

No. 877,415.

PATENTED JAN. 21, 1908.

W. S. ELY.
METAL COVERED DOOR.
APPLICATION FILED MAY 19, 1905.

Fig. 1

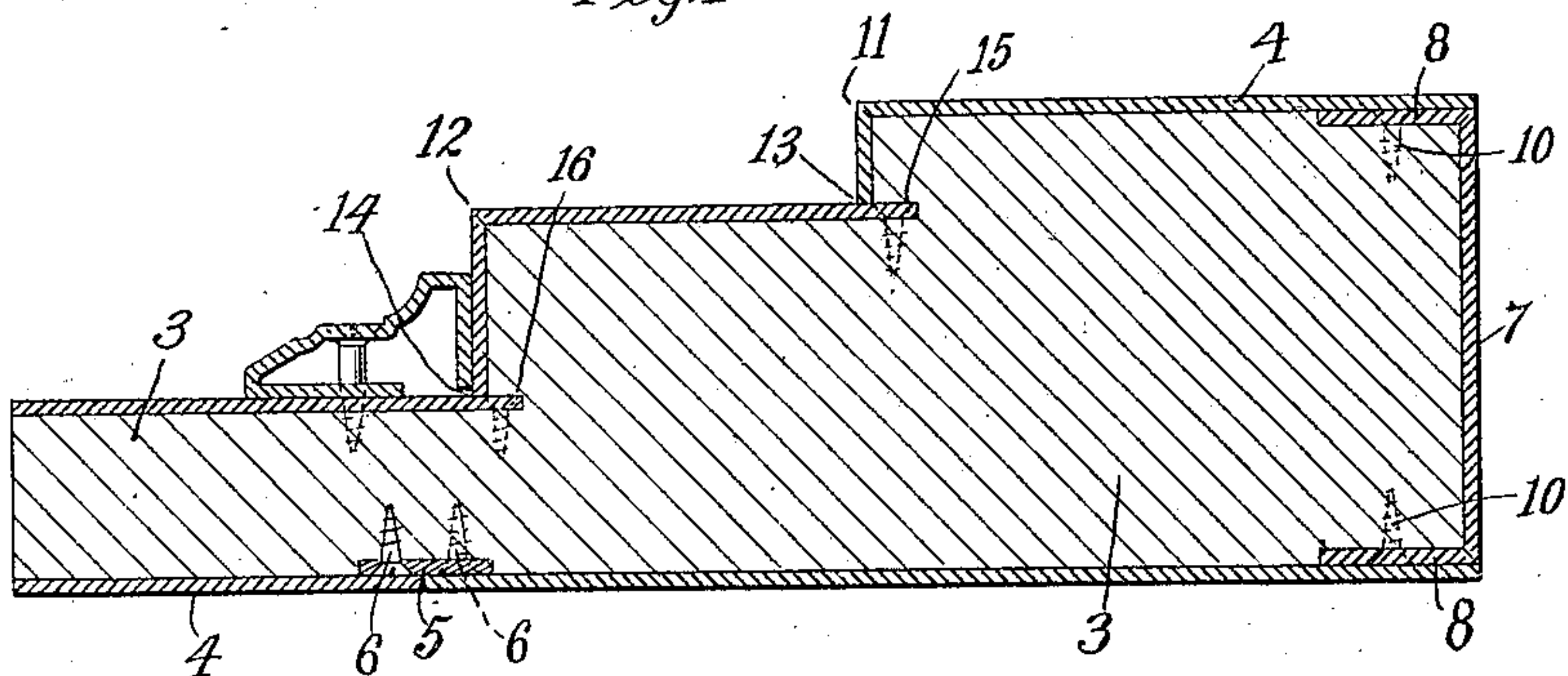


Fig. 2

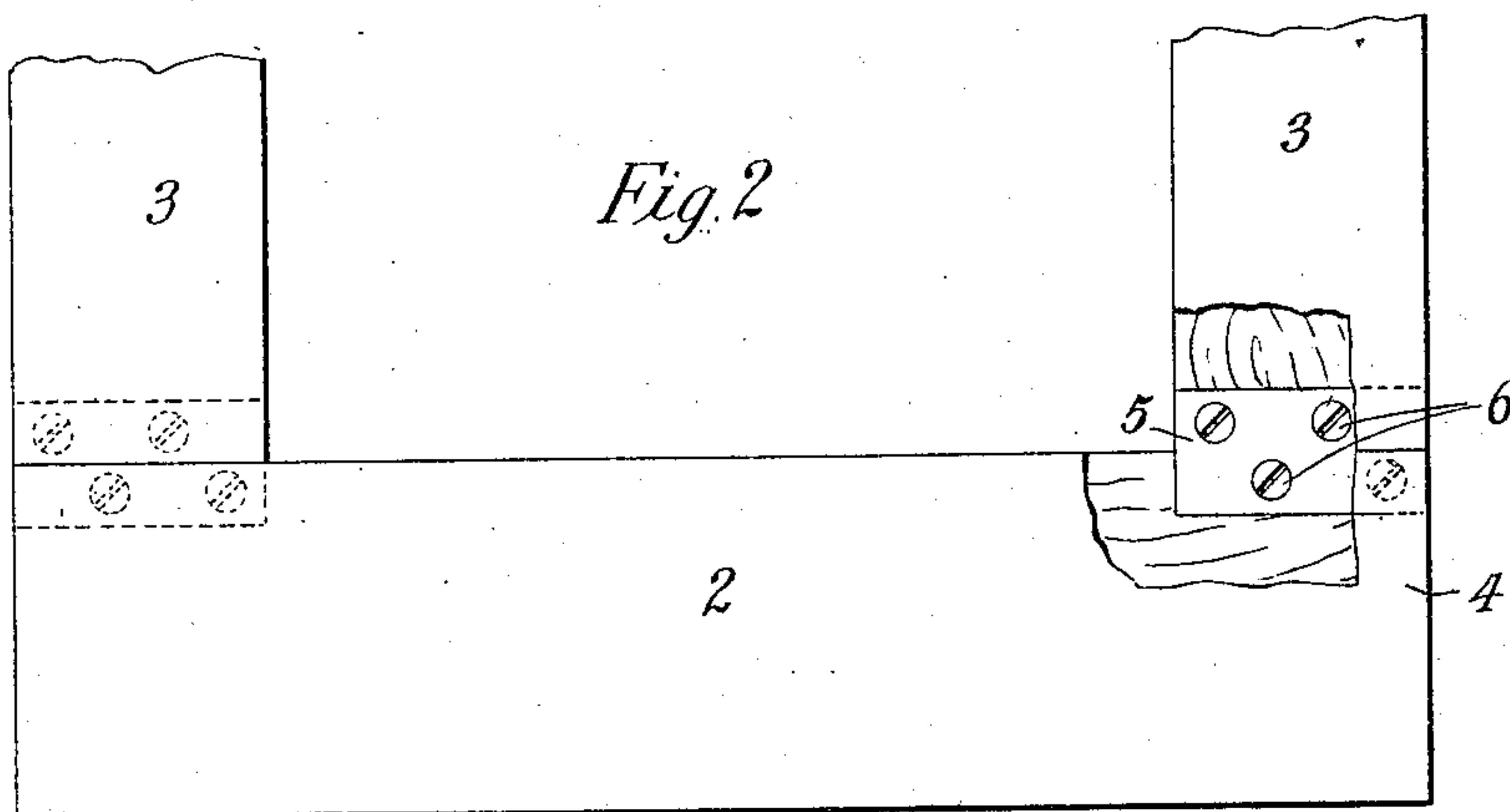


Fig. 3

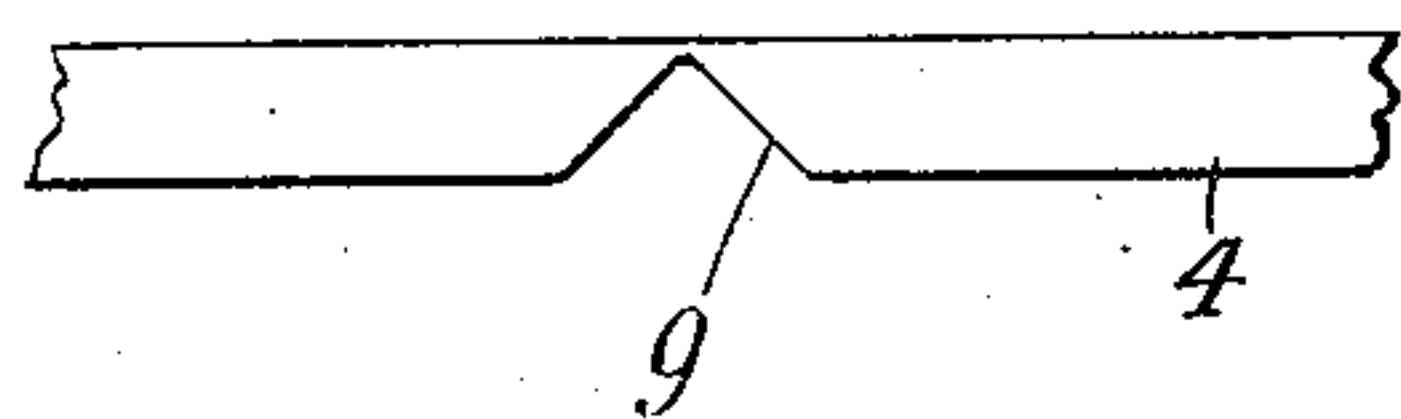
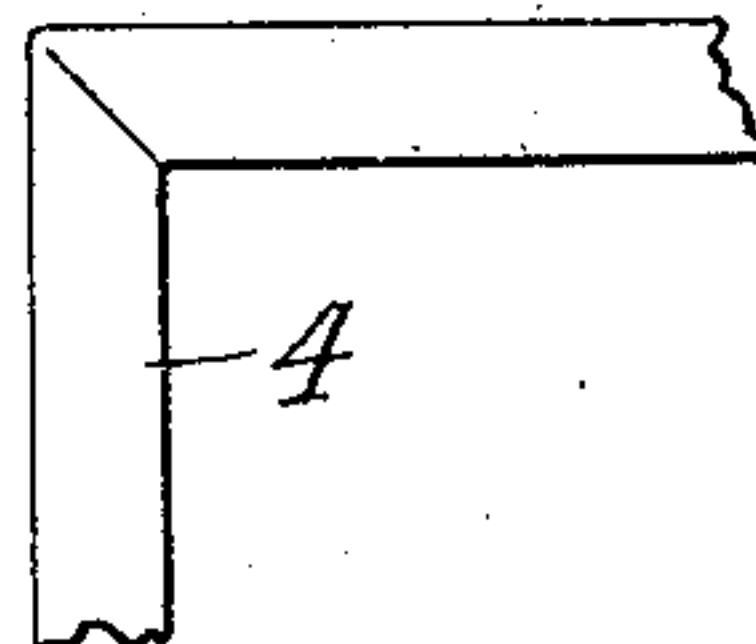


Fig. 4



Witnesses
Raphaël Ketter
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Walter S. Ely Inventor
By his Attorney J. S. Munn

UNITED STATES PATENT OFFICE.

WALTER S. ELY, OF NEW YORK, N. Y., ASSIGNOR TO VAN KANNEL REVOLVING DOOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

METAL-COVERED DOOR.

No. 877,415.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed May 19, 1905. Serial No. 261,129.

To all whom it may concern:

Be it known that I, WALTER S. ELY, a citizen of the United States, residing in the borough of the Bronx, city, county, and State of New York, have invented a new and useful Improvement in Metal-Covered Doors, of which the following is a specification.

My invention relates to improvements in sheet metal covered doors and similar fittings for buildings, and consists in the features of construction hereinafter described and claimed.

The object of my invention is to produce a door or similar structure with a metal veneer which shall have the appearance, form and impermeability to moisture of a solid structure.

To this end, my invention consists in securing on the surfaces of the door plane surfaced sheet metal strips or sections, the abutting edges of the sections being firmly united and hermetically sealed by securing them to an underlying plate recessed into the wood, and by soldering the contacting surfaces together. The angles are also formed with plane-surfaced strips, sections or members, and the use of folded seams throughout the entire construction is thus avoided. Ornamental finishings, such as moldings on inner angles, are then in any suitable way superposed upon and secured to the underlying sheet metal attached to the core of wood, as above described. By this means the metal veneer is firmly attached to the wooden core and sealed against the admission of moisture, and has all the appearance and durability of a solid metal structure, with less weight and cost of construction.

In the drawings forming part of this specification, Figure 1 is a detail cross-section of a door stile, covered with sheet metal and illustrating my improvement; Fig. 2 is a plan view of the bottom rail and stiles of a door; and Figs. 3 and 4 are details showing the manner in which the metal is bent or formed over an angle of a wood core.

In the drawings, 2 represents the rail, and 3 stiles of the door. In covering the same, suitable sheet metal sections 4 of copper or other material are employed. The abutting edges of these sections are secured by socketing a piece 5 in the wood underneath, it being held in place by screws 6, the sections 4 being secured to the piece 5 by solder, which also unites the abutting edges of the sections.

In fitting the sections around the edges of the door, I prefer to form a U-shaped piece 5, the side members 8 being formed by sawing or scoring a notch 9 (see Fig. 3) along the line upon which the piece is to be bent. The piece is then bent to right angles and assumes the form shown in Fig. 4, and of proper dimensions to fit accurately upon the edge of the door, as shown in Fig. 1, the sides or flanges 8 being socketed into the wood and secured thereto as by screws 10. The superposed sections 4 are then secured upon the flanges 8 by means of solder. It will be noticed that the socket for the piece 5 is recessed into the wood a depth equal to the thickness of such piece, so that the surface of the piece lies flush with the surface of the wood, and the same is true of the recess or socket formed for the members 8, thus forming the surfaces of such members flush with the adjoining surface of the core 3. This feature of my construction is essential, to permit the surface sections of metal to rest equally upon the surface of the core, and upon the members sunk into the same to which they are attached by solder. Where there are inner angles as 13 and 14 with a corner adjacent thereto, as at 11 or 12, the metal is merely bent around such corner, as shown at 11 or 12.

It will be noticed that all of the joints are made with special reference to the application of solder by means of a heated soldering iron, and that only one layer of the metal is superposed upon another where the joint is to be soldered, so that the heat of the iron may be readily transmitted to the contiguous surfaces of the layers and sweat or run the solder thoroughly between the same. To form an overlapping joint to be soldered, I find it preferable to make plane surfaces, the piece 5 or the side member 8 being recessed into the wooden core so as to be flush with the plane surface of the same, and the covering-section 4 then lying flat upon the same so as to be readily affected by the heat of the soldering iron, and firmly secured by the solder. At inner angles, such as 13 or 14, the joints are formed with plane surfaces in contact with one another to receive the solder, as such surfaces when in contact leave no interstices, and thus hold the solder more securely.

To prevent the sheet-metal from springing away from the inner angles of the wooden core, a channel 15 is extended into the core

from one side of the angle, and the edge of one section is extended into the channel 15 or 16, which locks it in place when secured to the contiguous section.

5 My invention is distinguished from others by the hermetic sealing of the sheet-metal covering, and the provision of joints especially adapted to the use of solder. If the edges of the covering sections were abutted
10 together without the underlying plate 5 or 8, the joint would have very much less strength when soldered, as the surfaces would have so very small an area. At the outer angles of the door and the joints upon the flat surface,
15 it is therefore a great advantage to have an underlying piece sunk flush with the surface of the core, and furnishing a much larger surface than the thickness of the sheet-metal, to give strength to the joint.

20 I am aware that it is not new to form a recess in the surface of a wooden core into which a folded seam of a sheet-metal covering can be pressed; but my invention employs no folded seams, and the recess which I employ is only adapted to receive one thickness
25 of the sheet-metal, so that the member sunk in such recess may be flush with the adjacent surface of the core. In my invention, such recess is filled flush with the surface of the
30 core, but the outer covering is applied over such surface and the member sunk in the recess is the means of securing such outer covering in place, which is not the case with any seamed construction.

35 I claim:

1. A metal surfaced structure of the class described, having a wooden core 3, a series of surface recesses upon the core with sheet-metal sections secured in the same flush with
40 the surface of the core, and a series of plane surfaced sheet-metal sections applied to the surface of the core and having their joints overlying the said recessed sections and soldered thereto.

45 2. A metal surfaced structure of the class described, having a wooden core 3, a series of surface recesses upon the core with sheet-metal sections secured in the same flush with the surface of the core, and a series of plane
50 surfaced sheet-metal sections entirely cover-

ing the surface of the core and having their joints overlying the recessed sections and soldered thereto, forming a hermetically sealed inclosure for the core.

3. A metal surfaced structure of the class 55 described, having a wooden core 3, a covering formed of a series of plane surfaced sheet-metal sections with their edges abutted, the core having recesses beneath the abutting edges of the surface sections with a plate 5
60 fitted in each of such recesses flush with the surface of the core and secured therein by suitable fastenings, and the adjacent edges of the sections being soldered to one another and to the surface of the plate 5, whereby the
65 plate 5 forms the means of securing the joint to the core, the whole forming a hermetically sealed covering for the core.

4. A metal surfaced structure of the class 70 described, having a wooden core 3, with exterior angles at the corners of its edge, recesses upon the sides of such corners, a covering section 7 applied to the core at the edge of the same and provided with the
75 flanges or side members 8 bent at right angles to the section 7 and fitted to the recesses flush with the sides of the core, and secured therein as by screws 10, and the plane surfaced sheet-metal sections 4 applied to such
80 sides and overlapping the members 8 and soldered thereto, thus forming hermetically sealed joints at the edges of the door.

5. A sheet-metal covered structure of the class described, having an inner angle of the covering formed with a core having a channel
85 extended inward from one side of the angle, with one covering-section extended to such side of the angle and into such channel, and another covering-section fitted to the other side of such angle and soldered to the first
90 section, the tongue within the channel holding both sections to the inner angle of the core, substantially as herein set forth.

In witness whereof, I have hereunto set my hand at the city of New York this 3rd
95 day of May, 1905.

WALTER S. ELY.

Witnesses:

T. VAN KANNEL,

JAMES B. F. MAHER.