Dec. 15, 1959 C. W. KELLY 2,916,781

DOOR FRAME CONSTRUCTION

Filed Dec. 26, 1956

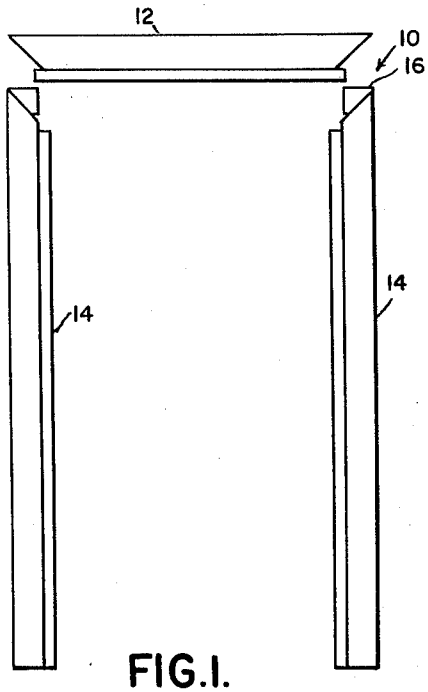


FIG.1.

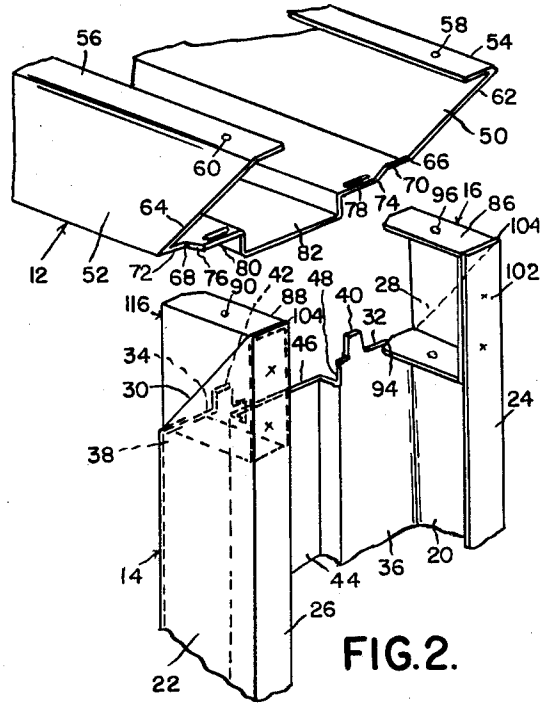


FIG.2.

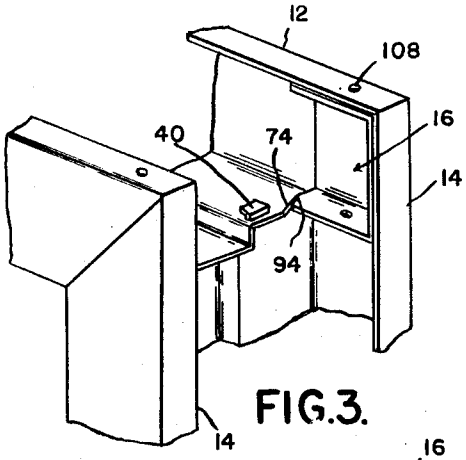


FIG.3.

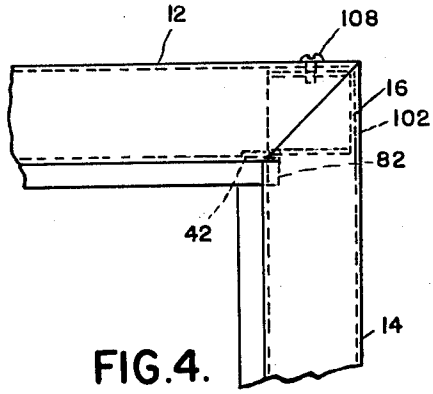


FIG.4.

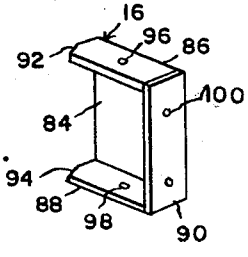


FIG.5.

INVENTOR.
CLYDE W. KELLY
BY Whittemore, Hulbert & Belknap
ATTORNEYS

United States Patent Office 2,916,781 Patented Dec. 15, 1959

2,916,781

DOOR FRAME CONSTRUCTION

Clyde W. Kelly, Detroit, Mich., assignor to Fenestra, Incorporated, Detroit, Mich., a corporation of Michigan

Application December 26, 1956, Serial No. 630,641

2 Claims. (Cl. 20—11)

The present invention relates to a corner construction for the metal frame of a door.

It is an object of the present invention to provide a corner construction for a metal door frame that will allow the frame to be shipped in knocked-down condition and easily assembled at the place of installation.

It is a further object of the present invention to provide a corner reinforcement for a metal door frame that can be attached to one of the members and not interfere with the nesting together of the members so that they will require a minimum amount of space during shipping and storing.

It is a further object of the present invention to provide a corner reinforcement for a metal door frame that will hold the joint firmly together and close the crack at the joint.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawing, illustrating a preferred embodiment of the invention, wherein:

Figure 1 shows a view of a door frame just prior to assembling.

Figure 2 is an enlarged perspective view of one corner of the door frame shown in Figure 1, before the members are assembled.

Figure 3 is a view of the members shown in Figure 2 after they are assembled.

Figure 4 is a side view of the members shown in Figure 3.

Figure 5 is a perspective view of the corner reinforcing member.

Referring now to the drawings, there is shown generally at **10** a knock-down door frame comprising a head **12** and two jamb members **14**. A corner reinforcing member **16** is attached to the jamb members.

The jamb members **14** have side portions **20** and **22** with one edge turned inwardly to form the flanges **24** and **26**. The sides **20** and **22** are mitre cut as at **28** and **30** with the edges **32** and **34** of the web portions **36** and **38** extending toward the center of the jamb from the lower end of the mitre cut. Tongues **40** and **42** project from the edges **32** and **34**. The doorstop **44** is intermediate the webs **36** and **38**. The upper edge **46** of the doorstop is offset downwardly as at **48**.

The head **12** has the side portions **50** and **52** with one edge turned inwardly to form the flanges **54** and **56**, having apertures **58** and **60** in the flanges. The side portions are mitre cut at **62** and **64**. Web portions **66** and **68** have the edges **70** and **72** extending toward the center of the head from the lower end of the mitre cuts. The edges **70** and **72** extend angularly and outwardly at **74** and **76** and then toward the center of the head. The slots **78** and **80** are located outwardly beyond the edges **70** and **72**. The doorstop **82** is intermediate the sides of the head. The head and jambs are fabricated from sections rolled from the same dies so that their contours are identical in shape and size.

The corner reinforcement is preferably made from sheet metal and has a flat portion **84** which is bent over on three sides to form a top **86**, a bottom **88**, and an end **90**. The top and bottom portions have the corners trimmed off as at **92** and **94** for purposes which will later be described. Apertures **96** and **98** are also in the top and bottom portions respectively. Two welding projections **100** are raised outwardly on the end portion.

The reinforcement **16** is electrically welded as at **102**, to the inside surfaces of the flanges **24** and **26** of the jamb member with the use of the welding projections. The reinforcement is positioned so that the top **86** comes slightly below the surface **104** of the jamb.

It will be noted that by turning the reinforcement member upside down that it can be used at either the right hand or left hand side of the jamb, thus avoiding the necessity of different right hand and left hand reinforcing members.

The reinforcing members are welded to the jambs during fabrication in the shop and it will be noted that they are positoned on the jambs so that the space between the flanges **24** and **26** is left open. The opposite or bottom end of the jambs (not shown) is also open between the flanges.

The two jambs are nested together by placing the sides **20** or **22** and flanges **24** or **26** of one jamb in the open space between the sides and flanges of the other jamb of the pair of jambs of the frame so that they require minimum space during shipping and storage. This is permitted since the reinforcing members are completely housed within the projection of the space between the flanges **24**, **26** and the opposed portions of the web. Thus, the reinforcing members do not in any way obstruct the space between the side walls of the frame members and the flanges thereon. This is accomplished by forming the reinforcing members with a width substantially equal to the width of the sides of the frame members and by forming the flanges on the reinforcing members of a width substantially equal to the flanges on the frame members.

To assemble the frame the head member **12** is slipped down on the jamb member **14** with the reinforcing members **16** sliding into position along the inner surfaces of the sides **50** and **52** of the head until the mitre cut edges **62** and **64** abut against the mitre cut edges **28** and **30** of the jamb as indicated in Figure 3. The tongues **40** and **42** pass through the slots **78** and **80** with notch **92** and **94** of the members **16** providing clearance for the edges **74** and **76** of the head. The doorstop portion **82** fits into a cutout above the doorstop **44** of the jamb. The hole **58** is positioned so that it registers with hole **96** and hole **60** registers with hole **98**. The slight clearance between the upper surfaces of the reinforcing members and the edges **104** of the jamb allow self tapping sheet metal screws **108** to draw the head and jamb securely together. The tongues **40** are bent over to complete the assembly. The opposite jamb is assembled to the head in a like manner.

The present invention provides a construction which allows the frame members to be shipped in a knocked-down condition in a compact package thus requiring a minimum of space without damage to the parts as there are no projecting members to become bent or knocked off and the construction can be easily assembled at the place of installation. The reinforcing members are constructed to provide a sturdy corner with no through cracks at the mitre joint.

It is understood that the above disclosure describes the preferred manner of construction with a door frame, but the reinforcement and its manner of assembly may be used equally as well with metal frames for windows or other similar uses.

The drawing and the foregoing specification constitute

a description of the improved door frame construction in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What I claim as my invention is:

1. A door frame comprising head and jamb frame members adapted to be shipped knocked-down and assembled on the job, said members being of the same cross-sectional shape and comprising a channel having a web, side walls and opposed flanges extending inwardly of the channel from the edges of said side walls remote from said web and parallel to said web, adjacent ends of said members being mitered to provide inclined abutting end surfaces on said side walls in assembly, a pair of reinforcing elements connecting each end of said head member to the upper end of one of said jamb members, each of said reinforcing elements being in the form of a flat plate abutting the inner surface of the end portion of one of the side walls of one of said frame members, said plate having first and second flanges extending from adjacent edges thereof generally perpendicular to the plane of said plate and to each other, said first flange of said reinforcing element being permanently connected to the inner surface of the end portion of one of the flanges of said one frame member, said plate extending beyond the mitered edge of said one frame member, the second flange of said element being located at the edge of said plate which is positioned beyond said mitered end, the flanges of said reinforcing element having a width not substantially exceeding the width of the flanges of said frame member, said plate having a maximum dimension measured perpendicularly from said first flange not exceeding the width of the side walls of the frame members, said second flange having means thereon providing for detachable connection to the other of said frame members.

2. A construction as defined in claim 1 in which the plate of said reinforcing element is rectangular and has a third flange thereon parallel to said second flange and at the opposite edge of said plate therefrom, said third flange also having means thereon for detachable connection to a frame member to provide for use of said element at either side of said frame member.

References Cited in the file of this patent

UNITED STATES PATENTS

2,052,121	Venzie	Aug. 25, 1936
2,652,907	Miller	Sept. 22, 1953
2,741,344	Herr	Apr. 10, 1956