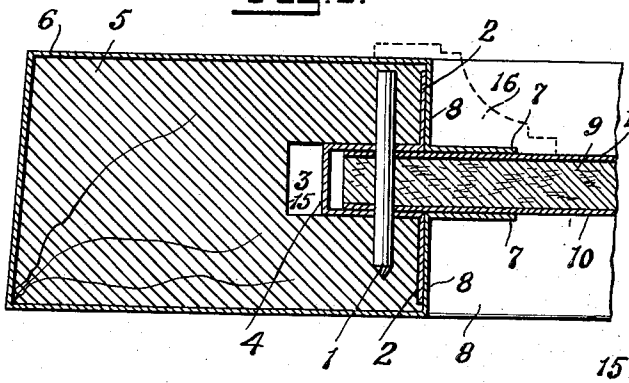
July 11, 1939. E. WEISFELD 2,165,430

METAL COVERED DOOR

Filed April 16, 1937

Fig. 1.



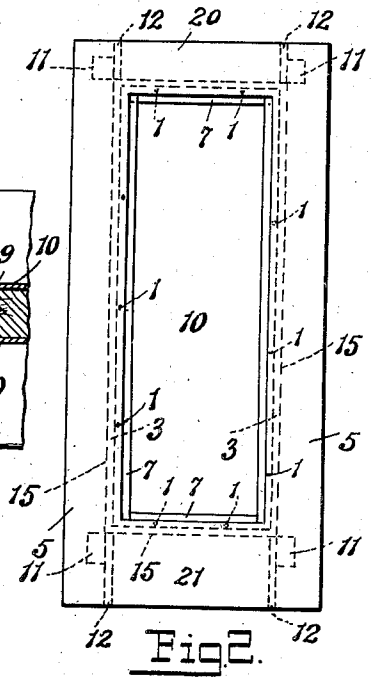


Fig. 2.

Fig. 3.

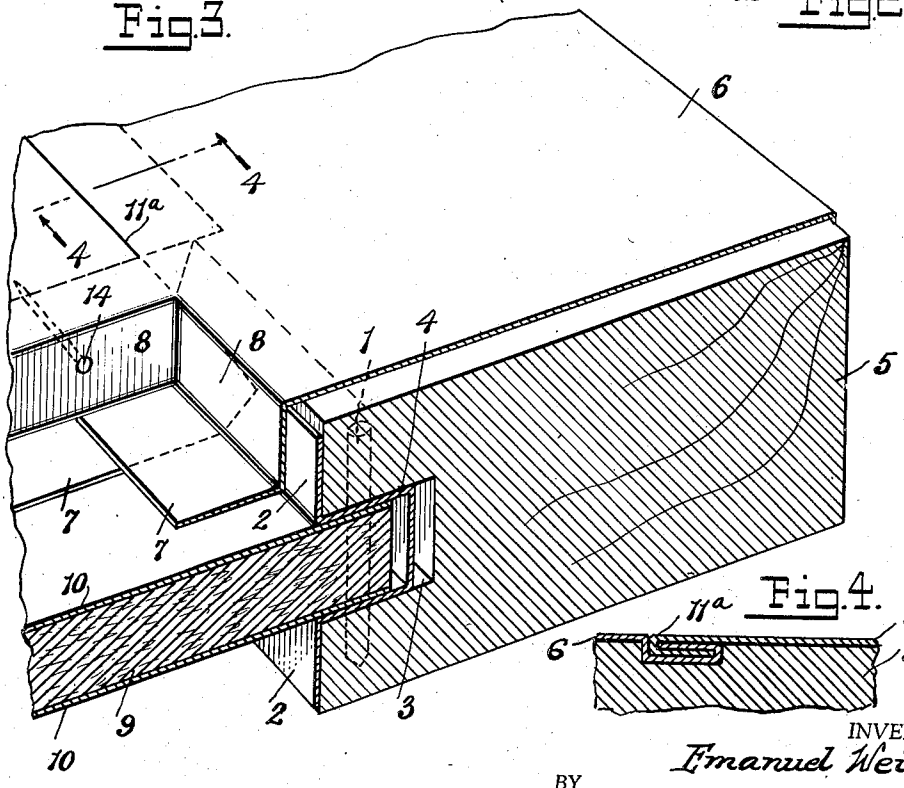


Fig. 4.

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METAL COVERED DOOR

Emanuel Weisfeld, New York, N. Y.

Application April 16, 1937, Serial No. 137,222

1 Claim. (Cl. 20—35)

This invention relates to an improvement in metal-covered doors and the object of the invention is to provide such a door as will secure a maximum of protection during fires. The optimum sought in doors of this character is freedom from warping during fires, and a maximum of resistance to heat. At the same time it is desirable that the door shall be made as light as possible consistent with the performance of its desired functions.

In the accompanying drawing, wherein an embodiment of the invention is shown, Fig. 1 is a transverse view through one of the door stiles and a part of the panel showing the joint therebetween; Fig. 2 is a front view of the door, complete except for the addition of the molding; Fig. 3 is a sectional view in perspective of a portion of the door at the junction of one of the stiles and rails, and Fig. 4 is a sectional view on the line 4—4 of Fig. 3, looking in the direction of the arrows.

The door frame is preferably composed of wood and comprises the two stiles 5 connected to the top rail 20 and bottom rail 21 by the conventional tenon joints 11. The frame thus formed is covered with sheet metal 6 which extends around the stiles and rails and is provided with an inwardly bent flange 8 formed with the projecting portions 7 as clearly shown in Figs. 1 and 3. At the meeting points of the stiles and rails the metal covering 6 is formed with the lock seam 11*a*, as shown in Fig. 4. The flange portions 7 of the covering also overlap at the corners where the stiles and rails meet as also clearly shown in Fig. 3.

The inner edges of the stiles and rails are formed with longitudinally extending grooves 3 in which a channel-shaped metal lining strip 4 is located, said strip being formed with laterally bent flanges 2 which overlie the face of the inner edges of the stiles and rails beneath the inturned flanges 8 of the outer metal covering 6. As will be seen in Figs. 1 and 3, the channel-shaped strip 4 does not completely fill the groove 3, but normally permits the existence of a passage between its inner end and the inner termination 15 of the groove. This constitutes room for expansion caused by heating of the door elements during a fire and it also provides a passage for air or gas generated by heat, said grooves communicating with the vent passages or ports 12 leading through the top and bottom rails to atmosphere.

The door panel consists of a filling 9 of any suitable material, such as a fibrous substance, having its opposite faces covered with sheet metal 10. The edges of the panel are received in the channels in the strips 4, and the panel and the strips 4 are secured in position in the grooves 3 by the dowels 1 or other fastening elements which pass through the panel, through the strips 4 and through the portions of the stiles and rails on the opposite sides of the groove 3. Lateral flanges 7 formed on the covering 6 overlie the faces of the panel, and nails or other fastening members 14 extending through the flanges 8 and through the flanges 2 on channels 4, enter the inner edges of the stiles and rails and hold the door assembly together. Flanges 7 and 8 are covered and concealed by molding 16, secured as indicated in dotted lines 16 in Fig. 1, on both faces of the panel.

Under the imposition of heat, as during a conflagration, it has been found by actual test that a door of this construction will greatly resist the effect of the fire for a surprising length of time due to the manner in which the metallic covering completely covers all interior wooden parts of the door; due also to the latitude for expansion provided by means of the channels or grooves 3 and the communicating ports 12 which allow the escape of internal vapors or gases created within the door by the heat. At the same time, the door is light in weight and extremely easy of installation.

What I claim is:

A metal covered door provided with stiles and rails secured together to form a frame, a sheet metal covering extending over and enclosing the stiles and rails, said stiles and rails each having a longitudinal groove formed in their inner edge, a channelled lining strip fitted into each of said grooves, said strip having laterally extending flanges extending over the face of the inner edges of the stile and rail in which it is located, a panel having its edges fitted into said strips, pins extending through the panel near its edges and also through the channelled strips to hold the strips and panel edges within the grooves, the sheet metal covering having a flanged inner edge bent over and covering the laterally extending flanges on the channelled strips and also enclosing and covering the pins said flanged inner edge overlying the opposite faces of the panel adjacent to its point of entry into the channelled strip.

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