May 7, 1929.

A. S. CAMPBELL

1,712,472

DOOR AND CUSHION THEREFOR

Filed Aug. 11, 1926

Fig. 1.

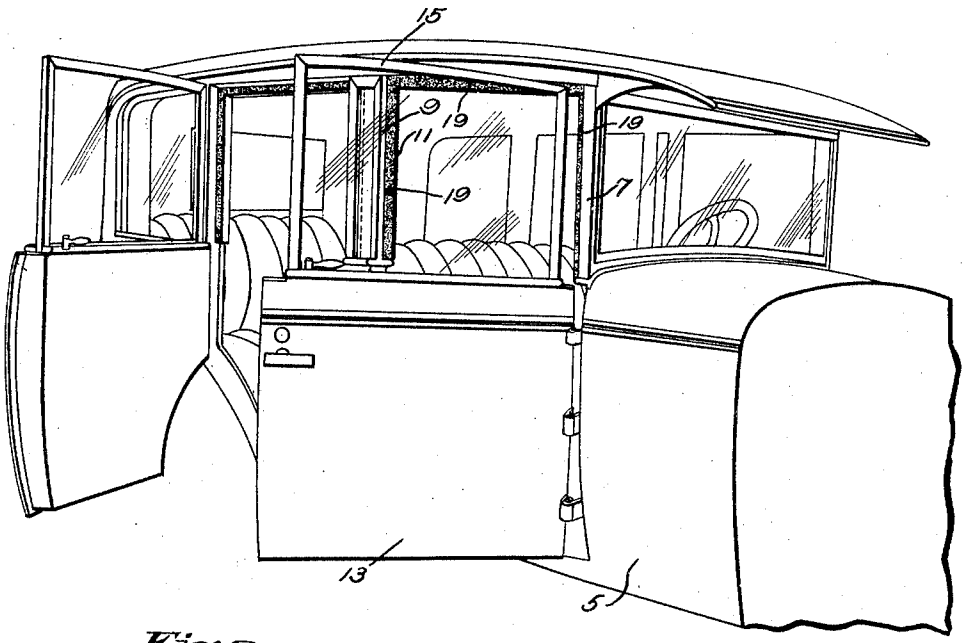


Fig. 2.

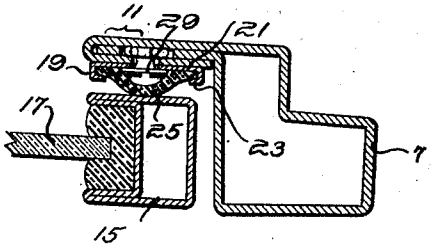


Fig. 3.

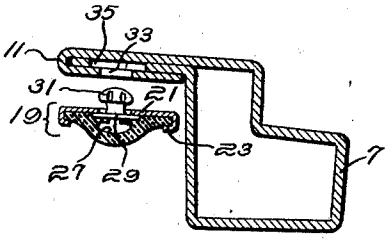
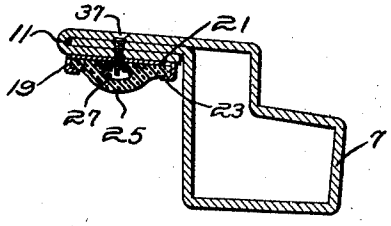


Fig. 4.



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Attys.

Patented May 7, 1929. 1,712,472

UNITED STATES PATENT OFFICE.

ALPHONSO S. CAMPBELL, OF WINCHESTER, MASSACHUSETTS, ASSIGNOR TO A. S. CAMPBELL COMPANY, OF EAST BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

DOOR AND CUSHION THEREFOR.

Application filed August 11, 1926. Serial No. 128,579.

This invention relates to doors and cushions therefor and finds a particular application to the doors of closed vehicles. In the preferred embodiment of the invention herein shown as an example thereof I provide means in connection with an automobile door which serves as a gasket for making the door weather-tight and also as a bumper and as a sound-deadener.

My invention will be well understood by reference to the following description of an illustrative embodiment thereof shown by way of example in the accompanying drawings, wherein:

Fig. 1 is a perspective view of the body of a closed vehicle having cushions embodying my invention applied to the doors thereof;

Fig. 2 is a section through the forward corner post of the vehicle and the adjacent portion of the door closing thereagainst but on a larger scale;

Fig. 3 is a view similar to Fig. 2, omitting the door and showing the post and the cushion in separated position; and

Fig. 4 is a section through the corner post showing a modified method of fastening.

I have herein shown my invention as applied to a closed vehicle of the type illustrated and described in the patent to William H. Edmond, No. 1,570,560, dated Jan. 19, 1926. Referring to Fig. 1, the vehicle comprises a lower body portion 5 from which rise top-supporting parts such as the forward corner posts 7 and other posts 9 which form a part of a door case and are provided with flanges 11 forming stop surfaces for the upper portion of the door. The door which is received in the case may embody, as described in said patent, a lower door section 13 extending between the sill and the belt line and which may be hung in any suitable or customary manner while the upper portion of the door consists of a light metallic window frame 15 in which the glazing 17 (Fig. 2) slides. As shown in Fig. 2, the frame 15 may have a suitable clearance at the sides from the adjacent posts such as the posts 7 illustrated in that figure so that there is no contact between these parts which could cause squeaks or rattles. In the preferred form of my invention shown the stop flanges 11 and the corresponding stop flange for the upper cross-piece or lintel of the frame 15 may be provided throughout their length with a suitable cushion denoted generally by the numeral 19 against which the frame 15 closes and which serves in the manner of a gasket to form a weather-tight seal throughout the periphery of the frame. The form of cushion 19 herein shown by way of example comprises a strip of light metal channel 21, the web or base of which may rest flat upon the face of the stop flange 11 and provides for the engagement with such base of mechanical securing means for securing the cushion as a whole to the flange 11. The channel may have inturned flanges 23 which retain a body 25 of resilient material such as rubber, the central portion of which may protrude markedly outwardly beyond the channel which contains it to be presented to the surfaces of the door which close toward the stop flange, the door contacting solely with the rubber body 25. This rubber body may be in the form of a suitable molded strip and may conveniently be provided with a central opening 27 which increases the yielding quality thereof. The protuberant central portion is thus disposed somewhat in arched formation so that under compression by the door the edge portions tend to be pressed firmly into their seats in the inturned flanges 23.

The rubber body 25 may also serve to cover the fastening means by which the cushion is secured to the stop flange. In Figs. 2 and 3 I have shown fastening means which are in the nature both of snap fasteners and of rivets. This means of fastening finds a particular application to the type of post 7 which is illustrated which is stamped from suitable sheet metal, the stop flange 11 being formed by folding one edge of the blank around the other edge, as illustrated, to form a flange portion comprising three thicknesses of sheet metal. The fastening means herein shown takes the form of a suitable double-headed button carried by the channel 21 and having a retaining head 29 resting against the interior of the web thereof and having a suitable resilient head 31 analogous to a glove fastener projecting

from the rear thereof. Referring to Fig. 3, the outermost thickness of the flange 11 may be formed (conveniently prior to the bending of the post to shape) with an opening 33 of such size as to permit the head 31 to be pressed past the margin thereof and to snap into position the head expanding behind the margin of the opening. To permit this action the central thickness of the flange may be provided with a larger or clearance hole 35. In the preferred embodiment of the invention shown the parts are so proportioned that on pressing the cushion home the head 31 will make contact with the innermost thickness of the flange which will serve to upset the same, riveting it over in the space provided by the hole 35 and over the margin of the hole 33. It will be understood that fastening means may be provided at suitable intervals to provide for proper anchoring of the cushion in accordance with the requirements of the particular case.

In Fig. 4 I have shown the cushion 19 as attached to the post 7 by means of a screw 37 extending through the flange 11 and tapping into the web of channel 21. This screw may have the general form of a wood screw with case-hardened threads, being what is known as a self-tapping screw, and may engage the metal of the channel 21 without any preliminary preparation of the latter.

The rubber 25 may readily be renewed if worn or the channel which carries it can easily be torn off and a new cushion substituted. The cushion as conveniently applied may rest flat against the stop flange 11 and the door presses directly against the same and tends to hold it on its seat without any twisting or tearing strain on the rubber or on the fastening means therefor. The securing means are covered by the rubber and under ordinary wear there is no danger of their coming into contact with the door frame and causing noise or marring of the same.

The cushion comprising the base of the channel strip 21 and the resilient body 25 may be supplied in long lengths and utilized in such lengths as desired. In the example shown the stop surfaces of the entire upper portion of the door casing are lined with such strip providing a continuous gasket against which the door closes, making a weather-tight joint all the way around.

I have described in detail one particular embodiment of my invention shown by way of example in the accompanying drawings.

What I claim as new and desire to secure by Letters Patent I shall express in the following claims:

1. In combination with a door a case receiving the same having a stop flange against which the door closes and a cushion overlying said flange comprising a rubber body against which the door closes and a carrier therefor overlying the flange and separated from the door by said body and fastening means securing said carrier to said flange and also covered by said strip.

2. In combination with a door a case having a stop flange against which the door closes and a cushion therefor comprising a base adapted to overlie the flange and itself having lateral flanges, fastening means engaging said stop flange and said base between the flanges of the latter and a removable body of resilient material held by the flanges of said base and projecting outwardly beyond the same to contact with the door.

3. A cushion for doors and like closures comprising, in combination, a base adapted to lie flat on a stop surface and having mechanical fastening means associated therewith carried by said base detachably supporting a body of yielding material which projects to cover said base and to contact with the door.

4. A cushion for doors and like closures comprising a channel of light metal having fastening means associated with the web thereof whereby it may be secured to the face of the stop of the door case and having a centrally protuberant body of resilient material held by the flanges thereof and overlying said fastening means.

5. In combination with a door or like closure a case having a stop flange against which the door closes provided with an undercut recess, a cushion having a base carrying a rivet entering and upset against the base of said recess and a resilient body carried by said base and projecting beyond the same to contact with the door.

6. In combination with a door or like closure a case having a stop flange against which the door closes provided with a hole, a cushion having a base carrying a resilient head adapted to snap into said hole and a resilient body carried by said base and projecting beyond the same to contact with the door.

7. In combination with a door jamb formed from a sheet of metal and having an edge bent around another edge to provide a stop flange of treble thickness, the outer thickness having an opening therein and the intermediate thickness an aligned larger or clearance opening, a cushion having a base carrying a rivet entering said first opening and upset against the inner thickness into said clearance opening behind the margin of the first and a resilient body carried by said base and projecting beyond the same to contact with the door.

8. In combination with a door jamb formed from a sheet of metal and having an edge bent around another edge to provide

a stop flange of treble thickness, the outer thickness having an opening therein and the intermediate thickness an aligned larger or clearance opening, a cushion having a base carrying a resilient head adapted to snap past the margin of said first opening and expand behind the same in said clearance opening and a resilient body carried by said base and projecting beyond the same to contact with the door.

In testimony whereof, I have signed my name to this specification.

ALPHONSO S. CAMPBELL.

CERTIFICATE OF CORRECTION.

Patent No. 1,712,472. Granted May 7, 1929, to

ALPHONSO S. CAMPBELL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 87, claim 3, after the word "with" insert the words "for securing it to such surface and means"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 11th day of June, A. D. 1929.

(Seal)

M. J. Moore,
Acting Commissioner of Patents.

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