

(No Model.)

E. M. EDGERTON.  
ELECTRICAL TIME ANNUNCIATOR.

No. 543,000.

Patented July 23, 1895.

Fig. 1.

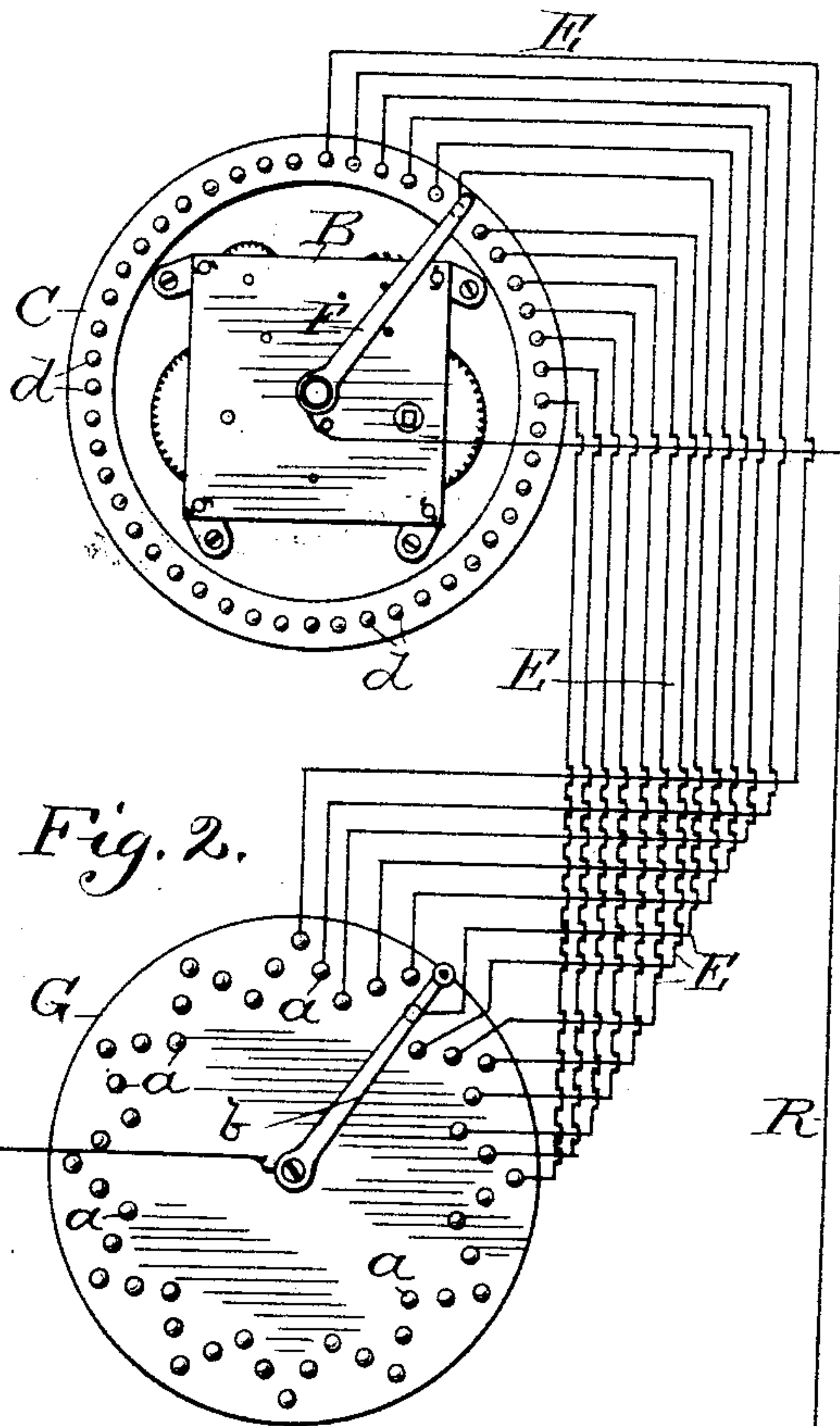
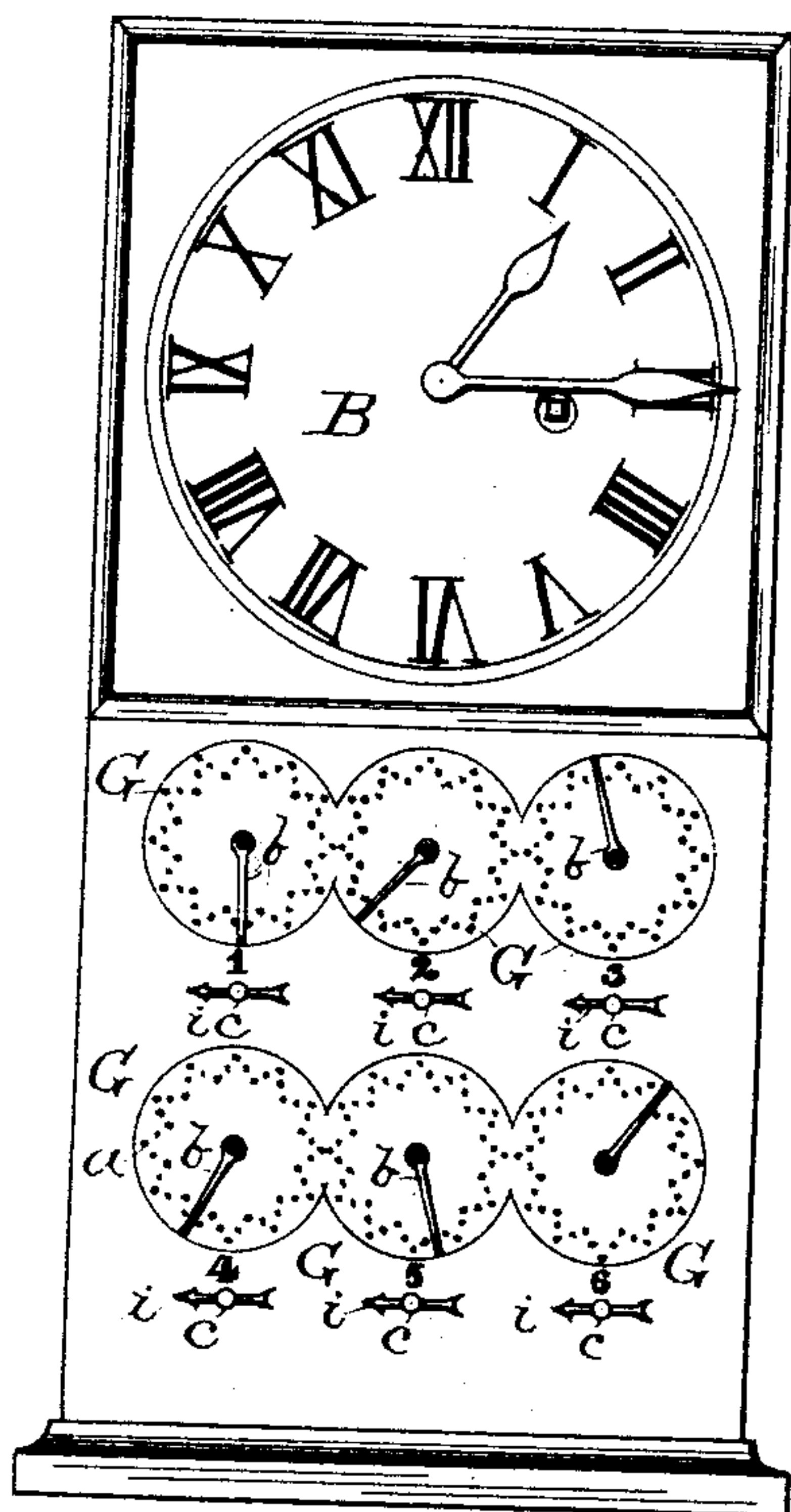


Fig. 2.

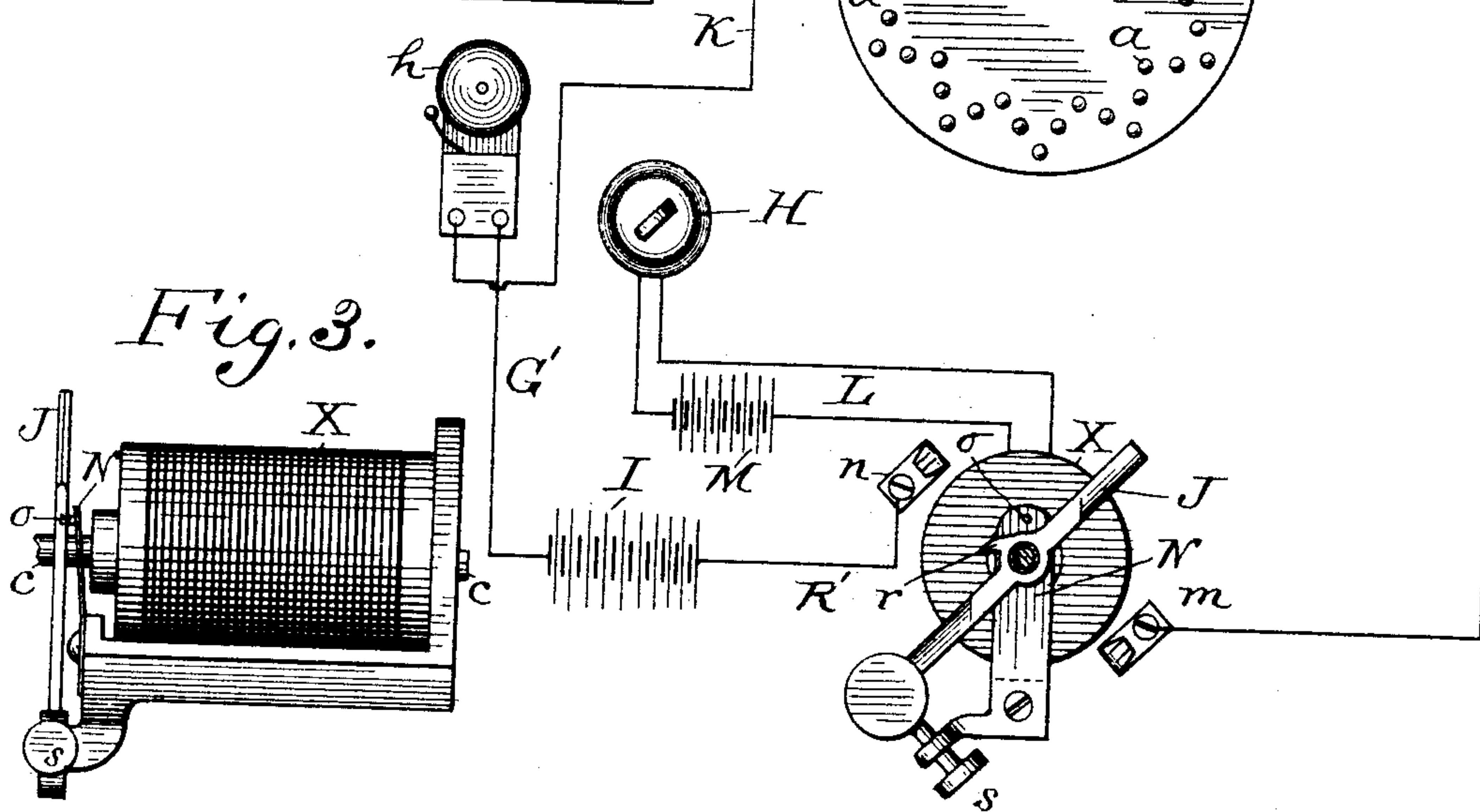


Fig. 3.

Witnesses:

R. J. Jaeger,

L. S. Thompson.

Inventor:

Edward M. Edgerton

By Frank D. Thompson  
Atty.



# UNITED STATES PATENT OFFICE.

EDWARD MUNSON EDGERTON, OF CHICAGO, ILLINOIS.

## ELECTRICAL TIME-ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 543,000, dated July 23, 1895.

Application filed February 12, 1892. Serial No. 421,352. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD MUNSON EDGERTON, of Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Electrical Switch or Index Boards, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates more particularly to improvements upon the electric alarm-clock for which I obtained Letters Patent of the United States March 17, 1891, No. 448,325; and its object is to enable an alarm or signal to be sounded or made in one or several different rooms at the same time or at different times, and which will continue for a given time unless sooner terminated by the occupant of the room, substantially as hereinafter fully described, and illustrated in the drawings, in which—

Figure 1 shows a front elevation of a clock having my improvements applied thereto arranged for a six-room alarm, and Fig. 2 is a diagrammatical view showing the connection between the annunciator-index and annulus. Fig. 3 is a detail view showing a side elevation of the magnet, switch-bar, and releasing devices therefor.

I employ substantially the same clockwork B, substantially the same annulus C, and substantially the same arm F for establishing the contact between the said annulus and clock as are employed in the subject-matter of my aforesaid Letters Patent. I also employ substantially the same switchboard G, but with this important exception, to wit: instead of having "contact-plates" which must be united by a metallic pin inserted between them, I provide a number of contact-points *a*, the heads of which project slightly from the outer surface of the switchboard, which I dispose of in a circular arrangement around the pivot of the brush *b*, so that any one of said points can be closed to the circuit by turning the brush *b* until it comes in contact with the said point. The brush is secured to the end of a suitable sleeve which passes through and is journaled in the switchboard and is electrically connected to the positive end of the wire K. The reason I arrange the contact-points *a* in a circle is be-

cause I can thus economize space and greatly simplify and economize on the cost of construction over the arrangement for closing the circuit illustrated in the drawings of my aforesaid patent. These points *a*, it will be understood, are each connected by a suitable wire E to some one of the metallic strips *d* embedded in the annulus, according to the arrangement described in the aforesaid patent. I employ one circle of contact-points or "index" for each arm in connection with which my improvements are used; and for the purpose of still further economizing space on the switchboard I dispose of the contact-points in each index so as to make them describe the outline of a twelve-pointed star, the points of said stars indicating the hours, and the three intermediate points of the star representing intervals of fifteen minutes apart. Now the brush *b* is turned until it is in contact with the points *a*, indicating any time at which it is desired to signal or sound the alarm in the room which is in the same circuit as said index. When the said arm F closes the circuit by coming in contact with the strip *d* in the annulus, which is electrically connected to the contact-point just referred to, the current passes from the battery I over the wire G' to the bell *h*, then over the wire K to the brush *b*, through the contact-points over the wire E to the annulus, from thence through the arm F to the clock, and from the clock over the wire R back to the battery. In the circuit thus established there is a switch, which is preferably placed between the clock work and the battery, and which is operated to open the circuit by the act of the occupant of the room in which the bell *h* is located by pushing on the button H. This switch consists of a suitable spindle *c*, extending through and journaled in the front of the clock-frame, below the switchboard. Its front end is provided with an arrow-shaped pointer or indicator *i*, and its rear end extends through but is insulated from the magnet X and has mounted thereon the switch-bar J. The switch-bar J is secured to the spindle about its center of length, and the end of one arm of said bar is weighted, so that when released it will turn in the direction in which said weighted end would naturally gravitate. The normal position of this bar,



when the indicator *i* is in a horizontal position, is such that the plain end thereof will be in contact with the brush *m*, secured to the positive end of the wire *R*, and the opposite  
 5 end will be in contact with the brush *n* on the negative end of the wire *R'* leading direct to the battery. These brushes are made of flexible metal and are so shaped that when the said bar is released they assist in giving it  
 10 impetus to make the bar turn and thus break the circuit normally established through the wires *R R'*.

The magnet is closed to the same auxiliary circuit *L* that the push-button *H* is in, and to  
 15 which current is supplied by the battery *M*, so that when the auxiliary circuit is closed by pushing on the push-button *H* the magnet is energized. When this magnet is energized it attracts and draws toward it the armature *N*.  
 20 This armature has a flexible metal shank, which is secured to an arm extending from the lower part of the frame carrying the magnet, and its upper end has an opening sufficiently large for the adjacent end of the spindle to easily pass through and has an out-  
 25 wardly-projecting pin *o*, which, when said bar is in the normal position hereinbefore referred to, enters behind the spur *r*, projecting from the upper edge of the boss of the switch-  
 30 bar, and holds said bar in the position in which it would be when it is closed to the brushes *m* and *n*. When the auxiliary circuit is closed the magnet attracts the armature, thereby withdrawing the pin *o* from be-  
 35 hind the spur *r* and releasing the bar, which immediately turns until its weighted end strikes against and is stopped by the gage-screw *s*.

The object of thus limiting the movement  
 40 of the weighted end of the bar by the gage-screw *s* is to prevent the spindle from turning any farther than would be required for the indicator on the outer end thereof to point to the index just above it, so that when the  
 45 occupant of the room in which the bell is sounded responded by pushing upon the push-button the indicator pointing to the index would be considered as a return-signal to show that the alarm had been effective.

50 It will be understood that there is an index for each room in conjunction with which my improvements are used, and there is likewise a return-signal and switch for breaking the circuit through wires *R R'*. When there is  
 55 more than one room in my improved system, for economy of construction I electrically connect the corresponding contact-points of each index. There is, however, necessity for an auxiliary circuit for each room, so that there  
 60 may be a distinct return-signal therefrom, and so that the breaking of the circuit of the wires *R R'* used in conjunction with one indicator may not be affected by the indicating mechanism of other rooms.

65 What I claim as new is—

1. The combination with an electric circuit,

clock work, annulus, an arm *F*, switch-board, and brushes *m* and *n*, of a switch-bar *J* normally connecting said brushes which constitutes the terminals of a break in said circuit, 70  
 a magnet, an auxiliary electric circuit, and a push-button for closing said auxiliary circuit, thereby vitalizing said magnet and causing the release of said switch-bar so as to open the main circuit, as set forth. 75

2. The combination with an electric circuit, clock work, annulus, arm *F*, and switch-board, of a switch-bar *J* suitably pivoted about its center of length and having one of its ends 80  
 weighted, which normally connect the terminals of a break in the said circuit, a magnet, an auxiliary electric circuit, and a push-button for closing said auxiliary circuit, thereby vitalizing said magnet and causing the release of said switch-bar so as to open the main cir- 85  
 cuit, as set forth.

3. The combination with an electric circuit, clock work, annulus, arm *F*, and switch-board, of the pivoted switch-bar *J* normally connecting the terminals of a break in said circuit 90  
 and provided with the spur *r*, a magnet, and armature provided with a pin *o* an auxiliary electric circuit, and a push-button for closing said auxiliary circuit thereby vitalizing said magnet and causing the release of the switch- 95  
 bar so as to open the main circuit, as set forth.

4. The combination with an electric circuit, clock work, annulus, arm *F*, a series of contact-points arranged in a circular manner around the brush *b*, and said brush pivoted 100  
 in the center of said series of contact-points and capable of contact therewith, and, together with said points, constituting the terminals of a switch in said circuit, of a switch- 105  
 bar *J* normally connecting the terminals of a break in said circuit, a magnet, an auxiliary electrical circuit, and a push-button for closing said auxiliary circuit thereby vitalizing said magnet and causing the release of said switch so as to open the main circuit, as set 110  
 forth.

5. The combination with an electric circuit, clock work, annulus, arm *F*, a series of contact-points arranged in a circular manner around the brush *b*, and said brush pivoted 115  
 in the center of said series of contact-points and capable of contact therewith, and, together with said points, constituting the terminals of a switch in said circuit, of the switch-bar *J*, spindle *c* on the rear end of 120  
 which said switch-bar is mounted, an indicator *i* on the forward end thereof normally connecting the terminals of a break in said circuit, an auxiliary electrical circuit, and push- 125  
 button for closing said auxiliary circuit thereby vitalizing said magnet, and cause the release of said switch-bar so as to open said main circuit, as set forth.

EDWARD MUNSON EDGERTON.

Witnesses:

E. A. THEARLE,  
 W. E. PAGE.