

W. A. SWAREN.
SIGNALING APPARATUS.
(Application filed Jan. 2, 1900.)

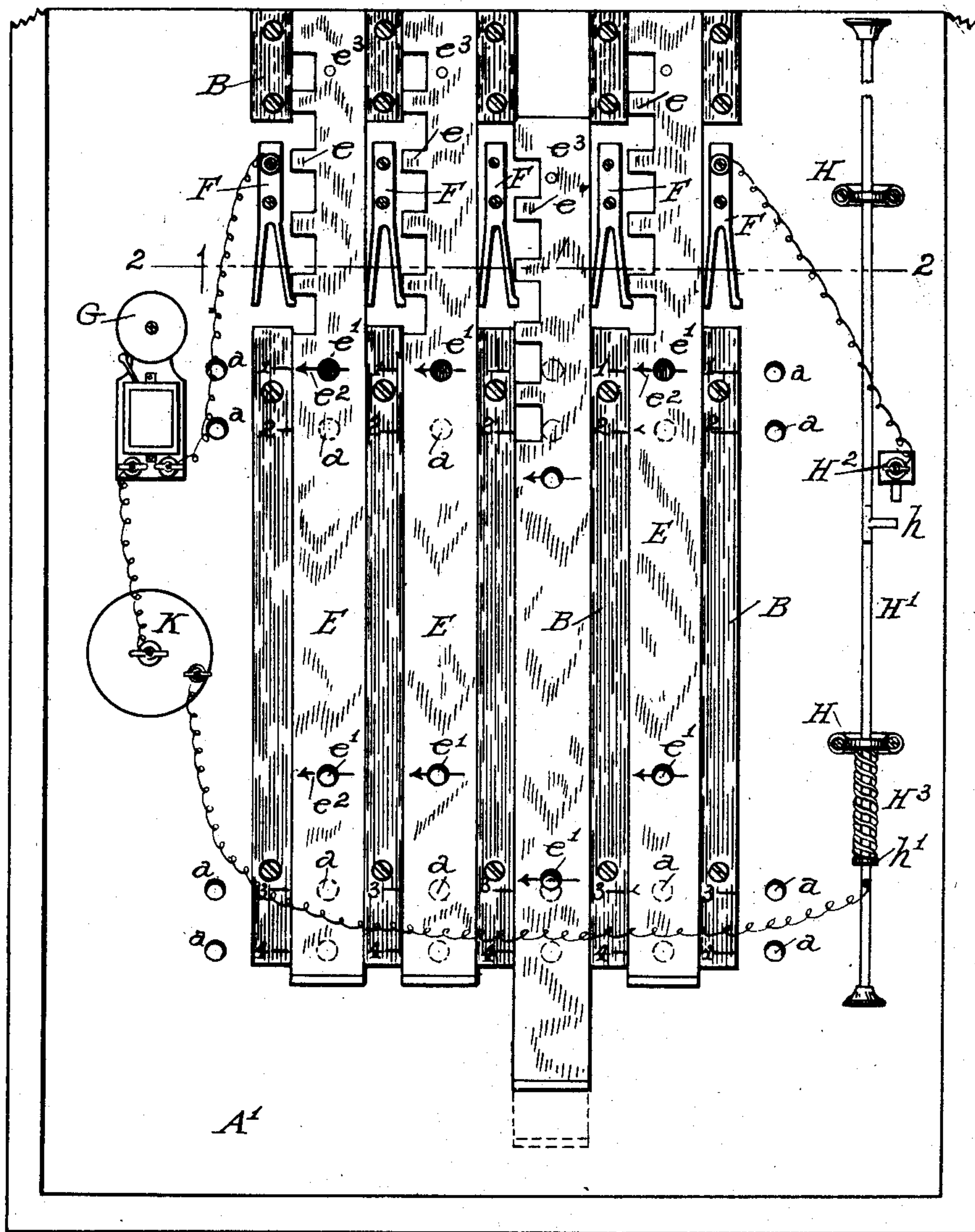


FIG. 1

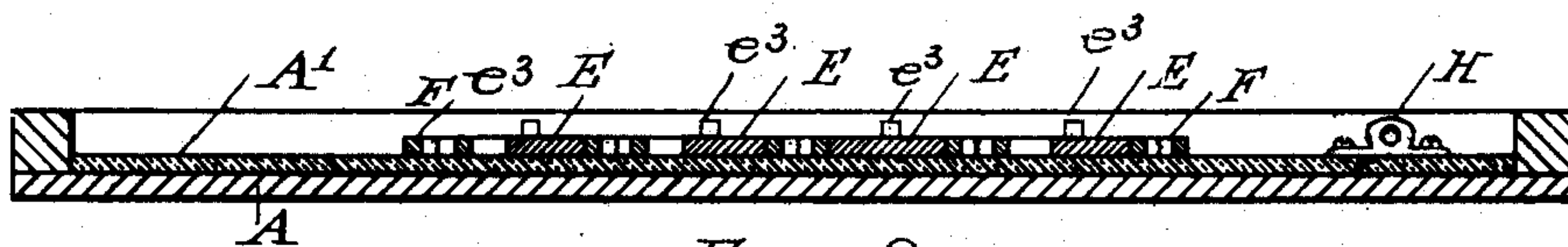


FIG. 2

WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM A. SWAREN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
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SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 667,805, dated February 12, 1901.

Application filed January 2, 1900. Serial No. 56. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. SWAREN, a citizen of the United States, residing at No. 181 Dearborn avenue, in the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Signaling Apparatus, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use my said invention.

My invention relates to apparatus of that class in which a number of movable parts are capable of operative adjustment in a number of different positions—such, for example, as the system of levers controlling interlocking railway-switches or a system of slides or levers employed in voting-machines or analogous mechanisms.

The mechanism herein shown and described sets forth my invention as applied to a voting-machine.

With slight modification, which will be apparent to any one skilled in the art, my apparatus may be employed in other mechanisms—such, for example, as the system of locking-levers of interlocking railway-switches or in other mechanisms in which it is desirable to apprise the operator by audible signals when all of the parts are properly disposed in the desired relation to each other, the construction and arrangement being such that the signal will sound only when the parts are accurately adjusted in the desired relation to each other.

The purposes of my invention are to provide conductive devices of novel and improved construction, to provide means for electrically insulating said conductive devices from each other, to provide circuit-closers of novel and improved form, and to provide a testing device of novel and improved construction.

With these ends in view my invention consists of the novel features of construction and combinations of parts shown in the annexed drawings, to which reference is hereby made, and hereinafter particularly described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a top plan view of the complete apparatus, and

Fig. 2 is a vertical transverse section on the line 2 2 of Fig. 1.

Similar letters of reference designate like parts in both views.

The apparatus may be mounted on a base A, covered by a plate A', of insulating material, such as hard rubber. Guides B, of insulating material, are secured on top of the plate A'. Slides E fit and slide between the guides B and have on one of their edges lugs e, as shown. The slides E are pierced by holes e', which in different positions of the slides register with corresponding holes a in the plate A', the last-named holes being equal in number to the total number of units subject to the operation of the apparatus.

The circuit-closers consist of bifurcated springs F, secured in any suitable way to the plate A'. An electric bell G, of any suitable form, is placed in a convenient position, preferably on the plate A', as shown. Posts H are secured to the base A' and have near their upper extremities eyes in which the rod H' slides. A suitably-placed battery K has one terminal connected with the bell G and the other terminal connected with the rod H'. A post H² is secured to the plate A' and is connected by a wire with the contiguous spring F. The bell G is also connected by a wire with one of the springs F.

When used in connection with a voting-machine, the plates A and A' are preferably pierced by a number of series of registering holes intercommunicating with a suitable box or compartment in which the ballots passing through the registering holes may be deposited. Said series correspond in number to the number of parties having candidates to be voted for, and the total number of holes in all of the series is equal to the total number of candidates or measures to be voted upon. The number of slides E is preferably the same as the number of offices and measures to be voted upon, either for or against. In such use of the apparatus the slides E are respectively slid inward or outward, as may be necessary, to bring a hole e' in each of the slides into registry with a hole a in the plate A' corresponding to the party to which the candidate belongs for which the voter wishes to deposit a ballot. In order to vote for candidates

for all of the offices represented by the slides, or to vote for or against all measures represented by a slide, or to indicate a purpose to refrain from voting as to any candidate or measure, it is necessary to move every one of the slides into such position that a hole e' in each slide will be in registry with a hole a in the plate A' , and when this occurs each one of the circuit-closers F will be in contact with a lug e on a slide E and the circuit may be closed and the signal sounded by moving the bar H' to bring the pin h into contact with the post H^2 . I do not, however, restrict my claims to the precise construction and arrangement of parts which I have shown and described, since it is obvious that the holes in the slides E and in the plate A' may be differently arranged or may, if used in apparatus other than a voting-machine, be entirely dispensed with without departing from the spirit of or sacrificing the advantages of my invention.

Instead of having holes a in the base A' and holes e' in the slides E registrable with the holes a , according to the position of the slide or slides, any other suitable means may without departing from my invention be employed to determine or indicate the proper setting of the slides for the purpose desired—such, for example, as graduations “1,” “2,” “3,” &c., on the guides, with which pointers e^2 or equivalent devices on the slides E register at different stages of movement of the slides corresponding to and determining different positions in which the circuit-closers F come in engagement with the lugs e of the slides E , respectively, according to the different operative settings of the conductive parts or slides, or such, for example, as pins e^3 or equivalent devices adapted to register or engage with co-operative parts (not shown) of the mechanism with which the signaling apparatus may be employed, the number of said determining or co-operative devices being equal to the number of units subject to the operation of the signaling apparatus.

It is only essential that the conductive parts shall be so constructed and arranged relative to co-operating circuit-closers and a testing device that every one of the slides or conductive parts must be moved into contact with a circuit-closer before the circuit will or can be completely closed by the testing device and the signal sounded, substantially as described.

The circuit is closed by one of the lugs e on every one of the slides E engaging with a circuit-closer F , and no signal can be sounded so long as any one of the slides is disengaged.

In the drawings I have shown one of the slides as pulled outward sufficiently to leave the lug on the slide out of contact with the circuit-closer. If then the slide be pulled still further outward, as shown in dotted lines in Fig. 1, the lug on the slide will engage with the spring and close the circuit through all of the springs and all of the slides. If the rod H' be then pushed inward, a pin h there-

on will engage with the post H^2 and current will pass from the battery through the rod H' , through the post H^2 , through the springs F , and through the slides E to the bell G and will cause the bell to ring in a usual and well-known manner. A coiled spring H^3 surrounds the rod H' and acts against a collar h' to slide the rod out of contact with the post H^2 . It will be seen then that after the closing of the circuit by pushing the rod H inward, as described, the spring H^3 reacts to pull the rod back and break the circuit.

In the apparatus as applied to voting-machines the rod H' may be pushed inward by the voter within the booth for the purpose of testing whether or not he has moved all of the slides into position to permit the deposit of ballots for all of the candidates for which he wishes to vote. The rod H' may be pulled outward by the judges or other authorized person outside of the booth for the purpose of determining whether or not the voter has completed the operation of voting. In other analogous mechanisms the rod H' may in like manner be moved to bring the pin h in contact with the post H^2 for the purpose of determining whether or not all of the movable parts have been set in the desired position.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a signaling apparatus, the combination of insulated conductive parts such as slides, each capable of a number of different operative settings, means for determining all the operative settings of said conductive parts, circuit-closers engaging with said conductive parts, a signaling device, and a battery having electrical connection with said conductive parts, circuit-closers and signaling device; as set forth.

2. In a signaling apparatus, the combination of a plate of insulating material, guides of insulating material on said plate, slides of conductive material slidable between said guides and having lugs, circuit-closers on said plate contiguous to said slides and adapted to engage with the edge of the slide on one side of a circuit-closer and the lugs of the slide on the other side of the same circuit-closer, a post secured to said plate, a rod mounted in supports on said plate and slidable to engage with said post, a bell, and a battery having electrical connection with said bell, circuit-closers, slides, post and rod; as set forth.

3. In a signaling apparatus, the combination of movable conductive parts such as slides, each capable of a number of operative settings; means for determining the operative settings of said conductive parts, the number of said determining means being equal to the number of units effected by the operation of the signaling apparatus; circuit-closers adapted to engage with said conductive parts; a signaling device; and a battery having electrical connection with said con-

ductive parts, circuit-closers, and signaling device; as set forth.

4. In a signaling apparatus, the combination of movable insulated conductive parts
5 such as slides, each adapted for setting in a number of different operative positions, means for determining the operative settings of said conductive parts, equal in number to the number of units subject to the operation of
10 the signaling apparatus, circuit-closers engaging with said conductive parts, a signaling device, a testing device, and a battery in electrical connection with said signaling device, circuit-closers, conductive parts and
15 testing device; as set forth.

5. In a signaling apparatus, the combina-

tion of a perforated base, insulated slides slidable on said base and having perforations registrable with the perforations in said base, circuit-closers engaging with said slides, a
20 signaling device, a closer on said base, and a battery having electrical connection with said last-named closer and with said circuit-closers, slides, and signaling device; as set forth.

In witness whereof I have hereunto sub-
25 scribed my name, at Chicago, Illinois, this 17th day of November, 1899.

WILLIAM A. SWAREN.

Witnesses:

ELIAS COLES,

ARTHUR Z. DIXON.