United States Patent [19]

Jerchower

[11] **3,721,055**

[45] **March 20, 1973**

[54] **DRYWALL DOOR FRAME**

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[21] Appl. No.: **807,238**

[52] **U.S. Cl.**.....**52/217**, 49/504

[51] **Int. Cl.**.....**E06b 1/04**

[58] **Field of Search**.....52/213, 215, 217, 204, 241, 52/242, 287; 151/69; 49/504

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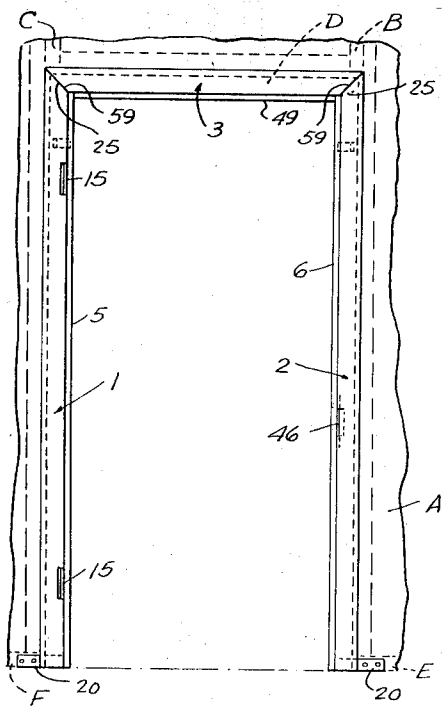
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[57] **ABSTRACT**

The present metal frame has a hinge jamb, strike jamb, and a head which lock together in place over finished drywalls and said jambs each includes an anchor adjustably carried from the exterior of the jamb for tightening the anchor against the frame studs of a drywall until the door frame is positioned securely between said studs.

1 Claim, 14 Drawing Figures



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SHEET 1 OF 2

FIG. 1.

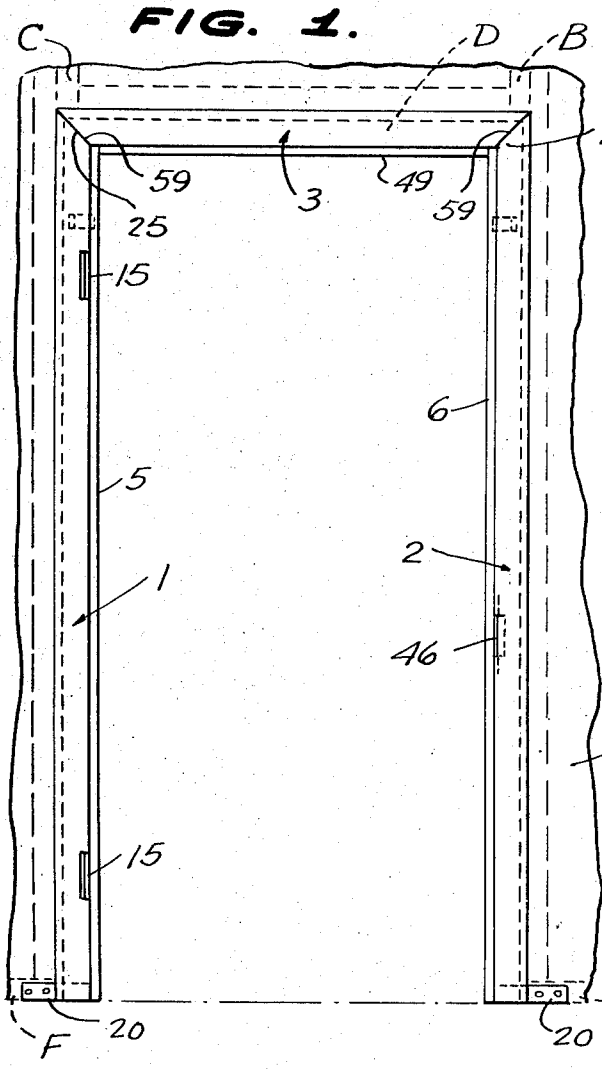


FIG. 2.

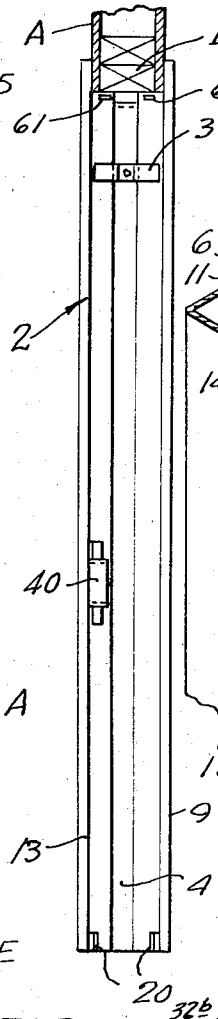


FIG. 4.

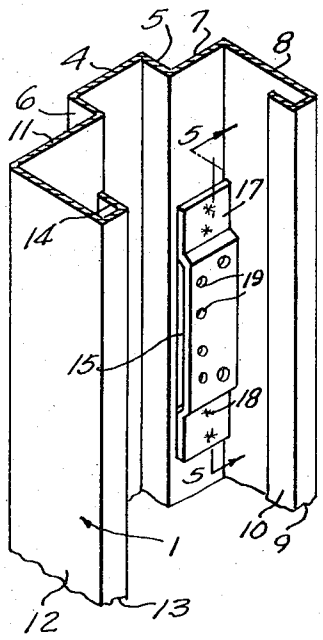
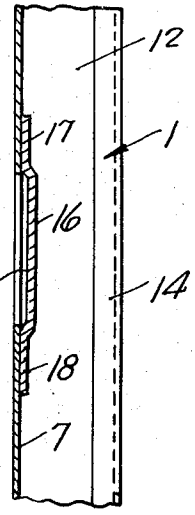


FIG. 5.



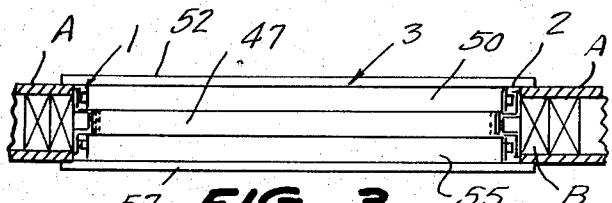


FIG. 3.

FIG. 12.

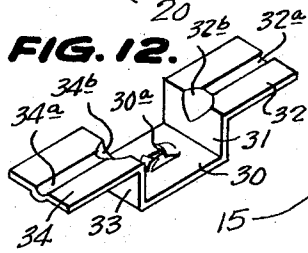
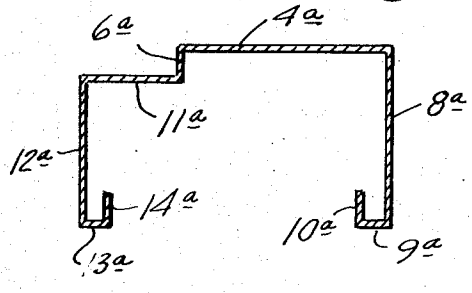


FIG. 10



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FIG. 6.

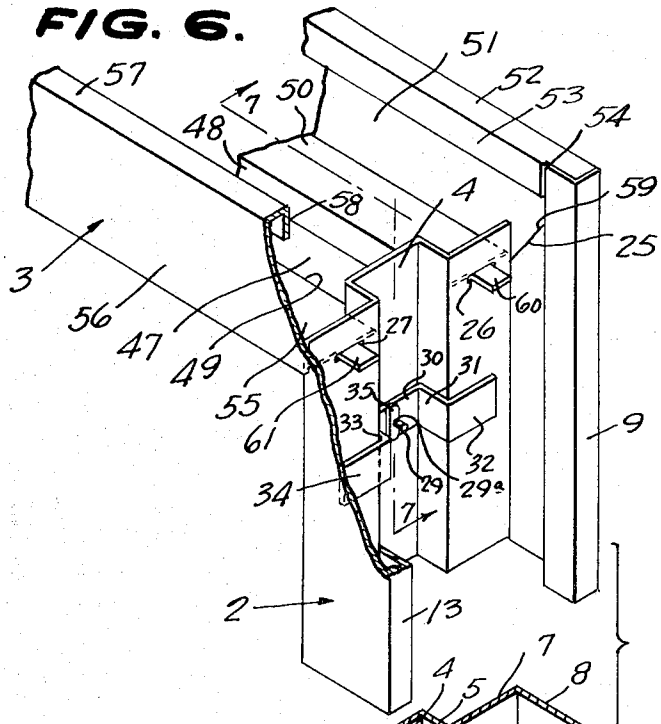


FIG. 7.

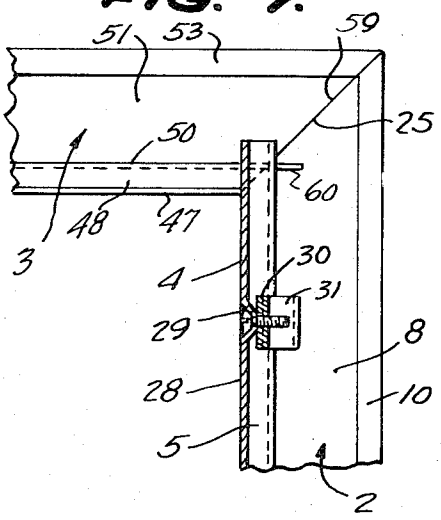


FIG. 8.

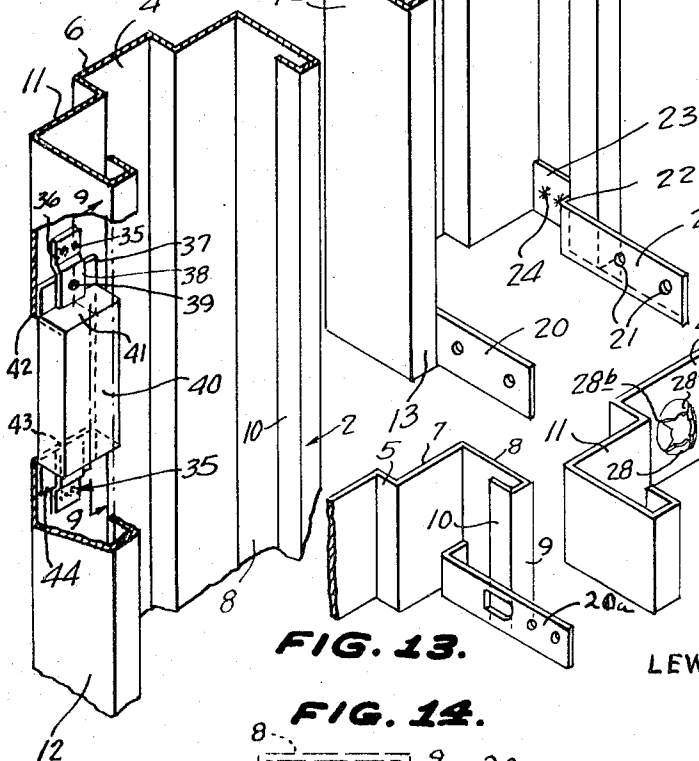


FIG. 9.

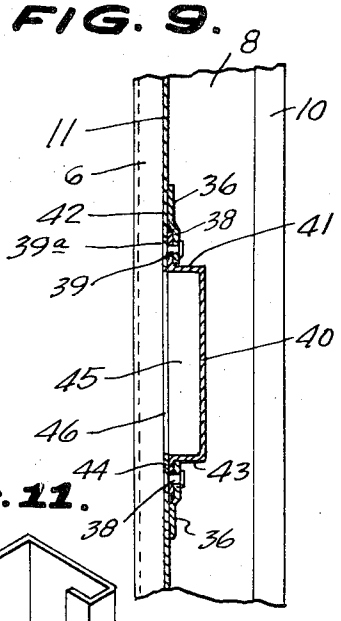
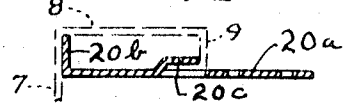


FIG. 11.

FIG. 13.

FIG. 14.



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DRYWALL DOOR FRAME

The principal object of the present invention is to provide a metal door frame which can be transported in a knock-down condition so as to require a minimum of space in transportation and storage thereof and can be quickly assembled at the site of construction without requiring special tools or skills.

A further and important object of the present invention is to provide a door frame for assembly with drywalls which frames receive the edges of the drywall defining a door opening in said drywall, between double return end portions of the frame eliminating any raw edges of the frame bearing against the wallboard, each jamb of the door frame can simply and quickly interlock with the door frame head in the assembly of the frame and each jamb includes an adjusting anchor operable from the exterior of the jamb for ensuring that the installed frame is rigid and secure.

A further important object of the present invention is to provide a new and novel arrangement for retaining a rotatable screw through a metal plate such as a metal door jamb or other forms of metal devices.

Further objects of the present invention will be in part obvious and in part pointed out in the following detailed description of the drawings, in which:

FIG. 1 is a front elevation of the present door frame mounted in position on a drywall,

FIG. 2 is a side view taken from the right of FIG. 1, but with the wall alongside the strike jamb removed,

FIG. 3 is a top view taken from the top of FIG. 1, but with the wall above the frame head removed,

FIG. 4 is an enlarged rear perspective view of a hinge portion of the hinge jamb,

FIG. 5 is a sectional view taken on line 5—5 of FIG. 4,

FIG. 6 is an enlarged perspective view of an interlocked end of the frame head and one of the jambs,

FIG. 7 is a sectional view taken on line 7—7 of FIG. 6,

FIG. 8 is an enlarged rear perspective view of the lock portion of a strike jamb,

FIG. 9 is a sectional view taken on line 9—9 of FIG. 8,

FIG. 10 is an enlarged cross-sectional view of a single rabbett frame,

FIG. 11 is an enlarged rear perspective view of an anchor portion of one of the jambs,

FIG. 12 is an enlarged perspective view of a modified form of the compression anchor used on the jambs,

FIG. 13 is a view of a modified form of a sill anchor, and

FIG. 14 is a cross-sectional view of the sill anchor of FIG. 13.

Referring now more particularly to the accompanying drawings wherein like and corresponding parts are designated by similar reference characters, A indicates a drywall having front and back wallboard supported by upright studs B and C and horizontal studs D providing a door opening in the drywall. Horizontal sill studs E and F are mounted on the floor and have the lower ends of studs B and C, respectively, mounted thereon. This is a conventional construction of a stud opening in a drywall.

Hinge jamb 1, strike jamb 2, and frame head 3 are the basic elements of the present frame. Hinge jamb 1 and strike jamb 2 are essentially similar when they have

a double rabbett profile with equal rabbetts, except for attached hardware and openings, and therefore, only one such jamb is described. That is, the hinge jamb and the strike jamb each have a center portion 4, a pair of side walls 5 and 6 extending normal to and from the edges of said center portion providing a center channel or stop, a pair of front walls 7 and 11 each extending normal to and from an edge of said side walls 5 and 6 respectively, a pair of end walls 8 and 12 each extending normal to and from an edge of said front walls 7 and 11 respectively providing a second channel, a pair of rear walls 9 and 13 extending normal to and from an edge of said end walls 8 and 12 respectively, and a pair of inner walls 10 and 14 extending normal to and from an edge of said rear walls 9 and 13, respectively. Thus, inner walls 10 and 14 are parallel to and spaced from end walls 8 and 12, respectively. Said center portion 4 and walls 5 to 14 are each flat, that is, they are each straight in their lateral and longitudinal directions.

Hinge jamb 1 only has a plurality of rectangular recesses 15 in front wall 7 thereof, each contiguous with a short recess in end wall 8 alongside each recess 15. A plurality of plates 16 each have offset ears 17 and 18 and screw holes 19. Ears 17 and 18 of each plate 16 is affixed to the rear of wall 7 by spot welding or the like on opposite sides of each recess 15 so that each plate 16 extends across one of said recesses, but is spaced above wall 7. Thus, one leaf of a hinge (not shown) may be placed in each recess 15 and affixed by screws to the plate 16 thereacross with the other leaf of the hinge affixed in the known manner to a door (not shown).

Each jamb 1 or 2 has a pair of sill anchors 20 as best shown in FIG. 6. Each sill anchor 20 has screw holes 21 for the passage of screws or nails therethrough into sill studs E and F. Also, each sill anchor has a bent medial portion 22 and an inner end portion 23 positioned on the lower end portion of an end wall 8 or 12 and affixed thereto by spot welding 24 or the like.

The upper end portion 25 of each end wall 8 or 12 extends on a slant, for example, on a 45° angle, from a side of its corresponding front wall 7 or 11 to the upper edge of its corresponding rear walls 9 and 13. That is, the upper edge of center portion 4 and walls 5, 6, 7, and 11 are straight across and perpendicular to the longitudinal direction of the jamb and each upper end portion 25 starts from walls 7 or 11 below said upper edge of said walls as shown in FIG. 6 and extends to the upper edges of walls 9 and 13 while the upper edge of walls 9, 10, 13 and 14 are straight across and perpendicular to the longitudinal direction of the jamb.

A pair of slots 26 and 27 are provided in front walls 7 and 11 just above a line extending from the lower ends of the upper end portions 25.

Each jamb center portion 4 has a concavo-convex inwardly extending countersink 28 in the portion thereof near its upper end portion 25. Each countersink 28 has an annular center opening 28a with radial slits 28b. An adjusting screw 29 is inserted through each opening 28a and the sections of the countersink on each side of the slits 28b are permanently crimped into the grooved neck of the adjusting screw 29 so that said screw cannot be removed but its head is in the countersink on the exterior of the jamb for being turned by a screw driver as required.

Also, each jamb has a drywall compression anchor 30 or 30' which have a center opening 30*a* above which is mounted a weldnut 29*b* with screws 29 extending through opening 30*a* and in threaded engagement with weldnut 29*b*. Anchors 30 and 30' have perpendicular side walls 31 and 33 with ears 32 and 34 extending laterally each from its corresponding side wall 31 or 33. Ear 32 of anchor 30' has a concavo-convex central portion 32*a* which widens at 32*b* into wall 31. Similarly, ear 34 of anchor 30' has a concavo-convex central portion 34a which widens at 34*b* into wall 33.

Strike jamb 2 has a pair of keepers 35 mounted on the inner face of front wall 11 at a position on said jamb for a female portion of a lock (not shown). Keepers 35 each have an end portion 36 attached by spot welding or the like to front wall 11, a slanting medial portion 37 and an opposite end portion 38 parallel to, but spaced from wall 11 and having a threaded opening 39 with end portions 38 extending towards, but spaced apart from one another.

A flat bottom 40 of a housing has perpendicularly extending end walls 41 and 43 with ears 42 and 44 each extending normal to and from its corresponding end wall 41 or 43. Ears 42 and 44 can be slideably inserted beneath end portions 38 of said keepers as shown in FIG. 8 and have openings corresponding to openings 39. The jamb wall 11 has a recess 45 opening beneath the tips of end portions 38 of said keepers and said housing bottom 40 and a recess 46 in wall 12 contiguous with recess 45. Screws 39a extend through openings in ears 42 and 44 and are in threaded engagement with openings 39. Screws 39a also are used to retain the female lock portion in said housing.

The frame head 3 has a center portion 47, side walls 48 and 49 extending normal to and from the opposite edges of center portion 47 providing a channel, front walls 50 and 55 extending normal to and from side walls 48 and 49, respectively, end walls 51 and 56 extending normal to and from front walls 50 and 55, respectively, rear walls 52 and 57 extending normal to and from end walls 51 and 56, respectively, and inner walls 53 and 58 parallel to, but spaced from end walls 51 and 56, respectively. Said center portion 47 and walls 48 to 56 are flat, that is, straight in both their lateral and longitudinal directions.

Also, center portion 47 and walls 50 and 55 correspond to and are of the same width as center portion 4 and front walls 7 and 11 respectively of said jambs.

End walls 51 and 56 each have opposite end edges 59 each of which slants, for example on a 45° angle, from an end of walls 50 and 55 outwardly to an end of rear walls 52 and 57. Inner walls 53 and 58 have opposite end edges spaced inwardly from the corresponding end edges of rear walls 52 and 57, a distance equal to the width of jamb walls 10 or 14. The opposite ends of center portion 47 and side walls 48 and 49 are straight across and are spaced inwardly from the corresponding ends of front walls 50 and 55 a distance equal to the width of jamb side walls 5 and 6.

Front wall 50 has a pair of tongues 60 each extending longitudinally from an opposite end of said front wall. Similarly, front wall 55 has a pair of tongues 61 each extending longitudinally from an opposite end of said front wall 55.

The jambs 1 and 2 and head 3 as above described have double rabbett profiles which may be of equal or unequal rabbetts. That is, the jambs and head have similar cross-sectional configuration and the front walls 7 and 50 may be the same width as 11 and 55 may be wider than walls 7 and 50. Also, said jambs and head may each have a cross-sectional configuration as shown in FIG. 10 to have a single rabbett profile. That is, each jamb and the head may have a front wall 4*a*, single side wall 6*a* joining front wall 11*a* to front wall 4*a* and end walls 8*a* and 12*a* with wall 8*a* narrower than wall 12*a*. Wall 8*a* has the same double return 14*a* of wall 12*a* and thus, as in the jambs and head of FIG. 6.

Jambs 1 and 2 and head 3 are produced separately, but can be stored, sold, and shipped as a unit, but without being connected together. When it is desired to erect the frame a suitable stud opening is provided in drywall A as indicated in FIG. 1. Hinge jamb 1 is then slipped over the drywall with jamb inner walls 10 and 14 having the wallboard therebetween and stud C extending along the inner side of front walls 7 and 11.

Head 3 is then slipped over the drywall with the wallboard between and against inner walls 53 and 58 and stud D on the inner side of front faces 50 and 55. At this time tongues 60 and 61 at the left end of the head in FIG. 1 are inserted through the slots 26 and 27 respectively of the hinge jamb until head edge 59 at the left of the head matches with hinge jamb edge 25.

Strike jamb 2 is then slipped over drywall A with the wallboard between and against inner walls 10 and 14 of the strike jamb, stud B positioned on the inner side of the front walls 7 and 11 of the strike jamb and tongues 60 and 61 at the right end of the head of FIG. 1 inserted through the slots 26 and 27 respectively of the strike jamb and the upper edges 25 of side walls 8 and 12 of the strike jamb matching with the right hand edges 59 of the head side walls 51 and 56. Walls 4, 5, and 6 of the hinge jamb 1 are then in the recess provided by the left end of center portion 47 with front walls 50 and 55, and similarly, walls 4, 5, and 6 of the strike jamb 2 are in the recess provided by the right end of center portion 47 with front walls 50 and 55.

Thereupon each screw 29 is turned until its anchor 30 or 30' abuts its stud B or C. Then both screws are turned until the frame is wedged securely between the studs. Hinge jamb 1 is plumbed and its sill anchors 20 fastened by screws to sill stud F and then the sill anchors 20 of the strike jamb are similarly fastened to sill stud E. The frame is then ready for the attachment of a door and hardware as desired.

A modified form of a sill anchor is shown in FIGS. 13 and 14 and consists of a flat plate 20*a* having a bent end portion 20*b* giving the sill anchor an L-shaped configuration. Plate 20*a* has a pushed out tongue 20*c* which extends parallel to, but is spaced from plate 20*a* the thickness of inner wall 10 or 14. As shown in FIG. 14, tongue 20*c* is positioned behind inner wall 10 or 14 with plate 20*a* on the exterior thereof and the bent end portion 20*b* pushed against front wall 7 or 11. Thus, the sill anchor can be quickly assembled to the door frame without the use of tools and plate 20*a* has openings 21*a* for the passage of screws or nails in the sill in the same manner as sill anchor 20.

I claim:

1. A door frame comprising a pair of jambs, a head, said jambs and head having similar cross-sectional configuration and each including a front wall, a pair of spaced apart side walls extending normal to said front wall and each side wall having inwardly turned free end portion, each jamb side wall having a slanting end, said head side walls each having slanting ends each matching a corresponding slanting end of a jamb side wall, said jamb front wall having slots therein, said head front wall having end tongues each extending through a jamb slot, anchors positioned in said jambs, and screws extending through said jambs and each being in threaded engagement with one of said anchors for moving the same laterally of its jamb, sill anchors extending from said jamb side wall free end portions, said sill anchors each consist of an L-shaped member with a tongue extending parallel to, but spaced from the leg of the anchor and the base of the anchor butting one of said front walls and an inner jamb side wall free end portion positioned between said tongue and said leg.

* * * * *