

919,472.

F. W. SANFORD.
ELECTRICAL SWITCH.
APPLICATION FILED JULY 24, 1908.

Patented Apr. 27, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

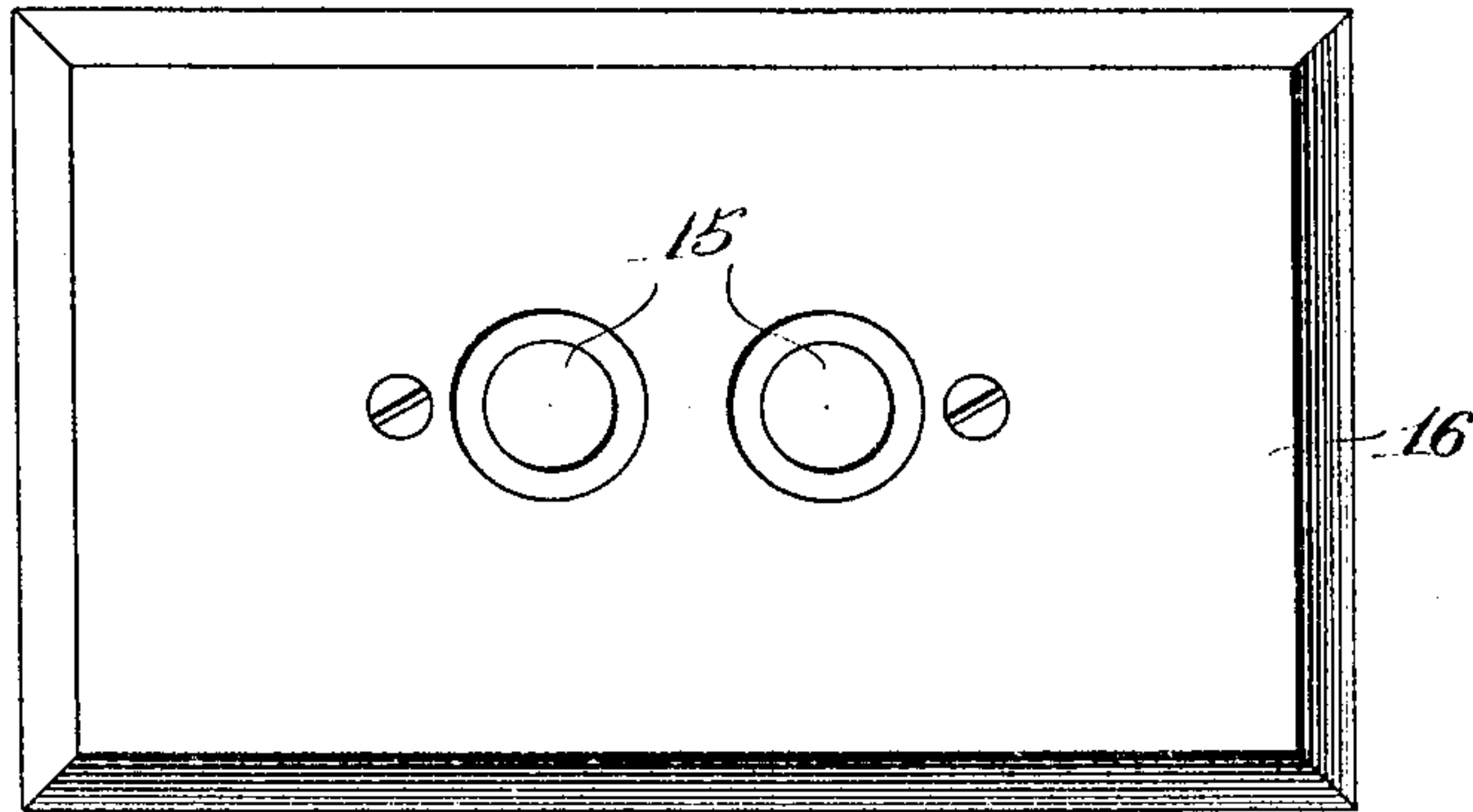


Fig. 2.

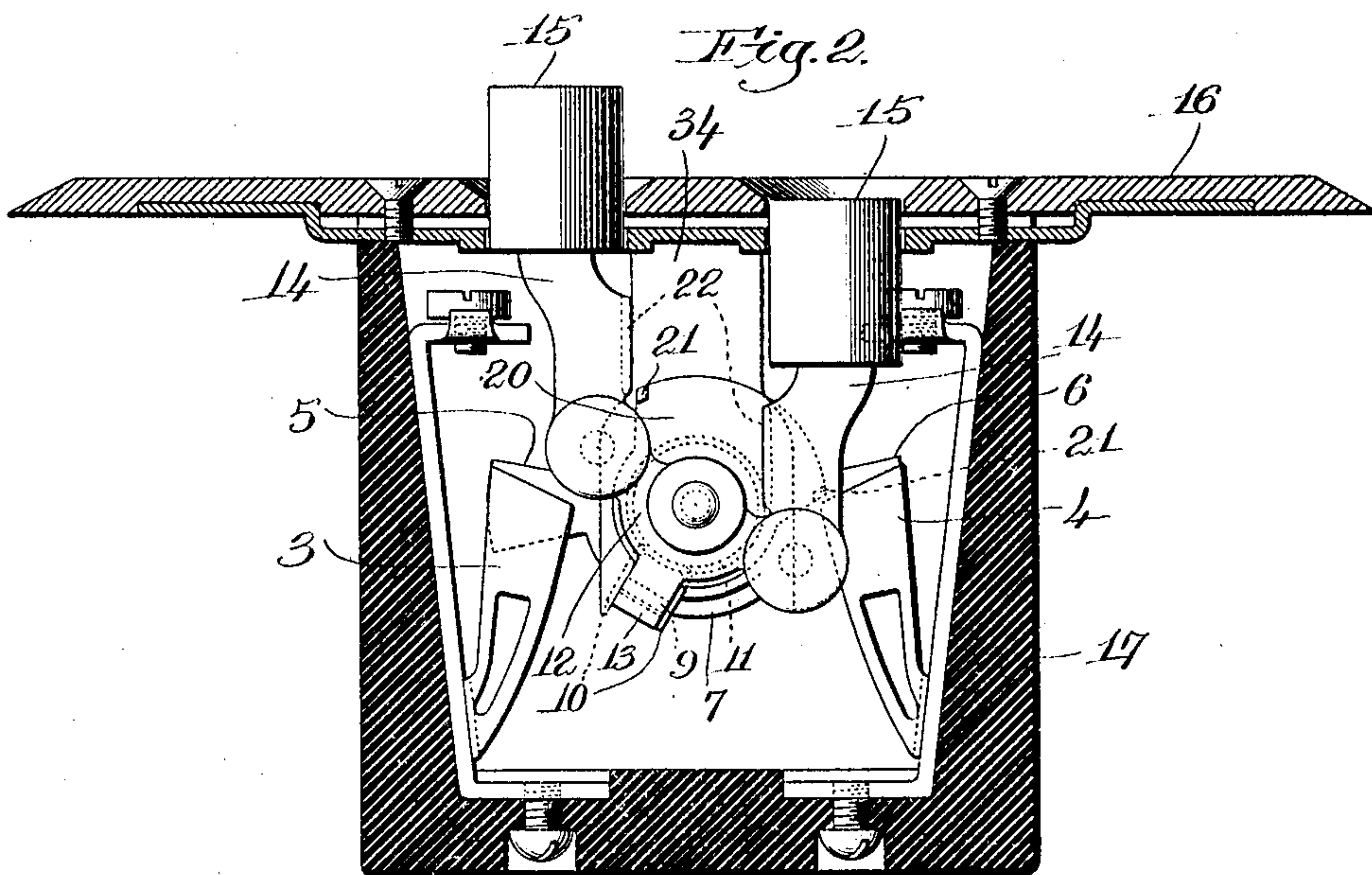
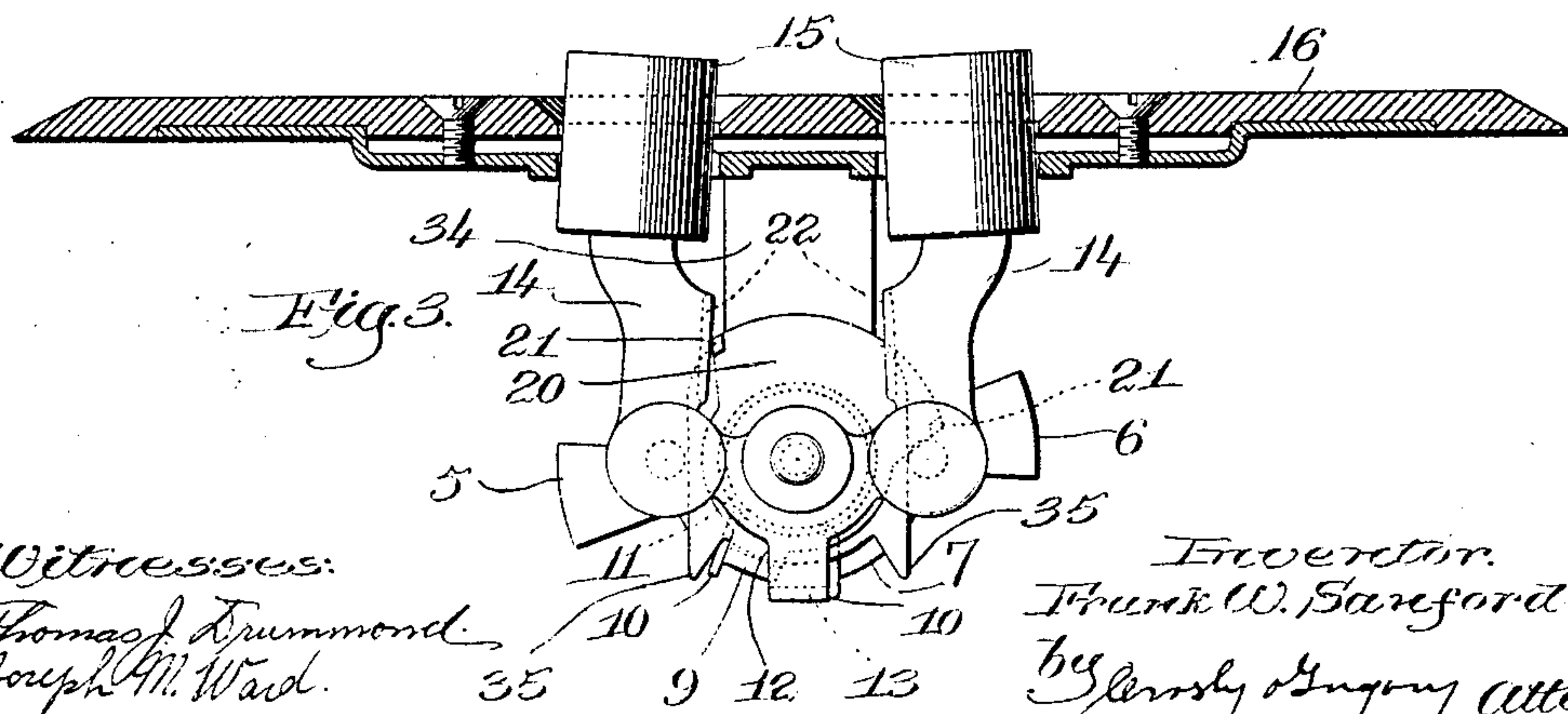


Fig. 3.



Witnesses:

Thomas Drummond
Joseph M. Ward.

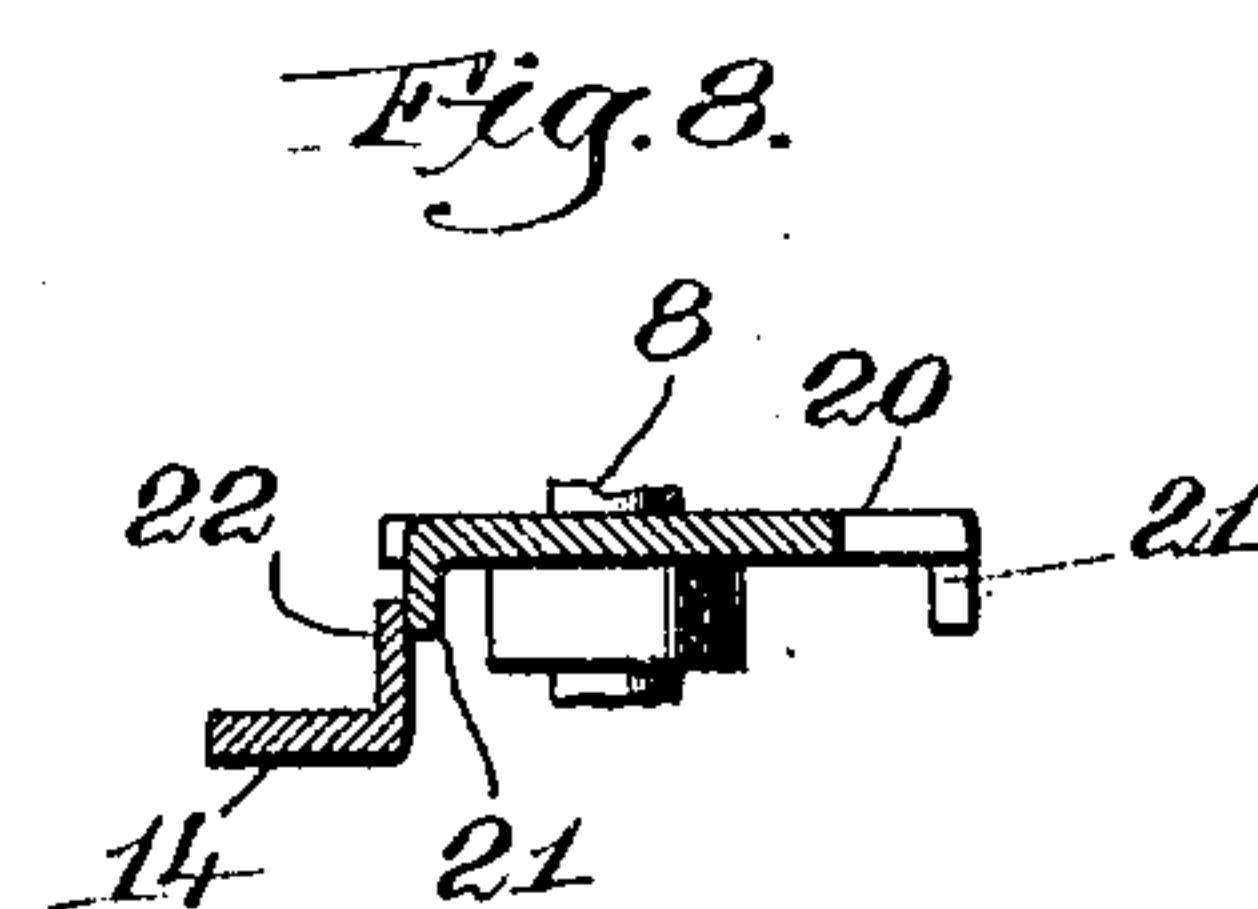
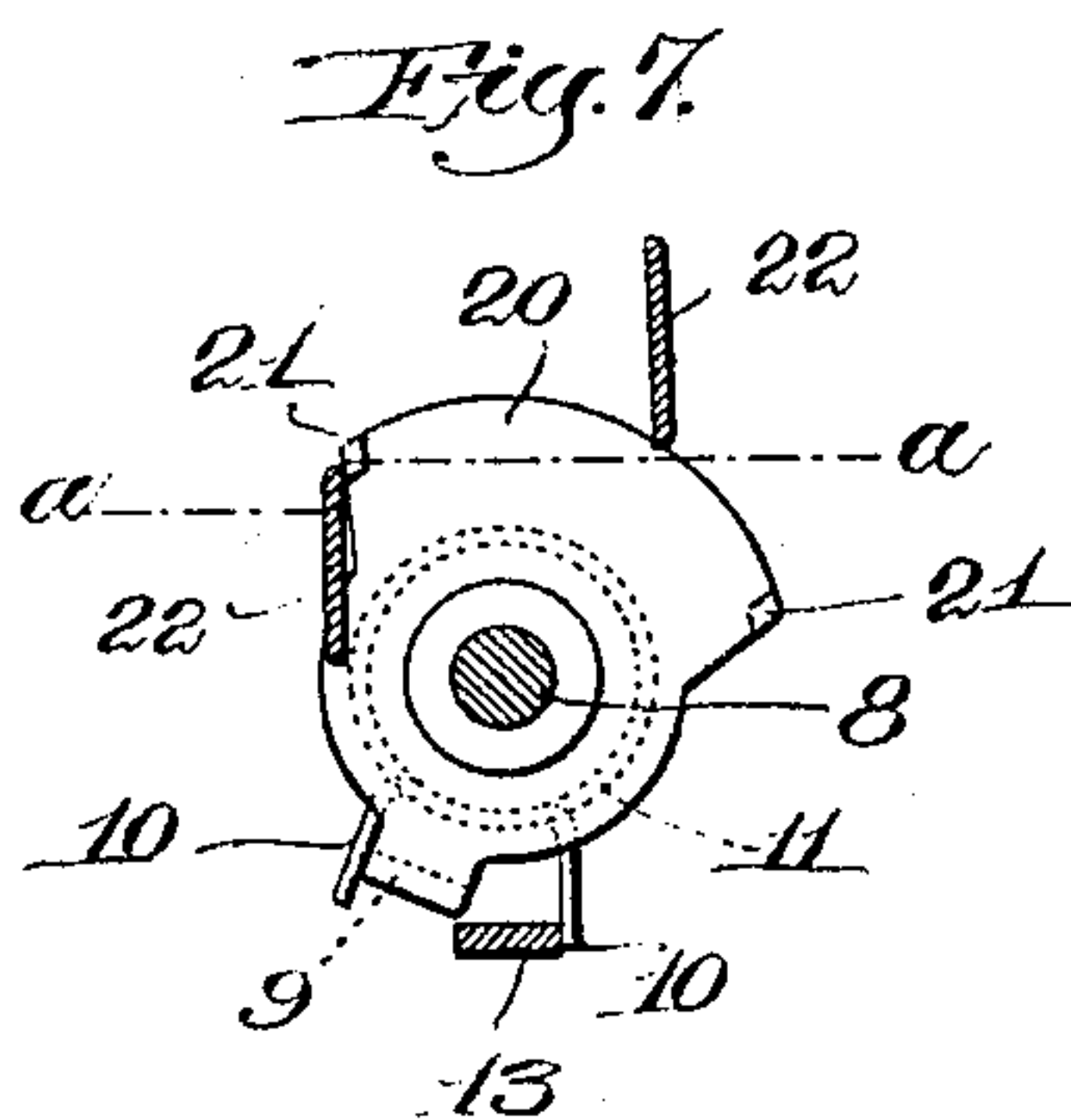
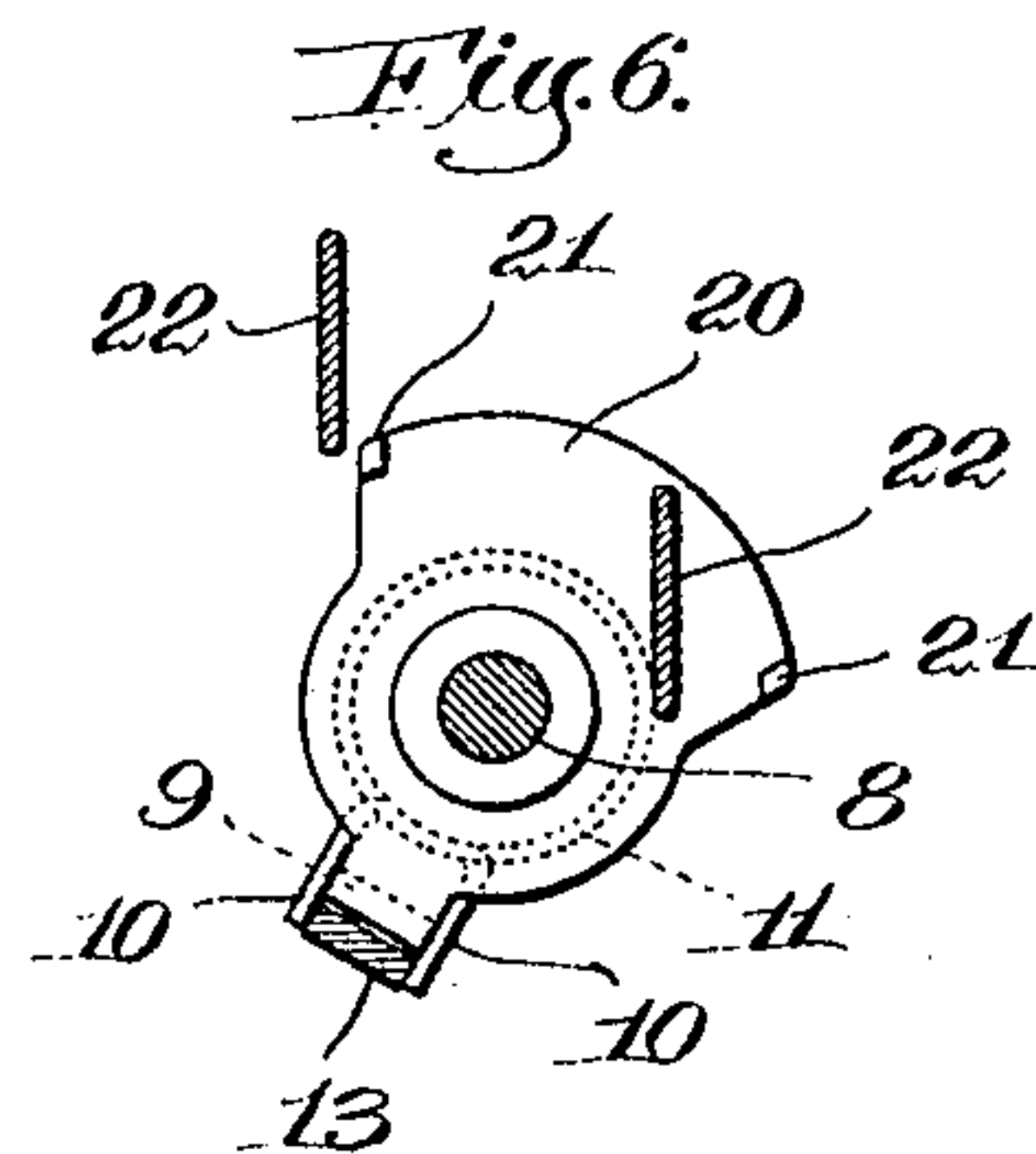
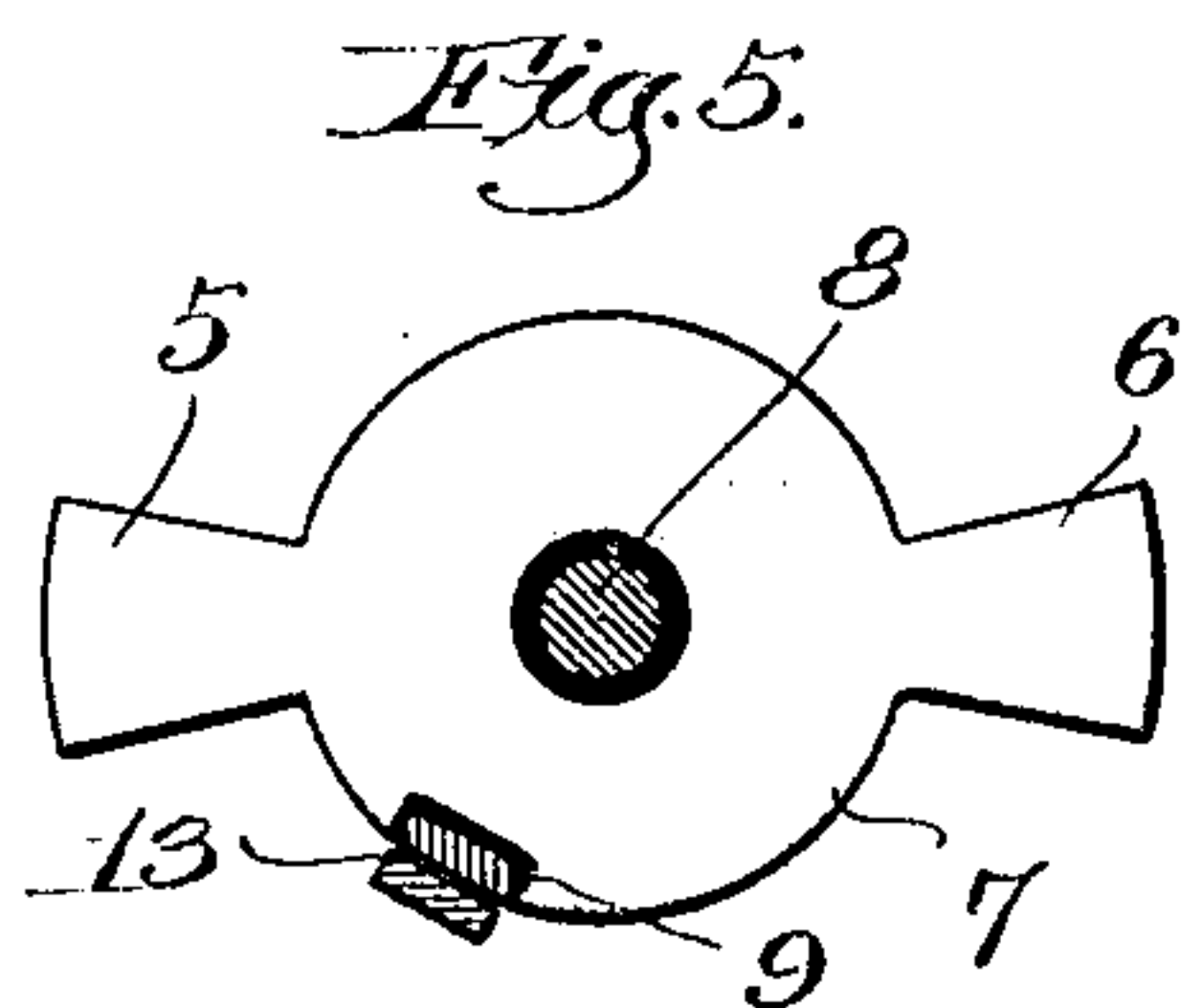
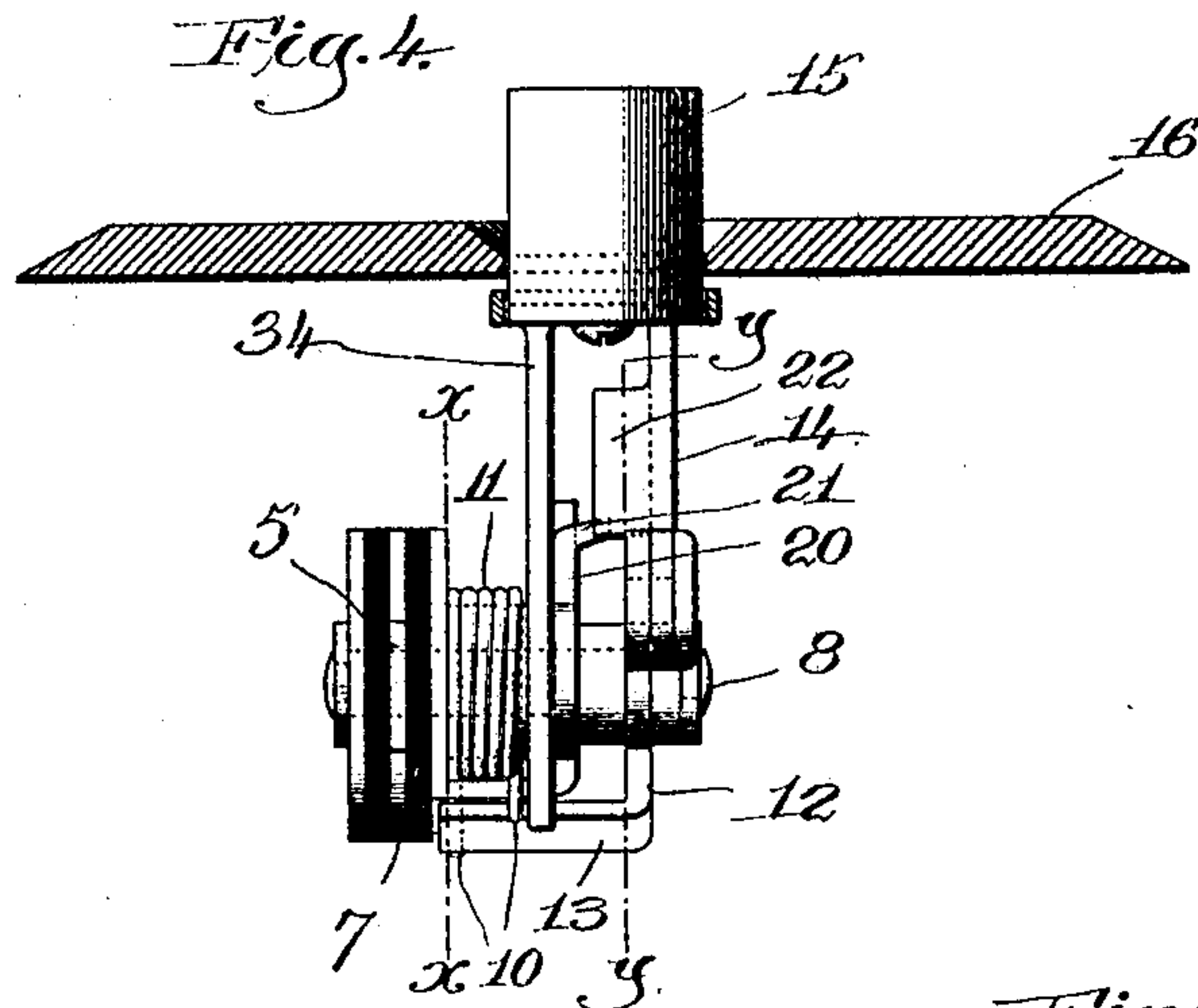
Inventor.

Frank W. Sanford,
by Henry Augustus Allen.

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2 SHEETS—SHEET 2.



Witnesses.
Thomas J. Drummond.
Joseph M. Ward.

Inventor.
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UNITED STATES PATENT OFFICE.

FRANK W. SANFORD, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO HERBERT C. WIRT,
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ELECTRICAL SWITCH

No. 919,472.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed July 24, 1908. Serial No. 445,208.

To all whom it may concern:

Be it known that I, FRANK W. SANFORD, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented an Improvement in Electrical Switches, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to electrical switches and especially to snap switches.

It has for its object to provide a novel construction relating to the stop for the switch-blade-carrying member to restrain said member from movement while the actuating spring is being wound up.

I have herein illustrated my invention as embodied in a so-called "flush" switch which has two push buttons, one for opening the switch and the other for closing the switch, although my invention is not confined to a switch of this character but may be embodied in other snap switches.

In the drawings wherein I have shown such a flush switch, Figure 1 is a top plan view of the plate or cover thereof; Fig. 2 is a section on an enlarged scale through the switch; Fig. 3 is a partial section similar to Fig. 2 showing the push buttons partially operated, the casing being omitted in said figure; Fig. 4 is a side view of the parts shown in Fig. 3; Fig. 5 is a section on the line $x-x$, Fig. 4; Fig. 6 is a section on the line $y-y$, Fig. 4; Fig. 7 is a view similar to Fig. 6 showing the manner in which the stop acts to limit the rocking movement of the switch-blade-carrying member; Fig. 8 is a section on the line $a-a$, Fig. 7.

In the switch herein shown 3 and 4 are the switch contacts, 5 and 6 are the switch blades which are carried by a switch-blade-carrying member 7 that is rotatably mounted on a shaft 8. This switch-blade-carrying member has a laterally-extending projection 9 that sets between the two ends 10 of a spring 11 that is coiled about the shaft 8 which is sustained in a hanger or bracket 34 depending from the face plate 16. The shaft 8 has mounted thereon a rocker 12 provided with a laterally-extending projection 13 which is also received between the two ends 10 of the spring 11. This rocker has connected to opposite sides thereof two plungers 14 carrying the push-buttons 15

which extend through the face plate 16 of the device. The contacts 3 and 4 are supported in a box or casing 17 which is adapted to be set into the wall, the face plate 16 coming flush with the surface of the wall as usual in flush switches of this character. When either push-button 15 is depressed, the rocker 12 is turned and the projection of the rocker acts on one end 10 of the spring 11 thereby winding said spring up and the resiliency of the spring acts through the other end 10 on the projection 9 to turn the switch-blade-carrying member 7 as usual in this class of devices. By depressing one of the push-buttons 15 the switch blades 5 and 6 are thrown into engagement with the contacts 3 and 4 thereby closing the switch and by depressing the other button 15, the switch-blade-carrying member 7 is turned to disengage the switch blades 5 and 6 from the contacts 3 and 4, thus opening the switch. The parts thus far described may be and are all as usual in flush switches of this character and form no part of my present invention.

In a device of this character it is desirable that the contact between the switch blades and the switch contacts should be made and broken with a quick movement, and my invention relates particularly to the device for restraining the movement of the switch-blade-carrying member while either push-button is being depressed and until the spring 11 has been wound up and then releasing said member 7 to permit it to have a quick movement. In the present invention this is accomplished by making rigid with the switch-blade-carrying member a plate 20 having extending therefrom two stop projections 21 and by providing the plungers 14 with the abutment flanges 22 which extend inwardly sufficiently to overlie the projections 21. The relation between the projections 21 and the abutment flanges 22 is such that when either push-button is depressed, the abutment flange corresponding thereto stands in the path of movement of the adjacent projection 21, as seen clearly in Figs. 3, 6, 7 and 8, and thus said flange 22 acts as a stop to prevent the movement of the plate 20 and consequently of the switch-blade-carrying member. The depressing of the push-button, however, turns the rocker 12 and through the arms 13 acts on one end of the spring 10 to wind said spring up, the

other end of said spring being held from movement by its engagement with the projection 9 which is restrained in its movement by the fact that the stop 21 is against the abutment flange 22, as shown in Figs. 3 and 7. The flange 22 is of such a length, as shown in Fig. 7, that when the push-button is completely depressed, the upper end of the flange passes down below the stop 21 and when this occurs the resiliency of the spring 11 throws the switch-blade-carrying member 7 with a quick movement to open or close the switch. Since each of the plungers 14 have an abutment stop 22 and the plate 20 has the two stops 21, the above described operation transpires when either of the push-buttons 15 is depressed. This makes a very simple device for accomplishing this purpose. In the present embodiment the projection 9 is integral with the plate 20, and the end of the projection is made fast to the member 7 so that said member 7 and the plate 20 turn in unison. This construction, however, is not essential to the invention. The hanger or bracket 34 is shown as provided with two shoulders 35 situated to engage the projection 9 and thereby limit the turning movement of the switch.

Having fully described my invention,

what I claim as new and desire to secure by Letters Patent is:—

1. In a switch, the combination with a switch-blade-carrying member, of a spring for actuating said member, a rocker for placing the spring under tension, two plungers carrying push-buttons for actuating the rocker, each plunger having an abutment flange, and two stops rigid with the switch-blade-carrying member to engage said flange.

2. In a switch, the combination with a switch-blade-carrying member, of a spring for actuating said member, a rocker for placing the spring under tension, two plungers carrying push-buttons for actuating the rocker, each plunger having an abutment flange, a plate rigid with the switch-blade-carrying member and provided with two projections coöperating with the abutment flanges to restrain the movement of said member until each plunger has been fully depressed.

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

FRANK W. SANFORD.

Witnesses:

LOUIS C. SMITH,

THOMAS J. DRUMMOND.