

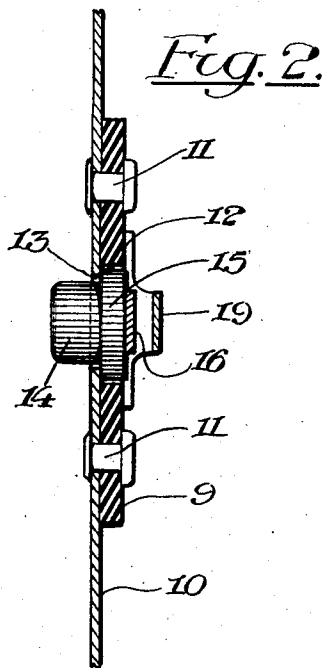
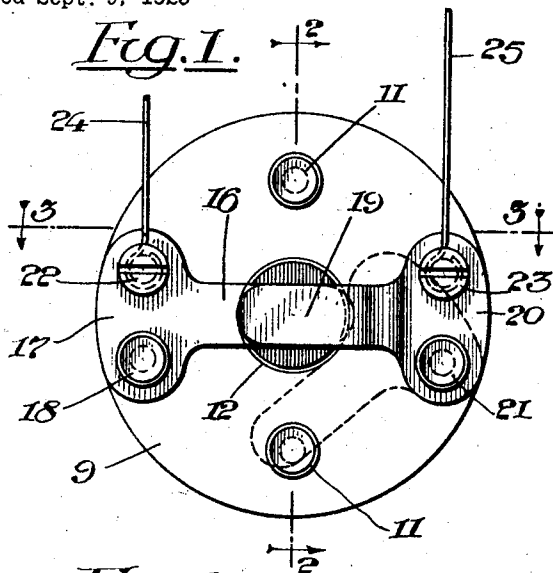
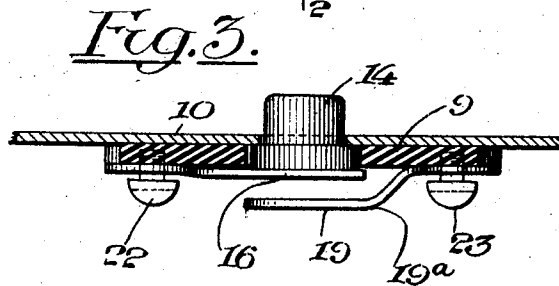
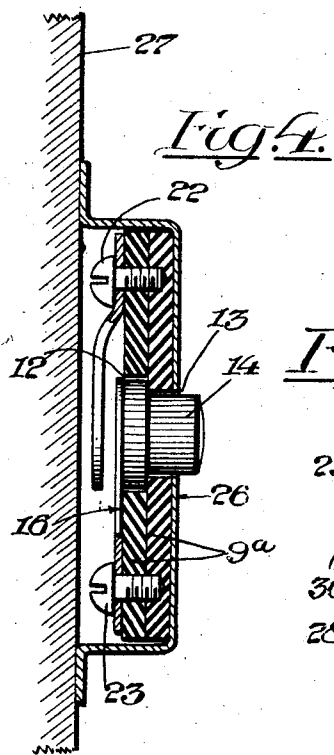
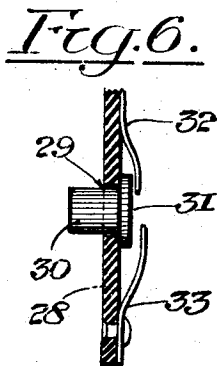
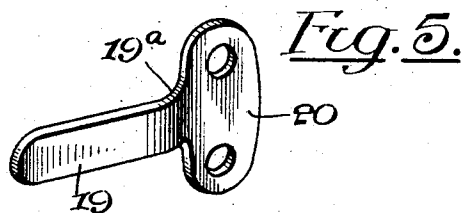
March 1, 1927.

H. WILHELM

1,619,010

CONTACT DEVICE AND INSULATION

Filed Sept. 9, 1925



Inventor
Henry Wilhelm
by his Attorneys
Weed & Gray

Patented Mar. 1, 1927.

1,619,010

UNITED STATES PATENT OFFICE.

HENRY WILHELM, OF BROOKLYN, NEW YORK.

CONTACT DEVICE AND INSULATION.

Application filed September 9, 1925. Serial No. 55,253.

This invention relates to a contact device and insulation particularly adapted for use in a push button mechanism for door bells, call bells, signalling devices, etc., an object of the invention being to provide an improved contact device of this character which will be simplified, durable and compact in construction, relatively cheap to manufacture, and wherein the contact points, wire connections and push button are readily accessible for inspection, cleaning or repair.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification, wherein like reference characters indicate corresponding parts in the several views, and wherein Fig. 1 is a rear elevation illustrating an embodiment of my invention; Fig. 2 is a vertical section taken substantially on lines 2—2 of Fig. 1; Fig. 3 is a horizontal section taken substantially on lines 3—3 of Fig. 1; Fig. 4 is a vertical section illustrating a modified form of the invention; Fig. 5 is a detail view showing a contact and Fig. 6 is a fragmentary vertical section illustrating a further modification.

Before explaining in detail the present improvement and mode of operation thereof, I desire to have it understood that the invention is not limited to the details of construction and arrangement of parts which are illustrated in the accompanying drawings, since the invention is capable of other embodiments, and that the phraseology which I employ is for the purpose of description and not of limitation.

In the drawings and referring particularly to Figs. 1 to 3 inclusive and 5 I provide a flat relatively thin strip of insulation 9 which may be of any preferred shape and material. In the present instance, this insulation is in the form of a flat fibre disk and forms a support for the contact members of the device.

As illustrated in this instance, the fibre disk or back 9 may be mounted on a front plate 10 as by means of rivets 11, and the plate 10 may be formed of metal or any other suitable material. The fibre back or insulating member 9 is provided centrally thereof with a hole or aperture 12, and aligned therewith is a hole or aperture 13 of smaller diameter formed in the outer plate

10. A push button projects thru the apertures 12 and 13. This push button comprises a front projecting portion 14 of substantially the diameter of the aperture 13 terminating in an enlarged portion or flange 15 approximating the diameter of the larger hole 12 in the fibre back 9. It will be noted that the rear end 15 of the push button is housed within the insulation 9 and has the rear face thereof substantially flush with the rear face of the insulation. A spring contact member 16 normally projects across the rear face of the push button and in engagement therewith, this spring 16 being enlarged at its rear end 17, which enlarged portion at one side is preferably riveted at 18 to the insulating member 9. A second contact member 19 also overlies the rear end 15 of the push button, this contact member being spaced from the contact member 17 in overlapping relation. The contact 19 is bent or offset at 19^a and is provided with an enlarged rear portion 20 secured at one side thereof to the insulation 9 as by a rivet 21. Connected to the opposite sides of the enlarged parts 17 and 20 of the contact members are binding posts 22 and 23, which as shown in Fig. 3 are adapted to extend partially into the fibre back 9 and connected to the binding posts are the usual wires 24 and 25.

From the foregoing construction it will be seen that the push button 14 is held in position within the insulation 9 by means of the spring contact member 16 and by pressing the push button the spring contact 16 will be forced into engagement with the contact member 19 thereby completing the circuit thru the wires 24 and 25.

It will be understood of course, that the contact members 16 and 19 may be spaced apart any suitable distance. Upon releasing the push button, the spring contact 16 will return the same to its normal position as shown in Figs. 2 and 3. It will also be noted that with the binding screws 22 and 23 removed the push button 14 may be installed or removed merely by swinging the contact members 16 and 19 laterally, as indicated in dotted lines in Fig. 1, the rivets 18 and 21 forming pivots about which the contact members may be swung. It will also be noted that when the supporting plate 10 is unscrewed to remove the same the contact members will be immediately accessible at the back of the device and

may be quickly inspected or cleaned. In addition, it will be seen that the push button may be renewed without removing the fibre insulation 9 or the contact members.

5 As shown in Fig. 4, the push button 14 may be housed within a pair of insulating strips 9^a having holes 12 and 13 there-
10 through of different diameters for housing the push button. Of course, it will be un-
derstood that a single fibre strip instead of the two strips 9^a shown in Fig. 4 may be
used and in this case the central hole would be countersunk to house the push button 14.
15 A metal casing 26 may enclose the contact device which is secured by means of screws (not shown) to the wall or other support 27.

Referring to Fig. 6, it will be seen that the insulating strip or fibre back 28 has a hole 29 therethrough to receive the shank of
20 the push button 30. In this instance, the push button is provided with a metal disk 31 overlapping the edges of the hole 29 at the back of the fibre disk. A spring contact 32 is secured to the member 28 and over-
25 lies the end 31 of the push button and substantially in engagement therewith to hold the push button in place. A second contact member 33 is also secured to the insulation 28 and its free end overlies the part 31 of
30 the push button but in spaced relation therefrom. In this instance, when the button 30 is pressed inwardly the spring 32 will be forced outwardly under tension until the metal disk 31 of the push button engages
35 both contacts 32 and 33.

It will be particularly noted from the present invention that the contact device may be housed within a relatively narrow space, whereas heretofore a relatively deep
40 bell-shaped canopy has been necessary for housing the contact device heretofore in use. In depth the space occupied by the present contact structure is only the thick-
ness of the fibre strip or insulating member plus the narrow space occupied by the two
45 contact members. In addition, my invention provides a more sightly and attractive appearance at the outside of the device, since the flat plate 10 furnishes a more attractive
50 appearance than the bulging metal canopies or bell-shaped casings heretofore required.

It is to be understood that by describing in detail herein any particular form, structure or arrangement, it is not intended to
55 limit the invention beyond the terms of the several claims or the requirements of the prior art.

Having thus explained the nature of my said invention and described a way of constructing and using the same, although
60 without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, I claim:

65 1. A contact device comprising a flat relatively thin insulating strip base having a

hole therein, a flanged push button carried by said insulating member and projecting through said hole, the flange thereof main-
70 taining the push button against displacement in one direction, a pair of spaced con-
tacts each pivotally secured to one side of said insulating member at diametrically op-
posite points thereof with the free ends pro-
75 jecting toward each other and both overlapping the flanged portion of the push button thereby to prevent removal of the push but-
ton in the opposite direction.

2. A contact device comprising a flat in-
sulating base member having a hole therein, a push button carried by said insulating
80 member and extending through said hole, and a pair of contact members pivoted at one side of said insulating member at di-
ametrically opposite points thereof with the
85 free ends projecting toward each other and both overlapping the inner end of the push button and both laterally shiftable to permit the removal of the button.

3. A contact device comprising a flat in-
sulating base member having a hole therein, 90
a flanged push button carried by said in-
sulating member and extending through said hole, a pair of spaced contact members pivoted at one side of said insulating mem-
95 ber at diametrically opposite points thereof with the free ends projecting toward each other and both overlapping the button and both laterally shiftable to permit the re-
moval of the button.

4. A contact device comprising a flat in- 100
sulating base member having a hole there-
through, a flanged push button carried by said insulating member and extending thru
said hole, the flange thereof preventing de- 105
tachment of the button in one direction, a pair of spaced contact members secured at one side of said insulating member at di-
ametrically opposite points thereof with the
110 free ends projecting toward each other and both overlapping said button to prevent de-
tachment thereof in the opposite direction and both laterally shiftable to permit the detachment of said button.

5. A contact device comprising a flat re- 115
latively thin insulating strip base having a hole therein, a flanged push button carried by said insulating member and projecting
through said hole, the flange thereof main-
taining the push button against displace- 120
ment in one direction, a pair of spaced con-
tacts each pivotally secured to one side of said insulating member at diametrically op-
posite points thereof with the free ends pro-
125 jecting toward each other and both over-
lapping the flanged portion of the push but-
ton thereby to prevent removal of the push button in the opposite direction, each of said
contacts having a binding post carried thereby.

6. A contact device comprising a flat in- 130

insulating base member having a hole therein, a flanged push button carried by said insulating member and projecting through said hole, the flange thereof maintaining the push button against displacement in one direction, a pair of spaced contacts each pivotally secured to one side of said insulating member at diametrically opposite points thereof with the free ends projecting toward each other and both overlapping the flanged portion of the push button thereby to prevent removal of the push button in the opposite direction, each of said contacts having a pair of laterally extending ears for the reception of its pivot and a binding post.

Signed at borough of Brooklyn, city and State of New York and county of Kings, this 5th day of September, 1925.

HENRY WILHELM.