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PUSH BUTTON MEANS

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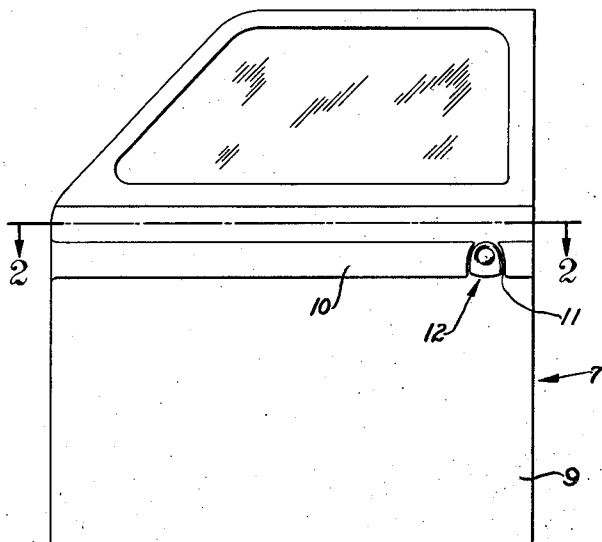


Fig. 1

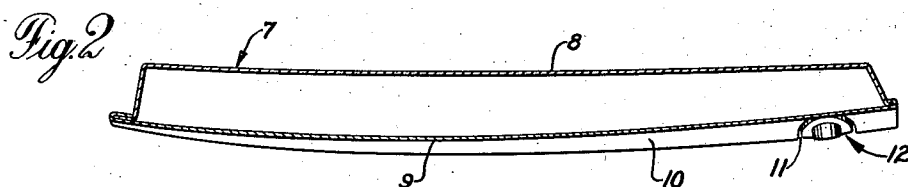


Fig. 2

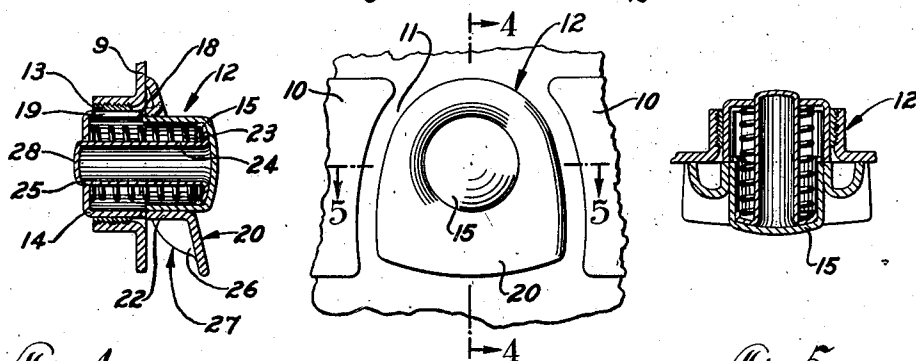


Fig. 4

Fig. 5

Fig. 3

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PUSH-BUTTON MEANS

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3 Claims. (Cl. 292—1)

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My present invention relates to an improvement in push button means, and more particularly to a push button means for actuating, for example, of the door latch mechanism of an automobile door.

At present there is a trend in automobile body design to eliminate the protruding pivoted lever type of door handle from the standpoint of appearance since they interfere with streamlining of the car body. In lieu of the conventional form of door handle it has been proposed to provide a push button device having a push button member terminating substantially flush with the outer surface of the door, and which is adapted to be engaged by the thumb and pushed inwardly to release the latching mechanism between the door and door post. These devices avoid the objectional appearance of the earlier conventional forms of door handles referred to but are open to other objections primarily from the standpoint of convenience in operation. The present forms of safety door latch mechanism usually comprise relatively strong biasing spring means for maintaining the latch mechanism in its closed position, and the force of such spring means is difficult to overcome with the order of forces which may be made effective thereagainst by pushing with the thumb. Further, doors embodying such latch mechanisms are usually spring loaded so that upon release of the latch mechanism by pushing inwardly of the push button the door is caused to be biased open an amount so that a person may grasp the edge of the door for swinging it about its hinge mounting to its fully opened position as when in entering the vehicle. The grasping of the edge of the door for fully opening it is objectionable for several obvious reasons, among which is the likely soilage of the hands.

It is an object of my present invention to provide a push button means having means adapted to be grasped with one or more fingers of one hand with the thumb in engagement with a push button member whereby a leverage may be effected through the hand on the push button member to bias the same inwardly to release, for example, the latch mechanism of a lock for an automobile door.

A further object is to provide a push button means as aforesaid in which the means through which the leverage is adapted to be effected through the hand in tripping the latch mechanism also affords a convenient instrumentality in effecting moving of the door about its hinged mounting.

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I propose to achieve the aforesaid objects by providing a push button device comprising telescopically arranged socket and push button members between which members a spring means is provided to normally bias the push button member outwardly of the socket member. With such an arrangement of parts I propose to provide a means comprising, in the preferred embodiment of my invention herein disclosed, a lip shaped member adjacent the push button member which is adapted to be engaged with one or more of the fingers of one hand with the thumb in engagement with the outer end of the push button member to effect a leverage through the hand for biasing the push button member inwardly of the socket member against the force of the spring means therebetween.

The above referred to lip member is adapted to be associated with the panel, for example, of a car door or the like, and projects therefrom in an amount sufficient to enable the fingers to be placed under the lip member to achieve the aforesaid leverage through the hand.

In the preferred embodiment of my invention herein disclosed, I preferably provide the door or panel member with a projecting ridge which is suitably recessed to provide for the reception of the push button means, and which does not interfere but rather blends with the streamlining designing of a car body.

A preferred feature of my present invention resides in the provision of lug and slot elements between the telescopically arranged socket and push button members for preventing relative rotation of these members with respect to each other.

A further preferred feature of my present invention is to provide the aforesaid lip member with a substantially hollow cylindrical sleeve portion which serves as a guide sleeve for the push button member.

A still further preferred feature of my present invention is to provide means for detachable mounting of the socket member in a panel of a door or the like for facilitating the ready assembly of the push button means therein, and for the convenient replacement or servicing thereof.

The above and other objects, advantages and features of my invention will appear from the detail description.

Now in order to acquaint those skilled in the art with the manner of constructing a push button means in accordance with my present invention, I shall describe in connection with the ac-

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companioning drawing a preferred embodiment of my invention.

In the drawing:

Figure 1 is a side elevational view of an automobile door with the push button means of my present invention embodied therein;

Figure 2 is a detail horizontal sectional view taken substantially on line 2—2 of Figure 1 looking in the direction indicated by the arrows;

Figure 3 is an enlarged elevational view of the push button means of my present invention as embodied in the door of Figure 1;

Figure 4 is a detail vertical sectional view taken substantially on the line 4—4 of Figure 3 looking in the direction indicated by the arrows; and

Figure 5 is a detail horizontal sectional view taken substantially on the line 5—5 of Figure 3 looking in the direction indicated by the arrows.

Referring now more particularly to Figures 1 and 2, I have shown an automobile door 7 which comprises an inner sheet metal panel 8 and an outer sheet metal panel 9 with the outer sheet metal section 9 being provided with a lengthwise extending ridge or rib 10 recessed as at 11 and within which recess the push button means 12 of my present invention is disposed. The ridge or rib 10 extends slightly beyond the outer surface or general plane of the exterior panel 9 and with the push button means 12 disposed in the recess 11 thereof the latter blends in with the external appearance of the ridge 10.

Referring now more in detail to Figures 3 through 5 it will be observed that the push button means 12 comprises a cup-shaped socket member 14 and a cup-shaped push button member 15. The cup-shaped member 14 has a threaded sleeve member 13 suitably secured thereto as by a press fit and which sleeve member 13 is adapted to have threading engagement with a threaded opening formed in the panel member 9 to fixably support the cup-shaped socket member in the position shown at Figures 3 through 5. The push button member 15 as shown is provided with a lug or ear 16 at its open end which is adapted to have sliding engagement in a groove 19 formed in the wall of the cup-shaped socket member 14 and extending lengthwise thereof for guiding the push button member and preventing relative rotation of the latter with respect to the socket member 14. A lip member 20 is suitably secured as by welding to the outer face of the panel 9 and as will be more clearly seen in Figures 4 and 5 it is provided with a hollow cylindrical sleeve portion 22 snugly receiving the cylindrical body portion of the push button member 15. The inner end of the cylindrical sleeve portion 22 is adapted to be engaged by the ear 16 of the push button member 15 to limit its outward position with respect to the socket member to which the push button member is caused to be urged by the coil spring 23 confined between the closed ends of the socket member 14 and the push button member 15. The push button member 15 is provided with a cylindrical actuating member 24 which extends co-axially of the axis of the cup-shaped socket and push button members with the opposite end of the actuating member 24 extending through an opening 25 formed in the closed end wall of the socket member 14. It will be understood that when the push button member 15 is forced inwardly against the force of the biasing spring 23 that the inner end 28 of the actuating member 24 is adapted to engage a lever or other suitable actuating means for a latch mechanism which normally maintains the door

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in closed position. A latch mechanism of a character with which my present invention has use is shown in Patent No. 2,394,646, dated February 12, 1946, to Edward F. Wagner. It will be understood, however, that the push button means of my invention has wide application to other forms of latch mechanism and the like, and is not limited for use with any specific form of such mechanisms. The lip member 20 as shown is provided with its lower portion 26 flaring downwardly and outwardly away from the surface of the panel 9 to provide a socket 27 between the lower end of the lip member and the surface of the panel 9 and into which one or more fingers of the hand of a person may be inserted with the thumb in engagement with the outer closed end of the push button member 15 to effect a leverage through the hand to urge the push button member 15 against the force of the spring 23 into the socket member 14 to release the latching mechanism for the door 7.

It will be observed that the hollow cylindrical sleeve portion 22 of the lip member 20 provides a pilot for snugly receiving the cylindrical portion of the push button member 15 to guide movement of the same inwardly and outwardly of the socket member 14.

While I have shown what I consider to be the preferred embodiment of my invention it will be understood that various modifications and rearrangements may be made therein without departing from the spirit and scope of my invention.

I claim:

1. Push button means comprising a cup-shaped socket member, a cup-shaped push button member telescopically arranged with respect to said socket member with the open end of said push button member extending into the open end of said socket member, said socket member having a slot extending lengthwise thereof and said push button member having a lug element fitting in said slot for preventing rotation of said push button member relative to said socket member, spring means between said socket and push button members for normally biasing the latter outwardly of said socket member, a stationary lip member mounted in fixed relation with respect to said cup-shaped members and having a portion disposed adjacent the open end of said socket member adapted to be engaged by said lug element of said push button member to limit the outward movement of the latter away from said socket member by said spring means, said lip member being adapted to be engaged with the fingers of one hand to effect a leverage there-through to the thumb adapted to have engagement with said push button member to move the latter inwardly of said socket member against the force of said spring means.

2. Push button means comprising a cup-shaped socket member, a cup-shaped push button member telescopically arranged with respect to said socket member with the open end of said push button member extending into the open end of said socket member, spring means between said members for biasing said push button member outwardly of said socket member, said push button member having a lug element adjacent its open end, a stationary lip member mounted in fixed relation with respect to said cup-shaped members and having a portion disposed adjacent the open end of said socket member adapted to be engaged by said lug element of said push button member to limit the outward movement thereof away from said socket member by said

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spring means, said lip member having a hollow cylindrical sleeve portion snugly receiving said push button member for guiding the same for movement axially inwardly and outwardly of said socket member, and said lip member being adapted to be engaged with the fingers of one hand to effect a leverage therethrough to the thumb adapted to have engagement with said push button member to move the same inwardly of said socket member against the force of said spring means.

3. Push button means comprising a cup-shaped socket member, a cup-shaped push button member telescopically arranged with respect to said socket member with the open end of said push button member extending into the open end of said socket member, said socket member having a slot extending lengthwise thereof and said push button member having a lug element fitting in said slot for preventing rotation of said push button member relative to said socket member, spring means between said socket and push button members for normally biasing the latter in a direction outwardly of said socket member, a stationary lip member mounted in fixed relation with respect to said cup-shaped members and having a portion disposed adjacent the open end

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of said socket member adapted to be engaged by said lug element of said push button member to limit the outward movement of the latter away from said socket member by said spring means, said lip member having a hollow cylindrical sleeve portion snugly receiving said push button member for guiding the same for movement axially inwardly and outwardly of said socket member, and said lip member being adapted to be engaged with the fingers of one hand to effect a leverage therethrough to the thumb adapted to have engagement with said push button member to move the same inwardly of said socket member against the force of said spring means.

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2,314,646	Keats	Mar. 23, 1943