(No Model.) 2 Sheets—Sheet 1.

H. T. CLARK.

ELECTRIC SWITCH.

No. 454,031. Patented June 16, 1891.

FIG. 1.

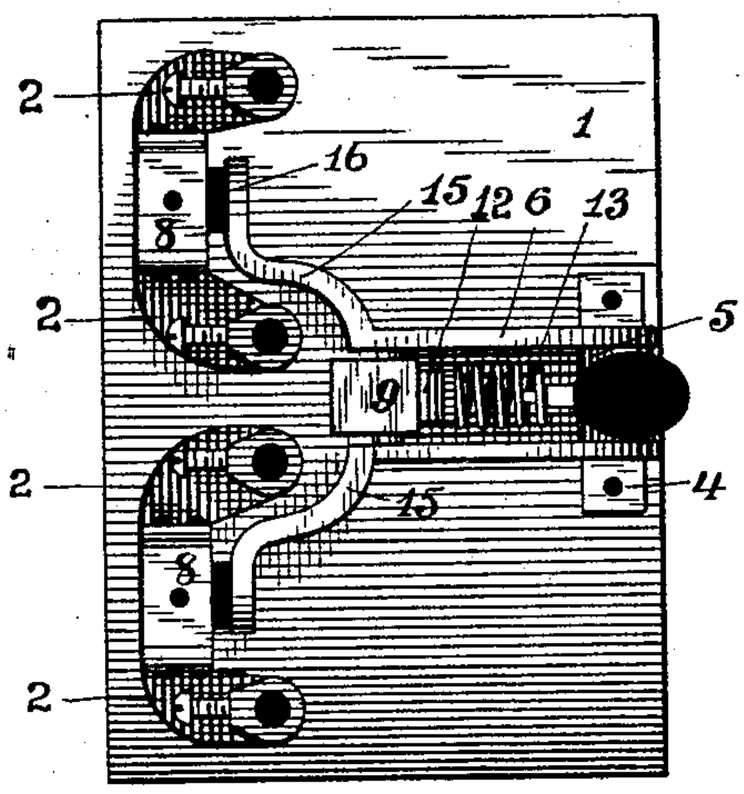


FIG. 2.

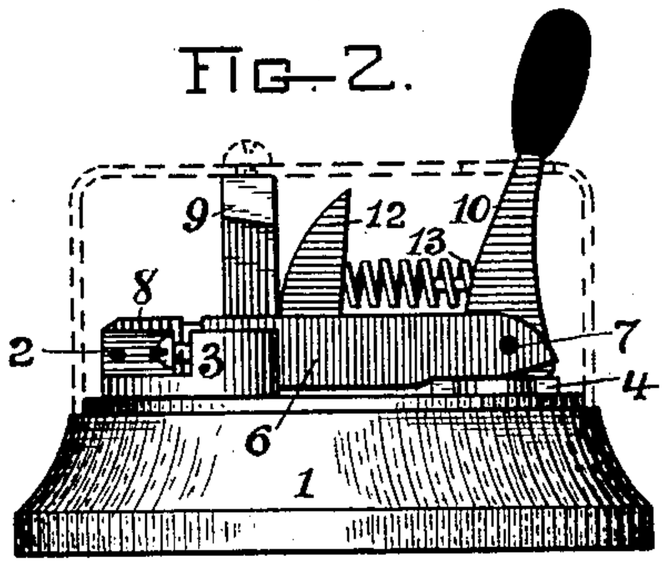


FIG. 3.

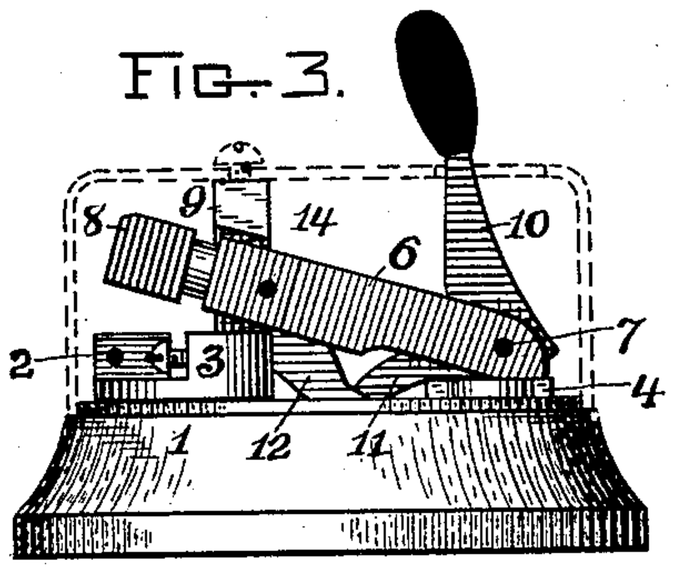


FIG. 4.

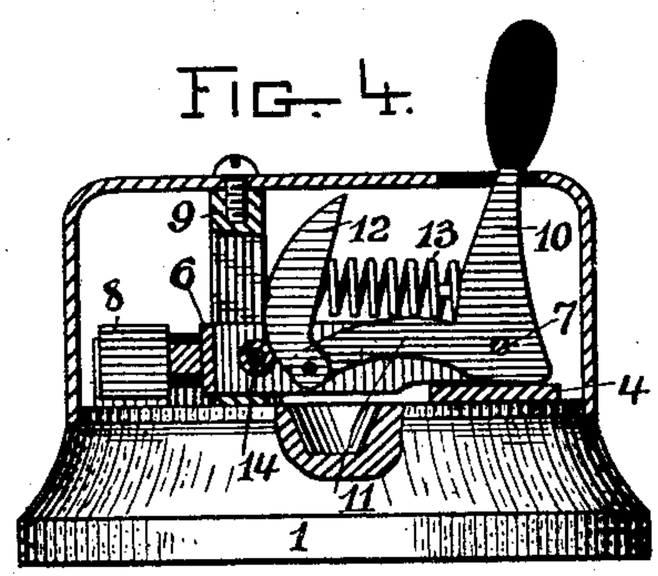
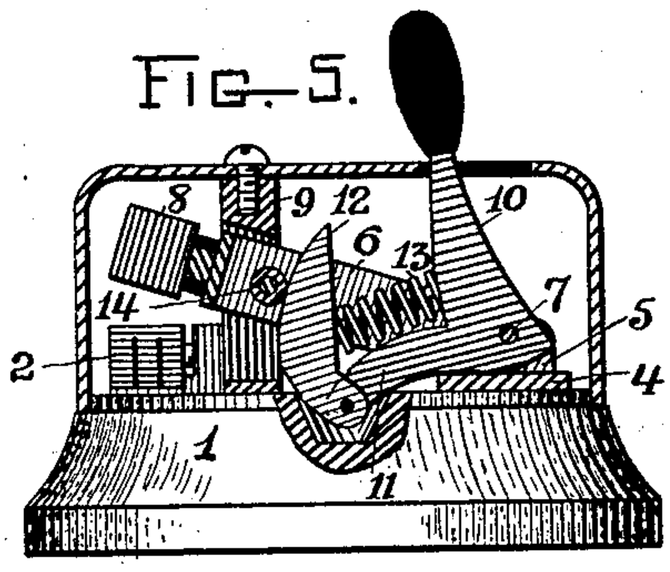


FIG. 5.



WITNESSES

A. J. Tanner.

W. C. Hinchcliffe

INVENTOR

Horace T. Clark

by his attorney D. H. Hubbard

(No Model.) 2 Sheets—Sheet 2.

H. T. CLARK.

ELECTRIC SWITCH.

No. 454,031. Patented June 16, 1891.

FIG. 6.

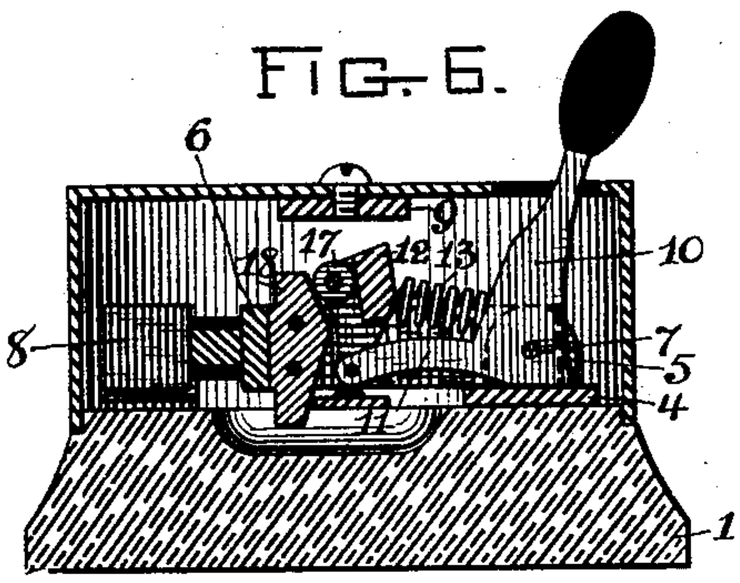
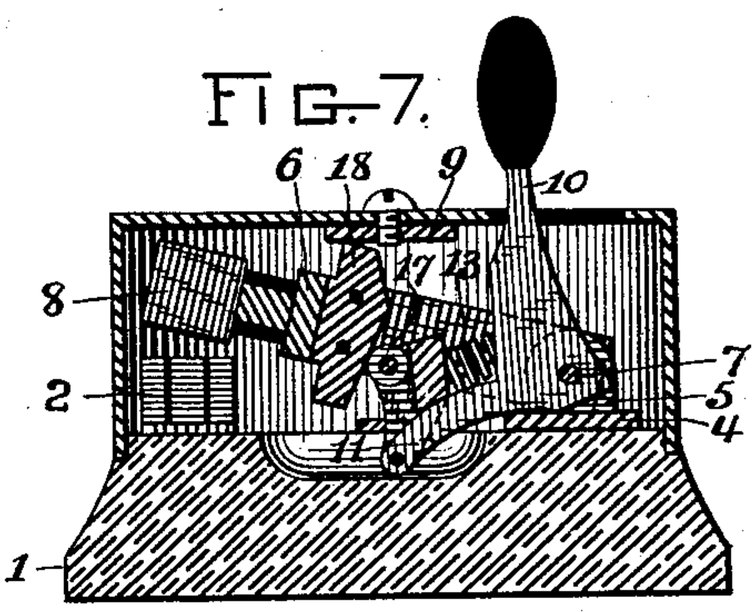


FIG. 7.



WITNESSES:

A. J. Tanner

W. C. Hinchcliffe

INVENTOR:

Horace T. Clark

by his attorney

D. A. Hubbard.

UNITED STATES PATENT OFFICE.

HORACE T. CLARK, OF BRIDGEPORT, CONNECTICUT.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 454,031, dated June 16, 1891.

Application filed April 15, 1891. Serial No. 388,997. (No model.)

To all whom it may concern:

Be it known that I, HORACE T. CLARK, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Electric Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain novel and useful improvements in electric switches; but more particularly is it designed as an improvement upon the subject-matter of a certain pending application for similar subject-matter filed by me the 25th of February, 1891, Serial No. 382,814.

It is my present intention to provide a construction particularly applicable to single-pole switches, although switches of the double-pole variety may be made in accordance with it, and such a switch is shown in the drawings.

My invention consists in the details of construction and combination of elements hereinafter set forth, and recited in the claims, and particularly in the combination, with the circuit-closer, of the rocking-lever handle and the operating-spring.

In order that those skilled in the art to which my invention appertains may fully understand its construction and operation, I will describe the same in detail, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of a double-pole switch. Fig. 2 is a side elevation showing a single-pole switch closed; Fig. 3, a similar view showing it open; Fig. 4, a central longitudinal section through Fig. 2; Fig. 5, a longitudinal section of Fig. 3; Figs. 6 and 7, sectional views showing modifications.

A suitable base of any convenient non-conducting material is denoted by the numeral 1. Upon this base are mounted terminals 2, having accommodation for the line-wires, as by the binding-posts 3.

4 is a small metal plate secured upon the base and provided with a pair of upwardly-projecting ears 5. Upon each side of these ears extend the limbs of a bifurcated circuit-closing bar 6, a pin 7 serving as a fulcrum. Upon its outer end this bar carries a contact 8, adapted to establish electrical connection between the terminals. A stop 9 in the form of a yoke is set astride the circuit-closing bar and serves to limit its upward movement.

Fulcrumed between the ears 5, heretofore referred to, is an L-shaped lever 10, having a suitable handle. The lower branch of this lever (lettered 11) has pivoted to its extremity a swinging member 12, whose outer face is either curved or is furnished with two straight faces meeting at a somewhat obtuse angle. Between the rear side of this swinging member and the front edge of the lever is interposed a spring 13, held in position in any suitable way—as, for instance, by pins projecting from the two parts or sockets formed therein. The swinging member just referred to operates after the manner of a double-faced cam, as will presently appear.

14 is a cross-pin extending through the bifurcated portion of the circuit-closing bar. It is preferably surrounded by a friction-roller, as shown at Figs. 4 and 5, and is engaged by the operating-face of the member 12.

The switch just described is operated by rocking the operating-lever upon its fulcrum, so as to move the swinging member 12 relative to the circuit closer. Referring, for instance, to Fig. 4, when the lever is rocked forward the first portion of its movement carries the swinging member downward and compresses the spring 13 until the center or apex of the face has passed the pin 14, when the expansion of the spring will throw the circuit-closing bar upward with a quick sharp movement, thereby breaking the electrical connection. A reverse movement of the operating-lever will in like manner throw the circuit-closing bar downward and establish the circuit.

The construction of the double-pole switch shown at Fig. 1 differs from the preceding construction, inasmuch as the circuit-closing bar has two branches 15, each branch bearing a contact 8, which is insulated therefrom, as seen at 16, Fig. 1. In Figs. 6 and 7 the construction is still further modified, inasmuch as the member 12 bears a roller 17 in its outer face, and said roller operates in connection with a block 18, carried on the circuit-closing

bar, said block having an angular face against which the roller works. The method of operation of this construction is the same as that of the preceding figure and needs no further description.

I claim—

1. In an electric switch, the combination, with suitable terminals, of a circuit-closing bar pivoted at its heel end, an L-shaped rocking lever having pivoted thereto a swinging actuator, and a spring adapted to engage and move said actuator, substantially as described.

2. In an electric switch, the combination, with the terminals, of a circuit-closing bar pivoted at one end and bearing a connector, an L-shaped lever fulcrumed at its elbow, a swinging member pivoted to the lower arm of the lever and provided with an operating-face engaging the bar, and a spring interposed between said member and the lever, substantially as described.

3. The combination, with the terminals, of a circuit-closing bar bifurcated at its rear end and fulcrumed at said end, a rocking L-shaped lever whose fulcrum-point is the fulcrum of the bar, a swinging member pivoted to said lever and having operative engagement with the bar, and a spring operating to push said swinging member outward and away from the vertical arm of the lever, substantially as described.

4. The combination, with the circuit-closing bar, bifurcated and fulcrumed at its rear end, of the L-shaped lever fulcrumed between the legs of the bar, a swinging member pivoted to the horizontal arm of the lever and having an angular outer face, a cross-pin secured in the bar and engaged by said swinging member, and a spring adapted to force the swinging member into engagement with the cross-pin and there retain it, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HORACE T. CLARK.

Witnesses:

SHERMAN HARTWELL HUBBARD,

M. C. HINCHCLIFFE.