

(No Model.)

L. T. STANLEY.
ELECTRIC SWITCH.

No. 472,610.

Patented Apr. 12, 1892.

Fig. 1

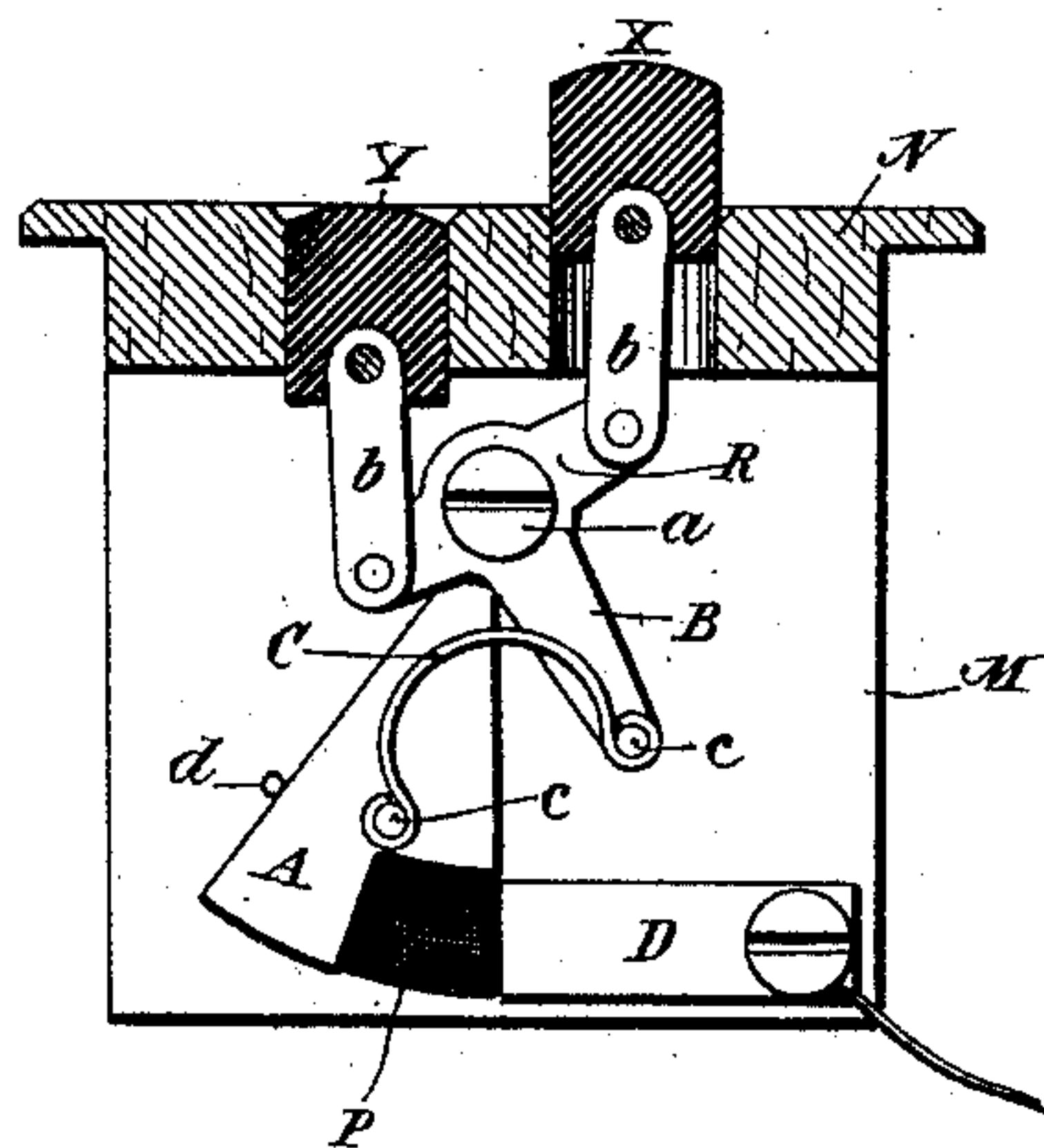


Fig. 2

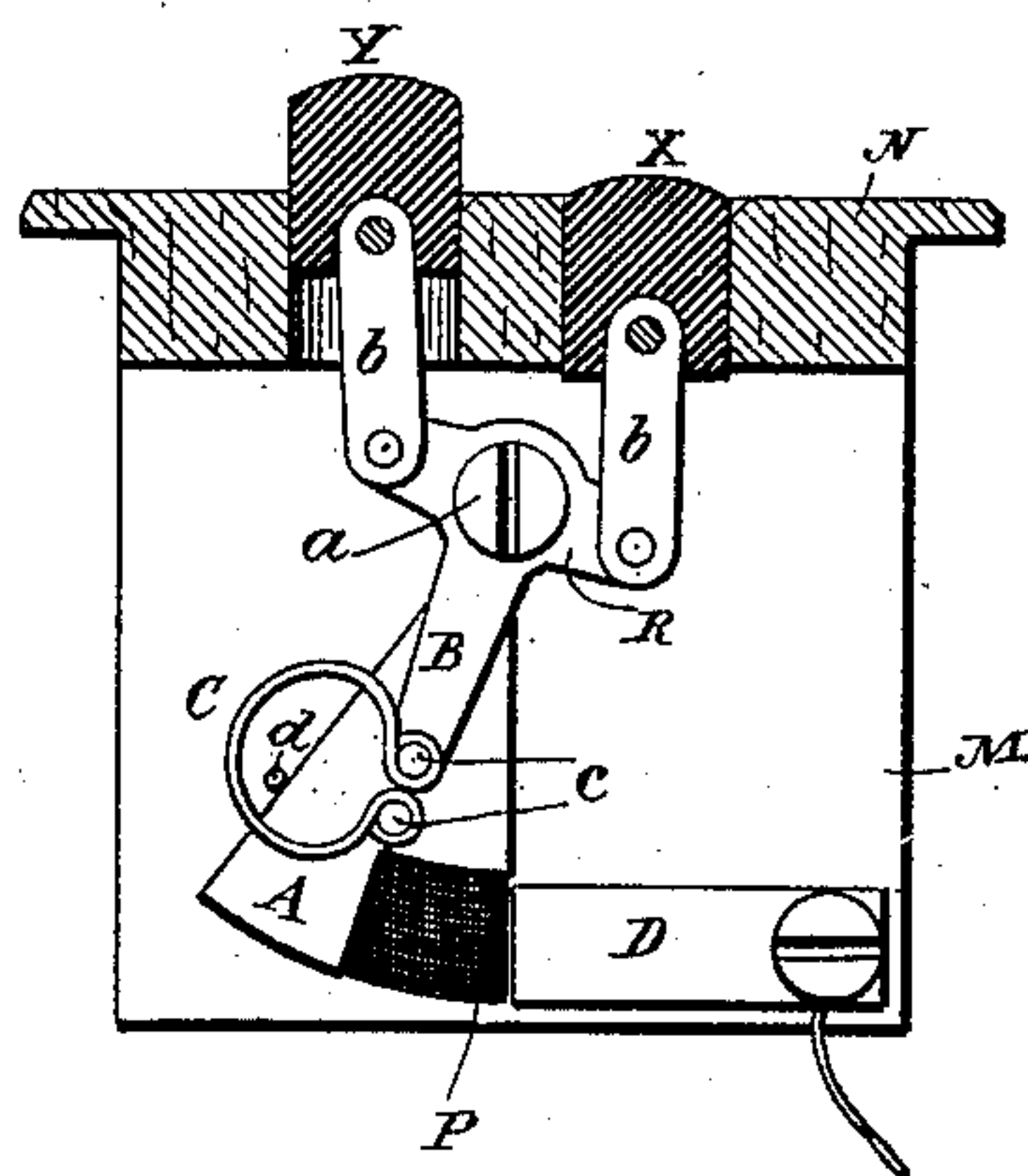
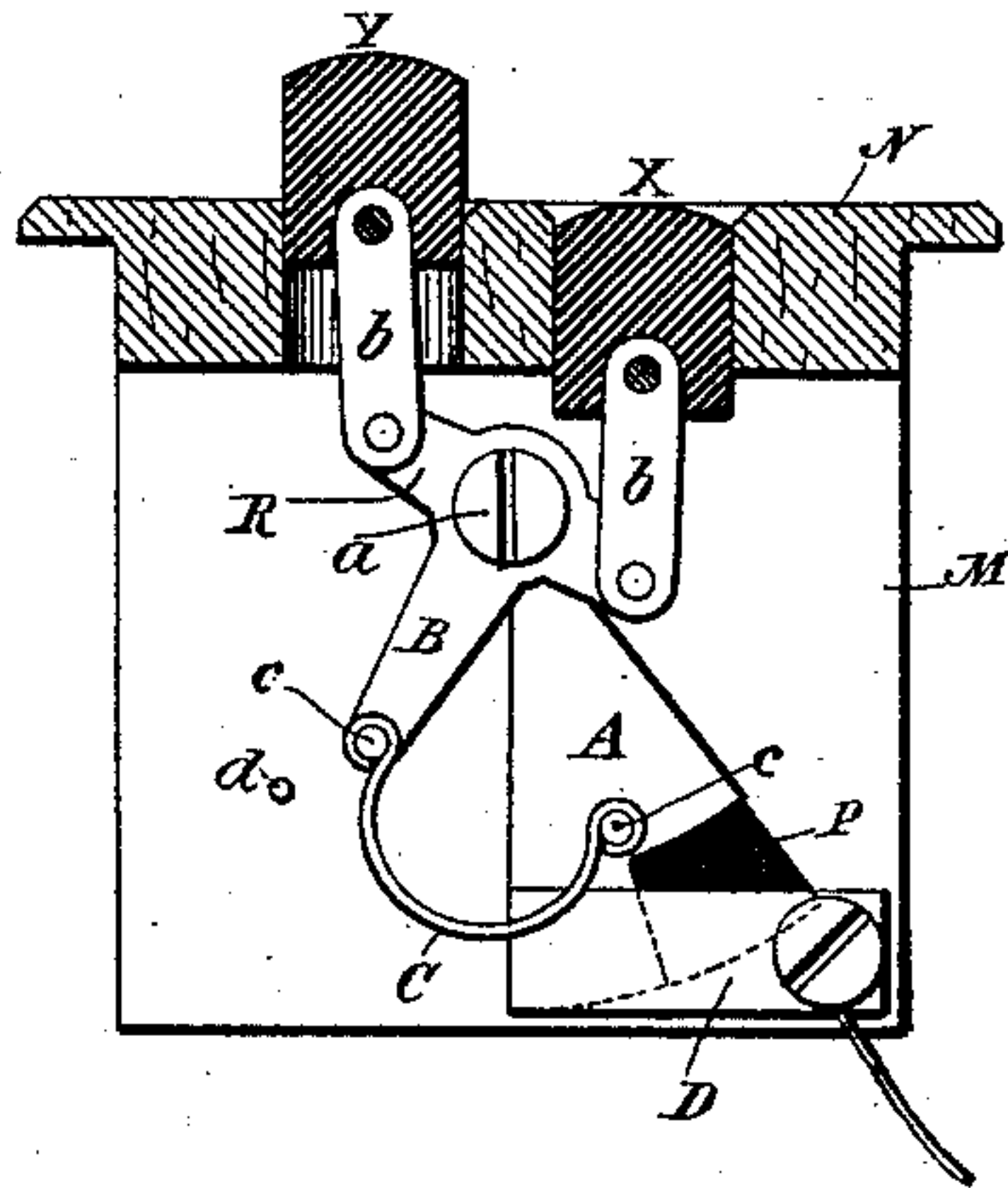


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

LUCIUS T. STANLEY, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE CUTTER
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ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 472,610, dated April 12, 1892.

Application filed September 24, 1891. Serial No. 406,643. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS T. STANLEY, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electrical Switches, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

10 This invention is primarily designed as a means of making and breaking an electric circuit. The mechanical movement, however, which the mechanism involves is applicable generally to other devices in which a sudden
15 movement in either of two directions of a part or parts is a necessary function. For example, the principle of the construction of the means for shifting or throwing the contact-arm may be applied to shifting the shutters of
20 cameras or for any other analogous purpose.

The construction and operation of the mechanism forming the subject of this specification and which comprises my present invention is based upon a well-known mechanical movement in which is there is connected to a pivoted or rocking arm or equivalent element and to a point thereon eccentric to its fulcrum or center of oscillation a spring which exerts thereon a certain pull or tension. The direction of this pull or tension is varied by moving
30 the spring, and for this purpose it has been usual to connect the opposite end of the spring to an arm or lever, which in its movement carries the spring and shifts the line of tension across a line passing through the fulcrum of the first-named lever and the point of connection of the spring therewith. I have constructed a mechanical movement on this principle; but I have greatly simplified the
40 construction and increased the efficiency of the same by employing a flat resilient strip as the actuating-spring and by so arranging the parts that the reaction of the spring is much more effectively applied to shifting the moving part than in the devices of this kind heretofore devised.

For a more specific description of my invention I now refer to the accompanying drawings. The three figures show the complete mechanism in side elevation and in three
50 different positions.

In Figure 1 the switch is "off," in Fig. 2 it has been brought to the position in which the spring by its reaction is just on the point of shifting the contact-arm, and in Fig. 3 the
55 switch is "on."

The mechanism is shown as contained in a box or case M, intended to fit into a recess in a wall or the like and provided with a face-plate N. Through this plate work two push-
60 buttons Y X, connected by links *b* with the opposite ends of a bell-crank or rocking lever R, mounted on a shaft *a* within the switch box or case. An arm B extends downward and at right angles from the center of the
65 lever and serves as the means for shifting the line or direction of the tension of the spring. The arm B is turned or shifted from side to side by pushing in one or the other of the buttons X-Y. A contact plate or
70 lever A is fulcrumed or swung on the shaft *a*, or it may be on an independent shaft, and in its path of movement is a contact-plate or pair of plates D, with which the lever when the circuit is to be closed is thrown into con-
75 tact. When a pair of plates D is used and the lever comes between them, I prefer to cut out a piece from the corner of the lever or that part last to leave the plates D and insert a piece of mica or other insulating material,
80 as shown at P. This construction or feature, however, is the same as that described in Patent No. 437,667, dated September 30, 1890, to Stanley and Cutter.

A strip of resilient metal or other material
85 C is secured by its ends to the arm B and lever A, respectively. The length of this strip is greater than the greatest distance between its two points of connection, so that it will always be more or less bowed and under a
90 tension that maintains the lever A in one of its extreme positions. I prefer to use for this strip a flat steel spring—such as a piece of a watch or clock spring—and to bend its ends into hooks that engage with pins *c c*.
95

In the position shown in Fig. 1 the tendency of the spring C to straighten out maintains the lever A out of contact and against a stop *d*. In Fig. 2 the arm B has been turned until the point of connection of the spring C with
100 it has been brought up to or nearly up to the line passing through the other point of con-

nection of the spring and the fulcrum of the lever A. By a further movement, which carries the first-mentioned end across this line, the spring, which up to this point has been bent by the close approach of its ends, is freed and its full force is applied directly to shifting the lever A over between the contacts D. The return of the lever is effected by a similar action.

10 This mechanism may be applied to a great variety of switches, single-pole or double-pole, and is, as I have shown above, a useful mechanical movement for various other purposes.

15 What I claim is—

1. A mechanical movement for electrical switches and other purposes, consisting in the combination of a pivotal lever or part to be shifted, stops for limiting the movement of the same, an operating part or handle capable of movement independently of the said lever, and a flat resilient strip, one end of which is permanently secured to the pivotal lever eccentrically and the other end to a point on the operating part that is movable

across the line joining the fulcrum of the lever and the point thereon to which the said strip is connected.

2. The combination of contact-terminals, a pivotal contact-lever, stops for limiting the movement of the same, a pivoted operating-lever capable of movement independently of the contact-lever, and a flat resilient strip, one end of which is permanently secured to the contact-lever eccentrically and the other to a point on the operating-lever that is movable across the line joining the fulcrum of the contact-lever and the point thereon to which the resilient strip is attached.

3. The combination of the rocking lever B, the push-buttons for turning the same, the contact-lever mounted concentrically with the rocking lever, and the flat spring having its ends connected with the lever or arm B and the contact-lever A, respectively, as set forth.

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Witnesses:

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