

(No Model.)

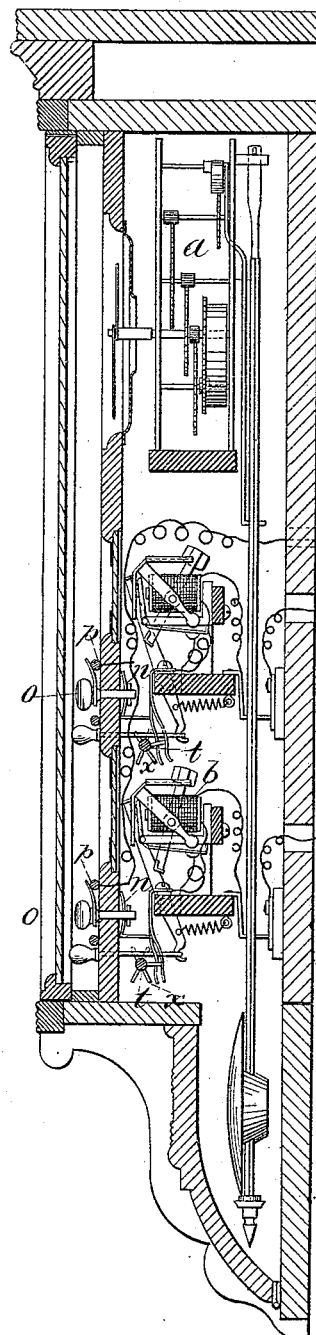
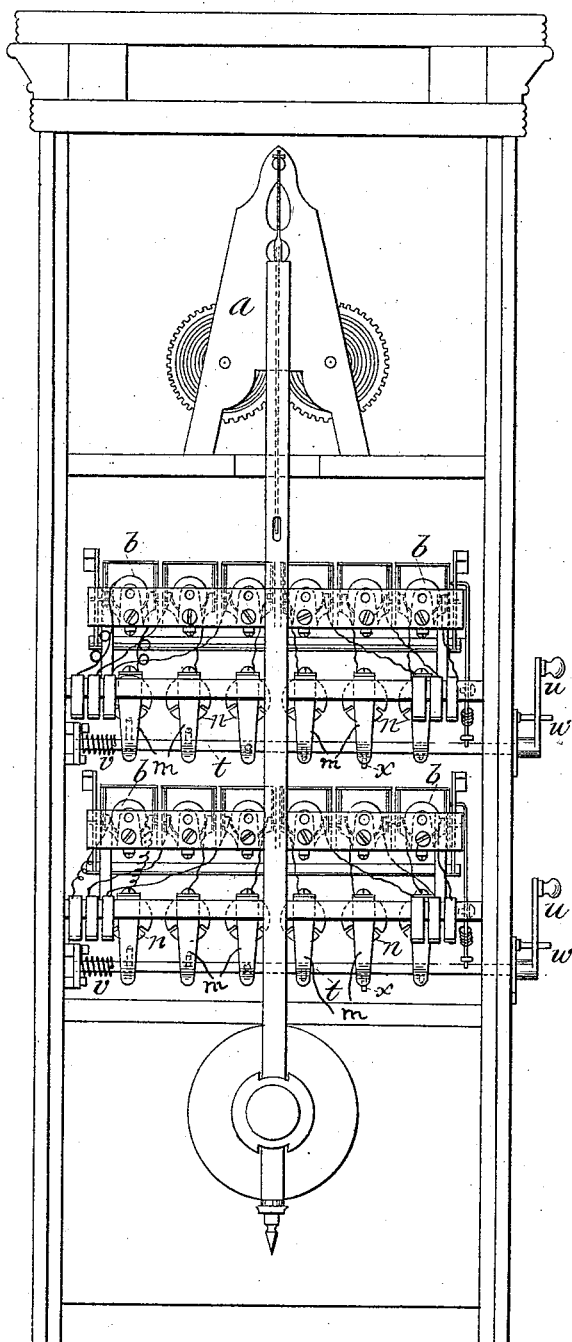
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D. ROUSSEAU.

ELECTRICAL ANNUNCIATOR.

No. 346,609. *Fig. 1.*

Patented Aug. 3, 1886.
Fig. 2.



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(No Model.)

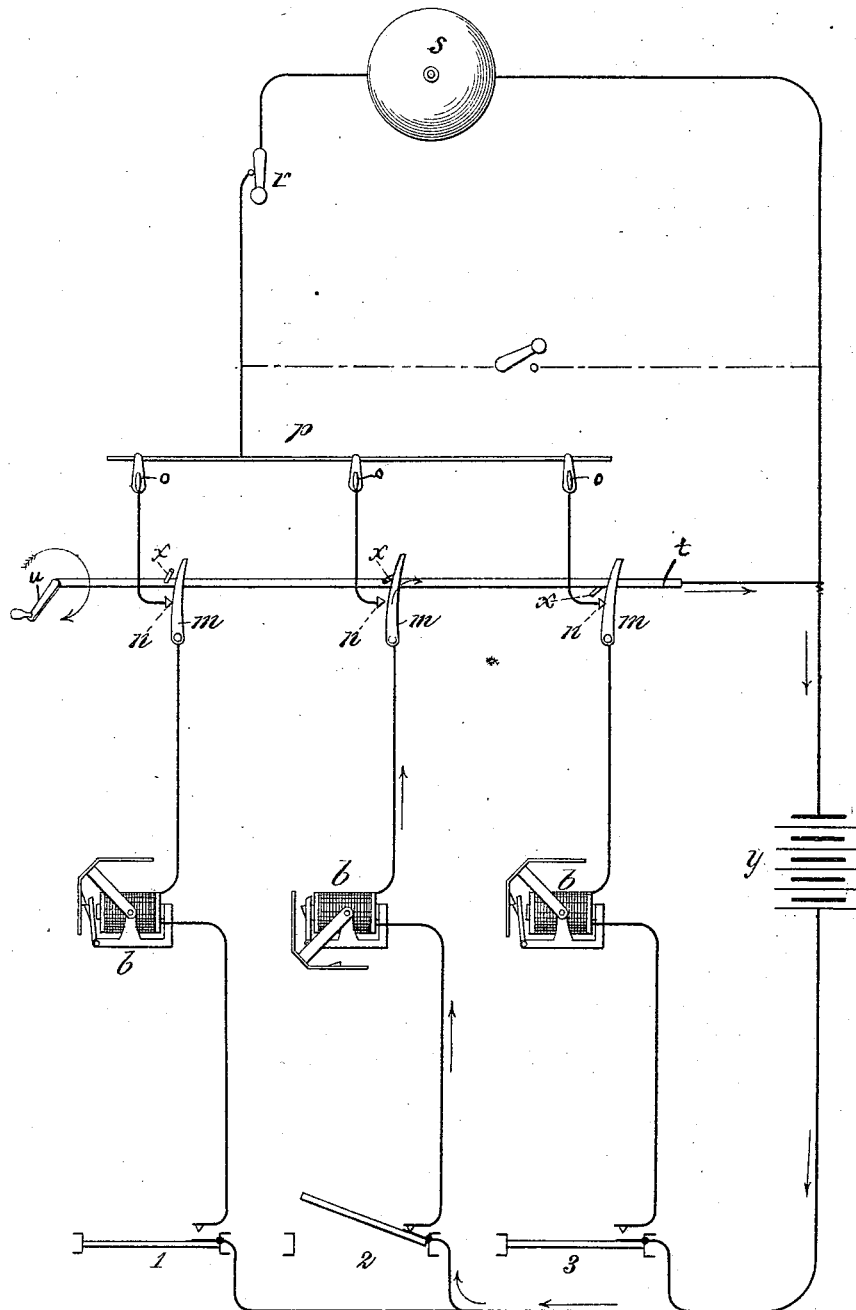
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Fig. 3.



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UNITED STATES PATENT OFFICE.

DAVID ROUSSEAU, OF NEW YORK, N. Y.

ELECTRICAL ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 346,609, dated August 3, 1886.

Application filed August 22, 1881. Serial No. 40,418. (No model.)

To all whom it may concern:

Be it known that I, DAVID ROUSSEAU, of New York city, county and State of New York, have invented certain new and useful Improvements in Switches for Electrical Annunciators, Alarms, or Signals, of which the following is a specification.

This invention relates to tell-tale or testing switches; and it consists in the peculiar combinations, and the construction and arrangements of parts, as hereinafter more fully described and claimed.

In the drawings, Figure 1 is a rear elevation of an annunciator with the back board removed to better illustrate my invention. Fig. 2 is a vertical section of the same. Fig. 3 represents, diagrammatically, the circuit of the apparatus and the construction and action of the tell-tale or testing switch.

a and *b* indicate the clock-movement and annunciator magnets, respectively.

The annunciator is of course usually placed in the bedroom of the master or mistress of the house, and on the upper or front corner of the case is arranged the usual switch, *r*, termed the "cut-off" switch, by which the general circuit may at any time be broken, so as to throw all sections of the burglar-alarms throughout the house out of action. This switch is of course usually opened through the day, so as to leave the windows and doors free to be opened without sounding an alarm. At night, however, before the master or mistress retires, this switch (shown at *r* in Fig. 3) is of course closed to set the apparatus for its detective work during the night.

Now, in Fig. 3, 1 2 3 indicate the several windows or doors to be protected, and *y* the battery, one wire of which connects with one part of the contact-maker on the doors, while the other part of the contact-maker connects with one end of the corresponding annunciator-magnets, *b b*, the connection being of course made in the manner shown and described on reference to Figs. 1 and 2, but not shown in Fig. 3. The other wire of the battery connects with the alarm-bell *s*, and from the bell the wire continues to the cut-off switch *r*, and from the switch goes to the individual switch-bar *p*, (see, also, Fig. 2,) on which the individual switches *o o*, corresponding to each annun-

ciator-magnet *b*, turn. These switches or turn-buttons *o* connect with the disks *n n*, (see Figs. 2 and 3,) on which the springs *m m* rest, and these springs connect with the other end of annunciator-magnet *b b*, as shown in Fig. 2, and diagrammatically in Fig. 3. It will hence be seen that the cut-off switch *r* controls the opening or closing of the general circuit of the apparatus to set it for its detective work or throw it out of action, as circumstances require, and it will be readily seen that before the apparatus is set and left for the night it is first necessary to know what windows and doors are then open, and to close the same before retiring. Now, of course by closing the cut-off switch *r* the tag of the magnet corresponding to any open door or window would fall and at the same time sound the alarm-bell, thus showing what window or door was open, but as it is not desirable to have the alarm sound in these cases, it has been usual heretofore to use a switch between the bar *p* and the battery-wire, so as to exclude the bell, as indicated by dotted lines in Fig. 3, for the special purpose of testing the circuit to see what windows or doors are open by the dropping of the tags corresponding thereto without sounding the alarm. It may now be readily understood, however, that it is objectionable to have the test-switch act on the entire or general circuit, as it does in both the instances above noted, for on reference to Fig. 3 it will be observed that the annunciator-magnets are circuited in multiple arc with the battery, and hence if a number of sections (door or windows) were open at the same time and the general-circuit switch were closed the battery-current would have to divide itself between all the magnets which thus happened to be thrown in circuit, and unless the number of magnets was small or the battery strong the result would be that no one would be sufficiently magnetized to attract its armature and drop its tag; hence no indication would be given, or, at best, but an uncertain indication. Now, in distinction from this, my improved tell-tale or testing-switch acts to first break each magnet individually and separately from the general circuit, and then throw each one successively into short circuit with the battery, thus bringing the entire battery-current to act on one mag-

net at a time, and hence if any magnet happens to be in closed circuit by reason of its corresponding door or window being open, it will become at once strongly magnetic and drop its tag, thus giving the desired indication in a positive and certain manner, no matter what number of sections happen to be open at the same time, and though the battery may be quite weak. In Figs. 1, 2, and 3, *t* indicates this testing-switch, which is formed as a rock-shaft and extends along under the springs *m m*. Its inner end is journaled within the case, (see Fig. 1,) and the outer end passes through the side of the case, and is provided with a crank-handle, *u*, on the exterior, by which it may be turned, while the inner end is fitted with a torsional spring, *v*, as seen in Fig. 1, which tends to constantly turn the shaft into its quiescent or inactive position and force the crank against a stop-pin, *w*, on the exterior of the case, which thus holds it stationary. Now, this shaft is connected with one pole of the battery, as shown in Fig. 3, and it is provided along its length with a number of radially-projecting pins, *xx*, corresponding with the several contact-springs *m m*, (see Figs. 1, 2, and 3,) which pins are, however, arranged in different progressive radial positions, or in spiral order around the shaft, as seen best in Figs. 2 and 3. When the shaft is at rest, none of the pins *x* will touch the springs *m*; but if the shaft be revolved, the pins *xx* will successively contact with the springs *m m*, (see Figs. 2 and 3,) and raise each spring separately and successively from the disks *n n*, thus cutting each magnet successively out of the general circuit, and simultaneously throwing it into a short circuit with the battery, thus causing the entire battery-current to bear on one

section at a time, as well illustrated in Fig. 3; hence whatever section or sections of the house happen to be open will be at once indicated by the drop of the tag corresponding thereto, for the entire battery-current is momentarily employed for this purpose on each magnet separately, thus producing the desired result in a very simple and certain manner, and obviating the employment of very strong batteries, and thus effecting an important improvement by very simple means.

It will be observed that I have illustrated and described the testing-switch as making a short circuit with one magnet at a time; but it will be readily understood that it may be organized to throw two or any small number of magnets into short circuit at the same time without departing from the spirit of my invention. This may be done in the case of very large annunciators having numerous sections and a strong battery; but in general the single successive circuiting of the magnets will be preferable.

What I claim is—

The combination, with an electrical annunciator having a number of annunciator-magnets arranged in multiple-arc circuit with the battery or source of electricity, of a testing-switch of substantially the kind described, organized to cut the magnets from the multiple circuit and put them into direct or short circuit with the battery in a separate or successive manner, substantially as and for the purpose set forth.

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