

1,376,607.

Patented May 3, 1921

2 SHEETS—SHEET 1.

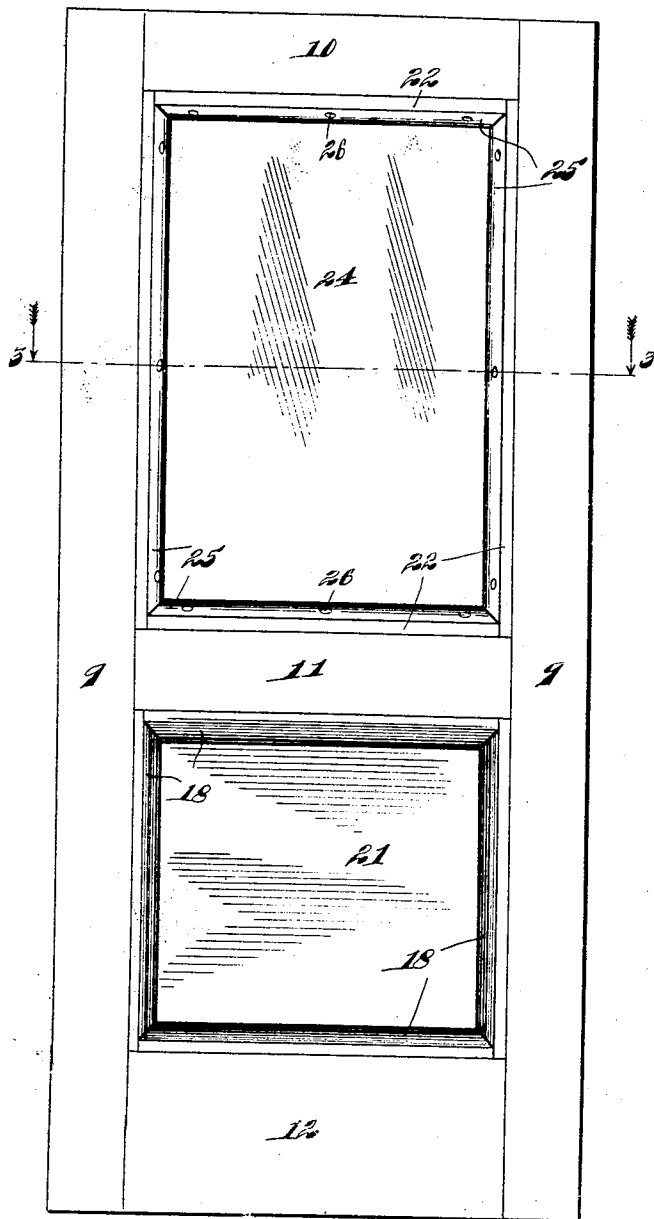


Fig. 1.

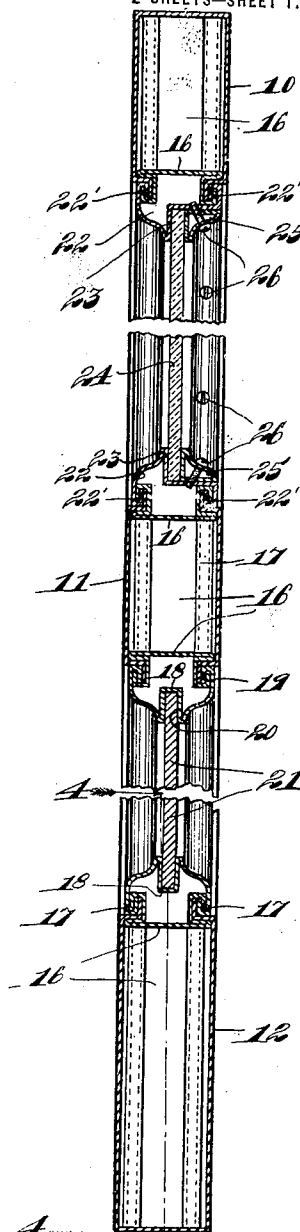


Fig. 2.

Witnesses:

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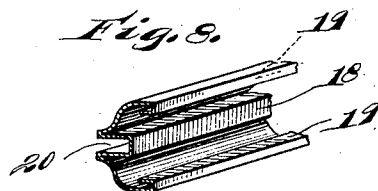
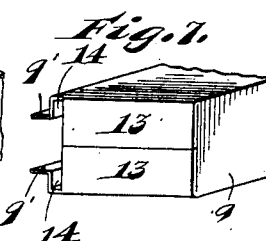
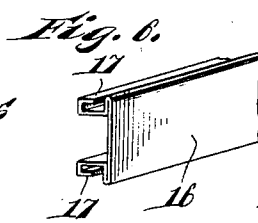
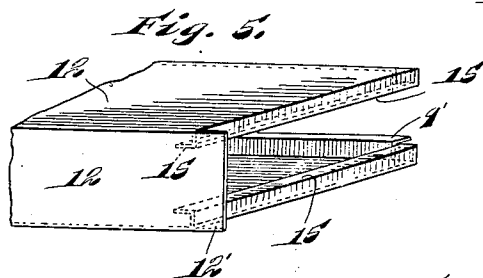
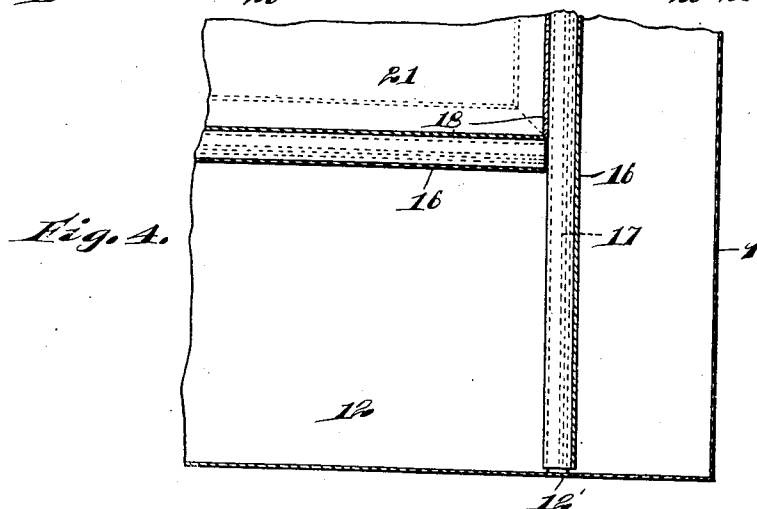
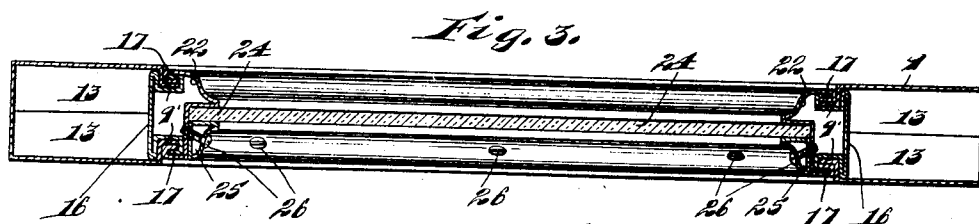
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1,376,607.

W. E. CLARIN.
METALLIC DOOR.
APPLICATION FILED FEB. 8, 1916.

Patented May 3, 1921.
2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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METALLIC DOOR.

1,376,607.

Specification of Letters Patent.

Patented May 3, 1921.

Application filed February 8, 1916. Serial No. 76,931.

To all whom it may concern:

Be it known that I, WERNER E. CLARIN, 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 the like and has for its object the provision of an improved construction of this character which is simple, capable of economical manufacture and strong and durable in use.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

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

Figure 1 is a face view of a door embodying my invention,

Fig. 2, an enlarged partial vertical transverse section of the same,

Fig. 3, an enlarged horizontal section taken on line 3—3 of Fig. 1,

Fig. 4, a vertical section taken on line 4—4 of Fig. 2,

Fig. 5, a perspective view of one end of a bottom rail employed in the construction,

Fig. 6, a perspective view of one end of a locking key employed in the construction,

Fig. 7, a perspective view of the lower end of one of the stiles employed in the construction, and

Fig. 8, a perspective view of a portion of one of a number of combined panel holders and moldings employed in the construction.

The preferred form of construction as illustrated in the drawings comprises two vertical side stiles or members 9 and top, intermediate and bottom rails 10, 11 and 12 connecting said stile members. The stile members 9 are hollow sheet metal channel members arranged with their open sides inward and provided with inwardly offset securing portions 9' extending in the same general direction as the sides of said channels. The upper and lower ends of the stile members 9 are partially closed by bending extended portions 13 of said side members inwardly as indicated in Fig. 7, gaps 14 being provided adjacent the inwardly offset securing portions 9' for a purpose which will appear hereinafter, end portions 13 being

gas welded together. Both the top and bottom rail members 10 and 12 are in the form of channel members the open sides of which are arranged inward with respect to the door and the ends thereof provided with inwardly and backwardly bent flanges 15 adapted to rest immediately adjacent and outside of the corresponding offset portions 9'. The top of top member 10 and the bottom of bottom member 11 is extended at 12' at each side sufficiently to fill the corresponding gaps 14 and abut against the stile closing portions 13 as indicated in Fig. 4. Locking keys 16 substantially in channel form but having the sides of the channel inwardly offset and provided with outwardly and backwardly turned flanges or lips 17 are arranged to engage and interlock with the portions 9' and the flanges 15 to serve as a means for securing the stiles and rails together, the heads of the keys 16 being of a width to nicely span the channel members 9, 10 and 12 and fit between the plates constituting member 11 thus greatly reinforcing the construction. The intermediate rail 11 is formed of two transverse plates provided at their ends with the inwardly and backwardly turned flanges 15 adapted to cooperate with the corresponding securing portions 9' and be interlocked therewith by means of said locking keys 16, the gaps 14 being provided to facilitate insertion of said locking keys. Combined molding and panel holding members 18 are arranged in substantially channel form and provided at their edges with inwardly and backwardly turned flanges 19 adapted to interlock with the portions 9' and the flanges 15 and 17 thus serving as means for holding said molding members in place. Each of the molding members 18 is provided with a central channel 19 adapted to receive the edges of the lower panel 21 of the door, the upper edges of the lower rail 12 and the lower edges of the intermediate rail 11 being provided with inwardly offset portions 9' cooperating with corresponding locking keys 16 to secure the top and bottom moldings in place.

The moldings 22 for the upper panel of the door are in general channel form having the edges of the channels turned inwardly and backwardly to form securing flanges 22' cooperating with the corresponding portions 9' and flanges 15 and 17 to serve as a means for securing said moldings in place.

However each of the moldings 22 is provided with a shoulder 23 adapted to constitute a stop rest for a glass plate 24 which constitutes the upper panel of the door. Remov-
 5 able sections 25 are removably secured to the bodies of the molding sections 22 by means of screws 26 which serve as a means for removably mounting the glass plate 24 in place as will be readily understood.

10 In assembling the door the intermediate rail 11 is first assembled equipped with its moldings 18 and 22 and is slipped into place between the stiles 9 as will be readily understood. Then the corresponding locking keys
 15 16 are slipped into place interlocking the ends of intermediate rail 11 with the corresponding securing portions 9', these locking keys 16 extending substantially the full length of the stiles. Then the side moldings
 20 are secured in place and the panels inserted therein. The moldings are then secured to the rails 10 and 12 and said rails placed in position, the portions 12' closing the gaps 14 and are gas welded to the ends 13 of the
 25 stiles.

The specific form of interlocking plates provided between the different members are easily assembled, highly efficient in use and capable of economical manufacture, since
 30 the parts or members having considerable size are very simple, the complicated shapes being provided on the locking keys 16 and the moldings 18-22 which are of comparatively small size and therefore capable of
 35 easier machine manipulations. The construction is strong and durable and capable of economical production.

While I have illustrated and described the preferred form of construction for carrying
 40 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 precise details of construction set forth, but desire
 45 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
 50 Patent is:

1. A construction of the class described, comprising a hollow sheet metal member in channel form having securing portions at its open side located beyond and extending
 55 only in the same general direction as the sides, whereby said securing portions are not rebent; a securing member having portions lying adjacent said securing portions; and a locking key embracing said portions
 60 and securing them together, whereby the parts may be assembled without longitudinal sliding, substantially as described.

2. A construction of the class described comprising a hollow sheet metal member in
 65 channel form having securing portions at

its open side located beyond and extending only in the same general direction as the sides, whereby said securing portions are not rebent; a securing member having portions lying adjacent said securing portions;
 70 and a locking key embracing and securing said portions and spanning and reinforcing said channel member, whereby the parts may be assembled without longitudinal sliding, substantially as described.

3. A construction of the class described comprising a hollow sheet metal member in channel form having securing portions at its open side located beyond and extending
 80 only in the same general direction as the sides, but inwardly offset with respect thereto, whereby said securing portions are not rebent; a secured member having portions lying adjacent said securing portions;
 85 and a locking key embracing said portions and securing them together, whereby the parts may be assembled without longitudinal sliding, substantially as described.

4. A construction of the class described comprising a hollow sheet metal member in
 90 channel form having securing portions at its open side located beyond and extending only in the same general direction as the sides, but inwardly offset with respect thereto; whereby said securing portions are
 95 not rebent; a secured member having portions lying adjacent said securing portions; a locking key embracing and securing said portions, and spanning and reinforcing said channel member, whereby the parts may
 100 be assembled without longitudinal sliding, substantially as described.

5. A construction of the class described comprising hollow sheet metal stiles in channel form arranged with the open sides
 105 of said channels inward, the extreme inner portions of the sides of said channels being located beyond and extending only in the same general direction as the sides and inwardly offset with respect thereto, whereby
 110 said extreme inner portions are not rebent; top, bottom and intermediate cross rails extending between said stiles and provided at their ends with inwardly and backwardly turned flanges resting against said extreme
 115 inner portions; and a locking key bent to slidably interlock with said portions and flanges, whereby said parts may be assembled without longitudinal sliding, substantially as described.

6. A construction of the class described comprising hollow sheet metal stiles in channel form arranged with the open sides
 120 of said channels inward, the extreme inner portions of the sides of said channels located beyond and extending in the same general direction as the sides and inwardly offset with respect thereto; top, bottom and intermediate cross rails extending between
 125 said stiles provided at their ends with in- 130

wardly and backwardly turned flanges resting against said extreme inner portions; combined moldings and panel holders in substantially channel form having inwardly and backwardly turned edges slidably engaging said portions and flanges; and a locking key bent to slidably interlock with said portions and flanges, substantially as described.

7. A construction of the class described comprising hollow sheet metal stiles in channel form arranged with the open sides of said channels inward, the extreme inner portions of the sides of said channels extending in the same general direction as the sides and inwardly offset with respect thereto, the extreme ends of said stiles being partially closed by bending portions of the sides thereof inwardly, gaps being left adjacent said offset portions; top, bottom and intermediate cross rails extending between said stiles provided at their ends with inwardly and backwardly turned flanges resting against said extreme inner portions, the top of said top rail and the bottom of said bottom rail being extended at each side to fill the corresponding gaps; and a locking key bent to slidably interlock with said portions and flanges, substantially as described.

8. A construction of the class described comprising hollow sheet metal stiles in channel form arranged with the open sides of said channels inward, the extreme inner portions of the sides of said channels extending in the same general direction as the sides and inwardly offset with respect thereto, the extreme ends of said stiles being partially closed by bending portions of the sides thereof inwardly, gaps being left adjacent said offset portions; top, bottom and intermediate cross rails extending between

said stiles provided at their ends with inwardly and backwardly turned flanges resting against the outer sides of said extreme inner portions, the top of said top rail and the bottom of said bottom rail being extended at each side to fill the corresponding gaps; combined moldings and panel holders in substantially channel form having inwardly and backwardly turned edges slidably engaging said portions and flanges, and a locking key bent to slidably fit within said stiles interlock with said portions and flanges, substantially as described.

9. A construction of the class described comprising a hollow sheet metal member in channel form, the extreme portions of the sides of said channel being located beyond and extending in the same general direction as the sides thereof, but inwardly offset with respect to said sides, a secured member spanning the open side of said channel and having back turned flanges resting immediately outside of the inwardly offset securing portions of the sides of said channel; and a locking key slidably insertible within said hollow sheet metal member and spanning and reinforcing the open side thereof, said locking key being provided with portions extending outwardly through the channel opening and then having their outward edges re-bent to embrace and interlock with the adjacent portions of said members, substantially as described.

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

WERNER E. CLARIN.

Witnesses:

JOSHUA R. H. POTTS,
CORA F. SCHIEBER.