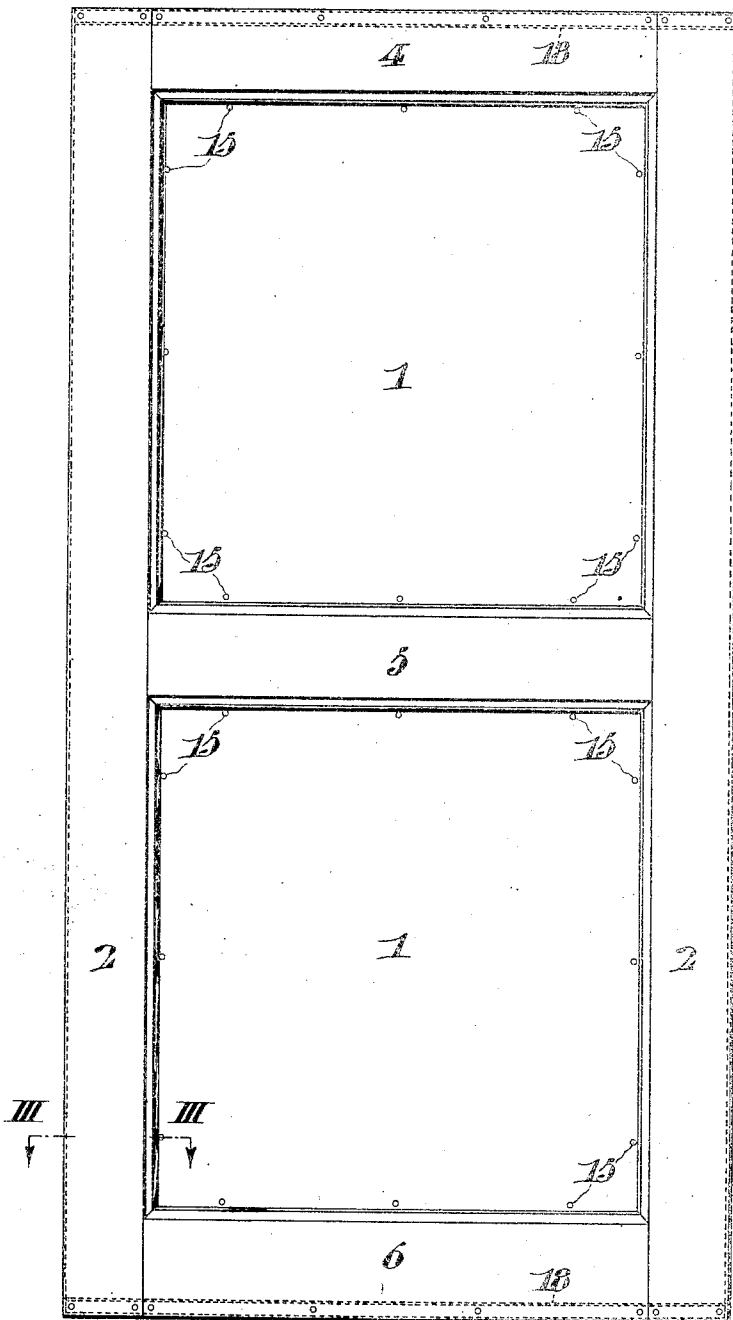


J. BROGDEN.
SHEET METAL PANELED STRUCTURE.
APPLICATION FILED AUG. 22, 1908.

929,824.

Patented Aug. 3, 1909.
2 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:

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Wm. J. Spurl

INVENTOR:

JOHN BROGDEN,
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Miley & Paul

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FIG. II.

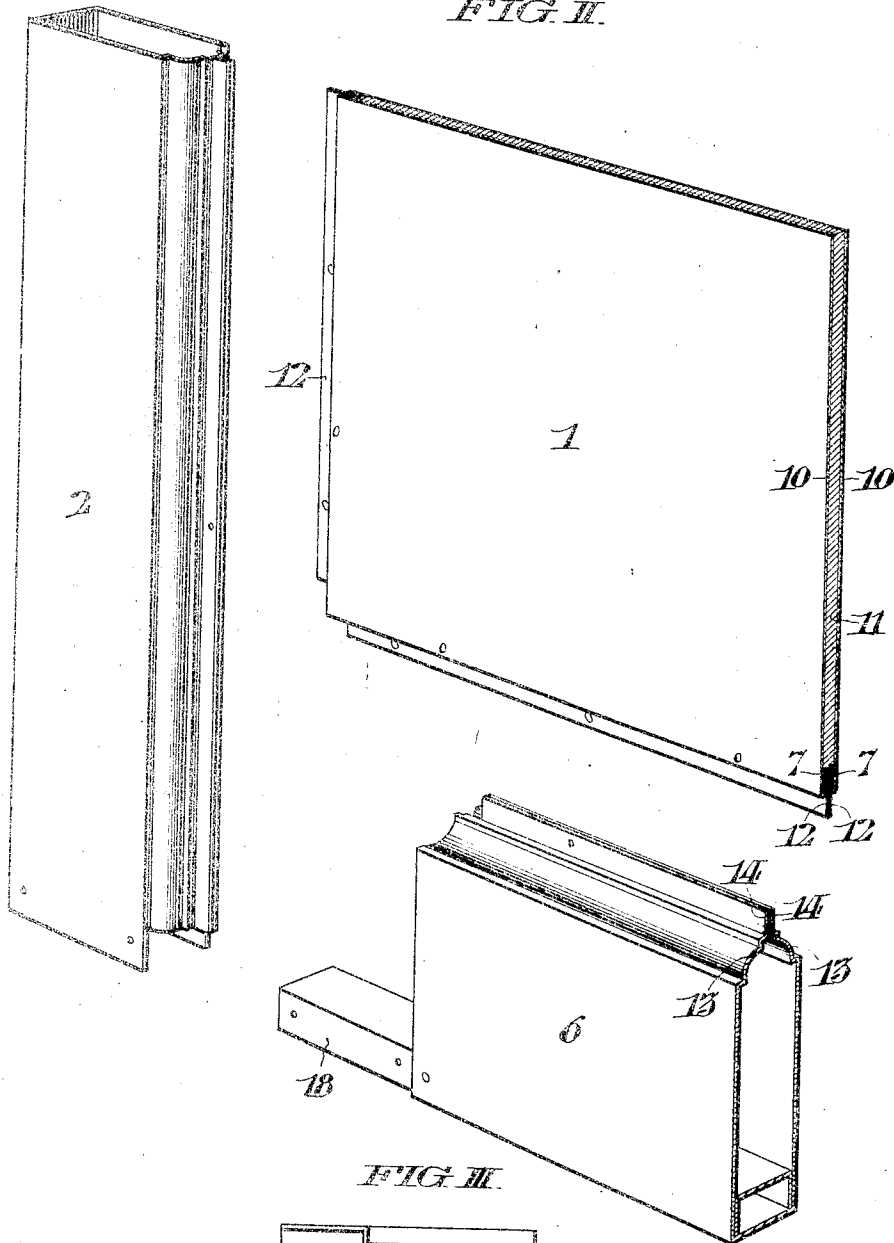
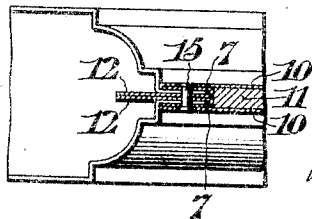


FIG. III.



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UNITED STATES PATENT OFFICE.

JOAH BROGDEN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO DAVID LUPTON'S SONS COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

SHEET-METAL-PANELED STRUCTURE.

No. 929,824.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed August 22, 1908. Serial No. 449,812.

To all whom it may concern:

Be it known that I, JOAH BROGDEN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Sheet-Metal-Paneled Structures, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to a paneled structure, comprising rails, stiles, and panels made of sheet metal, and relates more particularly to the method of interlocking the panels with the rails and stiles, and also the method of interlocking the rails to the stiles.

I have shown and will describe my invention as applied to an ordinary two paneled door, it being understood that the scope of the invention, is not thus limited, but may be extended to any paneled structure.

In the accompanying drawings, Figure I, is an elevation of a two paneled door embodying my invention. Fig. II, shows in perspective a portion of a rail, stile, and panel embodying my invention, and separated from each other so as to more clearly illustrate the method of interlocking. Fig. III, is a partial horizontal section along the line III, III, in Fig. I.

The door shown in Fig. I, comprises two panels 1, 1, two stiles 2, 2, and three rails respectively, the top rail 4, the middle rail 5, and the bottom rail 6. The construction of these parts will be more evident upon reference to Fig. II, where it will be seen that the panel 1, is composed of two surface layers of sheet metal 10, 10, with an intervening thicker layer 11, of deadening material, such as wood, composition board, asbestos lumber, or other suitable material. The intervening layer 11, does not reach to the margin of the surface sheets, thus affording a space within which the overhanging edges of the sheets are folded in upon themselves, and out again, so as to produce sigmoid flexures, 7, 7, with projecting contiguous tongues 12, 12.

The rails 6, are preferably formed by bending a single piece of sheet metal to form the edge, sides and also the two moldings 13, 13, with two slightly separated parallel flanges 14, 14. The stile 2, is similarly

formed. These parts may be hollow or may contain deadening or fireproofing material.

In uniting the panel to the rail or to the stile, the flanges 14, 14, of the rail or stile enter the flexures 7, 7, of the panel, at the same time, receiving the tongues 12, 12, of the panel between themselves. This is more clearly seen in Fig. III, where it will be observed that by reason of the reception of the flanges within the flexures of the panel, there is a space around the edges of the panel where it is built up of eight parallel layers of sheet metal, made up of three thicknesses of each surface sheet of the panel and two flanges. The thickness of the intermediate board of the panels is such as to correspond to the thickness of the six intermediate layers of the edge portion of the panel. In this way the edge of the panel becomes a very strong laminated structure strengthening the entire door, and at the same time affording a suitable supporting means for the rivets 15, 15, by which these parts are secured at intervals, and by which the flanges of the rails and stiles are retained within their position within the flexures of the paneling surfaces, affording an exceedingly strong union between the two.

The union of the rail to the stile at the corner of the door is an overlapping one, as shown in Fig. II, with the interposition of a strengthening trough-shaped sheet metal piece 18, riveted interiorly to the bottom of the rail, and projecting beyond it at the ends, so as to be received between the projecting sides of the stile to which it is firmly riveted.

The structure thus described is one of very great strength, lightness and simplicity. It is very easily put together and comprises strengthening elements at the points where most needed. Especially valuable is the support given by the laminated strengthening masses which are formed around the edges of each of the panels where its sheet metal parts interlock with and are riveted to those of the rails or stiles.

Having thus described my invention, I claim:

1. In a paneled sheet metal structure, a panel comprising two surface sheets, the edges of which are folded in and out in the

form of a sigmoid flexure, to form a central tongue; and a sheet metal stile or rail provided with flanges which enter the flexure of the panel receiving its tongue between
5 themselves:

2. In a paneled sheet metal structure, a panel comprising two surface sheets the edges of which are folded in and out in the form a sigmoid flexure, to form a central
10 tongue; and a sheet metal stile or rail provided with flanges which enter the flexure

of the panel receiving its tongue between themselves, united by rivets passing through the laminated structure composed of the flexures, flanges and tongues.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this twenty-first day of August, 1908.

JOAH BROGDEN.

Witnesses:

JOHN W. WATKINS,
JAMES H. BELL.