

No. 665,856.

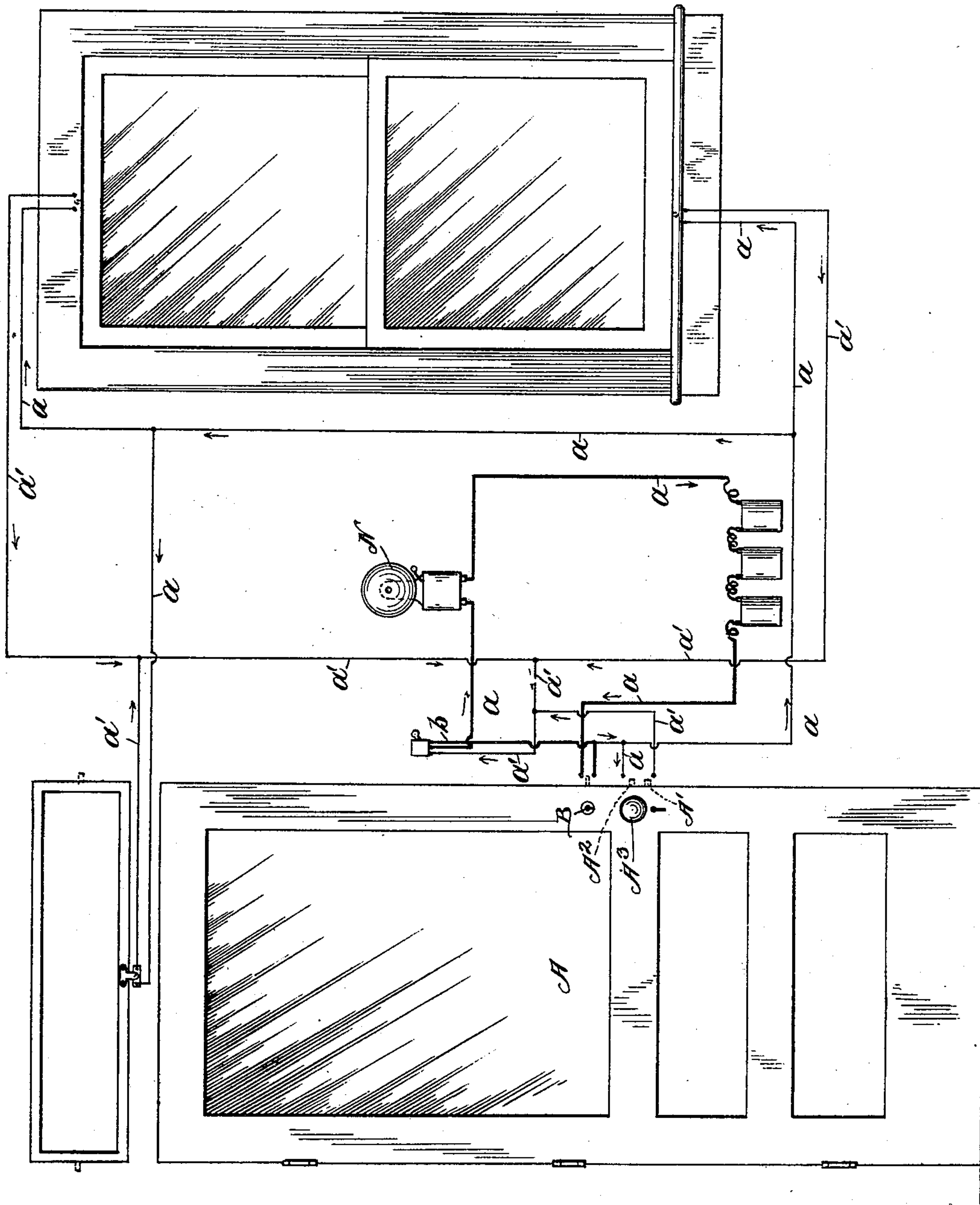
Patented Jan. 8, 1901.

E. BIEDERMANN & L. A. HEINE.
ELECTRIC BURGLAR ALARM SYSTEM.

(No Model.)

(Application filed Apr. 23, 1900.)

2 Sheets—Sheet 1.



Witnesses:
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Fig. 1.

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2 Sheets—Sheet 2.

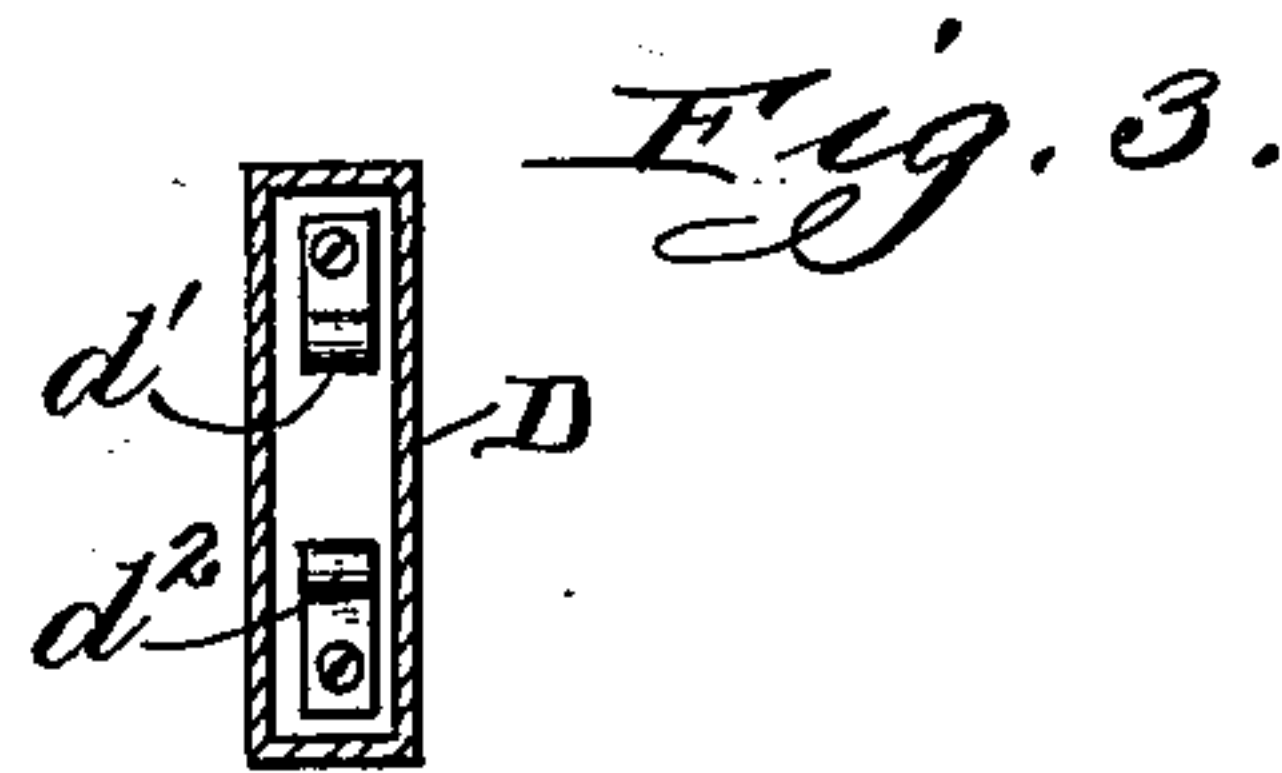
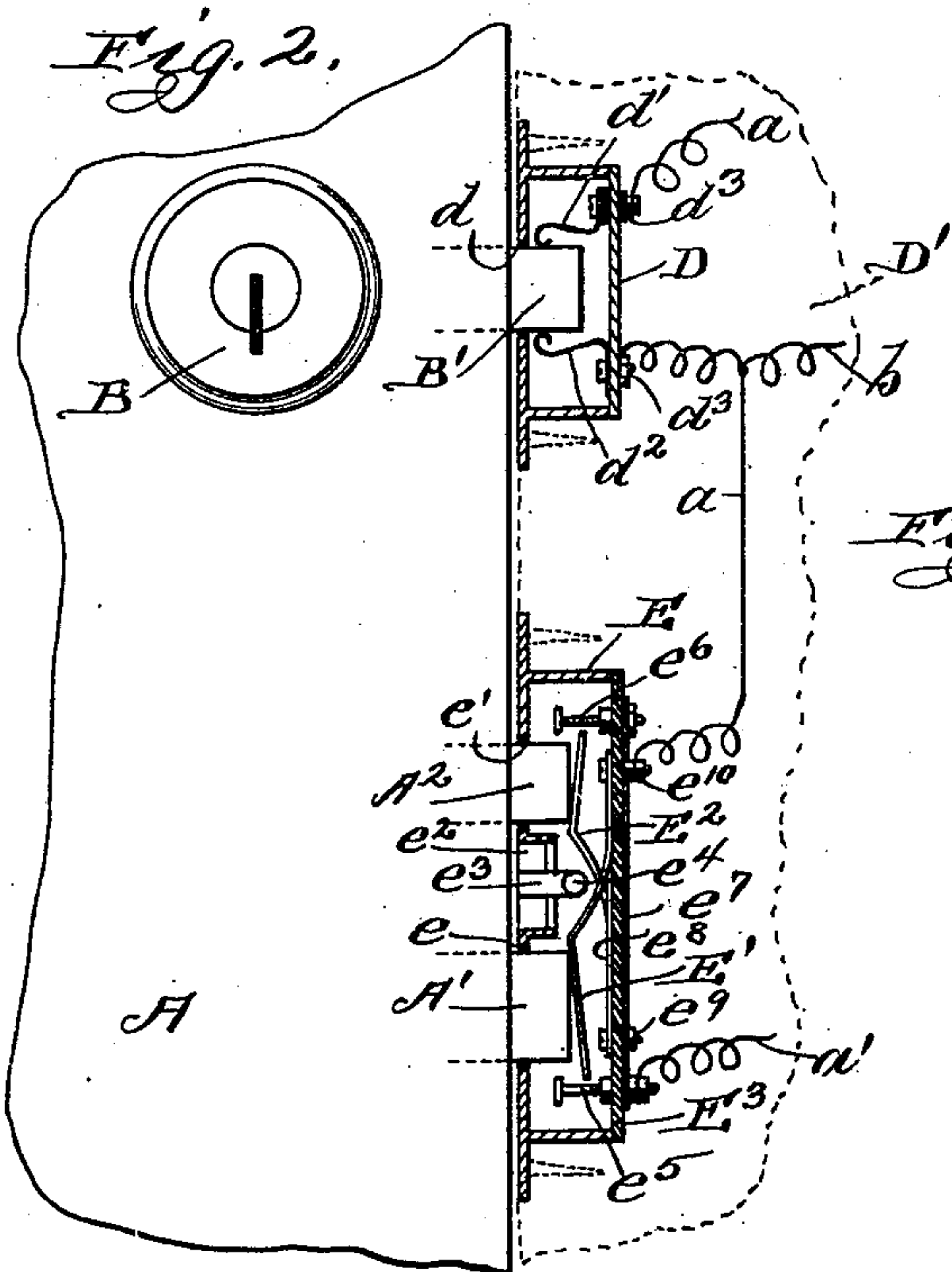


Fig. 5.

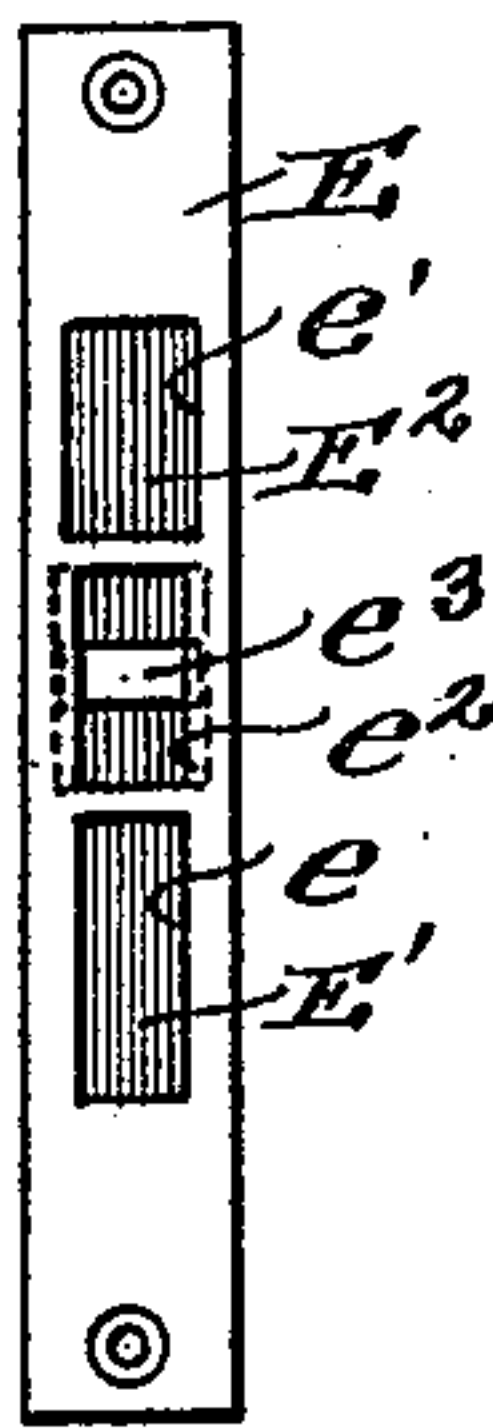


Fig. 4.

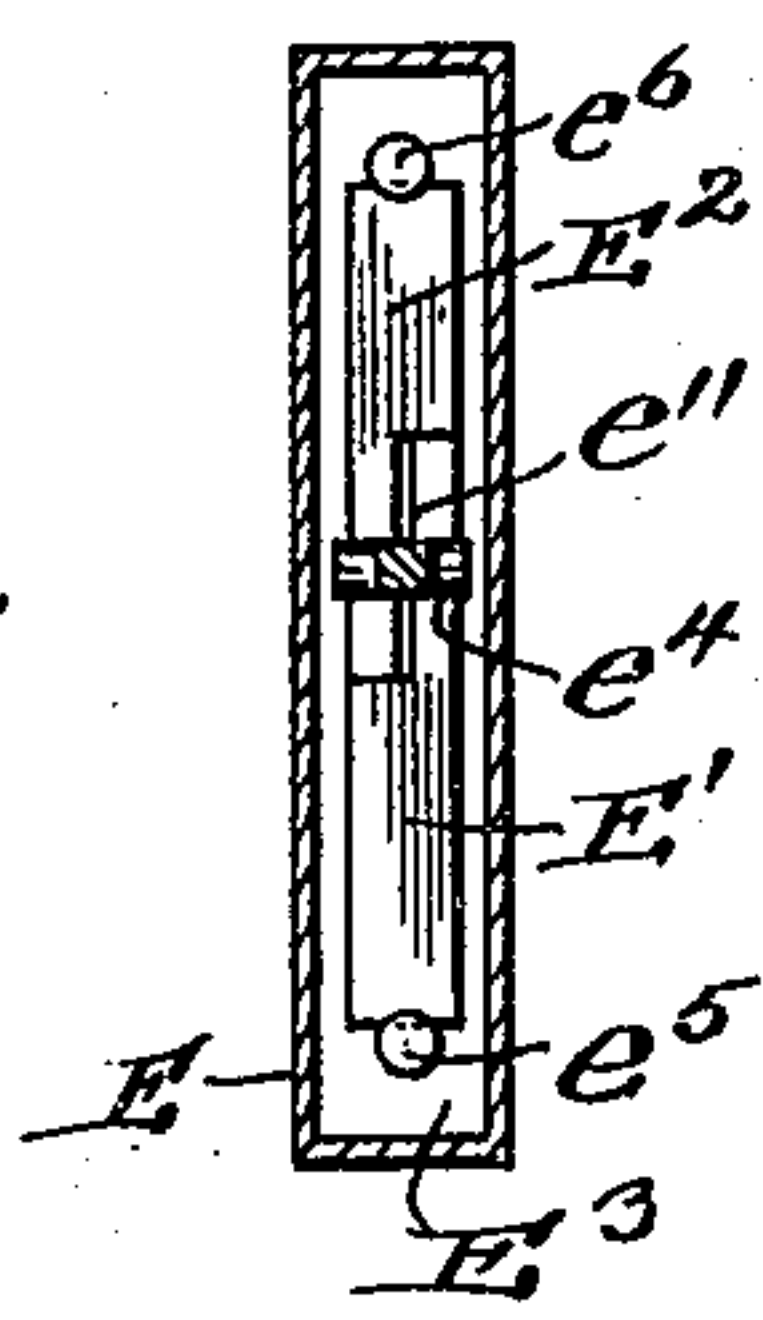


Fig. 6.

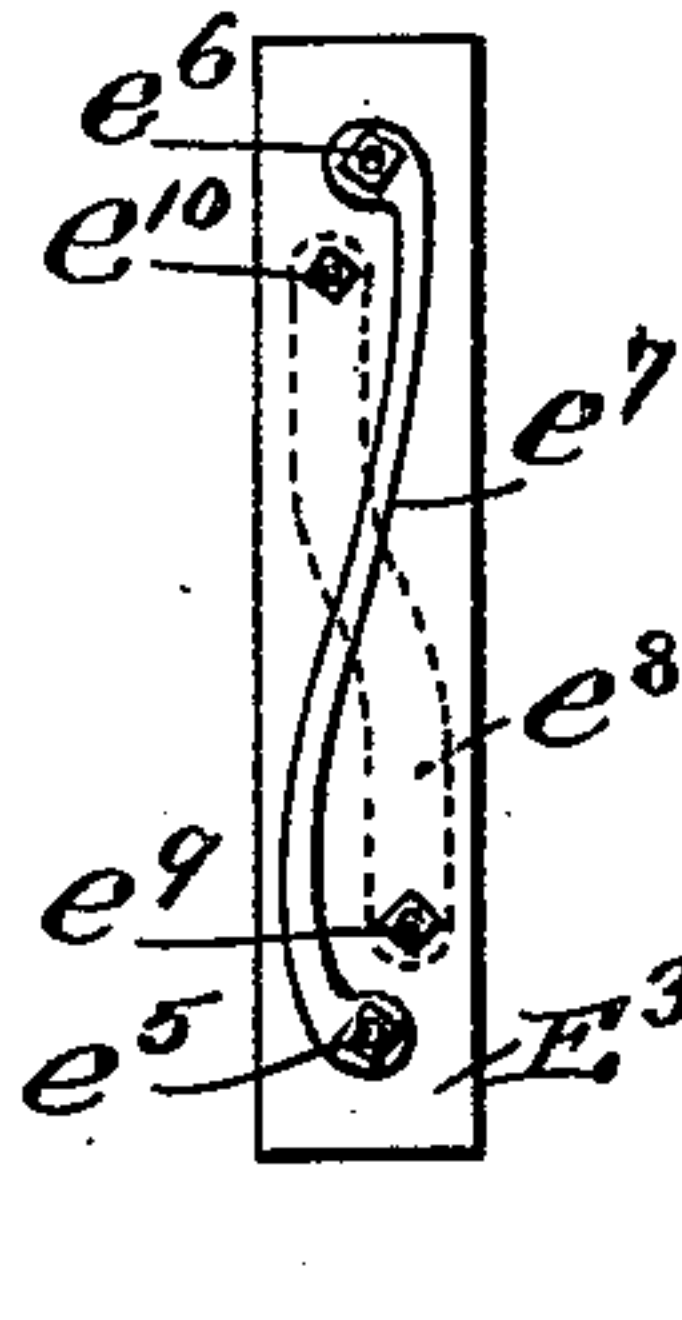


Fig. 7.

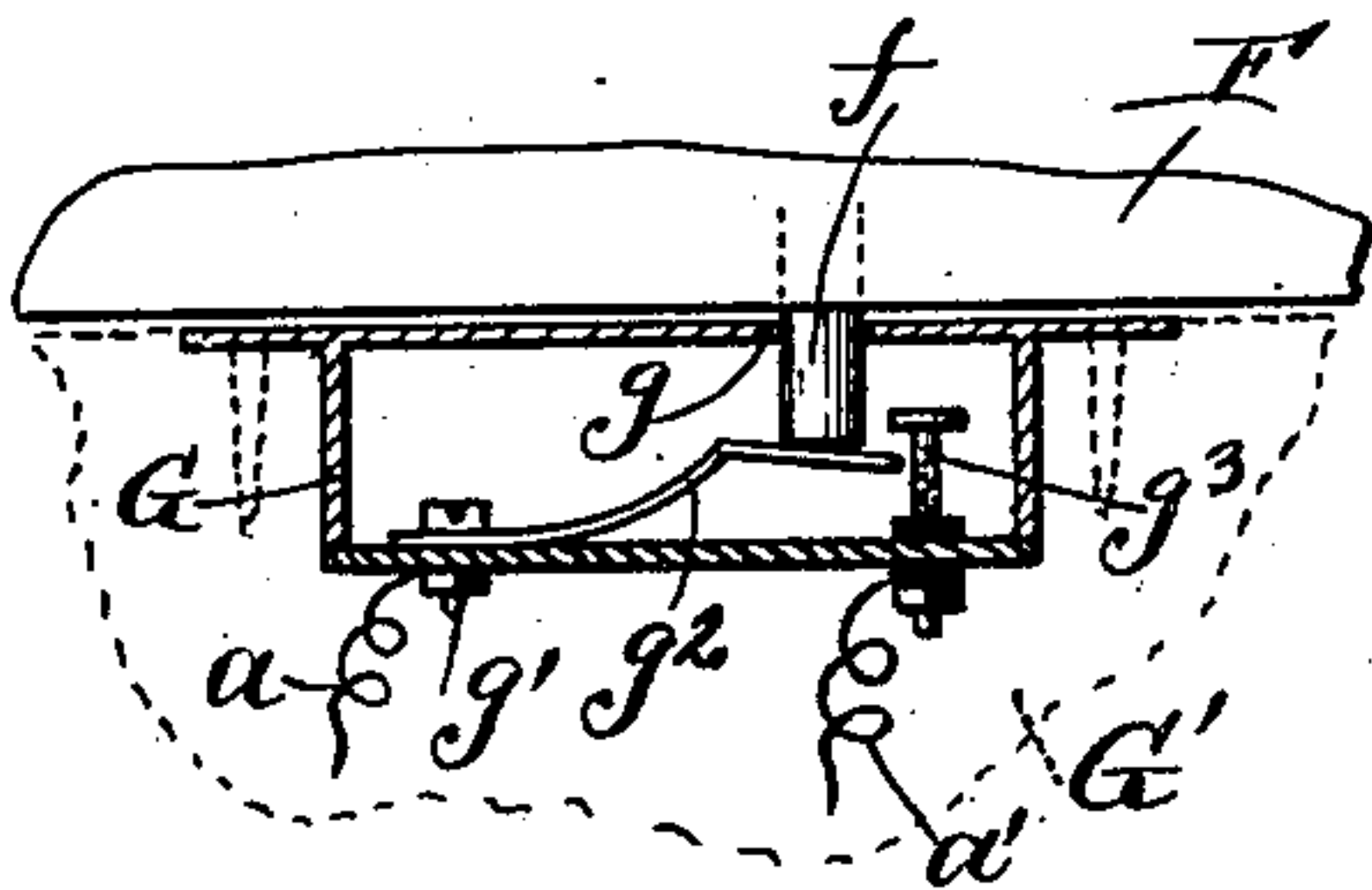


Fig. 9.

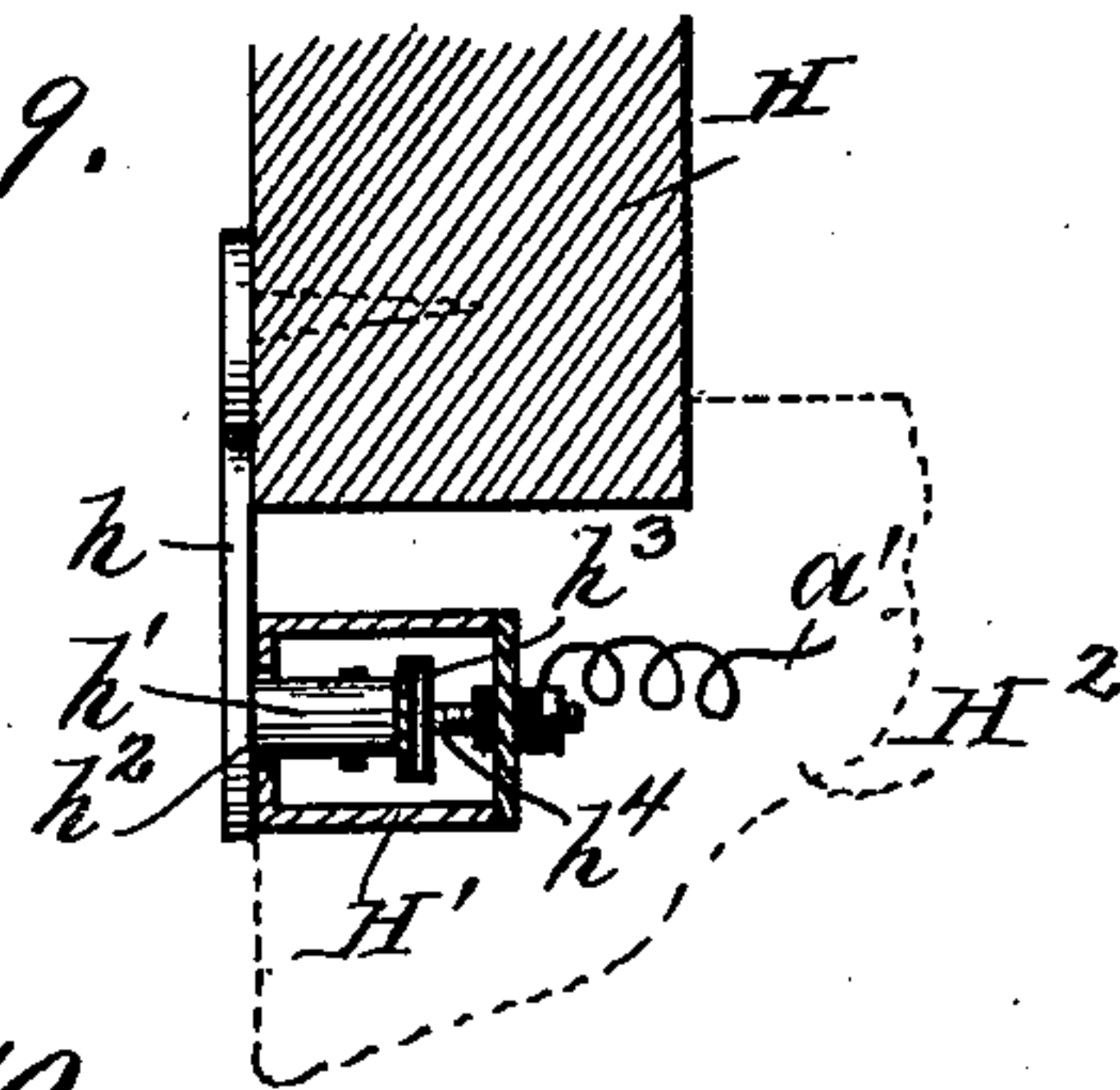
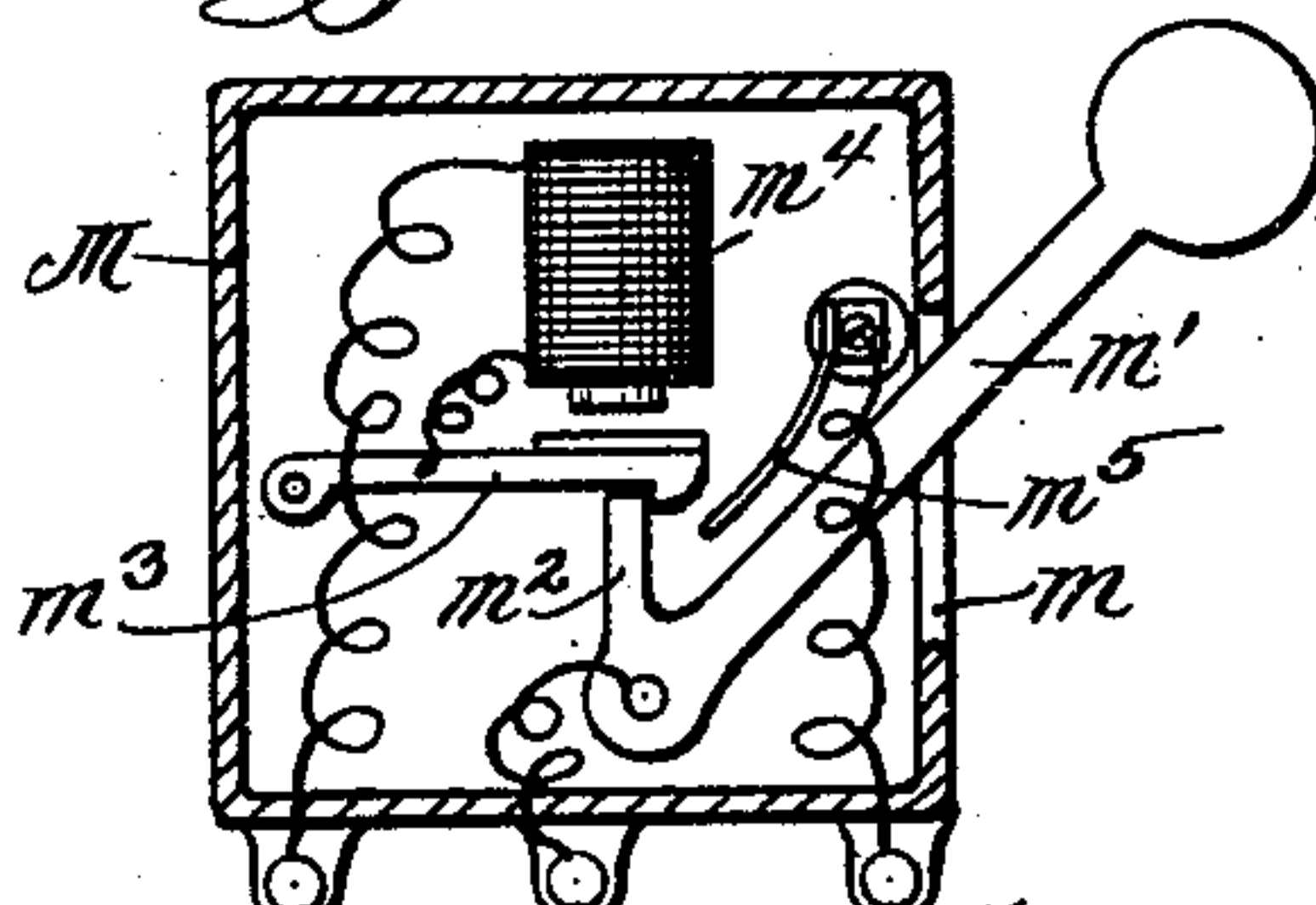


Fig. 10.



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UNITED STATES PATENT OFFICE.

EMIL BIEDERMANN AND LEOPOLD A. HEINE, OF CHICAGO, ILLINOIS.

ELECTRIC BURGLAR-ALARM SYSTEM.

SPECIFICATION forming part of Letters Patent No. 665,856, dated January 8, 1901.

Application filed April 23, 1900. Serial No. 14,016. (No model.)

To all whom it may concern:

Be it known that we, EMIL BIEDERMANN and LEOPOLD A. HEINE, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric Burglar-Alarm Systems, of which the following is a specification.

This invention relates to electric burglar-alarm systems, and while it is especially adapted for the protection of residences in the absence of the occupants, yet it is applicable to other buildings and for other purposes, such as banks, offices, money-drawers, vaults, and the like; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The object of our invention is to provide a positive and efficient alarm system of the above-named character which shall be simple and inexpensive in construction and easily installed and which by reason of the novel and peculiar construction and arrangement of its parts can be caused to produce a continuous alarm on the slightest unauthorized attempt to open the door, window, transom, or other device, and yet when ingress or egress through the door and free movement of the windows, transoms, and other devices is desired the parts may be so arranged as to give forth no alarm. In other words, the alarm may be thrown out of circuit during the presence of the occupants or into circuit in their absence by simply the turning of a key.

In order to enable others skilled in the art to which our invention pertains to make and use the same, we will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a diagrammatic view of our electric alarm system, showing it applied to a door, window, and transom. Fig. 2 is a view in side elevation of a portion of the door and the bolts therefor and illustrating the casings of the contact-springs in section. Fig. 3 is a longitudinal sectional view of the casing for the contact-springs of the switch-lock, showing

said springs in position therein. Fig. 4 is a similar view of the casing for the contact-springs of the door lock and latch. Fig. 5 is a face view in elevation of said casing. Fig. 6 is a detail view of the back or insulating piece of said casing. Fig. 7 is a view, partly in elevation and partly in section, of a portion of a window-sash, showing the casing for the contact-spring thereof. Fig. 8 is a face view of said casing detached. Fig. 9 is a cross-sectional view of a portion of the transom and the casing for the contact-spring thereof; and Fig. 10 is a view, partly in section and partly in elevation, of the automatic drop and its casing.

Similar letters refer to like parts throughout the different views of the drawings.

A represents a door which is provided, as usual, with a lock having a lock-bolt A' and a latch-bolt A², the latter of which is retracted by means of a knob A³ of the ordinary construction. The door is also provided at a suitable point with a safety-lock B of any desired kind, but preferably of the Yale type on account of the difficulty in picking or tampering with the same. This lock operates a bolt B', which we will hereinafter designate as the "switch-bolt." Secured to the jamb of the door-frame and usually countersunk therein is a casing D, which has an opening d in its face to receive the bolt B' in order that it may pass between and engage the contact-springs d' and d², which are suitably secured, by means of binding-posts d³, to the back of the casing, as is clearly shown in Fig. 2 of the drawings. Secured to the jamb D' is another casing E, which is provided with openings e and e' in its front or face portion for the passage of the lock and latch bolts A' and A², respectively. The face or front portion of this casing is also provided between the openings e and e' with another opening e², in which is movably located a button e³, having on its inner portion a transverse part e⁴ to impinge the contact-springs E' and E², as will be presently explained. The back of the casing E is formed of an insulating-piece E³, through which pass into the casing E screws or posts e⁵ and e⁶, each having a head on its inner end

with which the springs E' and E^2 will contact when the lock and latch bolts, or either of them, are retracted.

The posts e^5 and e^6 are connected on one side of the insulating-piece by means of a metallic piece e^7 , and on the other side of said piece is located a metallic strip e^8 , which unites the posts or screws e^9 and e^{10} . The said posts or screws are employed to secure the contact-springs E' and E^2 to the insulating-piece. These springs are each provided with a cut-away portion e^{11} to allow them to cross each other without contacting and are bent downwardly at about their middle, as shown in Figs. 2 and 4 of the drawings. By reference to said figures it will be seen that the button e^8 normally rests between said bent parts, and it will be understood that by sliding said button in either direction either one of the springs may be depressed and held out of contact with the posts e^5 and e^6 when desired.

In Fig. 7 of the drawings is shown a portion of the window-sash F , which is provided with a bolt or projection f , which passes through an opening g in the face of the casing G , which is secured to the window-casing G' and usually countersunk therein. Secured to the back of the casing G by means of a screw or post g' is a contact-spring g^2 , which the projection or bolt f on the window-sash impinges. The back of the casing G is also provided with a post g^3 , having on its inner end a head to engage the spring g^2 when the window-sash is moved so as to release the spring. Connected to the posts g' and g^3 are conductors a and a' , which lead to the lock and latch contact-springs and automatic drop, respectively.

In Fig. 9 of the drawings is shown a portion of a transom H , to which is secured a plate h , having a projection h' , which passes through an opening h^2 in the face of the casing H' , which is secured to the transom-casing H^2 and usually countersunk therein. Within the casing H' is a contact-spring h^3 , which is secured to the back of the casing by means of a screw or post in a similar manner to that shown in Fig. 7 of the drawings. The free end of the spring h^3 contacts with the head of a post h^4 , secured to the back of the casing, and to which post, as well as the screw which holds the spring h^3 , are connected conductors which lead to the lock and latch bolts and the automatic drop. This drop comprises a casing M , having a vertical slot m for the operation of the weighted lever m' , which is pivotally secured to the casing and has on its inner end a short arm m^2 to engage the pawl m^3 , which is also pivotally secured to the casing and is electrically connected to the magnets m^4 . Secured to the casing M is a spring or projection m^5 , with which the short arm m^2 of the lever contacts when the pawl m^3 is drawn to the magnets, thus completing the circuit

through the conductors a and b , the former of which is connected to the lever and the latter to the spring or projection m^5 , with which the short arm of the lever contacts, as before stated. This automatic drop may be located at any convenient point, and an electric bell N of the ordinary or any preferred construction is also located at a suitable point within an electric circuit, (shown by heavy lines in Fig. 1 of the drawings,) which when once closed will cause the bell to sound an alarm continuously until the circuit is broken. This circuit, comprising the heavy lines a and b , is closed by means of the switch-bolt B' , and another circuit comprising the conductors indicated by the letters a and a' (light lines) leads from the window and transom to the lock and latch bolts and automatic cut-off.

When the door, window, transom, or other device—such as a cash-drawer or vault-door—are closed and the switch-bolt B' is extended between the spring-contacts d' and d^2 , it is apparent that the respective bolts on the door, window, transom, or other device will hold their respective spring-contacts out of contact with the posts and that by a partial removal of any of said bolts the spring-contact thereof will contact with its post and energize the magnets m^4 , which operation will draw the armature-pawl m^3 from the short arm m^2 of the lever m' of the automatic drop, thus allowing said arm to contact with the projection m^5 and complete the bell-circuit, thus sounding a continuous alarm. By removing the switch-bolt B' from the switch spring-contacts it is apparent that the circuits will be open and the door, window, and transom may be opened or closed without giving forth an alarm.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An electric burglar-alarm system, consisting of a normally open bell-circuit, an alarm, a switch, and an automatic drop in said circuit, another circuit including the said switch and automatic drop, and a circuit-closer in said circuit, and comprising a door-lock having a lock and latch bolt, and spring-contacts for said bolts, said springs being held out of contact when either of the bolts is projected, but permitted to come in contact and close the circuit by the withdrawal of the bolt, substantially as described.

2. In an electric burglar-alarm system, a circuit-closer consisting of a door-lock having a lock and latch bolt, a casing having openings to receive said bolts, two spring-contacts located within the casing, posts extending into the casing but insulated therefrom, and means to depress from the bolts one or both of the said spring-contacts, substantially as described.

3. In an electric burglar-alarm system, a

5 circuit-closer consisting of a door-lock having a lock and latch bolt, a casing having openings to receive said bolts, and an opening between said openings for the bolts, two spring-contacts located within the casing and formed so as to cross each other without contacting, a button located in the opening between the openings for the bolts and extending into the

casing, posts extending into the casing but insulated therefrom, substantially as described.

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