

No. 696,963.

Patented Apr. 8, 1902.

G. W. HART.  
ELECTRIC SWITCH.

(Application filed Nov. 19, 1901.)

(No Model.)

Fig. 1.

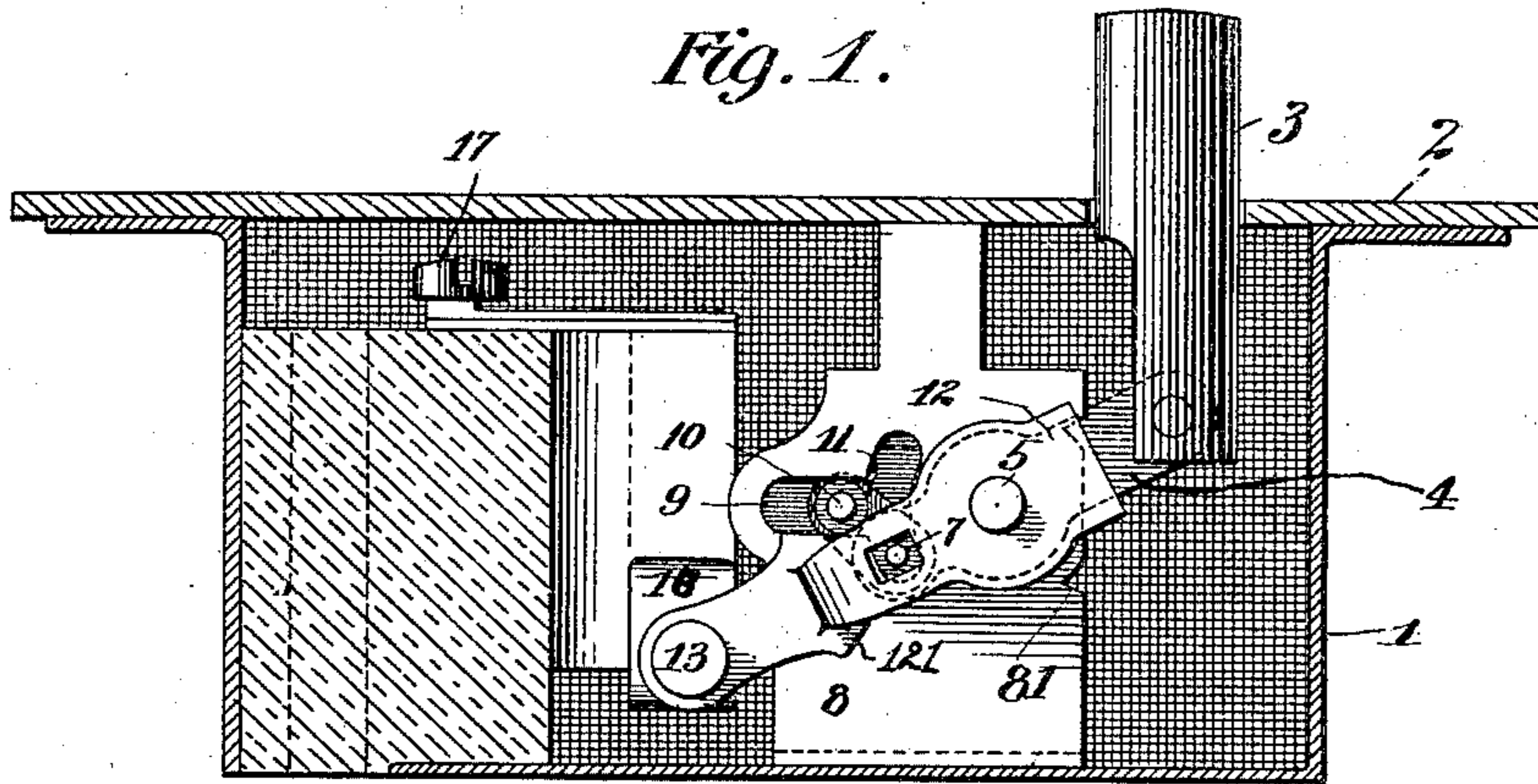


Fig. 2.

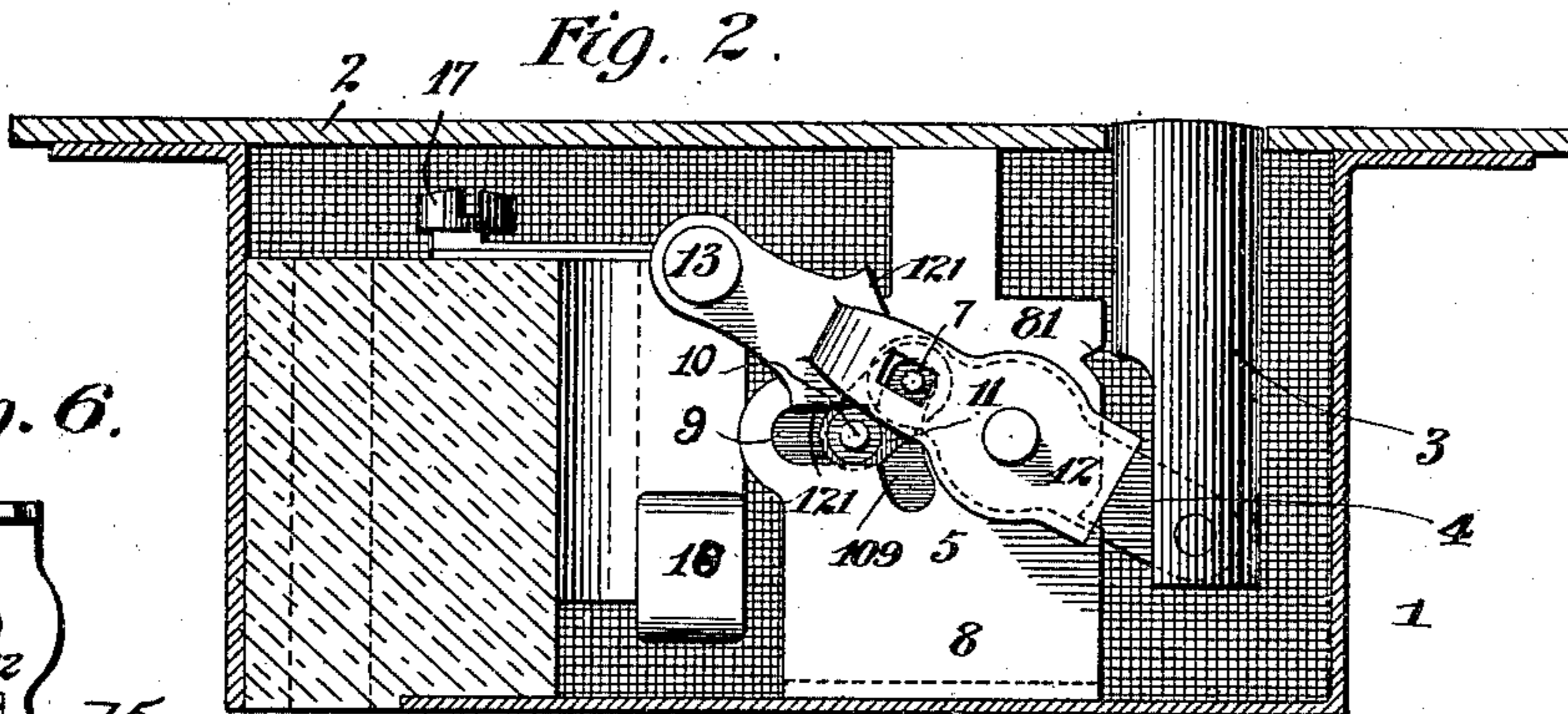


Fig. 6.

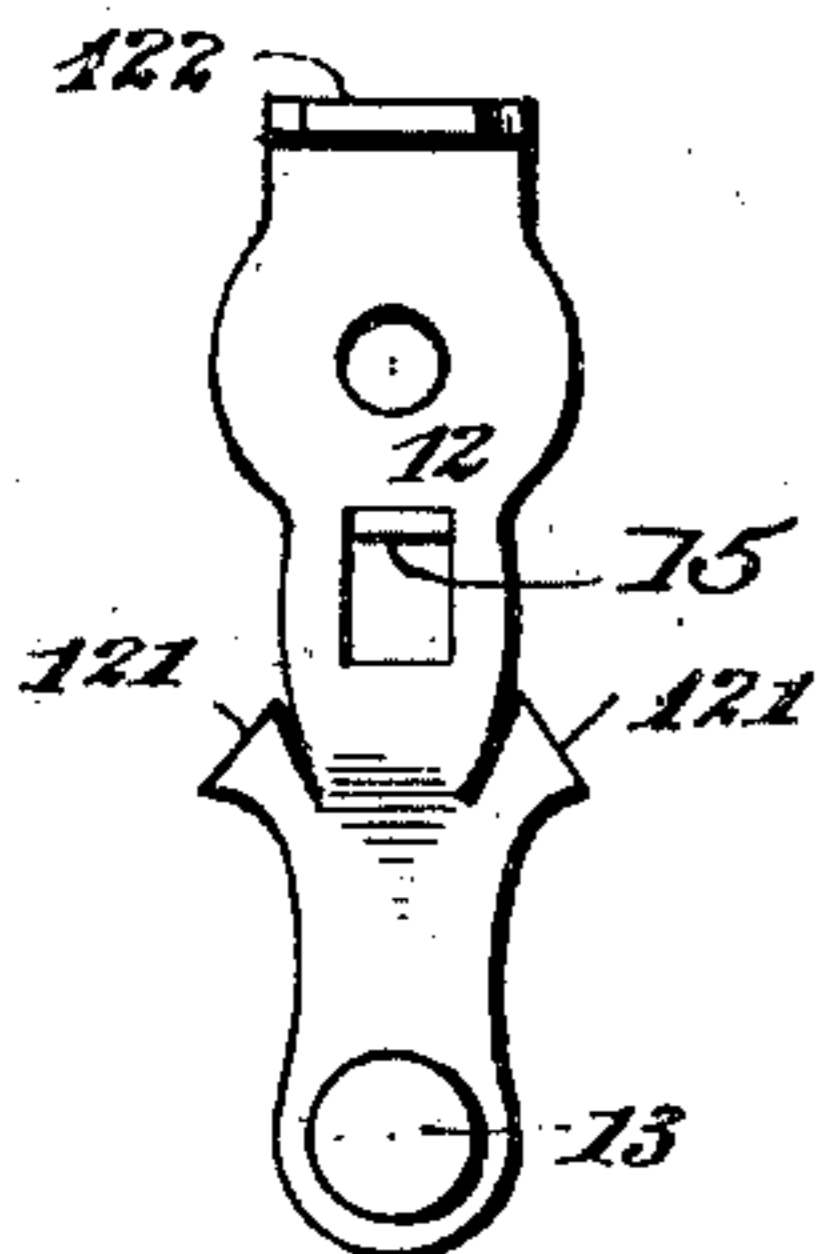


Fig. 3.

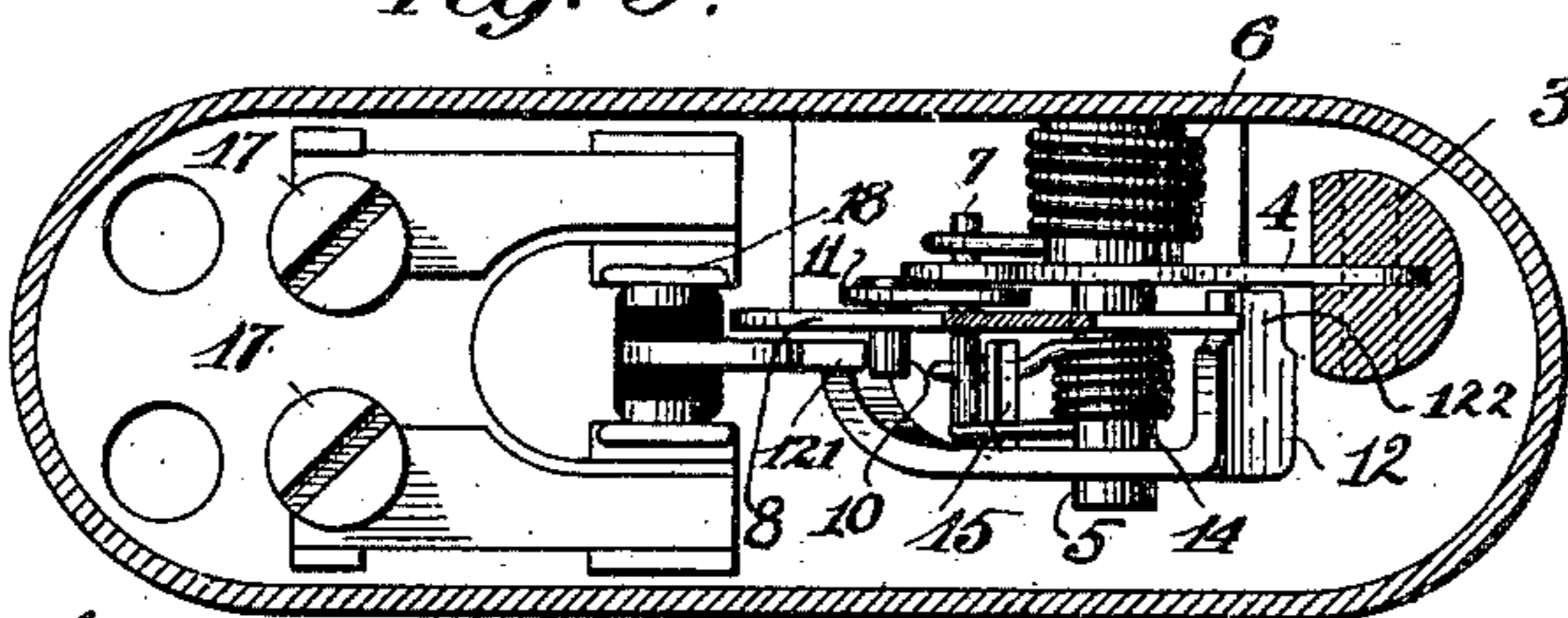


Fig. 4.

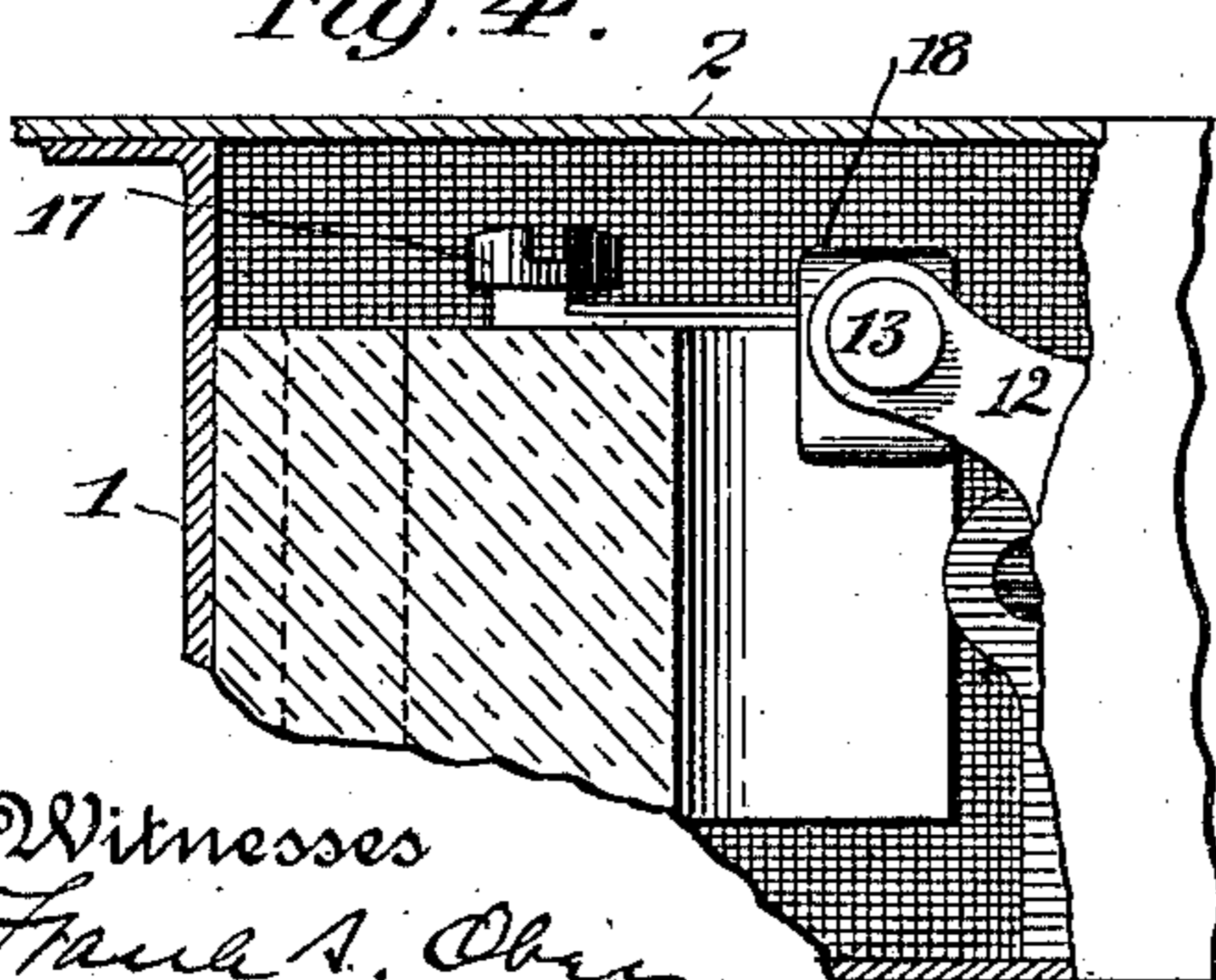
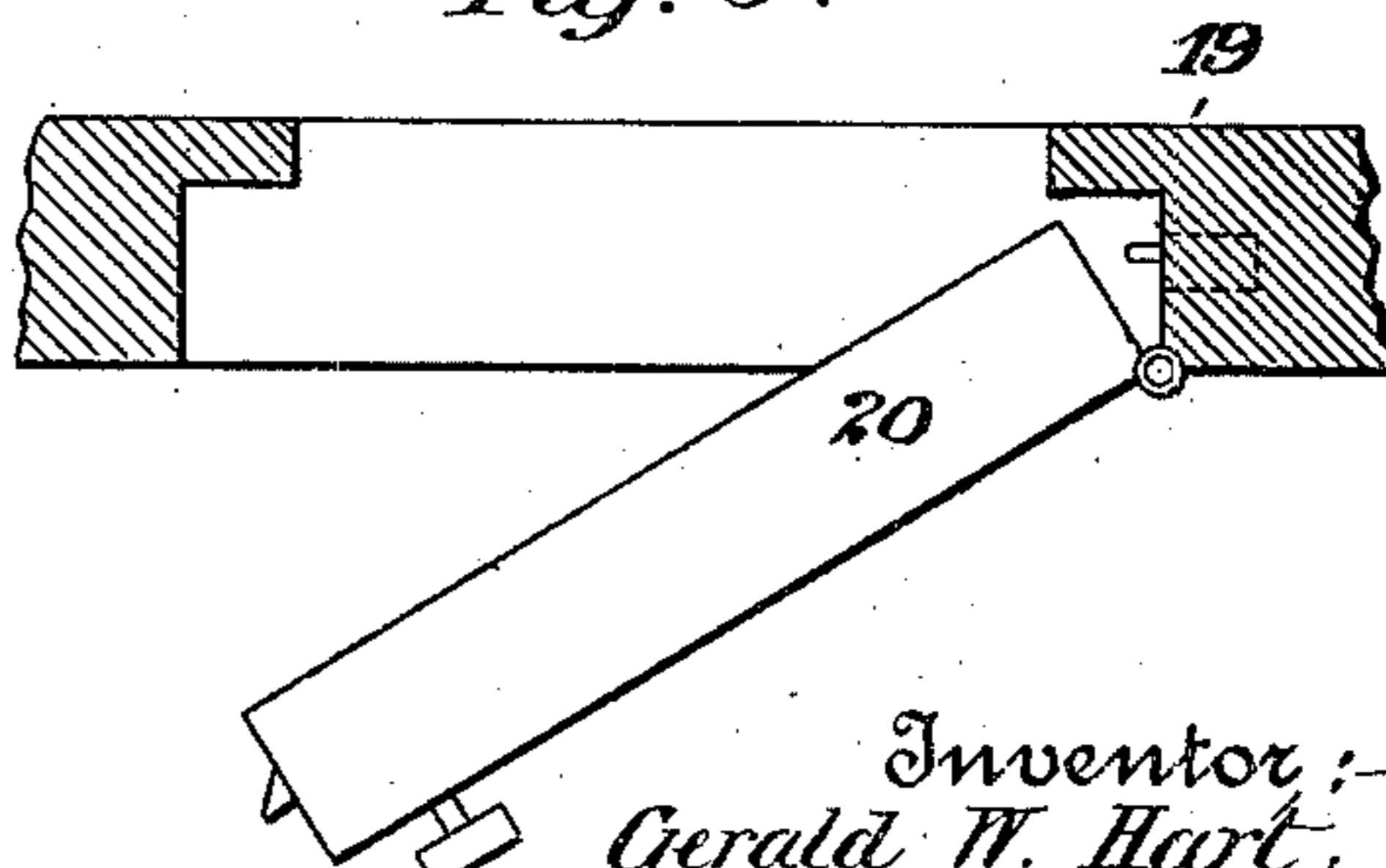


Fig. 5.



Witnesses  
Frank S. Ober,  
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Inventor:—  
Gerald W. Hart,  
By his Attorney, [Signature]

# UNITED STATES PATENT OFFICE.

GERALD W. HART, OF WEST HARTFORD, CONNECTICUT, ASSIGNOR TO THE  
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## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 696,963, dated April 8, 1902.

Application filed November 19, 1901. Serial No. 82,920. (No model.)

*To all whom it may concern:*

Be it known that I, GERALD W. HART, a citizen of the United States, residing at West Hartford, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Electric Switches, of which the following is a full, clear, and exact description.

My invention relates to electric switches, particularly of the "snap-switch" type.

The object of my invention is to provide a simple, effective, and durable construction.

The particular type of switch to which this invention relates is a single-button switch, by which when the button is in one position, either in or out, the circuit is complete and when in the other position the circuit is broken. This type of switch has a large field of usefulness in connection with closets or other rooms which it is desired to light by the opening or closing of a door. In this use the switch is so placed that when the door is in one position, open or closed, the current is on and when in the other position the current is off.

In the drawings, Figure 1 is a longitudinal section of a switch-case, showing the interior mechanism in elevation and in the on position. Fig. 2 is a similar view showing the switch mechanism in the off position. Fig. 3 is a section and plan view of the parts as they are shown in Fig. 1, the face-plate of the casing being removed. Fig. 4 is a fragmentary view of the parts as they are shown in Fig. 2, showing a modified arrangement. Fig. 5 is a plan view, partly in section, of a door and casing in which the switch is located. Fig. 6 is a view of a detail.

1 is a suitable casing or housing for the switch mechanism.

2 is a face-plate.

3 is a push-button projecting outside of the face-plate 2.

4 is an operating-lever mounted on a pivot 5, to one end of which lever the inner end of the push-button 3 is connected.

6 is a spring fastened at one end and engaging the operating-lever in any suitable way—for example, by the pin 7 on the lever

4. The spring 6 normally gives to the said lever the position indicated in Fig. 1, wherein it is so tilted that the push-button 3 stands in its outward position.

8 is a stationary frame having therein a recess 9, generally of T-shaped outline. The particular outline of this recess, however, is immaterial, excepting as to the lower portion, the sides of which form a guide for the locking-pin 10, carried by the link 11, pivoted to the lever 4, so that as said lever is rocked the pin moves to and fro in the guiding portion of said recess 9.

12 is a contact-carrier, and 13 is a contact piece or blade of any suitable design by which the circuit may be opened or closed.

14 is a tension-spring, one end of which bears against the pin 7 or a suitable projection carried by the operating-lever 4. In the particular form shown the pin 7 projects through a portion 109 of the aforesaid slot or recess 9, said slot being of such shape as to allow the pin to swing back and forth, while the closed ends of the slot afford a convenient stop at each end of said slot to check or limit the movement or swing of said operating part. One end of the spring 14 bears against the pin 7. The other end of the spring 14 is engaged with the contact-carrier 12—for example, by bearing against a pin 15 thereon. In the particular construction shown the circuit leads to the binding-posts 17 17, which are each provided with suitable terminals 18 18. The contact 13 is of suitable form to bridge the gap between the terminals 18 18 and close the circuit therethrough.

In Figs. 1, 2, and 3 the terminals 18 18 are located in such position that the circuit will not be closed excepting when the push-button is in the outward position. In Fig. 4 the location of the terminals is changed, so that the circuit is closed only when the push-button is in its inward position. The contact-carrier in the particular form shown is arched, so as to give sufficient room for spring 14 between its inner surface and the frame 8 and also to give sufficient room for the freedom of action of the locking-pin 10. The locking-pin 10 engages with the shoulders 121 121 on

opposite sides of the said contact-carrier. These shoulders are best seen in Figs. 2 and 6. The rear end of the contact-carrier is preferably bent down, as at 122, to form a stop to limit said shoulder 122, engaging with either one of the notches 81 in the frame 8, thus checking its swing in either direction.

19 is a door-casing. 20 is a door hinged thereto in the usual way.

The switch may be placed in the door-casing 19 adjacent the rear edge of the door, so that when the door is open, as shown in Fig. 5, the spring 8 will cause the parts to move into such position that the push-button is projected outwardly. When the door is closed, the rear edge of the same bears against the pin and pushes it inwardly, shifting the parts of the switch accordingly.

The springs 6 and 14 are preferably carried by the pivotal support for the operating part and the contact-carrier, said springs being coiled around said support, whereby they are securely held in place. Manifestly the type of spring employed might be modified or the means for supporting the same might be modified.

In operation when the button is pushed in, say, from the position indicated in Fig. 1 to the position indicated in Fig. 2 the springs 6 and 14 are put under tension. The locking-pin 10 moves in front of one of the shoulders 121 and prevents the contact-carrier from swinging until the operating-lever reaches approximately the position shown in Fig. 2, in which the pin 10 has been retracted and has allowed the contact-carrier 12 to swing from the position shown in Fig. 1 to the position shown in Fig. 2 under the influence of the spring 14. In these figures the circuit is broken by the contact leaving the terminals 18. This action is brought about by closing the door and pushing the button 3 inwardly. Consequently if the appliance is used in a lamp-circuit leading to the interior of a closet when the door is closed the circuit is broken and the lamp within the closet is extinguished. As soon, however, as the door is opened the push-button is allowed to move outwardly under the influence of the spring 6, whereupon the contact 12 is thrown into the position in which the contact 13 closes the circuit through terminals 18 18, whereupon the lamp within the closet is lighted. So long as the door is open the closet is illuminated. Manifestly this arrangement may be reversed, so that when the door is closed the closet will be illuminated and when open the light within

the same will be extinguished. This end is attained by merely changing the location of the terminals 18 from the position shown in Figs. 1 and 3 to the position shown in Fig. 4.

Manifestly many changes in the particular construction and proportion of the parts may be made. For example, a blade-switch might be substituted in place of the particular switch shown. Such a change and others are too obvious to require illustration, since they would readily suggest themselves to the mechanic skilled in the art.

What I claim is—

1. In a snap-switch, a tilting operating part, a stationary frame, a link connected to said operating part, a locking-pin carried by said link and guided by said frame, a contact-carrier, said pin being adapted to engage on opposite sides of said contact-carrier, and a spring, one end being engaged by the operating part and the other end engaging said contact-carrier.

2. A snap-switch comprising, a stationary frame, a pivoted operating part, a swinging contact-carrier pivoted concentrically with said operating part, a reciprocating locking device controlled by said operating part and adapted to engage on opposite sides of said contact-carrier, and a spring one end being engaged by said operating part the other end engaging said contact-carrier.

3. In a snap-switch, a tilting operating part, a stationary frame, a link connected to said operating part, a locking-pin carried by said link and guided by said frame, a contact-carrier, said pin being adapted to engage on opposite sides of said contact-carrier, a spring, one end being engaged by the operating part and the other end engaging said contact-carrier, and another spring for normally returning the operating part to its original position.

4. In a snap-switch, a tilting operating part, a stationary frame, a link connected to said operating part, a locking-pin carried by said link and guided by said frame, a contact-carrier, said pin being adapted to engage on opposite sides of said contact-carrier, a spring, one end being engaged by the operating part and the other end engaging said contact-carrier, and a stop for limiting the movement of said operating part.

Signed at Hartford, Connecticut, this 15th day of November, 1901.

GERALD W. HART.

Witnesses:

FREDERICK M. GOODRICH,  
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