Dec. 26, 1922. 1,439,839

D. P. RAGENOVICH.
DOUBLE CIRCUIT PUSH BUTTON SWITCH.
FILED NOV. 11, 1919.

Fig. 1.

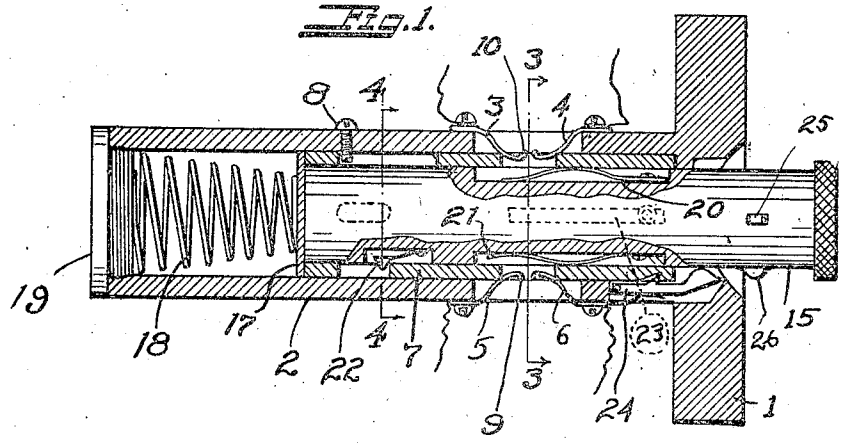
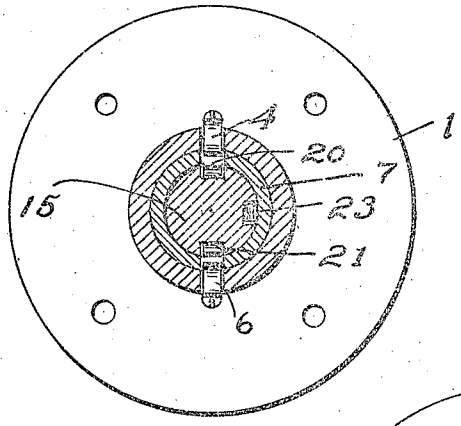


Fig. 3.



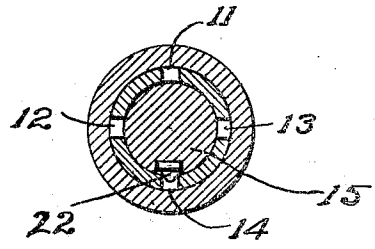


Fig 4

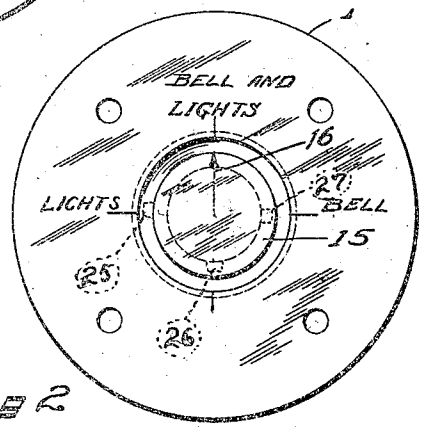


Fig 2

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UNITED STATES PATENT OFFICE.

DANO P. RAGENOVICH, OF SAN FRANCISCO, CALIFORNIA.

DOUBLE-CIRCUIT PUSH-BUTTON SWITCH.

Application filed November 11, 1919. Serial No. 337,207.

To all whom it may concern:

Be it known that I, DANO P. RAGENOVICH, a subject of the Kingdom of Serbia, residing at San Francisco, in the county of San Francisco, State of California, have invented a new and useful Double-Circuit Push-Button Switch, of which the following is a specification, in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a push button switch which is capable of closing a contact or several contacts in one movement and of breaking the contacts in another movement in the same direction, a spring restoring the push button to its normal position.

Another object of the invention is to provide a switch capable of connecting several circuits should that be desired.

Other objects of the invention will appear as the description proceeds.

An embodiment of the invention is shown in the accompanying drawings in which the same reference numeral is applied to the same reference throughout, but I am aware that there may be modifications thereof.

Fig. 1 is a vertical sectional view of the switch,

Fig. 2 is a front view of the switch,

Fig. 3 is a sectional view on line 3—3, Fig. 1, and

Fig. 4 is a sectional view on line 4—4, Fig. 1.

The numeral 1 indicates the face plate of the switch to which the tube 2 is connected, the latter tube having the contact springs 3 to 6 connected thereto in pairs. Inside the tube 2 is a slidable tube 7 held from the rotation by the short screw 8 and provided with the slots 9 to 14 inclusive through two of which the contact springs project.

Slidable within the tube 7 is the rod 15 which is provided with an indicating arrow 16 at one end and with a plate 17 at the other end to engage the tube 7. A spring 18 holds the switch normally in the position shown in Fig. 1 and a plug 19 holds the spring in place.

The rod 15 has two contact springs 20, 21 positioned diametrically opposite and a spring latch 22 at one end, while between the two springs 20, 21 there is a spring 23 the object of which is to connect either of the contacts 3, 4 or 5, 6 in pairs or the springs 20, 21 may be connected to both pairs of contacts at one time. The operation of this switch is as follows:

The normal position of the switch is illustrated in Figure 1, and corresponds to the position of all of the electric circuits being open. If it is desired to ring the bell and supply the lights with current at the same time, the button 15 is pushed in until the spring 20 and spring 21 press up through the respective slots in the sleeve 7 until said springs contact with the plates 3 and 4, and 5 and 6 respectively. These two springs are stiff enough to hold the push button in the position indicated. When it is desired to put out the lights the push button 15 is pushed in still further. This will cause the lug 26 to engage the latch 24 and release the sleeve 7, and the latch 22 will then carry the sleeve 7 back so that the contacts 3 and 4, and 5 and 6 cannot further connect with the springs 20, 21, and unless pressure is relased from the push button, the spring 18 will restore the sleeve and push button to the position shown in Figure 1.

If it is desired to connect the contacts 3 and 4 only, the push button will be turned 90 degrees so that the snap 22 will engage the slot 13 instead of the slot 14. This will bring the spring 23 into a position to be engaged if the push button is pushed inwardly with the contact plates 3 and 4, and said spring is sufficiently stiff to hold the push button in that position when the spring 23 presses up into the slot in which the plates 3 and 4 project.

As was previously described if it is desired to put out the lights pressure is applied to the push button and thereupon the sleeve 7 is pushed backwardly so that the plates 3 and 4 cannot further contact with the spring 23. As soon as pressure is released the spring 18 will push the push button and sleeve to the position shown in Figure 1, the inertia being sufficient to jump the spring 23 out of the slot in which it may be engaged.

If the circuit connected with the plates 5 and 6 only is to be connected, the push button is turned so that the plates 23 will engage the slot into which said plates 5 and 6 project, and this will bring the latch 22 into a position to engage the slot 12. When pushed forward the spring 23 will first connect with the plates 5 and 6. When the circuit is to be broken further pressure thereon will push the sleeve 7 in following its

release by the lug 27 contacting with the latch 24, and upon removing the pressure from the push button, the push button and sleeve will be restored to the positions shown in Figure 1 by the spring 18.

A hook 24 locks the tube 7 in the position shown in Fig. 1 until one of the lugs 25, 26 or 27 engages and releases it and permits it to slide back to break the contacts.

As shown, when the rod 15 is pushed in, the lights and the bell circuit will both be closed and the springs 20, 21 will snap up into the slots in the tube 7 with sufficient force to hold the rod 15 in the given position until it is pushed further in and then it will then be returned by the spring 18 along with the tube 7.

When the rod 15 is turned so its indicating arrow corresponds to lights or bell those contacts will be made singly.

What I claim is as follows, but various modifications may be made in the construction shown in the drawings and above particularly described form within the purview of my invention.

1. A push button switch comprising an outer tube, contact plates carried thereby, a second tube slidable within the first tube and having slots therein through which said contact plates may be projected, a push button slidable in the second tube, means carried by the push button to connect the contact plates, and a spring to restore the push button to its normal position.

2. A push button switch comprising a tube carrying contact plates, a second tube slidable within the first tube and having slots into which said contact plates may project, a push button slidable in the second tube, means carried by the push button to connect said contact plates, a spring to restore the push button to its normal position, and means to permit the push button to be rotated to connect different pairs of contacts.

3. A push button switch comprising a slide, contact plates carried thereby, a tube movable in said slide and having slots into which said contacts may project, a push button slidable in the tube, a latch for holding the tube in a fixed position, means to release the latch when the contacts are to be broken whereby the tube is carried along with the push button, and a spring for restoring the push button and tube to their initial positions after the contacts have been disengaged.

4. A push button switch comprising a slide having opposite pairs of contact plates, a slotted tube movable in said slide, a push button slidable in said tube, means to hold the push button in a position to connect either or both pairs of contacts, means to hold the tube in a fixed position, means on the push button to release the tube when the contacts are disengaged, and a spring for restoring the push button and slotted tube to their initial positions when the contacts are disengaged.

In testimony whereof I have hereunto set my hand this 5th day of November A. D. 1919.

DANO P. RAGENOVICH.