

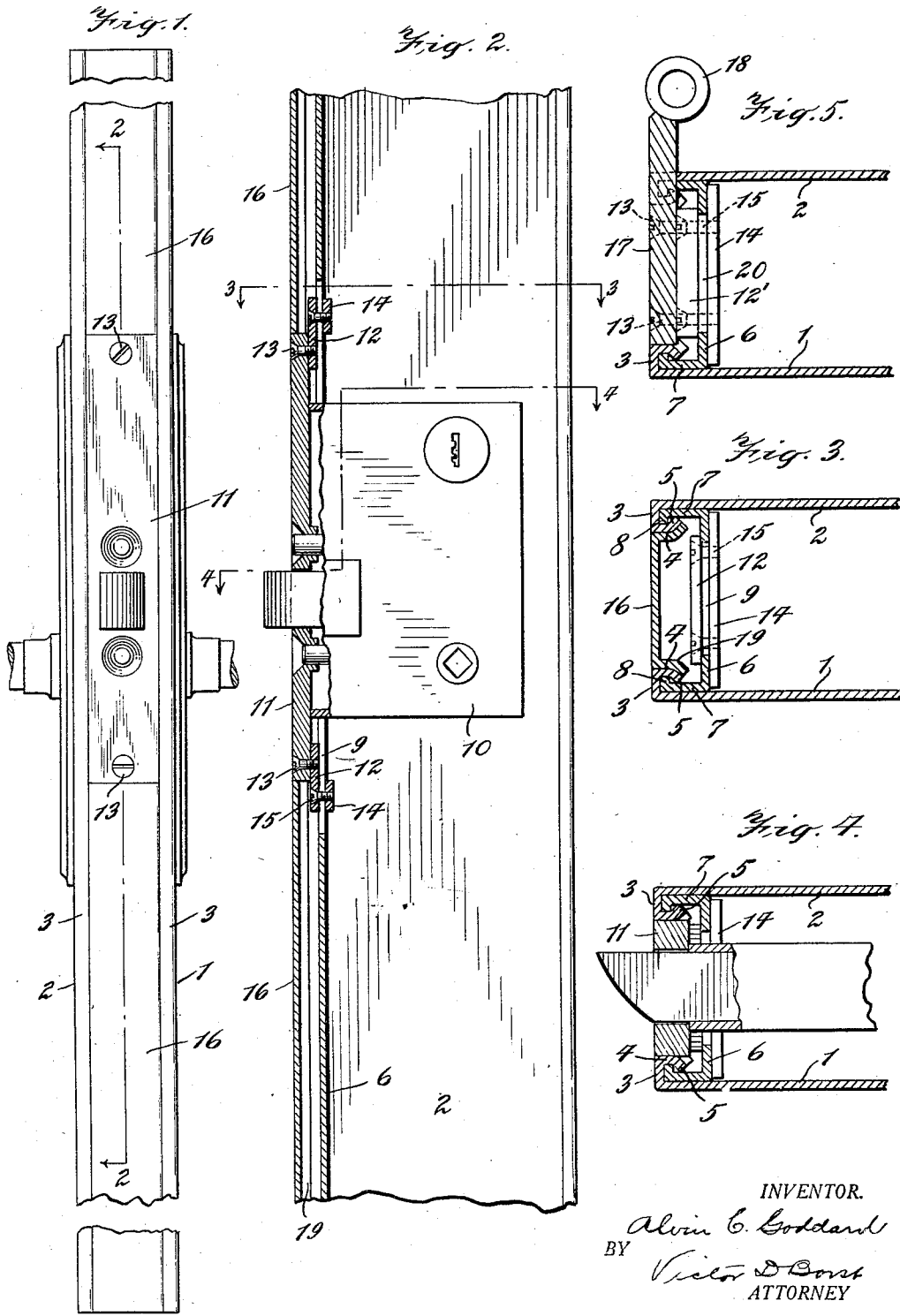
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METAL DOOR

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METAL DOOR

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My invention relates to metal doors and has been designed as an improvement upon the structure shown in Letters Patent No. 1,587,771 granted to me on January 8, 1926.

5 In the structure shown in said patent, the stile which carries the door lock is provided with an elongated opening adapted to receive a filling plate. This filling plate is formed with a slot through which the door latch extends and which gives access to the usual pins or buttons for throwing on and off the night latch. The face plate of the lock is in the rear of the filling plate, and is therefore depressed with respect to the edge of the door. The present structure is designed to avoid a depression such as that described, by doing away with the slotted filling plate and by mounting the lock with its face plate flush with the edge of the door.

20 The present invention has for another of its main objects the provision of a door in which the oppositely disposed stiles are identical in construction so that it is possible to use either stile for carrying the lock or the usual butts or hinges by which the door is mounted upon its support. This feature is advantageous since it permits the door to be hung from either edge. It also simplifies the manufacturing operations, reduces the necessary equipment for producing the doors and speeds up production.

35 The improved door is constructed so as to present a neat appearance and at the same time have ample strength to resist wear and shocks incidental to the use of a door. The parts are so designed and arranged that the assembly of the lock and hinges with respect to the door stiles can be effected very readily and the parts will be so firmly united to the door stiles as to withstand all kinds of usage.

Reference is hereby made to the accompanying drawing of which:

45 Fig. 1 is an elevation of the outer edge of a door constructed in accordance with my invention, portions thereof being broken away;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a section on line 3—3 of Fig. 2;

Fig. 4 is a section on line 4—4 of Fig. 2, and

50 Fig. 5 is a section similar to that of Fig.

4 except that a hinge plate is secured to the stile instead of the face plate of a lock as in Fig. 4.

In the construction shown, the stile is composed of front and rear face plates, 1 and 2 respectively. These plates are of sheet metal and may be either integral or secured together at their inner edges in any desired manner. The outer margins or edges of these face plates are bent to form webs 3—3 extending toward each other. The margins of these webs are bent to form flanges 4—4 which extend in an inward direction with respect to the stile and the margins 5—5 of which flanges 4—4 are bent away from each other as shown. By this construction the stile is formed with an opening in its outer edge extending from top to bottom and the edges of this opening are strongly reinforced by reason of the flanges 4. Furthermore by reason of the provision of the webs 3, which are of substantial width, the appearance of the edge of the door is improved and since the metal is bent at an angle of not more than 90° its strength is preserved and is greater than it would be if the metal were bent back upon itself through an angle at 180° without providing a web of substantial width such as the portion 3.

For the purpose of uniting the side edges of the opening referred to, I provide a support which extends the entire height of the stile and which consists of a sheet metal channel 6 comprising a web which extends from the face plate 1 to the face plate 2. This channel is formed with side flanges 7—7 which extend in an outward direction with respect to the stile and the edges or margins of these webs are bent toward each other, forming flanges 8—8. The flanges 8 are interlocked with the flanges 5 of the face plates 1 and 2, the assembly being made by sliding the channel into position by longitudinal movement and thereafter clamping the flanges 5 firmly upon the flanges 8.

The support 6 is provided with a vertical opening 9 of sufficient size to receive the lock 10 allowing for vertical adjustment thereof throughout a considerable range. The lock may be of usual construction including a face

plate 11 for its support. Suitable means are provided for securing said face plate 11 to the web of said support 6 and as shown, consist of plates 12 having threaded openings for receiving the threaded members or screws 13 for uniting same to the plate 11 and plates 14 also provided with threaded openings for receiving the securing means or screws 15 by which members 12 and 14 are clamped together and to said support 6. This arrangement provides a vertical adjustment of the face plate 11 with respect to the stile through any desired range. After the desired position of the face plate 11 of the lock has been determined, the door is then finished by insertion of elongated fillers 16—16 which extend respectively from the lower edge of the face plate 11 to the bottom of the stile and from the upper edge of the face plate to the top of the stile. Each of the fillers is in the form of a channel having outwardly flaring marginal flanges 19. The length of these fillers of course depends upon the position of the face plate and in practice these fillers will not be cut until an order has been received for the door; that is, the doors will be manufactured in quantity without fillers and the latter will be cut and applied to each door when the lock is mounted, the position of which in practice will vary with different orders to meet the requirements of particular jobs. These fillers may be assembled into position by longitudinal movement from the top of the stile, the door top member being so formed as to permit such insertion of the fillers.

The manner of assembling the parts for the inner or hinge stile of the door will be similar to that which has been described, the only difference being that it is necessary to cut away portions of one of the face plates 1 or 2, its web 3 and flanges 4 and 5 and portions of one of the flanges 7, 8 of the channel 6 in order to secure the hinge plate 17 in proper position with its outer face flush with the surfaces of the webs 3 and so that the hinge knuckles 18 may be in proper position for the hanging of the door, as shown in Fig. 5.

The supporting web 6 is provided with openings 20 at any desired points to permit the insertion and vertical adjustment of securing means for the hinge plates 17, which means are similar to those previously described for the securing of the face plate 11 and consist of clamping plates 12', 14 and screws 13 and 15. The thickness of the hinge plate 17 will ordinarily be less than that of the face plate 11 and this difference may be compensated for by making the plate 12' of correspondingly greater thickness than plate 12 so that the thickness of the plate 17 plus plate 12' will be the same as that of plate 11 plus plate 12. After determining the desired positions of plates 17, fillers 16 similar to those previously described will be inserted within the stile in the manner hereinbefore

set forth and previous to the clamping of said plates.

Having now described my invention what I claim is:

1. A metal door comprising oppositely disposed stiles having openings in their outer edges so that a lock and hinge may be secured therein having the outer surface thereof flush with the outer edge of the stiles, identical supports for locking together the edges of said openings, similar securing means for securing respectively a lock and hinges to said supports whereby said door may be hung from either stile.
2. A metal door comprising oppositely disposed stiles having openings in their outer edges so that a lock and hinge may be secured therein having the outer surface thereof flush with the outer edge of the stiles, identical supports for locking together the edges of said openings, similar securing means extending the full length of the stile for securing respectively a lock and hinges to said supports whereby said door may be hung from either stile.
3. A metal door comprising a stile having an opening in its outer edge extending from top to bottom, a support for locking together the edges of said opening, means for securing door lock or hinge plates to said support with outer surface thereof flush with said edges, and elongated fillers for closing said opening above and below said plate or plates, the exterior surfaces of the fillers being flush with the side edges of said opening.
4. A metal door comprising a stile having an opening in its outer edge extending from top to bottom, a support within and secured to said stile, a plate extending entirely across said opening and flush with the side edges thereof, means for securing said plate to said support in positions of vertical adjustment, and elongated fillers for closing said opening above and below said plate, the exterior surfaces of the fillers being flush with the side edges of said opening.
5. A metal door comprising a stile having front and rear face plates the outer edges of which are bent toward each other and then inward with respect to the stile thereby forming a vertical opening with reinforcing flanges, an elongated support having a web extending from one face plate to the other and marginal flanges engaging said reinforcing flanges to lock them together, a plate extending entirely across said opening and flush with the side edges thereof, means for securing said plate to said support in positions of vertical adjustment, and elongated fillers for closing said opening above and below said plate, the exterior surfaces of the fillers being flush with the side edges of said opening.
6. A metal door comprising a stile having front and rear face plates, the outer edges of which are bent toward each other, thence

inward with respect to the stile, thence away
from each other, thereby forming a vertical
opening with reinforcing flanges, and an elon-
gated support having a web and marginal
5 flanges extending outward with respect to
the stile thence toward each other, the flanges
of said support being interlocked with the
flanges of said face plates.

7. A metal door comprising a stile having
10 front and rear face plates, the outer edges of
which are bent toward each other, thence in-
ward with respect to the stile, thence away
from each other, thereby forming a vertical
opening with reinforcing flanges, an elon-
15 gated support having a web and marginal
flanges extending outward with respect to the
stile thence toward each other, the flanges
of said support being interlocked with the
flanges of said face plates and a filler having
20 outwardly flaring flanges engaging the in-
wardly extending flanges of said face plates.

In witness whereof, I hereunto subscribe
my signature.

ALVIN C. GODDARD.

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