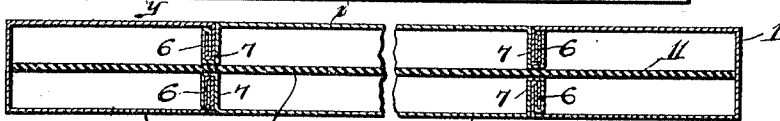
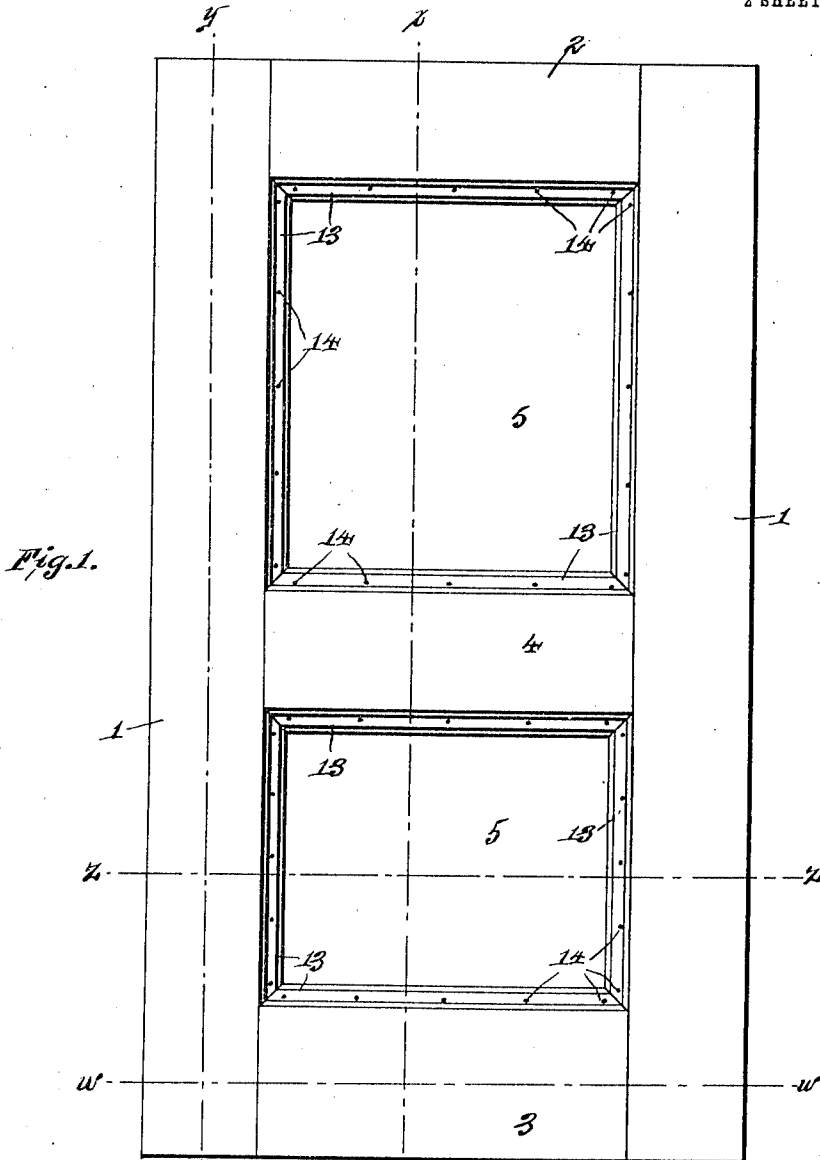


C. M. SINCLAIR.
METALLIC DOOR.
APPLICATION FILED APR. 1, 1911.

1,001,315.

Patented Aug. 22, 1911.

2 SHEETS-SHEET 1.



Witnesses:
A. Q. Olson

B. S. Richards

Inventor:
Charles M. Sinclair

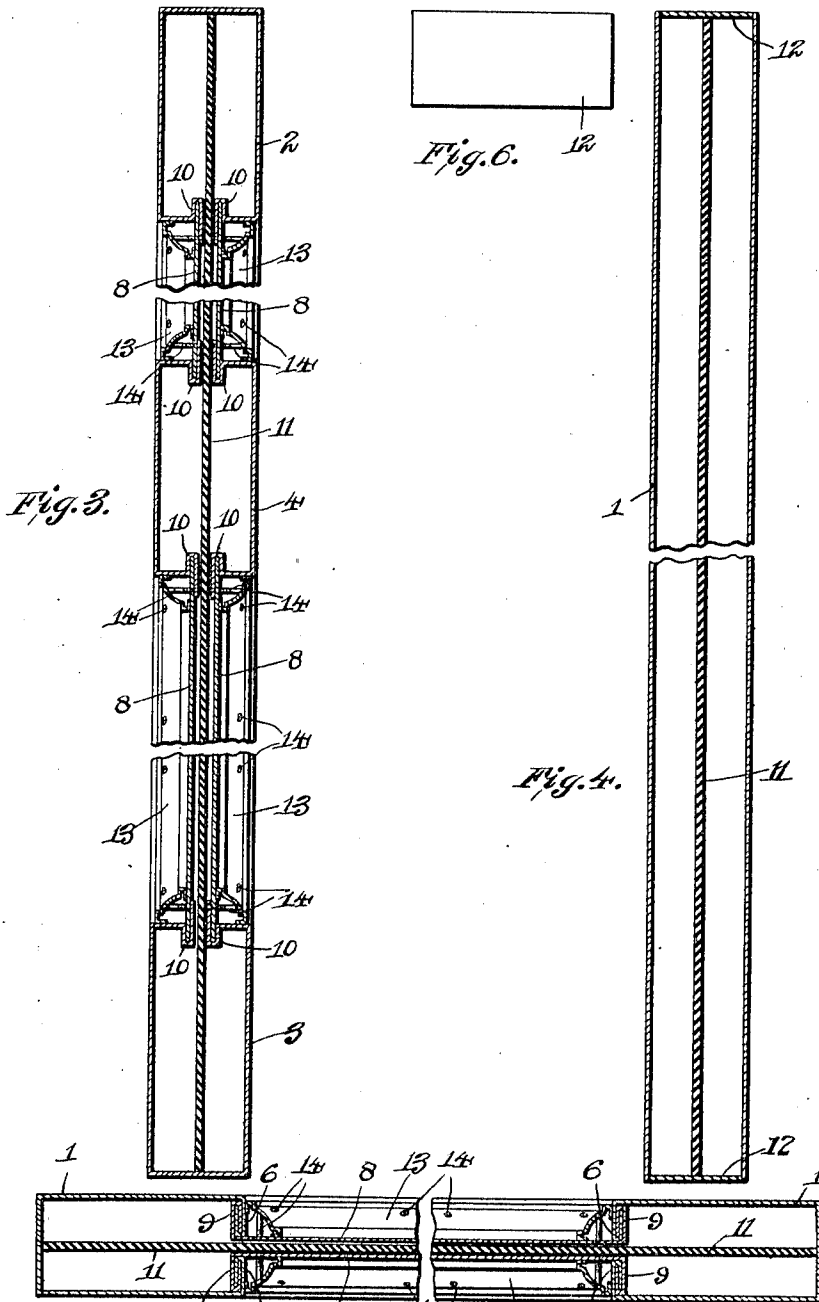
by Joshua K. Torrey
his Attorney.

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By Joshua R. H. Tans
his Attorney.

UNITED STATES PATENT OFFICE.

CHARLES M. SINCLAIR, OF CHICAGO, ILLINOIS.

METALLIC DOOR.

1,001,315.

Specification of Letters Patent.

Patented Aug. 22, 1911.

Application filed April 1, 1911. Serial No. 618,363.

To all whom it may concern:

Be it known that I, CHARLES M. SINCLAIR, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Metallic Doors, of which the following is a specification.

My invention relates to improvements in metallic doors and has for its object the provision of a door of this character, which will possess strength and durability; one which will be economical to construct; and one which will be of great efficiency in operation.

Other objects will appear hereinafter.

With these objects in view my invention consists in the combination and arrangements of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification and in which,

Figure 1 is a front elevation of a metallic door embodying my invention, Figs. 2, 3, 4 and 5 are enlarged sections taken on lines $w-w$, $x-x$, $y-y$ and $z-z$ respectively of Fig. 1, and Fig. 6 is a detail plan view of one of the plates which are arranged to close the open ends of the stiles.

The preferred form of my construction as illustrated in the drawings comprises the vertically or longitudinally extending stiles 1, the transversely extending upper, lower and intermediate rails 2, 3 and 4 respectively and the panels 5 which extend between and connect said stiles, the relative arrangement of said parts corresponding with the conventional arrangement of these parts in doors of ordinary construction.

Each of the stiles 1 is formed of a single piece of sheet metal which is bent upon itself, the respective longitudinal edges being brought together at the inner edge of the stile so as to form a longitudinally extending opening in said edge, said edges terminating in channel engaging flanges 6 which are disposed as will be observed perpendicular to the plane of the door. The rails 2 and 3 are also each formed of a single piece of sheet metal which is bent upon itself so that the lateral and inner edges thereof will be formed with medial longitudinally extending openings. The rail 4 is formed of two similar pieces of sheet metal which are

spaced apart so that the longitudinally extending openings will be formed at the peripheral edges thereof. Formed at the lateral edges of said rails 2, 3 and 4 are integral engaging flanges 7 which are channel formed to correspond with the flanges 6 with which the same are adapted to interlock as clearly shown in Fig. 2, the arrangement being such that interlocking of said flanges may be effected only upon longitudinally sliding thereof into engagement with each other. The panels 5 are each formed of two flat pieces 8 of sheet metal which are spaced apart and formed at their lateral edges with channel engaging flanges 9 similar to the flanges 7 which are adapted to interlock with the flanges 6 of the stiles 1 as clearly shown in Fig. 5, interlocking of the flanges 9 and 6 being effected in the same manner as the flanges 7 and 6 as above described. Formed at the inner transverse edges of the rails 2 and 3 and at both of the transverse edges of the rail 4 are outwardly opening channels 10 which are adapted to snugly receive the adjacent transverse edges of the panel sheets or sections 8 as clearly shown in Fig. 3.

In assembling the parts of the door in the course of manufacture thereof the stiles 1 are first arranged in their relative spaced positions. The rail 4 is now slid to position between the stiles 1, the engaging flanges 7 at the lateral edges of said rail being interlocked with the flanges 6 of said stiles. Next the panel sheets 8 are slid to operative position at either side of the rail 4, the engaging flanges 9 at the lateral edges of said panel sheets being slid to interlocking position with the flanges 6 of said stiles as clearly shown in Fig. 5. In this arrangement of the panel sheets 8, the transverse edges of the latter are forced into engagement with the adjacent panels 10 of the rail 4 as shown in Fig. 3. The construction is such as will be observed that a continuous opening or space co-extensive with the door is formed within the latter, this opening being formed for the reception of the insulation sheet 11 which is of such thickness as to snugly fit said opening. Said insulation sheet is formed preferably of asbestos and the same is slid to position at this point in the process of assembling of the door parts. By reason of the continuous uninterrupted insulation space formed within the door as

above mentioned the employment of an insulation sheet in one piece, as shown in the drawing, is made possible, this as will be understood by those skilled in the art, being of material advantage. The insulation sheet being arranged in position, the terminal rails 2 and 3 are now slid to position at the outer sides of said panels until the channels 10 of said rails embrace the respective adjacent edges of said panel sheets 8 as shown in Fig. 3. This being done the open extremities of the stiles 1 are closed by rectangular plates 12 which are secured in position in said stile ends by means preferably by the process of welding. The plates 12 in addition to serving as closures for the open ends of the stiles also serve to lock the terminal rails and hence the panels and intermediate rail in proper position since the outer ends of the engaging flanges 7 of said terminal rails abut against the adjacent sides of said plates as will be readily understood.

The molding strips 13 which may be of any desired ornate design are now arranged in position at the junctures of the panel sheets 8 with the rails and stiles, said molding strips being rigidly secured in position by means of screws 14 which pass there-through at intervals and which are threaded into the adjacent portions of the panel sheets 8. In order to reinforce said panel sheets at the points of connection of the screws 14 therewith, the inner sides of the channels 10 of the rails are preferably extended as shown in Fig. 3, said screws passing into engagement with said portions of said channels. This being done the door is complete and may be finished off with paint, enamel or any desired covering.

A door of the construction set forth is possessed of great durability and strength and because of its simplicity in construction may be manufactured at a low cost. Moreover, the construction is such that the door will not be susceptible to ready warping or distortion when subjected to varying atmospheric conditions or temperatures and the same because of the insulation sheet employed therein will not readily conduct heat in case of fire.

While I have illustrated and described the preferred construction for carrying my invention into effect this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the exact details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A metallic door comprising hollow stiles and hollow rails and panels extending

between and connecting said stiles, the adjoining edges of said stiles and rails and panels being angularly formed for interlocking with each other, the adjoining edges of said rails and panels being in over lapping relation, substantially as described.

2. A metallic door comprising hollow stiles and hollow rails and panels extending between and connecting said stiles, the adjoining edges of said stiles and rails and panels being angularly formed for interlocking with each other, said edges being so formed that interlocking may be effected only by sliding the same longitudinally into engagement with each other, the adjoining edges of said rails and panels being in over lapping relation, substantially as described.

3. A metallic door comprising hollow stiles and hollow rails and panels extending between and connecting said stiles, the adjoining edges of said stiles and rails and panels being angularly formed for interlocking with each other, said interlocking edges being disposed perpendicularly to the plane of the door, the adjoining edges of said rails and panels being in over lapping relation, substantially as described.

4. A metallic door comprising hollow stiles and hollow rails and panels extending between and connecting said stiles, the adjoining edges of said stiles and rails and panels being formed with interlocking longitudinally extending channels adapted to be slid longitudinally into engagement with each other, the adjoining edges of said rails and panels being in over lapping relation, substantially as described.

5. A metallic door comprising hollow stiles and hollow rails and panels extending between and connecting said stiles, the adjoining edges of said stiles and rails and panels being formed with interlocking longitudinally extending channels disposed perpendicularly to the plane of the door and adapted to be slid longitudinally into engagement with each other, the transverse edges of said rails being formed with recesses for the reception of the adjacent edges of said panels, substantially as described.

6. A metallic door comprising hollow stiles and hollow rails and panels extending between and connecting said stiles, the inner vertical edges of said stiles being open and formed with inwardly turned channel flanges, the lateral edges of said panels being open and formed with outwardly turned channel flanges adapted to be slid into interlocking engagement with said stile flanges, the transverse edges of said rails being formed with recesses for the reception of the adjacent edges of said panels, substantially as described.

7. A metallic door comprising hollow stiles and hollow rails and panels extending

between and connecting said stiles; the inner vertical edges of said stiles being open and formed with inwardly turned channel flanges extending substantially perpendicu-
5 larly to the plane of the door, the lateral edges of said panels being open and formed with correspondingly outwardly turned channel flanges adapted to be slid longitudi-
10 nally into interlocking engagement with said stile flanges, the transverse edges of said rails, except the outer transverse edges of the terminal rails being formed with re-
cesses for the reception of the adjacent edges of said panels, substantially as described.

15 8. A metallic door comprising hollow stiles and hollow rails and panels extending between and connecting said stiles, the ad-
joining edges of said stiles and rails and
20 panels being angularly formed for interlocking with each other, said edges being so
formed that interlocking may be effected only by sliding the same longitudinally into
engagement with each other, the adjoining
25 edges of said rails and panels being in over lapping relation; and molding strips se-
cured in position at the adjoining edges of

said panels with said stiles and rails, sub-
stantially as described.

9. A metallic door comprising hollow
stiles and hollow rails and panels extending
30 between and connecting said stiles, the ad-
joining edges of said stiles and rails and
panels being angularly formed for inter-
locking with each other, said edges being so
35 formed that interlocking may be effected
only by sliding the same longitudinally into
engagement with each other, the adjoining
edges of said rails and panels being in over
lapping relation; molding strips arranged
40 at the adjoining edges of said panels with
said stiles and rails; and securing devices
passing through said molding strips and
into said panels for securing said molding
strips in position, substantially as described.

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

CHARLES M. SINCLAIR.

Witnesses:

HELEN F. LILLIS,
JOSHUA R. H. POTTS.