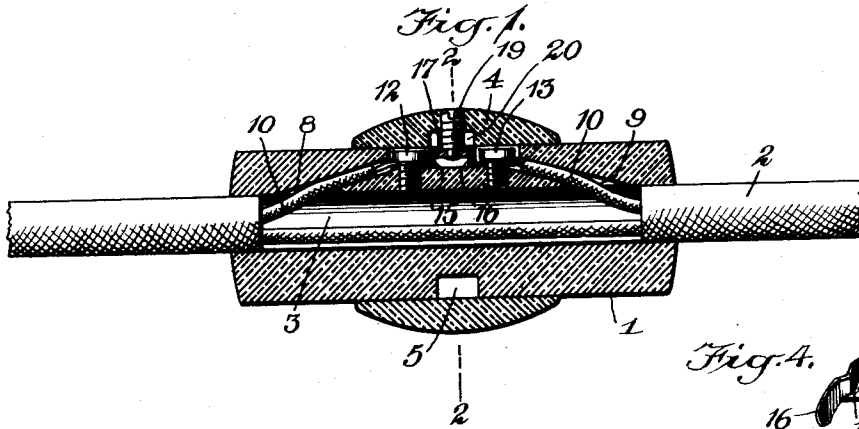
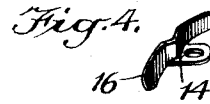
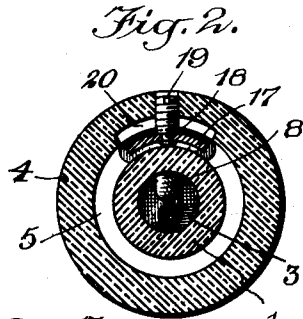
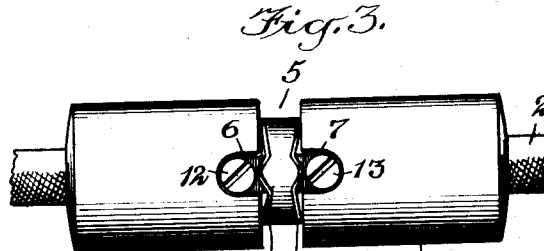
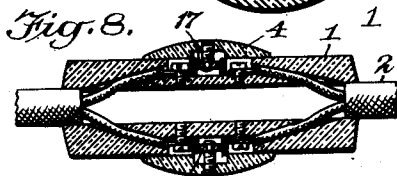
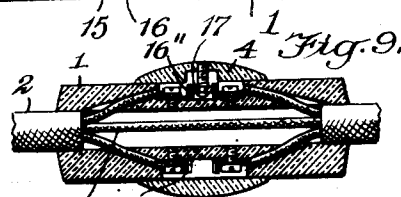
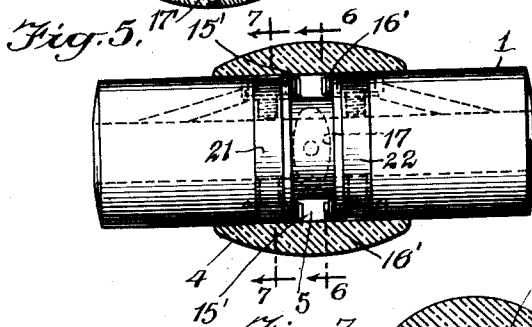
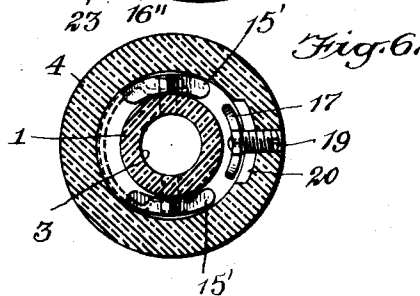
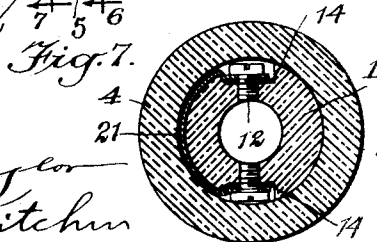


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ROTARY ELECTRIC SWITCH
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2,071,099



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2,071,099

ROTARY ELECTRIC SWITCH

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3 Claims. (Cl. 200—155)

This invention relates to electric switches and particularly to an improved rotary switch, an object being to provide a simple construction wherein a ring may be grasped and partly rotated to close or open the switch according to the direction of rotation.

Another object of the invention is to provide a rotary switch wherein the switch mechanism is connected to only one of the wires of a circuit.

A further object is to provide a rotary electric switch having a tubular body for receiving a cable carrying a pair of conductors, the same being associated with a rotary switch structure permanently associated with the body and formed to rotate in one direction or in either of two directions and at certain points of rotation to close an electric circuit.

In the accompanying drawing:

Fig. 1 is a vertical sectional view through a rotary electric switch disclosing an embodiment of the invention;

Fig. 2 is a sectional view through the switch shown in Fig. 1, the same being on the line 2—2;

Fig. 3 is an elevation of the body of the switch shown in Fig. 1;

Fig. 4 is a perspective view of one of the stationary or fixed contacts shown in Fig. 3;

Fig. 5 is a view similar to Fig. 3 but with the rotary ring mounted thereon and with a modified structure associated therewith;

Fig. 6 is a sectional view through Fig. 5 on line 6—6;

Fig. 7 is a sectional view through Fig. 5 on line 7—7;

Fig. 8 is a view similar to Fig. 1 but showing a slightly modified construction;

Fig. 9 is a view similar to Fig. 8 but showing a second modified construction.

Referring to the accompanying drawing by numeral, 1 indicates the body of the switch and 2 a cable having portions extending into the bore 3 of body 1. A rotary ring 4 is rotatably mounted on body 1 and positioned centrally thereof as illustrated in Fig. 1. When the switch is connected up to be in operative position and the current is turned on, it is only necessary to grasp the ring 4 and move the same to one position to open the circuit and to move the same to a second position to close the circuit. As shown in the drawing the ring 4 and associated parts are illustrated with the circuit closed. Body 1 is not only provided with the bore 3 but with an annular groove 5 with notches 6 and 7 offset therefrom. From the notches 6 and 7

there extend auxiliary bores 8 and 9 so that the respective wires 10 and 11 may extend there-through and be connected by the clamping screws 12 and 13 to the ears 14 of the respective stationary fixed contacts 15 and 16. These contacts are identical in construction and have their contact faces extending into the groove 5 as shown in Fig. 3.

When the parts are in the position shown in Fig. 3 with the wires 10 and 11 connected to the screws 12 and 13, it is only necessary to electrically connect the two contacts 15 and 16 in order to close the circuit. This is done by a movable contact or closure contact 17 which is substantially elliptical in shape as indicated in dotted lines in Fig. 5. Preferably the movable contact 17 is a comparatively heavy piece of metal and is provided with an aperture through which the reduced end 18 of the screw 19 extends. The end portion or extension 18 is upset but preferably the movable contact 17 is freely rotatable on the extension 18. This permits a person to use a screw driver in rotating the screw 19 to the position shown in Fig. 2 so that the movable contact 17 will be engaging the stationary contacts 15 and 16. If it is desired to remove the hand ring 4 it is only necessary to rotate screw 19 in a reverse direction and this will pull the movable contact 17 upwardly into the notch 20 of ring 4, whereupon the ring may be slid off of the body 1. It will be understood that the body 1 may be made from any desired insulating material and also the ring may be made from any desired insulating material, as for instance rubber, wood, bakelite, porcelain, or the like.

When the parts are in the position shown in Figs. 1 and 2 the circuit is closed. If the ring 4 is rotated for a quarter of a revolution or slightly more, the movable contact 17 will move out of engagement with the stationary contacts and thereby the circuit will become broken. When it is desired to again close the contact, ring 4 may be moved back to its former position or the original rotation may continue until the movable contact 17 engages the stationary contact from the opposite ends.

Under some circumstances it may be desirable to have more than one pair of stationary contacts in groove 5. This may be done without departing from the spirit of the invention as clearly illustrated in Figs. 5 to 7. In these figures it will be observed that there are two stationary contacts 15' and two stationary contacts 16'. The two contacts 15' are connected by a con-

ductor 21 as shown particularly in Fig. 7. The contacts 16' are likewise connected by a conductor 22. The remaining parts of the device are the same as the preferred form. It will, however, be understood that the movable contact 17 and in fact all parts are proportioned so that contact 17 may be moved completely out of engagement with any of the stationary contacts or into engagement with either pair. This structure permits the circuit to be opened with a comparatively short movement of the hand ring 4 and also permits it to be closed by a comparatively short movement.

In Fig. 8 a slightly modified structure is shown to that illustrated in Fig. 1, wherein a double pole switch formation is presented instead of a single pole formation. In this form of the invention there are diametrically opposite movable contacts 17' so that the circuit is closed and opened at two points when the ring 4 is moved to two different positions.

In Fig. 9 a selective pole switch is shown wherein there is provided a common return 23 and two sets of stationary contacts 16''. As shown in Fig. 9 one circuit is closed, but if the ring 4 was rotated for a half revolution the other circuit would be closed and the first circuit opened. This form of switch is good for heating pads and other electrical devices where different circuits are adapted to be switched on to a given article.

I claim:

1. A rotary switch comprising a tubular body having a peripheral groove in the outer surface, oppositely positioned notches also in the outer surface merging into said groove and an independent auxiliary bore extending from each of the notches to the interior of the body whereby a conductor may extend into the body from each end and then through said auxiliary bores to said notches, a stationary contact having a portion fitting into each of said notches and positioned to engage conductors extending into the notch and portions extending into said groove, a ring surrounding part of said body and covering said groove, and a movable contact carried by said ring positioned to be moved into said groove to prevent displacement of the ring with respect to said body, said movable contact being adapted

to be moved along said groove to a position between said stationary contacts to electrically connect the same.

2. A rotary switch comprising a hollow body having an annular groove in the outer surface and passageways extending from the interior to the groove, a pair of contacts arranged in the groove and positioned opposite each other with portions extending into said passageways, a rotatable ring having a bore of slightly greater diameter than said body normally covering said groove, a movable contact adapted to be moved by said ring into and out of engagement with said stationary contacts, and a screw member carried by said ring for moving said movable contact into and out of said groove, said screw normally suspending said movable contact in said grooves so that the contact may act to hold said ring against displacement in respect to said body.

3. A rotary switch for electric wires comprising an elongated body circular in cross-section formed with a longitudinally positioned bore extending from one end to the other for receiving the ends of electric wires, an annular groove substantially midway between the ends of said body in the outer surface merging into a notch on each side of the groove and diagonally extending auxiliary bores extending respectively from said notches to said longitudinally positioned bore, a stationary contact positioned in said annular groove on each side thereof, each of said contacts having an extension, the respective extensions projecting into the respective notches, a clamping screw for each of said extensions for connecting conductors to said extensions and for clamping said contacts firmly to said body, a ring having a bore of greater diameter than said body positioned to surround part of said body and cover said annular groove and said notches, and a movable contact carried by said ring and positioned to project into said groove for preventing longitudinal displacement of the ring on said body, said movable contact being of a size to move between said stationary contacts and engage the same when the ring has been rotated to a predetermined position.

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