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1,451,476

R. E. SCHIEBER

PUSH BUTTON CONSTRUCTION

Filed Jan. 16, 1922

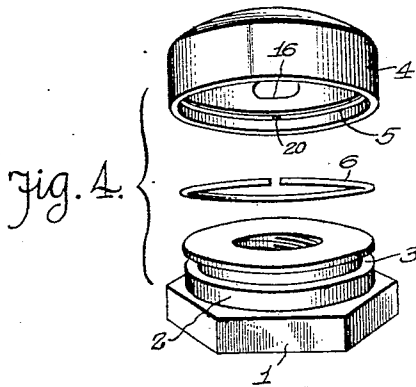
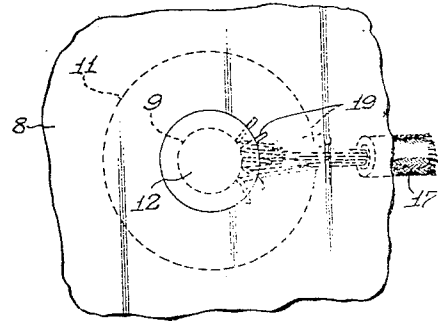
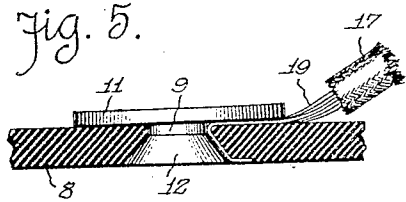
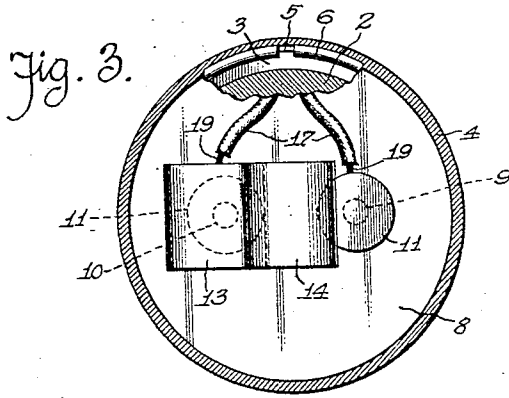
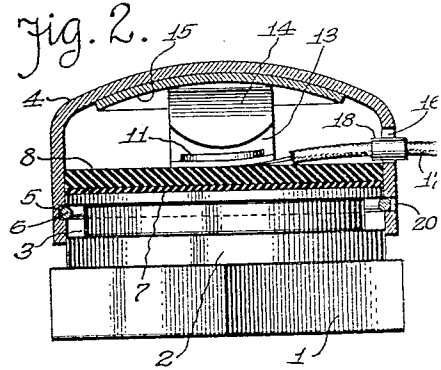
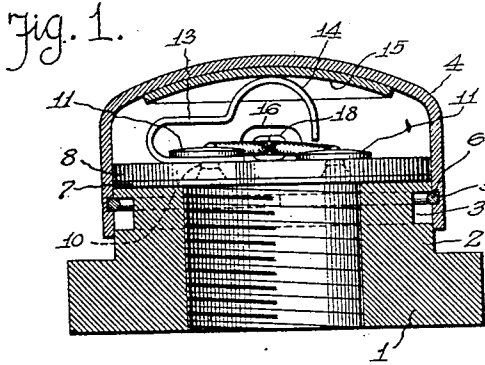


Fig. 6.

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UNITED STATES PATENT OFFICE.

ROBERT E. SCHIEBER, OF DETROIT, MICHIGAN.

PUSH-BUTTON CONSTRUCTION.

Application filed January 16, 1922. Serial No. 529,430.

To all whom it may concern:

Be it known that I, ROBERT E. SCHIEBER, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Push-Button Constructions, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a push button construction wherein a cap or finger piece is depressed to establish an electrical connection between contact members, and I have improved such construction in two particulars.

15 First, I provide novel means for retaining the cap on the body or nut so that the same may be actuated without any danger of the cap becoming accidentally displaced. The means employed for this purpose includes a split ring or member which is anchored in the cap to move therewith and extends into a groove in the body or nut with the groove of sufficient width to permit of the cap being actuated.

25 Second, the contact members are in the form of rivets mounted in an insulator or support, and the leading-in conductors have the inner ends thereof positively anchored by the rivets so that there will be a positive electrical connection between the conductors and the rivets.

30 My improvements will be hereinafter more fully described and then claimed, and reference will now be had to the drawing, wherein—

35 Figure 1 is a cross sectional view of the push button;

Fig. 2 is a transverse sectional view of the push button, partly in elevation;

40 Fig. 3 is a horizontal sectional view of the push button, partly in plan;

Fig. 4 shows perspective views of different parts of the push button;

45 Fig. 5 is an enlarged detail sectional view of an insulator or support provided with a contact member, and

Fig. 6 is a bottom plan of the same.

50 In the drawing, the reference numeral 1 denotes a body or nut adapted to be mounted on the steering column assembly of an automobile or other vehicle so that the push button may form part of the electrically operated or alarm system of the automobile. The nut 1 has a cylindrical portion 2 and

the annular wall of this portion of the nut 55 is provided with an annular groove 3.

Slidable on the cylindrical portion 2 of the nut 1 is a cap or finger piece 4 which has its annular inner wall provided with an annular groove 5 for a split ring or member 6 which snugly fits in the groove 5 and protrudes into the groove 3 of the nut, said groove being of a width permitting of the cap 4 shifting on the cylindrical portion 2 of the nut 1, when depressed, without any danger of the cap becoming accidentally displaced.

65 On the cylindrical portion 2 of the nut 1 is a washer 7 made of insulation material and on the washer 7 is a support 8 also made of insulation material. Mounted in the support 8 are two rivets 9 and 10, each having flat heads 11 and flared countersunk heads 12. Considering the push button as being used in a vertical position the heads 12 are countersunk in the lower face of the support 8 and are prevented from coming in contact with metallic parts, such as the nut 1 or a steering shaft, by the washer 7. The heads 11 are above the support 8 and under the head 11 of the rivet 10 is anchored the ends of a resilient bowed contact member or arm 13 which has a bowed end 14 thereof extending above the head 11 of the rivet 9 to contact therewith when the cap or finger piece 4 is depressed. In the cap or finger piece 4 is a washer or wear member 15 preferably made of insulation material as fiber, and the resiliency of the contact member 13 causes said member to hold the wear member 15 normally against the cap 4, as best shown in Fig. 1.

75 The side wall of the cap 4 has an opening 16 and extending through said opening are leading-in conductors 17 which are held together and protected, at the walls of the opening 16, by a sleeve or band 18 mounted on said conductor.

80 The inner ends of the conductor 17 are bared and the strands or wires of each conductor separated or spread apart, as shown in Fig. 6, so that the strands or wires 19 may be placed in the rivet holes of the support 8 and lie comparatively flat under the head 11 of each rivet and at the same time positively engage each rivet, particularly the countersunk heads 12 thereof, as best shown in Fig. 5. The bared ends of the wires are snugly held in engagement

with the support 8, insuring a positive electrical connection between the conductors and the rivets and permitting accidental displacement of said conductors.

5 In order that the rotatable cap 4 may be removed, said cap has a side opening 20 into which may be inserted a suitable tool to engage and force a portion of the ring 6 from the groove 5, so that the cap can be forced off or sprung from the nut without injury to either.

10 My improvements provide a push button of better construction than an ordinary push button, and while in the drawing there is illustrated the construction which I am now manufacturing yet I reserve the right to make such changes as fall within the scope of the appended claims.

What I claim is:—

20 1. In a push button construction wherein a nut is provided with a cap or finger piece adapted to be depressed to effect an electrical connection between a stationary contact member and a movable contact member, 25 which movable member holds said cap normally distended relative to said nut, and a leading in conductor;—means articulating said nut and cap to prevent displacement of the latter and permit said cap to rotate relative to said nut, said means including a 30 split ring, said cap having a groove in its inner wall to receive said ring and said nut having a groove to receive said ring, the nut groove being of sufficient width to permit 35 said ring to shift therein during depression of said cap, and said cap having a side

opening to rivet said leading in conductor so that said conductor by virtue of said rotatable cap may be conveniently placed.

2. In a push button construction wherein 40 a cap is depressed to establish an electrical connection between contact members,—said members comprising rivets, an insulator support for said rivets, the rivets having 45 flat heads on said support and countersunk heads in said support, a conductor extending through an opening in said cap and having strands thereof held by the countersunk heads of said rivets, and a resilient bowed contact arm held under the flat 50 head of one of said rivets and extending over the flat head of the other of said rivets and adapted to be sprung by said cap to engage said head and establish the electrical connection. 55

3. A push button comprising a normally stationary nut, a rotatable and depressible cap on said nut, said cap having a side opening, contact members between said cap and 60 nut adapted to close an electric circuit when said cap is depressed, and a leading in conductor extending through the cap opening and connected to said contact members, said cap being rotatable to permit of said conductor being conveniently placed relative to 65 said nut.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT E. SCHIEBER.

Witnesses:

ANNA M. DORR,
KARL H. BUTLER.