June 25, 1929. A. G. GEISTERT 1,718,643

HORN BUTTON CONTACT

Filed March 29, 1926

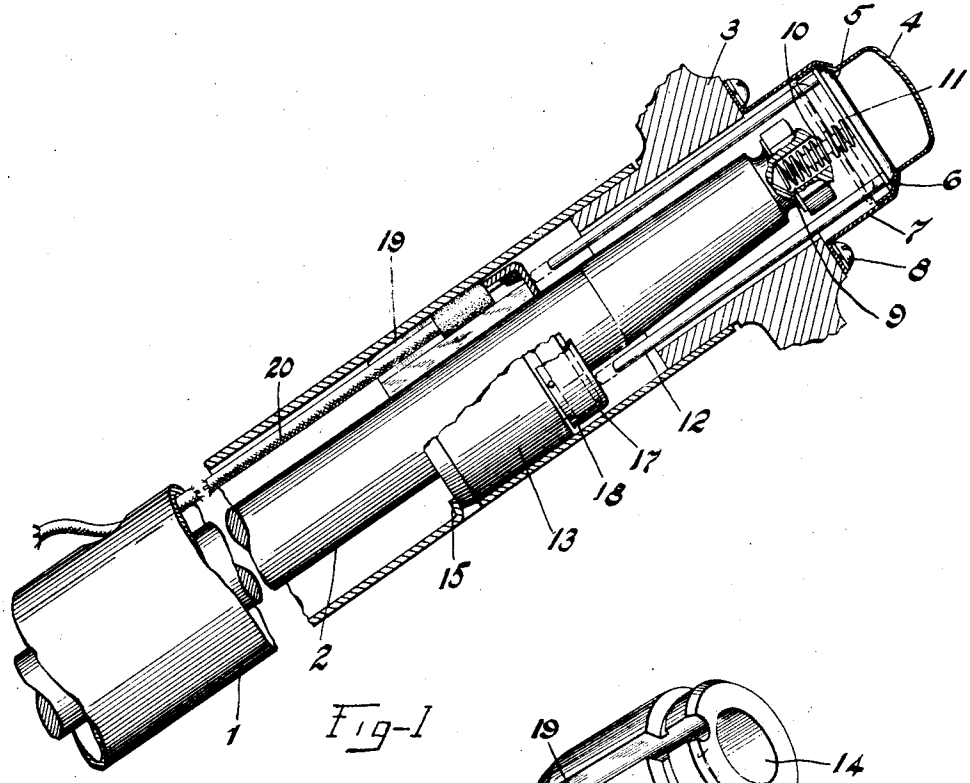


Fig-1

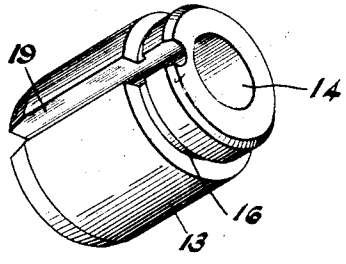


Fig-2

Inventor

Albert G. Geistert

By Blackmore, Spencer & Flint

Attorneys

Patented June 25, 1929. 1,718,643

UNITED STATES PATENT OFFICE.

ALBERT G. GEISTERT, OF DETROIT, MICHIGAN, ASSIGNOR TO GENERAL MOTORS CORPORATION, OF DETROIT, MICHIGAN, A CORPORATION OF DELAWARE.

HORN-BUTTON CONTACT.

Application filed March 29, 1926. Serial No. 98,305.

This invention relates to a circuit controlling device. It is intended to be used in connection with a horn button assembly similar to that shown in patent to Lewellen 1,651,397 December 6, 1927 for "circuit controlling devices."

The particular feature to which this invention relates is a fixed contact within the steering column which cooperates with a movable contact member reciprocating through and rotatable with the steering wheel hub.

It is an object of this invention to provide within the steering column a part including the fixed contact so constructed as to permit the wire leading to the fixed contact to be positioned within the steering column instead of outside the column. In the drawing:

Figure 1 is a longitudinal vertical section through the steering column.

Figure 2 is a perspective of the bushing for the fixed contact member.

Referring by reference characters to the drawing, numeral 1 represents the fixed steering column. Rotatable within the said steering column is the steering post 2. Secured to the upper end of the steering post and rotatable within the upper end of the steering column is the hub of a steering wheel 3. The button for operating the horn is carried by the hub portion of the steering wheel. This button is represented by numeral 4. At its lower end it is outwardly flared, as at 5, where it engages an inwardly directed portion 6 of housing 7 secured to the hub portion of the steering wheel by fastening means 8. Within the upper end of the steering post is recess 9 within which is placed a coil spring 10. This spring engages a plate 11 carried in the flared portion of the horn button 4. Depending from the plate 11 is a hair pin type of contact member 12.

It will be understood from the construction described that the spring 10, by engagement with plate 11, normally holds the button 4 outwardly, the outward movement being limited by the engagement of parts 5 and 6. When the button is in its outermost position, the inner ends of hair pin member 12 are out of contact with a fixed contact member to be described below. When the button member 4 is pushed inwardly against the resistance of spring 10, the contact members 12 are brought into engagement with the fixed contact member.

This invention is more particularly concerned with the structure relating to the attachment of the fixed contact member. In Figure 2 is seen a bushing 13 which is made of insulating material, preferably of wood. This bushing is centrally apertured as at 14 for surrounding the steering post 2. The steering column has one or more indented portions 15 for engaging the tapered end of bushing 13, as shown in Figure 1. The upper end of the bushing 13 is of reduced diameter and that part of the upper portion at the shoulder 15 is formed with a groove 16.

The fixed contact member 17 is in the form of a shallow metal cup. It fits over the upper reduced portion of the bushing and one or more indentations of the flange of the cup, as at 18, engage the groove 16 to hold the fixed contact member in position. The bushing is cut away on one side, as for example, by means of a groove 19, shown in Figure 2. Through this groove passes a wire 20 which enters the inner side of the fixed contact member to which it is soldered. The size of the groove 19 is such as to permit the passage of the insulated wire and its connecting terminal. By means of this bushing it is possible to use a wire extending up through the inside of the steering column instead of carrying the wire along the outside of the column.

The operation will be readily understood. The movable terminal is grounded through its connection with the button, the housing and the steering wheel. When the button is depressed the movable contact members 12 engage the annular contact member 17 whatever be the position of the steering wheel. The contact is thus completed through parts 12 and 17. When the pressure on button 4 is released the spring separates contact members 12 and 17.

I claim:

1. In an electric contact device for steering columns, a fixed tubular column, an inner rotatable steering post, an annular insulating

bushing between said column and post, said bushing having its upper end of reduced dimensions, a metallic contact member secured to said reduced end whereby it is out of contact with said column, a second contact member movable into engagement with said first contact member.

2. The invention defined by claim 1, said bushing having an external groove whereby a wire may be connected to said first mentioned contact member and extend through said groove along the interior of said column.

In testimony whereof I affix my signature.

ALBERT G. GEISTERT.