

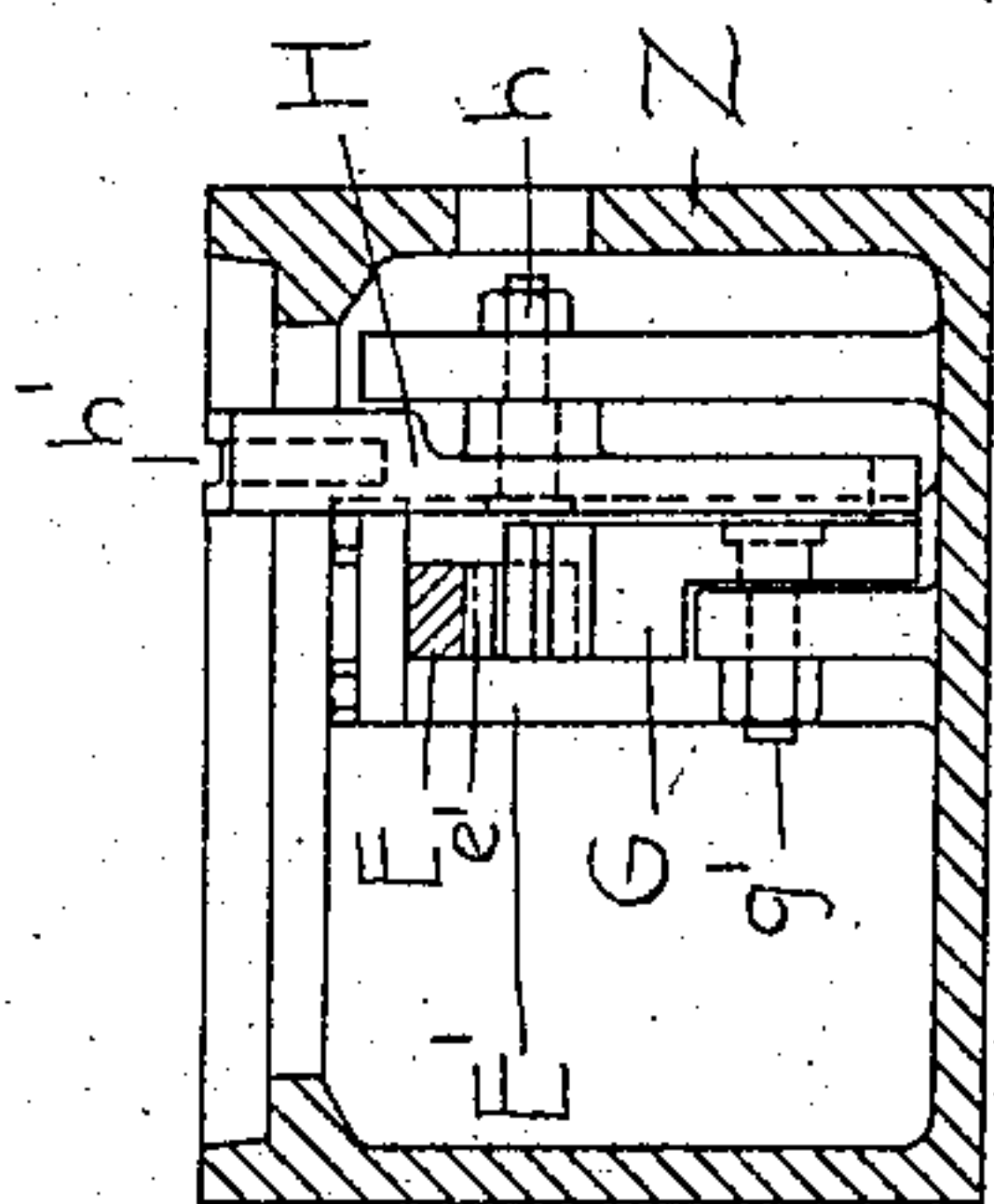
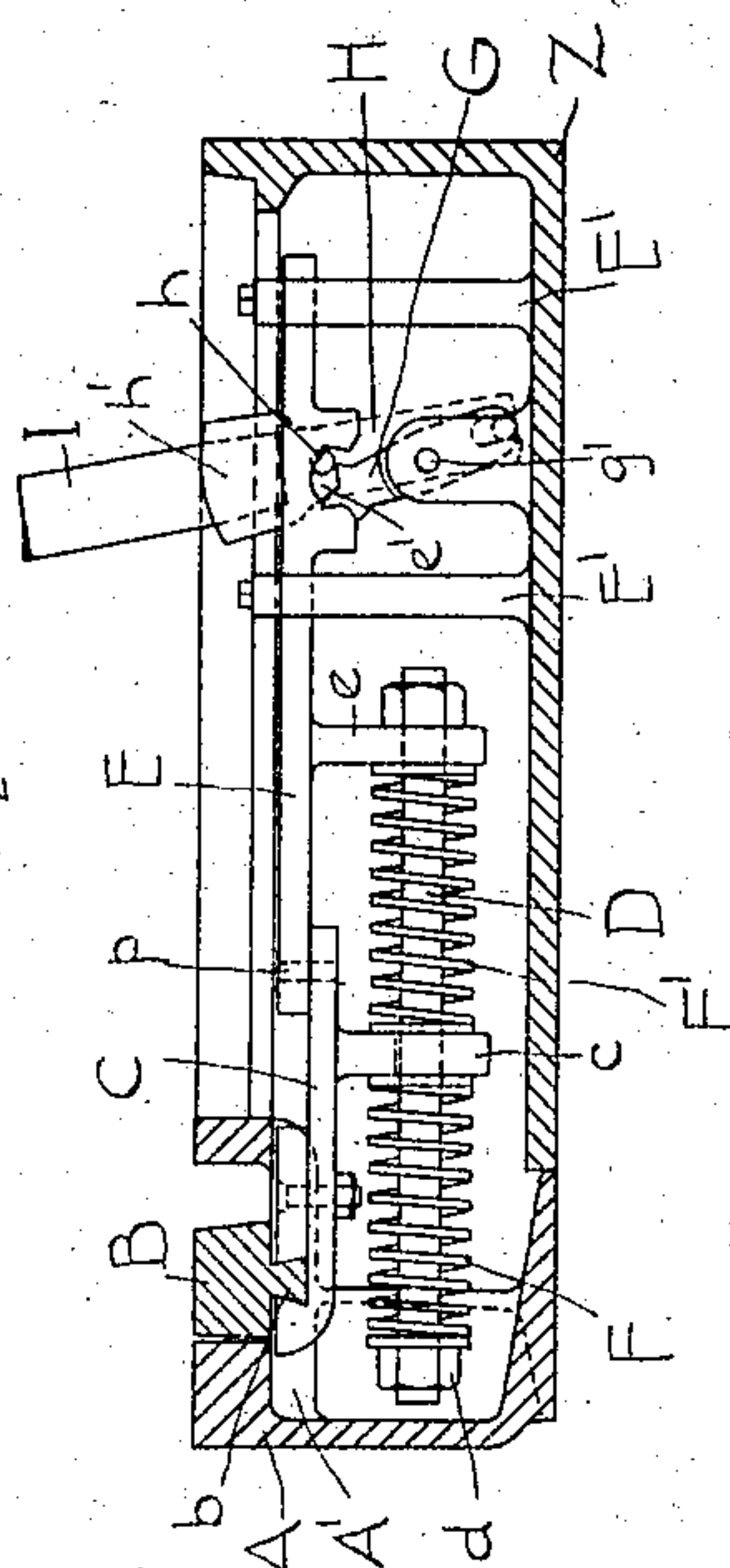
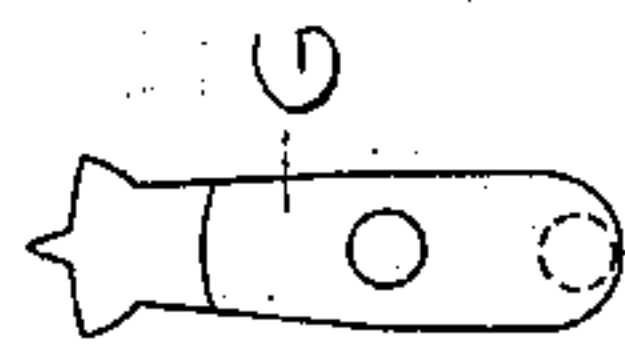
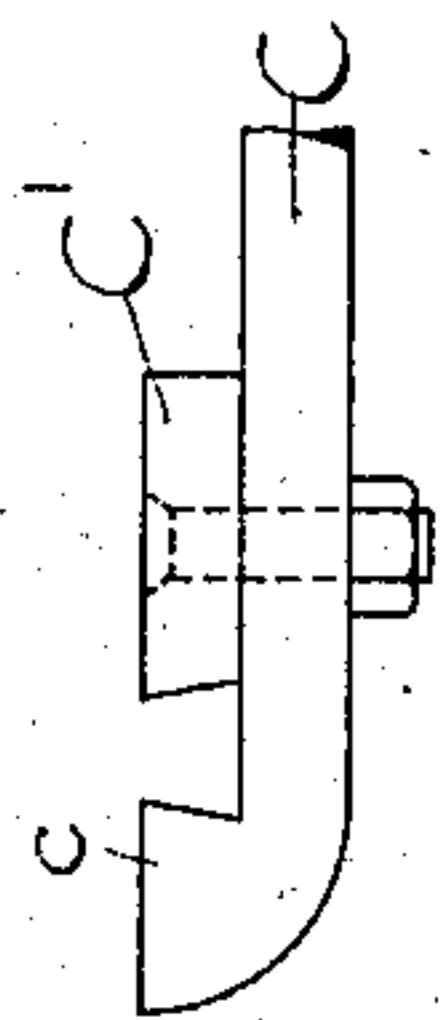
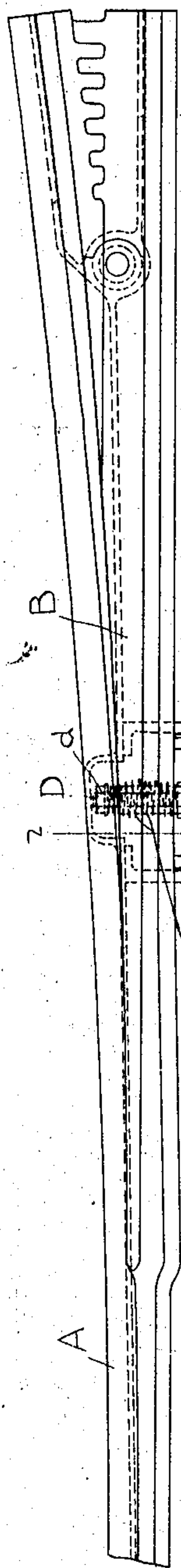
No. 773,013.

PATENTED OCT. 25, 1904.

H. G. ISENBERG.
TONGUE SWITCH.

APPLICATION FILED OCT. 5, 1903.

NO MODEL.



WITNESSES:
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UNITED STATES PATENT OFFICE.

HERBERT G. ISENBERG, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO
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TONGUE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 773,013, dated October 25, 1904.

Application filed October 5, 1903. Serial No. 175,823. (No model.)

To all whom it may concern:

Be it known that I, HERBERT G. ISENBERG, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Tongue-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in tongue-switches, and is designed to provide means whereby by a simple change in the arrangement of springs or by the omission thereof the switch may be adapted for use as either a right or left hand spring-switch or as a positively-locked right or left hand switch, using in each case the same spring-box, operating mechanism, and tongue attachments; also, to provide means whereby, if desired, the same structure may be used either as a right or left hand spring-switch and as a positively-locked switch; also, to provide means for holding the tongue down to its bed or seat.

With these objects in view my invention consists in the novel construction, arrangement, and combination of parts, all substantially as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a tongue-switch embodying my invention, the cover of the spring-box being removed; Fig. 2, a section on the line 2 2 of Fig. 1; Fig. 3, a section on the line 3 3 of Fig. 1, and Figs. 4 and 5 detail views.

The letter A designates the body of the structure, and B the pivoted tongue. Attached to the tongue intermediate of its ends is a laterally-extending arm C, having a depending lug *c*, through which passes a rod D. One end of this rod carries a head or nut *d*, and the opposite end is secured in a depending lug *e* of a slide E, supported in guides E' and overlapping at one end the arm C.

F F' are spiral springs on the rod D, one of them being seated between the head *d* and the lug *c* and the other one between the said lug and the lug *e*.

G is a dog or pawl pivoted at *g'* to a fixed support in the spring-box Z and pivotally engaged below its own pivot with the lower arm of an operating-lever H. The lever H is pivoted at *h* and is provided at its upper end with a socket *h'* to receive a removable operating-bar I. The upper toothed and shouldered end of the pawl or dog G engages loosely a notch or recess *e'* in the under side of the slide E.

The connection between the arm C and the tongue B is preferably made as follows: The tongue is formed with a depending dovetailed lug *b*, which is preferably forged thereon. The arm C is formed with an end portion *c*, shaped to fit against one side of this lug, and fitting against the opposite side is a separable piece C', bolted or otherwise secured to the arm C. This arm extends through an opening at A' in the guard portion of the body portion A, and thereby prevents the tongue from lifting or jumping from its seat.

When the lever H is moved over to the position shown in Fig. 2, the spring F' is compressed and acts to hold the tongue in its left-hand position, at the same time, however, permitting the tongue to be trailed. When the lever H is moved to its opposite position, the rod D is moved endwise, thereby compressing the spring F, which then acts to hold the tongue set to its right-hand position.

It will be seen that inasmuch as the dog G is moved considerably by center by the movement of the lever H the slide cannot move back against this dog, as its guides prevent it from rising sufficiently to take the arc of movement of the end of the dog. The arrangement therefore forms a lock which cannot be released except by the movement of the lever H. In case it is desired to positively lock the tongue a pin may be dropped through the holes indicated by the dotted lines at *p* in Fig. 2. This locks the tongue against any movement, except through the lever H. If the tongue is to be habitually positively locked, the springs will be omitted, as in such cases they perform no function.

In the event that the tongue is to be habitually set to one side or the other and used as a

spring-switch, which is usually the case, either the spring F or F' is omitted, as the case may be, the purpose of the invention being to provide an attachment for a switch which by a
 5 simple change in the arrangement of springs, or by the omission thereof, may be fitted up at the shops for a spring-switch with either right or left hand throw or for a positive lock, using in each case the same spring-box,
 10 lever movement, and tongue attachment.

I do not wish to be limited to the exact construction, combination, and arrangement of parts herein shown and described, as various changes may be made in the details thereof
 15 without departing from my invention as it is defined in and by the following claims.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

20 1. The combination with the movable tongue or point having a laterally-extending arm, provided with an abutment for one or more springs, of a slide also carrying one or more spring-abutments opposing that of the said
 25 arm, and an operating and locking device for said slide.

2. The combination with a movable switch tongue or point having a laterally-extending arm, provided with a spring-abutment, a slide
 30 carrying opposing abutments, an operating and locking device for said slide, and means whereby said arm and slide may be positively connected to each other.

3. The combination with the movable point
 35 or tongue, of a slide, spring-abutments carried by the tongue and slide, means whereby springs may be seated against said abutments to act upon the tongue in one or both directions, and an operating and locking device for
 40 the said slide.

4. In a switch the combination with a movable point or tongue, of an arm connected thereto and extending laterally underneath the guard member of the switch structure,
 45 means for seating a spring or springs to act upon said arm in either direction or in both directions, and an operating and locking device.

5. In a switch, the combination of a movable tongue or point, a laterally-extending
 50 arm connected thereto, and having a depending lug, a slide also having a depending lug, a rod secured in the last-named lug and extending through the lug on the said arm and terminating in a spring-abutment, and means
 55 for operating and locking the slide.

6. In a switch, the combination with a movable tongue or point, having a laterally-extending arm connected thereto, said arm having a depending lug, a slide also having a de-
 60 pending lug, a spring-guide secured in the last-named lug and extending through the lug of said arm and terminating in a spring-abutment, means whereby the slide may be positively secured to the said arm, and means for
 65 operating and locking the said slide.

7. In a switch, the combination with a movable point or tongue, of a slide connected thereto, guides for said slide, a combined locking and operating pawl or dog engaging said
 70 slide, and means for actuating the pawl or dog.

8. In a switch, the combination with a movable point or tongue, of a slide connected thereto, guides for said slide, a pivoted dog or pawl engaging said slide, and an operating
 75 lever engaging the dog or pawl.

9. In a switch, the combination with a movable point or tongue, of a slide for actuating the same, a dog or pawl for actuating and locking the slide, and a socketed operating-lever
 80 engaging the opposite arm of said dog or pawl.

10. In a switch-operating mechanism, the combination with the slide E having the notch or recess e', of the dog or pawl G having the toothed and shouldered upper end portion en-
 85 gaging the said recess, and the operating-lever H engaging the lower end portion of said dog or pawl and having a socket at its upper end.

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

HERBERT G. ISENBERG.

Witnesses:

GEO. H. PARMELEE,
 H. W. SMITH.