G. CARLSON.

METAL DOOR.

APPLICATION FILED FEB. 26, 1910.

970,985. Patented Sept. 20, 1910.

Fig. 1.

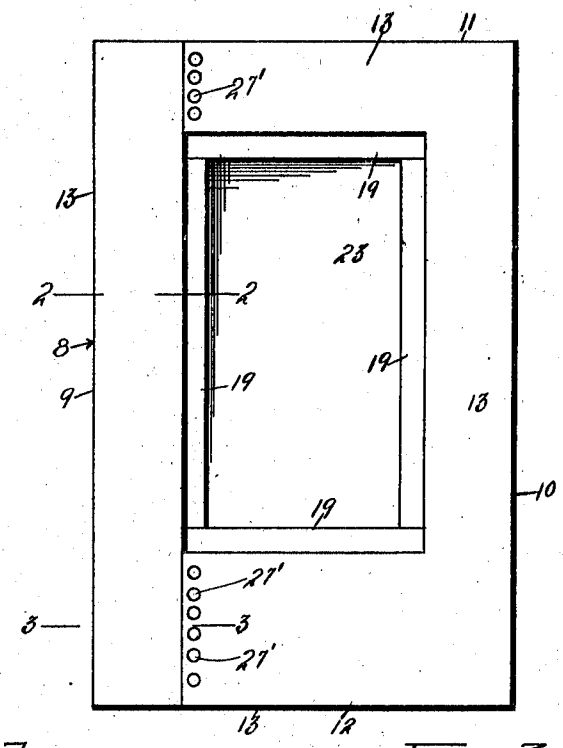



Fig. 2.

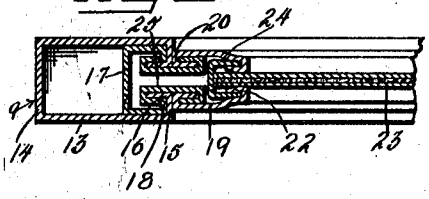



Fig. 3.

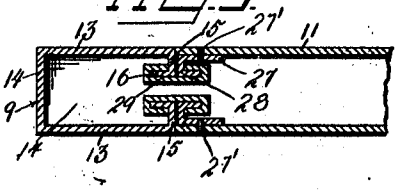
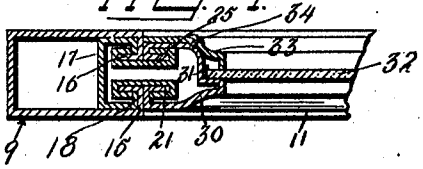



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## METAL DOOR.

970,985. Specification of Letters Patent. **Patented Sept. 20, 1910.**

Application filed February 25, 1910. Serial No. 545,863.

*To all whom it may concern:*

Be it known that I, GUST CARLSON, a citizen of the United States, residing at Jamestown, in the county of Chautauqua, State of New York, have invented certain new and useful Improvements in Metal Doors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a door and more particularly to the class of metallic doors.

The primary object of the invention is the provision of a door in which the frame thereof is entirely constructed of metal so that the same is fire-proof.

Another object of the invention is the provision of a door in which the metallic material forming the same is so joined without necessitating the employment of rivets, screws, or the like.

A further object of the invention is the provision of a door of this character which is simple in construction, thoroughly reliable and efficient as a fire-proof structure, and one that may be manufactured at a minimum expense.

With these and other objects in view, the invention consists in the construction, combination, and arrangement of parts, as will be hereinafter more fully described in detail, illustrated in the accompanying drawings, which disclose the preferred form of embodiment of the invention, to enable those skilled in the art to practice the invention, and as pointed out in the claims hereunto appended.

In the drawings:—Figure 1 is a front elevation of a metallic door constructed in accordance with the invention. Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1. Fig. 3 is an enlarged fragmentary sectional view taken on the line 3—3 of Fig. 1. Fig. 4 is a fragmentary sectional view of a modification.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals, 8 designates generally a metallic door formed with a hollow frame structure comprising stiles 9 and 10, the latter being integral with transverse top and bottom rails 11 and 12, while the stile 9, is connected to the said top and bottom rails in a manner as will be hereinafter more fully described.

The stiles and top and bottom rails are constructed of sheet metal material bent to form side faces 13, and an edge face 14, the latter being the desired thickness of the door. The inner edges of the stiles 9 and 10, and the top and bottom rails 11 and 12, are bent inwardly toward each other to form a right angular flange 15, the same being also provided with an inbent portion forming a locking tongue 16, disposed in spaced parallel relation to the side faces 13, of the stiles and top and bottom rails. Disposed between the side faces 13, adjacent the flange 15, formed at the inner edges of the stiles and top and bottom rails are channeled plates 17, the free edges of which are bent inwardly as at 18, so that these bent portions will abut or lie contiguous to the flanges 15, between the side faces 13, and the tongues 16, thereby closing the inner edges of the stiles and top and bottom rails. It is to be noted however, that these flanges 15, and tongues 16, extend longitudinally of the stile 10, only for the distance between the inner edges of the top and bottom rails 11 and 12, for the purpose as will be hereinafter more fully described.

Disposed against the exterior surfaces of the flanges 15, are opposed inwardly converging curved strips 19, each having one longitudinal edge bent inwardly to form an abutment flange 20, the latter being disposed against the flange 15, and this flange 20, is bent to provide a locking tongue 21, extending in the opposite direction with respect to the locking tongue 16, while the opposite longitudinal edges of the said strip 19, are bent inwardly to form locking flanges 22, engaging against opposite faces of a metallic panel 23, fitted between the strips 19, at the inner edges of the stiles and top and bottom rails.

Engaging the locking flanges 22, of the strips 19, are substantially U-shaped or channeled locking strips 24, and also engaging the locking tongues 16 and 21, of the stiles and top and bottom rails and strips 19, are channeled locking strips 25, which latter securely fasten the said panel engaging strips 19, to the stiles 9 and 10, and top and bottom rails 11 and 12. At the ends of the top and

bottom rails 11 and 12, adjacent the stile 9, are suitably welded as at 27′ strips 27, formed with locking tongues 28, which latter together with the tongues 16, on the stile 9, above and below the points of juncture of the strips 19, with the said stile 9, are engaged by channeled locking strips 29, whereby the said stile 9, is connected to the upper and lower rails of the door.

In Fig. 4 there is shown a slight modification in the formation of the paneling engaging strips of the door frame. Mounted adjacent the inner edges of the stiles 9 and 10, and the upper and lower rails 11 and 12, are molding strips 30, the same being formed with bearing seats 31, receiving the edges of a glass panel 32, the latter being held in these seats 31, by clamping strips 33, which are detachably secured to the molding strips 30, by means of screw members 34, by the employment of which enables the glass panel 32, to be removed when the occasion requires. The said molding strips 30, are secured to the stiles 9 and 10, and the top and bottom rails 11 and 12, in the same manner as the panel strips 19, heretofore described.

The invention is shown and described in connection with the formation of a metallic door although it is to be understood that the said invention is not limited to this particular construction because window sashes and other analogous structures may be made and are contemplated in carrying the invention into practice. Also slight changes, variations, and modifications may be made such as come properly within the scope of the appended claims without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed is:—

1. A door comprising single sheets of material, one of the sheets being bent to provide a stile, top and bottom rails, the other sheet being bent to provide a stile, the edges of the stile sheets being inturned and bent to provide L-shaped flanges, channeled strips engaging the flanges, panel retaining strips having flanges correspondingly shaped to the first named flanges and abutting against the latter, and channeled securing strips engaging said flanges and locking the panel retaining strips against the inner faces of the stiles and top and bottom rails.

2. A door comprising single sheets of material, one of the sheets being bent to provide a stile, top and bottom rails, the other sheet being bent to provide a stile, the edges of the stile sheets being inturned and bent to provide L-shaped flanges, channeled strips engaging the flanges, panel retaining strips having flanges correspondingly shaped to the first named flanges and abutting against the latter, channeled securing strips engaging said flanges and locking the panel retaining strips against the inner faces of the stiles and top and bottom rails, and U-shaped strips securing the panel retaining strips together.

In testimony whereof, I affix my signature, in presence of two witnesses.

GUST CARLSON.

Witnesses:
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