

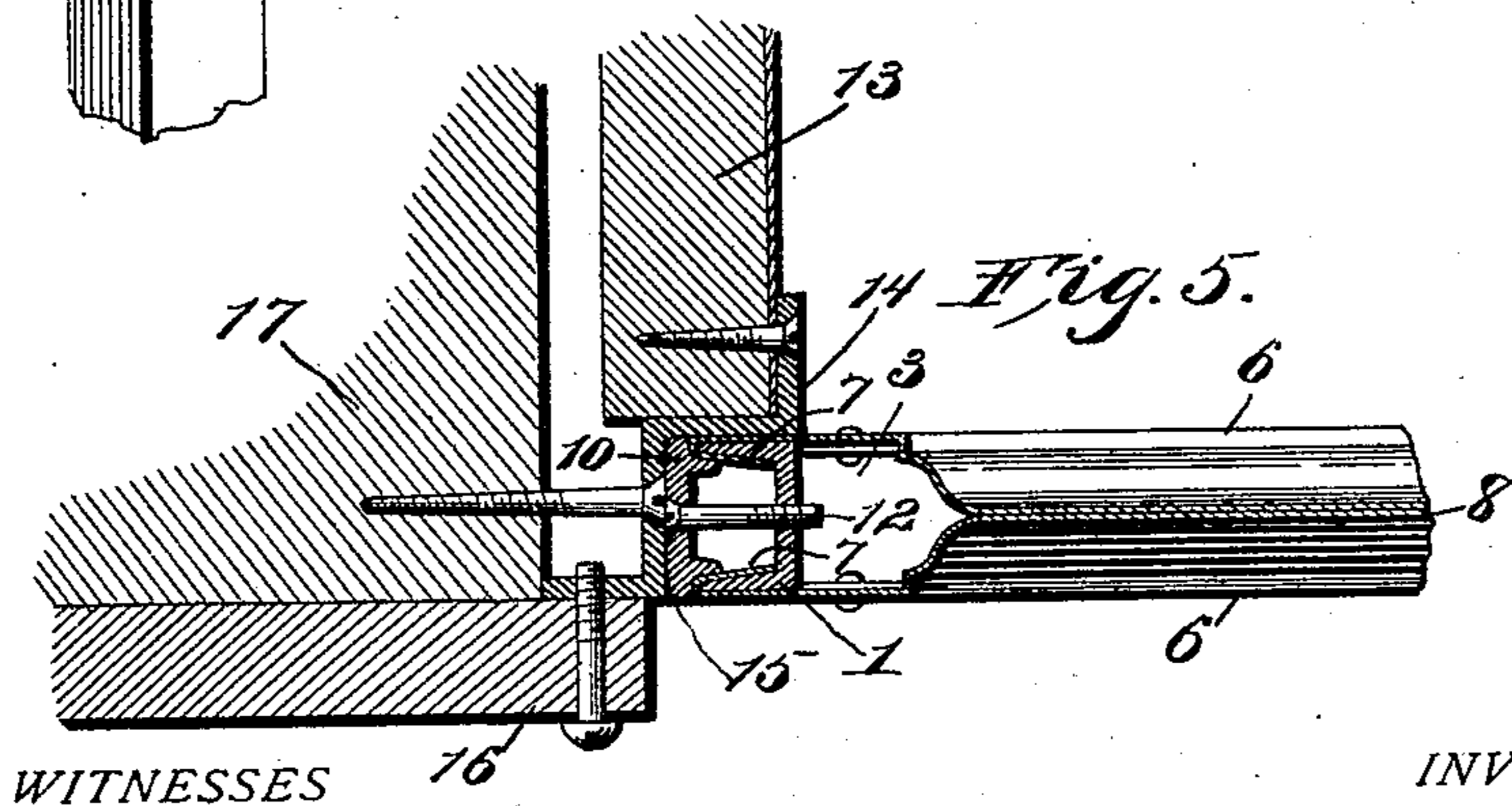
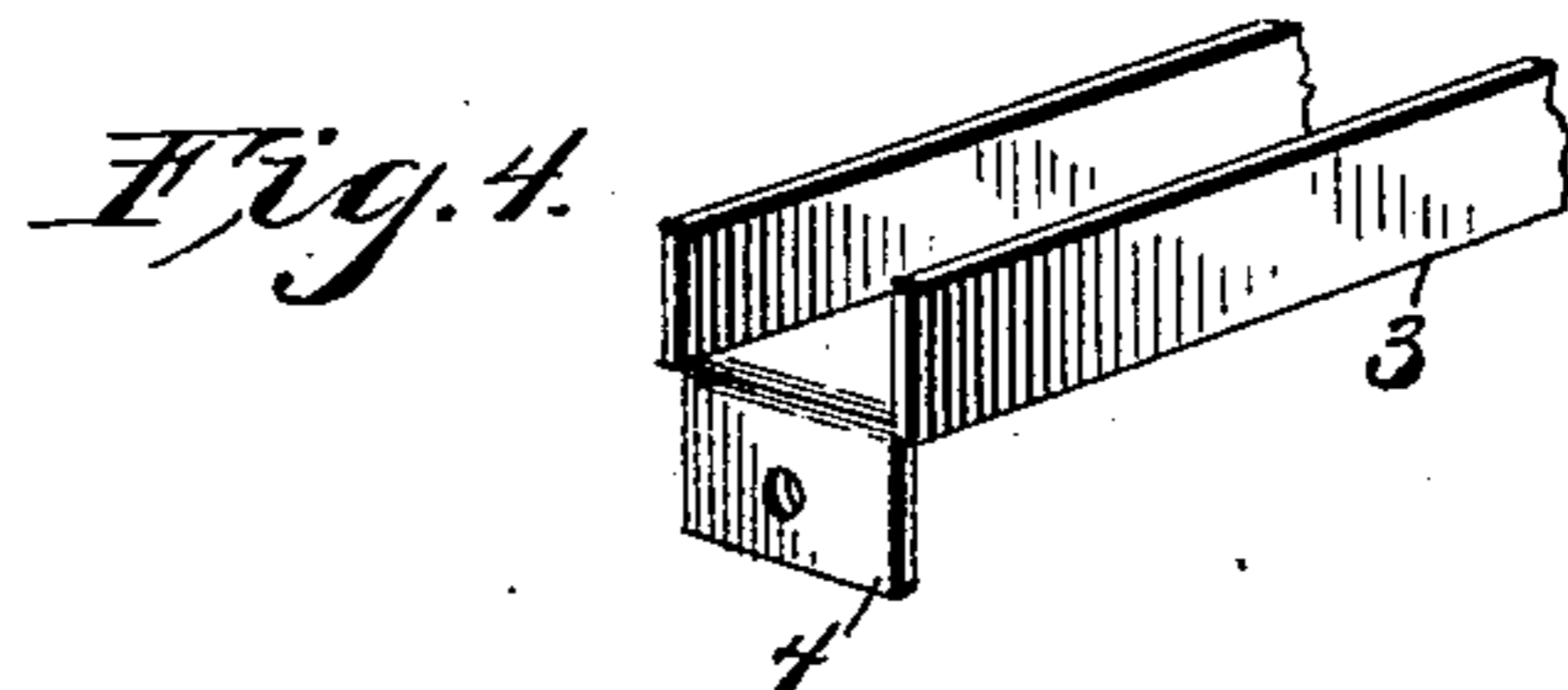
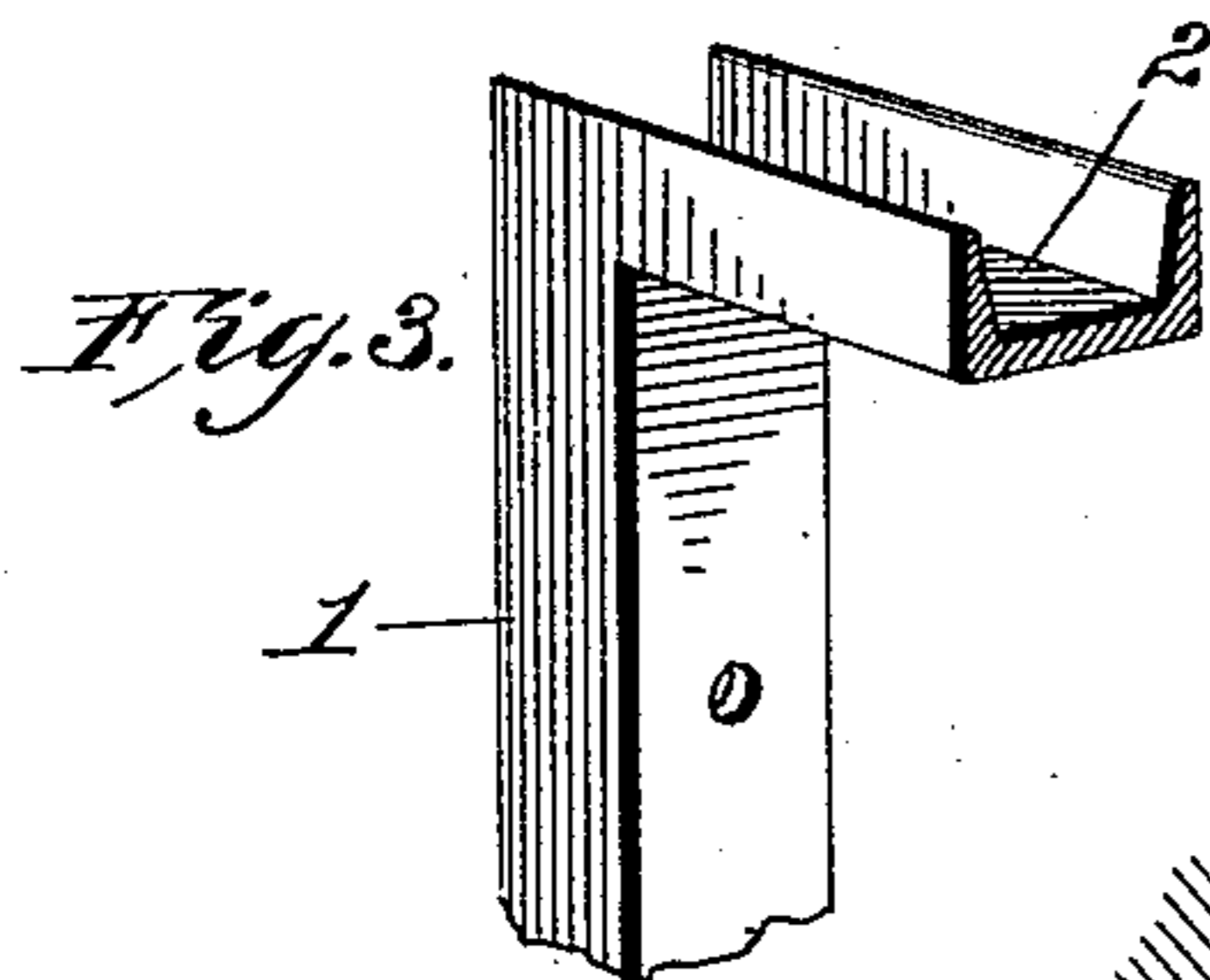
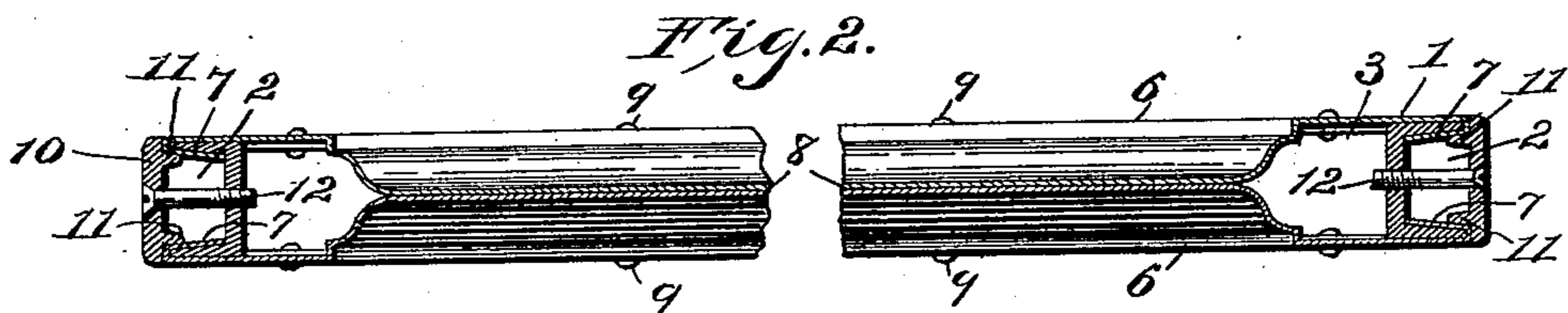
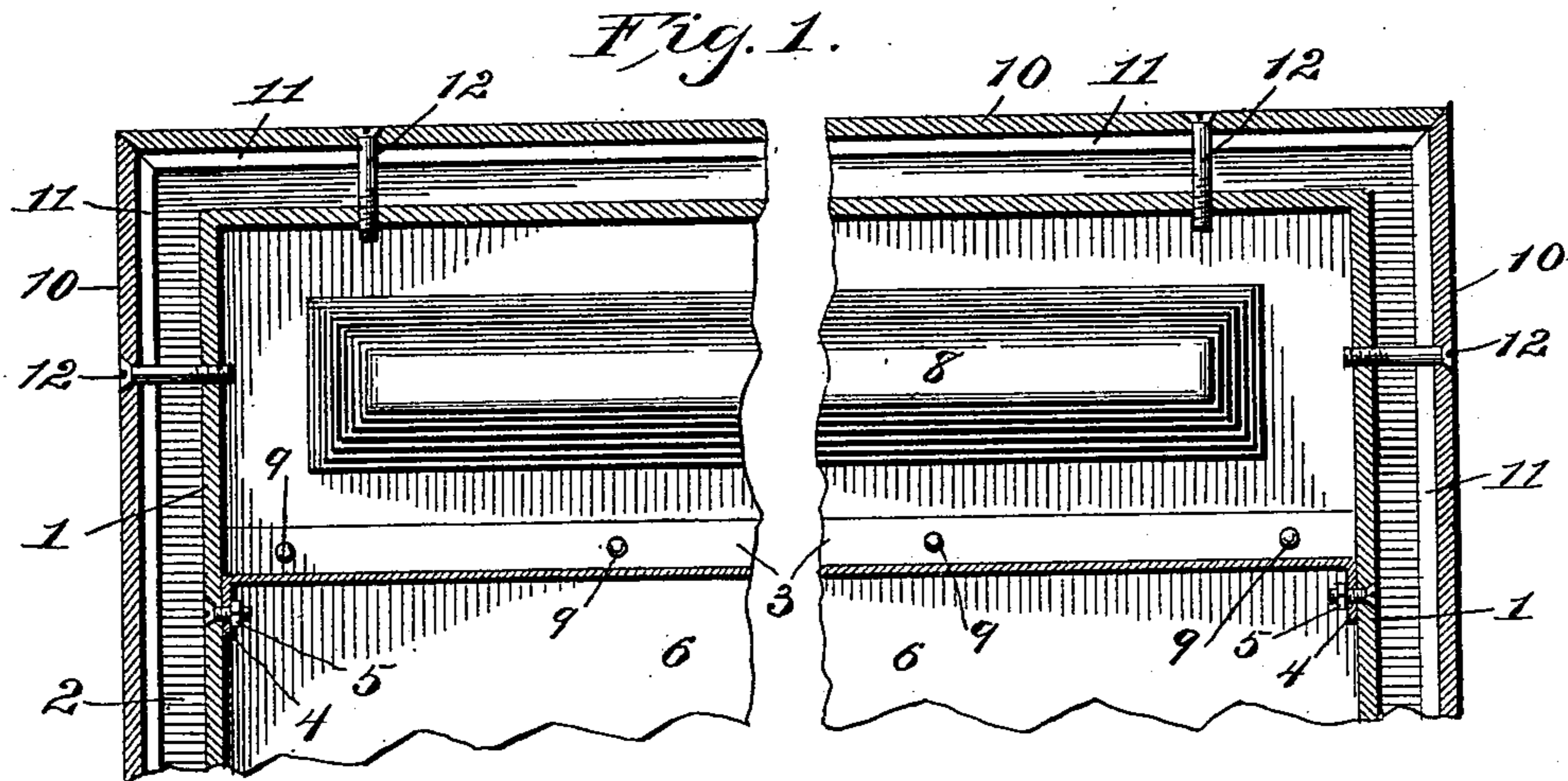
No. 640,811.

Patented Jan. 9, 1900.

J. S. REYNOLDS.
FIREPROOF DOOR.

(Application filed June 2, 1899.)

(No Model.)



WITNESSES

INVENTOR

Louis D. Heinichs.
Chas. S. Hoyer.

James S. Reynolds.
By Victor J. Evans.
Attorney

UNITED STATES PATENT OFFICE.

JAMES S. REYNOLDS, OF MINNEAPOLIS, MINNESOTA.

FIREPROOF DOOR.

SPECIFICATION forming part of Letters Patent No. 640,811, dated January 9, 1900.

Application filed June 2, 1899. Serial No. 719,104. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. REYNOLDS, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Fireproof Doors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to fireproof doors, and contemplates the provision of a door constructed entirely of metal and adapted for use in fireproof buildings or other places, and particularly as a means of closure in compartments having fireproof fittings.

The invention primarily consists of a door-frame having an outer channel-iron construction connected by intermediate cross channel-irons and supplied with opposite sheet-metal sheathings, which may be formed with embossed or indented panels and connected to the surrounding channel-iron, the sheet-metal sheathings being attached to the cross channel-irons intermediate of the panels and the outer or surrounding channel-iron closed by a plate extending entirely thereover and secured in fixed relation thereto.

The invention further consists of the details of construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a section through a part of the door, the latter being broken away and embodying the invention. Fig. 2 is a horizontal section of the door as shown in Fig. 1. Fig. 3 is a detail perspective view of a portion of the surrounding channel-iron. Fig. 4 is a similar view of a portion of one of the cross channel-irons. Fig. 5 is a horizontal section showing a metal-covered extension for wide jambs and a rolled-iron jamb adapted to be employed with the improved form of door.

Like numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a surrounding channel-iron, which forms the main support

of the door-frame, and the flanges of said iron extend outwardly, thereby producing a surrounding recess 2. This surrounding channel-iron may be of any size and formed in any preferred or selected manner. The side portions of the channel-iron 1 are connected at regular intervals by cross channel-irons 3 of lighter construction than the said iron 1. The bases of the ends of the cross channel-irons are bent downwardly at an angle to form securing-flanges 4, and these are attached by bolts or rivets 5 to the surrounding channel-iron 1. On opposite sides of the skeleton frame as thus formed sheet-metal sheathings 6 are applied and have the edges bent over the flanges of the surrounding iron 1, as at 7 and more clearly illustrated in Fig. 2. By this means the sheathings are held in close engagement with the door-frame and at regular intervals are formed with panels 8, which are preferably located between the cross-irons 3. Between the panels 8 the sheathings 6 are riveted or otherwise fastened to the cross-irons 3, as at 9, to prevent buckling or vibration of said sheathings. The edges of the door, which stand open through the formation of the recess 2 of the surrounding channel-iron 1 are finished by a surrounding band 10, of iron, steel, or other metal, having a pair of spaced flanges 11 on the inner side and closely fitting against the outer portions of the flanges of the said iron 1. The flanges 11 on the band 10 closely press against the bent parts of the sheathings 6 surrounding said flanges of the iron 1, and said band is secured by machine-screws or analogous devices 12, having their heads countersunk in said band, and the screw-threaded ends engage the inner part of the iron 1. To receive these machine-screws or other devices 12, the iron 1 is formed with suitable screw-openings at regular intervals, and in forming the parts as thus far described they may at times be made in sections and jointed at the corners or from suitable patterns be constructed homogeneously or in one piece.

Of course it will be understood that the several irons and the finishing-band will be in separate parts, as well as the sheathings, and in the ornamentation of the latter any desired pattern may be used. Furthermore, the surrounding channel-iron will be of such

transverse width as to form the skeleton frame when the sheathings are applied of the thickness desired and also of a weight necessary to give proper stability to the door. The sheathings 6 may be formed of iron, steel, galvanized iron, or copper, and it is preferred that a single sheet be employed to cover opposite sides of the door.

If desired, sheets of asbestos paper may be interposed between the sheathings and the skeleton frame to deaden the sound or dampen the resonance of a door constructed entirely of metal, and, as will be readily understood, particularly in the hollow form set forth. The door when completed may also be supplied with a coating of paint or other material to give it a unique and pleasant appearance or to correspond with adjacent trimmings and can be made to imitate wood by surface ornamentation.

It will be observed that in the construction of the door no wood is used and the several parts are of fireproof material.

In Fig. 5 a means for hanging the improved door in partitions is shown, and to the frame a metal-covered extension 13 is secured by means of a rolled or wrought iron attachment 14, having a rabbet 15 and secured to the casing 16, as well as to the adjacent portion 17 of the partition. The attachment provides a narrow jamb for the door, which is constructed in all respects as heretofore specified, and by means of this attachment a wider jamb than could be obtained in the partition is furnished for the operative reception of the door.

Changes in the proportions, dimensions, and minor details of construction might be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. A fireproof door constructed entirely of metal and comprising a surrounding channel-iron, cross channel-irons connected to said surrounding channel-iron, metallic sheathings applied to opposite sides of the frame and connected to the cross channel-irons and the surrounding iron, and a finishing metallic band fitted in the surrounding iron.

2. A fireproof door constructed entirely of metal, comprising a frame having a surrounding channel-iron with the flanges outermost, cross channel-irons connected to said surrounding iron, metallic sheathings secured to opposite sides of the door and provided with panels, the panels being located in the spaces between the cross channel-irons and connected to the latter and also bent around the flanges of the surrounding iron, and a metallic finishing-band having inner flanges fitted in the surrounding iron and secured thereto.

3. A fireproof door constructed entirely of metal and comprising a surrounding channel-iron, metallic sheathings connected to opposite sides of the said iron and bent over the flanges of the latter, and a finishing-band secured in the surrounding iron over the bent portions of the sheathings.

4. A fireproof door consisting of a frame made of metal and sheet-metal sheathings secured to opposite sides thereof with their edges bent over the flanges of the surrounding iron.

5. A fireproof door comprising a metallic frame including cross-irons, and sheet-metal sheathings secured to opposite sides of the frame with their edges bent around the surrounding channel-iron, the said sheathings being also attached to the cross-irons.

6. A fireproof door constructed of metal and comprising a framework having surrounding channel-irons and connected by cross channel-irons, and sheet-metal sheathings secured to the opposite sides of the said irons and having the edges bent over and held by the flanges of the surrounding iron and also attached to portions of the cross-irons.

7. A fireproof door having a frame comprising a surrounding channel-iron, cross channel-irons connected to interior portions of the surrounding iron and provided with depending flanges at opposite ends, and metallic sheathings applied to opposite sides of the said frame.

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

JAMES S. REYNOLDS.

Witnesses:

C. O. ALEXIUS OLSON,
JULIA M. REYNOLDS.