J. CAHILL.

FIREPROOF FOLDING DOOR OR SHUTTER.

APPLICATION FILED JUNE 25, 1910.

1,205,707. Patented Nov. 21, 1916.

Fig. 1.

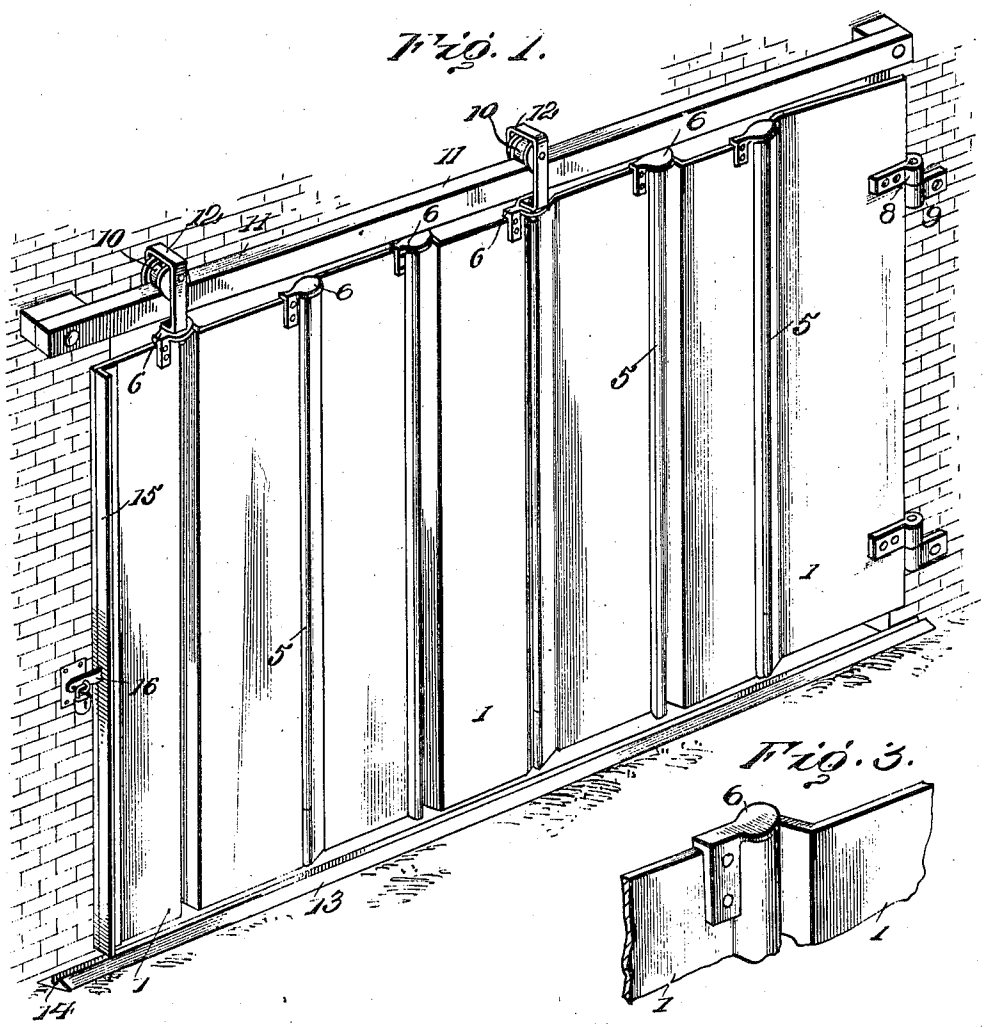


Fig. 3.

Fig. 2.

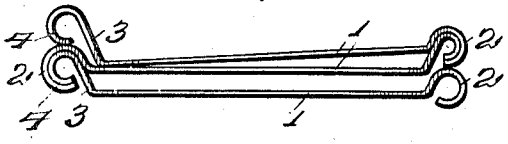
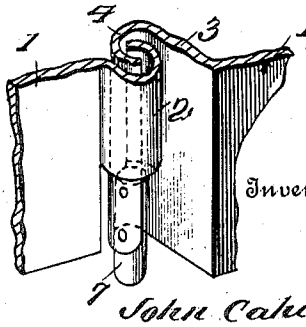


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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FIREPROOF FOLDING DOOR OR SHUTTER.

1,205,707. Specification of Letters Patent. Patented Nov. 21, 1916.

Application filed June 25, 1910. Serial No. 568,829.

To all whom it may concern:

Be it known that I, JOHN CAHILL, a citizen of the United States, and a resident of Norfolk, in the county of Norfolk and State of Virginia, have invented a certain new and useful Fireproof Folding Door or Shutter, set forth in the annexed specification.

This invention relates to fire-proof structures and more particularly to doors or window closures which have a lateral or sidewise movement.

One of the principal objects is to provide a door or shutter of the character stated which may be easily erected and operated and which shall be economical both as regards first cost and cost of maintenance.

Another object is to provide a fireproof shutter composed of jointed sections adapted to fold or close upon one another and weather-proof in that they are arranged to shed rain water.

Other objects as well as the nature, characteristic features and scope of the invention will more readily be understood from the following detailed description taken in connection with the accompanying drawing, forming a part hereof, wherein—

Figure 1, is a perspective view of a door or shutter embodying features of my invention. Fig. 2, is a sectional view showing the relative arrangement of the panels or slats; and Figs. 3 and 4, illustrate details.

The improved closure is constituted of substantially straight or flat face units, slats or panels 1, constructed from sheet metal blanks. At one end the blank is curled or formed with a roll, loop, or tubular engaging member 2, and at the other end the blank assumes an angular bend or offset 3, which terminates in a loop or tubular engaging member 4, and this arrangement is alternate or staggered as shown in Fig. 2, so that the rolled edge or tubular part 2, of one slat or shutter element, is adapted to sleeve into or telescope the rolled edge 4, of an adjoining slat and the combination constitutes a protected or water shed hinge or folding connection 5. Manifestly the slats are displaceable vertically and to avoid this, use may be made of a cap or abutment 6, which overhangs the hinge connection and is secured to one of the slats or shutter units 1, as shown in Fig. 3; or as shown in Fig. 4, use may be made for this purpose of a pin 7, that is secured in the lower end of the tubular part 4, and arrests the downward movement of the complemental hinge element 2. It is evident that the caps when present also serve to exclude water from the hinges.

It will be observed upon reference to Fig. 2 that the slats in cross-section are of a general U or channel shape, the webs of the channel being formed by the offset rolls and the bottom of the channel being flat. The web or offset 3 projects beyond the complemental roll 2, whereby the alinement of the slats is not disturbed when the slats are in unfolded state. This structure and arrangement enables the slats to fold compactly, somewhat on the order of an accordion plait, the flat parts of the slats being superimposed or nested in the folded or collapsed position, as clearly evident in Fig. 2.

The structure, Fig. 1, shows one way of practising the invention. The door as a whole may be swung on hinges 8, secured to the building structure 9, and to facilitate the opening and closing of the door, rollers 10, are provided which run on a track or rail 11. The rollers are suitably mounted in stirrups 12, that are pivotally connected to the slats. A floor rail or track 13, may be employed if desired, and its groove 14, constitutes a way for the pins 7, when the latter are present.

The angle bar 15, when present, serves as a reinforcement and also as a support for a suitable latch or fastening 16.

Manifestly various changes and modifications may be made without departing from the spirit and scope of the invention. Hence the same is not limited other than required by the prior state of the art.

Having described the nature and objects of the invention, what I claim as new and desire to secure by Letters Patent is:—

1. A collapsible fire-resistant barrier embodying a series of sheet metal slats of U or channel form in cross-section, the bottoms of the channels being flat and the webs terminating in hinge sections, one of the webs being of greater extent than the other and the short web of one slat telescoping the extended web of the next adjoining slat, substantially as described.

2. A collapsible fire-resistant barrier embodying a series of sheet metal slats with flat bodies and whereof the vertical edges are rolled and are adapted to be introduced endwise into the rolled edges of adjoining

panels to provide self-locking hinges, the flat parts of the slats being superimposed or nested when the slats are folded, and means to prevent the vertical displacement of the slats, substantially as described.

3. A structure of the type recited, comprising the combination with floor and overhead rails, of a horizontally folding and sliding door formed of a plurality of flat sheet metal slats having their vertical edges rolled or beaded to provide telescopic hinge connections with the next adjoining slats, one of said rolled edges being projected beyond the other to maintain an alinement of the slats when the door is closed, means to prevent the vertical displacement of the slats and having an extension which slides in the floor rail, and rollers on the overhead rail and operatively connected with the door, substantially as described.

4. A structure of the type recited, comprising the combination with floor and overhead rails, of a folding and sliding door embodying a series of sheet metal slats which are U shape in cross-section with flat bodies and rolled edges that form hinge locks with the next adjacent slats, whereby the slats are nested in the folded state, means for guiding the door in the floor rail, a roller suspension coöperating with the overhead rail, and a hinge mounting at one end of the doorway whereby the door may be lifted from the rails and swung clear of the doorway, substantially as described.

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

JOHN CAHILL.

Witnesses:
A. B. Degges,
Chas. M. C. Doran.