P. E. HEGSTEDT.

METAL DOOR.

APPLICATION FILED JUNE 26, 1913.

1,138,105.

Patented May 4, 1915.

2 SHEETS—SHEET 1.

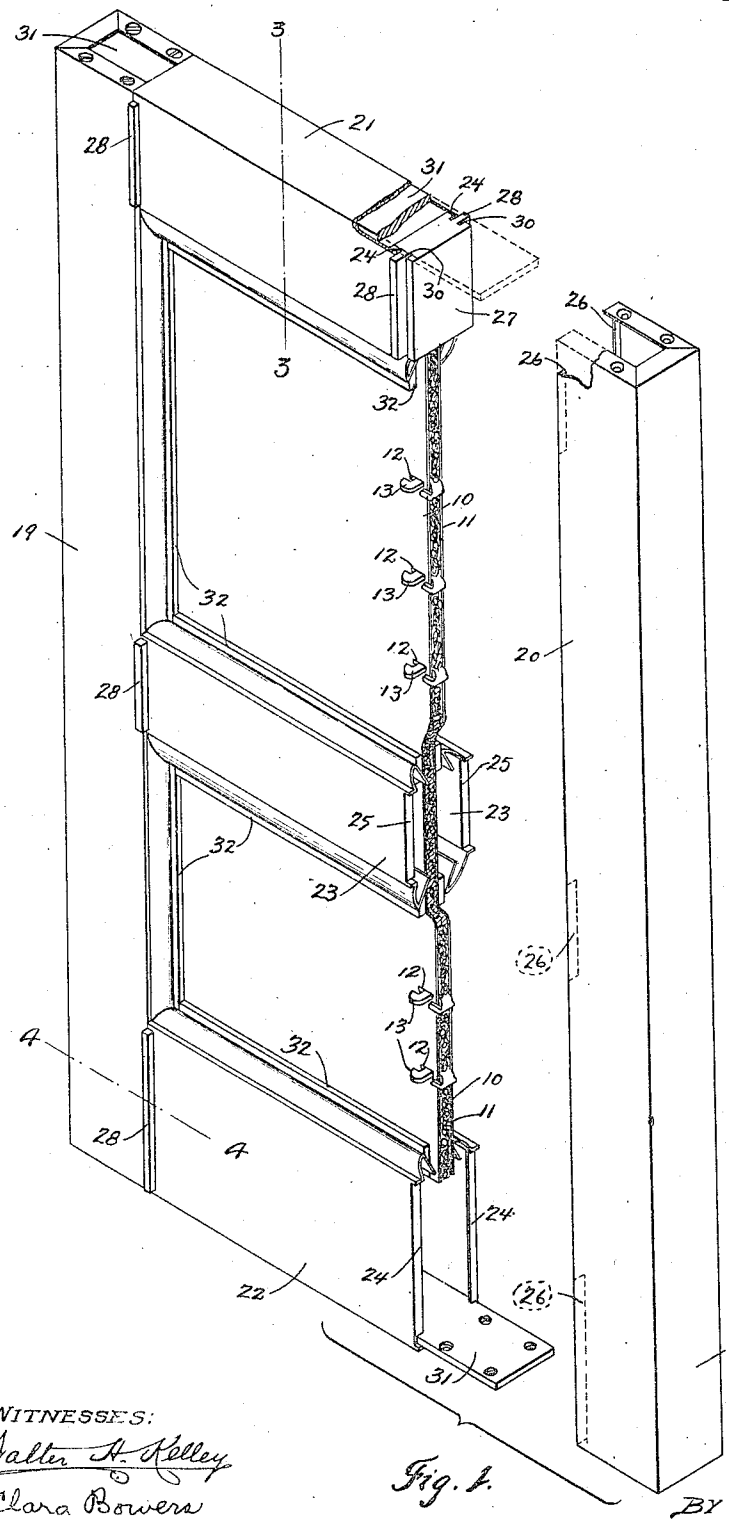


Fig. 1.

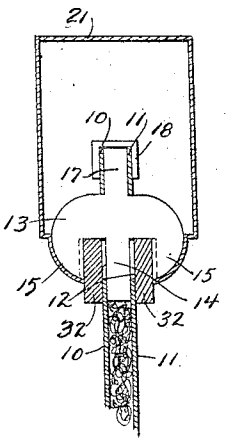


Fig. 3.

WITNESSES:

Walter A. Kelley

Clara Bowers

INVENTOR

Peter Edward Hegstedt

BY J. M. M. Ellis

P. E. HEGSTEDT.

METAL DOOR.

APPLICATION FILED JUNE 26, 1913.

1,138,105.

Patented May 4, 1915.

2 SHEETS—SHEET 2.

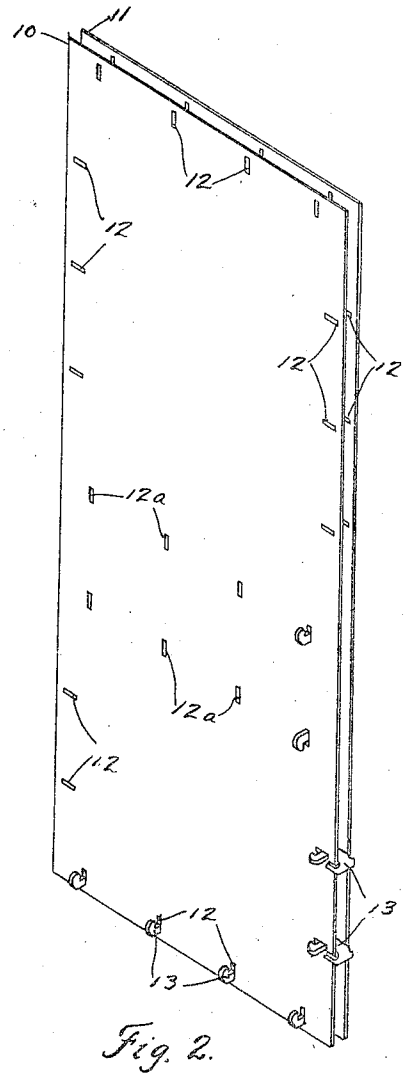


Fig. 2.

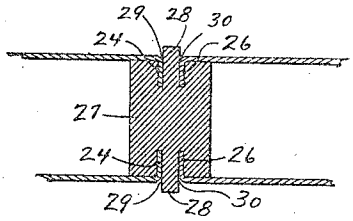


Fig 4.

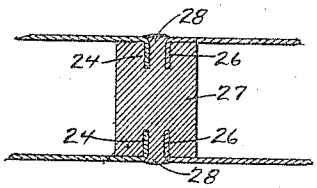


Fig. 5.

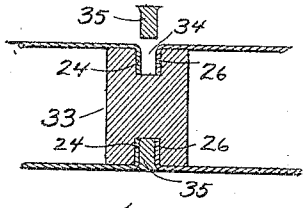


Fig 7.

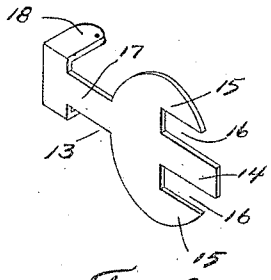


Fig. 6

WITNESSES:

Hattie A. Kelley

Clara Bowers

INVENTOR

Peter Edward Hegstedt

BY J. M. McEllis

ATTORNEY

UNITED STATES PATENT OFFICE.

PETER EDWARD HEGSTEDT, OF JAMESTOWN, NEW YORK.

METAL DOOR.

1,138,105. Specification of Letters Patent. Patented May 4, 1915.

Application filed June 26, 1913. Serial No. 775,906.

To all whom it may concern:

Be it known that I, PETER EDWARD HEGSTEDT, a citizen of the United States of America, and a resident of the city of Jamestown, county of Chautauqua, and State of New York, have invented certain new and useful Improvements in Metal Doors, of which the following is a full, clear, and exact description.

My invention relates generally to metallic doors and like sheet metal structures and more particularly to fire-proof doors.

The general object of my invention has been to provide a metallic door, the parts of which may be separately painted, japanned or otherwise protected and prevented from rust or corrosion both on the inside and outside before assembling.

Another object has been to provide a door which may be easily and quickly assembled and in such a manner that the paint, japan or other protective covering will not be burned off or any parts of the metal door buckled or bent due to the application of heat, which results when the door parts are welded together. Moreover, after my door is assembled there are no holes to be filled with solder, putty or other filler. Thus the assembled door presents a very neat finish.

Another object has been to provide a door in which the molding or other ornamentation shall be made integral with stiles and cross rails and to otherwise reduce the number of parts used in the completed door.

Reference is to be had to the accompanying drawings forming part of this specification, in which like characters of reference indicate like parts throughout the several views of which:

Figure 1 is an isometrical perspective view of my door partly assembled and showing portions thereof in section. Fig. 2 is an isometrical perspective view of the panels of my door partly assembled. Fig. 3 is a fragmentary sectional view through one of the cross rails taken on line 3—3 of Fig. 1. Fig. 4 is a fragmentary sectional view of one of the joints of my door after having been assembled but before being secured and is taken on line 4—4 of Fig. 1. Fig. 5 is a similar section also taken on line 4—4 of Fig. 1 showing the parts secured together. Fig. 6 is an isometrical perspective view of one of the clamp hooks used in my door. Fig. 7 is a fragmentary sectional view of a modified form of one of the joints of my door.

Referring to the drawings and more particularly to Figs. 1 and 2, 10 and 11 are the panels of my door, each of which is made of one single piece of material. Each of these panels is provided along near its edges with a plurality of slots 12 which extend at right angles with the edge of the panel. These panels are also provided with similar slots 12^a across the central portion or directly beneath the cross rail of the door.

13 are the clamp hooks of my device, each of which is provided with a central separator lug 14 and on each side of said lug with a clamp prong 15, thus forming parallel slots 16. A separator 17 is also provided at the opposite end of the hook and at the outer end thereof is provided a U-shaped clamp 18. The clamp prongs 15 of one of the hooks 13 are inserted in each pair of registering slots 12 in the panels 10 and 11, with the U-shaped clamp 18 extending beyond the edge of the panels. The panels are brought down against the separator 14 and 17, whereupon the U-shaped clamp 18 is bent over at right angles and clenched down on the outside of the panels, thus securely holding the same together. The clamp hooks which are used in the slots 12^a are not provided with the U-shaped clamp 18. The space between the panel plates 10 and 11 is preferably filled with asbestos, thus making the structure better able to resist fire.

19 and 20 are the stiles of my door and 21 and 22 are the upper and lower cross-rails respectively.

23, 23 are the central cross rails of my door. The stiles 19 and 20 and upper and lower cross rails 21 and 22 respectively are each formed preferably of one piece of material, bent so as to form a hollow rectangular body, having the desired molding or other ornamentation formed at the inner edges thereof. The top and bottom cross rails are provided at each end on each side with flanges 24 which are bent at right angles with the rails. The central cross rails 23 are each formed with the molding along their edges and are also provided at their ends with right-angled flanges 25. The stiles 19 and 20 where they contact with the cross

rails 21, 22 and 23 have the molding cut away and are provided with right-angle flanges 26.

27 are interlocking blocks, each of which is provided on two of its opposite sides with a central projecting lug 28 and two parallel grooves 29 and 30 adjacent to each side of said lug. For convenience of illustration, interlocking blocks 7 are not shown in connection with the cross rails 22 and 23, but it is to be understood that such interlocking blocks are to be used at each end of such cross rails. These blocks are arranged so that the right-angle flanges of the cross rails and stiles engage with the slots 29 and 30 formed in the blocks.

To strengthen the structure of the door and to close the upper and lower ends of the stiles 19 and 20, I provide cross bars 31, 31 which extend across the top and bottom of the door and just inside the top and bottom cross-rails. The material at the upper and lower ends of the stiles 19 and 20 is preferably folded in at right angles, as shown in Fig. 1, and secured to said cross bars 31, preferably by means of flat-headed machine screws.

32 are locking strips which are driven in between the outer surfaces of each of the panels 10 and 11 and into the slots 16 and beneath the clamp prongs 15 of the clamp hooks 13 after the cross rails and stiles have been placed in position on the panels. After the lock strips have been driven in place, all that remains to be done is to rivet down the projecting lugs 28 of the interlocking blocks 27 which is accomplished, preferably by the use of a drop hammer. When these projections have been riveted down, the right-angle flanges formed on the cross rails and stiles will be securely locked within the slots formed in the interlocking blocks and thus firmly and securely hold the door parts together.

In the modification shown in Fig. 7, the interlocking block 33 is provided in each side with a slot 34 in which the flanges of the cross rails and stiles are placed. After the parts have been assembled, strip 35 is forced into the slot 34 and between the flanges of adjacent parts thus securely fastening them together.

Obviously, many modifications of the details herein shown and described may be made without departing from the spirit of my invention or the scope of the appended claims, and I do not wish to be limited to the exact embodiment herein shown and described.

Having thus described my invention, what I claim is:

1. In a metal panel structure of the character described, the combination with a U-shaped stile having flanged edges and two parallel cross rails spaced apart, each of such rails having its end edge flanged, of a rectangular interlocking block provided on each of two of its opposite sides with one central projecting lug and parallel grooves adjacent to each of said lugs, said block being so arranged that one of the flanges of said stile and cross rail will engage with the grooves on one side of said block and the opposite flanges of said stile and cross rail will engage with the grooves on the other side of said block, whereby the said stile and cross rail may be securely locked in place by riveting down the projecting lugs.

2. In a metal panel structure of the character described, the combination with a U-shaped stile having right-angled flanged edges and a U-shaped cross rail having its two opposite end edges flanged at right angles, of an interlocking block provided on each of two of its opposite edges with one central projecting lug and narrow parallel grooves adjacent to each of said lugs, said block being so arranged that one of the flanges of said stile and cross rail will engage with the grooves on one side of said block and the opposite flanges of said stile and cross rail will engage with the grooves on the other side of said block, whereby the said stile and cross rail may be securely locked in place by riveting down the projecting lugs.

3. In a metal panel structure of the character described, the combination with a U-shaped stile having right-angled flanged edges and two parallel cross rails spaced apart, each having their end edges flanged at right angles, of an interlocking block provided on each of two of its opposite edges with a slot, said block being so arranged that one of the flanges of said stile and the flange of one of said cross rails will engage with the groove on one side of said block, and the opposite flange of said stile and the flange on the opposite cross rail will engage with the grooves on the other side of said block and strips longer than the depth of the said grooves, whereby the said strips may be inserted in the grooves of the said block, and the stile and cross rails may be locked in place by riveting the said strip over the said stile and cross rails.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

PETER EDWARD HEGSTEDT.

Witnesses:
OSCAR NOREN,
ALFRED ANDERSON.