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WINDOW GLASS GUIDE

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FIG. 1.

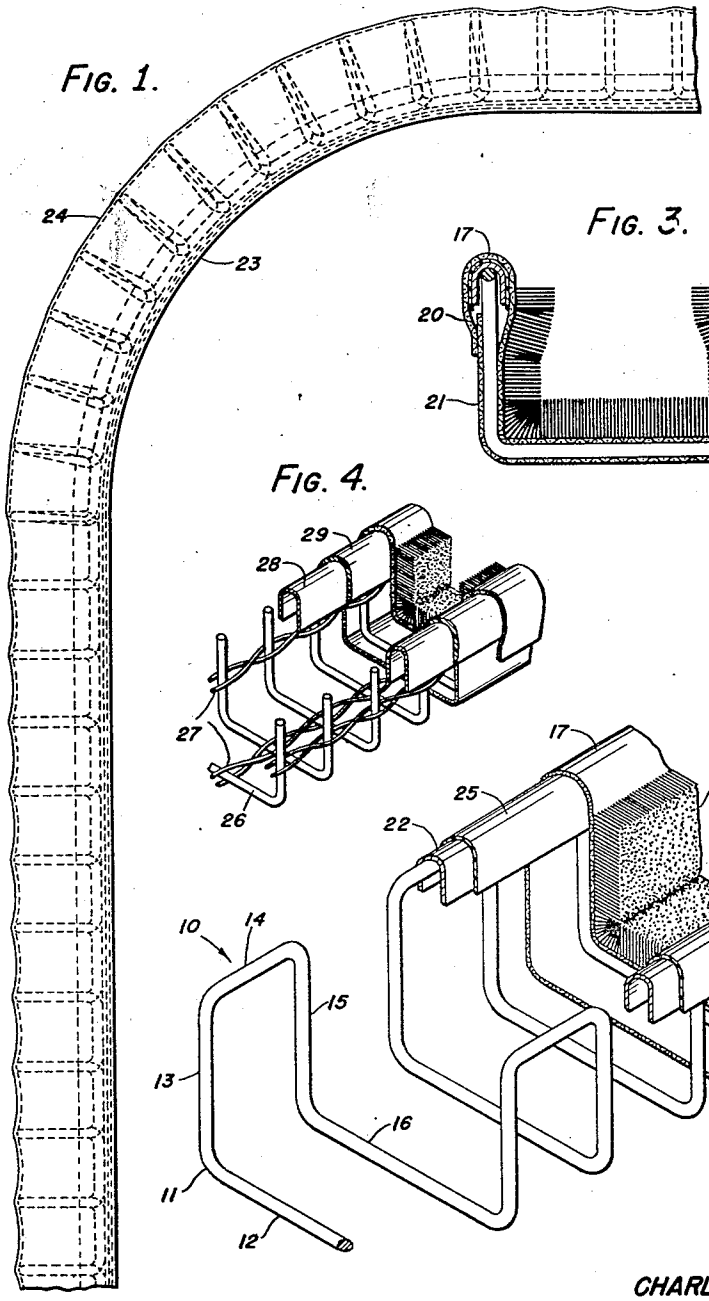


FIG. 3.

FIG. 4.

FIG. 2.

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WINDOW GLASS GUIDE

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6 Claims. (Cl. 296—44.5)

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This invention relates to window glass guides of the variety having a channel shape adapted to be applied to a vehicle body or the like around the outline of a window opening therein, to support and cushion the edges of a glass window pane, one object of the invention being to provide such a guide having a more simple, practical and efficient type of construction.

Another object is to provide a window guide of the above character having a strong construction adapted to firmly support the window pane, but capable of being readily bent and curved to conform to a curved outline of the window opening, without otherwise substantially distorting its shape or deranging its several parts.

A further object is to provide a guide having the above advantages in a construction capable of being readily and economically manufactured, assembled and installed in place in the window opening.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Fig. 1 is a side view of a window guide embodying the present invention and showing the same partly curved to fit the outline of a curved window opening.

Fig. 2 is an enlarged, perspective view of the same with parts broken away to more fully illustrate the construction;

Fig. 3 is an enlarged, transverse, sectional view of the same, and

Fig. 4 is an enlarged, perspective view similar to Fig. 2, but showing a modified construction.

The preferred embodiment of the invention, herein disclosed by way of illustration, comprises a supporting core or frame comprising transversely extending elements such as wire strands and bent into channel shape, the inside of the channel being lined with fabric thickened to provide cushioning surfaces. The exterior of the frame is also preferably covered with fabric and the transverse elements or wire strands ending in the outer edges of the arms of the channel are provided with means for continuously and smoothly supporting the covering fabric, while allowing relative movement of the parts, when curved to follow the window outline, without substantial puckering or derangement of the fabric or other parts.

Referring more particularly to the drawings, the supporting core or frame indicated generally

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at 10, comprises, preferably, a continuous length of wire 11 extending at spaced intervals transversely of the frame, as at 12, to support the bottom of the channel. From such transverse portion 12, the wire is bent substantially at a right angle so as to extend upwardly as at 13 to support the side of the channel and is then bent as at 14 along the outer edge of the side wall or arm of the channel. This longitudinally extending portion 14 may be of more or less length, as desired, the wire being then reversely bent, as at 15, to extend down the side of the channel and across its bottom, as at 16, to the opposite side where the above described shape is repeated, thus providing a light, flexible frame having a desired stiffness controlled by the selection of wire stock of suitable size and composition to suit particular installations, as well understood in the art.

The frame so formed is preferably lined with a fabric strip 17, having portions 18 and 19 thickened or padded to cushion the side walls and bottom, respectively, of the channel, for contact with the glass surfaces. This cushioning is preferably accomplished by weaving the fabric to provide such cushioning portions with a relatively long resilient pile, such as disclosed in my Letters Patent No. 1,847,700, to firmly hold the glass against rattling and allow it to slide for opening the window with a minimum of friction. The fabric strip 17, outwardly of such cushioning portions, has its edges turned outwardly over the edges of the channel arms and downwardly against their outer sides, to form portions 20 for attaching the fabric to the frame, as hereafter described.

It is preferred also to cover the outside of the frame with a strip 21, of cambric, cotton cloth or other suitable fabric, which covers the bottom of the channel and extends up the outer surfaces of its side walls into overlapping relation with the edges of the strip 17, as shown. The fabric strip 17, or at least the inner side thereof next the frame, and the fabric strip 21 are treated with a permanently tacky, water-resistant adhesive substance, such as an adhesive compound having a latex or other natural or synthetic rubber base, of known and commercially available varieties, the particular composition of which forms no part of the present invention. Such adhesive treatment of the fabric surfaces causes them to adhere to opposite sides of the frame and to each other between the wire strands and also secures the attaching portions 20 of the fabric 17 to the edges of the outer fabric strip 21. By this means the inner and outer fabric coverings are securely attached to each other and enclose and protect

the frame against inadvertent derangement of its strands.

The transverse strands of the frame, however, provide only an intermittent support, along the outer edges of its side arms, for the outer portions of the fabric strip 17, and means are provided along such edges to bridge the spaces between the strands and afford a continuous and smooth support for the fabric. Such means comprises for each edge of the channel a substantially U-shaped shield strip 22, of metal or other relatively stiff material, laid to embrace and enclose the ends of the transverse strands and bridge the gaps therebetween, the outer portions 20 of the fabric strip 17 being secured over and smoothly supported by such shield strips, as shown. The arms of each strip 22 are long enough to engage the portions 13 and 15 of the frame to hold the strip on the edge portions 14 to which they are further secured by the covering fabric.

In the bending and curving of the guide to conform to the curved outlines of a window opening and its glass, the free edges of the side arms of the channel-shaped guide tend to be contracted, as at 23 (Fig. 1), while the bottom portion of the channel tends to be extended or stretched, as at 24. In such bending, the portions 16 of the transverse strands of the frame lying in the bottom of the channel tend to be separated, while the portions 14 of the strands lying in the outer edges of the channel arms tend to be moved somewhat nearer to one another. The fabric materials forming the covering strips 17 and 21 have a sufficient amount of elasticity or stretch to allow such separating movements of the strands in the bottom of the channel and the fabric covering the free edges of the channel is capable of being sufficiently condensed to avoid puckering and allow it to remain in straight and smooth condition, but the shield strips 22, being of relatively rigid supporting material, are subjected to a longitudinally compressive force which tends to cause them to buckle laterally out of proper shape. In order to accommodate this force and avoid such lateral buckling, I have devised a construction which allows the shield strips 22 to slide and extend themselves longitudinally of the channel edges, such means comprising a correspondingly free arrangement of the strips in the assembly and the interposition of a non-adhesive substance between the strips and the overlying adhesive fabric strip 17. By such means the shield strips 22 are left free to slide in the fabric covering, while the ends of the frame strands 14 are free to slide within the shield strips.

Such non-adhesive substance for the shield strips 22 is preferably provided in the form of a covering strip 25, of a non-adhesive sheet material, such as cellophane or other known and commercially available thin flexible sheet material having a cellulose base, as commonly employed, for example, for packaging purposes. Strip 25 corresponds in shape to the shield strip 22 and covers its outer surface so as to prevent it from direct contact with the adhesive surface of the fabric, thus leaving the shield strip free to slide in the fabric and on the ends of the transverse wire strands of the frame.

The above described construction of the wire frame may be varied, of course, as illustrated by the embodiment shown in Fig. 4 of the drawings, where the strands 26 are not parts of a continuous wire but are formed with a separate length of wire for each strand, the side arms being secured together by interwoven strands 27, of wire or textile material, to space and firmly support the strands in place. The ends of these strands at each outer edge of the channel are supported and covered, as in the above described construction, by a shield strip 28, of metal or other suitable material, to provide continuous and smooth support for the fabric, but the non-adhesive susbtance interposed between the shield strip and the adhesive fabric may take the form of a layer 29 of wax or non-plastic material applied as a coating adhering to the outer surface of the shield.

It is evident from the above description that the invention provides a cushioning guide or channel having a core or frame of simple and inexpensive construction completely enclosed and protected by a fabric covering, with means on the frame for continuously and smoothly supporting the fabric along the outer edges of the channel and not only along the straight portions of the channel but along its bent or curved edges as well. Such construction affords a light, inexpensive and strong guide channel adapted to be easily bent to the curvature of the window outline and installed in the rabbet or groove usually provided for its reception, so as to insure a smoothly continuous cushioning guide or runway for the glass pane.

It will thus be seen that the invention accomplishes its objects and while it has been herein disclosed by reference to the details of preferred embodiments, it is to be understood that such disclosure is intended in an illustrative, rather than a limiting sense, as it is contemplated that various modifications in the construction and arrangement of the parts will readily occur to those skilled in the art, within the spirit of the invention and the scope of the appended claims.

I claim:

1. A window glass guide comprising a channel-shaped wire frame having a plurality of elements extending transversely thereof from the outer edge of one arm of said frame to the outer edge of the other arm thereof, a U-shaped shield strip of substantially smooth relatively stiff material freely embracing and connecting said elements along each of said frame edges, and a fabric strip having a cushioning portion lining the interior of said frame for contact with said glass and having attaching portions extending freely over said shield strips and attached to the exterior of said frame, said shield strips being constructed and arranged to continuously and smoothly support said fabric strip portions along the edges of said frame and to freely slide longitudinally of said edges and fabric portions, to provide for relative movement therebetween during bending of said guide to fit a curved glass edge.

2. A window glass guide comprising a channel-shaped wire frame having a plurality of elements extending transversely thereof from the outer edge of one arm of said frame to the outer edge of the other arm thereof, a substantially U-shaped shield strip embracing and connecting said elements along each of said frame edges, a fabric strip having a cushioning portion lining the interior of said frame for contact with said glass and having attaching portions extending outwardly over said shield strips, a water-resistant adhesive coating on the surface of said strip next to said frame for securing said strip in place on said guide, and a non-adhesive sub-

stance interposed between said fabric strip portions and said shield strips to maintain a slidable relation therebetween, said shield strips being constructed and arranged to continuously and smoothly support said fabric strip portions along the edges of said frame and to freely slide longitudinally of said edges and fabric portions, to provide for relative movement therebetween during bending of said guide to fit a curved glass edge.

3. A window glass guide comprising a channel-shaped wire frame having a plurality of elements extending transversely thereof from the outer edge of one arm of said frame to the outer edge of the other arm thereof, a substantially U-shaped shield strip embracing and connecting said elements along each of said frame edges, a fabric strip having a cushioning portion lining the interior of said frame for contact with said glass and having attaching portions extending outwardly over said shield strips, a water-resistant adhesive coating on the surface of said strip next to said frame for securing said strip in place on said guide, and strips of non-adhesive sheet material interposed between said fabric strip portions and said shield strips and covering said shield strips to prevent adhesion of said fabric strip portions thereto, said shield strips being constructed and arranged to continuously and smoothly support said fabric strip portions along the edges of said frame and to freely slide longitudinally of said edges and fabric portions, to provide for relative movement therebetween during bending of said guide to fit a curved glass edge.

4. A window glass guide comprising a channel-shaped wire frame having a plurality of elements extending transversely thereof from the outer edge of one arm of said frame to the other edge of the other arm thereof, a substantially U-shaped shield strip embracing and connecting said elements along each of said frame edges, a fabric strip having a cushioning portion lining the interior of said frame for contact with said glass and having attaching portions extending outwardly over said shield strips, a water-resistant adhesive coating on the surface of said strip next to said frame for securing said strip in place on said guide, a coating on the outer surfaces of said shield strip next to said fabric strip portions to prevent adhesion therebetween, said shield strips being constructed and arranged to continuously and smoothly support said fabric strip portions along the edges of aid frame and to freely slide longitudinally of said edges and fabric portions to provide for relative movement therebetween during bending of said guide to fit a curved glass edge.

5. A window glass guide comprising a channel-shaped wire frame having a plurality of elements extending transversely thereof from the outer edge of one arm of said frame to the outer edge of the other arm thereof, a U-shaped shield strip of substantially smooth relatively stiff material freely embracing and connecting said elements along each of said frame edges, a fabric strip having a cushioning portion lining the interior of said frame for contact with said glass and having attaching portions extending freely over said shield strips, said fabric strip being treated on the inner side thereof next to said frame with an adhesive substance, and a second fabric strip covering the outer surfaces of the bottom and portions of the sides of said frame, with its edges overlapping and adhesively secured to said attaching portions of the first mentioned fabric strip, said second fabric strip being adhesively secured to the first mentioned fabric strip between the elements of said frame and said shield strips being constructed and arranged to continuously and smoothly support said fabric strip portions along the edges of said frame and to freely slide longitudinally of said edges and fabric portions, to provide for relative movement therebetween during bending of said guide to fit a curved glass edge.

6. A window glass guide comprising a channel-shaped wire frame having a plurality of elements extending transversely thereof from the outer edge of one arm of said frame to the outer edge of the other arm thereof, a U-shaped shield strip of substantially smooth relatively stiff material freely embracing and connecting said elements along each of said frame edges, a fabric strip having a cushioning portion lining the interior of said frame for contact with said glass and having attaching portions extending freely over said shield strips, said fabric strip being treated on the inner side thereof next to said frame with a permanently tacky water-resistant adhesive and a second fabric strip covering the outer surfaces of the bottom and portions of the sides of said frame, said second strip having both sides thereof treated with a permanently tacky, water-resistant adhesive and having its edges overlapping and adhesively secured to said attaching portions of the first mentioned fabric strip and its intermediate portions adhesively secured to the first mentioned fabric strip between the elements of said frame and said shield strips being constructed and arranged to continuously and smoothly support said fabric strip portions along the edges of said frame and to freely slide longitudinally of said edges and fabric portions, to provide for relative movement therebetween during bending of said guide to fit a curved glass edge.

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