

C. DAHLSTROM.
METALLIC DOOR.

APPLICATION FILED SEPT. 11, 1907.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 1.

945,224.

Fig. 1.

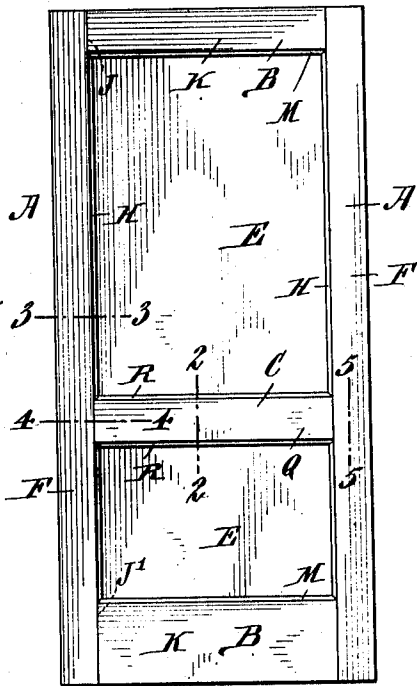


Fig. 2.

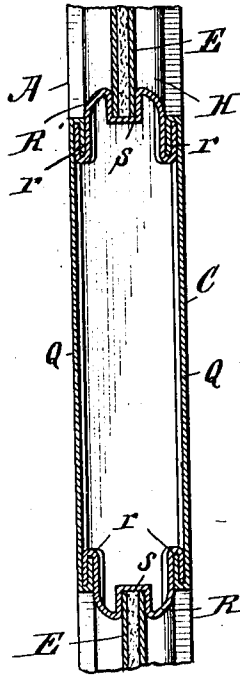


Fig. 3.

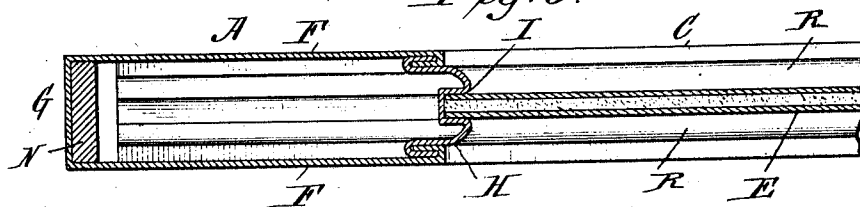
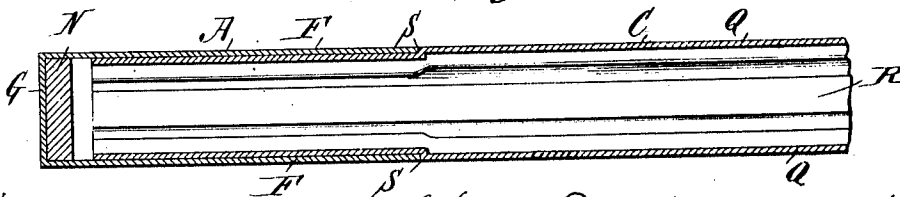


Fig. 4.



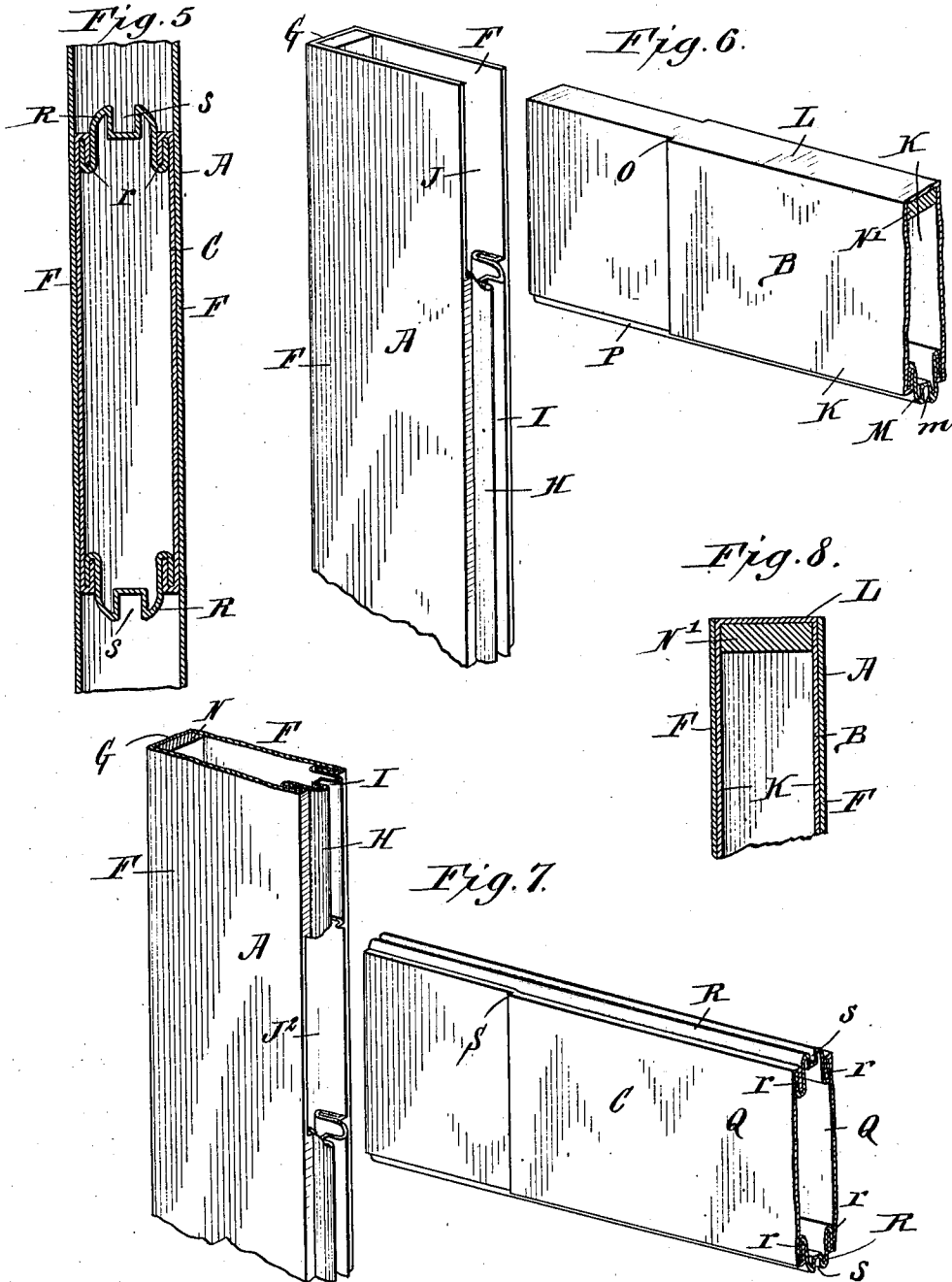
Witnesses:
Christ Feinle.
Harry D. Rapp.

Charles Dahlstrom, Inventor.
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UNITED STATES PATENT OFFICE.

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METALLIC DOOR.

945,224.

Specification of Letters Patent.

Patented Jan. 4, 1910.

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To all whom it may concern:

Be it known that I, CHARLES DAHLSTROM, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Metallic Doors, of which the following is a specification:

My invention relates to improvements in metallic-doors and the like, and it has for its object the construction of a door of this type wherein a perfect seam is obtained between the ends of the rails and the inner edges of the stiles, and whereby a lighter, more durable, and stiffer door results from the employment of my invention.

In doors of this type heretofore constructed, the ends of the rails were made to abut against the inner edges of the stiles, and a stiffening-plate placed against the inner sides of said rails and stiles in overlapping relation and riveted thereto.

My invention consists in extending the rails into the stiles by reducing the thickness of the rails, which is accomplished by offsetting the end portions thereof to form shoulders that abut against the inner edges of the walls of the stiles.

My invention also consists in the construction, arrangement and combination of parts to be hereinafter described and particularly pointed out in the subjoined claims.

In the drawings,—Figure 1 is an elevation of a metallic-door. Fig. 2 is an enlarged vertical section taken through the intermediate rail on line 2—2, Fig. 1. Fig. 3 is an enlarged horizontal section taken on line 3—3, Fig. 1. Fig. 4 is an enlarged horizontal section taken on line 4—4, Fig. 1. Fig. 5 is an enlarged vertical section taken on line 5—5, Fig. 1. Fig. 6 is a perspective view of the upper end of one stile and the adjacent end of the upper rail of the door, the two being disassembled. Fig. 7 is an enlarged perspective view of the intermediate portion of one stile and the adjacent end of the intermediate rail of the door, the two being disassembled. Fig. 8 is an enlarged vertical section through the upper end of one of the stiles showing the adjacent end of the upper rail inserted therein.

Referring now to the drawings in detail, like letters of reference refer to like parts in the several figures.

A represents the two stiles of a door, B

the end rails, C the intermediate rail and E the panels. The stiles are each formed of a sheet of metal fashioned to provide opposite side walls F connected by an outer edge wall G, and having the inner edges of said side-walls bent inward, and thence parallel with the side-walls so as to interlock with panel retainers H, fashioned to provide grooves I that receive the side marginal portions of the panels. Each stile is provided with two such panel-retainers that extend from the intermediate rail to the end rails so that openings J, J¹, J², are provided to receive the rails of the door. The end rails of the door are also formed of a sheet of metal bent to provide two side-walls K which are connected by an outer edge wall L and have their inner edges bent inward and recurved for a lock-seam connection with panel-retainers M, grooved as at m, to receive the upper marginal portion of the upper panel and the lower marginal portion of the lower panel.

With a view of stiffening the edges of the door, a bar of metal N is secured to the outer edge walls of each of the stiles, and similar bars N¹ are secured against the inner faces of the outer edge walls of the upper and lower rails. The ends of the upper and lower rails enter the openings J, J¹, at the inner edges of the stiles, and as the exposed portions of said rails are flush with the faces of the stiles, said rails are reduced in thickness by offsetting the side walls so as to form shoulders O that abut against the inner edges of the side walls of the stiles; the outer edge walls of the reduced end portions of said rails serving to close the ends of the stiles. In this manner a very rigid construction is obtained in which the rails serve to reinforce the stiles at such points, and said rails are themselves reinforced at their inner edges by extending the panel-retainers to the extremity thereof, as at P. The extremities of the panel-retainers at the inner edges of the stiles are fastened to conform to the cross sectional outline of the panel-retainers at the inner edges of the rails, thus assuring a finished connection at this point.

The intermediate rail (or rails if more than one be used) is formed of two sheets of metal Q connected at their longitudinal edges by panel-retainers R, they being preferably connected by lock-seams,

as at *r*. The ends of said intermediate rails are reduced in thickness by offsetting said metal sheets to provide shoulders *S*; said reduced ends being inserted in the openings *J*² between the panel-retainers of the stiles and the shoulders thereof abutting against the inner edges of the walls of said stiles. The panel-retainers of the intermediate rail are grooved, as at *s*, to receive the lower marginal portion of the upper panel and the upper marginal portion of the lower panel. Said panel-retainers are extended to the extremities of the side walls so that they stiffen the same throughout their length. The stiles are also reinforced at this point by inserting the intermediate rail into them in the manner described.

When the rails, stiles, and panels are drawn together and securely interlocked, a very stiff and durable door is obtained and when the door is finished and enameled, the seams between the stiles and rails are invisible, and the enamel is not likely to crack at these points.

It is apparent from the foregoing that window-sashes and other like articles can be constructed according to this invention, as the drawings forming part of this specification are only intended to illustrate my invention in a representative way in connection with a metallic-door.

Having thus described my invention, what I claim is,—

1. A metallic-door or the like, comprising hollow stiles formed of sheet-metal, each consisting of an outer edge wall, side walls and a panel retainer terminating a short distance from the ends of the stiles, hollow rails formed of sheet-metal, each consisting of an outer edge wall, side walls and a panel-retainer connecting the inner edges of said

side-walls, the latter being offset to form shoulders and the ends of said rails being entered into the hollow stiles with the shoulders thereof abutting against the inner edges of the side walls of the stiles, the ends of the panel-retainers of the stiles being fashioned to conform to the outline of the panel-retainers of the rails against which they abut, and a panel having its marginal portions secured in the panel retainers of said stiles and rails.

2. A metallic-door comprising hollow stiles, each having an outer edge wall, two side walls and two panel-retainers separated to form an opening at a point between adjacent ends of the stile and terminating a short distance from said ends to form openings at the upper and lower ends of each stile, end rails having each an outer edge wall, two side walls and a panel-retainer connecting the inner edges of said side walls, an intermediate rail having two side walls and two panel-retainers connecting the longitudinal edges of said side walls, said intermediate rail and said end rails having their side walls offset to reduce the ends thereof and to form shoulders thereon, the reduced ends of the end rails entering the openings at the ends of the stiles and the reduced ends of the intermediate rail entering the openings between the panel-retainers on the stiles, and panels having their marginal portions secured in said panel-retainers.

In testimony whereof, I have affixed my signature in the presence of two subscribing witnesses.

CHARLES DAHLSTROM.

Witnesses:

JOHN A. WESTMAN,
JOHN HAGELIN.