

March 18, 1952

J. RASKIN

2,589,864

DOORFRAME

Filed May 29, 1948

2 SHEETS—SHEET 1

FIG. 1

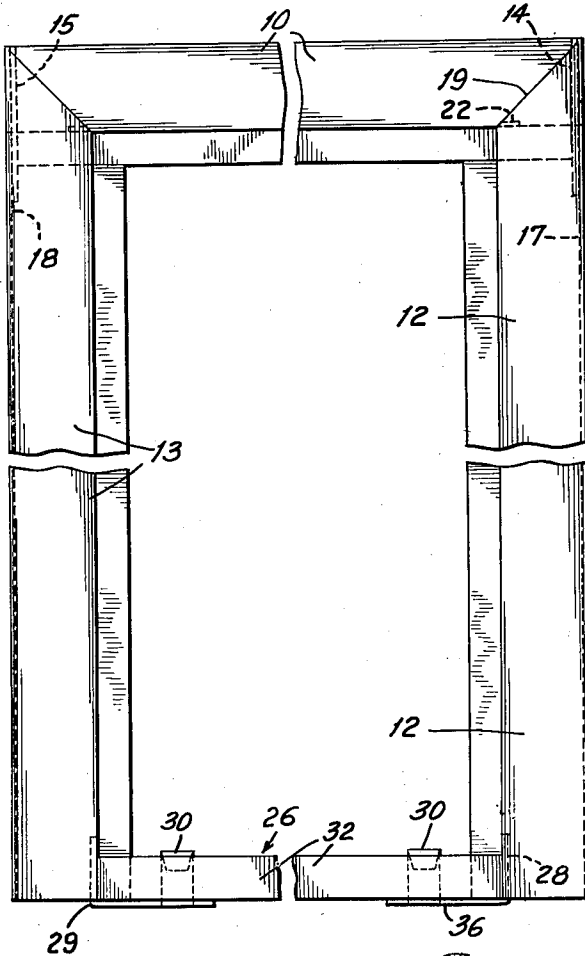


FIG. 2

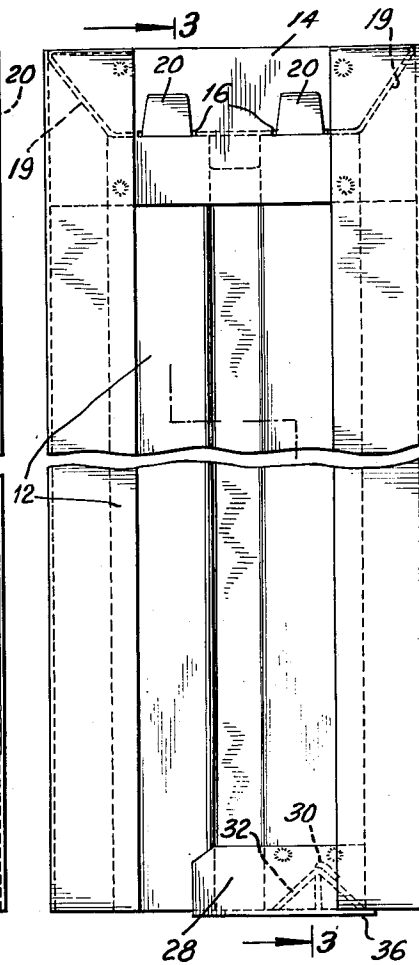
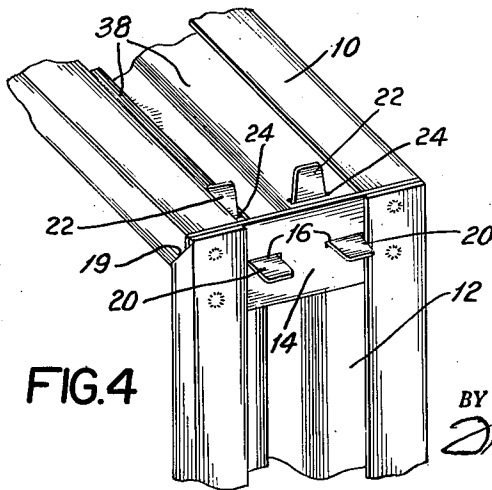


FIG. 4

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2 SHEETS—SHEET 2

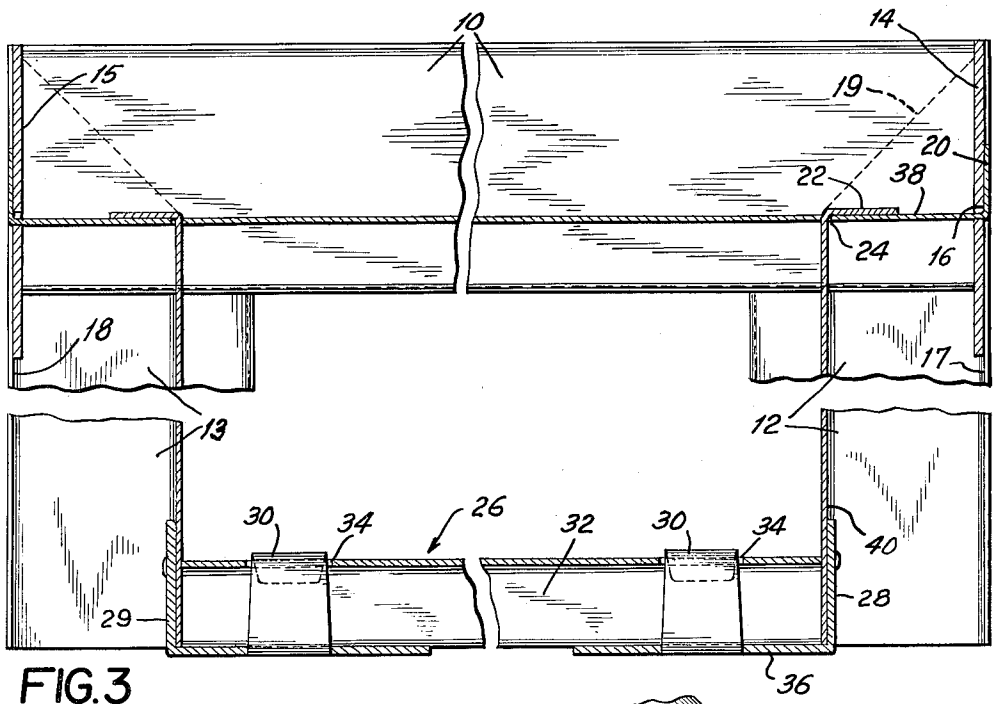


FIG. 3

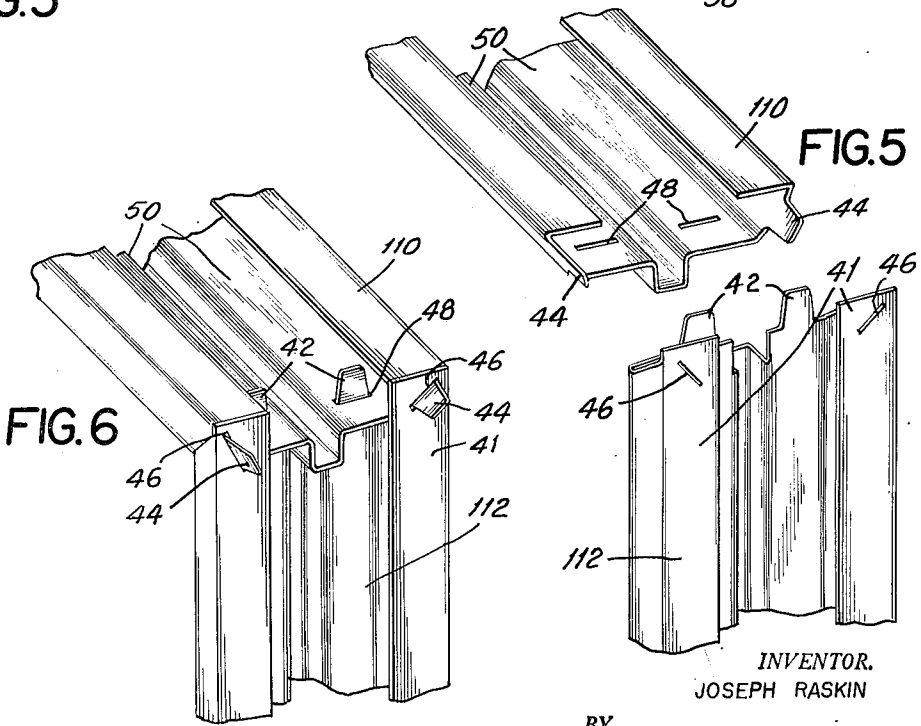


FIG. 5

FIG. 6

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2,589,864

DOORFRAME

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1 Claim. (Cl. 189—46)

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This invention relates to aperture frames and more particularly to prefabricated metallic door frames.

One object of the invention is a simple prefabricated aperture frame suitable for industrial applications.

A further object of the invention is to provide a simple prefabricated aperture frame which may be readily assembled without the aid of special tools or machinery.

Still another object of the invention is a prefabricated aperture frame which may be installed with a minimum of alignment checks.

The invention also has for an object a method of producing and assembling the aperture frame.

To these and other ends, the invention consists in the construction, arrangement, and usage for the attainment of the above stated objects.

These and other objects of the invention and the means of their attainment will be more apparent from the following detailed description taken in connection with the accompanying drawings illustrating one embodiment by which the invention may be realized and in which:

Fig. 1 is a view in front elevation showing the door frame of this invention and the relationship of the structural members.

Fig. 2 is a view in side elevation showing the door frame and the relationship of the structural members.

Fig. 3 is a section view in side elevation in the plane indicated by the line 3—3 of Fig. 2 looking in the direction of the arrows.

Fig. 4 is a fragmentary isometric view showing a typical member joint in the assembled but unlocked position.

Fig. 5 is a fragmentary isometric view showing an alternative construction, in unlocked and disassembled condition.

Fig. 6 is a fragmentary isometric view of the alternative construction shown in Fig. 5, assembled but unlocked.

With reference to the drawings, similar reference characters refer to similar parts throughout.

Referring now to Figs. 1, 2, 3, and 4, a formed sheet metal structural member 10 is supported by two vertical formed sheet metal structural member jambs 12 and 13. Supporting plates 14 and 15, each provided with two formed slots 16, are rigidly fastened by spot welds, screws, bolts, rivets, or other means, to the inside of the upper end of surfaces 17 and 18 of the vertical member jambs 12 and 13. The vertical member jamb 12 is cut at an angle of forty-five degrees from the surface 18, as at 19, to form one half of the door frame corner joint.

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The structural member 10 contains insert tabs 20 which are fitted into the formed slots 16 of the supporting plate 14. The ends of the formed structural member 10, with the exception of the insert tabs 20, are cut square and butt up against the supporting plates 14 and 15 for additional strength and rigidity when assembled.

The vertical member jamb 12 contains insert tabs 22 which are positioned for alignment with the formed slots 24 which are located in surface 38 of the structural member 10. After locating the four insert tabs 20 and 22 in their respective formed slots 16 and 24, the insert tabs 20 are deformed upward against the supporting plate 14 thereby effecting a tight joint between the square end of the structural member 10 and the supporting plate 14. The insert tabs 22 are then deformed downward and outward against surface 38 of the structural member 10 thus effecting a tight joint between the upper inner portion 19 of the vertical member jamb 12 and the formed structural member 10. The vertical member jamb 13 is fastened to the structural member 10 in a like manner.

A tread spacer 26 is employed to effect parallelism of the two member jambs 12 and 13. An angle plate 28 is positioned and firmly secured as by spot welds, bolts, screws, or other suitable means to surface 40 of the vertical member jamb 12. The horizontal portion 36 of the angle plate 28 extends inwardly and contains a cutout insert tab 30 which is mutually perpendicular to the two surfaces of the angle plate 28. A similar angle plate 29 is fastened to the vertical member jamb 13. An angle bar 32, located in an inverted position (see Fig. 2), is formed with slots 34 which are located along the angle edge and are positioned for alignment with the cutout insert tabs 30. After assembly of the angle plates 28 and 29 and the angle bar 32, the cutout insert tabs 30 which extend through the formed slots 34, are deformed downward over the angle bar 32. The angle bar 32, if desired, may be removed after the door frame has been properly positioned.

Referring now to Figs. 5 and 6, an alternative method of joining the structural members 110 and 112 is illustrated. Insert tabs 44 are positioned on the structural member 110 for alignment with the formed slots 46 which are located in the upper surface 41 of the member jamb 112. In like manner, insert tabs 42 are located on the upper end of the vertical member jamb 112 for alignment with the formed slots 48 which are located in surface 50 of the structural member 110.

With the exception of the insert tabs 44, the

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ends of the structural member 110 are cut square and butt up against the inner surface of the vertical member jamb 112 when assembled. The upper inner portion of the vertical member jamb 112 is cut at a forty-five degree angle to form the fitted joint.

Once again, the insert tabs 42 and 44 are inserted in their respective formed slots 46 and 48. The insert tabs 42 are then deformed downwardly and outwardly against surface 50 while the insert tabs 44 are deformed upwardly and inwardly against the outside of surface 41. In this manner, an effective joint of the formed structural members 110 and 112 is produced.

By means of either of these two unique methods of forming an aperture frame corner joint, a considerable misalignment of members cannot cause a clear unsightly space to appear at the joint. At the same time, this construction affords the maximum of rigidity and strength while still retaining the simplicity of assembly.

Various modifications will occur to those skilled in the art in the structural features of the aperture frames as well as the disposition and configuration of the various members going to make up this invention as a whole as well as in its several parts and no limitation is intended by the foregoing description, specification, or illustrations in the accompanying drawings, except as indicated in the appended claim.

What is claimed is:

A prefabricated aperture frame of sheet metal assembled without the aid of special tools, including in combination, a lintel, including a top wall, side walls and a lower wall including a door stop formed with square ends and tabs projecting longitudinally from the ends, and further formed

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with slots in its lower wall adapted to receive tabs, two side members, each formed with mutually facing walls including door stops, a front side wall, a rear side wall and a back wall, the facing walls and door stop at the top terminating short of the top of the side walls, the ends of the lintel lying between the front and rear side walls of the members, said facing walls formed with tabs at their upper ends lying in the slots of the lower wall of the lintel, plates, one positioned between the front side wall and the rear side wall of each of the members and attached to the back walls thereof, said plate formed with slots in which lie the tabs of the lintel, all of said tabs being bent over against adjacent surfaces whereby the lintel and the side members may be shipped disassembled and assembled at the place of use, and means for retaining the lower ends of the side members in spaced relation.

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