Nov. 29, 1966 S. V. ZIENTARA 3,288,512

RESILIENT CAR DOOR PROTECTOR

Filed Oct. 21, 1965

Fig. 1.

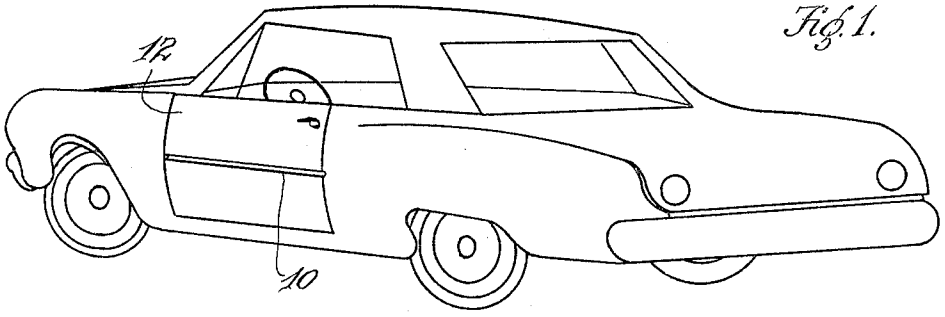
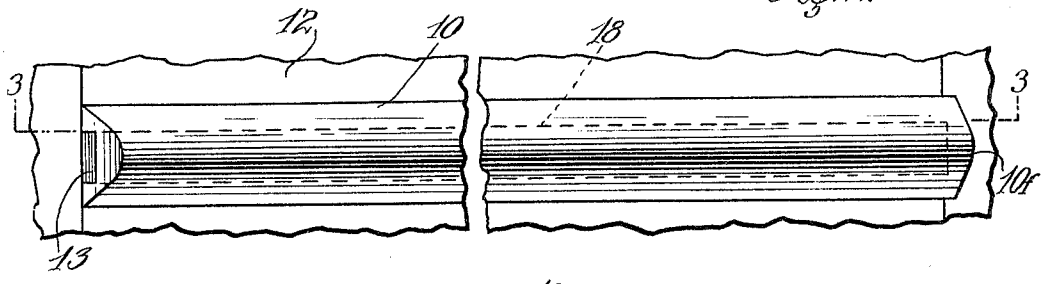


Fig. 2.



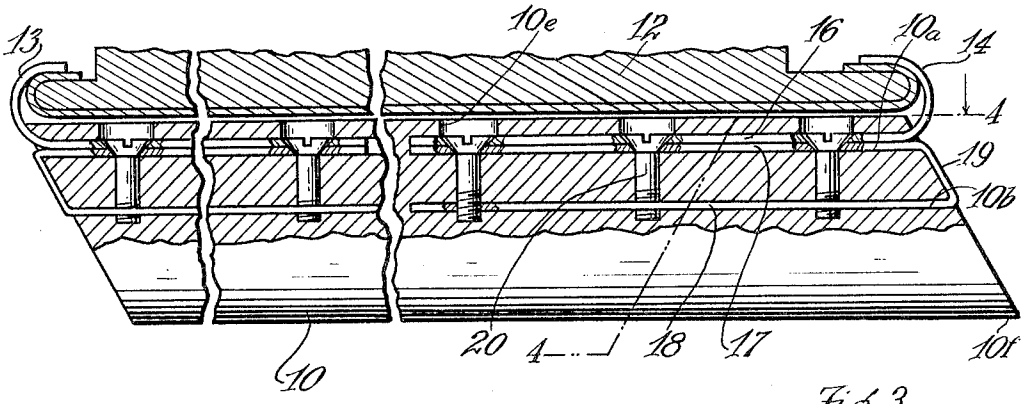


Fig. 3.

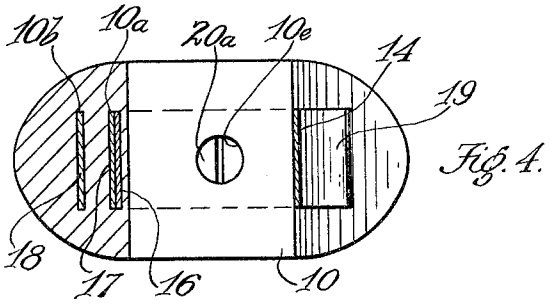


Fig. 4.

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RESILIENT CAR DOOR PROTECTOR

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My invention relates to means applicable to motor car bodies for protecting the sides thereof against injury by adjoining cars in a garage or parking lot. More particularly, the invention is an improvement on the device covered in my Patent No. 2,889,165, dated June 2, 1959, which is carried by the door of a motor car to soften the impact when the door opens against the body of an adjoining car.

In general form the protector is a crowned strip of yieldable substance applied to extend along the outer surface of the door, with end-hooks projecting from the strip to engage the side flanges of the door. Owing to the unstable factor in rubber and like substances, the patented device resorted to mechanical adjuncts in order to insure the hold of the end-hooks on the strip. However, of late substances have been developed which have both bodily cushioning qualities and extreme toughness, and it is therefore one object of the present improvement to provide means which attach the end-hooks directly to the protector strip.

Another object is to provide a metallic attaching frame for each end-hook which secures clamping engagement with the protector strip along an extended area and by means of a series of fastening elements anchoring the frame to the strip at several points.

Another object is to mold the protector strip with longitudinal slots in which sections of the frame are insertible, with the fastening elements applied from the inner side of the strip at longitudinally spaced points.

A still further object is to mold the strip in a manner to present cavities in its inner side in which the fastening means assume sunken positions, so that no metallic part is exposed to mar the door which carries the strip.

Another object is to extend the strip in pointed form beyond the opening edge of the door, whereby to insure first contact by the end of the strip in case the door is opened against the body of an adjoining car.

An important object is to construct the attaching frame of the protector in a manner to be extensible with different varieties and sizes of end hooks, according to the door dimensions and characteristics of different cars.

A better understanding of the improved protector may be gained by reference to the accompanying drawing, in which:

FIG. 1 is a perspective view of a motor car, showing the protector mounted on a door;

FIG. 2 is an elevation of the protector on a full-size scale, with the protector and adjacent portion of the car door broken away;

FIG. 3 is a double-size plan view of the showing in FIG. 2, taken mostly on the section line 3—3; and

FIG. 4 is a section on the line 4—4 of FIG. 3.

Referring specifically to the drawing, **10** denotes the protector strip; and the end-portions of FIG. 4 indicate that the strip is of substantially semi-circular cross-section. As in the structure of the patent, the strip **10** is applied wih its flat side to the outer surface of the car door **12**; and the protector strip **10** carries end-hooks **13** and **14** engageable with the edge flanges **12***a* of the car door as shown in FIG. 3.

The metallic attaching frame mentioned above is the important feature of the present improvement. It is of stainless steel; and the frames are the source of the end-hooks **13** and **14**, and are virtually identical. Thus,

each frame comprises an inner bar **16**, a second bar **17**, and a third bar **18**. The inner bar **16** is the shank of the end-hook **13** (or **14**); and the second bar **17** extends in doubled relation along the outer side of the inner bar **16**. The third bar **18** is spaced in parallelism from the second bar **17**, and is joined to the same by a terminal portion **19**, the latter occurring at the same end of the frame as the end-hook **13** (or **14**).

The protector strip is of extremely tough plastic substance, and is molded with a narrow slot **10***a* in its inner portion, and a narrower slot **10***b* in outwardly-spaced relation to the slot **10***a*; and the slots are parallel and continuous throughout the strip. Thus, when a length of the strip is cut corresponding to the width of a car door to which the strip is applied, a hook-attaching frame is inserted in each end of the strip, the doubled bars **16–17** entering the slot **10***a*, and the single bar **18** entering the slot **10***b*, as is apparent in FIG. 3. The bars are of flat stock and dimensioned to fit snugly in the related slots.

The attaching frame is secured in the embedded position by a series of bolts **20**. The protector strip is molded in its inner or flat face with holes **10***c* to receive the bolts, seats **10***d* for the beveled heads **20***a* of the bolts, and outer cavities **10***e* to accommodate the bolt heads in the sunken positions shown. With the protector strip applied to the polished surface of a car door, the sunken positions of the bolts keep the heads thereof from contacting and marring the surface of the door. The outer frame bar **18** is made with tapped holes for receiving and retaining the bolts when they are screwed down.

The attaching frame serves both as a metallic reinforcement for the protector strip on the inner side, and as a clamp for the stock of the protector strip between the frame bars **17** and **18**. The U-shape of the outer frame section enables it to be made in one piece and the bars thereof to hold their positions. It is further noted that the reinforced protector strip is formed with a receding angle—at the left in FIG. 3—from the hinge edge of the car door, so as not to be in the way or strike the car body when the door is opened wide. On the other hand, the strip is extended at an angle beyond the opening edge of the car door—as seen at the right in the same figure—in order to project a ridged edge **10***f* of yieldable material as a cushion when the door is opened wide and the protector contacts the body of an adjoining car.

It is now apparent that the novel protector is a compact accessory which should be cut somewhat shorter than the width of the door, in order that it may be stretched and secure a strong grip on the same. The tough consistency of the protector strip material not only serves to anchor the bolts retentively, but secures a firm engagement with the attaching frame on the inside by virtue of the clamping feature described. Further, the hooks extended from the attaching frames are comparatively thin and inconspicuous when engaged with the sides of the door, so that only the protector is visible, and nothing in connection with it detracts from the appearance of the car.

I claim:

1. A protector applicable to a door of a motor car to protect an adjoining car from injury when the door is opened, comprising a strip of resilient material applied to the exterior of the door, hooks endwise of the strip and engageable with the sides of the door to hold the strip to the same, the strip being made with slots from the ends and means clamping the portions of the strip between the slots, such means carrying said hooks.

2. The structure of claim **1**, said means including bars extending into the slots, and fastening means directed crosswise through said portions and bars.

3. A protector applicable to a door of a motor car to protect an adjoining car from injury when the door is opened, comprising a strip of resilient material applied to the exterior of the door, hooks endwise of the strip and engageable with the sides of the door to hold the strip to the same, and means clamping internal portions of the strip, such means carrying said hooks, the strip having longitudinally directed slots in its ends, and said means comprising frames in such ends with components inserted in the slots and gathered to clamp portions between the slots, the frames extended with said hooks.

4. A protector applicable to a door of a motor car to protect an adjoining car from injury when the door is opened, comprising a strip of resilient material applied to the exterior of the door, hooks endwise of the strip and engageable with the sides of the door to hold the strip to the same, and means clamping internal portions of the strip, such means carrying said hooks, the strip having a pair of longitudinally directed slots throughout its length and designed to be cut to a length proportionate to the width of the door, and said means comprising frames insertible in the ends of the strip when the length thereof has been made suitable for a given door, the frames having bars seating in said slots, and means gathering the bars to clamp the strip portions between the slots, the frames extended with said hooks.

5. A protector applicable to a door of a motor car to protect an adjoining car from injury when the door is opened, comprising a strip of resilient material applied to the exterior of the door, hooks endwise of the strip and engageable with the sides of the door to hold the strip to the same, and means clamping internal portions of the strip, such means carrying said hooks, the strip having a pair of longitudinally directed slots throughout its length and designed to be cut to a length proportionate to the width of the door, and said means comprising frames insertible in the ends of the strip when the length thereof has been made suitable for a given door, the frames having bars seating in said slots, and bolts crosswise of the strip and effective to gather them and clamp the strip portions between the slots, the frames extended with said hooks.

6. A protector applicable to a door of a motor car to protect an adjoining car from injury when the door is opened, comprising a strip of resilient material applied to the exterior of the door, hooks endwise of the strip and engageable with the sides of the door to hold the strip to the same, and means clamping internal portions of the strip, such means carrying said hooks, the strip having a pair of longitudinally directed slots throughout its length and designed to be cut to a length proportionate to the width of the door, and said means comprising frames insertible in the ends of the strip when the length thereof has been made suitable for a given door, the frames having bars seating in said slots, and bolts crosswise of the strip and effective to gather them and clamp the strip portion between the slots, the frames extended with said hooks, said bolts directed from the surface of the strip which is applied to the door, and such surface having cavities where the bolts occur to sink the heads of the bolts in the strip.

7. A protector applicable to a door of a motor car to protect an adjoining car from injury when the door is opened, comprising a strip of resilient material applied to the exterior of the door, hooks endwise of the strip and engageable with the sides of the door to hold the strip to the same, and means clamping internal portions of the strip, such means carrying said hooks, the strip having longitudinally directed slots in its ends, and said means comprising a frame in each end of the strip, the components of each frame being a bar terminating with one of said hooks, a pair of parallel bars adjacent to said bar and along said strip portion, and second means gathering the bars to clamp such strip portion between the parallel bars and secure the latter to the first-mentioned bar.

8. A protector applicable to a door of a motor car to protect an adjoining car from injury when the door is opened, comprising a strip of resilient material applied to the exterior of the door, hooks endwise of the strip and engageable with the sides of the door to hold the strip to the same, and means clamping internal portions of the strip, such means carrying said hooks, the strip having longitudinally directed slots in its ends, and said means comprising a frame in each end of the strip, the components of each frame being a bar terminating with one of said hooks, a pair of parallel bars adjacent to said bar and along said strip portion, and second means gathering the bars to clamp such strip portion between the parallel bars and secure the latter to the first-mentioned bar, said parallel bars joining with a connecting portion adjacent to the related hook.

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