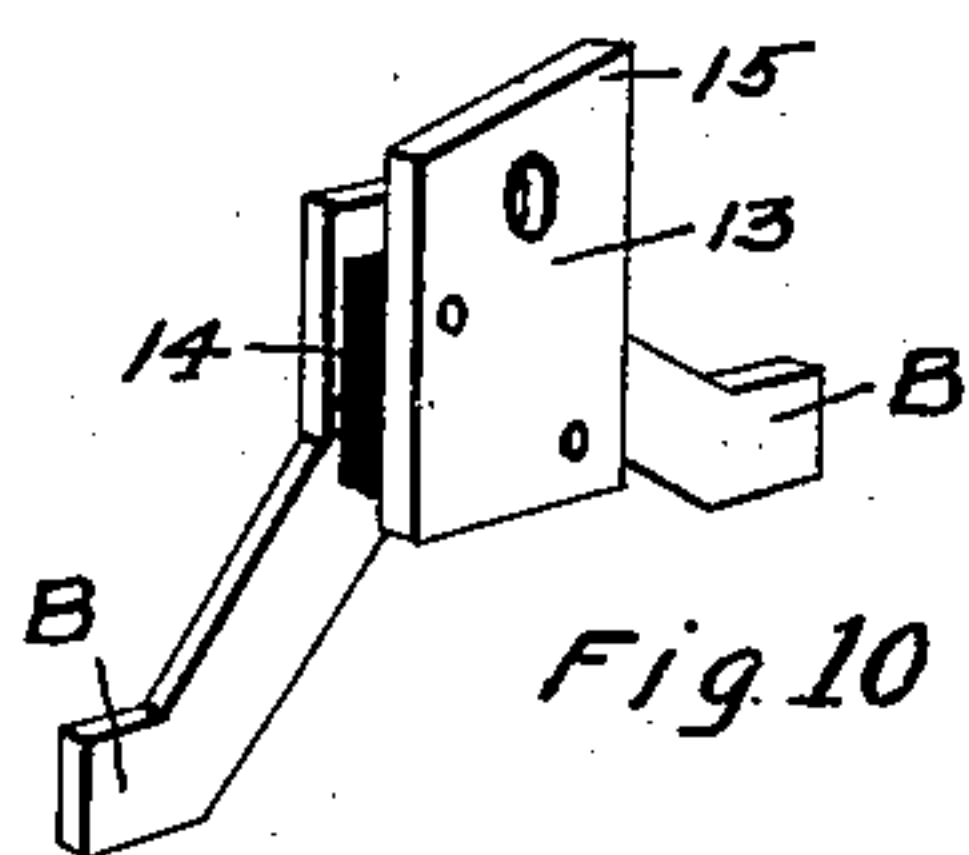
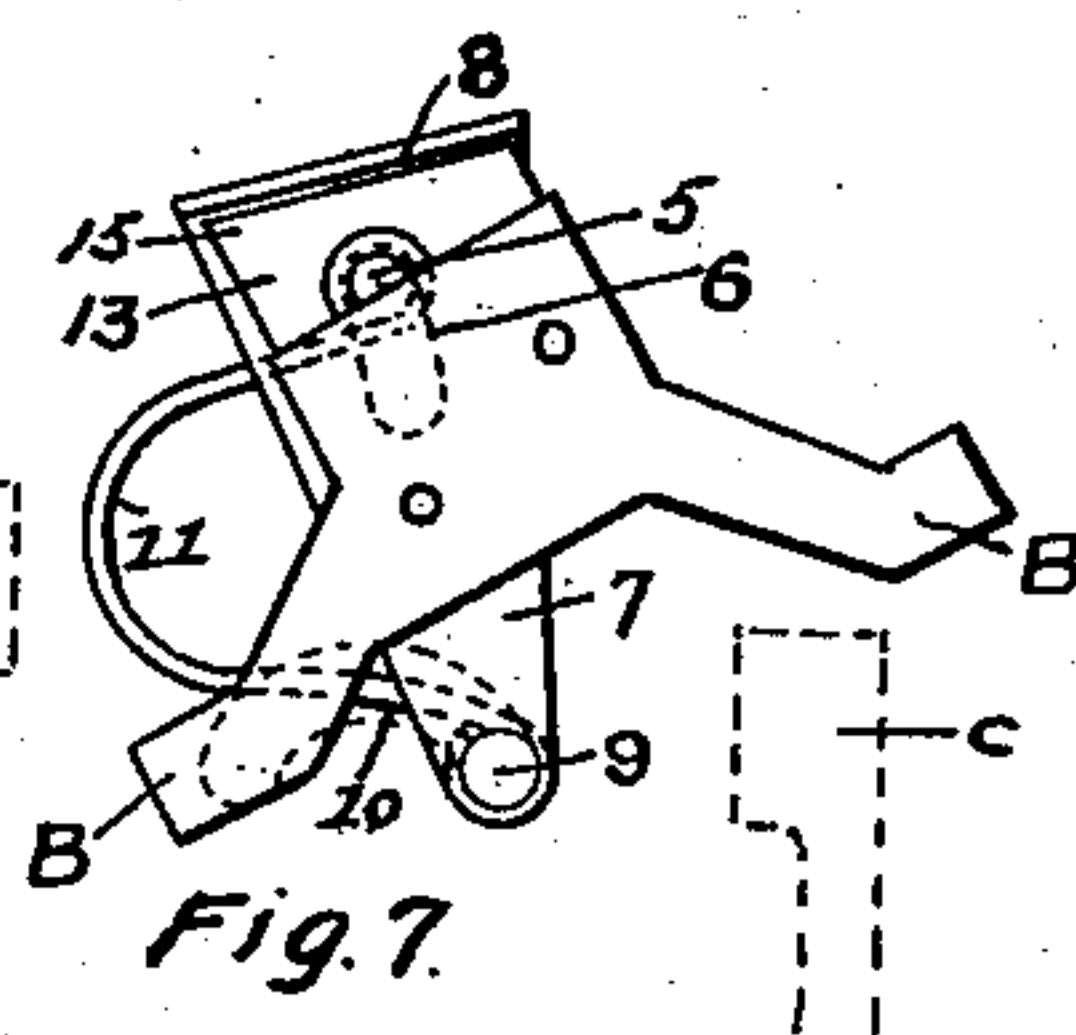
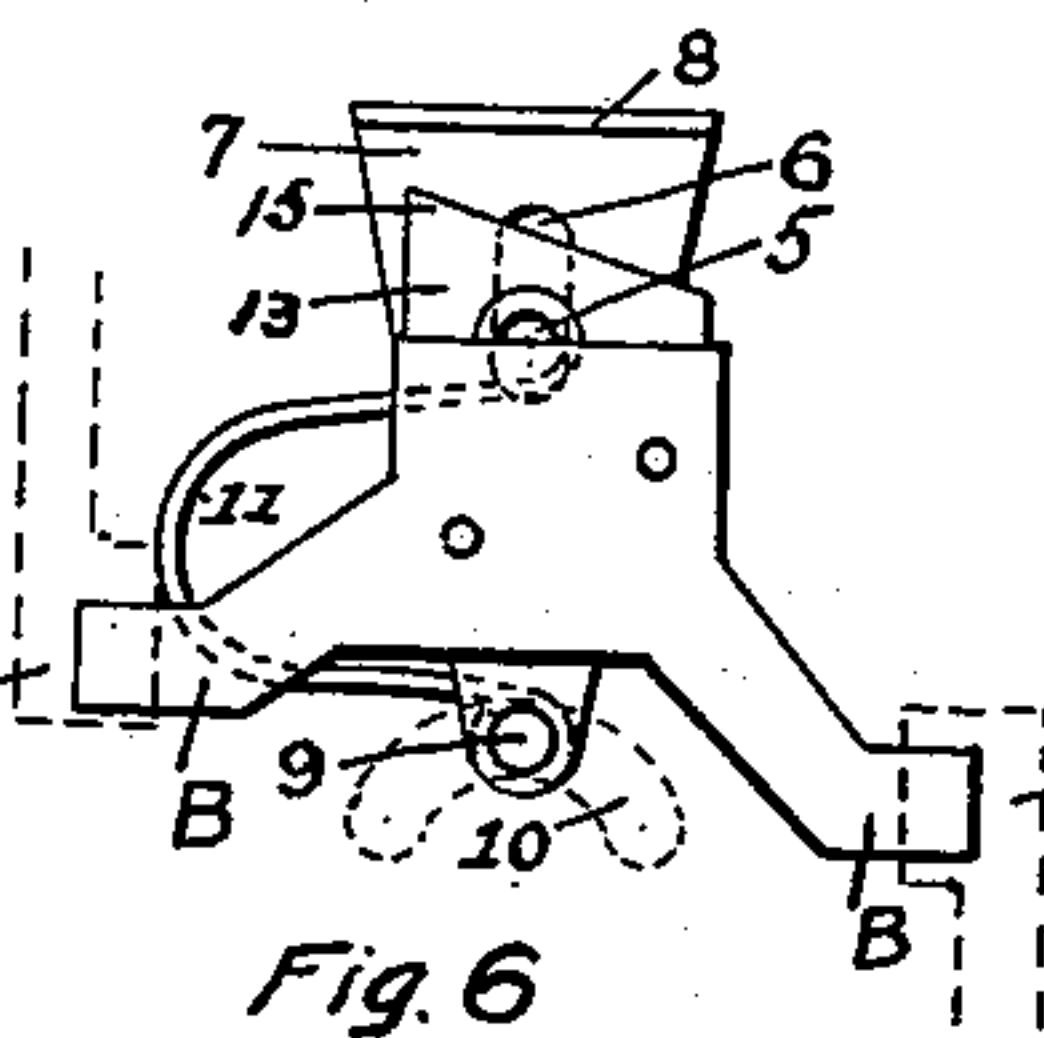
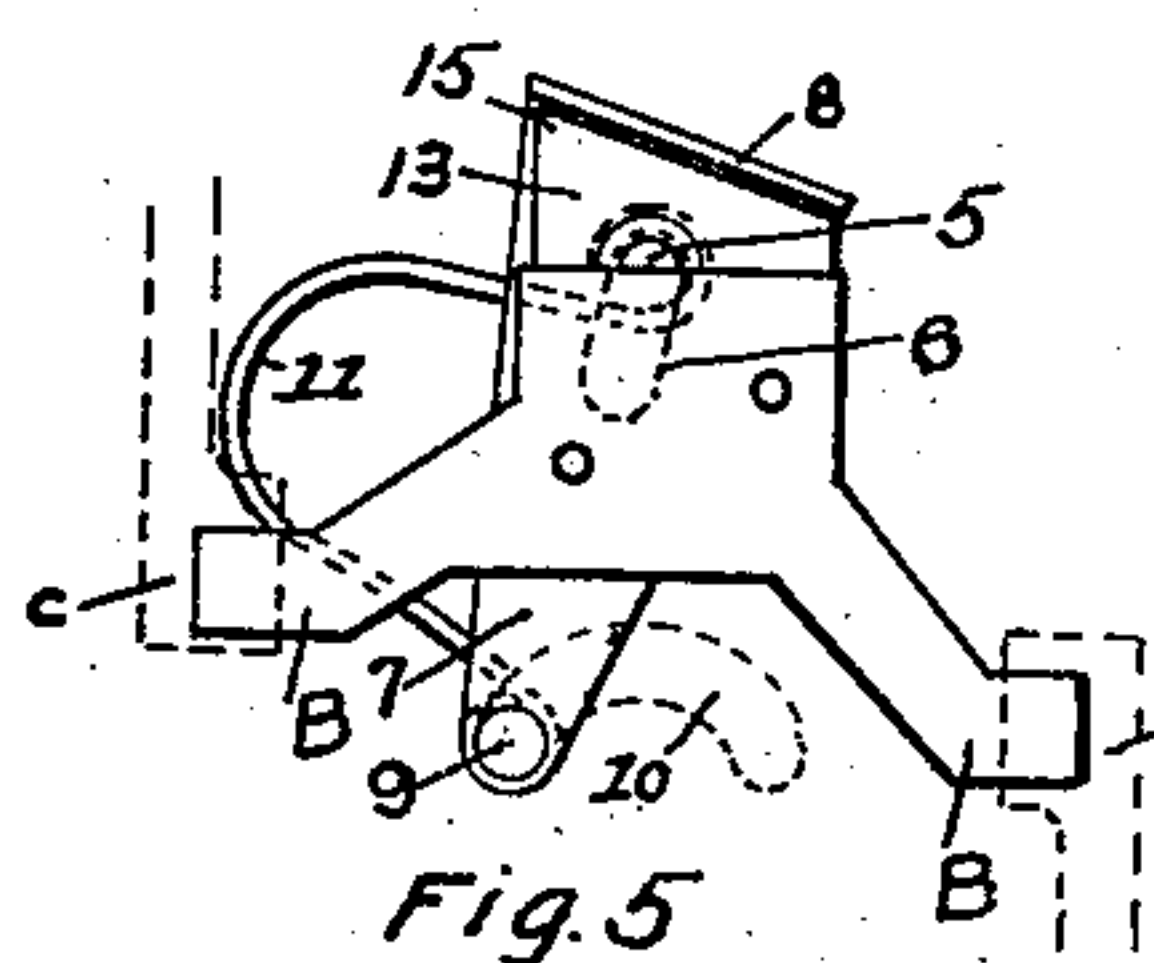
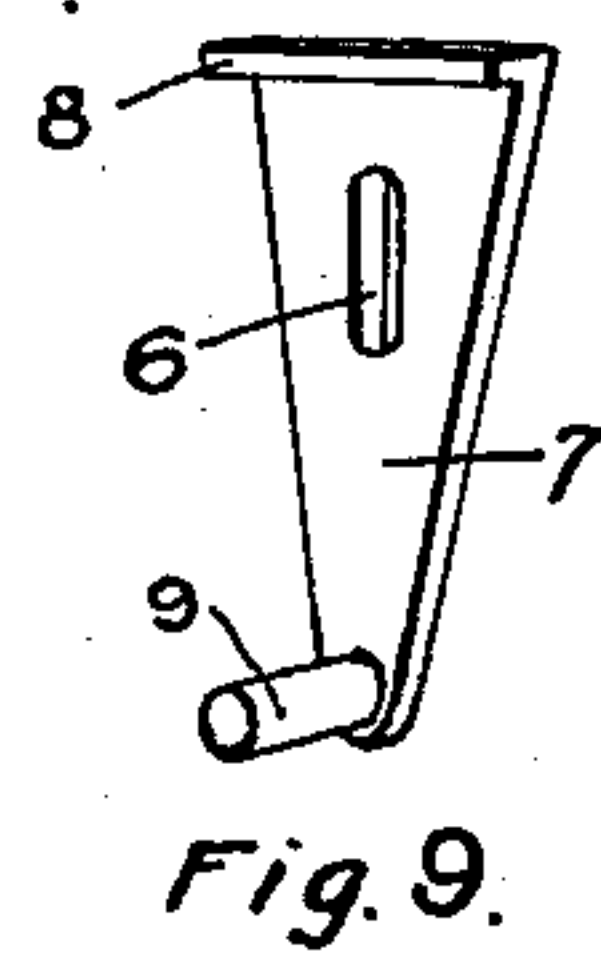
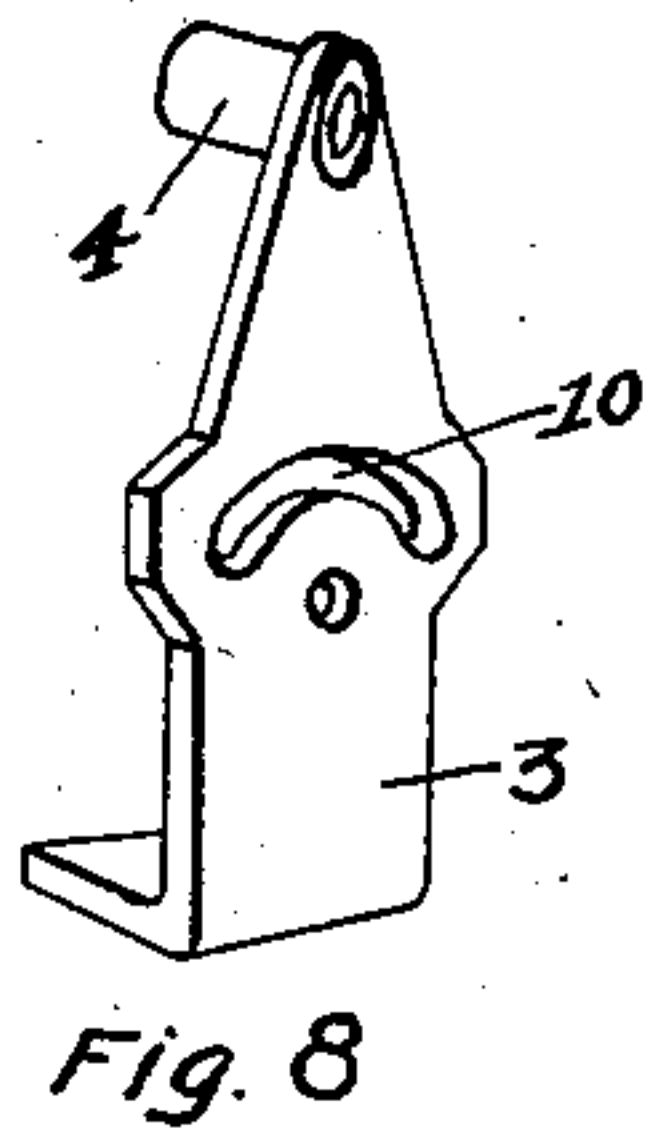
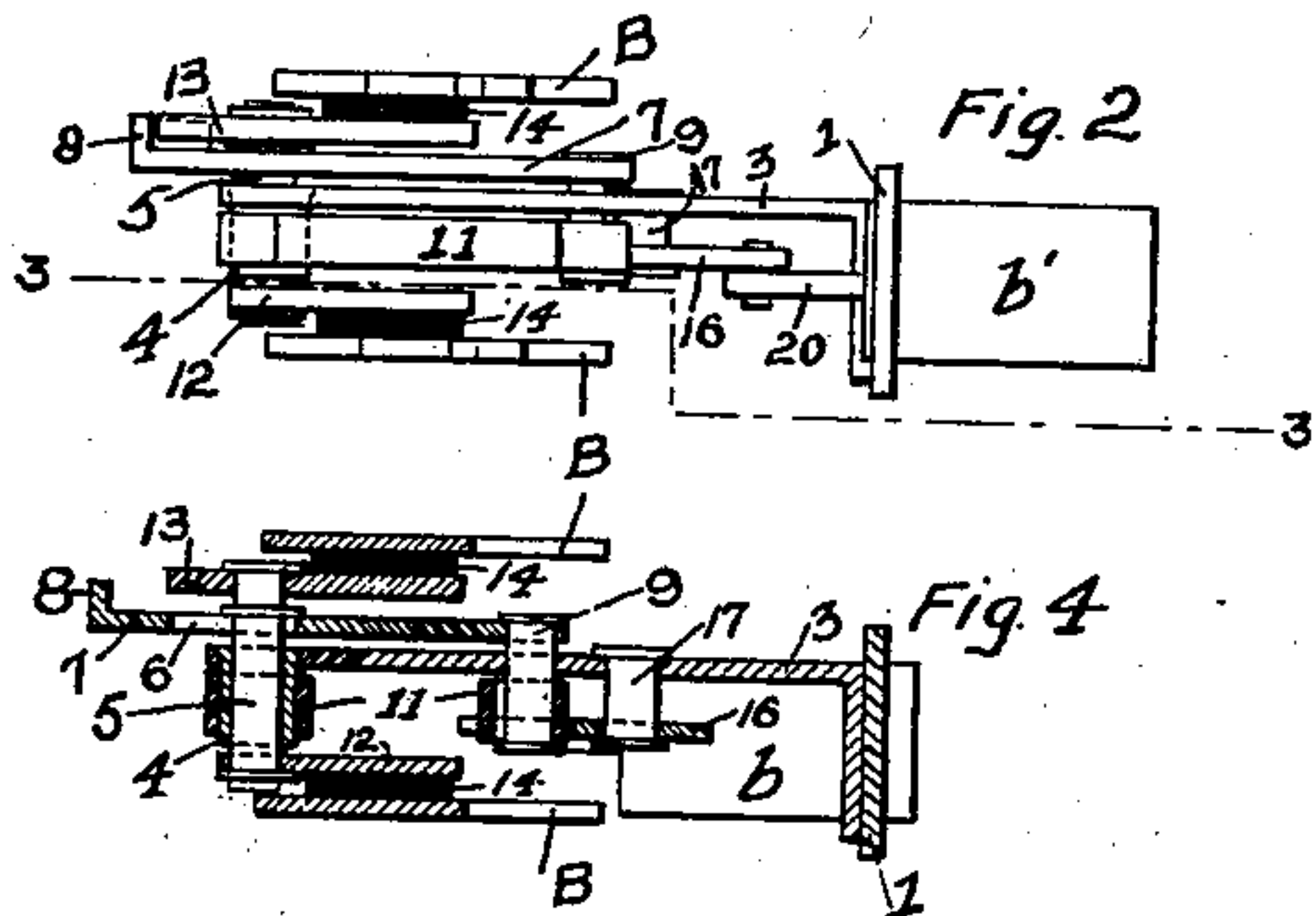
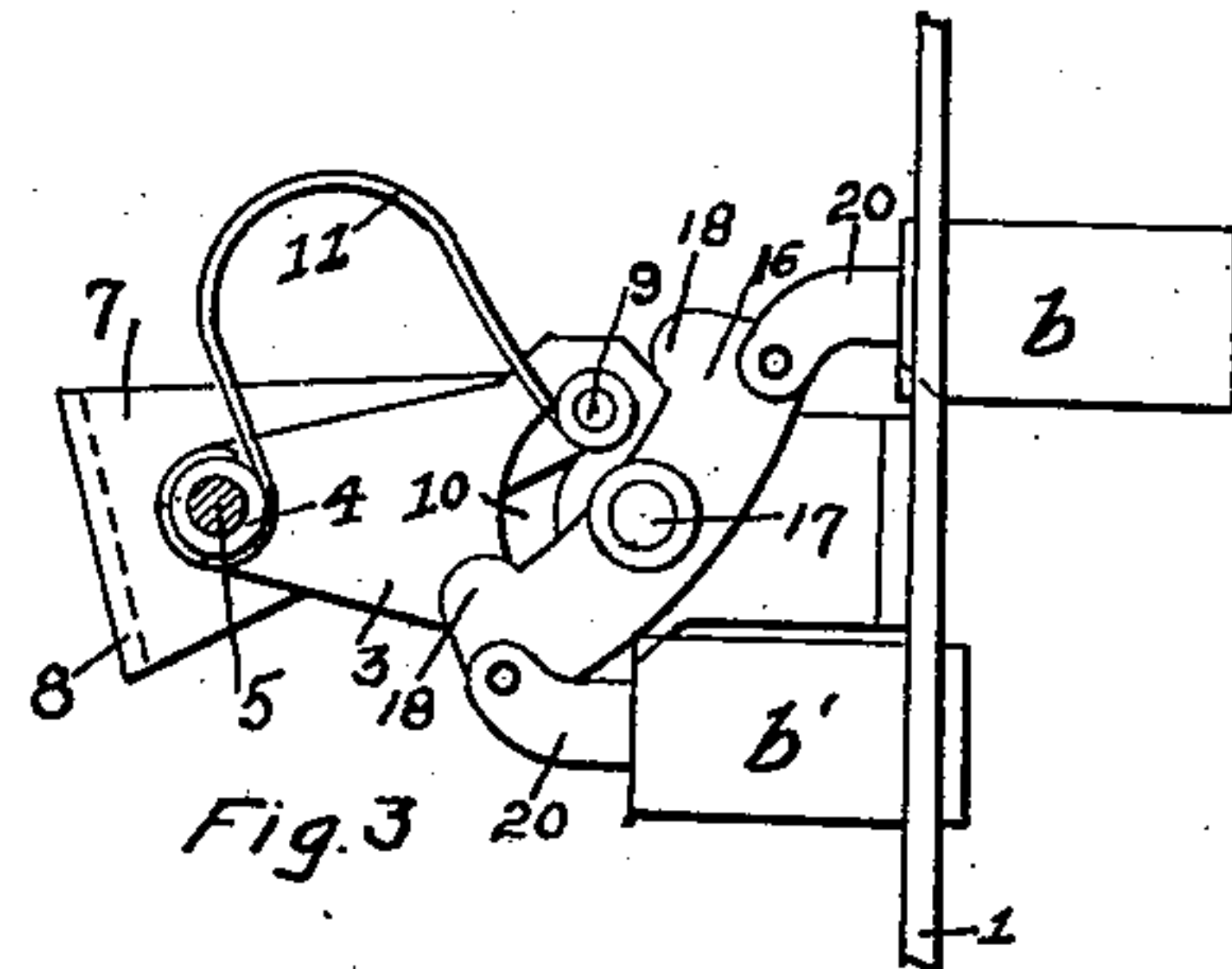
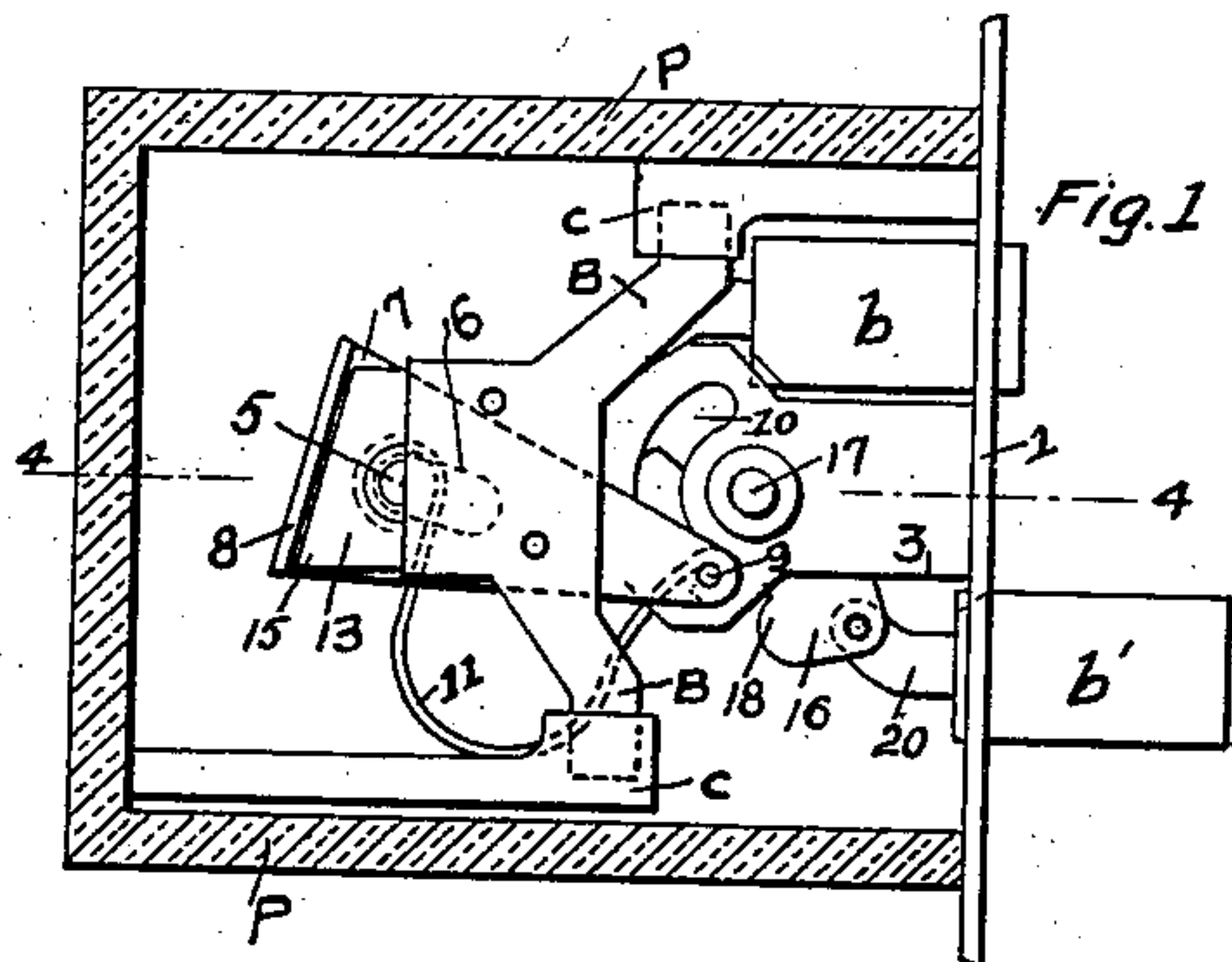


No. 742,508.

PATENTED OCT. 27, 1903.

A. B. SIMPSON.  
PUSH BUTTON SWITCH.  
APPLICATION FILED JULY 9, 1903.

NO MODEL.



WITNESSES:-

Richard A. Wright.  
G. W. Wright.

INVENTOR

ALEXANDER B. SIMPSON

BY

Howson & Howson,

HIS ATTORNEYS.



# UNITED STATES PATENT OFFICE.

ALEXANDER B. SIMPSON, OF NEW YORK, N. Y., ASSIGNOR TO H. KRANTZ MANUFACTURING COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

## PUSH-BUTTON SWITCH.

SPECIFICATION forming part of Letters Patent No. 742,508, dated October 27, 1903.

Application filed July 9, 1903. Serial No. 164,817. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER B. SIMPSON, a citizen of the United States of America, and a resident of the borough of Manhattan, city of New York, in the county and State of New York, have invented an Improved Push-Button Switch, of which the following is a specification.

This invention relates to a push-button switch, and has for its object to improve, simplify, and cheapen the construction of this type of switch.

In the accompanying drawings, Figure 1 is a side elevation of my improved operating mechanism, the receptacle being shown in section. Fig. 2 is an edge or plan of the mechanism removed from the receptacle. Fig. 3 is a section on line 3 3, Fig. 2. Fig. 4 is a section on line 4 4, Fig. 1, when the operating parts are in the position of Fig. 6. Figs. 5, 6, and 7 show the moving parts in position of contact, mid-position, and "off" position, respectively. Fig. 8 is a perspective view of the fixed plate which carries the operating parts. Fig. 9 is a perspective view of the plate which delivers a hammer-like stroke to move the switch, and Fig. 10 is a perspective view of one of the contact-blades and the attached plate which is struck the hammer-blow.

P is the receptacle, of porcelain or the like, containing fixed contact-clips *c c*. A plate 1 is secured across the top of the receptacle and carries a plate 3 to support the moving parts of the switch. The plate 3 carries pivoted contact-blades *B B*, adapted to engage with the clips *c c*. The plate 3 has a sleeve 4 fastened at one end as a bearing for the shaft 5, carrying the contact-blades, Figs. 2 and 4. This shaft 5 passes through a slot 6 in a plate 7, which has a lip 8 at one end and a stud 9 at its other end, the stud 9 passing through a slot 10 in the fixed plate 3. A spring 11, connected at one end to the stud 9 and at the other to the sleeve 4, tends to always force the stud into the lower ends of the slot 10, and thus to move the plate 7 to the right, Figs. 1, 2, 3, and 4. The shaft 5 carries a plate 12 and an anvil-plate 13, one at each end and to which the blades *B B* are made fast, insulation

14 being interposed, Figs. 4 and 10. The anvil 13 projects above one of the blades *B*, and its upper end is preferably at an angle with said blade, so that one corner 15 is higher than the other, as shown in Figs. 5, 6, 7, and 10.

A cross-arm 16 is pivoted on a stud 17 to the plate 3 and each end connected by pivoted links 20 20 with the push-buttons *b b'*, which project through openings in the cover-plate 1. The cross-arm 16 has two projecting lugs 18 18, adapted upon the oscillation of the cross-arm to travel into the path of the slot 10 and force the stud 9 of the slotted plate 7 up the incline of the slot from the position of Fig. 5 to the position of Fig. 6, compressing the spring 11, so that as the stud passes the center of the slot the stud will be forcibly and quickly pushed down into the other end of the slot, Fig. 7, causing the lip 8 to strike the corner 15 of the plate 13 a hammer-blow and move the shaft 5 and blades *B B* away from the clips *c c* to break the circuit, as shown in Fig. 7, or upon the operation of the oscillating cross-arm 16 in the other direction to similarly cause the blades *B B* to make connection again with the clips *c c*, in which position the lip 8 of the blade 7 will occupy its innermost position on an angle which limits the motion of the blades *B B*, and thus acts as a stop to make circuit always in proper relation to the clips *c c*.

I claim as my invention—

1. A switch, having a contact-blade in combination with operating mechanism, comprising a shaft for the blade, an anvil adapted to turn with the blade, a slotted plate, a plate having a groove in which the slotted plate is guided, a stud on said plate passing through the slot in the slotted plate, a spring tending to move the slotted plate against the anvil, means for moving the slotted plate away from said anvil, means to change its angle, and means to release the blade from said first-named means to cause it to strike the anvil, substantially as described.

2. A switch having a contact-blade and an anvil, turning together, in combination with a plate 3, a groove and a bearing in said plate, a shaft carrying the contact-blade and anvil, a slotted plate slidable on the shaft, a stud at

one end of the slotted plate moving in the groove of the plate 3, a spring tending to move the slotted plate toward the anvil and means for moving the stud in the guide, substantially as described.

3. A switch having a plate 3, provided with a bearing and a groove, and a shaft in the bearing carrying a contact-blade and an anvil, in combination with a slotted plate having a lip and a stud, the slot fitting the shaft, and the stud fitting the groove, a spring between the stud and shaft, and means for moving the stud along said groove, substantially as described.

4. A switch having a plate 3 with a bearing

and a groove, and a shaft in the bearing carrying a contact-blade and an anvil, in combination with a slotted plate having a lip and a stud, the slot fitting the shaft, and the stud the groove, a spring between the stud and shaft and a rocker-arm to move the stud in the groove and push-buttons connected to the rocker-arm, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALEXANDER B. SIMPSON.

Witnesses:

EDNA W. COLLINS,  
F. WARREN WRIGHT.