Sept. 20, 1955 R. GOLDBERG 2,718,291

METAL DOORFRAMES

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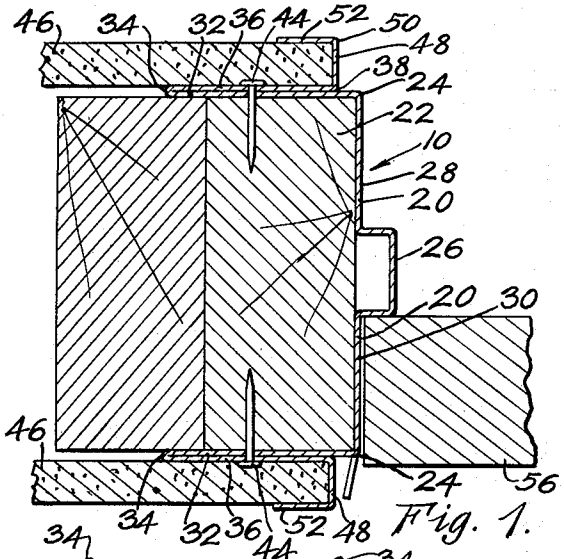

Fig. 1.

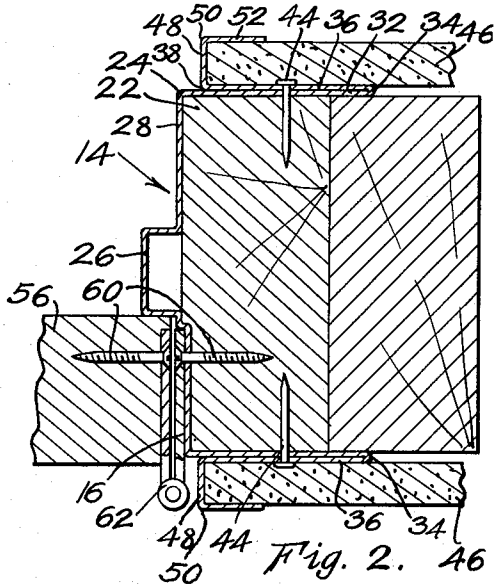

Fig. 2.

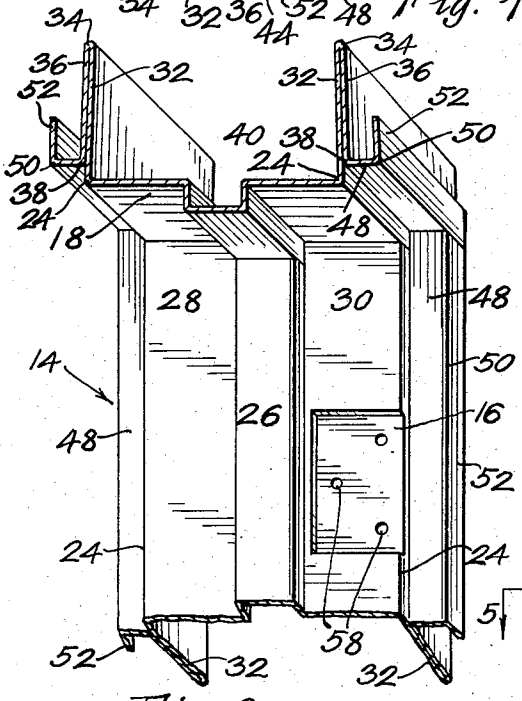

Fig. 3.

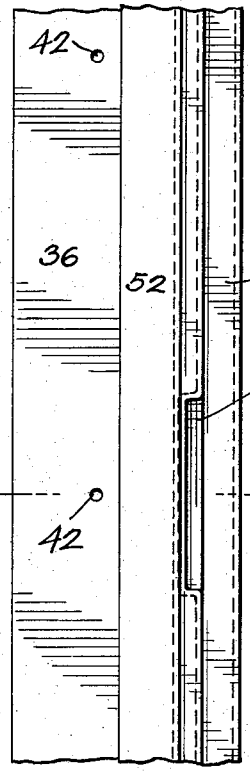

Fig. 4.

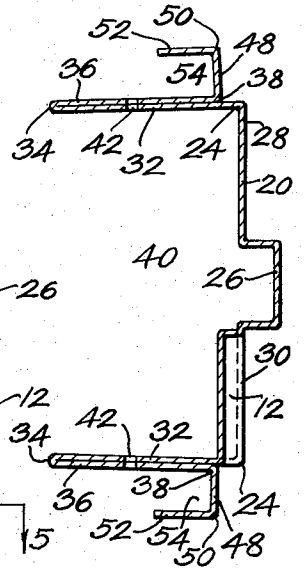

Fig. 5.

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METAL DOORFRAMES

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6 Claims. (Cl. 189—46)

This invention relates to one-piece metal doorframes; and more particularly, to one-piece metal doorframes of the type used with dry-wall plaster board.

The high-cost, custom-built home of a few years ago is rapidly being replaced by the low-cost housing development home which can be built more rapidly and more inexpensively than heretofore possible. Modern housing developments have been made possible by low-cost construction materials and low labor costs even in view of the general upward trend in these items. Today's builder is constantly on the lookout for ways of improving his homes while keeping his expenses at a minimum. Also, modern design which emphasizes simple smooth lines has influenced the development of many of the present construction materials and methods.

Two of these materials which are finding ever wider public acceptance are metal doorframes and dry-wall plaster board walls. Both dry-wall construction and metal doorframes lend themselves quite well to development housing because of their low initial cost and the small amount of labor time which is necessary to install them. The conventional one-piece metal doorframe, however, has certain disadvantages, especially when used with dry-wall plaster board, which have been overcome by the one-piece metal doorframe of the present invention.

Among these disadvantages are the fact that the metal frame cannot be attached to the door buck forming the wooden doorframe rigidly enough to enable the door to be hung properly therein and to prevent marring and denting of the frame. Also, channels are needed at the sides of the frame to receive the thickness of the plaster board and hide any uneven edges which would show in the conventional door jamb. Further, if simple modern lines are to be maintained a single thickness of metal is all that should be visible.

Among the objects of the present invention are to provide; a one-piece metal doorframe formed with channels on the sides to receive the uneven edges of a piece of dry-wall plaster board; a metal doorframe having a central channel portion sized to fit tightly and snugly around the door buck and having a double thickness of metal along the sides of the buck in order that the frame may be more rigidly attached thereto; a doorframe having a single thickness of metal visible when in place on the wooden doorframe; and a one-piece metal doorframe of the type described herein which is simple and inexpensive to manufacture, decorative in appearance, rapidly and easily installed on a wooden doorframe, and ideally suited for use with conventional dry-wall plaster board.

Other objects will be in part apparent and in part pointed out specifically hereinafter in connection with the description of the drawing which follows; and in which:

Figure 1 is a transverse section of one of the vertical doorframe members of the present invention showing it secured in place to a rough door buck between two dry-wall plaster board sections; and in which, the latch side of a door is shown in closed position against the door stop rib;

Figure 2 is a transverse section similar to Figure 1 of the opposite vertical frame member taken through the portion having the hinge recess; and in which, a conventional door hinge is shown with a door secured thereto in closed position;

Figure 3 is a fragmentary perspective view showing the portion of the vertical frame member having the hinge recesses therein and the manner in which it is connected to the horizontal frame member;

Figure 4 is a fragmentary side elevation of the vertical frame member having the strike plate recess therein; and,

Figure 5 is a transverse section taken along line 5—5 of Figure 4.

The one-piece metal doorframe of the present invention consists in general of three pieces, all of which have identical cross-sections with the exception of the hinge recesses and strike plate recess formed in the vertical frame members. The first of these is a vertical frame member indicated in a general way by numeral **10**, and shown particularly in Figures 1, 4 and 5, which has a strike plate recess **12** embossed into the metal forming the frame. The second vertical frame member indicated in a general way by numeral **14**, and illustrated in Figures 2 and 4, is positioned in the door opening opposite frame member **10** and contains hinge recesses **16** embossed therein. The third piece necessary to complete the doorframe is horizontal frame member **18** which extends horizontally across between the upper ends of vertical frame members **10** and **14**, and is shown in Figure 3 joined to frame member **14**.

Vertical frame member **10** in Figure 1, and horizontal frame member **18** in Figure 3, show the cross-section of the frame members most clearly. Each of the frame members consists of a single sheet of metal formed into a lateral web **20** having a width substantially equal to the width of the door buck **22** and terminating in spaced parallel side edges **24**. A door stop rib **26** may be formed in the lateral web extending outwardly therefrom and dividing said lateral web into door receiving surfaces **28** and **30**. The frame members may be formed with or without the door stop rib depending upon whether a door is to be hung in the metal doorframe. Inner flanges **32** extend rearwardly substantially at right angles to the lateral web from each side edge **24** thereof and terminate in spaced parallel rear edges **34**. The single sheet of metal is then reversely bent along rear edges **34** of the inner flanges to form outer flanges **36** which extend forwardly against the outer face of the inner flanges and terminate in spaced parallel forward edges **38** lying behind the side edges **24** of the lateral web. Lateral web **20** and inner flanges **32** form a channel **40**, shown most clearly in Figures 3 and 5, sized to receive the width of the door buck **22** with the inner flanges lying along the sides of the buck and the lateral web lying along the forward face thereof. A plurality of aligned openings **42** extending through the inner and outer flanges are provided for fastening the frame members to the door buck by suitable fastening means **44**. It is to be noted that the double thickness of metal formed by inner and outer flanges **32** and **36** is not exposed but lies between the door buck **22** and the dry-wall plaster panels **46**. Thus, only a single thickness of metal is exposed to view. Of even greater importance is the fact that a double thickness of metal is provided for fastening the frame members to the door buck which enables the metal doorframe of the present invention to be connected much more rigidly to the wooden doorframe than is possible with the conventional metal doorframes. If desired, the inner and outer flanges may be bent inward slightly when formed as shown in Figure 5 in order to insure a tight fit on the door buck. Of course, when the flanges are in posi-

tion alongside the door buck they will be substantially parallel to one another and perpendicular to the lateral web.

Side webs **48** extend outward laterally from the forward edges **38** of the outer flanges and terminate in spaced parallel outside edges **50**. The side webs preferably extend laterally in a plane parallel to the plane of the lateral web **20** a distance substantially equal to the thickness of a dry-wall plaster board panel. The frame members terminate in side faces **52** extending rearwardly substantially parallel to the outer and inner flanges from the outside edges **50** of the side webs **48**. The side faces lie along the outside face of the dry-wall plaster board panels **46** and act in conjunction with the side webs and the outer flanges to form channels **54**, shown most clearly in Figures 1, 2 and 5, to receive the thickness of a piece of dry-wall plaster board **46**. Any uneven edges on the plaster board panel will be completely hidden within the channel. Also, side faces **52** leave only a single thickness of metal showing on the outside face of the plaster board panel and a coat of paint or two will make it very difficult to tell where the plaster board ends and the doorframe begins, thus blending the doorframe into the wall.

In Figures 1 and 2 an interior door **56** is shown swung into closed position against door stop rib **26** and door receiving surfaces **30**. Figures 2 and 3 show the hinge recesses **16** embossed into door receiving surface **30**. Screw openings **58** are provided in the hinge recesses to receive screws **60**, by means of which, hinges **62** are fastened to the doorframe. The hinges are screwed directly to the door buck thereby giving adequate support to the door **56**. It is to be noted that side webs **48** lie spaced behind the outer face of the lateral web a sufficient distance to provide room for the portion of the hinge **62** containing the pin.

Figures 1, 4 and 5 illustrate the manner in which the strike plate recess **12** is embossed into door receiving surface **30** of the lateral web. It is to be understood that the hinge recesses, strike plate recess and door stop rib are intended as refinements of the doorframe construction illustrated herein as many instances arise wherein no door is to be mounted in the frame thereby making these elements unnecessary, in which case they may be omitted. In the wooden frame construction illustrated in the drawing it is necessary to either mortise the door buck to receive the hinge and strike plate recesses in the vertical frame members or leave sufficient space between the rear face of the lateral web and the forward face of the door buck to accommodate them. However, it is advisable to mortise the buck in order that the lateral web may lie in contact with the face of the buck. A rough mortise is all that is necessary as the mortised portion is completely covered by the frame members.

Figure 3 illustrates the way in which the vertical frame members join the horizontal frame member. The entire doorframe can, of course, be prefabricated to fit a given door opening with the hinge and strike plate recesses properly positioned within the frame, depending on how it is desired that the door swing. Also, the side of the doorframe on which the door hinges may be changed by merely switching the position of the vertical frame members. Furthermore, the door may be hung on the same side of the doorframe, but on the opposite side of the door stop rib, by merely inverting the vertical frame members and cutting them at the top to form a proper joint with the horizontal frame member.

From the foregoing description of the drawing it will be seen that the many useful and novel objects sought to be achieved by the metal doorframe construction of the present invention have been attained; and therefore, I claim:

1. A one-piece metal doorframe for use with dry-wall plaster board as a moulding over a wooden doorframe of the type having a rectangular door buck, comprising a single sheet of metal formed into a lateral web having a width substantially equal to the width of the door buck and terminating in spaced parallel side edges, inner flanges extending rearwardly at substantially right angles to the lateral web from each side edge thereof and terminating in spaced parallel rear edges, outer flanges extending forwardly against the outer face of each inner flange from the rear edge thereof and terminating in spaced parallel forward edges lying in the rear of the side edges of the lateral web, side webs extending outward laterally from the forward edges of the outer flanges and terminating in spaced parallel side faces extending rearwardly substantially parallel to the outer and inner flanges, said lateral web and inner flanges forming a channel sized to receive the width of the door buck, and said outer flanges, side webs and side faces forming channels sized to receive the thickness of a piece of dry-wall plaster board.

2. A device in accordance with claim 1 in which the side webs extend outward laterally parallel to the lateral web.

3. A device in accordance with claim 2 in which the lateral web is provided with a door stop rib extending outwardly therefrom and dividing said lateral web into two door receiving surfaces.

4. A device in accordance with claim 3 in which the metal doorframe is symmetrical about the door stop rib.

5. A device in accordance with claim 3 in which the lateral web is provided with at least two hinge recesses on the same side of the door stop rib.

6. A device in accordance with claim 3 in which the lateral web is provided with a strike plate recess positioned at the side of the door stop rib.

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