No. 809,145. PATENTED JAN. 2, 1906.

N. P. SJOBRING.

DOOR.

APPLICATION FILED JUNE 2, 1905.

Fig. 1.

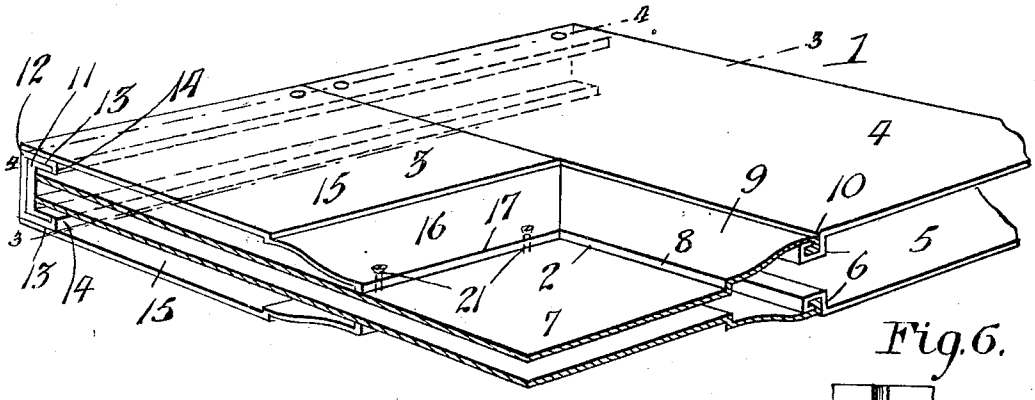


Fig. 6.

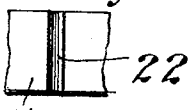


Fig. 2.

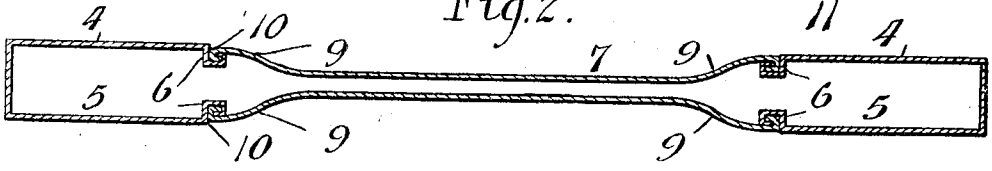


Fig. 3.

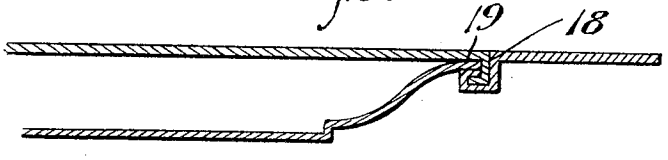


Fig. 4.

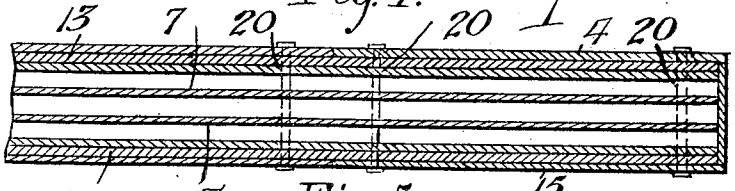
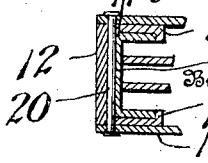


Fig. 5.



Witnesses

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DOOR.

No. 809,145. Specification of Letters Patent. Patented Jan. 2, 1906.

Application filed June 2, 1905. Serial No. 263,442.

To all whom it may concern:

Be it known that I, NILS P. SJOBRING, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Doors, of which the following is a specification.

This invention relates to an improvement in doors, and particularly to metallic doors constructed entirely of sheet metal.

The main object of the invention is the production of means in a door of the class described for readily and securely connecting the panel-sections with the upper and lower end sections, whereby the parts of the door are readily connected to provide the desired door structure.

The preferred details of construction will be described in the following specification, reference being had particularly to the accompanying drawings, in which—

Figure 1 is a broken perspective showing one corner of the door constructed in accordance with my invention. Fig. 2 is a sectional view of the door on a line transverse the length thereof. Fig. 3 is an enlarged broken sectional view on the line 3 3 of Fig. 1. Fig. 4 is an enlarged sectional view on the line 4 4 of Fig. 1. Fig. 5 is a transverse section showing the attachment of the binder, keeper, and end section-plates; and Fig. 6 is a broken elevation of the face of the keeper, illustrating particularly the bolt-receiving depression therein.

Referring to the drawings, wherein like parts are indicated by similar reference-numerals throughout the several views, my improved door comprises stiles 1, forming the vertical side edges of the door, centrally arranged, two panels 2, and end pieces 3, the latter forming the transverse top and bottom sections of the door.

The door of my invention, as illustrated, is, as is common in doors of this structure, similarly paneled on opposite sides of the door, though the side sections or stiles are integrally formed to present in one body both sides of the door. The panel-sections comprise duplicate panel-strips, and the end sections also comprise duplicate plates secured to and forming opposite surfaces of the door. The stiles 1 are identical in construction, and a detail description of one will suffice for both. The stile is formed of a single strip of metal bent into rectangular shape in cross-section, being of a length equal to the desired height of the door. The side strips 4 and 5 of the stile are spaced apart to provide the desired thickness of door and are shaped at their inner terminals to provide a locking-flange 6, which, though constructed as illustrated, may be formed in any desired manner. The panel-sections 2 are also in duplicate, one for each surface of the door. Each section comprises an elongated metallic strip 7, which near one side edge is projected vertically at 8 for a short distance and inclined outwardly and upwardly from said vertical projection on a regular curve, as at 9, the free edge of said panel-strip being bent at 10 to interlock by longitudinal sliding movement with the locking-flange 6 on one of the side strips of the stiles. The panel-strips are approximately equal in length to the length of the stiles, and their upper and lower edges are inserted in a binder 11, comprising a U-shaped strip of channel-iron or the like having its arms extending inwardly toward the transverse center of the door, between which arms the panel-strips 7 are received. The binder 11 is seated within a keeper 12, also of U-shape channel-iron and designed to receive the binder, the arms 13 of the keeper being turned to provide flanges 14 to engage the free ends of the arms of the binder, whereby to prevent independent movement of the binder. The ends of the panel-strips are seated within said binder, and thereby retained in parallel relation and securely braced against independent movement through their bearing contact against the end wall of the binder. The keeper 12 is of a width practically equal to the distance between the side strips 4 and 5 of the stiles, and in assembling the sections of the door said keeper, with the contained binder, is inserted within the stile and in contact with the approximate surfaces of the strips 4 and 5 thereof.

The upper and lower end sections of the door are identical in construction, each comprising duplicate plates 15, arranged to overlie and rest upon the arms 13 of the keeper and project therefrom toward the transverse center of the door. These plates are of a length desirable in the particular type of door to be constructed and at their inner edges terminate in a curve 16, sloping inwardly, exactly similar to the curve 9, with their free edges 17 resting upon the panel-strips 7. This provides a relief contour trans-

verse of the door similar to the relief contour lengthwise of the door formed by the panel-sections. The curved section 16 of the plate 15 extends to and in contact with the curved section 9 of the panel-section 7, preferably meeting the same on a line diagonally of the door structure to provide the desired finish. The side edges of the plate 15 interlock with the locking-flange 6 on the stile-strips 4 and 5, being provided with an interlocking flange 18 for this purpose. It is to be understood that the interlocking flange 10 of the panel-strips terminates at the point of juncture of the end plate 15 and the stile, so that said panel-section simply overlies the locking-flange 6 of the stile-strips and is held in place by the interlocking of the flange 18 on the end plate 15 with the locking-flange 6 on the stile-strip, as clearly shown at 19 in Fig. 3.

A plurality of rivets 20 are arranged transversely of the door near the upper and lower ends, passing through end plates 15, the arms of the keeper, and engaging but not passing through the binder, the horizontal face of the binder being formed with horizontally-arranged channels or depressions 22 to receive the rivets 20, as shown in Figs. 5 and 6. The construction of the binder just described is material in that it provides for effective setting or heading of the rivets, as said rivets pass through depressions or panels formed in the horizontal wall of the binder, whereby the full strength of said wall is utilized as a brace between the arms of the keeper through which the rivets pass. I am thereby enabled to set the rivets in securing the door-sections together without liability of bending or buckling the plates or arms of the keeper. Screw bolts or rivets 21 are passed transversely through the ends 17 of the plates 15 and into the panel-strip immediately beneath, whereby to secure said end plate in place.

In assembling the sections of the door the panel-strips are connected with the stiles by a longitudinally-sliding movement to engage their respective locking-flanges, and after said panel-sections have been moved to a proper position relative to the stiles said flanges are interlocked by suitable pressure. The binder and keeper are then positioned relative to the panel-strips, being inserted within the ends of the stiles, as shown and described. The plates 15 of the end sections are then secured in position by the respective bolts and interlocked with the stile-flanges, and the door structure is complete.

It will be noted that the end sections of my improved door comprises four thicknesses of material, the end edges proper of the door being composed of channel-iron which is of a strength necessary to provide against warping or other distortion. All parts are readily interlocked and may be readily disconnected when desired. The structure provides a large amount of space intermediate the various strips, which, if desired, may be filled with a suitable non-heat conductor or may be left without filling, providing in the latter event a door of substantial structure though simple in arrangement and of few parts.

Having thus described the invention, what is claimed as new is—

1. A door comprising stile-sections, end sections interlocking with the stile-sections and extending transversely of the door, and panel-sections interlocking with the stile-sections between the end sections, said panel-sections being secured beyond said interlocking plane by the interlocking of the stile and end sections.

2. A door comprising stile-sections, end sections interlocking with the stile-sections and panel-sections interlocking with the stile-sections between the end sections, said panel-sections being secured to the stile-sections beyond their interlocking plane.

3. A door comprising stile-sections, end sections interlocking with the stile-sections, and panel-sections interlocking with the stile-sections between the end sections, the side edges of the panel-sections being secured between the interlocking connections of the stile-sections and end sections.

4. A door comprising stile-sections provided with locking-flanges on their inner edges, end sections formed with locking-flanges to engage the locking-flanges of the stile-sections, and panel-sections formed on their side edges for a portion of their length with interlocking flanges to engage the interlocking flanges of the stile-sections between the end sections.

5. A door comprising stile-sections provided with locking-flanges on their inner edges, end sections formed with locking-flanges to engage the locking-flanges of the stile-sections, and panel-sections formed on their side edges for a portion of their length with interlocking flanges to engage the interlocking flanges of the stile-sections between the end sections, the remaining length of the side edges of the panel-sections being plain to engage between the interlocking flanges of the end sections and stile-sections.

6. A door comprising stile-sections, panel-sections secured thereto and end sections secured to the stile-sections, a keeper to support the edges of the end sections between the stile-sections, and a binder within the keeper to receive the ends of the panel-sections.

7. A door comprising stile-sections, panel-sections secured thereto and end sections secured to the stile-sections, a keeper to support the edges of the end sections between the stile-sections, a binder within the keeper to receive the ends of the panel-sections, and means passed through the end sections and between the binder and keeper to secure said parts together.

8. A door comprising stile-sections, panel-sections secured thereto and end sections secured to the stile-sections, a keeper to support the edges of the end sections between the stile-sections, a binder within the keeper to receive the ends of the panel-sections, and rivets passed through the end sections and between the binder and keeper, the approximate wall of the former being channeled to receive said rivets.

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

NILS P. SJOBRING.

Witnesses:
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