Feb. 4, 1936. M. G. MARTIN 2,029,432

METAL DOOR

Filed April 9, 1934

Fig. 2.

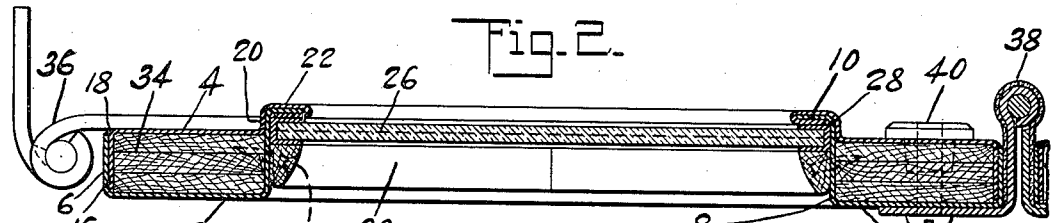
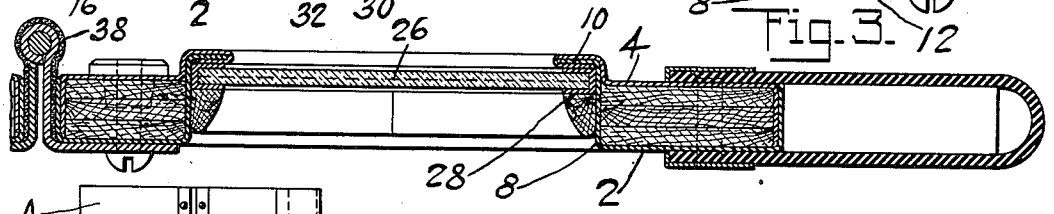


Fig. 3.



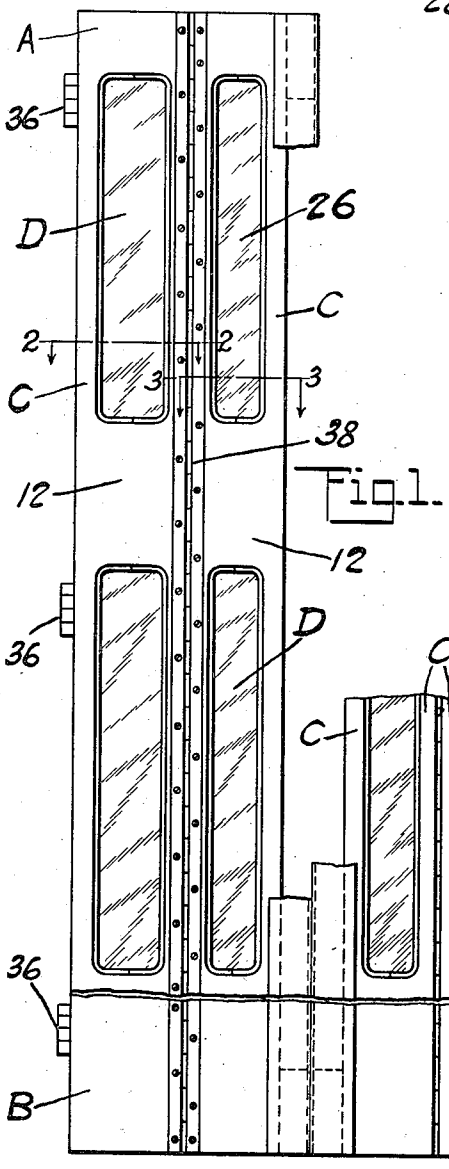


Fig. 1.

Fig. 4.

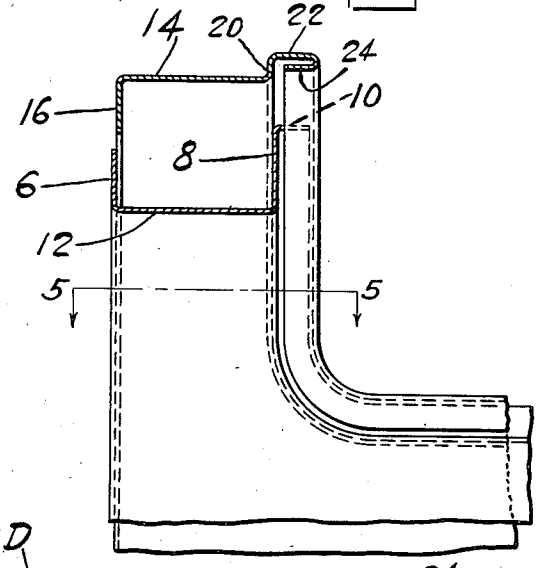
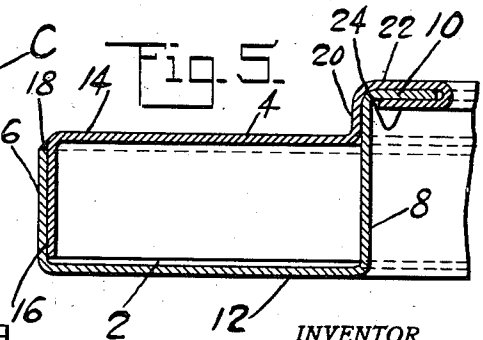


Fig. 5.



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METAL DOOR

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Application April 9, 1934, Serial No. 719,672

6 Claims. (Cl. 189—46)

This invention relates generally to metal doors and has reference particularly to doors adapted for use with vehicles such as railway cars, buses and the like.

One object of this invention is the provision of a metal door formed of substantially complementally interfitted sections.

Another object of this invention is the provision of a door formed of metal sections pressed to desired shape, such shape being of such a nature that the sections may be easily interfitted and connected.

Another object of this invention is the provision of a metal door for railway cars, buses, or the like, which is easy and inexpensive to manufacture and strong and durable in service.

Other objects and advantages of this invention will be apparent from the following description taken in conjunction with the accompanying drawing, in which

Figure 1 is a side elevation of a pair of doors formed in accordance with the present invention, one of the doors having portions thereof broken away;

Fig. 2 is a sectional view on the line 2—2, Fig. 1;

Fig. 3 is a sectional view on the line 3—3, Fig. 1;

Fig. 4 is an enlarged fragmentary detail view of a portion of the door, the view being taken at the window opening; and

Fig. 5 is a sectional view on the line 5—5, Fig. 4.

Referring now more particularly to the drawing in which similar characters of reference designate similar parts in the several views, the drawing illustrates doors of the type used in buses in which a pair thereof are hingedly connected together to form a door unit, a pair of these units being usually employed for closing a door opening. Each door section comprises top and bottom rails A and B, respectively, and stiles C. The door of the present invention is provided with longitudinally spaced openings in which glass panes D are secured.

As shown clearly in the drawing, each door is formed of front and rear sections 2 and 4, respectively, pressed to the form shown and described and section 2 thereof is provided with a rearwardly projecting marginal flange 6. The sections 2 and 4 are each provided with vertically alined openings which receive the glass panes D, the openings in section 2 being bounded by a rearwardly projecting flange 8 paralleling but of greater length than the marginal flange 6, as clearly shown in Fig. 5, and having an inturned attaching flange 10 which is parallel to the main or body portion 12 of section 2. From the above description it will be apparent that the door section 2 comprises a metal unit having a marginal flange extending entirely therearound, said unit, at the window openings, having stiles which are substantially channel shaped in cross section.

The rear section 4 comprises a main body portion 14 having a marginal forwardly projecting flange 16 at substantially right angles thereto adapted to rest against the inner surface of the marginal flange 6 and to be welded to the latter as shown at 18, the weld 18 obviously extending entirely around the door. The section 4 is also provided with window openings bounded by an offset 20 resting against the inner surface of flange 8 of section 2 and by an offset portion 22 extending from offset 20 and fitted against the outer surface of flange 10 but having its end portion folded over flange 10 after the sections are assembled to cover the latter as shown at 24; the portion 24 of the door constituting a shoulder against which the panes D rest. The panes D are of the usual type and are formed preferably of glass 26, the edge portions of which are enclosed by resilient strips 28. For securing the panes D in position suitable retainer strips 30 are provided which are secured by fasteners 32 extending through flange 8 of section 2 of the door and into fillers 34 held in the box sections of the doors formed by the door sections 2 and 4 as clearly shown in Figs. 2 and 3.

The doors are of the hinged type and the hinge elements, indicated at 36, are secured to the fillers 34 in any suitable manner. Each door unit comprises a pair of door sections as indicated clearly in Fig. 1 and a piano type hinge 38 is provided which is secured to contiguous edge portions of adjacent door sections by suitable fasteners such as bolts 40.

From the above description it is believed that the construction of the present invention will be fully apparent to those skilled in the art. It is obvious that each door is formed of telescopically connected sections due to the provision of the marginal flanges on each of the sections, said flanges being so arranged that they fit one within the other in nesting or frictional engagement. The door sections are pressed to the form shown and, due to the pressing, sharp corners are eliminated, the corners being rounded and hence the necessity of cutting and filling joints, soldering or welding as has been previously done in the art is eliminated. It will also be apparent to those skilled in the art that the doors are so constructed as to provide substantially box sections surrounding the window openings this con-

struction obviously providing for great strength. The drawing illustrates one embodiment of the invention but it is to be understood that they are for illustrative purposes only and various changes in the form and proportions of the door may be made within the scope of the appended claims without departing from the spirit of the invention.

What is claimed is:

1. In a metal door, one piece front and rear sections having marginal flanges arranged adjacent and in parallel overlapping engagement with each other, means connecting said sections, said sections having registering window openings bounded by continuous offsets pressed in each section, the material of the rear section being folded over the material of the front section entirely around the window openings in such a manner as to provide a pane receiving shoulder.

2. In a metal door, one piece front and rear sections having marginal flanges arranged adjacent and in parallel overlapping engagement with each other, weld metal connecting the rear section with the edge portion of the marginal flange of the front section, said sections having registering window openings bounded by continuous offsets pressed in each section, the material of the rear section being folded over the material of the front section at the window opening in such a manner as to provide a pane receiving shoulder.

3. In a metal door, a one piece front section having a marginal flange extending entirely therearound, said section having a window opening with the material of the section at the window opening pressed to present a continuous portion flanged parallel to the marginal flange and provided with an inturned portion constituting an attaching flange, and a rear one piece section having a marginal flange so formed as to be telescopically received within the first named section, weld metal connecting said sections at the flanges, and a window opening formed in the rear section with the material surrounding the same folded over said attaching portion.

4. In a metal door, one piece front and rear sections telescopically interfitted and connected, said sections having window openings formed therein, the material of said front section being pressed to present a continuous flanged portion around the window opening offset from the plane of the door and including an attaching portion arranged substantially parallel with the surface of the section, the rear section at the window opening being folded about said attaching portion.

5. In a metal door, one piece front and rear pressed sections each having a marginal flange, said sections being telescopically interfitted and connected and being provided with window openings, a flange surrounding the window opening in the front section and having a portion arranged parallel to the marginal flange but of greater depth than said marginal flange and having another portion inturned at substantially right angles to said first named portion and constituting an attaching flange, the rear section being provided with an offset arranged in engagement with the flange surrounding the window opening in the front section and the offset portion having a part adapted to be folded over the attaching portion.

6. In a metal door, one piece front and rear pressed sections telescopically interfitted and connected, said sections having window openings formed therein, the material of the front section being flanged entirely around the window opening whereby to provide substantially box section stiles, the flange around the window opening including an attaching portion at substantially right angles thereto, the rear section at the window opening therein overlapping a portion of said flange and being folded about said attaching portion, and filler members arranged within the door and between the front and rear sections.

MARVIN G. MARTIN.