April 8, 1924. 1,489,433

J. R. GAMMETER

WINDOW GUIDE CHANNEL AND METHOD FOR MAKING SAME

Filed July 14, 1923

FIG. 1.

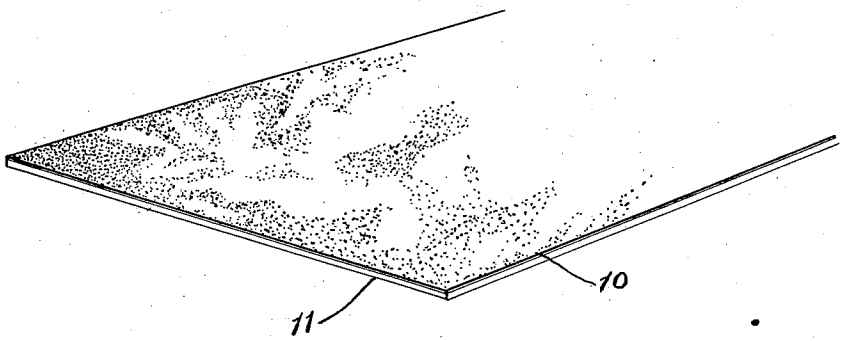
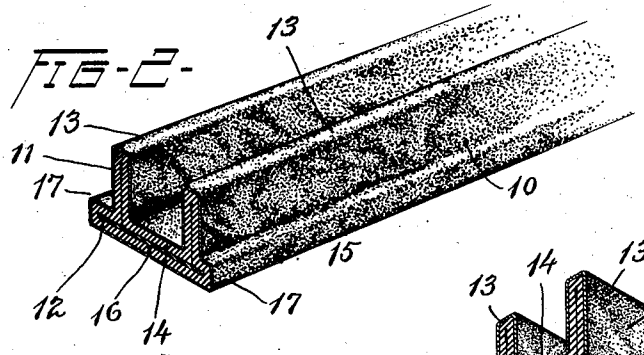


FIG. 2.



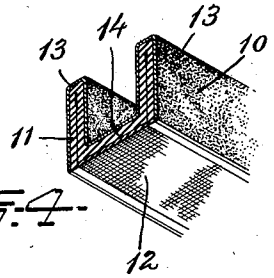


FIG. 4.

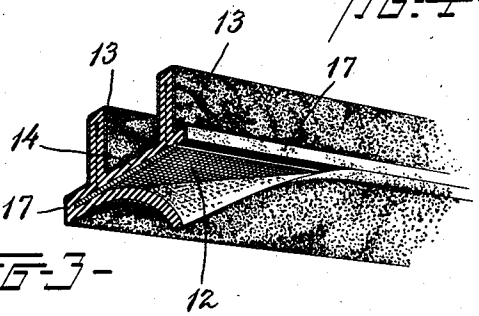


FIG. 3.

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UNITED STATES PATENT OFFICE.

JOHN R. GAMMETER, OF AKRON, OHIO, ASSIGNOR TO THE B. F. GOODRICH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

WINDOW-GUIDE CHANNEL AND METHOD FOR MAKING SAME.

Application filed July 14, 1923. Serial No. 651,674.

To all whom it may concern:

Be it known that I, JOHN R. GAMMETER, a citizen of the United States, residing at Akron, Ohio, in the county of Summit and State of Ohio, have invented certain new and useful Window-Guide Channels and Methods for Making Same, of which the following is a specification.

This invention relates to flexible guides or channels for vertically sliding sashless window panes such as are used in automobile bodies, and more particularly to channels composed of an adhesive strip such as rubber-coated fabric folded or doubled upon itself to form a base and channel legs, and vulcanized into an integral structure.

In those types of automobile bodies where the closing of the windows requires that the window pane be swung outward so that its lower edge rests outside the weather strip, or where said window is suspended from said weather strip by a hook formed on the binding of its bottom edge, the window guiding channels require to be loose in the frame of the automobile to permit such lateral movement. This precludes their being fastened anywhere except at their end portions, and I have found that the ordinary rubber guides do not have sufficient rigidity to prevent a bulge or buckle from forming ahead of the leading edge of the window pane as the latter is raised or lowered.

The chief object of this invention is to provide an improved construction for folded window guiding channels, which will give them sufficient rigidity to prevent the buckling induced by the friction of the sliding glass, yet permitting lateral flexure to allow the window pane to be set over the weather rail, but my invention may also be used to make the fixed type of channel.

Of the accompanying drawings, Fig. 1 is a perspective view showing a rubber-coated sheet or strip of fabric which is used to form a channel.

Fig. 2. is a perspective view of a completed channel embodying the preferred form of my invention.

Fig. 3 is a perspective view of a completed channel of modified construction.

Fig. 4 is a perspective view of another modification.

In the preferred mode of manufacturing my improved window-guiding channel, I first apply a relatively-thick coating of unvulcanized rubber to one side of a wide sheet of fabric such as felt or velvet, and then cut this wide sheet into a plurality of relatively-narrow strips, one of such strips being shown in Fig. 1 wherein 10 is the fabric and 11 the rubber coating thereon, each strip being of a width sufficient to make one of the channels and of a length the same as the original sheet. In similar manner I prepare narrow, reinforcement strips, 12, 12 preferably of heavy square-woven fabric, friction coated on both sides with unvulcanized rubber.

Then by suitable means, preferably of a continuous progressive nature, I fold or double the fabric strip 10 upon itself, with the rubber coating 11 inside, to form the spaced-apart legs, 13, 13, and intermediate base portion 14 of the channel 15, and simultaneously or subsequently the reinforcing strip 12 is fed into adhesive engagement with the bottom of the base portion 14, after which the edges of the strip 10 are folded around the strip 12, preferably meeting or approaching in a butt seam or a narrow cleft 16 along the middle of the base portion as shown in Fig. 2. However, the disposition of the seam is not important, and it may be located at any suitable place on the channel such as at one edge of the base portion as shown in Fig. 3.

The channels shown in Figs. 2 and 3 are provided with laterally-projecting flanges 17, 17 forming extensions of their base portion, this type of channel being adapted to be fitted in a grooved metal frame strip. In some cases these flanges are dispensed with as shown in Fig. 4, wherein the lateral margins of the strip 10 terminate flush with the base of the channel.

During the time the strip 10 is being folded to form the channel or previously thereto, its rubber coating is rendered tacky by the application of rubber cement, or a rubber solvent such as gasoline or benzol, and the strip 12 may be similarly treated if desired. The plies of the channel are pressed firmly into adhesive engagement when folded, and after vulcanization, the rubber body portion presents a solid homogeneous structure which, however, by reason of its laminated construction and mode of preparation from calendered stock is of greater durability than channels made of tubed stock.

The channels, when formed, are vulcan-

ized in open, dry heat, either in long lengths or in lengths suitable for the respective windows with which they are to be used. During vulcanization they may be supported in any suitable manner, as by laying them inverted over square rods, or merely by placing them upright upon a flat support.

My invention may be modified within the scope of the claims and I do not wholly limit myself to the exact procedure described.

I claim:

1. The method of making flexible window-guide channels which comprises folding a strip of adhesive material upon itself into channel form, and incorporating a reinforcement in the base.

2. The method of making flexible window-guide channels which comprises folding a strip of adhesive material upon itself into channel form, and incorporating a fabric reinforcing strip in the base.

3. The method of making flexible window-guide channels which comprises folding a strip of rubber upon itself into channel form, incorporating a fabric reinforcing strip in the base and vulcanizing the channel.

4. The method of making flexible window-guide channels which comprises folding an adhesive strip upon itself to form the legs and base of the channel, and enclosing a fabric reinforcing strip in the base between the plies of the adhesive strip.

5. The method of making flexible window-guide channels which comprises folding a rubber strip upon itself to form the legs and base of the channel, enclosing a fabric reinforcing strip in the base between the plies of the rubber strip, and vulcanizing the channel.

6. The method of making flexible window-guide channels which comprises coating cloth with an adhesive, folding it into channel form with the adhesive between the cloth plies, and incorporating a reinforcement in the base.

7. The method of making flexible window-guide channels which comprises coating cloth with rubber, folding it upon itself to form the legs and base of the channel, with the cloth outside, incorporating a fabric reinforcing strip in the base, and vulcanizing the channel.

8. A flexible window-guide strip of channel form comprising adhesive material folded upon itself to form the legs and base of the channel, and a fabric reinforcing strip incorporated in the base only.

9. A flexible window-guide strip of channel form comprising sheet rubber folded upon itself to form the legs and base of the channel and vulcanized, and a fabric reinforcing strip vulcanized in the base only.

10. A flexible window-guide strip of channel form comprising a base and legs of vulcanized rubber, and a fabric reinforcing strip embedded in the base.

11. A flexible window-guide strip of channel form comprising a rubber-coated strip of fabric folded upon itself to form the legs and base of the channel, with the fabric on the outside, and vulcanized, and a separate fabric reinforcing strip vulcanized in the base.

In witness whereof I have hereunto set my hand this 12th day of July, 1923.

JOHN R. GAMMETER.