C. D. PLATT.

ROTARY SNAP SWITCH.

APPLICATION FILED JUNE 30, 1919.

**1,351,124.** **Patented Aug. 31, 1920.**

Fig. 1.

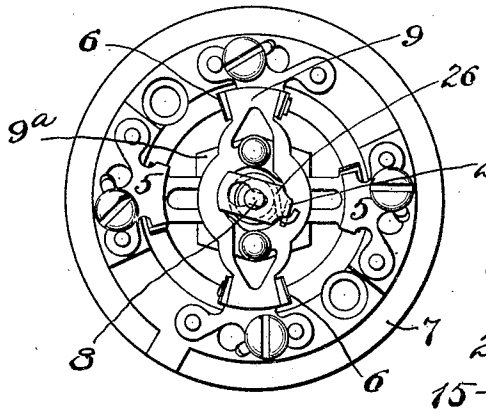



Fig. 3.

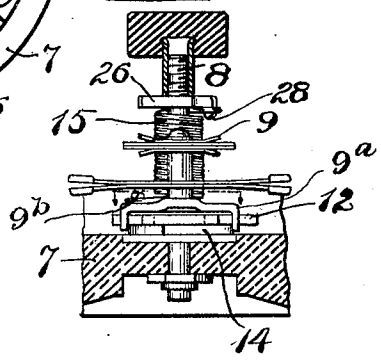



Fig. 2.

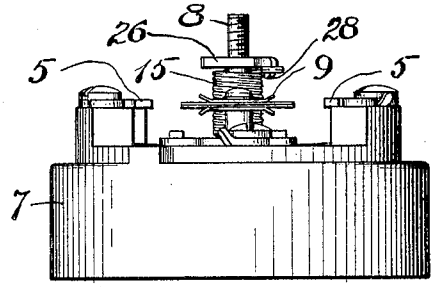



Fig. 5.

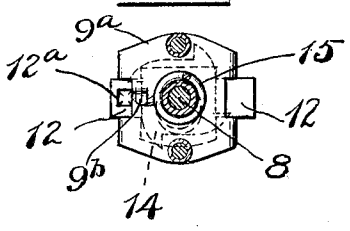
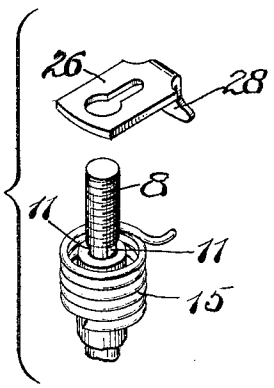



Fig. 4.




INVENTOR

Clarence D. Platt

BY

Mitchell Talbot

ATTORNEY

# UNITED STATES PATENT OFFICE.

CLARENCE D. PLATT, OF BRIDGEPORT, CONNECTICUT.

## ROTARY SNAP-SWITCH.

1,351,124. Specification of Letters Patent. Patented Aug. 31, 1920.

Application filed June 30, 1919. Serial No. 307,742.

*To all whom it may concern:*

Be it known that I, CLARENCE D. PLATT, a citizen of the United States of America, residing at Bridgeport, Connecticut, have invented a new and useful Improvement in Rotary Snap-Switches, of which the following is a specification.

My invention relates to switches of the rotary snap type and refers particularly to spring tensioning mechanism for such switches. Generally, the object of the invention is to provide simple, efficient and inexpensive mechanism whereby the switch throwing spring may be properly tensioned in a very easy manner at any time after the various parts of the switch have been assembled.

In the accompanying drawings:

Figure 1 is a plan view of a rotary switch of the conventional type constructed to embody my invention, the cover and switch handle being removed.

Fig. 2 is a side elevation of the parts shown in Fig. 1.

Fig. 3 is a detail view partly in section.

Fig. 4 is a perspective view of certain details relatively enlarged.

Fig. 5 is a plan view of certain parts, partly in section.

7 represents a switch base of any suitable construction. 8 is a spindle arranged to be mounted on the base to rotate. 9 is a rotary switch piece mounted to rotate around the spindle 8 and being driven by a coiled spring 15. Suitable latch mechanism may be provided for controlling the rotary snap movements of the snap piece, said mechanism in the present instance including a locking slide 12 which reciprocates to and fro in a frame $9^a$ upon which the switch piece 9 is mounted. In this particular instance, one end of the spring 15 engages a lug $9^b$ on the rotary plate $9^a$, while the other end engages a lug 28 on what I may designate a key plate 26. The key plate 26 has a slot, the parallel portions of which are arranged to engage on the flattened sides of the spindle 8, the opposite sides of said spindle being somewhat flattened as indicated at 11—11, so that when the key plate 26 is in its normal position, it cannot turn excepting with the spindle 8. It now follows that if the spindle 8 is rotated clockwise, the lug 28 will tend to wind up the spring 15 from the upper end, and hence, the tension thereof will be increased until the switch latch mechanism is released to allow said switch mechanism to snap around to its next position, which snapping around movement is effected by the tension of said spring 15. If the initial tension of the spring is found to be insufficient on the one hand, or too much on the other hand, this may be readily corrected by simply pulling out the key plate 26 so as to free the parallel sides of the slot therein from the flattened portions 11—11 of the spindle, so that by turning the key plate 26 in one direction or the other around the said spindle, the upper end of the spring may be turned to a corresponding degree to vary the tension thereof as desired. When the desired tension has been attained, the key plate 26 is again pushed into place on the spindle 8 so as to retain in the spring 15 the desired initial tension. In the particular form shown in the drawing, the slot in the key plate 26 is of the key hole type, that is to say, at one end of the parallel sides of the slot, the said slot is rounded out so as to slide over the spindle 8. This serves to hold the key plate on the spindle as it is being turned up to secure the initial spring adjustment and facilitates the ease with which said adjustment may be effected. Any suitable means may be provided to hold the key plate 26 in its locked position on the spindle 8. One simple method comprises merely bending back the upper end of the spring 15 so that it will stand outside of the lug 28, in which position the spring itself operates to hold the member 26 against accidental disengagement.

Any suitable latch mechanism may be employed to control the step by step rotary movement of the switch proper. The form shown herein is well known and no claim of novelty is made thereto. The slide 12 is associated with the spindle in such a way that as the latter is rotated the slide will be reciprocated. This slide is provided with a depending lug at $12^a$ which engages successively the teeth of a fixed ratchet plate 14 as the switch proper snaps around into its successive positions. In operation, as the spindle 8 is rotated it first engages the tension of the spring 15 and simultaneously moves the slide 12 until the lug $12^a$ becomes freed from the ratchet tooth with which it is in engagement whereupon the tension of the spring is exerted in a direction to throw the switch around into the next position wherein

the lug 12ª engages the next tooth of the ratchet and so on. A further description of this latch mechanism is unnecessary, inasmuch as it is well understood by a mechanic skilled in this art. 5—5 and 6—6 are the usual fixed terminals which are engaged by the switch member proper. I have not shown herein the switch cover, but any well known cover can be provided if desired. A switch handle of any conventional form may be screwed on to the upper end of the spindle 8.

From the foregoing it will be seen that all of the main parts of the switch mechanism may be assembled on the base 7 before the spring is tensioned. The desired intitial adjustment of the spring may be effected after this is done, or indeed, changed at any time, all of which is of great advantage in switches of this type.

What I claim is:

1. In a rotary snap switch, a base, a rotatable spindle mounted thereon, a rotatable switch piece mounted on the spindle, latch mechanism for permitting only a step by step rotation of said switch piece, a spring surrounding said spindle and engaged at one end with said switch piece, a plate having an elongated opening with one portion wider than the remainder and angularly adjustable on and around said spindle, the other end of said spring being engaged therewith.

2. In a rotary snap switch, a base, a rotatable spindle mounted on said base and having a flattened portion, a switch piece movable about said spindle, a spring having one end operatively engaged with said switch piece, and a spring adjusting plate mounted on said spindle and having a slot, one end of which engages said flattened portion of said spindle, said slot being wider at the other end for permitting rotary adjustment of said plate about the spindle, said spring being operatively engaged with said adjusting plate.

3. In an adjusting means for snap switches, a base, a spindle on the base and having a flattened portion, a rotatable switch member on the spindle, an adjusting key member mounted on the flattened portion of the spindle and a coiled spring engaged with the rotatable switch member at one end and with the adjusting key at the other end, the key member having a slot fitting the flattened portion of the spindle and the slot terminating in an enlarged opening which permits of the key member being partially withdrawn from engagement with the spindle for the purpose of adjusting the tension of the spring.

4. In a rotary snap switch, a base, a spindle mounted thereon and having flattened portions, a rotatable switch member on the spindle, a spring adjusting member having a closed ended slot engaging the flattened portion of the spindle and having an enlarged portion to permit rotation about said spindle and a spring coiled about the spindle and engaged at its opposite ends with the rotatable switch member and the adjusting member.

5. In a snap switch, a base, a spindle mounted on the base and having flattened portions, a rotary switch plate on the spindle, a spring adjusting plate having a slot for engagement with the flattened portions of the spindle and a spring coiled about the spindle having one end engaged with the rotary switch plate and the other end with the adjusting plate, the slot in the adjusting plate having an enlarged portion permitting disengagement of the plate from the flattened portion of the spindle for adjusting the tension of the spring without removing said plate from said spindle.

CLARENCE D. PLATT.