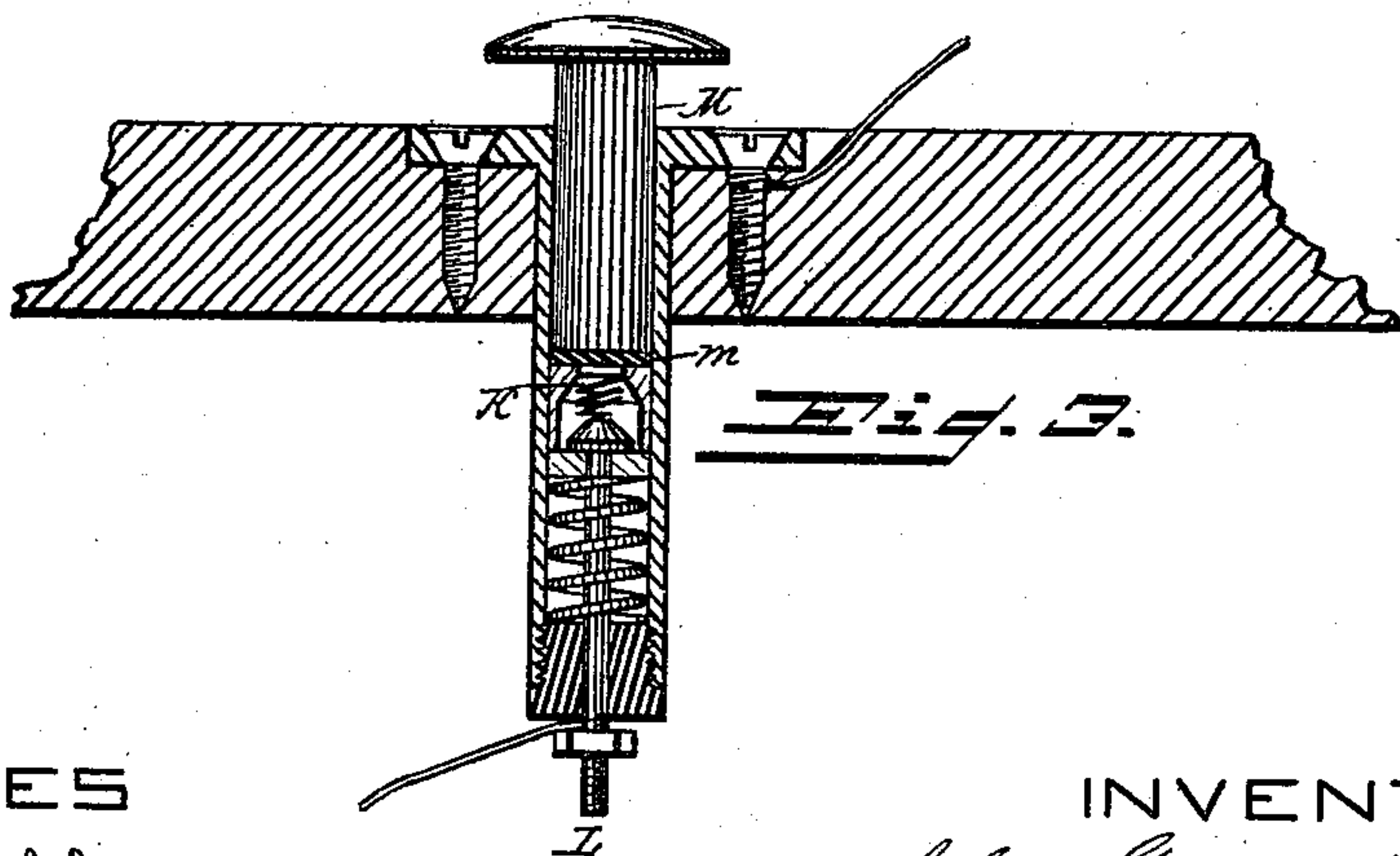
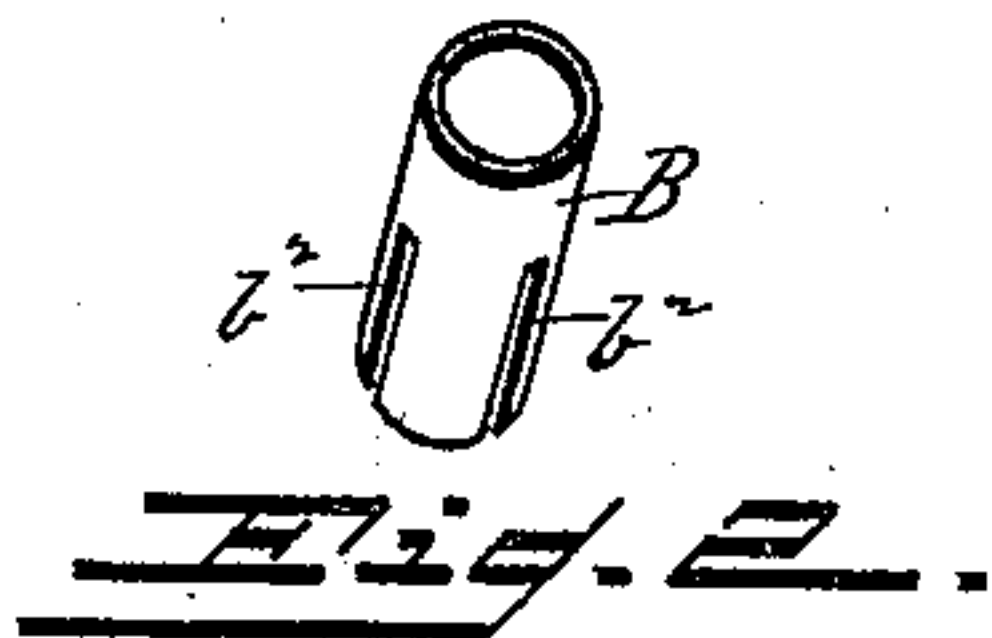
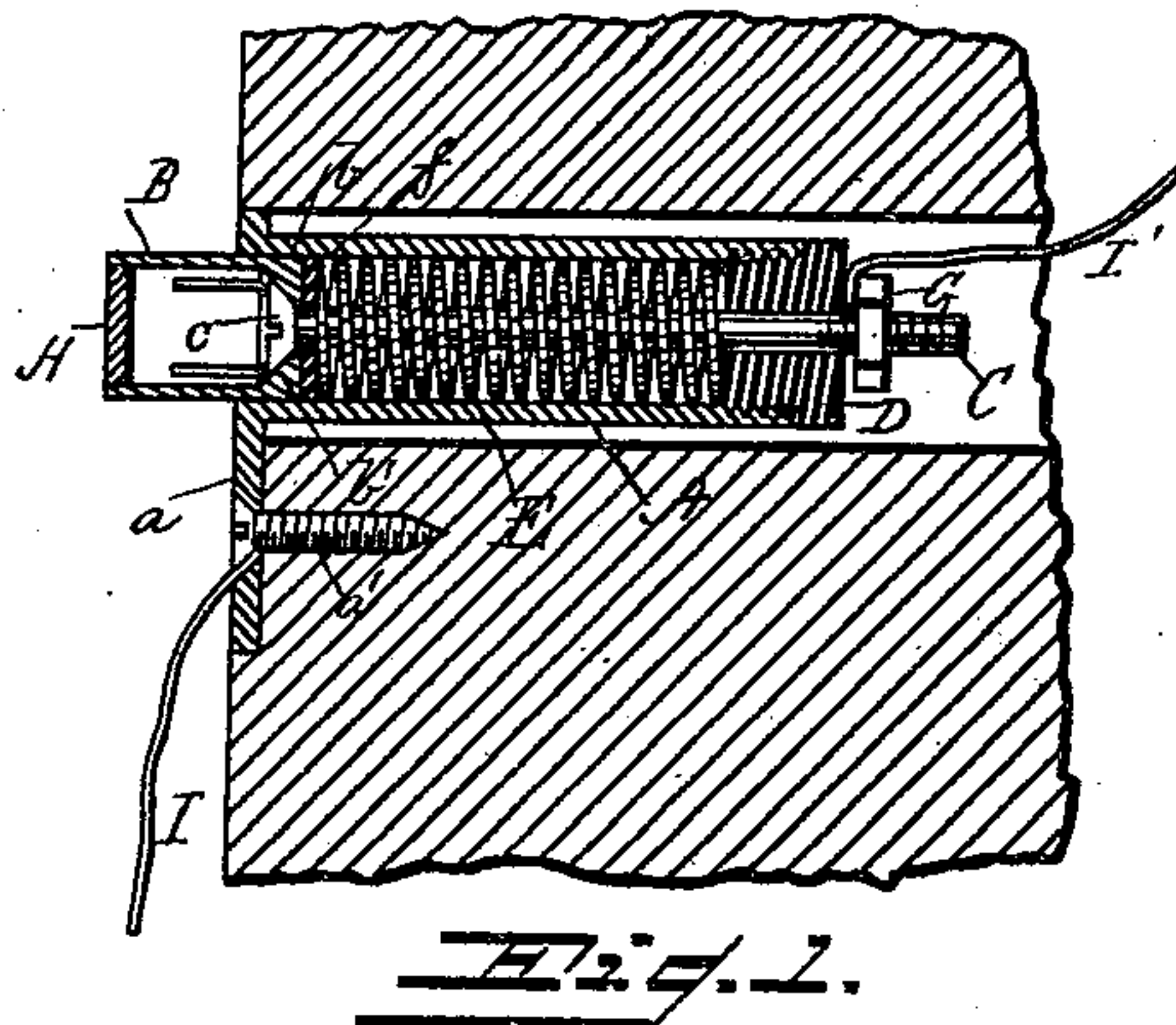


(No Model.)

J. GEARY.
ELECTRIC CIRCUIT CLOSER.

No. 354,858.

Patented Dec. 21, 1886.



WITNESSES
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UNITED STATES PATENT OFFICE.

JOHN GEARY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO J. ELLIOTT SHAW, OF SAME PLACE.

ELECTRIC-CIRCUIT CLOSER.

SPECIFICATION forming part of Letters Patent No. 354,858, dated December 21, 1886.

Application filed August 30, 1886. Serial No. 212,203. (No model.)

To all whom it may concern:

Be it known that I, JOHN GEARY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric-Circuit Closers; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a vertical longitudinal section of my invention. Fig. 2 is a perspective of sliding tube. Fig. 3 is a vertical longitudinal section of a modification.

My invention has relation to the "door-springs" or make-and-break devices of electric burglar-alarm and other circuits; and my improvements have for their principal object to provide a construction in which the movable part of the device will have a rubbing contact with a stationary part in which said moving part works, and in which, also, said moving part will be expanded, whereby a good electric contact and certainty of action will be secured and maintained.

My invention consists in the peculiar construction and combination of parts hereinafter described and specifically claimed.

Referring to the accompanying drawings, A designates a metallic shell of cylindrical form, which is provided with an ear, *a*, having a hole for the reception of a fastening-screw, *a'*, or it may have any other suitable means for securing it in position. Said cylinder is adapted and designed, when in use, to fit in a socket or mortise bored for its reception in the frame of a door.

B is a metallic tube which fits in one end of and normally projects from the barrel A. When the device is in use and the door with which it operates is closed, said tube is pushed into the barrel A. Said tube is formed with a blank or closed end, *b*, having a central opening, *b'*, and its sides are longitudinally or axially slotted, as shown at *b*². The sections between the slots form springs *b*³, which bear elastically against the inner side of the barrel A.

C is a metal screw, whose head *c* is beveled on its under side and normally rests against

the correspondingly-tapered bottom or end *b* of tube B. Said screw C passes through a threaded opening in an insulating-plug, D, of hard rubber or equivalent material, which is screwed into the opposite end of the barrel A.

E is a spiral spring, preferably made of phosphor-bronze, which surrounds but does not touch the screw C and fits in the barrel A, abutting at one end against the plug D and at the other against a washer, *f*, of vulcanized fiber or equivalent insulating material, which rests against the bottom *b* and prevents electric contact of said spring with tube B, and also forms an insulated bearing or guide for screw C.

G is a nut on screw C, and H is a plug which closes up the outer end of tube B, giving said tube a solid end, and preventing entrance of dust, &c., to said tube, which, if allowed, might injuriously affect the contact between the head *c* of said screw and the bottom *b* of tube B.

One of the wires or battery-connections I is fastened beneath the ear *a* or otherwise to the barrel A, making contact therewith, the other wire or connection, I', being fastened between nut G and plug D by turning down said nut, thus making electric contact or connection with screw C. When a door to which the device is applied is closed, it pushes tube B into barrel A, and so moves the bottom of said tube away from the head of screw C, thus breaking the electric circuit. When such door is opened, the spring E pushes the tube B outwardly until its end meets the head of the screw, whereby the battery-circuit is closed. The tube B in its movement rubs against the barrel A, and so always maintains a bright, clean, and good electric contact with the latter. The head *c* of the screw C being beveled and the bottom *b* correspondingly tapered or inclined, an extended surface-contact is obtained between said head and bottom, and the head of the screw also acts as a wedge to force the sides of the tube against the barrel A.

A modification is shown in Fig. 3, wherein my improvements are applied to a "floor-push." The construction is substantially that already described, and embraces all the essential parts hereinbefore mentioned, the sliding tube, which is shown at K in said figure, being

reversed, so that contact is made with the screw shown at L when said tube is pushed in or down, and is broken when said tube is pushed up or out by the spring. In this modification the tube does not project beyond the barrel or cylinder A, and a sliding plug or piston, M, is used to move the latter upwardly or downwardly. A washer, *m*, of vulcanized fiber is located between the end of the plug M and the end of the tube, so as to prevent the admission of dust to the latter when said plug is removed (as is usual) at or before sweeping the floor in which the push is located.

It will be noted that my invention may be used with either an open or a closed circuit.

If desired, a spiral spring may be located between the head of the screw and the bottom or end of the sliding tube, so as to obtain electric contact without allowing said head and bottom to touch, and thus admitting variations in the extent of movement of said tube in sliding.

What I claim as my invention is as follows:

1. In a door-spring for electric burglar-alarm or a make-and-break device, the combination of a barrel or cylinder, A, a sliding tube, B, therein, and a screw or contact-piece, C, with which said tube contacts or forms circuit in one position, substantially as shown and described.

2. In a door-spring or make and break for electric circuits, the combination, with a cylinder or barrel, A, and a screw, C, of a tube, B, having slotted sides or walls forming springs which bear against the barrel or cyl-

inder, and a bottom, *b*, which contacts or forms circuit with the screw-head when said tube is in one position, substantially as shown and described.

3. In a door-spring or make and break for an electric circuit, the combination, with a barrel or cylinder, A, and a screw, C, having a beveled head, of an interposed sliding tube, B, having an inclined bottom with an opening through which said screw passes, and having slotted sides, said screw-head contacting or forming circuit with the said bottom when the tube is in one position only, substantially as shown and described.

4. In a door-spring or make and break for electric circuits, the combination of barrel A, sliding tube B, screw C, insulating plug D, spring E, and insulating-washer *f*, said parts being adapted and designed for operation substantially as shown and described.

5. In a door-spring or make and break for electric circuits, the combination, with a barrel, A, and screw or contact-piece C, of a sliding tube, B, having a bottom, *b*, with which the head of said screw located in said tube contacts or forms circuit, the latter having its outer end closed by a plug, H, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of August, 1886.

JOHN GEARY.

Witnesses:

WILL H. POWELL,
R. DALE SPARHAWK.