Dec. 15, 1970 S. B. KIMBERLY 3,546,815

REVERSIBLE DOOR FRAME

Filed May 15, 1969 2 Sheets-Sheet 1

FIG. 1

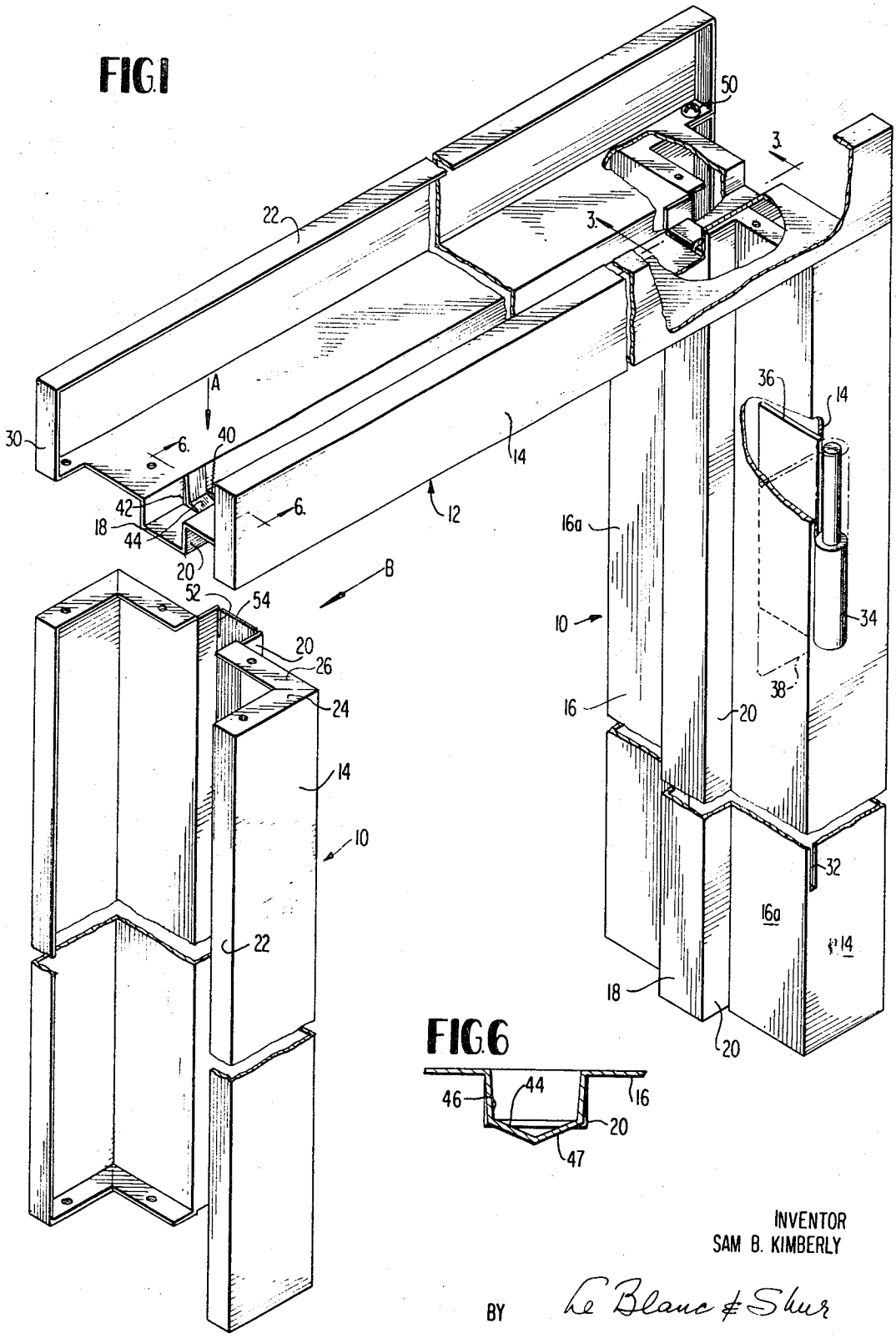


FIG. 6

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REVERSIBLE DOOR FRAME

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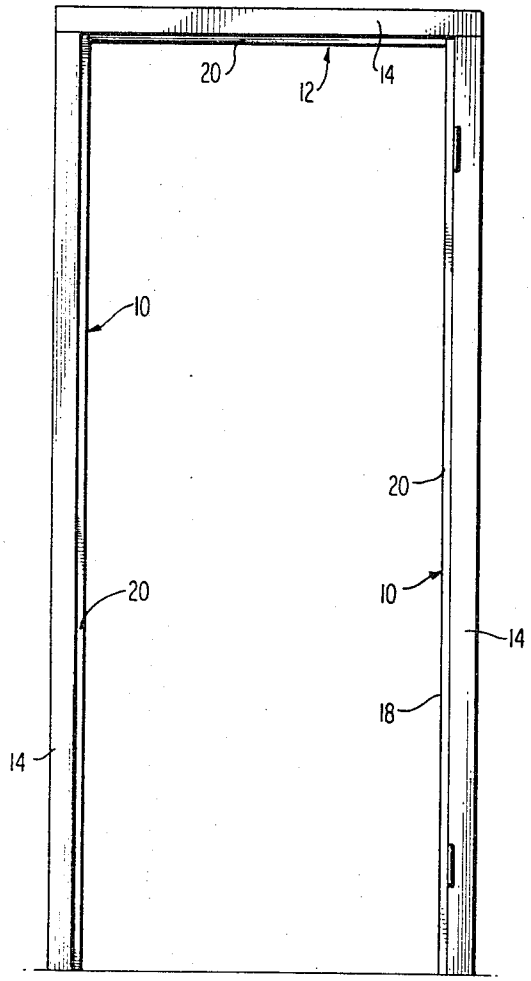


FIG. 2

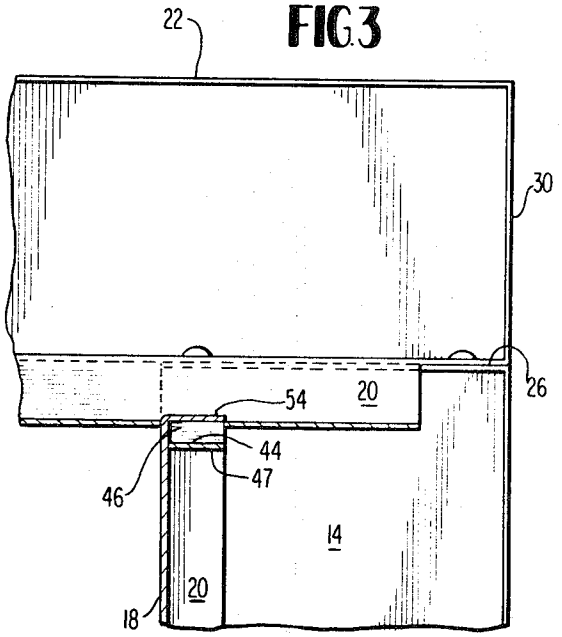


FIG. 3

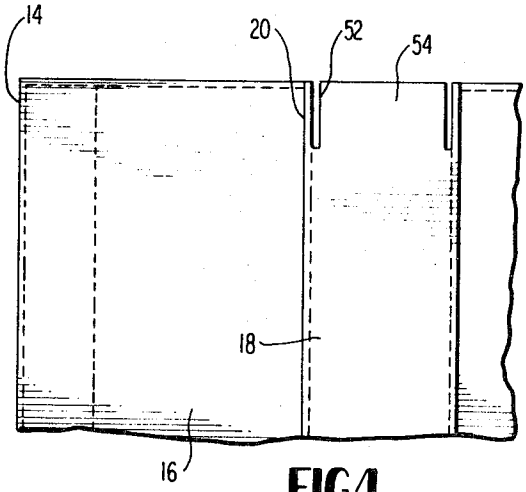


FIG. 4

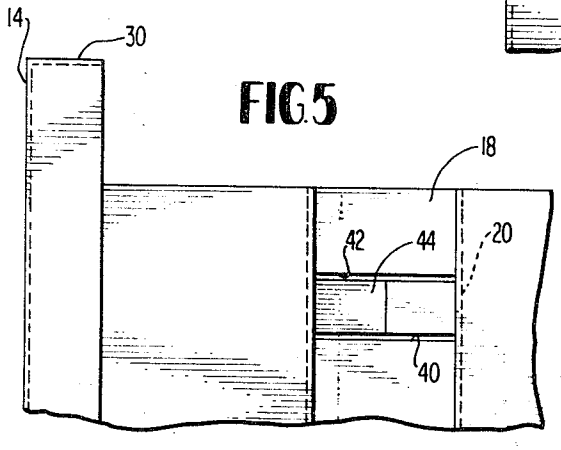


FIG. 5

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REVERSIBLE DOOR FRAME

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Int. Cl. E06b 1/14
U.S. Cl. 49—504 10 Claims

ABSTRACT OF THE DISCLOSURE

The reversible door frame includes sheet metal side and head jamb members. Each jamb member has a stop including a stop face and a pair of stop edges. The head jamb has a pair of slots through its stop including its edges at each end thereof. The stop edges of the metal strip defined between the slots is bent inwardly while the stop face of the strip is bent outwardly. The upper ends of the stops on the side jamb members are received within the slot with the inwardly bent edges extending within side edges of the stops of the side jamb members. Metal screws are employed to finally secure the side and head jamb members one to the other.

The present invention relates to improvements in door frame construction and particularly relates to a novel, unique reversible sheet metal door frame construction.

Many prior reversible door frame constructions have not been truly reversible in the sense that the side jambs could be readily adapted without modification for left and right hand opening doors and inwardly or outwardly opening doors. Moreover, many of these prior so-called reversible door frames are comprised of a large number of parts proving difficult of assembly at a construction site. Such prior door frames have also been expensive to manufacture.

The present invention provides a reversible door frame comprised solely of three sheet metal parts, two side jambs and a head jamb, which are readily, easily and inexpensively manufactured and which can be readily assembled at the construction site. Additionally, the door frame hereof is adaptable to hang a door for either inward or outward swinging movement as well as hang the door from either side of the door frame to provide either a left or right hand opening door. To this end, the present invention provides symmetrically constructed side and head jambs formed of sheet metal. Each jamb has a generally channel shaped cross section having side walls and a stop projecting outwardly from the jamb face. Slots are formed in one side wall of a side jamb at locations equidistant from the ends of the jambs for receiving the support plates of door hinges. The hinge support plates are suitably secured to the inside of the jamb faces. Also, a center slot may be provided in the side jamb to accommodate three hinges. In this manner, the side jamb provided with the hinges can be disposed vertically on one side of the door frame and on either of its ends to provide for an inwardly or outwardly opening door respectively. The same jamb can be disposed on the other side of the door frame on either of its ends to also provide an inwardly or outwardly opening door. Thus, the side jamb, which mounts the door hinges, is prefabricated to be completely reversible and usable on either side of the door frame to accommodate any desired type of door opening.

Once the particular type of door opening is finalized, the side and head jambs may be readily and easily assembled at the building site. To accomplish this, a pair of slots are formed in the stop adjacent each of the opposite ends of the head jamb. The slots extend through the stop face and the stop edges to define a metal strip extending between the slots. The side edges of the strip

are bent inwardly with the strip portion between the edges being bent outwardly beyond the stop face. Inwardly directed flanges are formed on the ends of the jambs. One of the slots at each end of the head jamb receives the upper end portion of the stop face of the associated side jamb, the strip portion between the slots being received within the side edges of the side jamb stop. The slots on the head jamb are spaced such that the width of the strip portion therebetween is at least as great as the width of the stop edges of the side jambs whereby the head jamb face butts the upper end flanges of the side jambs. Screws are provided through the jamb face and the flanges on the side jambs to secure the jamb members one to the other.

Accordingly, it is a primary object of the present invention to provide a novel, improved reversible door frame construction.

It is another object of the present invention to provide a novel, improved reversible door frame construction having the hinges for the side jambs spaced equidistantly from its ends whereby the side jamb member can be disposed to hang a door opening inwardly or outwardly from either side of the door frame as desired.

It is still another object of the present invention to provide a reversible door frame construction formed of sheet metal and which can be readily and quickly assembled at the building site.

It is a further object of the present invention to provide a novel, improved door frame construction having a novel, improved head to side jamb connection.

These and further objects and advantages of the present invention will become more apparent upon reference to the following specification, appended claims and drawings, wherein:

FIG. 1 is a fragmentary exploded perspective view with parts broken out for ease of illustration of a novel, improved reversible door frame constructed in accordance with the present invention;

FIG. 2 is an elevational view of the door frame hereof as finally assembled;

FIG. 3 is an enlarged fragmentary cross sectional view thereof taken generally about on line 3—3 in FIG. 1;

FIG. 4 is an enlarged fragmentary elevational view of the upper end of a side jamb looking generally in the direction of the arrow B in FIG. 1;

FIG. 5 is a fragmentary enlarged plan view of one end of the head jamb looking generally in the direction of the arrow A in FIG. 1; and

FIG. 6 is a fragmentary cross sectional view of the head jamb taken generally about on line 6—6 in FIG. 1.

Referring now to the drawings, particularly to FIG. 1, there is illustrated a door frame constructed in accordance with the present invention and comprising a pair of side jamb members, generally indicated at **10**, and a head jamb member, indicated at **12**. Each of the jambs **10** and **12** is generally channel shaped in cross section having side walls **14**, and a jamb face **16** including jamb face portions **16***a* on opposite sides of a stop **18**. The stop **18** projects outwardly from jamb face **16** and includes a pair of stop edges **20**. The cross sections of the jamb members including both side jambs **10** and the head jamb **12** are identical. Moreover, for purposes set forth hereinafter, the side and head jamb members are symmetrical about their respective vertical and horizontal axes. The jambs are formed of sheet metal and have inwardly directed flanges **22** formed along the rear edges of side walls **14**. The side jambs **10** further include inwardly directed flanges **24** and **26** formed along the opposite end edges of the side walls **14** and the jamb face portions **16** respectively. The head jamb member **12** is provided with a flange **30** extending inwardly from the opposite end edges of each of the side walls **14**. The opposite end edges of

the jamb face **16** and stop **18** of head member **12** are inset from the ends of the head member as to receive a portion of the rough buck or fixed frame, not shown, on which the reversible frame hereof is mounted.

From the foregoing, it will be appreciated that the side jamb members **10** can be disposed with either end secured to the head frame member **12** and that the side jamb members can be disposed on either side of the door frame.

As seen in FIG. 1, a side wall **14** of one of the side jambs **10** is provided with a pair of elongated slots **32** adjacent its juncture with a jamb portion **16***a*. To insure that the side jamb members **10** can be disposed on either side of the door frame whereby the door, not shown, can swing either inwardly or outwardly, the slots **32** are spaced equidistantly from the ends of the jamb member. A pair of hinges **34** for hanging a door, not shown, are provided and each hinge **34** includes a support plate **36** receivable through the associated slot **32**. The hinge support plates **36** are suitably secured to the rear side of jamb face **16** as by welding or the like. The support plates, which are secured to the door, not shown, are pivotally mounted on the hinges **34** in the usual fashion and are indicated at **38** by the dot dash lines. Thus, it will be appreciated that the side jamb member **10**, as illustrated on the right hand side of the door frame, provides a right hand hinge for a door which will open inwardly. By disposing side jamb member **10** on the opposite end than illustrated, side jamb **10** accommodates a door opening outwardly or in the opposite direction. By disposing the side jamb member which mounts the hinges on the left hand side of the door frame, it will be seen that either an inwardly or outwardly opening door can likewise be provided. Thus, the jambs **10** are completely reversible and provide a door frame useful to mount a door for all modes of door openings. It will be appreciated that a center hinge can be provided to provide three hinges for hanging a door and that such door frame construction is compatible with the foregoing.

A pair of slots **40** and **42** are inwardly spaced from the opposite ends of head jamb **12** and extend through stop face **18** and side edges **20**. The side edges **46** of the band or strip of metal **44** disposed between the slots **40** and **42** are pressed inwardly as indicated in FIG. 6 to converge towards one another with the base or intermediate portion **47** of the strip being located below the stop **18**. The width of the metal strip portion **44** is at least as great as the width of the side edges **20** on the side jambs **10**.

To assemble the door frame, the head jamb **12** is disposed on the upper ends of the side jambs **10** with the upper end portions of the stops **18** being received within the slots **40** at opposite ends of the head jamb. The upper end portions of the side edges **20** on the side jambs **10** engage outwardly of the converging side edges **46** of strip portion **44** and in alignment with the respective edges **20** of the head jamb **12**. That is to say, the strip portion **44** is received between the side edges **20** of the side jambs **10**. This permits the jamb face **16** on the head member **12** to butt directly against the end flanges **24** and **26** of the side jamb members **10**. By engaging the stop **18** within the slot **40**, the head is locked against relative lateral movement relative to the side jambs **10**. Additionally, by the unique formation of the metal strip portion **44**, it is possible to form the stop **18** on head jamb **12** of a width identical to the width of the stop **18** on the side jambs thereby providing a continuous flush stop about the door frame. Thus, merely by pressing the head jamb **12** down on the ends of the side jambs **10**, the door frame is locked in a semipermanent assembled condition. To finally secure the jamb members one to the other, self tapping screws, indicated at **50**, are threaded down through the jamb face **16** of head jamb **12** into the flanges **24** and **26** formed on the side jambs **10**. In this manner, the jambs are readily and quickly assembled and finally secured one to the other.

In another embodiment hereof, a pair of slots **52** may be formed in the upper ends of each jamb stop **18** to define a tab **54** therebetween. When the head jamb **12** is disposed in assembled relation on the ends of the side jamb members, it will be seen that tabs **54** extend within the respective slots **40** and can be bent over, as seen in FIG. 1, to lock the head jamb **12** and side jambs **10** in assembled relation.

Thus it will be appreciated the objects of the present invention have been fully accomplished in that there has been provided a door frame construction comprised of three readily fabricated sheet metal parts which are easily assembled one to the other to form a continuous uninterrupted door frame. Additionally, by providing slots for receiving the door hinge brackets along one side of a side jamb and spacing such slots equidistantly from the ends of the side jamb, there is provided a reversible door frame for hanging doors from either side of the frame and for inward or outward opening as desired.

What is claimed and desired to be secured by United States Letters Patent is:

1. A metal door frame construction comprising an elongated side jamb member and an elongated head jamb member, said side and head jamb members being formed of sheet metal, and having substantially identical channel shaped cross sections, said members including jamb faces and stops projecting from said jamb faces, each of said stops having a pair of side edges and a stop face portion, a pair of laterally extending spaced slots formed in the stop adjacent an end of one of the jamb members, said slots extending through the stop face portion and the side edges of said one stop to define a metal strip portion between said slots, said strip portion having a width between said slots at least as great as the width of the stop side edges of the other jamb member, the side edges of the strip portion being bent inwardly, said side and head jamb members being disposed substantially normally one to the other with an end of the stop face portion of the other jamb member being received in one of said slots, the strip portion on said one jamb member being received inwardly of the side edges adjacent the end of the other jamb member to lock said one member against lengthwise movement relative to the other member and means for securing said jamb members one to the other.

2. A door frame construction according to claim **1** wherein said other jamb member has an end edge portion, the jamb face of said one jamb member butting said end edge portion.

3. A door frame construction according to claim **2** wherein said channel shaped jamb members have side walls, said end edge portion including inwardly extending flanges carried on one of the associated side walls and jamb face, said securing means including fasteners extending through said flanges and the jamb face of said one jamb member.

4. A door frame construction according to claim **1** wherein said channel shaped jamb members have side walls, a pair of spaced slots extending through a side wall of one of said members, a pair of hinges including support plates received through said slots, and means for securing said hinge support plates to said latter mentioned member.

5. A door frame construction according to claim **1** wherein the end portion of the stop face of the other jamb member has a pair of slots defining a tab therebetween, said tab extending within said one slot and being bent over to lock said jamb members one to the other.

6. A door frame construction according to claim **1** wherein said jamb members are symmetrical about planes extending medially through said jambs and normal to said jamb faces.

7. A door frame construction according to claim 1 including a second side jamb member formed of sheet metal and having a substantially identical channel shaped cross section, said second jamb member including a jamb face and a stop projecting from said latter jamb face, said latter stop having a pair of side edges and a stop face portion, a pair of laterally extending spaced slots formed in said second stop portion, adjacent an end of one of said head and second jamb members, said slots extending through the stop face portion and the side edges of said second stop to define a metal strip portion between said latter slots, said latter strip portion having a width between said slots at least as great as the width of the stop side edges of the other of said head and second jamb members, the side edges of said latter strip portion being bent inwardly, said second and head jamb members being disposed substantially normally one to the other with an end portion of the stop face portion of the other of said head and second jamb members being received within one of said latter slots, the strip portion on the one of said head and second jamb members being received inwardly of the side edges adjacent the end of the other of said head and second jamb members, and means for securing the head and second jamb members one to the other.

8. A door frame construction according to claim 7 wherein said slots and strip portions are formed on said head member.

9. A door frame construction according to claim 1 wherein said channel shaped jamb members have side walls, a pair of slots extending through a side wall of said side jamb member, said slots being spaced equidistantly from the opposite ends of said one member, a pair of hinges including support plates received through said slots, and means for securing said hinge support plates to said latter mentioned member, said one member being adapted to comprise a side jamb member on either side of the door frame for hanging a door for selected opening either inwardly or outwardly or from the left or right hand side of the door frame.

10. A metal door frame construction comprising a pair of elongated side jamb members and an elongated head jamb member, said side and head jamb members being formed of sheet metal and having substantially identical channel shaped cross sections, said members including jamb faces and stops projecting from said faces, each of said stops having a pair of side edges and a stop face portion, a slot formed in the stop of said head jamb member adjacent each of its opposite ends, said slots extending through the stop face portion and the side edges of said head jamb stop, said side jamb members being disposed substantially normally to said head jamb member adjacent opposite ends of the latter with the stops of said side jamb members being received within the respective slots in said head jamb member, said jamb members having side walls, a pair of slots extending through a side wall of one of said side jamb members, said latter slots being spaced equidistantly from the opposite ends of said one member, a pair of hinges including support plates received through said latter slots, and means for securing said hinge support plates to said one side jamb member, said one member being adapted to comprise a side jamb member on either side of the door frame for hanging a door for selected opening either inwardly or outwardly or from the left or right hand side of the door frame, and means for finally securing said side and head jamb members one to the other.

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U.S. Cl. X.R.

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