

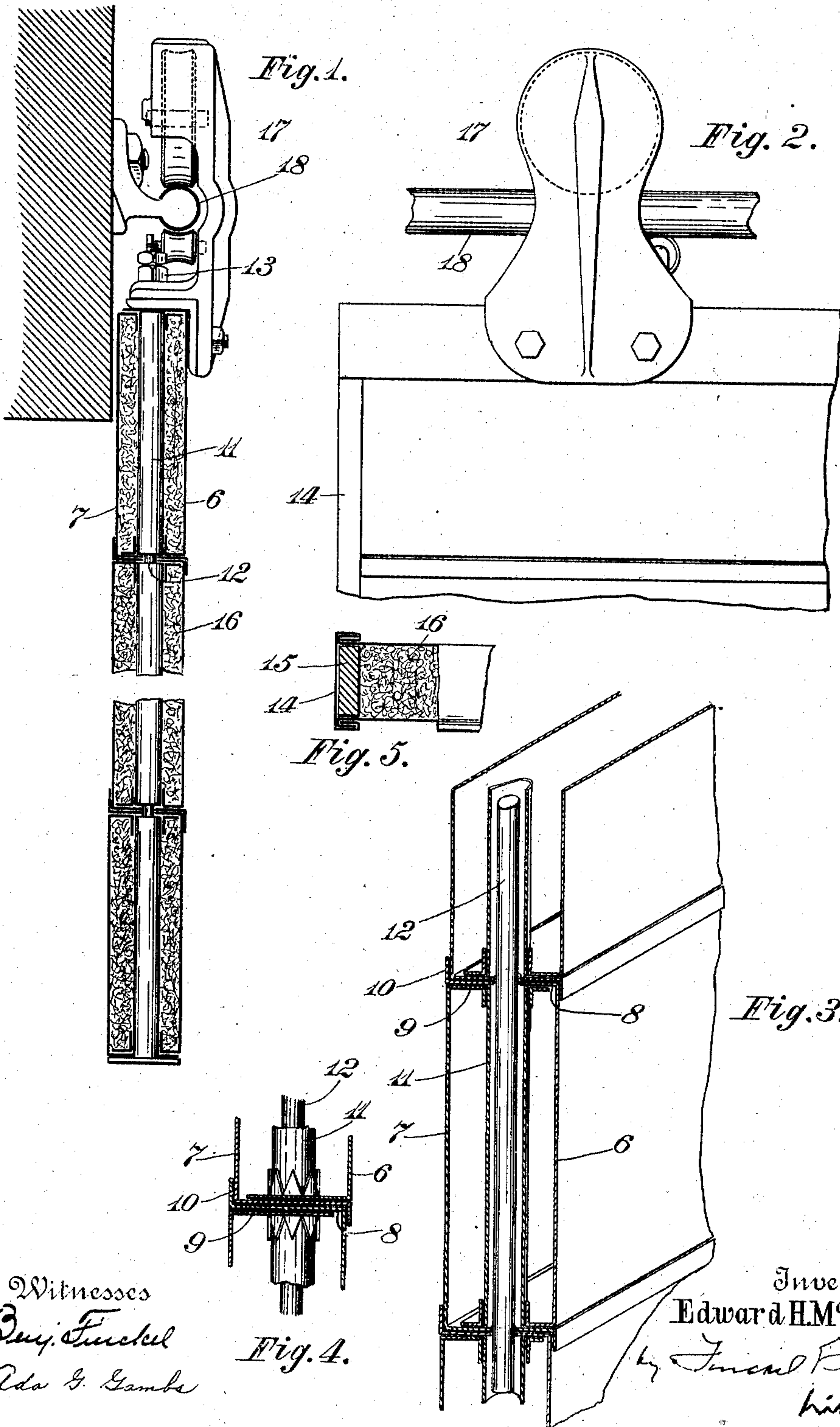
E. H. McCLOUD.

FIREPROOF DOOR OR SHUTTER.

APPLICATION FILED OCT. 21, 1908. RENEWED MAY 27, 1910.

967,543.

Patented Aug. 16, 1910.



Witnesses
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Fig. 4.

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UNITED STATES PATENT OFFICE.

EDWARD H. McCLOUD, OF COLUMBUS, OHIO.

FIREPROOF DOOR OR SHUTTER.

967,543.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Application filed October 21, 1908, Serial No. 458,791. Renewed May 27, 1910. Serial No. 563,786.

To all whom it may concern:

Be it known that I, EDWARD H. McCLOUD, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Fireproof Doors or Shutters, of which the following is a specification.

The object of this invention is to provide an improved fire resisting door or shutter of the filled type.

The invention is embodied in the construction herein shown and described and then particularly pointed out in the claims.

In the accompanying drawings—Figure 1 is a vertical section of the door with a portion broken out about midway its height. Fig. 2 is a view in elevation of a corner of the door. Fig. 3 is an isometric perspective projected from a vertical section exhibiting interior construction. Fig. 4 is a fragmentary vertical sectional view taken on a plane somewhat removed from the axis of the section-connecting devices. Fig. 5 is a plan view of the corner of the door or shutter at its end with a part of the metal removed.

The door is made up largely of sections or tubes of sheet metal of oblong form generally in cross section. The main body of the section comprises two strips 6 and 7 of sheet metal, each having its two longitudinal margins 8 and 9 bent to stand at right angles to the central portion of the strip and lap upon each other, as shown. One of the margins, the outer one 8 of each strip, is made somewhat wider and is further bent outward at its edge to form a tongue 10 that stands at right angles to the margin and fits against the outer face of the contiguous section, the sections being placed edge to edge to form the shutter or door body. This mode of connecting the sections is pursued throughout the length of the door or shutter and insures a closed joint between the sections and prevents the formation of gaps for the passage of flame when the structure is subjected to high heat. Both the margins are perforated. The perforations of the inner margin 9 are formed by making a number of equal radiating slits and bending up the teeth thus formed. The perforation in the margin 8 is of smaller diameter so that its edge projects beyond the edge of the perforation in the margin 9 and forms a seat for the end of the tube 11. The tube 11 extends from edge to edge of the section and

internally braces it. The tubes 11 are held from dislodgment and in line by the serrations and said tubes are so located in the several sections that when the sections are properly placed together, edge to edge, they aline and form a continuous passage. Through this passage is passed a long bolt or rod 12 that unites all the sections to form the body of the door or shutter and said bolt is secured by a nut 13 turned tightly down on its threaded end. The number of passages and bolts or rods 12 employed in a door or shutter will be varied according to the width of the door or shutter. At the upper and lower ends of the door or shutter the margins merely lap as shown, but said ends can be suitably reinforced by added strips if desired.

The vertical edges of the door or shutter as a unit, or the ends of the several sections separately can be closed by a strip 14 suitably secured thereto, as by seaming as shown in Fig. 5. The vertical edges may also, as shown, be strengthened or reinforced by inserting a metallic bar 15 extending the entire length of the structure, the aforesaid margins at the ends of the sections being removed to permit this.

It is desirable that the sections be filled with a suitable fire resisting material, or a poor conductor or radiator of heat as indicated at 16. This material 16 can be put in before both vertical edges of the structure are closed.

The door or shutter as thus constructed can be mounted for closing the opening of a building in any desired way. The instance of mounting shown consists of a hanger bracket 17 in which are mounted suitable rollers for suspending and guiding the door or shutter on a suitable track 18.

In applications for patent of the United States filed concurrently herewith Serial Numbers 458,792, 458,793 and 458,794 I have claimed other matters herein shown.

What I claim and desire to secure by Letters Patent is:

1. A fire resisting door or shutter comprised mainly of sections each consisting of two strips of sheet metal, each strip having its margins bent to lap at opposite edges of the section, and said margin provided with perforations, the perforations in the outer margins being of smaller diameter than those in the corresponding inner margins to form seats for a tube, combined with tubes

seated in said seats, and a rod passed through the tubes to unite the sections and means for securing the rod.

2. A fire resisting door or shutter comprised mainly of sections each consisting of two strips of sheet metal, each strip having its margin bent to lap and the outer of said margins having edge tongues bent to lie against the outer faces of the sections, said margins provided with perforations, combined with bracing tubes in the sections, and a rod passed through the tubes to unite the sections and means for securing the rod.

3. A fire resisting door or shutter comprised mainly of sections each consisting of two strips of sheet metal, each strip having its margins bent to lap, and the inner of said margins having a perforation surrounded by the metal of the strip bent up around it, and the outer of said margins having a perforation of smaller diameter than that of the inner margin to form a seat for a tube, combined with tubes seated on said seats, a rod passed through the tubes to unite the sections and means for securing the rod.

4. A fire resisting door or shutter comprised mainly of sections each consisting of two strips of sheet metal each strip bent to lap across the edge of the section and both said margins having perforations, the outer of said margins having their edges bent in opposite directions to lie against the faces of contiguous sections, said sections placed

edge to edge, bracing devices in said sections extending from edge to edge of the section, a rod passed through said perforations and parallel to the face of the sections to unite the sections, and means for securing the rod.

5. In a fire resisting door or shutter a section consisting of an inclosing shell of sheet metal having margins bent to lapping position across the edge of the section, said margins having perforations, the perforations of the outer margin being of smaller diameter than that of the inner margin to form a seat, combined with a bracing tube seated on said seat and a rod passed through the tube with means for securing the same to hold the margins rigidly in place.

6. In a fire resisting door or shutter a section consisting of an inclosing shell of sheet metal having margins bent to lapping position across the edge of the section, said margins having perforations the perforation of the outer margin being smaller in diameter than the inner margin to form a seat and the inner of said margins having the metal thereof bent up around the perforation therein, combined with a bracing tube seated in said seat, a rod passed through the tube and means for securing the same to hold the margins rigidly in place.

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Witnesses:

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