

E. G. BUDD.
METALLIC DOOR.
APPLICATION FILED JUNE 23, 1908.

973,751.

Patented Oct. 25, 1910.

Fig. 1

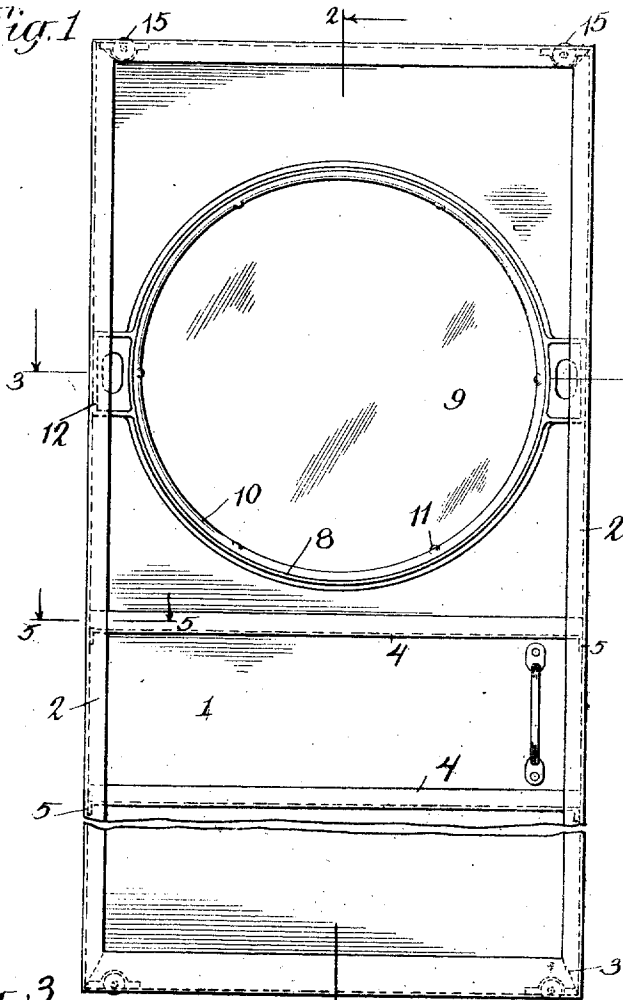


Fig. 2

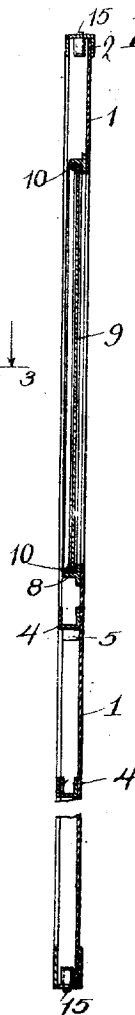


Fig. 3

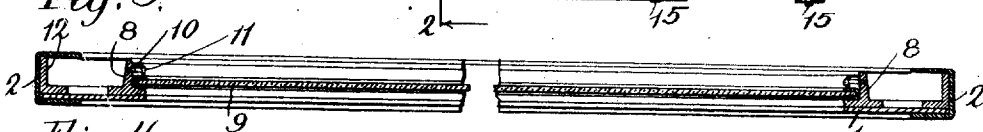
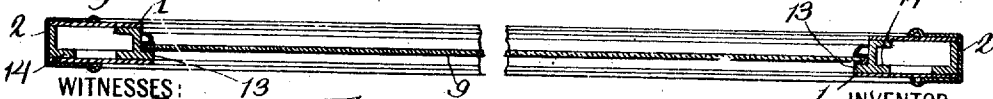


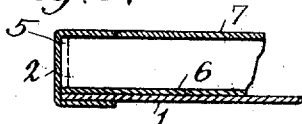
Fig. 4



WITNESSES:

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Fig. 5



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METALLIC DOOR.

973,751.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD G. BUDD, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Metallic Doors, (Case B,) of which the following is a specification.

This invention relates to metallic doors adapted particularly for use as side or end doors for railway-cars.

The object of the invention is to provide a metallic door of improved construction, such that it may be manufactured at low cost and possesses great strength and stiffness.

I have illustrated the preferred embodiment of my invention in the accompanying drawings, in which—

Figure 1 is a plan view of the door; Fig. 2 is a longitudinal section on line 2—2 of Fig. 1; Fig. 3 is a transverse section on line 3—3 of Fig. 1; Fig. 4 is a view similar to Fig. 3, illustrating a modification; and Fig. 5 is a sectional detail view on line 5—5 of Fig. 1.

Referring to these drawings, the door has one or two side walls, each consisting of a piece of sheet-metal cut to the shape desired for the completed door. In Figs. 1, 2, 3 and 5, I have shown the door as provided with but one such side wall, the other side of the door being open. The sheet-metal piece 1, constituting the side wall of the door, has edge pieces 2 secured thereto, one at each of the edges of the side wall 1. Each of the four edge pieces 2 is a strip of sheet-metal pressed to a U-shaped cross-section, and the flange at one edge of each piece 2 is secured to the side wall 1 in any suitable manner, as by welding it or riveting it thereto. The meeting ends of each pair of adjacent edge strips 2 are mitered as shown by the dotted line 3 in Fig. 1, and these ends are united, preferably by welding them together, so that the line of the joint does not show on the exterior of the door.

In order to stiffen the construction, I employ a plurality of strips 4 secured to the inner surface of the side wall 1 and extending across the same. These stiffeners are preferably made from sheet-metal strips which are pressed to U-shaped cross-section,

as shown in Fig. 2, and they may be secured to the side wall 1 by means of rivets or by welding them to the side wall. Each end of each of the stiffeners 4 extends to the edge of the door at the bottom of the U of the edge strip at the edge of the door and the metal at the end of the stiffener is cut to provide an integral extension 5, which may be turned downwardly as shown in Fig. 2 and be secured to the bottom of the U-shaped edge strip upon the inner face thereof. The stiffeners 4 are preferably of such size that when one of the side walls 6 thereof lies adjacent to the side wall 1, the other side wall 7 of the strip lies in the same plane as the flanges of the edge strips 2 distant from the side wall 1, as shown in Fig. 5. At each end of the stiffener, the side wall 7 is cut away for a short distance back and this end of wall 7 is united to the edge strip 2 by brazing or soldering, so as to strengthen the construction, as shown in Fig. 5. A window is provided in the door, but preferably this is not arranged to open and close. For this purpose, an opening is cut in the side wall 1, of a size and shape corresponding to the size and shape desired for the window. A frame 8, which may be either a casting or a sheet-metal strip, is then secured to the inner face of the side wall 1 at the edge of the opening therein. This frame 8 is provided with a wall extending inwardly of the frame, against which a panel, such as a pane of glass, 9, may be positioned. The glass 9, when cut to the proper shape, has a strip of soft material, such as felt or rubber, applied about the edge thereof and is then mounted within the frame 8 against the wall of the frame provided for positioning the glass. In this position the glass 9 is held by a fastening strip 10, which is secured to the frame 8 by screws 11 in a position to hold the glass 9 firmly against rattling. When a casting is employed for the frame 8, this is preferably so shaped as to provide offsets 12 at opposite sides thereof, which extend outwardly into the U-shaped edge strips 2, and these offsets are so formed as to fill the edge strips 2 along a portion of the length of the latter, so as to maintain them in the proper shape and position.

If desired, the door may have two side walls 1, instead of only one as shown in

Figs. 1, 2, 3 and 5, this construction being illustrated in Fig. 4. Referring to this figure, it will be seen that the two side walls 1 have their edges inclosed within the U-shaped edge strips 2. In this door, the stiffening strips 4 are made somewhat narrower, so that they will fit within the space between the two side walls 1. The window-frame 13 is also made somewhat narrower, so that it will lie between the side walls 1. The opening for the window in one of the side walls is made somewhat larger than the opening in the other, and one of these side walls is secured to one side of the frame 13, while the other side wall is secured to the opposite side. Frame 13 is provided with lateral offsets 14, which extend into the edge strips 2 between the side walls 1. The pane of glass 9 is positioned within the frame 13 in the manner above described in connection with Fig. 3.

In Fig. 4, a modification of the shape of the edge strips 2 is shown, by means of which rough edges are avoided, such as would be apt to catch on and tear the clothes. In accordance with this construction, the lateral edges of each of the edge strips 2 are bowed outwardly and then inwardly, so as to form a bead at each edge of each strip 2 and to carry the edge of the strip squarely against the side wall of the door, so that it is not exposed in a position where burs thereon might catch on the clothes.

The door shown in the drawings is adapted to slide in the plane in which it lies to open and close it; for this purpose, it is provided with rollers 15 mounted in bearing-blocks secured to the interior of the top and bottom edge strips 2 with the rollers projecting through openings therein. If desired, however, the door may be arranged to swing on hinges secured to the edge strip at one side of the door.

Having now described my invention, what

I claim as new therein and desire to secure by Letters Patent is as follows:—

1. A metallic door comprising a side-wall of sheet-metal having an opening therein, sheet-metal edge-strips of U-shaped cross-section secured to the edges of said wall, and a window-frame secured to said wall about said opening, parts of said frame extending within the edge-strips at opposite sides of the door, substantially as set forth.

2. A metallic door comprising a sheet-metal side-wall having an opening therein, edge portions of U-shaped cross-section at the edges of the side-wall, and a window-frame secured to said wall about said opening and having parts thereon extending within said edge-portions and bracing the same, substantially as set forth.

3. A metallic door comprising a side-wall of sheet-metal having an opening therein, sheet-metal edge-strips of U-shaped cross-section secured to the edges of said wall, a window-frame secured to said wall about said opening, and offsets on said frame extending within the edge-strips at opposite edges of the door, substantially as set forth.

4. A metallic door consisting of two sheet-metal side-walls spaced apart from each other and having openings therein one of which is larger than the other, edge-strips secured to the edges of said side-walls, a window-frame lying between said side-walls, secured to the adjacent faces thereof and alining with the edges of said openings in the side-walls, parts on said frame extending within said edge-strips and bracing the same, and a glass in said frame, substantially as set forth.

This specification signed and witnessed this 6th day of June, 1908.

EDWARD G. BUDD.

Witnesses:

R. M. FRIES,
P. J. TUCKER.