March 24, 1936. A. KRESS 2,035,079

AUTOMOBILE SCREEN

Filed Dec. 12, 1934 2 Sheets-Sheet 1

Fig. 1.

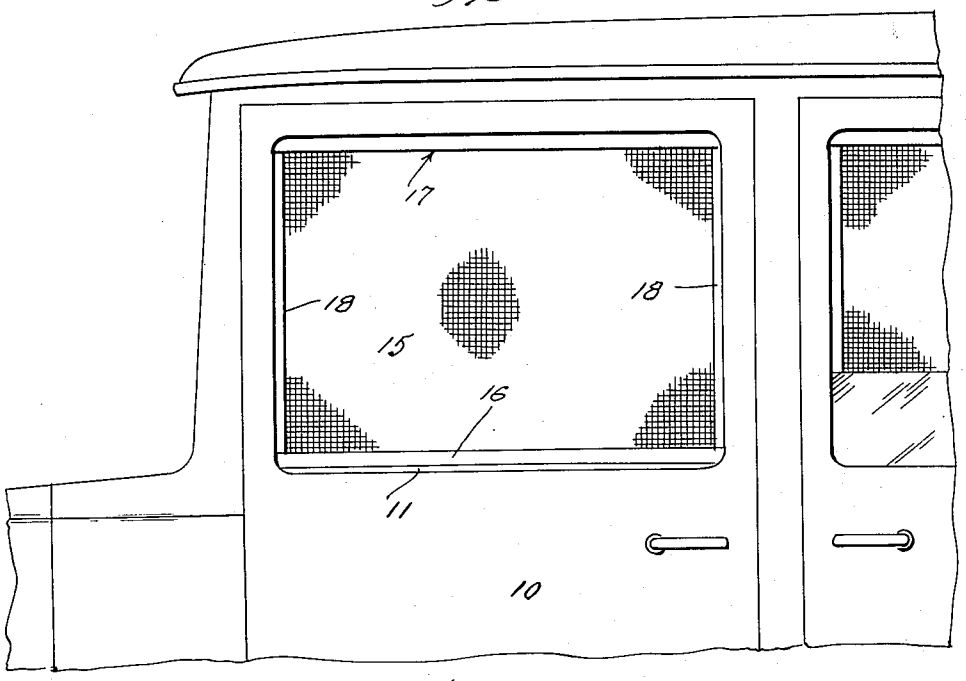
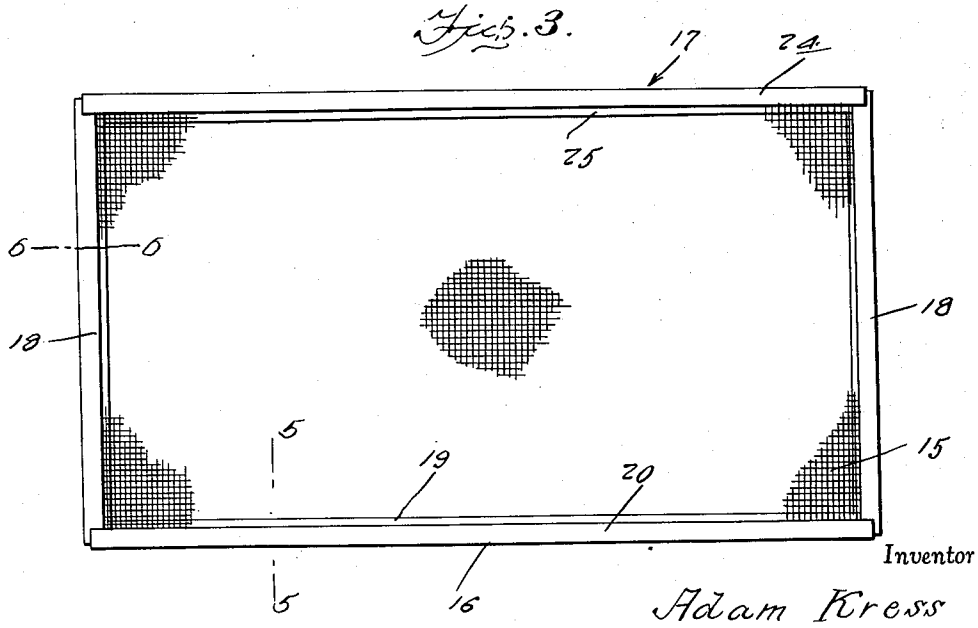


Fig. 3.



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Fig. 2.

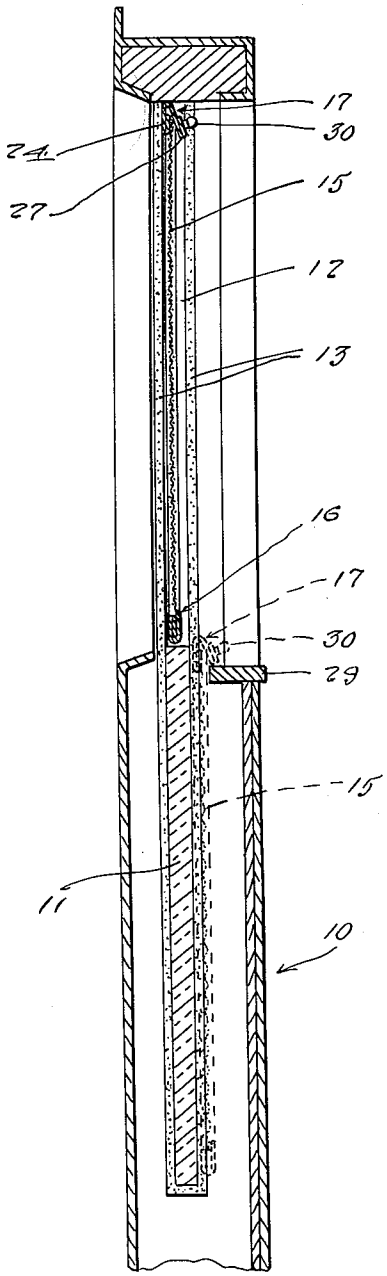


Fig. 4.

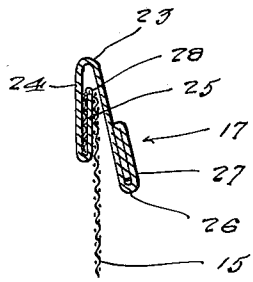


Fig. 5.

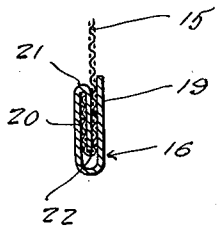


Fig. 6.

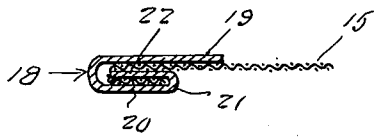
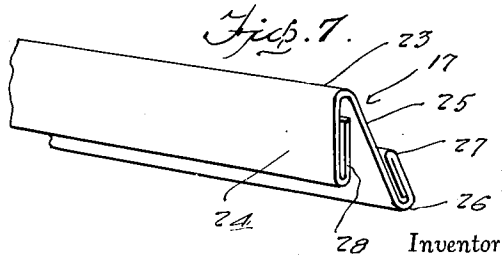


Fig. 7.



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UNITED STATES PATENT OFFICE

2,035,079

AUTOMOBILE SCREEN

Adam Kress, Brookhaven, N. Y.

Application December 12, 1934, Serial No. 757,200

4 Claims. (Cl. 156—14)

This invention relates to an improved automobile window screen of the so-called one-piece type which is adapted to be inserted in the vertical guide channels of the existing frame structure to close the opening in the car door when the window glass is lowered or telescoped into the customary adapter pocket or receptacle in the lower portion of the door.

Needless to say, I am aware of the fact that the art to which the invention relates is well developed and characterized by variable forms and types of car door screens possessing slight, but appreciable structural improvements and refinements. It follows, therefore, that the present invention, being quite simple and economical, likewise becomes noteworthy as a novel contribution to the art and trade in that it too possesses distinguishable adaptations which may be accredited as rendering it satisfactory as better fulfilling the requirements due to its adaptability to cooperate with the conventional window and door structure without requiring alterations in the existing or stock parts.

Relying for distinctiveness on structural deviations the improved screen may compare with the known prior art types in that it is of all-metal construction, the screen wire being in a single piece and having its four marginal edges bounded by a sectional frame, the frame members being especially designed and inter-connected in a feasible manner which is calculated to promote expediency in manufacture, strength and durability and such other factors as result in the development of an altogether better screen.

Other features and advantages will become more readily apparent from the following description and the accompanying drawings.

In the drawings, wherein like numerals are employed to designate like elements or parts throughout the views:—

Figure 1 is a side elevational view of a fragmentary portion of a conventional automobile showing the glass pane or window lowered and the improved window screen inserted in operative position showing the parts as they appear in outside elevation.

Figure 2 is a slightly enlarged vertical sectional view through the conventional door construction showing the improved manner in which the features thereof coact more intimately with the guide channel.

Figure 3 is an outside view of the screen per se, that is removed from the automobile door.

Figure 4 is an enlarged sectional view disclosing the upper frame member and detailing the specific configuration or formation thereof.

Figure 5 is a section on the line 5—5 of Figure 3.

Figure 6 is a section on the line 6—6 of Figure 3.

Figure 7 is a fragmentary detailed perspective showing the configuration of the metal as it is specifically bent to define the unique combination of features found in the upper frame member of the screen.

Referring to the drawings it will be observed that the conventional automobile door is denoted by the numeral 10. The sliding window glass is indicated at 11 and the customary vertical guideways are denoted by the numeral 12. The usual felt or rubber packing elements, found in the guideway are differentiated by the numeral 13. The novel screen, as a unit, is denoted by the numeral 14 and it is adapted to fit in the guide channel 12 as shown to advantage in Figure 2 when it is in use, or it may be dropped down into the casing portion of the door, as shown in dotted lines, when it is not in use. The screen is of the bodily liftable type, that is, it is bodily dropped down into the lower portion of the door when it is not in use, then grasped and lifted up and inserted into the guide channel 12 when it is brought into use during which period the glass window 11 is lowered.

As before stated, the wire mesh or screen fabric is of one-piece form and is here represented by the numeral 15. Surrounding the marginal edges thereof is the fore part or sectional frame. Referring to Figure 3 for example, it will be observed that the two longitudinal frame members are differentiated by the numerals 16 and 17, the first of which may be further described as the lower member and the remaining one 17, as the upper frame member. Then the duplicate transverse or end members are indicated by the numerals 18. All three of the parts, 16, 17, and 18 are actually of duplicate construction. That is, the blank piece of metal from which these parts are formed is bent in the manner shown in detail in Figures 5 and 6. By describing one, the description will suffice for all, and calling attention for example to Figure 6, it will be noted that the metal is so bent as to define first a relatively wide adapter or backing flange 19 and its spaced parallel companion flange 20, the latter flange being a little over one half as wide as the flange 19. The free edge portion of the flange 20 is formed with a return bend 21 defining an inturned screen wire fastening or clamping flange 22. As a matter of fact and in effect, the parts 20 and 22 define a sort of a channel into which the free edge portion of the screen wire is doubled as shown and then the features, 19, 20 and 22 are firmly pressed or clenched together to securely anchor the screen wire in place. This particular arrangement not only insures effective anchorage of the screen wire but prolongs the screen wire because of the stabilizing effect of the relatively wide backing flange 19. When the various frame members 16, 17 and 18 are assembled in frame forming relationship as shown in Figure 3 it is obvious that the end members 18 become inter-

posed between the two longitudinal members 16 and 17. Not only this, the end portions of the members 18 actually telescope in between the complemental flange forming portions of the members 16 and 17 thus making the various parts independent, yet coupling them together with sufficient rigidity to promote strength and durability.

The chief feature of construction has to do with the frame member 17 depicted in Figures 4 and 7. This is formed from a single plate or sheet of metal which is bent between its ends as at 23 to define a screen attaching relatively narrow flange 24 and an outwardly bent companion flange 25. This flange 25 has its free edge doubled upon itself as indicated at 26 to provide a reinforced rib or bead 27. It will be noted that the bead equipped edge or end portion of the flange portion 25 projects beyond the inbent screen retaining lip or flange 28. Moreover, the metal has sufficient inherent resiliency to permit this feature 25 to serve as an expansible and contractible retaining plate or cleat (see Figures 2 and 4). It will be noticed in connection with the features 26 and 27 that the manner in which the metal is bent presents rounded surfaces calculated to prevent tearing of the felt or rubber packing elements 13 in the guide ways 12 in which the screen slides. Ordinarily, the area of the screen is equivalent to the area of the window opening when the glass 11 is lowered completely. It is evident however, that the area of the screen may vary so that the window may be partly closed with the remainder of the opening occupied by the screen. Hence, if the screen has any sliding movement in the guide ways 12, the special formation of the metal will prevent unnecessary wear and tear on the packing strips 13.

In addition to the flange 25 serving as a retaining cleat, it also serves as a hanger lip. Referring to the dotted line illustration in Figure 2 it will be observed that when the screen is lowered down into the casing portion of the door the bent end 26 rests upon the usual sill 29 and this retains or hangs the screen in a position so that it is easily accessible to be withdrawn to be placed in operative position. For the purpose of handling the screen I have found it expedient and practicable to provide a suitable hand-grip or handle 30 as shown in Figure 2. This is attached centrally (not shown) to the flexible flange 26 and may be conveniently used in exerting a slight inward pressure on the flange to bend it toward the flange 24 for the purpose of releasing the screen to enable it to be taken out. In practice it has been found desirable to use a comparatively heavy resilient metal for the purpose and the flange 25, thus constructed, serves not only as a retainer but an anti-rattler. Thus, the presence of the hand-grip 30 makes it desirable to facilitate releasing said retainer flange.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in shape, size and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

Having thus described the invention, what is claimed as new is:

1. A frame for screen fabric of the class described, comprising a rectangular-shaped frame structure for the edge portion of a screen, the frame structure including a frame member formed from a single sheet of metal bent between its ends to define a relatively wide backing flange and a proportionately narrower spaced parallel screen fabric anchoring flange, the longitudinal edge portion of the last named flange being formed with a return bend to provide an inturned anchoring lip whereby the edge portion of the screen fabric may be clamped between the lip and the second named narrow flange.

2. A reinforcing frame structure for the marginal edges of a screen fabric including a sheet metal adaptor unit having a relatively short vertical screen attaching flange and a spaced downwardly diverging inclined companion flange, the companion flange depending below the lower edge of the first named flange and having its free edge portion bent outwardly and rolled upon itself to provide a reinforcing bead, said second named flange being resilient to serve as a retaining cleat and said bead being provided with a handle, said second named flange also having the function of a hanger, when the screen is lowered into a door structure and when not in use.

3. A frame for screen fabric of the class described comprising a pair of longitudinal upper and lower frame members connected together at their ends by transverse end members, each of the transverse members and said lower frame member being formed from a single sheet of metal bent between its ends to define a relatively wide backing flange and a proportionately narrower spaced parallel screen fabric anchoring flange, the longitudinal edge portion of the last named flange being formed with a return bend to provide an inturned anchoring lip for the adjacent edge portion of screen fabric, the remaining upper frame member including a relatively short vertical screen attaching flange and a spaced downwardly diverging inclined companion flange, the companion flange depending below the lower edge of the first named flange and having its free edge portion bent outwardly and rolled upon itself to provide a reinforcing bead, said diverging inclined companion flange having the function of a hanger when the frame is lowered into a door structure when not in use.

4. A reinforcing frame structure for the marginal edges of screen fabric comprising upper and lower longitudinal frame members and adjoining transverse end members, said upper member including a downwardly bent flange spaced from the adjacent body portion of the member and extending below the lower edge thereof and having its free end portion rolled upon itself to provide a reinforcing bead, said flange being resilient to serve as a retaining cleat and said bead being provided with a handle.

ADAM KRESS.