No. 896,513. PATENTED AUG. 18, 1908.

A. H. BOBB.

METALLIC DOOR.

APPLICATION FILED JUNE 22, 1907.

2 SHEETS—SHEET 1.

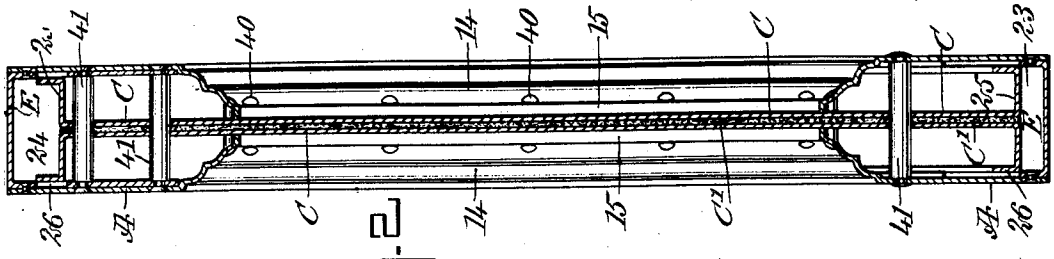


Fig. 2

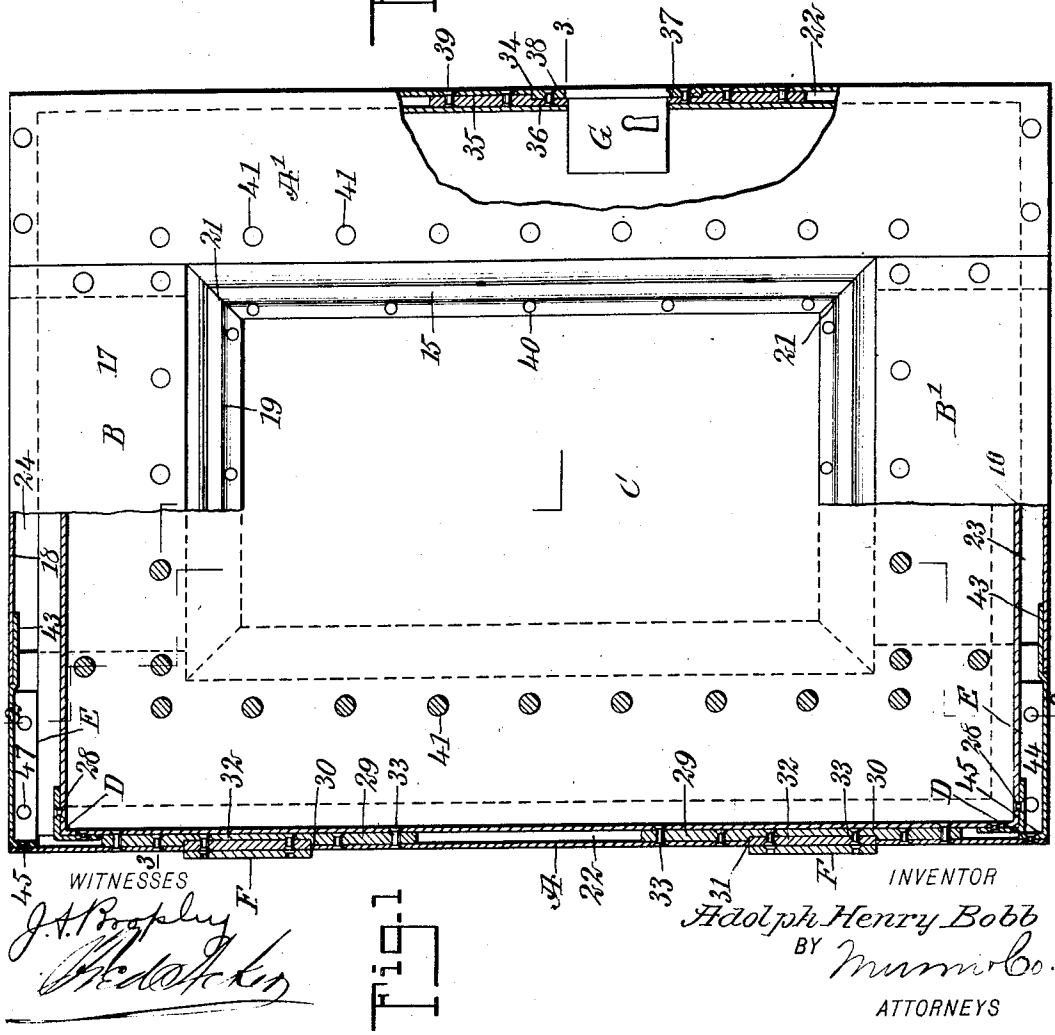


Fig. 1

WITNESSES

J. A. Brophy

INVENTOR

Adolph Henry Bobb

BY Munn & Co.

ATTORNEYS

No. 896,513. PATENTED AUG. 18, 1908.

A. H. BOBB.

METALLIC DOOR.

APPLICATION FILED JUNE 22, 1907.

2 SHEETS—SHEET 2.

Fig. 3

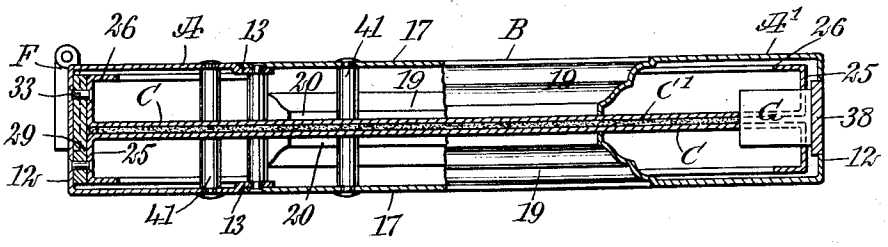
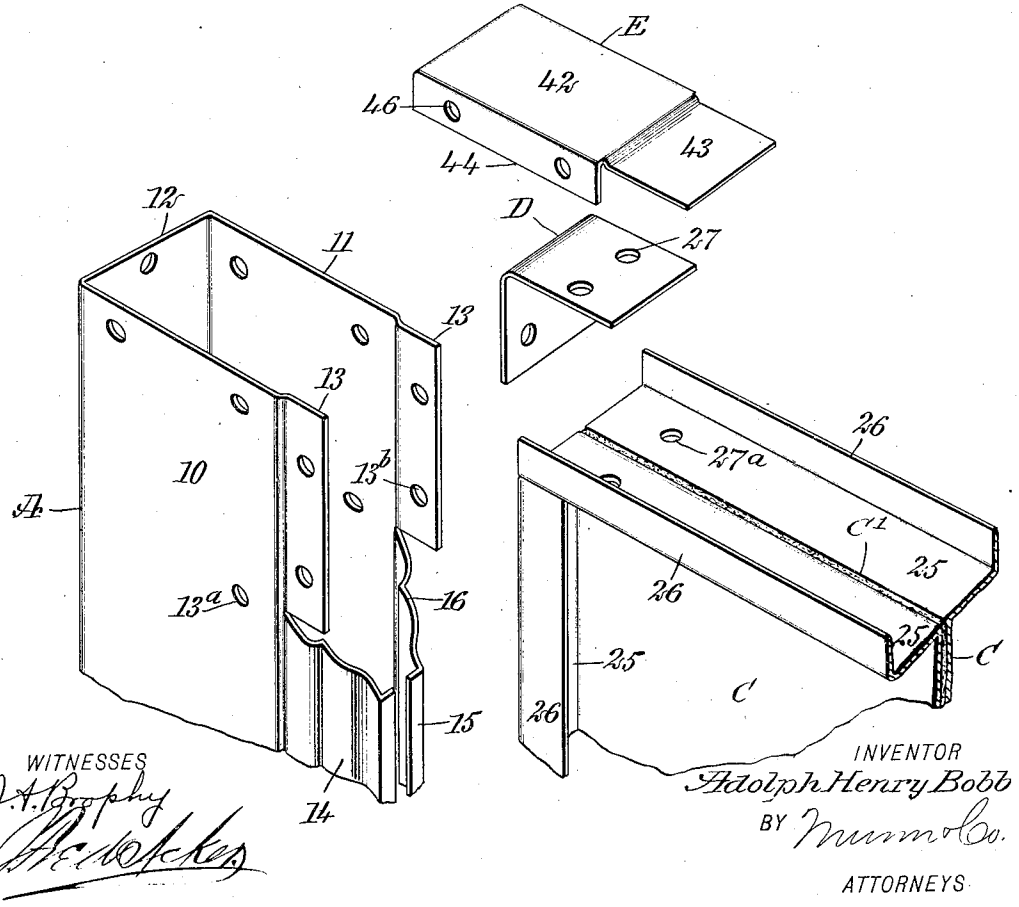


Fig. 4



WITNESSES

J. A. Brophy

INVENTOR

Adolph Henry Bobb

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

ADOLPH HENRY BOBB, OF NEW YORK, N. Y.

METALLIC DOOR.

No. 896,513. Specification of Letters Patent. Patented Aug. 18, 1908.

Application filed June 22, 1907. Serial No. 380,250.

To all whom it may concern:

Be it known that I, ADOLPH HENRY BOBB, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and useful Improvement in Metallic Doors, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a very simple and durable construction of metallic doors, one wherein comparatively few parts are employed, which parts are capable of being quickly and conveniently assembled, and wherein also the metal composing the door can expand and contract to a proper extent.

It is a further purpose of the invention to so construct the pieces or sections forming the door that they can be readily and strongly bolted together, and so that hinges and a mortise lock, if required, can be conveniently applied.

The invention consists in the novel construction and combination of the several parts as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional front elevation of the improved door; Fig. 2 is a vertical section taken practically on the line 2—2 of Fig. 1; Fig. 3 is a transverse section taken substantially on the line 3—3 of Fig. 1, and Fig. 4 illustrates in detail various portions of the door.

The frame of the door consists of two side or longitudinal stiles A and A′, and an upper and a lower stile, B and B′, which connect with the side or longitudinal stiles, and therefore may be termed also transverse stiles. The stiles A and A′ are of the same construction; each is hollow and is open at the top and at the bottom, and at the inner longitudinal edge portion. The construction of the side stile is best shown in Fig. 4, wherein the said stile is shown as comprising opposing longitudinal cheek pieces 10 and 11, that is to say, a front and a rear member, and a connecting outer edge member 12. Each member or cheek piece 10 and 11 at each end of its inner longitudinal edge portion is provided with an inwardly extending wing 13, which wings are parallel and are of a length corresponding to the width of the transverse stiles B and B′, and furthermore the wings 13 are bent inward on a straight line where they connect with the cheek pieces 10 and 11, but the wings 13 are parallel with the said cheek pieces 10 and 11, as is shown in Figs. 3 and 4. These wings 13 are provided with any desired number of apertures 13^b and the main members of the side stiles A and A′ are also provided with apertures designated as 13^a.

In the further construction of the side stiles A and A′, opposing longitudinal flanges 14 are formed integral with the inner edge portions of the cheek members 10 and 11, and these flanges 14 are preferably given the form of molding, as is illustrated, and each molding or flange 14 is provided at its inner edge with a longitudinal auxiliary flange 15 and opposing auxiliary flanges 15 extend toward each other yet a space intervenes, and furthermore, each molding flange 14 for the side stile is more or less inclined at its upper and lower edges, as is shown at 16 in the drawings, so as to make a miter connection with corresponding portions of the upper and the lower stiles, to be hereinafter particularly referred to. The upper and the lower stiles B and B′ are of the same construction, each being hollow and open at both of its ends and at its longitudinal inner edge portion. Each of said upper and lower stiles B and B′ comprises opposing cheek members 17 and a connecting outer edge member 18, and flanges 19 at the inner edges of the cheek members or sections 17, and these flanges 19 are also preferably given the form of molding and are provided with auxiliary spaced flanges 20 that correspond to the flanges 15 of the side stiles hereinbefore referred to. The ends of the molding flanges 19 of the upper and lower stiles are beveled to meet the portions 16 of the side stiles, as is illustrated at 21 in Fig. 1.

In connection with a frame constructed as has been described, two opposing panels C are employed, and between these panels an asbestos sheet or filling C′ is located. The panels C enter the side stiles A and A′ and top and bottom stiles B and B′ at the inner open edges of the said stiles, and after the panels C have been so entered the auxiliary flanges 15 of the side stiles and the corresponding flanges 20 of the top and bottom stiles engage with the outer faces of the said panels. The panels C are of such dimensions that when properly placed in the stiles of the frame they provide for spaces 22 between

their longitudinal edges and the connecting members 12 of said side stiles, and a space or chamber 23 is made to intervene between the lower edges of the said panels and the connecting member 18 of the bottom stile B′ and by preference a larger space or chamber 24 is provided between the upper edges of the said panels C and the upper edge of the frame in order that rollers, or their equivalents, may be placed in such chamber 24 when the door is to be a sliding or a rolling door. Each of the panels C is provided with a marginal flange 25, the flanges of the two panels extending in opposite directions, as is shown in Figs. 2 and 3, and while the body of the panels occupies a central position relatively to the distance between the cheek pieces of the stiles, their marginal flanges 25 engage with the inner faces of the said cheek pieces of the stiles, and each flange 25 for a panel is at right angles to the body of the panels and is provided in its turn with an auxiliary flange 26 at right angles to a main flange 25. The auxiliary flanges 26 are turned inward at the side and bottom portions of the panels, but at the upper portion of said panel, or where the larger chamber 24 is located, these auxiliary flanges 26 extend outwardly, as is shown best in Fig. 2.

Each corner of the connected panels C is protected by a corner iron D provided with apertures 27 adapted to register with apertures 27ª produced in the main flanges 25 of the said panels, which registering apertures are adapted to receive rivets or hooks 28, as is shown at the left in Fig. 1. At each side of the center of the connecting member 12 of what may be termed the swinging stile A, and the opposing faces of the flanges 25 of the panels, blocks or strips 29 are located in the space or chamber 22, being securely fastened therein by bolts 33. Each block or strip 29 is provided with a recess 31 in its outer face, and a corresponding opening 30 is made in the connecting member 12 of the stile A; the said openings 30 and the recesses 32 receive a leaf of a hinge F, the said leaves being usually secured to the said strips or blocks by means of the same bolts 33 employed to hold the strips or blocks in position. A single strip 35 of metal, or other approved material, is located at the central portion of the space 22 between the connecting member 12 of the stile A′ and the opposing flanges 25 of the panels C, as is best shown in Fig. 1, and in the outer face of the strip or block 35, at or about its central portion, a depression 34 is made to receive the face plate 38 of a mortise lock G, which lock is made to extend into the stile A′ through a suitable opening produced in the connecting member 12 of said stile, and in the strip or block 35, and in the flanges 25 of the panel C.

In assembling the stiles of the frame, the upper and lower stiles B and B′ are slipped over the wings 13 of the side stiles, as is shown in Figs. 1, 2, and 3, then the molding flanges 14 of all of the stiles are secured to the panels C by means of bolts 40, rivets, or their equivalents, while longer bolts or rivets 41 are passed through the various apertures 13ª in the cheek pieces of the stiles and also through the panels C, as is best shown in Figs. 2 and 3. The open ends of the side stiles A and A′ are closed by means of a closing strip E, shown in detail in Fig. 4; each of said closing strips E consists of a body member 42 provided at one end with a lip 43, and with side flanges 44, and a flange 45 at that end of the body opposite the one at which the lip is formed, and the flanges 44 and 45 are provided with apertures 46. In applying the closing strips E, the lips 43 of the said strips which are depressed to a certain extent are passed into the end portions of the top and bottom stiles B and B′, engaging with the inner faces of their connecting members 18, as is shown in Fig. 1, and the flanges 44 and 45 of the connecting strips are made to enter the space occurring between the connecting members of the stiles and the flanges of the panels C, and then bolts or rivets 47 are passed through the apertures 46 in the closing strips and through corresponding apertures in the stiles.

A door constructed as has been described, is exceedingly strong and yet can be made of very light material and will be also light in weight. The parts of the door are exceedingly few in number and it is evident they can be conveniently and expeditiously assembled or disassembled, and that the various parts may be stamped out, rendering the door exceedingly economic.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,—

1. In metallic doors, hollow upper and lower and side stiles, interlocking connections between the stiles, panels extending within the stiles, having flanges at their marginal portions that engage with the inner faces of the stiles, and means for securing the stiles to the panels.

2. In metallic doors, hollow upper and lower, and side stiles, having open inner longitudinal edges and closely approaching flanges at said edges, interlocking connections between the stiles, panels that extend into the stiles, engaging the flanges thereof, oppositely extending flanges at the marginal portions of the panels, and means for securing the panels to the stiles.

3. In metallic doors, the combination with side stiles open at their inner longitudinal edges and provided at said edges with closely approaching flanges, wings located at the end portions of the inner longitudinal edges of the said side stiles, and top and bottom stiles open at their inner longitudinal edges and

provided at said edges with closely approaching flanges, the end portions of the top and bottom stiles receiving and being secured to the wings of the side stiles, the inner flanges of all the stiles being brought in engagement with each other at their end portions, of a panel that enters all of the stiles at their inner open longitudinal portions, a marginal flange extending in opposite directions from the said panel, which flange at its outer edge portions engages with the inner faces of the said stiles, and means for securing the panel and its flanges to the said stiles.

4. In a metallic door, the combination with hollow side stiles open at both ends and at their inner longitudinal portions, being provided at said open longitudinal portions with closely approaching flanges, and top and bottom stiles also hollow and open at each end and at their inner longitudinal edges, being provided at said edges with closely approaching flanges, and interlocking connections between the end portions of the top and bottom and the side stiles, of a panel having marginal flanges extending from its side faces in opposite directions, which panel enters the open longitudinal portions of the stiles, the flanges of the panel engaging with the inner faces of the stiles, corner irons for the flanges of the panel, a closing strip for each open end of the side stiles, the said closing strips being provided with lips that extend into the top and the bottom stiles, and means for securing the stiles to the said panel and its flanges and means for locking the closing strips in position in the stiles.

5. In metallic doors, hollow upper and lower stiles having open ends and provided at their inner edges with flanges having their edges bent inwardly and spaced from each other, the ends of the flanges being beveled, hollow side stiles provided at their inner edges with wings and flanges, the wings being bent inward and then extended parallel with each other and entering the upper and lower stiles, and the flanges having beveled ends and their edges bent inward and spaced from each other, a panel fitting between the inwardly extending edges of the flanges of the stiles and means for securing the stiles together.

6. In metallic doors, hollow upper and lower and side stiles provided at their inner edges with flanges having beveled ends, means for securing the stiles together, and a panel formed of two sheets of metal and fitting between the flanges of the stiles, each sheet of the panel being provided with marginal flanges engaging the sides of the stiles.

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

ADOLPH HENRY BOBB.

Witnesses:

J. FRED. ACKER,

JOHN P. DAVIS.