Nov. 20, 1934. I. D. PERRY 1,981,283

DOOR BUMPER

Original Filed Oct. 28, 1931

Fig. 1

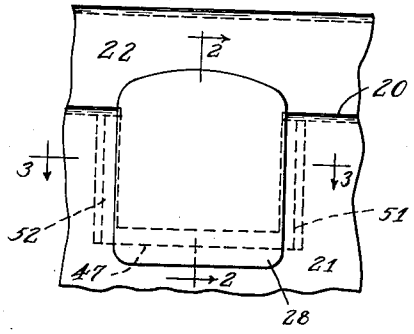


Fig. 2

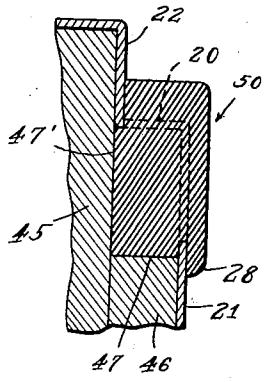


Fig. 3

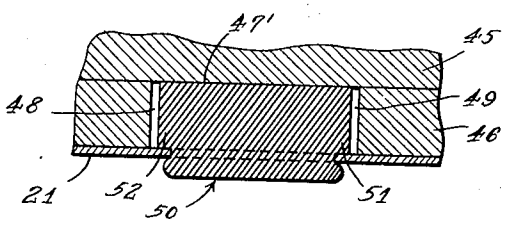
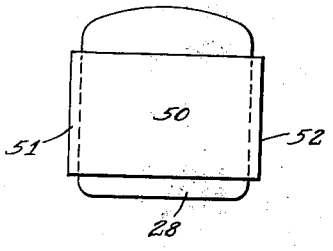


Fig. 4



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Patented Nov. 20, 1934 1,981,283

UNITED STATES PATENT OFFICE

1,981,283

DOOR BUMPER

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Original application October 28, 1931, Serial No. 571,573. Divided and this application July 25, 1932, Serial No. 624,377

4 Claims. (Cl. 296—28)

This invention has to do with certain improvements in door bumpers and the like. These door bumpers are intended primarily for use in connection with the doors on automobile bodies and the like, although it will presently appear that the features of the invention may also be used to advantage in connection with other purposes.

Inasmuch, however, as the features and construction herein disclosed have been devised with particular reference to use in connection with automobile doors I have illustrated and will describe such use in particular. In so doing, however, I wish it clearly understood that I do not intend thereby to limit the use or application of the invention except as I may do so in the claims.

The automobile bodies are generally provided with door stanchions or pillars toward or against which the edge portions of the doors move during the door closing operation. These door stanchions or pillars are generally provided with ledges facing in the direction of door closing movement; and also are provided with inwardly extending flanges lying parallel to the direction of door closing movement. Frequently also the stanchions or door pillars are provided with outwardly extending flanges lying parallel to the direction of door closing movement. The edge portion of the door is provided with a ledge portion which faces in the direction of door closing movement and approaches the corresponding ledge portion of the stanchion or pillar when the door is closed.

The door bumpers herein disclosed are located on the door stanchions or pillars at the position of the ledge thereof and serve to receive the forces of pressure and impact of the ledge portion of the door itself during the door closing operation.

The principal feature of this invention consists in the provision of a sheet metal door pillar having a wood filler therein, the sheet metal of the pillar being formed to provide a ledge facing in the direction of door closing movement and an inwardly extending flange connected with the edge of the ledge and disposed substantially parallel with the direction of door closing movement, there being an opening provided in the sheet metal of the pillar extending across the ledge and inwardly along the flange, and a socket in the wood filler behind the opening, whereby to accommodate a bumper block of resilient material fitting in the opening and supported for compression by engagement with the walls of the socket in the filler.

In the drawing—

Figure 1 is a face view of a short section of a door pillar embodying the features of my invention and showing a bumper block in place thereon;

Fig. 2 is a cross-section on the line 2—2 of Figure 1 looking in the direction of the arrows;

Fig. 3 is a horizontal section on the line 3—3 of Figure 1, and

Fig. 4 is a face view of the bumper block of Figs. 1 to 3 removed from the pillar.

This application is a division of my copending application, Serial No. 571,573, filed October 28, 1931.

The door pillar is of sheet metal and formed to provide a ledge 20 facing in the direction of door closing movement, and inwardly and outwardly extending flanges 21 and 22, respectively, both of which are disposed substantially parallel to the direction of door closing movement. The sheet metal pillar is reinforced by filling the same with wood, a wood filler being clearly indicated in Figs. 2 and 3 as including the blocks 45 and 46, although, of course, a one-piece filler may be used. The block 46 of the filler is mortised out, as clearly appears in Figs. 2 and 3, such mortising extending slightly below the opening in the flange 21 so as to provide the floor 47 at the proper level, and also extending beyond the ends of the opening in the ledge 20 and flange 21 so as to provide end walls 48 and 49 in proper relation to the opening in the pillar. In that way, a sheet metal lip is defined along the sides of the opening by means of which the bumper block 50 can be held in place.

The bumper block 50 is disposed fitting in and projecting from the opening in the pillar, the extent of projection at the ledge 20 and at the flange 21 being clearly indicated in Fig. 2. The block is provided with a marginal flange 28 to conceal the opening in the pillar when the block is in place therein, thus making for improved appearance in addition to providing better support for the block on the pillar. The bumper block engages the floor 47 and back wall 47′ of the socket in the filler so as to be properly supported for compression lengthwise as well as transversely when the door comes into abutment with the bumper block in closing. The depression of the floor 47 with respect to the lower edge of the opening in the flange 21 serves in a measure to retain the bumper block in place in the socket, as must be evident from inspection of Fig. 2. In addition, the bumper block is formed so as to project, as at 51 and 52, beyond both ends of the opening in the ledge 20 and flange 21 for engagement under the ledge and with the inside

of the flange, whereby to lock the bumper block in place.

I claim:

1. In a door pillar construction, a sheet metal door pillar suitably formed to provide a ledge facing in the direction of door closing movement and an inwardly extending flange disposed substantially parallel to the direction of door closing movement and connected to the edge of said ledge, and a filler of suitable material in said pillar for reinforcement thereof, the sheet metal of the pillar being suitably formed to provide an opening of a predetermined length measured lengthwise of the pillar, the same extending across the ledge and inwardly in the flange a predetermined distance, and the filler being suitably formed to provide a socket with which the opening communicates, said socket having a floor, and a back wall, and being longer than the opening so as to present shoulders under the ledge adjacent the ends of the socket, said opening and socket being adapted to receive a bumper block of resilient material with the back and bottom thereof engaging the back wall and floor of the socket, to permit compression of the block in the closing of a door against the same, and with end portions projecting toward the ends of the socket for engagement under the aforesaid shoulders to retain the block without need for other retaining means.

2. A structure as set forth in claim 1, wherein the socket in the filler extends inwardly a greater distance than that portion of the opening provided in the inwardly extending flange, whereby to define still another bumper retaining shoulder by the inside of the inwardly extending flange, lengthwise of the socket, the bumper block being adapted to have abutment with the inside of said inwardly extending flange along the bottom of the socket, whereby to better retain the bumper block in place.

3. A structure as set forth in claim 1 wherein the sheet metal door pillar is suitably formed to provide an outwardly extending flange parallel to the inwardly extending flange and connected to the other edge of said ledge, whereby to define still another bumper retaining shoulder at the inner end of said outwardly extending flange, lengthwise of the socket, the bumper block being adapted to have abutment with said shoulder along the back wall of the socket, whereby to better retain the bumper block in place.

4. In metal door frame construction, a hollow sheet metal pillar having a portion thereof formed to angular cross-section to provide a door stop, said pillar having an opening provided in the angle of the door stop portion, adapted to receive and retain a bumper block of resilient material projecting from the door stop portion for engagement and compression in the closing of a door toward the door stop portion, and filler means substantially completely filling at least the door stop portion of the pillar, said filler means being recessed in register with the aforesaid opening to accommodate an inwardly projecting portion of the aforesaid bumper block, the recess in said filler means being formed so as to have supporting engagement with the inwardly projecting portion of the bumper block to withstand shock and compression in the door cushioning action of the bumper.

IRA D. PERRY.