Dec. 14, 1926. 1,610,369

A. C. GODDARD

METAL BUILDING CONSTRUCTION

Filed Jan. 14, 1925

Fig. 1.

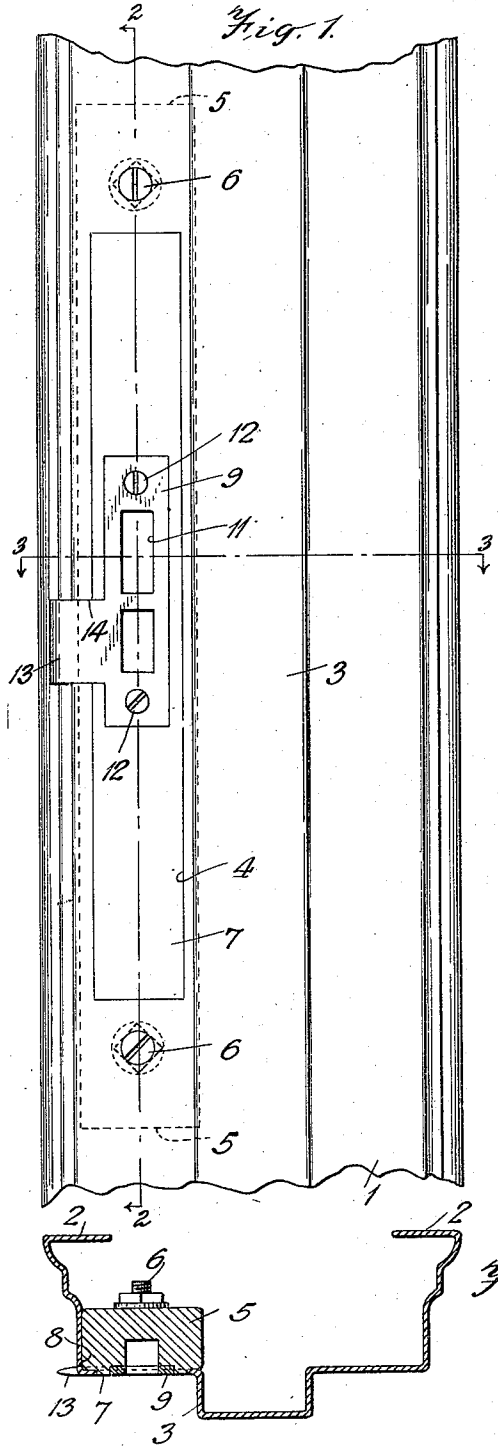


Fig. 4.

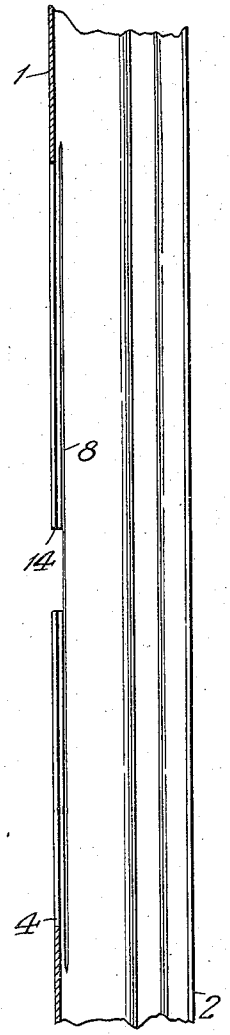


Fig. 2.

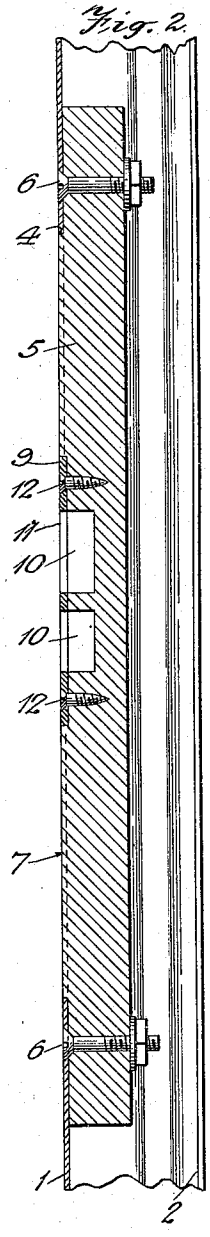


Fig. 3.

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UNITED STATES PATENT OFFICE.

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METAL BUILDING CONSTRUCTION.

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In the manufacture of sheet metal door frames, the frames have heretofore commonly been manufactured only after the hardware to be used has been specified, because with the various different types of hardware, the striking plate must be positioned at different heights and after the frames have been pressed to the desired shape, it is difficult, if not impossible, to cut the frames for the reception of the striking plates. It has, therefore, become the custom to cut the necessary apertures for the striking plates from the flat blank for the frame before it is pressed to shape. Otherwise it would be necessary to carry in stock an excessively large supply of door frames and in any case the frames could not be shipped until the type of hardware to be used was specified. It has also been necessary heretofore to carry special dies and tools for forming the door frames to mount the striking plates at different points, which greatly increased the cost of production of such door frames.

An object of this invention is to provide improved sheet metal door frames which may be produced in a minimum number of standard stock sizes; to which the striking plates of any hardware may be fitted by ordinary mechanics and with ordinary tools at the place of installation regardless of the type of hardware employed; which will present an attractive appearance after the striking plate has been applied; which will be simple and practical; and which will reduce the cost of manufacture and permit the rapid filling of orders from stock before the hardware to be used is specified.

Various other objects and advantages will be apparent from the following description of one embodiment of the invention, and the novel features will be particularly pointed out hereinafter in the appended claims.

The invention comprehends the various details of construction which will appear from the accompanying description of one embodiment of the invention.

In the accompanying drawing:

Fig. 1 is an inside elevation of the post of a door frame, constructed in accordance with this invention and having a striking plate secured thereto;

Fig. 2 is a longitudinal sectional elevation of the same with the section taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is a transverse sectional plan of the same with the section taken substantially along the line 3—3 of Fig. 1; and

Fig. 4 is a sectional elevation similar to Fig. 2 with the filler block and striking plate removed.

In the illustrated embodiment of the invention, the side post 1 of the door frame is channel-shaped in cross section and formed of sheet metal, the free edges of the sides of the channel being turned toward one another as at 2, and the inner face of the post having a U-shaped rib 3 formed therein and serving as a door stop. Between the door stop 3 and one side face, the post is provided with a vertically elongated aperture as at 4, at approximately the height of the position of the usual striking plate and extending vertically sufficiently to accommodate in the aperture, at the desired height, the striking plate of any expected type of hardware that may be desired.

A sub-holder 5 in the nature of a strip or block, preferably of wood, fibre or similar material, is disposed against the inner face of the cross wall of the channel of the post, so as to extend longitudinally of and bridge the aperture 4, the sub-holder being held against the face of the post by suitable securing members, such as by bolts 6, that pass through the metal of the post and through the sub-holder or block, the head of each bolt being countersunk into the outer face of the cross wall of the channel post. The sub-holder or block 5, upon its outer face, is provided with an elevated or raised surface portion 7, which fills the aperture 4 flush with the outer face of the post.

That portion of the post through which the striking tongue projects is weakened along a line 8 in the side wall at a point adjacent the meeting angle of the side and cross walls of the post and at a distance from the cross wall approximately equal to the thickness of the striking tongue, for a purpose which will hereinafter appear. This line of weakening is preferably located on the inner face of the side wall and may be provided by scoring the surface of the metal as indicated in Fig. 4; it extends vertically of the post for a distance approximately co-

extensive with the length of the aperture 4.

The door frames may be shipped in this condition to the location where they are to be installed, and there are assembled as usual heretofore. The posts, as shipped, are secured at 8 and include the sub-holder or block 5 secured in place across the aperture, but having the surface of the raised portion 7 uncut. This condition of the post is not illustrated, but will be readily understood, since a completed door post is illustrated to explain further features of the invention.

When the door post is assembled as a part of the door fraime in the building where it is to be used, the carpenters apply the hardware to the door in the usual manner, and knowing the type of hardware to be employed and consequently the relative location of the latch bolt of the lock and its height above the floor, they can then readily apply the latch plate 9 to the raised surface 7 of the block in the same manner as usual in any wooden door frame, the material of the block, when made of the wood, fibre, or similar material, being cut out by the usual wood working tools so as to provide the recess 10 for receiving the lock bolts and spring latch bolts. These recesses are coextensive with the usual bolt and latch apertures 11 of the striking plate, and the striking plate may be secured to the sub-holder or block by suitable means such as the usual wood screws 12.

When the sub-holder has the raised portion 7 filling the aperture 4 flush with the outer face of the channel post, the striking plate 9 will be set into the surface of the sub-holder or block so as to be flush with the same, and the usual striking tongue 13 of the plate will be disposed in a slot 14 leading from the aperture 4 to the side face of the post as usual in door posts. This slot 14 is easily formed with simple tools in the following manner. Slits defining the vertical limits of the slot are cut from the aperture 4 to the scored line 8 by suitable tools, such as by a hacksaw or file, then the tongue, thus formed, may be broken off at the scored line by bending or flexing it upon the scored line; any raggedness at the scored line, produced by the breaking off of the tongue, may be smoothed off with a file.

It will be observed that with this construction, door posts of sheet metal may be shipped with the apertures 4 cut therein and filled by a plain or uncut sub-holder or block 5 of sufficient length to receive and mount the latch plate of any expected type of hardware at any usual or expected height above the floor, and with the notches 14 uncut but with the post provided with the scored line or line of weakening 8. The posts may be shipped to the job even before the type of hardware to be used is specified, which avoids delay heretofore experienced in getting the frames to the job after the hardware is specified.

Furthermore, with this arrangement, it is possible to manufacture the door posts for stock in advance of the demand, and have them ready for immediate shipment when orders are received, whereas when it was necessary to know the particular hardware to be used as heretofore, each post for receiving the latch plate had to be cut for each particular type after the order was received. It will be observed also that the block or sub-holder 5 is of such a thickness that the recesses 10 therein for receiving the lock plates and latches will not extend all the way through, and, as a result the aperture 4 will always be closed, so that dust and dirt from the wall can never escape into the room through the door post and the door frame will be rendered more nearly airtight.

The operations necessary to prepare such a door post for shipment are reduced to the minimum, and the fitting of the striking plates on the job are so simple that they may be performed by ordinary workmen, such as are usually employed for fitting hardware to door frames, and no particular special tools are required. The entire post thus formed is not weakened by the long aperture 4 since it is stiffened or reinforced adequately by the block or sub-holder 5.

It will be obvious that various changes in the details and materials, which have been herein described and illustrated in order to explain the nature of the invention, may be made by those skilled in the art within the principle and scope of the invention as expressed in the appended claims. It will be further understood that the invention is equally applicable to windows or other metal frame constructions where striking or latch plates must be applied, and that the term "door" post is not to be considered as strictly limiting.

I claim:

1. In a building construction, a sheet metal door frame post having a vertically elongated aperture at approximately the location of the usual striking plate, and a wooden block mounted in said post to extend across the aperture, to which block the striking plate of any of a variety of types of hardware locks may be secured.

2. In a building construction, a sheet metal door frame post having a vertically elongated aperture at the location of the usual striking plate, a wooden block mounted in said post to extend lengthwise of and bridge said aperture, to which block the striking plate of any of a variety of types of hardware locks may be fitted at the desired height, and securing members passing through the post and into the said block to

anchor the latter directly against the inner face of the post.

3. In a building construction, a sheet metal door frame post having a vertically elongated aperture at approximately the location of the usual striking plate, a striking plate sub-holder filling said aperture and extending at each end beyond the limits of the aperture so as to fit against the inner face of the apertured wall, and securing members passing through the sheet metal of the post and directly into the sub-holder to secure the sub-holder against displacement.

4. In a building construction, a sheet metal door frame post having a vertically elongated aperture at approximately the location of the usual striking plate, a wooden sub-holder extending lengthwise of the aperture beyond the ends of the same and fitting against the inner face of the post, said sub-holder having a raised surface portion completely filling said aperture flush with the outer face of the post, and means for securing the sub-holder to the post.

5. In a building construction, a sheet metal door frame post, having a vertically elongated aperture at approximately the location of the usual striking plate, and a sub-holder to which the striking plate of any type of hardware may be secured at any point, fitting against the inner face of the post and bridging said aperture with the striking plate mounted thereon in said aperture, the metal of the post being weakened along a line substantially parallel with the length of said aperture for some distance from each end of the usual height of the striking plate, whereby the notch for the striking tongue of the striking plate may be formed at the desired height by merely slitting the metal of the post from the aperture to said line of weakening, and then breaking the tongue thus formed by bending at the line of weakening.

6. In a building construction, a sheet metal door frame post, having a vertically elongated aperture at approximately the location of the usual striking plate, and a sub-holder to which the striking plate of any type of hardware may be secured at any point, fitting against the inner face of the post and bridging said aperture with the striking plate mounted in said aperture, the metal of the post being scored along a line parallel with the length of said aperture for some distance each side of the usual height of the striking plate, whereby the notch for the striking tongue of the striking plate may be formed at the desired height by merely slitting the metal of the post from the aperture to said line of scoring, and then breaking the tongue thus formed by bending at the scored point.

7. In a building construction, a sheet metal door frame post having a vertically elongated aperture in the inside wall of the frame adjacent a corner edge of the post and at approximately the location of the usual striking plate, the metal of the post being weakened along a line extending vertically for a considerable distance each side of the center of the aperture, said line of weakening being located in the side wall of the frame post at a distance from the corner edge adjacent the aperture, approximately equal to the thickness of the striking tongue of the striking plate, so that the notch for any striking plate may be formed by slitting the post from the aperture to the line of weakening at the vertical limits of the notch to provide a tongue which may be readily broken off by flexing at the line of weakening.

8. In a building construction, a sheet metal door frame post having a vertically elongated aperture in the inside wall of the frame adjacent a corner edge of the post and at approximately the location of the usual striking plate, the inner face of the side wall of the post adjacent the aperture being scored along a line extending vertically for a considerable distance each side of the center of the aperture, said scored line being located at a distance from the corner edge adjacent the aperture approximately equal to the thickness of the striking tongue of the striking plate.

9. In a building construction, a door part formed of hollow sheet metal and having in its surface, an aperture coextensive in length, with the positions commonly occupied by different types of hardware pieces that may possibly be employed as elements of door constructions, and a wooden block secured within said apertured part and extending across said aperture therein, the surface of said block where exposed through said aperture being such as to receive any connecting piece of various selected different types of hardware and mount it in position to perform its expected function, whereby said construction may be assembled and placed at the job, and thereafter any type of hardware selected and applied to said block to complete the door construction.

10. In a building construction, a hollow sheet metal part forming a component element of a door construction and having, in its surface, an aperture elongated in a direction peripherally of the opening for an extent coextensive with the positions commonly occupied by different types of hardware pieces that may possibly be employed as a part of the door construction, and a wooden block secured within said apertured part and extending across and closing said aperture therein, the surface of said block where exposed through said aperture being raised above the remainder of the block so as to fill said aperture and be flush with the outer

surface of said apertured part, whereby any connecting piece of various selected different types of hardware may be mounted on said block in order to effect a proper connection between parts of the door construction and whereby said construction may be assembled at the job and placed and thereafter any type of hardware selected and applied to said block to complete the door construction.

In witness whereof, I hereunto subscribe my signature.

ALVIN C. GODDARD.