

Aug. 6, 1940.

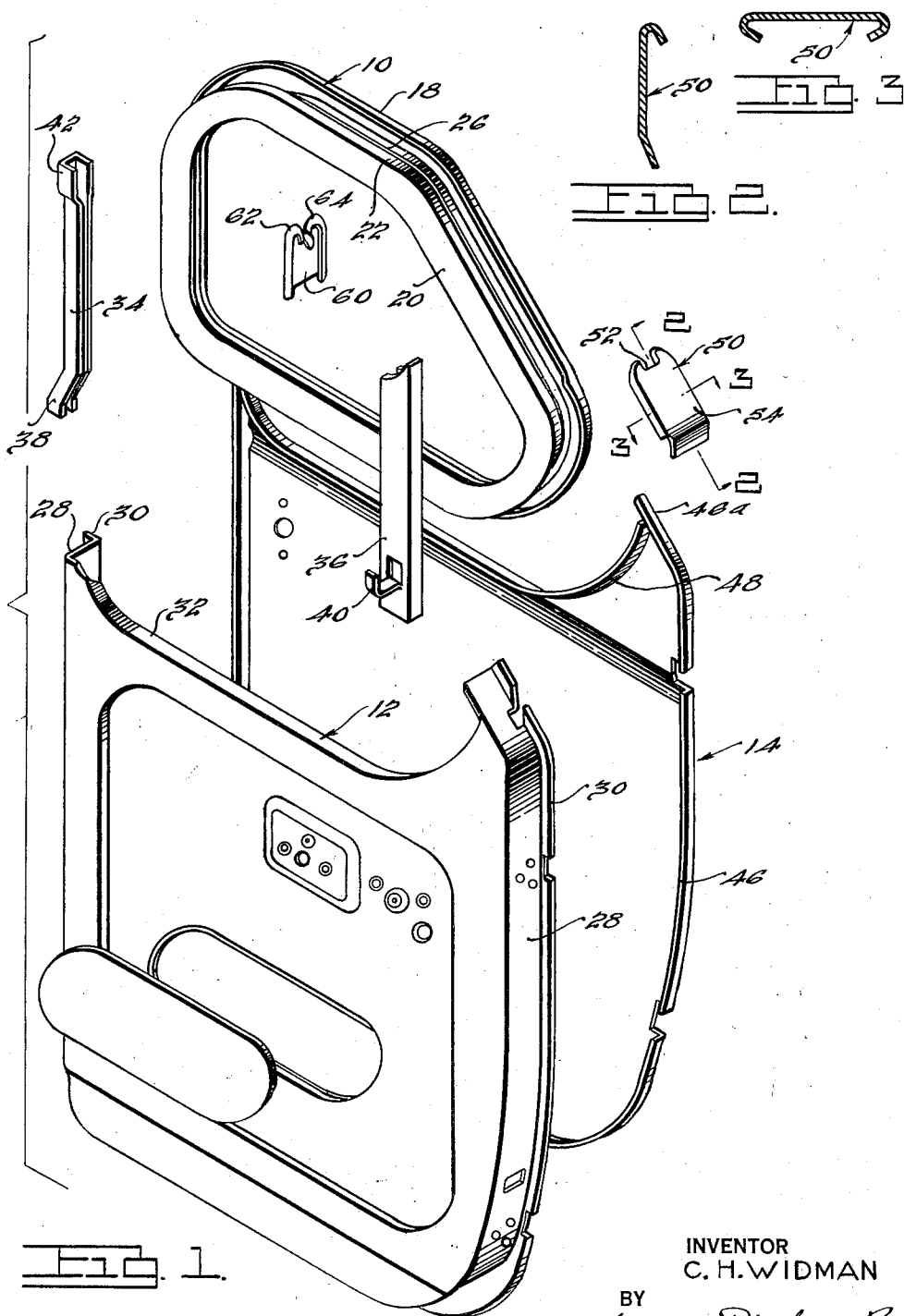
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2,210,612

VEHICLE DOOR

Filed Sept. 4, 1937

2 Sheets-Sheet 1



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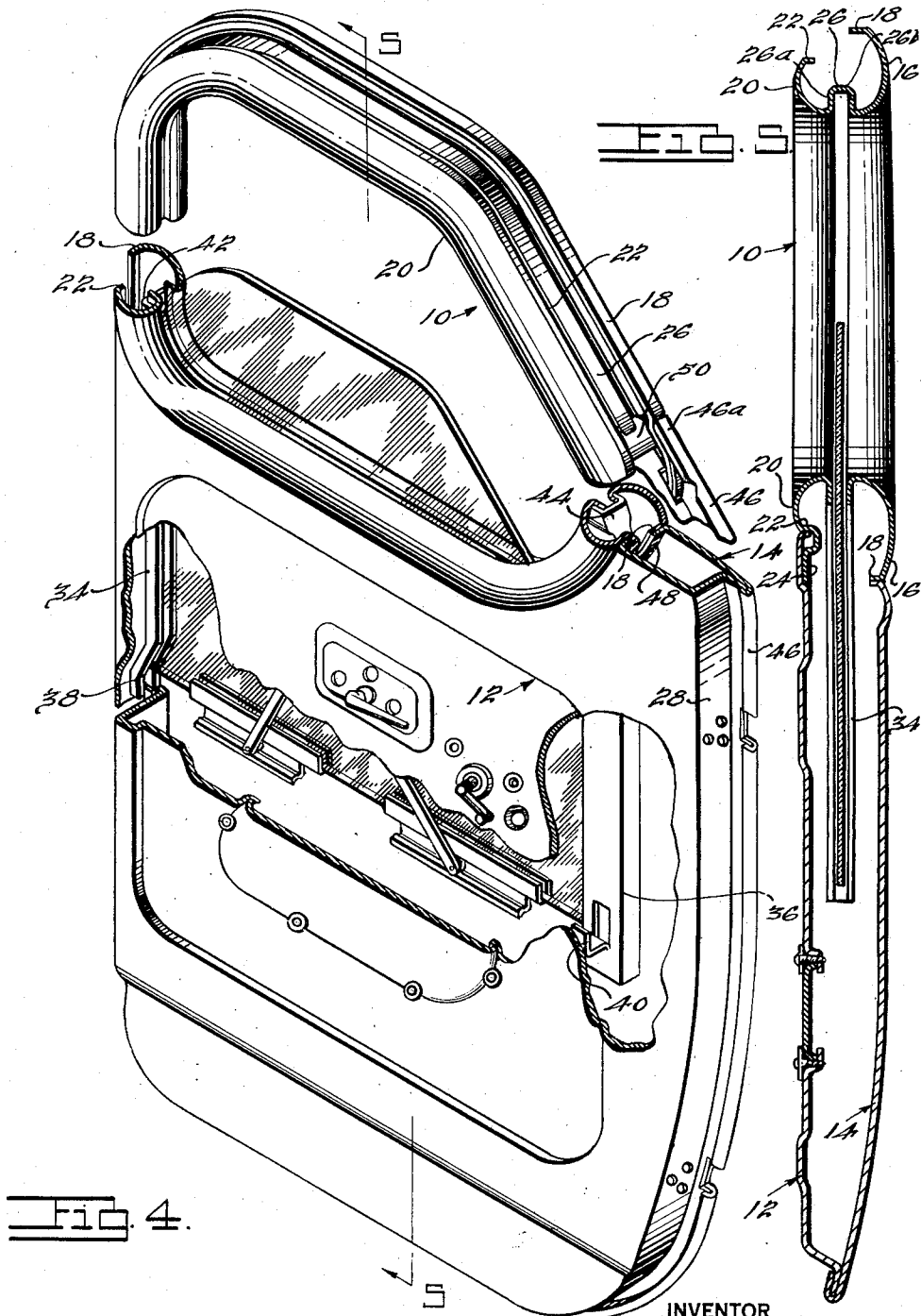
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VEHICLE DOOR

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4 Claims. (Cl. 296—44)

The present invention relates to vehicle door constructions, and in particular, provides an improved door construction characterized in that the window opening is defined by a continuous separately formed element, adapted to be secured to the body of the door in an improved manner. The present construction embodies many of the principles of, but is an improvement upon, the construction disclosed and claimed in U. S. Patent No. 1,996,601, granted April 2, 1935 to the present applicant.

The principal objects of the invention are to provide a door construction of the above generally indicated type, the individual elements of which may be economically manufactured and assembled, and which as a whole constitutes an improvement over constructions heretofore known; to provide such a construction in which the door comprises a body portion and a window defining portion, adapted to be connected together adjacent the belt line of the door; to provide such a construction in which the window defining portion is formed to extend completely around the associated window; and to provide such a construction embodying improved means for securing the window defining portion to the body portion of the door.

With the above as well as other and more specific objects in view, which appear in the following description and in the appended claims, a preferred but illustrative embodiment of the invention is shown in the accompanying drawings, throughout which corresponding reference characters are used to designate corresponding parts, and in which:

Figure 1 is an exploded view showing the elements of the improved door in perspective;

Fig. 2 is a view in section, taken along the line 2—2 of Fig. 1;

Fig. 3 is a view in section taken along the line 3—3 of Fig. 1;

Fig. 4 is a view in perspective of the completely assembled door, certain of the parts thereof being broken away to show the associated elements in section; and

Fig. 5 is a view in section, taken along the line 5—5 of Fig. 4.

Referring to the drawings, the improved door comprises generally a window defining member 10, an inner member 12 and an outer body member 14. The window defining member 10, which may be and preferably is formed of a single piece of metal, extends continuously around the associated window and is adapted to be secured, along its lower edge, to the inner and outer body mem-

bers 12 and 14 in the manner described below.

In section, the window defining member 10 is of generally outwardly presenting U-shape. One leg of the member 10 defines a reveal portion 16, which terminates in an inwardly directed flange 18. The other leg of the member 10 defines a garnish mold portion 20. Throughout the top and the greater part of the side of the member 10, the garnish mold portion 20 terminates in an inwardly directed flange 22, but throughout all or substantially all of the lower side of the member 10, the flange 22 is extended to form a lip 24, by which the member 10 may be connected as hereinafter described to the inner body 12. The base of the member 10 is reversely depressed to form a window run or guide 26, the lateral sides 26a of which extend continuously around the member 10 and the base 26b of which is cut away along the underside of the member 10 so as to permit the window glass to be moved downwardly in the usual way. The portions of uniform section of the member 10 may, of course, be formed by a rolling operation and the portions such as the lip 24 may be formed by a subsequent stamping operation as will be understood.

The inner body member 12 is conventionally formed to provide a door rail portion 28, which terminates in an outwardly directed flange 30 along which the members 12 and 14 are secured together. The upper edge of the member 12 is given a configuration which corresponds to the underside of the window defining member 10, and terminates in an inwardly directed flange 32, which constitutes a seat to receive and support the previously mentioned flange 22 of the member 10. The inner member 12 is also provided with the usual glass runs or guides 34 and 36. The lower end 38 of the guide 34 is outwardly projected and is adapted to be welded or otherwise secured to the adjacent part of the door rail 28. The lower end of the guide 36 is provided with an offset bracket 40, which is adapted to be welded or otherwise secured to the inner face of the member 12. As clearly appears in Fig. 4, the upper ends 42 and 44 of the guides 34 and 36 respectively, embrace the glass run 26 of the member 10, so that guides 34 and 36 form continuations of the guide 26.

The outer body panel member 14 is provided with a flange 46 which extends substantially throughout the front, rear and lower edges thereof and is adapted, as is usual, to be bent over the previously mentioned flange 30 so as to secure the members 12 and 14 together. The member 14 is also provided with an inwardly di-

rected flange 48 along its upper edge, which forms a seat for supporting the co-operating flange 18 of the member 10.

In assembling the door, it is preferred to first secure the window defining member 10 to the outer body member 14, as by forming one or more welds along the mating flanges 18 and 48. A weld is also preferably formed between the extreme end portions 46a of the flange 46. As clearly appears in Fig. 4, the extreme end portion 46a of the flange 46 mates with and is secured to the flange 18. The flange 18 is depressed in the region where it is connected to the flanges 46 and 48a, so that the resulting mated flanges form a continuous outer flange surface. The connection between members 10 and 14 at the opposite side of the door preferably duplicates the just described arrangement.

Before securing the inner body member 12 to the members 10 and 14, it is preferred to weld or otherwise secure the upper enlarged portions 42 and 44 of the window guides 34 and 36 to the window guide portion 26 of the member 10. Thereafter, the inner body member 12 may be moved into place, with the upper flange 32 thereof in mating relation to the flange 22 of the member 10, and with the flange 30 thereof in abutting relation to the inner surface of the outer body member 14. If desired, a weld may be formed between the mating flanges 22 and 32 and in addition, it is preferred to form a permanent connection between the flange 24 and the adjacent part of the inner body member 12. In addition, as will be understood, the marginal flange 46 of the member 14 is bent over the marginal flange 30, to form the usual permanent connection between the inner and outer members 12 and 14. It will also be understood that the guides 34 and 36 may be permanently secured to the member 12 as by forming a weld adjacent the portions 38 and 40 thereof respectively, as previously described.

In the thus assembled relation of the parts, the extreme portions of the rail 28 at the hinge side of the door forms a continuation of, but is slightly spaced from, the guide portion 26 of the window defining member 10. To bridge this space as well as to reinforce the door, it is preferred to provide a gusset plate 50, the upper end of which is provided with a notch 52 to receive the guide 26 and one side of which is provided with a notch 54 to receive the flanges 18 and 48. The gusset 50 may be and preferably is secured as by welding to the rail 28 before the member 12 is fitted into place. A final connection as by a welding operation may be formed between the notched end of the gusset 50 and the guide portion 26. Similarly, it is preferred to provide a gusset 60, to bridge the otherwise existing notch between the end of the rail portion 28 and the member 10 at the other side of the door. The gusset 60 is provided with a body portion by which it is adapted to be secured to the rail 28, and is also provided with laterally offset leg portions 62 and 64, which are adapted to be suitably secured as by welding to the flanges 22 and 18, respectively.

In accordance with conventional practice, the window glass may be inserted after the members 10, 12 and 14 are completely assembled with each other. This may readily be accomplished by

moving the glass through a substantially 90° angle from its normal position, projecting the lower end thereof through the open slot in the member 10 and finally returning the glass to its normal position, in which the lateral edges thereof are received in the guides 34 and 36, and the underside thereof is supported by the usual window regulator elements.

It will be appreciated from the foregoing that the resultant door structure comprises generally a lower body portion of generally box form, defined by separately formed inner and outer body members; and an upper or window defining portion, adapted to be secured to the body portion at a point adjacent the belt line of the door. The window defining portion constitutes in itself a closed body, and may readily be formed to correspond to the desired configuration of the window opening.

Although a specific embodiment of the invention has been described in detail, it will be appreciated that various modifications in the form, number and arrangement of the parts, may be made within the spirit and scope of the invention.

What I claim is:

1. In a vehicle door construction, a window defining member having integrally related laterally spaced garnish mold and reveal portions, at least one of the portions terminating in a laterally turned flange, said member having a slot therein adjacent said flange through which an associated glass may be moved into and out of said member, and means cooperating with said flange for securing said member to an associated door body portion in fixed relation to such body portion.

2. In a vehicle door construction having a separately formed window opening defining and body members, said window opening defining member having laterally spaced garnish mold and reveal portions, one of said portions terminating in a laterally turned flange, and said body portion having a laterally turned flanged mated with and rigidly secured to said first mentioned flange to form a fixed connection between said members.

3. In a vehicle door construction, the combination of a body formed of inner and outer panels each provided along their upper edges with laterally turned flanges, and a cooperating member adapted to completely encircle and define a window opening for the door, said cooperating member being of outwardly presenting channel shape, one leg whereof constitutes a reveal portion, and the other leg whereof constitutes a garnish mold portion for the door, said flanges of said body member acting to receive and support said cooperating member.

4. In a vehicle door construction, the combination of a body formed of inner and outer panels each provided along their upper edges with laterally turned flanges, and a cooperating member adapted to completely encircle and define a window opening for the door, said cooperating member being of outwardly presenting channel shape, one leg whereof constitutes a reveal portion, and said cooperating member having laterally turned flanges at the marginal edges of said legs for mating relation with the flanges of said body portion.

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