

No. 677,829.

Patented July 2, 1901.

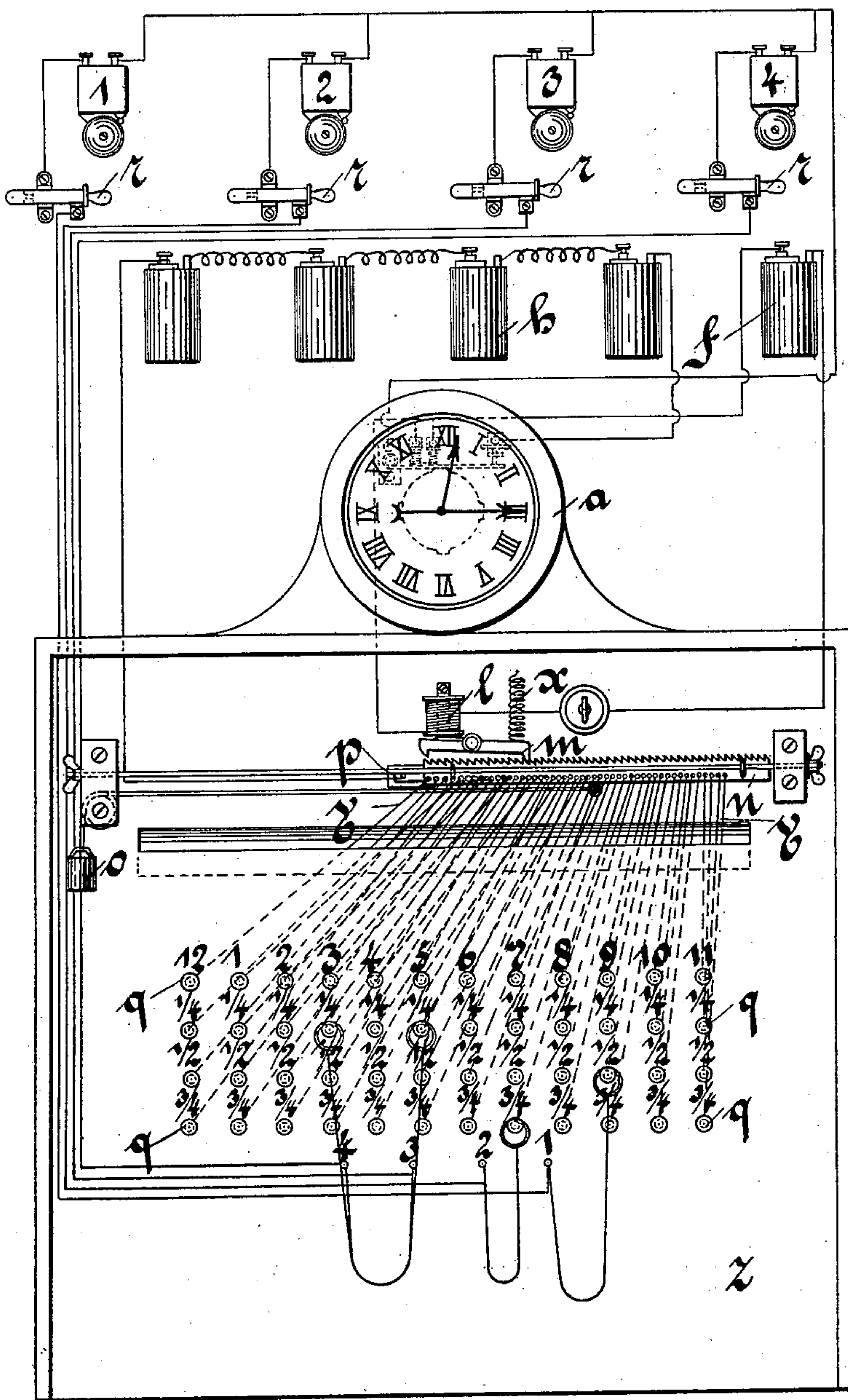
M. WESCHER & P. WOLLENHAUPT.
ELECTRIC ALARM.

(Application filed Dec. 21, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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2 Sheets—Sheet 2.

Fig. 2.

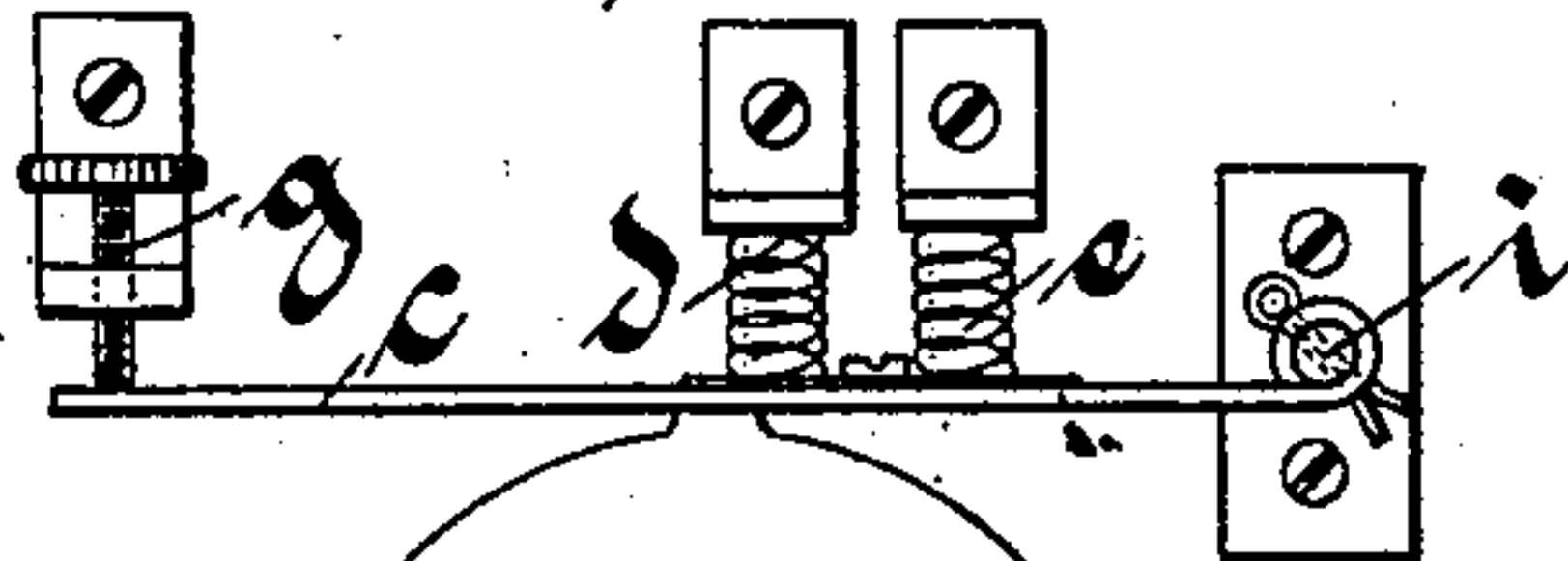


Fig. 3.

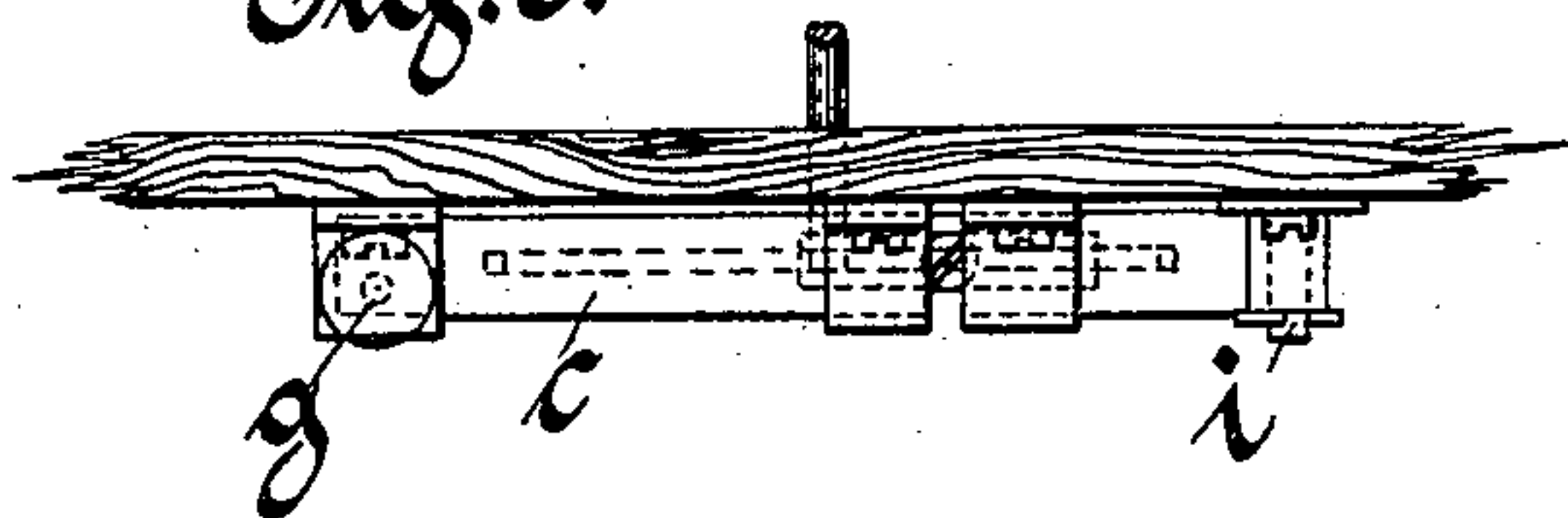


Fig. 4.

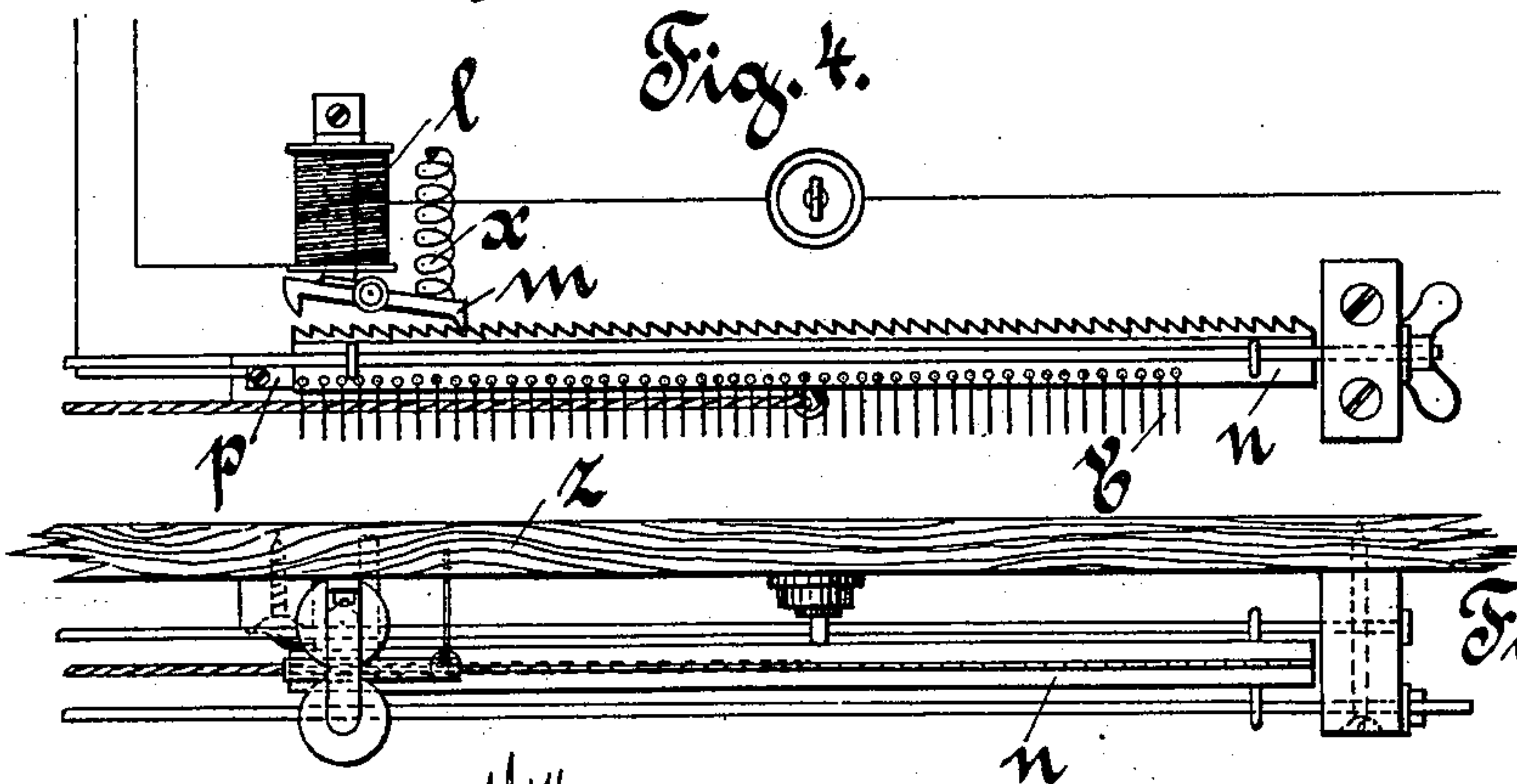


Fig. 5.

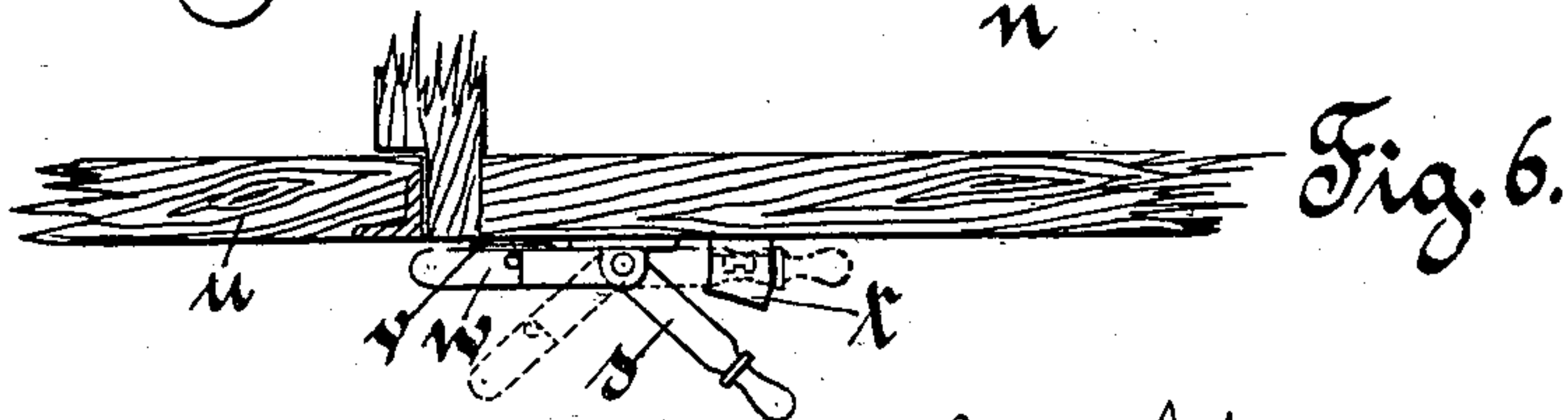


Fig. 6.

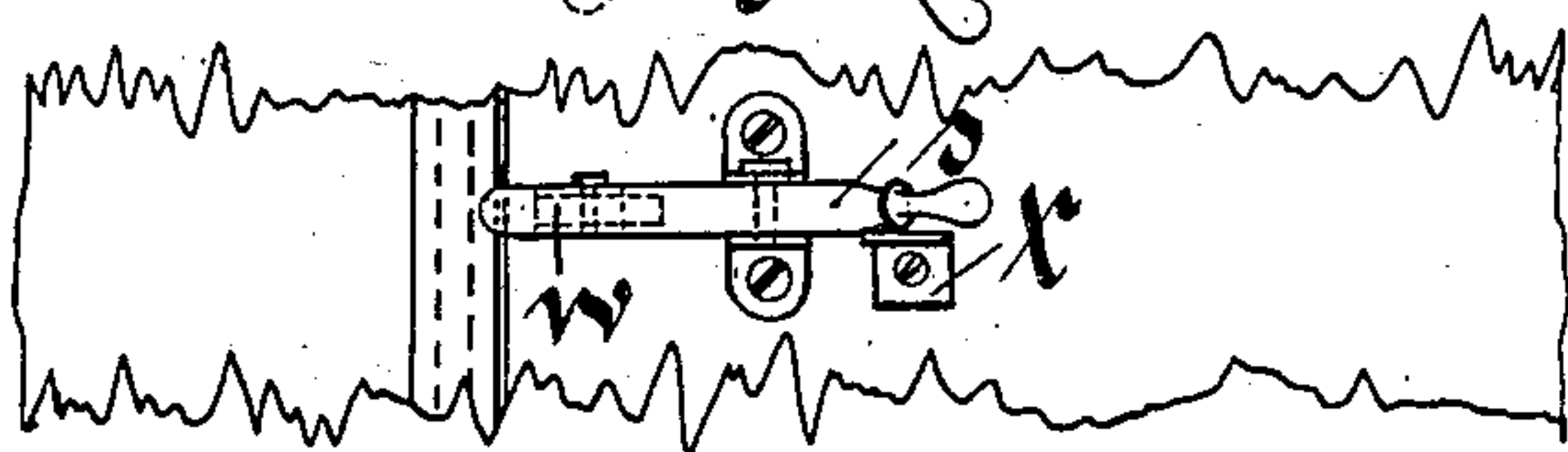


Fig. 7.

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ELECTRIC ALARM.

SPECIFICATION forming part of Letters Patent No. 677,829, dated July 2, 1901.

Application filed December 21, 1899. Serial No. 741,140. (No model.)

To all whom it may concern:

Be it known that we, MAX WESCHER and PAUL WOLLENHAUPT, subjects of the King of Prussia, German Emperor, residing at Cologne, in the Province of the Rhine, Kingdom of Prussia, German Empire, have invented a new and useful Improvement in Electric Alarms, of which the following is specification.

Our invention relates to an electric alarm system by means of which alarm-signals can be given in different rooms at different times destined a long time before. We attain this by the system illustrated in the accompanying drawings, in which—

Figure 1 is a view of the whole system and a diagrammatic view of the circuits. Fig. 2 is a back view of the clock effecting the closing of an electric circuit. Fig. 3 is an upper view of the parts shown in Fig. 2. Fig. 4 is a view of a periodically-advancing toothed bar and of the armature releasing this bar. Fig. 5 is an upper view of the parts shown in Fig. 4. Fig. 6 is an upper view of a circuit-closer provided in each room. Fig. 7 is a front view of the same.

In the drawings the system is represented for a plan of four rooms, in which every quarter of an hour alarm-signals can be given.

On the back side of a clock *a*, Fig. 1, a wheel *b*, Fig. 2, provided with four teeth, is fixed to the axle of the minute-hand of a double-handed clock. The teeth of this wheel *b* are adapted to raise the contact-lever *c*. In raising this contact-lever it is at first pressed against the two spiral springs *d* and *e*. These springs are connected with the poles of a battery *f*, Fig. 1, so that by pressing the contact-lever *c* against these springs *d* and *e* the circuit of the battery *f* is closed. If now the contact-lever *c* is further raised, it touches the screw *g*, Figs. 2 and 3, which is connected with one pole of a second electric battery *h*, Fig. 1, the other pole of which is connected with the axle *i*, Figs. 2 and 3, around which the contact-lever *c* turns. In the circuit of the battery *f*, Fig. 1, an electric magnet *l* is provided which can effect a pivoted armature *m*. This armature is situated above a toothed bar *n*, which is moved by means of the weight *o*. The armature *m* is provided with a nose

on each end which fits into the teeth of the toothed bar *n* in the way of the escapement of a clock. By the up-and-down motion of the armature *m*, effected by closing and breaking the circuit of the battery *f* and by the effect of a spiral spring *x*, the toothed bar *n* will advance one tooth in the direction in which it is drawn by the weight *o*. In the toothed bar *n* wires *y* are fixed, so that the ends of these wires project on the back side of the same. When the toothed bar *n* advances, the projecting ends of these wires *y* slide over a plate or spring *p*, fixed behind the toothed bar *n*. Hereby it is attained that the projecting ends of the wires successively come in contact with the plate or spring *p*. Now as the magnet is energized every quarter of an hour the toothed bar *n* will advance one tooth at this time, and therefore every quarter of an hour the end of another wire will come in contact with the plate or spring *p*. The wires *y* are fixed with their free ends to pins *q*, screwed into the board *z*, upon which the whole apparatus is mounted. These pins *q* are each provided with the nomination of the time at which the projecting end of the wire affixed to this pin comes in contact with the spring or plate *p*.

In case repeated alarm-signals shall be given—that is to say, in case a quarter of an hour after the first alarm-signal a second signal shall be given—the plate or spring *p* is arranged in that way that it touches two projecting ends of the wires *y* at the same time. In this case an interrupter must be provided in each room, in order to be able to break the circuit in case the second signal is not necessary. As it would be very troublesome to close the circuit by hand after it has been interrupted, an automatic circuit-closer *r*, Fig. 1, is provided. This circuit-closer consists of an angle-lever *s*, Figs. 6 and 7, the one arm of which is usually in contact with the contact-plate *t*. As soon as this arm is drawn away from the contact-plate the current is interrupted, so that the bell will not ring any more. In order to be able to restore the current automatically, the angle-lever *s* is situated in that way that as soon as the door *u* of the room in which the bell is arranged is opened the angle-lever *s* returns to

its former position, thereby restoring the contact. In order to prevent the lever *s* returning to the position in which the contact is broken as soon as the door is closed again, the lever is provided with a hinge *w*, held in its position by a spring *v*. As may be seen from the drawings, this hinge is only turnable in one direction, so that when the door is closed only this hinge-piece turns, while the lever *s* rests in its position.

In order to be able to give alarm-signals every time in each of the rooms, the wires which lead the current of the battery *h* back are fixed to the board *z* and provided with the number of the room from which they come. The free ends of these wires are provided with a metallic ring, which can be put over each of the pins *q*.

The operation of my device is as follows: If, for instance, the system is employed for a hotel and the guest living in the room No. 3 wishes to be waked up at 3.15 o'clock, he puts at any time before the ring of the wire provided with his room-number over the pin marked "3.15." The projecting end of the wire fixed with its other end to this pin comes, as shown above, at 3.15 o'clock in contact with the plate or spring *p*. A short time afterward when the contact-lever *c* is farther raised by the rotation of the wheel *b*, so that the lever touches the screw *g*, the circuit of the battery *h* is closed, so that the current coming from the battery goes through the screw *g*, the contact-lever *c*, the axle *i*, the bell 3, the wire connecting this bell with the board *z*, the pin marked "3.15," the wire connecting this pin with the toothed bar *n*, the plate or spring *p*, which is just in contact with the projecting end of this wire, and returns to the battery *h*, ringing the bell No. 3.

The duration of each alarm-signal depends upon the length of the teeth of the wheel *b*, Fig. 2, and can be prolonged or diminished by replacing the wheel *b* by another one with longer or shorter teeth.

As soon as the guest wishes to stop the alarm-signal he can do so by means of the interrupter *r*. Now it would be necessary afterwards to close the circuit again in order to be able to give alarm-signals in the same room on the next morning. In order to avoid that, this must be done by hand. The institution described above is provided so that the contact is restored as soon as the door of this room 3 is opened—that is to say, as soon as the guest leaves this room.

What we claim as our invention, and desire to secure by Letters Patent of the United States of America, is—

1. In an electric alarm the combination of a clock, a toothed wheel fixed upon the axle of the minute-hand of this clock, a contact-lever, situated above the toothed wheel, an electromagnet *l*, an armature *m*, a toothed bar *n*, a weight *o* for moving this bar, electric wires *y*, fixed to the toothed bar, a contact-post *p*, pins *q*, provided with time-marks and metallic rings fixed to the wires coming from the different rooms, as and for the purpose set forth.

2. In an electric alarm the combination of a clock, a toothed wheel fixed upon the axle of the minute-hand of this clock, a contact-lever, situated above the toothed wheel, an electromagnet *l*, an armature *m*, a toothed bar *n*, a weight *o* for moving this bar, electric wires *y*, fixed to the toothed bar, a contact-post *p*, pins *q*, provided with time-marks, metallic rings fixed to the wires coming from the different rooms, and an interrupter consisting of an angle-lever and a contact-plate.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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Witnesses:

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