

Jan. 5, 1971

H. L. WOODRUM

3,552,085

MOUNTING ARRANGEMENT FOR METAL DOOR FRAMES

Filed Feb. 20, 1969

4 Sheets-Sheet 1

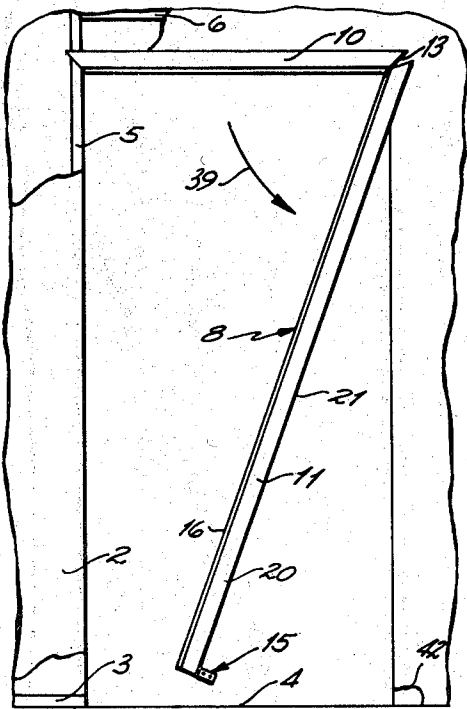


Fig. 1

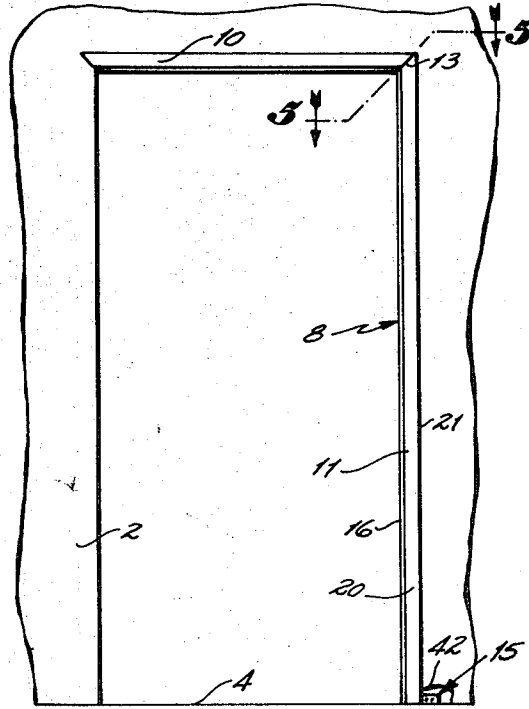


Fig. 2

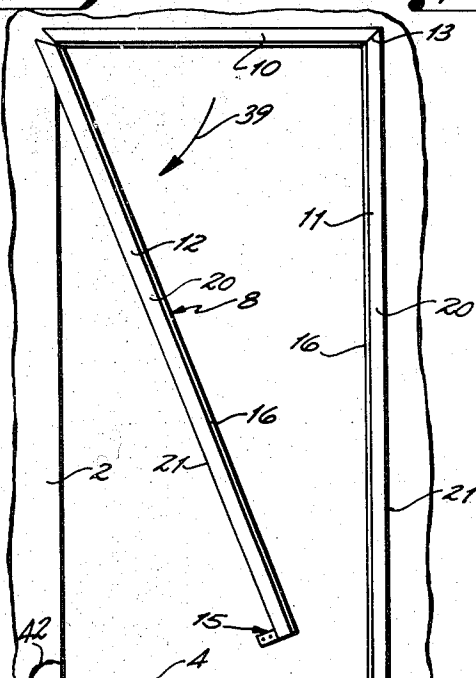


Fig. 3

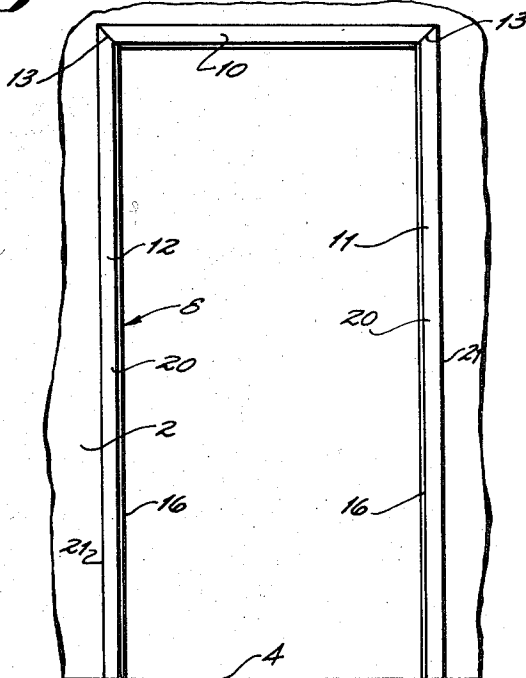


Fig. 4

INVENTOR.

BY *Harold L. Woodrum*
Wood, Vernon, & Evans
ATTORNEYS

H. L. WOODRUM

MOUNTING ARRANGEMENT FOR METAL DOOR FRAMES

4 Sheets-Sheet 2



INVENTOR.

INVENTOR.
Harold L. Hoodlum
 BY
Paul, Remond & Evans
 ATTORNEYS

Jan. 5, 1971

H. L. WOODRUM

3,552,085

MOUNTING ARRANGEMENT FOR METAL DOOR FRAMES

Filed Feb. 20, 1969

4 Sheets-Sheet 3

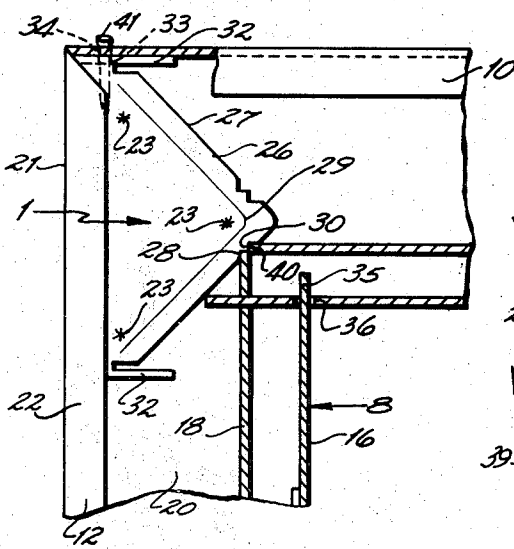


Fig. 1

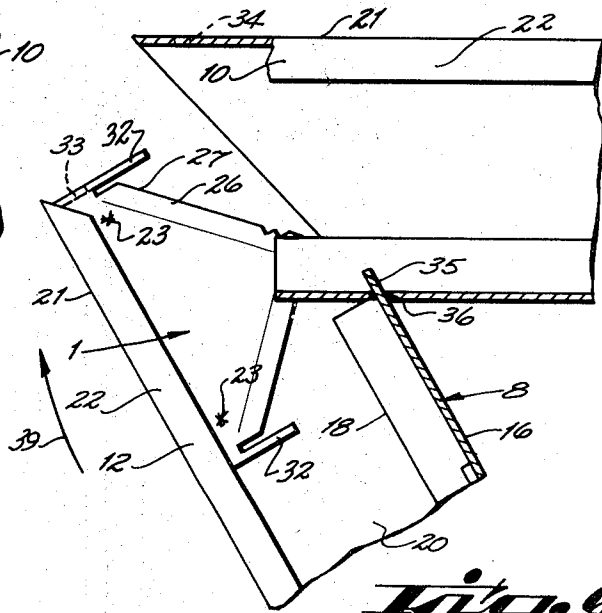
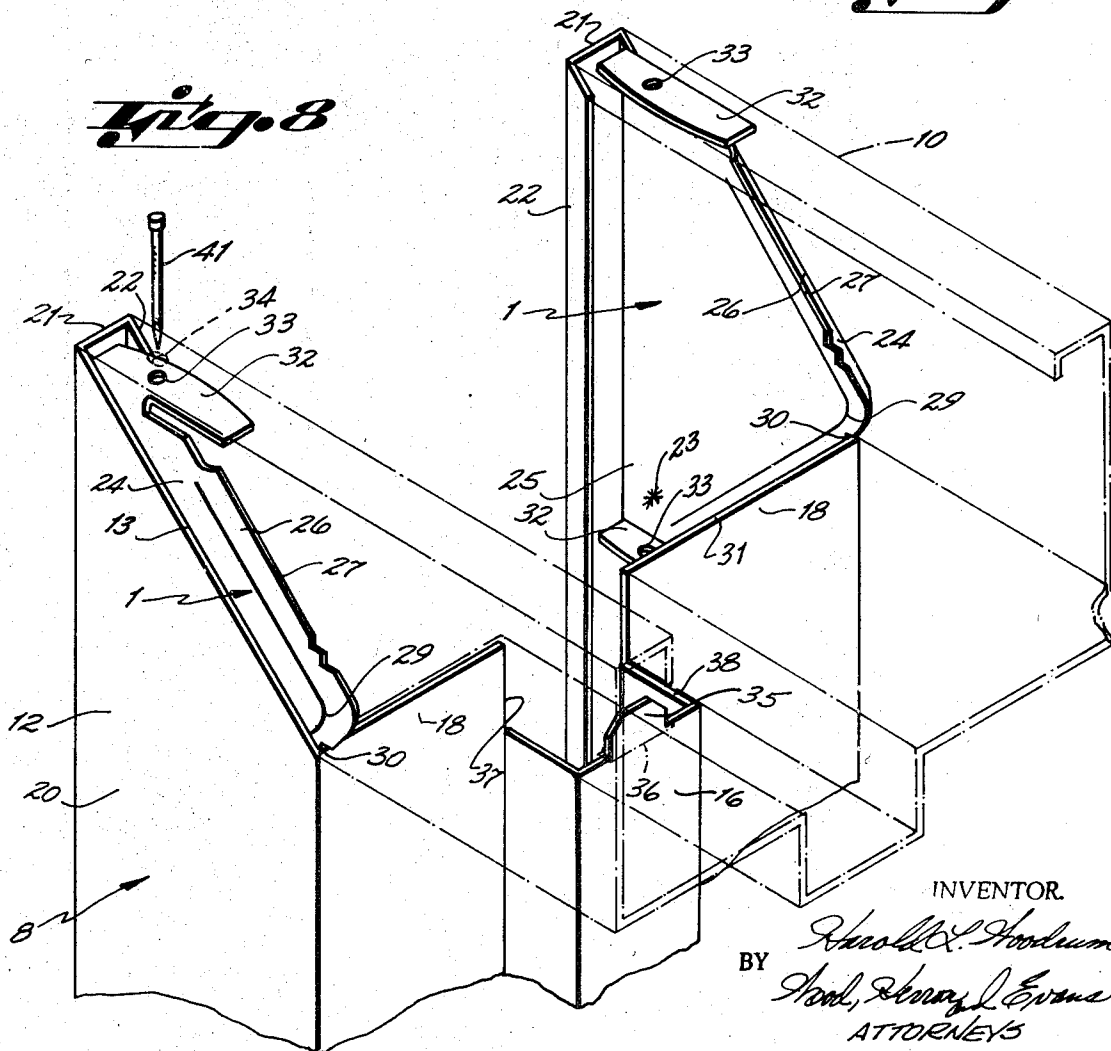


Fig. 6

Fig. 8



INVENTOR.

BY *H. L. Woodrum*
Paul, Henry, & Evans
ATTORNEYS

Jan. 5, 1971

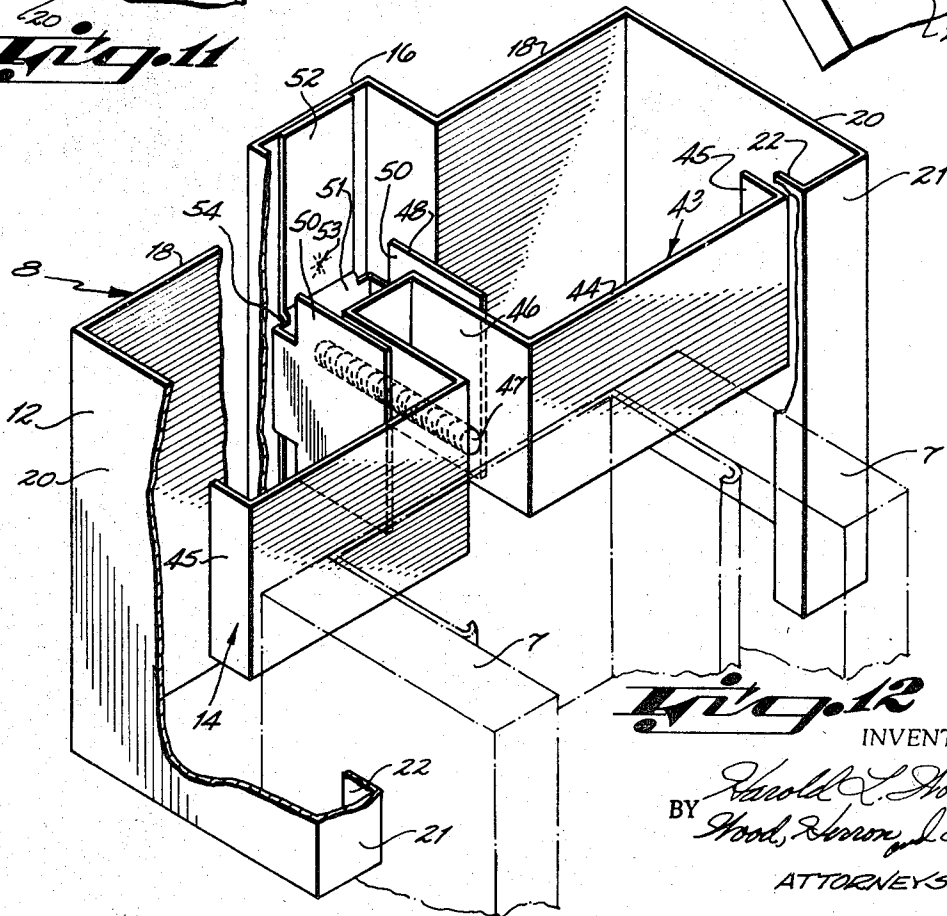
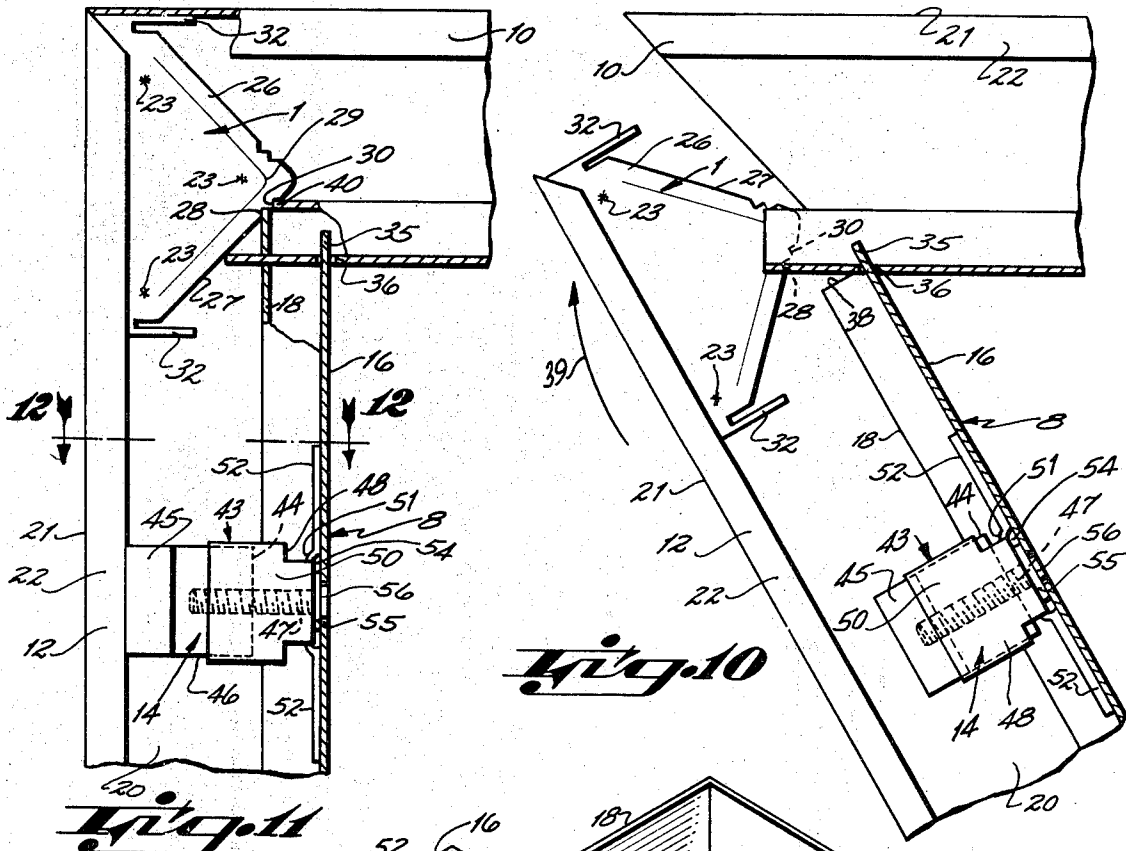
H. L. WOODRUM

3,552,085

MOUNTING ARRANGEMENT FOR METAL DOOR FRAMES

Filed Feb. 20, 1969

4 Sheets-Sheet 4



INVENTOR

BY *Harold L. Woodrum*
Wood, Simon, & Evans
ATTORNEYS

1

2

3,552,085

MOUNTING ARRANGEMENT FOR METAL DOOR FRAMES

Harold L. Woodrum, West Chester, Ohio, assignor to The
Steelcraft Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 20, 1969, Ser. No. 801,033

Int. Cl. E06b 1/04

U.S. Cl. 52-211

5 Claims

ABSTRACT OF THE DISCLOSURE

A sectional door frame of sheet metal construction, comprising a horizontal header and a pair of vertical jambs hingedly connected to the end of the header to facilitate installation of the frame, the frame members having mitered ends seated against one another upon installation of the frame in a door opening. The mitered ends of the jambs at opposite sides include triangular corner clips which interfit the mitered ends of the header to align the jambs and header upon installation. The sides of the triangular corner clips include notches engaged by the end portions of the header to lock the header and jambs in assembly, combined with pins which are driven in place to join the members in a positive manner at the corners. In addition, the jambs each include a clamp located near its upper end, the clamps being engaged against the opposite sides of the door opening and being adjustable to locate the frame, with the lower end of the jambs secured to a base anchor to facilitate installation and adjustment.

BACKGROUND OF THE INVENTION

The invention relates to sectional door frames formed of sheet metal, consisting of a pair of vertical jambs and a horizontal header installed in the door opening of a wall.

Generally speaking, the sectional door frame, to which the invention is addressed, comprises a header which is generally channel-shaped in cross section arranged to embrace the opposite surfaces of the wall (which may be of dry wall construction) across the top of the opening, combined with a pair of vertical jambs having their upper ends mitered and hingedly connected to the mitered opposite ends of the horizontal header, the jambs also being generally channel-shaped in cross section and designed to embrace opposite marginal side portions of the wall surfaces about the door openings. One of the jambs constitutes a hinge jamb to which the door is hingedly connected and the opposite jamb comprises a strike jamb against which the swinging edge portion of the door engages.

A sectional metal door frame of this general construction is disclosed in U.S. Pat. 3,222,833 issued on Dec. 14, 1965, to which attention is invited. The prior patent is assigned to The Steelcraft Mfg. Co. the present assignee.

One of the primary objectives of the present invention has been to provide a sectional door frame generally similar to the frame structure disclosed in the prior patent, but being of simplified construction while providing the same advantages of rapid, convenient installation in the field without requiring fitting operations and permitting the frame to be installed with the use of simple tools such as a hammer and screwdriver.

In order to provide a simple mounting structure, the upper end portion of each vertical jamb is mitered and each is provided with a pair of triangular corner clips which are welded to the opposed inner surfaces of the

jamb, with portions of the corner clips projecting outwardly beyond the mitered end portions of the jambs. The projecting portions of the clips, upon installation of the frame sections, project into the interior surfaces at the mitered end portion of the header (which is of identical channel-shaped cross section) thus aligning the jambs and header in the vertical plane.

A further objective has been to provide an improved positive connection at the mitered corner portions of the header and jambs arranged to forcibly draw the surfaces of the mitered joints into positive clamping engagement with one another, whereby the mitered edges provide a hairline joint having a permanent neat and trim appearance.

According to this concept, the upper ends of the jambs are each provided with an upwardly projecting tongue which interfits a slot formed in the mating end portion of the header such that upon installation, the tongue enters the slot to form a pivotal connection between the header and jambs. This permits the jamb to be pivoted from an inwardly inclined position to a vertical position along the marginal edge portion of the opening, providing a fulcrum to force the mitered ends of the members into intimate engagement, with the corner clips in engagement.

In order to provide a permanent connection at the mitered joint, the edge portion of each corner clip is notched for engagement with the end portion of the header when the two members are forced to their final mating position. To make the connection positive and permanent, the upper edge of each corner clip (which is secured to the jamb) includes a horizontal tongue having a hole which mates with a hole formed in the upper surface of the header. After the jamb is pivoted forcibly to its vertical position, respective locking members, such as nails are driven through the matching holes, whereby the nails coact with the hinged joint and notched connection to lock the parts permanently in assembly at the corners.

A further objective has been to provide a clamp bracket for each jamb which is located near the upper portion of the jamb and engageable with the surface of the door opening, the clamp bracket being non-rotatable and arranged to locate the sectional frame accurately in alignment with the door opening.

After the sectional frame has been installed, as outlined above, the lower edges of the jambs are connected to base anchors, fixed to the lower portion of the wall opening, and with the locking nails driven in place through the headers, the clamp brackets are adjusted to adjust and rigidly clamp the assembled frame in its opening. This completes the installation procedure.

The various features and advantages of the invention will be more fully apparent from the following detailed description taken in conjunction with the attached drawings.

DRAWINGS

In the drawings:

FIG. 1 is a diagrammatic view showing the first step of installing a door frame in the opening of a building wall, the door frame being equipped with the mitered corner clip and adjustable jamb anchor of the present invention.

FIG. 2 is a view generally similar to FIG. 1, showing the right-hand jamb pivoted to its vertical position.

FIG. 3 is a view generally similar to FIG. 2, showing the left-hand jamb pivotally connected to the end of the horizontal header ready to be pivoted to its vertical position and clamped in place within the door opening.

FIG. 4 is a view similar to FIG. 3, showing the left-hand jamb in its vertical position and secured in place within the door opening.

3

FIG. 5 is an end view taken along the lines 5—5 of FIG. 2, illustrating the jamb, the corner clip, and the jamb anchor.

FIG. 6 is an enlarged fragmentary view, partially in section, as taken from FIG. 3, showing the header mounted in place within the door opening, with the left-hand jamb pivotally connected to the end portion of the header.

FIG. 7 is an enlarged fragmentary sectional view similar to FIG. 6, showing the relationship of the parts after the left-hand jamb has been pivoted to its upright locking position with reference to the header as in FIG. 4.

FIG. 8 is an enlarged fragmentary perspective view showing the upper portion of the left-hand jamb connected to a portion of the header showing, in broken lines, the position which the parts assume after assembly, corresponding to FIG. 7.

FIG. 9 is an enlarged fragmentary sectional view, taken along line 9—9 of FIG. 8, detailing the locking engagement of the adjoining edges of the header and jamb with reference to the notched edge portion of the corner clip.

FIG. 10 is an enlarged fragmentary sectional view taken along line 10—10 of FIG. 5 and similar to FIG. 11, detailing the combination of the corner clip and jamb anchor during assembly.

FIG. 11 is an enlarged fragmentary sectional view similar to FIG. 10, further illustrating the coaction of the corner clip and jamb anchor at final assembly.

FIG. 12 is an enlarged fragmentary perspective view, taken along the lines 12—12 of FIG. 11, detailing the jamb anchor by means of which the jamb is clamped in adjusted position within the door opening.

DOOR FRAME STRUCTURE GENERALLY

The corner clip indicated generally at 1, (FIGS. 5-8) is intended to facilitate the installation of the sheet metal door frame in the opening of a wall 2 of stud-type construction (FIGS. 1-4). Walls of this construction are in common use and are known in the industry as "dry walls" in which the wall comprises vertical studding, either wood or metal, with panels formed of plaster board secured to opposite sides of the studs. The wall 2, shown in FIGS. 1-4, represents an internal partition wall of this type; however, the sectional door frame of the invention is also intended to be installed in the external wall of a building such as masonry construction (not shown). The sectional frame structure is also intended for use as a window frame, utilizing the same general principles of construction and installation.

As shown in FIGS. 1-4, the partition wall comprises a floor runner strip 3 formed (in the present example) of sheet metal and permanently attached to the floor 4 by nails or screws. A similar runner strip (not shown) preferably is attached to the ceiling of the building to anchor the upper portion of the wall.

The vertical studs 5, which may be formed of sheet metal, have their upper and lower ends attached to the runner strips (FIGS. 1-4). Generally speaking the door opening is delineated by the vertical studs 5—5 and a horizontal cross piece 6, which may be fabricated from sheet metal or wood, depending upon the design of the building. As shown in FIGS. 5 and 12, the dry wall 2, selected to illustrate the principles of the invention, consists of the panels 7—7 which are secured to the studs 5 and cross piece 6 in a conventional manner.

The door frame, indicated generally at 8, (FIGS. 1-4) in which is embodied the corner clip and adjustable jamb anchor of this invention, comprises the header 10 and the vertical jambs 11 and 12, one constituting the hinge jamb and the other forming a latch jamb.

As shown in FIGS. 1-4 and several other views, the mating ends of the header 10 and the jambs 11 and 12 are mitered as at 13 in the usual way to interfit one another upon assembly of the framing members within the door opening.

4

The mitered ends of the jambs and header are held in squared mating relationship with one another by the corner clip 1 of the invention, coacting with respective adjustable jamb anchors, indicated generally at 14 (FIGS. 5 and 12). The jamb anchors are located near the upper ends of the jambs and are arranged to seat against the vertical studs 5 or any other wall surface which delineates the door opening, serving to force the upper mitered end portions of the jambs toward the opposite mitered ends of the header 10. The anchors 14 also permit the assembled door frame 8 to be adjusted to a plumb position with reference to the door opening of the wall, as explained later.

It will be understood, at this point, that the jamb anchors 14 coact with the corner clip structure 1 of the invention in installing the door frame 8. It should also be noted that the lower ends of the jambs are anchored with reference to the floor 4 by means of base anchors, indicated generally at 15, which are connected in a fixed position with reference to the floor, being secured to the vertical studs 5 or to the runner strip 3.

In installing the door frame 8 of the invention, the header 10 is first installed across the top of the door opening and is preferably held in place by frictional engagement with the opposite marginal surfaces of the wall panels 7. After the header 10 is installed, one of the jambs, for example the right-hand jamb 11 (FIG. 1), is pivotally connected to the right-hand end of the header by means of a hinge arrangement, as explained in detail later. After having been pivotally connected, the jamb 11 is pivoted toward its vertical position, as indicated by the arrow, (FIG. 1) frictionally embracing the opposite surfaces of the wall panels 7 marginally about the door opening. Thereafter, the left-hand jamb 12 (FIG. 3) is pivotally connected to the left-hand end of the header 10 in the same manner and swung, as indicated, to the vertical position, also embracing the opposite marginal surfaces of the opposed panels 7 about the door opening.

It will be understood, at this point, that the header 10 and the jambs 11 and 12 (FIG. 5) are identical in cross section, each framing member being generally channel-shaped in cross section to embrace the opposite sides of the wall 2. As shown, the header 10 and the jambs 11 and 12 are in the form of sheet metal stampings of the double rabbet type, each framing member including a door stop 16 delineating the rabbets 18—18 (FIG. 12).

The rabbets 18—18 each include a yieldable limb 20 completing the channel-shaped configuration, and each limb includes an in-turned flange 21 which includes a reverse or inwardly turned lip 22 which seats against the surface of the wall panels 7, as explained later.

CORNER CLIP

As best shown in FIGS. 5 through 9, the corner clips, previously indicated at 1, are arranged in pairs and are spot welded as at 23 to the yieldable limbs 20—20 of the jambs 11 and 12. Referring to FIG. 8, the corner clips are located at the upper mitered end portions 13 of the jamb, with a portion 24 projecting upwardly above the mitered edge 13 for engagement with the mitered end portions of the header at opposite sides, the arrangement being identical for each jamb. It will be understood at this point, that the arrangement could be reversed, that is, the pairs of corner clips 1 could be spot welded or otherwise attached to the mitered end portions of the header for engagement with the mitered end portions of the jambs.

Described in detail, each corner clip 1 is in the form of a triangle providing a base 25 and a pair of sides 26 rising from the base 25 and leading to a vertex or apex portion 29. In the present example, the triangular corner clip 1 comprises an isosceles triangle, the length of the sides 26 being equal and thus are symmetrical in shape. This makes the clips interchangeable, permitting identical clips to be secured to the opposite limbs 20 of the jambs 11 and 12. The corner clips are in the form of sheet metal stamp-

5

ings and the symmetrical design permits fabrication in one die set to reduce costs.

The two side portions 26 of the corner clip (FIG. 8) are bent angularly with reference to the flat plane of the clip proper to form angulated or bevelled lips, indicated at 27. The angulated lips create camming surfaces which guide the header and jambs to a flush relationship in the vertical plane as the jambs are pivoted to their vertical position with reference to the opposite ends of the header.

As the header is swung to its vertical position (FIGS. 1, 3, 6 and 10), the angulated or bevelled lip portions 27 of the corner clips at opposite sides progressively engage the mitered edge 13 of the limbs 20 at their interior surfaces. The bevelled lips thus guide the projecting portion 24 of the corner clip into engagement with the interior surfaces of the limbs 20 to bring the jambs precisely in flush and squared relationship with the header.

In order to facilitate locating the clip 1 with reference to the mitered end of the header, each side 26 of the clip is provided with two right-angular notches indicated at 28 and 30 (FIGS. 5-9). The first notch 28 is used in locating corner clip 1 accurately with reference to the mitered edge 13 of the jamb. For this purpose, at assembly of jamb, the base 25 of the triangular clip may be seated against the in-turned flange 21 of the limb 20, then the clip is slipped downwardly until the notch 28 is seated against the upper edge 31 (FIGS. 8 and 9) of the rabbet 18 at the base of the mitered edge 13. Thereafter the clip is secured permanently in position by spot welding as at 23. This procedure is carried out identically with respect to both limbs 20-20 of the jambs.

The base portion 25 of each triangular corner clip 1 includes, at opposite end portions, a respective tab 32 projecting at right angles from the base 25 of the clip so as to reside in squared relationship to the vertical edge of the jamb. Each tab 32 includes a locking aperture 33 which coacts with a matching aperture 34 (FIG. 8) formed in the flange 21 of the header.

In order to forcibly clamp the mating mitered ends 13 of the header and jambs into engagement with one another at installation, a pivotal connection, as noted earlier, is provided between the ends of the header and jambs. The pivotal connection is formed by means of a hinge tongue 35 projecting upwardly from the upper edge of the door stop section 16 of each jamb 11 and 12. The tongue 35 interfits a slot 36 (FIGS. 6-8) formed near the end portion of the stop section 16 of the header at its opposite ends.

During the assembly operation, with the header 10 in position, one of the jambs 11 or 12 is placed in a canted or angular position with its tongue 35 inserted through the slot 36 (FIGS. 1, 6 and 7). It will be noted that the upper portion of each jamb (FIG. 8) includes a cut-out area 37 delineated by the door stop section 16. The cut-out area 37 permits the stop section 16 of the header to interfit the upper end of the jamb at opposite sides of the door frame. The tongue 35 is formed along the upper edge 38 of the cut-out area. Accordingly, at assembly, the cut-out area 37 interfits stop 16 of the header, with the tongue 35 interfitting the slot 36 of the header.

After the frame elements at one side are thus interconnected (FIGS. 1 and 3), the jambs 11 and 12 are pivoted from the canted position toward the vertical position as indicated by the arrows 39 (FIGS. 1, 3, 6 and 10). It will be noted that the interconnecting tongue 35 and slot 36 act as a fulcrum, such that the jambs 11 and 12 provide a lever action to force the mitered ends 13 of the header and jamb into pressure engagement, while the corner clips assure the alignment of the header and jambs in a common plane.

As each jamb is thus pivoted to its vertical position, the locking apertures 33 of the tabs 32 are shifted into registry with the locking apertures 34 formed in the header. At or about the same time, the ends 40 of the header (rabbets 18-18) are engaged within the locking

6

notches 30 of the corner clips 1 at opposite sides to establish a lock at the juncture of the header and jamb (FIGS. 7 and 9). With the ends of the header thus engaged within the locking notches 30, a pin or nail, such as a brad 41, is driven through the matching apertures 33 and 34 of the header and corner clip, thus securing the two framing members in a positive manner to one another. The pins 41 thus coact with the hinge connection (tongue and slot 35 and 36) and with the locking notch 30 to provide a positive and permanent corner connection between the header and jamb at opposite sides of the door frame.

In an alternate form of construction, a sheet metal screw (not shown) is substituted for the brad or pin 41 to draw the framing members together at the corners.

ADJUSTABLE JAMB ANCHOR

After the jambs 11 and 12 have been pivoted to their upright position and secured to the header in positive squared relationship by the corner clips, as described above, the frame assembly is plumbed with reference to the door opening by the adjustable jamb anchor, previously indicated at 14 (FIGS. 5 and 12). In installing the frame, the lower ends of the jambs 11 and 12 preferably are secured to the base anchors, previously indicated at 15. The base anchor may be similar to the structure disclosed in U.S. Pat. 3,222,833, previously referred to and is not disclosed in detail in the present application.

Generally speaking, the base anchors 15 are U-shaped and are attached to the lower end portions of the jambs 11 and 12 to secure the lower ends of the jambs to the studs 5 which delineate the wall opening. The U-shaped base anchor 15 provides spaced limbs adapted to embrace the opposite sides of the stud 5, an opening 42 (FIGS. 1, 2 and 3) being formed in the panel 7 in the area to be embraced by the base anchors 15.

Each base anchor 15 is secured to the lower end portion of the jamb by means of a mounting plate (not shown) or by other means. After the jambs have been swung to their vertical positions, the U-shaped base anchors embrace the lower ends of the studs 5 at opposite sides and are then secured to the studs 5, preferably by sheet metal screws. The anchor and the stud are provided with pre-formed apertures to receive the screws. After this procedure, the opening 42, formed in the lower portion of the panels 7, may be plastered over (FIG. 4) to conceal the base anchors and screws.

The adjustable jamb anchors, previously indicated at 14 (FIGS. 10-12) are located near the upper ends of the jambs, being spaced downwardly from the header as shown. The jamb anchors are arranged to engage the surface wall opening (studs 5) and to develop a clamping action to force the upper portion of the jambs 11 and 12 away from the studs and toward the mitered ends of the header. The purpose of the jamb anchors 14 is to adjust the previously squared door frame to a plumb or vertical position within the door opening. This adjustment is made in a simple manner with a screw-driver, utilizing a level to bring the jambs to their perpendicular positions. The present adjustable jamb anchor is generally similar to the structure disclosed in the prior U.S. Pat. 3,222,833, and represents an improvement over the prior structures in that the anchor clip, as explained below, is held against rotary motion to facilitate the adjustment procedure.

As best shown in FIGS. 5 and 12, each adjustable jamb anchor 14 comprises a sheet metal clamping clip 43 which is U-shaped in cross section, comprising a cross web 44 having side flanges 45-45 which loosely interfit the limbs 20-20 of the jamb. The sheet metal clip 43, at its central portion, is bent to provide a U-shaped extension 46 projecting from web 44 toward the stop section 16 of the jamb (FIG. 12).

As explained below, the jamb anchor 15 is adjusted with reference to the jamb by means of a captive screw

7

47 having a head exposed for screwdriver engagement at the surface of the stop section 16. In order to hold the clamping clip 43 against rotary motion in response to rotation of the screw 47 during adjustment, there is provided a U-shaped restraining bracket 48 having opposed limbs 50—50 which slidably embrace the opposite sides of the extension 46.

The restraining bracket 48 comprises a sheet metal stamping, having a cross web 51 joining the limbs 50—50. The cross web 51 includes mounting feet 52—52 extending at right angles to the limbs 50 in opposite directions and spot welded as at 53 to the surface of stop 16 (FIGS. 5, 10, 11 and 12). It will be noted, in these views, that the cross web 51 of bracket 48 is offset from the feet 52 to provide a space 54 (FIGS. 10 and 11) between the surface of stop 16 and cross web 51. The arrangement is such that the captive screw 47 is rotatably confined in the space 54 but is held against longitudinal motion.

For this purpose, the captive screw 47 includes, at its outer end portion, a collar 55 which is confined in the space 54. The screw includes a slotted head 56 which projects outwardly through an opening formed in the metal section 16 so as to be exposed for screwdriver engagement, the outer surface of the screw head 56 being flush with the surface of the metal section 16. The threaded shank portion of the captive screw 47 passes in threaded engagement through the cross web of the U-shaped extension 46 (FIG. 5) so as to shift the jamb anchor 14 into pressure engagement with the wall surface when the screw 47 is rotated.

Having described my invention, I claim:

1. A sectional metal frame arranged to be mounted in the opening of a wall comprising:

a header arranged to be mounted in a horizontal position across the top of the opening;

a pair of jambs arranged to be mounted in a vertical position along opposite sides of said opening;

the said header and jambs having a web and a pair of limbs arranged to embrace the opposed sides of the wall marginally about the opening;

the adjoining ends of said header and jambs interfitting one another upon installation in the opening;

coacting hinge means on the interfitting end portions of the header and jambs to provide a pivotal connection between the header and jambs;

respective pairs of corner clips mounted on the interior surfaces of the limbs of the jambs at the interfitting end portions thereof;

each corner clip formed of sheet metal and being triangular in shape having a base, sides and an apex; the base of said triangular clip being parallel with the edge of the jamb;

each corner clip having a locating notch formed in one of the sides of the triangle below the apex thereof;

said locating notch being interfitted with the upper edge of the web of the jamb to locate the clip relative to the end of the jamb when the clip is mounted therein;

said apex portion projecting outwardly beyond the edge of the jamb above the web of the jamb;

said apex portion arranged to guide the jambs and header into flush relationship as the jambs are pivoted to their vertical positions;

said projecting apex portion of the corner clip having a locking notch formed in the edge portion of the corner clip immediately above said locating notch for engagement with the upper edge of the web of the header as the jambs are pivoted to their vertical positions to lock the adjoining edges of the webs of the header and jambs in engagement relative to one another as the jambs are swung to their vertical positions;

8

each of said corner clips having a locking aperture formed therein;

said header having locking apertures which register with the locking apertures of the corner clips when the jambs are pivoted to their vertical positions, whereby upon insertion of a locking element into the registered apertures, the jambs and header are locked positively in squared relationship.

2. A sectional metal frame as set forth in claim 1 in which the web of each jamb includes a hollow door stop portion and in which the upper portion of each jamb, below the interfitted upper end thereof, includes an adjustable jamb anchor, said jamb anchor mounted between the limbs of the jambs, the central portion of said jamb anchor having an extension projecting outwardly into the hollow door stop portion of the jamb, thereby locking the jamb anchor against rotary motion while providing lineal motion thereof relative to the jamb, a captive screw confined within the web of the jamb and having a shank portion in threaded engagement with the outwardly projecting extension of the adjustable jamb anchor, said screw having a head portion exposed at the surface of the web for tool engagement, whereby, upon rotation of the captive screw, the jamb anchor is forced into clamping engagement with the surface of the opening to force the upper end of the jambs toward one another to bring the ends of the jambs into forcible mating engagement with the opposite interfitting ends of the header.

3. A sectional metal frame as set forth in claim 1 in which the web of each jamb includes a hollow door stop portion and in which the upper portion of each jamb, below the interfitted upper end thereof, includes an adjustable jamb anchor, said jamb anchor mounted between the limbs of the jambs, said jamb anchor being generally U-shaped and having an extension projecting outwardly, a restraining bracket having a pair of spaced limbs secured in the hollow door stop portion of the web of the jamb and embracing the outward extension of the U-shaped jamb anchor and thereby locking the jamb anchor against rotary motion while providing lineal motion thereof relative to the jamb, the limbs of said restraining bracket having a length greater than the depth of the hollow door stop, thereby increasing the lineal adjustment movement of the jamb anchor while locking the same against rotary motion, a captive screw confined within the web of the jamb and having a shank portion in threaded engagement with the extension of the adjustable jamb anchor, said screw having a head portion exposed at the surface of the web for tool engagement, whereby, upon rotation of the captive screw, the jamb anchor is forced into clamping engagement with the surface of the opening to force the upper end of the jambs toward one another to bring the ends of the jambs into forcible mating engagement with the opposite interfitting ends of the header.

4. A sectional metal frame arranged to be mounted in the opening of a wall comprising:

a header arranged to be mounted in a horizontal position across the top of the opening;

a pair of jambs arranged to be mounted in a vertical position along opposite sides of said opening;

the said header and jambs having a web and a pair of limbs arranged to embrace the opposite sides of the wall marginally about the opening;

the limbs of the header and jambs having inturned flanges;

the adjoining ends of said header and jambs interfitting one another upon installation in the opening;

coacting hinge means on the interfitting end portions of the header and jambs to provide a pivotal connection between the header and jambs;

respective pairs of corner clips mounted on the interior surfaces of the limbs of the jambs at the interfitting end portions thereof;

9

each of said corner clips formed of sheet metal and being triangular in shape having a base sides and an apex;

the base of each triangular clip being seated against the intumed flange of the jamb;

each clip having a locating notch formed in one edge portion of at least one of the sides of the triangular clip below the apex thereof;

said locating notch being seated and interfitted with the upper edge of the web of the jamb whereby the triangular clip is located relative to the end of the jamb by engagement of the base with the intumed flange, combined with the engagement of the locating notch with the edge of the web of the jamb;

said apex portion projecting outwardly beyond the edge of the jamb above the web of the jamb;

said apex portion arranged to guide the jambs and header into flush relationship as the jambs are pivoted to their vertical positions;

said projecting apex portion of each of said corner clips having a locking notch formed in the edge portion of the clip immediately above said locating notch for engagement with the edge of the web of the header as the jamb is swung to its vertical position;

each of said corner clips having a locking aperture formed therein;

said header having locking apertures which register with the locking apertures of the corner clips when the jambs are pivoted to their vertical positions, whereby upon insertion of a locking element into the registered apertures, the jambs and header are locked positively in squared relationship.

5. A sectional metal frame arranged to be mounted in the door opening of a wall comprising:

a header arranged to be mounted in a horizontal position across the top of the opening;

a pair of jambs arranged to be mounted in a vertical position along the opposite sides of said opening;

the said header and jambs having a web and a pair of limbs projecting generally at right angles to the web; the limbs of the header and jambs each including intumed flanges;

the adjoining ends of the limbs and header and jambs being mitered to interfit one another;

the intumed flanges of the header and jambs arranged to embrace the opposite sides of the wall marginally about the opening with the mitered ends of the header and jambs interfitting one another upon installation in the opening;

coacting hinge means on the mitered, interfitting ends of the header and jambs providing a pivotal connection between the header and jambs;

10

respective pairs of corner clips mounted on the interior surfaces of the limbs of the jambs at the mitered interfitting end portions thereof;

each of said corner clips being formed of sheet metal and being triangular in shape, having a base, sides and an apex, with the base of the triangular clip seated against the intumed flange of the jamb;

each of said triangular clips having a locating notch formed in one edge portion of at least one of the sides of the triangular clip below the apex thereof;

said locating notch being seated and interfitted with the upper edge of the web of the jamb at said mitered portion, whereby the triangular clip is located relative to the mitered end of the jamb by engagement of the base with the intumed flange of the jamb combined with the engagement of the locating notch with the edge of the web of the jamb;

a locking notch formed in the edge portion of the corner clip immediately above said locating notch for engagement with the edge of the web of the header as the jamb is swung to its vertical position relative to the header;

said apex arranged to guide the jambs and header into flush relationship as the jambs are pivoted to their vertical position;

each of said corner clips having a locking aperture formed therein;

said header having locking apertures which register with the locking apertures of the corner clips when the jambs are pivoted to their vertical position, whereby, upon insertion of a locking element into the registered apertures, the jambs and header are locked positively in squared relationship.

References Cited

UNITED STATES PATENTS

1,005,249	10/1911	Cunken	52—656X
2,874,420	2/1959	Henderson	52—211
3,222,833	12/1965	Woodrum	52—211
3,248,833	5/1966	Sklar	52—211
3,269,068	8/1966	King	52—217
3,324,599	6/1967	Brost	52—212X
3,385,004	5/1968	Oehler et al.	52—211X
3,469,360	9/1969	Peterson et al.	52—217

FRANK L. ABBOTT, Primary Examiner

S. D. BURKE, III Assistant Examiner

U.S. Cl. X.R.

52—217