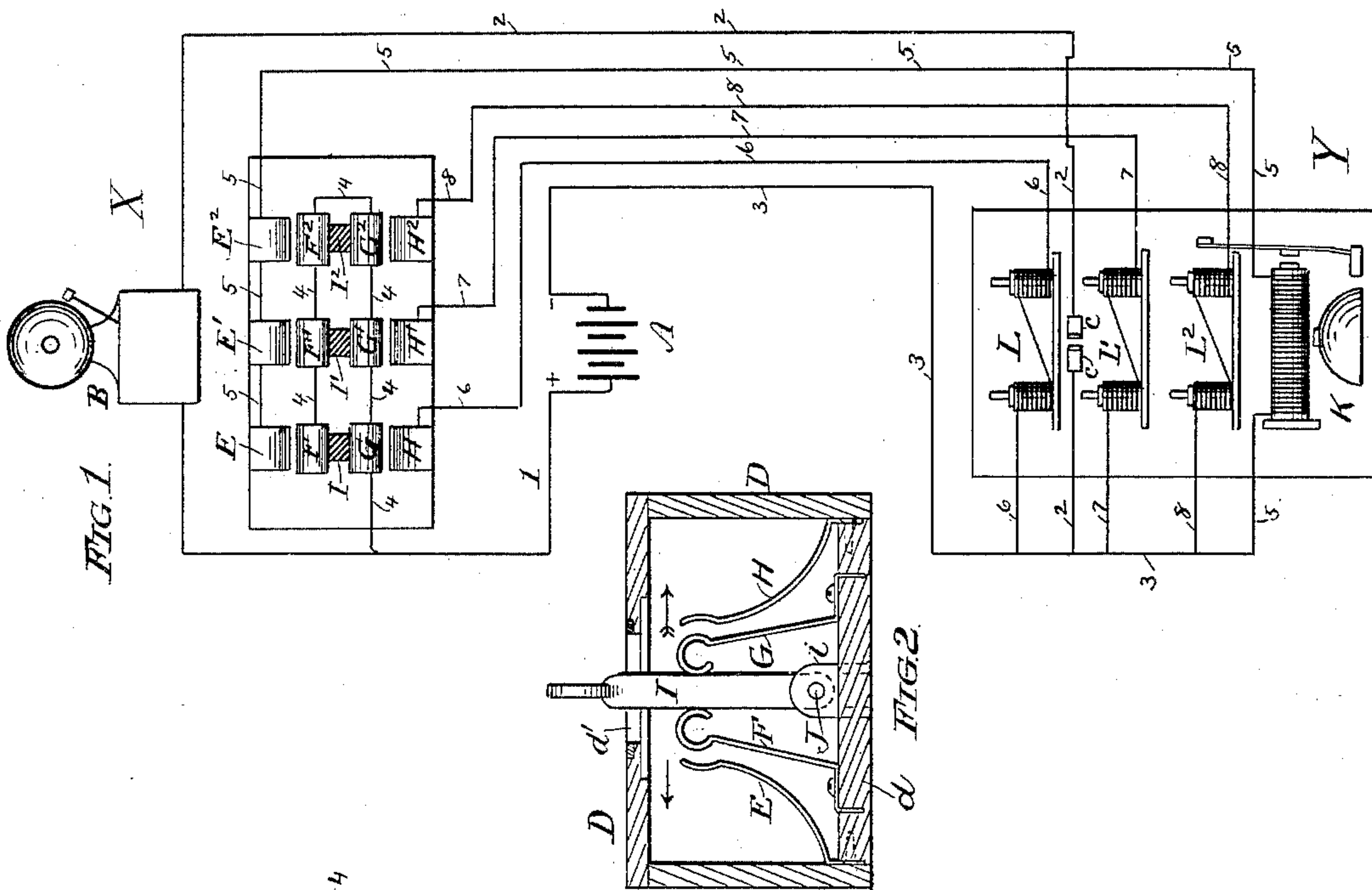


(No Model.)

W. EBERT.
ELECTRICAL ANNUNCIATOR.

No. 468,170.

Patented Feb. 2, 1892.



Witnesses:
J. Halpenny
G. S. Johnson

Inventor:
William Ebert
By Dudley Hopkins
His Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM EBERT, OF CHICAGO, ILLINOIS.

ELECTRICAL ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 468,170, dated February 2, 1892.

Application filed May 20, 1891. Serial No. 393,418. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EBERT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electrical Annunciators, of which the following is a specification, reference being had to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a diagrammatic view showing an entire system of apparatus embodying the invention. Fig. 2 is a transverse section of one of the instruments. Fig. 3 is a vertical section of another of said instruments. Fig. 4 is a section thereof on the line 4 4, Fig. 3.

This invention consists of certain features of novelty that are particularly pointed out in the claims hereinafter.

It relates to instruments for signaling back and forth between two distant places, an instrument being situated in each of said places and the two instruments connected by wires, as is the case with other devices for a similar purpose.

For convenience in describing the invention the two remote places will be hereinafter referred to as "station X" and "station Y," respectively. The instrument to be situated at station X is shown diagrammatically by the upper part of Fig. 1 and in transverse section by Fig. 2, and the instrument to be situated at station Y is shown diagrammatically by the lower part of Fig. 1 and in sectional elevation by Figs. 3 and 4.

A is the battery, which may be situated in any convenient place at either of the stations.

B is an electro-magnetic alarm of any desired construction, situated at any convenient place at station X.

1 2 3 is an open circuit, including the alarm B, and C is a push-button situated at station Y and adapted, when thrust in, to electrically connect the normally-separated contact-plates *c c* and thereby complete the circuit, permitting the current to pass and actuate the alarm B. This is simply an alarm-circuit of common form.

To enable the person at station X upon hearing this alarm to send back to the person at station Y one or another of a limited num-

ber of messages is the object of the present invention and of the mechanism hereinafter described. I desire to have it understood, however, that the mechanism hereinafter described may in some cases be used to advantage without the alarm-circuit already described, as will appear presently.

At station X is situated a box D, to the back *d* of which are secured twelve normally-separated contact-plates arranged in four parallel rows of three each and lettered, respectively, E E' E², F F' F², G G' G², H H' H². Between the plates F and G, F' and G', F² and G² are situated levers I, I', and I², respectively, preferably made of bone, ivory, or other non-conducting material. Each of these levers fits at its inner end between a pair of lugs *i*, secured to the back *d*, and is perforated for the passage of a rod or pin J, upon which it fulcrums. These levers pass through slots *d'* in the front of the box D, and are held in central position with relation to said slots by the plates F G, &c., which are made of spring metal. The plates F F' F², G G' G² are all electrically connected, say, by a wire 4, and said wire is in turn connected with the wire 1. The plates E E' E² are all electrically connected with each other, say, by a wire 5, and said wire is carried to an electro-magnetic alarm K, situated at station Y, and thence to the return-wire 3 or to ground. Hence it will be seen that by moving either of the levers in the direction of the featherless arrow, Fig. 2, the circuit 1 4 5 3 will be closed, permitting the current to pass and actuate the alarm K, said alarm continuing to sound until the circuit is again opened by a return movement of the lever. To the plate H is electrically connected a wire 6, which is carried to a pair of electro-magnets L at station Y, and thence to the wire 3, and the plates H' and H² are similarly connected by wires 7 and 8 with electro-magnets L' and L², respectively. The alarm K and magnets L L' L² are contained within a case M, the front of which supports the push-button C and has a window *m* for a purpose that will appear presently.

N N are a pair of brackets projecting from the back *m'* of the case, and O O are levers fulcrumed to said brackets, respectively. P is an armature supported at its ends by said

levers and so situated that when the magnets are excited it will be drawn down into contact with metallic washers Q, resting upon the helices, said washers being covered with paper or similar non-metallic material in order that the armature will be released the instant the circuit is broken. The armature is cut away at *p p* so that it will embrace the projecting cores *l* of the magnets and fit close to them without actual contact, the object being to increase the superficial area of the active portions.

R is a slide suspended from the ends of the levers O by cords or other suitable connections *o o* and fitting at its ends between guides *s s* on the inner faces of brackets S.

The parts N' O' o' P' p' Q' R' s' are similar to the parts N O, &c., and bear to the magnets L' the same relations as the parts N O, &c., bear to the magnets L, and so as to the parts N² O², &c., and magnets L², except that the slides R R' R² all bear different inscriptions. My invention is not limited to any particular inscription or inscriptions, as it will be understood that these are to be selected with a view to meeting the requirements of particular cases. For the sake of the description I will suppose that station X is an upper floor of an apartment-building and station Y the vestibule and that the slides bear the following inscriptions, respectively, to wit:

R, "Come up."

R', "Will come down."

35 R², "Engaged. Call again."

Similar inscriptions are placed over the levers I, I', and I², respectively. A caller presses the button C, whereupon the alarm B sounds. If the person at station X desires the caller to come up he takes hold of lever I and moves it first in the direction of the featherless arrow. This, as already explained, closes the circuit 1 4 5 3, causing the alarm K to sound, with a view to attracting the caller's attention. The lever is then moved in the direction of the feathered arrow, thereby breaking the circuit 1 4 5 3 and closing the circuit 1 4 6 3. This excites the magnets L and causes them to draw the armature P down to the position shown by Fig. 2, lifting the slide R, so that it can be seen through the window *m*. As soon as the lever I is released the parts resume their normal positions, the slide and its connections being sufficiently heavy to hold the armature normally elevated. Should the person at station X desire to send either of the other messages, the appropriate lever is selected and moved, as described.

It is obvious that the capacity of the instrument may be increased or decreased, as desired, by simply employing a greater or less number of circuits and their accessories, such as above described. It is also obvious that the instrument may be used without the alarm B and its circuit. For instance, the slides may bear the inscriptions "Messenger," "Carriage," and "Police," respectively. The

alarm K is then used for attracting the attention of a person who is supposed to be constantly in attendance at station Y for sending to station X whatever is called for.

T is a plate for concealing the working parts, it being slotted for permitting the necessary movement of the levers O².

The magnets L L' L² are inclined, with a view to dividing the movement of the levers O O' O² upon opposite sides of a line perpendicular to the line of movement of the slides R R' R².

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination, with the casing M, having the single window *m*, of a number of visible signals R R', the levers O O', by which they are carried, the armatures P P', carried by said levers, the electro-magnets L L', in operative proximity to said armatures, and a separate circuit for each magnet, said armatures being left free to automatically withdraw as soon as the current ceases to flow through the magnets, substantially as set forth.

2. The combination, with the casing M, having the single window *m*, of a number of slides R R', vertical guides *s s'* therefor, the levers O O', the cords *o o'*, by which the slides are suspended from the levers, the armatures P P', carried by said levers, the electro-magnets L L', and a separate circuit including each of said magnets, said armatures being left free to automatically withdraw as soon as the current ceases to flow through the magnets, substantially as set forth.

3. The casing M, having the single window *m*, a number of visible signals R R', electro-magnets L L', the wires 6 7, and the plates H H', in combination with the alarm K, the wire 5, the plates E E', a source of electricity, the wire 1 4, and means for placing said wire in electrical connection with either of the plates E, E', H, or H', substantially as set forth.

4. The casing M, having the single window *m*, a number of visible signals R R', electro-magnets L L', the wires 6 7, and plates H H', in combination with the alarm K, the wire 5, the plates E E', a source of electricity, the wire 1 4, the plates G G', to which said wire connects, and means for establishing electrical connection between said plates and the plates E E' or H H', respectively, substantially as set forth.

5. The electro-magnets L L', the wires 6 7, and the plates H H', in combination with the alarm K, the wire 5, the plates E E', in electrical connection with said wire, the plates F F', arranged opposite the plates E E', the plates G G', arranged opposite the plates H H', a source of electricity, the wire 1 4, connected therewith and with all of the plates F F' G G', and the levers I I', situated between the plates F and G and F' and G', respectively, substantially as set forth.

6. The combination, with a source of elec-

tricity, the wire 1 4, the spring-plates F and G, in electrical connection with said wire, the plate E opposite the plate F, the electro-magnetic alarm K, the wire 5, connecting plate E and alarm K, the electro-magnet L, the wire 6, connecting the plate H and magnet L, the lever I, situated between the plates F and G, and the inclosing case having slot d' , in which said lever works, substantially as set forth.

7. The combination, with the box D, having slots d' , of the levers I I', fulcrumed to the back d of said box and projecting through said slots, the spring-plates F F' and G G', secured to the back d and bearing against opposite sides of said levers, and the plates E E' and H H', secured to the back d and arranged opposite the plates F F' and G G', respectively, substantially as set forth.

8. The combination, with the visible signals R R', the levers O O', by which they are carried, the armatures P P', carried by said levers, electro-magnets L L', arranged in operative proximity to said armatures, and the electro-magnetic alarm K, of the casing M, inclosing all of said parts and having the single window m , before which any one of said signals may be displayed, and a separate circuit including each of said signal-magnets, said armatures being free to automatically withdraw as soon as the current ceases to flow through the magnets, substantially as set forth.

9. The combination, with the slides R R', levers O O', by which they are carried, the armatures P P', carried by said levers, the elec-

tro-magnets L L', the electro-magnetic alarm K, and the contacts $c c$, of the casing M, inclosing all of said parts and having the single window m , said casing being located at station Y, the push-button C for closing the contact $c c$, a separate circuit for each of the magnets, each circuit having a make and break at station X, an electro-magnetic alarm B at station X, and a circuit including it and the contacts $c c$, substantially as set forth.

10. The combination, with an electro-magnet having a projecting core, of an armature cut away so as to embrace the side of said core, and a washer Q, having a non-metallic coating, substantially as set forth.

11. The combination, with the electro-magnet L, having the projecting core l , and the washer Q, having the non-metallic coating, of the armature P, cut away at p to embrace said core, the levers O, by which said armature is carried, and means for applying the movement of said lever to the production of a useful result, substantially as set forth.

12. The combination of the slide R, the lever O, to which it is connected, the armature carried by said lever, the electro-magnet L, in operative proximity to said armature, and a circuit including said magnet, said magnet being inclined with respect to the plane of movement of the slide R, substantially as set forth.

WILLIAM EBERT.

Witnesses:

L. M. HOPKINS,

CHAS. B. ENGLISH.