

C. F. COOKSON.
ELECTRIC SWITCH.
APPLICATION FILED APR. 18, 1910.

Patented July 2, 1912.

1,031,324.

Fig. 1

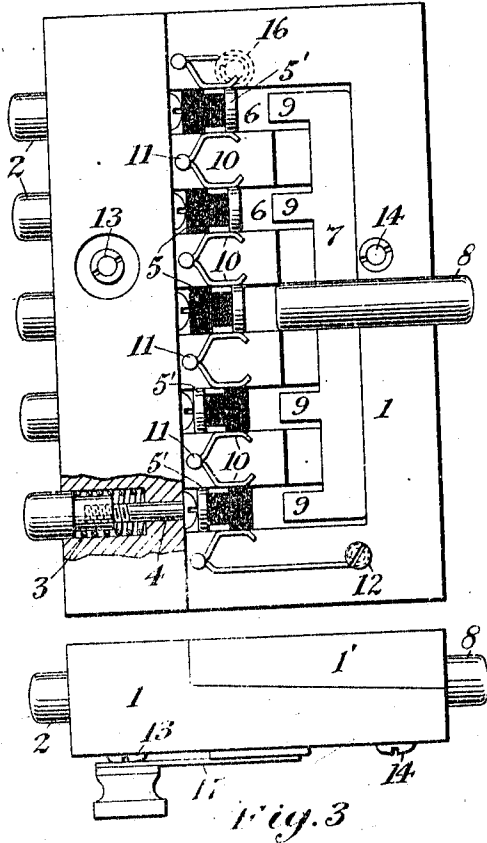


Fig. 2

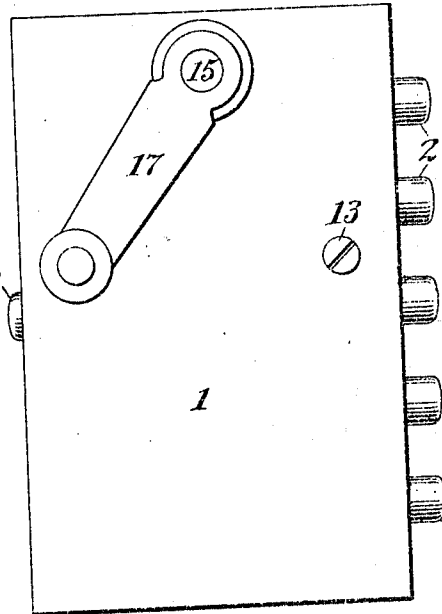
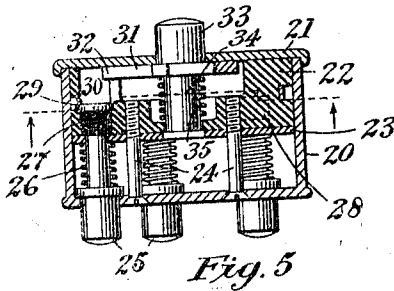
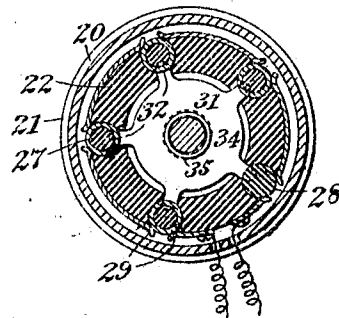


Fig. 6



Fig. 4



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UNITED STATES PATENT OFFICE.

CLARENCE F. COOKSON, OF BROOKLYN, NEW YORK.

ELECTRIC SWITCH.

1,031,324.

Specification of Letters Patent.

Patented July 2, 1912.

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To all whom it may concern:

Be it known that I, CLARENCE F. COOKSON, a citizen of the United States, and resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

The object of this invention is to provide a safety switch for use on automobiles and other places where it is desirable to connect and disconnect an electric circuit and particularly to prevent unauthorized persons from making the electric connection.

This invention is in its nature a combination lock in which the combination must be known to connect the circuit. It can be made in various forms and the combination made more or less complicated by making the apparatus with a more or less number of keys.

In the accompanying drawing forming part of this specification two forms of construction are shown.

Figure 1 shows the invention embodied in a right angled frame or case viewed from the back or underside, having the working parts exposed or in section. Fig. 2 is a front view of the same. Fig. 3 is an end view of the same. Figs. 4 and 5 show another form of arrangement embodied in a circular case, Fig. 4 being a section divided by dotted line shown in Fig. 5; Fig. 5 being a sectional view. Fig. 6 is a sectional and end view of one of the movable pistons.

Like figures refer to like parts.

1 shown in Figs. 1, 2 and 3 is a rectangular case; 1' in Fig. 3 is a removable section of the case; 2 indicates buttons slidable in the case 1; 3 represents springs surrounding the shank of the button; 4 is a screw forming a shank to the button; 5 is a piston slidable in passage way 6; 5' is a metallic ring or end piece on the piston 5; 7 is a frame fixed to plunger 8, the frame having prongs 9 movable in the passage ways 6; 10 represents springs forming electric conductors between the pistons; 11 shows a pin for securing the springs in position in the case; 12 is the point of connection to the switch key; 13 is where the wire from the battery is connected; 14 is where the wire from the magneto is connected; 15 is the pivot on which swings lever 17; 16 is the inner end of the pivot 15 connected to a con-

ductor, the conductor bearing against one of the pistons.

In Figs. 4 and 5 are shown the same elements arranged in a small, compact case of circular form. 20 is the case; 21 is the cover of the case; 22 is a non-conducting filler of the case being shaped to admit the moving parts; 23 is a diaphragm resting on supports on the inner side of the case having apertures for the shanks of the buttons 25; 26 is a spring to keep the buttons in operative position; 24 represents screws holding the non-conducting filler in position in the case; 27 is a piston of non-conducting material having a metallic end or ring and movable in passage way 30; 28 in Fig. 4 shows the non-conducting portion of a piston; 29 are conductors let into and secured in a groove in the non-conducting substance and formed so as to touch the pistons and make a complete circuit, the bearing points being made angular or rounded so that the pressure has a tendency to hold the piston in either position; 31 is a spider shaped piece having extended members 32 and a protruding button 33. 34 is the shank of the spider shaped piece which passes through opening in diaphragm 23; 35 is a spring on the shank 34; 36 and 37 are the electric connections to the battery and to the switch.

The action of this device is as follows:—An electric current supplied by a battery or by a magneto is connected to one of the wires 36 or 37 in Fig. 4, the other wire being connected to the spark coil. The circuit can be broken in five different places by the arrangements of the pistons as shown in Fig. 1. The electric connection is broken at the two lower pistons by reversing the pistons. To complete the electric circuit it is necessary to press the two lower buttons moving the pistons so that the metallic ends of the pistons come in contact with the springs, which will complete the circuit from either the buttons 13 or 14 through the lever 17 and pivot 15 and 16 and through the connecting springs and pistons to 12, a conductor being attached from 12 to the coil box. When it is desired to break the circuit, a pressure on the plunger 8 carrying with it the frame 7 and the prongs 9, pushes all of the pistons to normal position and unless all of the pistons are turned the same way as the upper three pistons are shown, the electric connection will be broken. To

change the combination it is only necessary to remove the cover of the case and turn one or more of the pistons end for end.

In the modified form of the device shown in Figs. 4 and 5 the action of the parts is similar to the action as described in Fig. 1, the buttons being arranged in a circular case for compactness and the conductors 29 changed to suit the circular form, pressure on the buttons 33 moving the spider shaped piece 31 so that the pistons are re-set the same as they would be by pressure on plunger 8 in Fig. 1. The change of combination in the circular form is made by taking off the cover 21, taking out the spider shaped piece 31 and re-arranging the pistons by turning them end for end.

Having described my invention what I claim and desire to secure by Letters Patent is:

In an electrical switch device, a number of reversible pistons of non-conducting substance separate from the push buttons and adapted to be shifted thereby, each piston having a portion of its surface forming an electric conductor, and means for moving the pistons in the direction opposite to the movement caused by the push buttons, substantially as shown and described.

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Witnesses:

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