

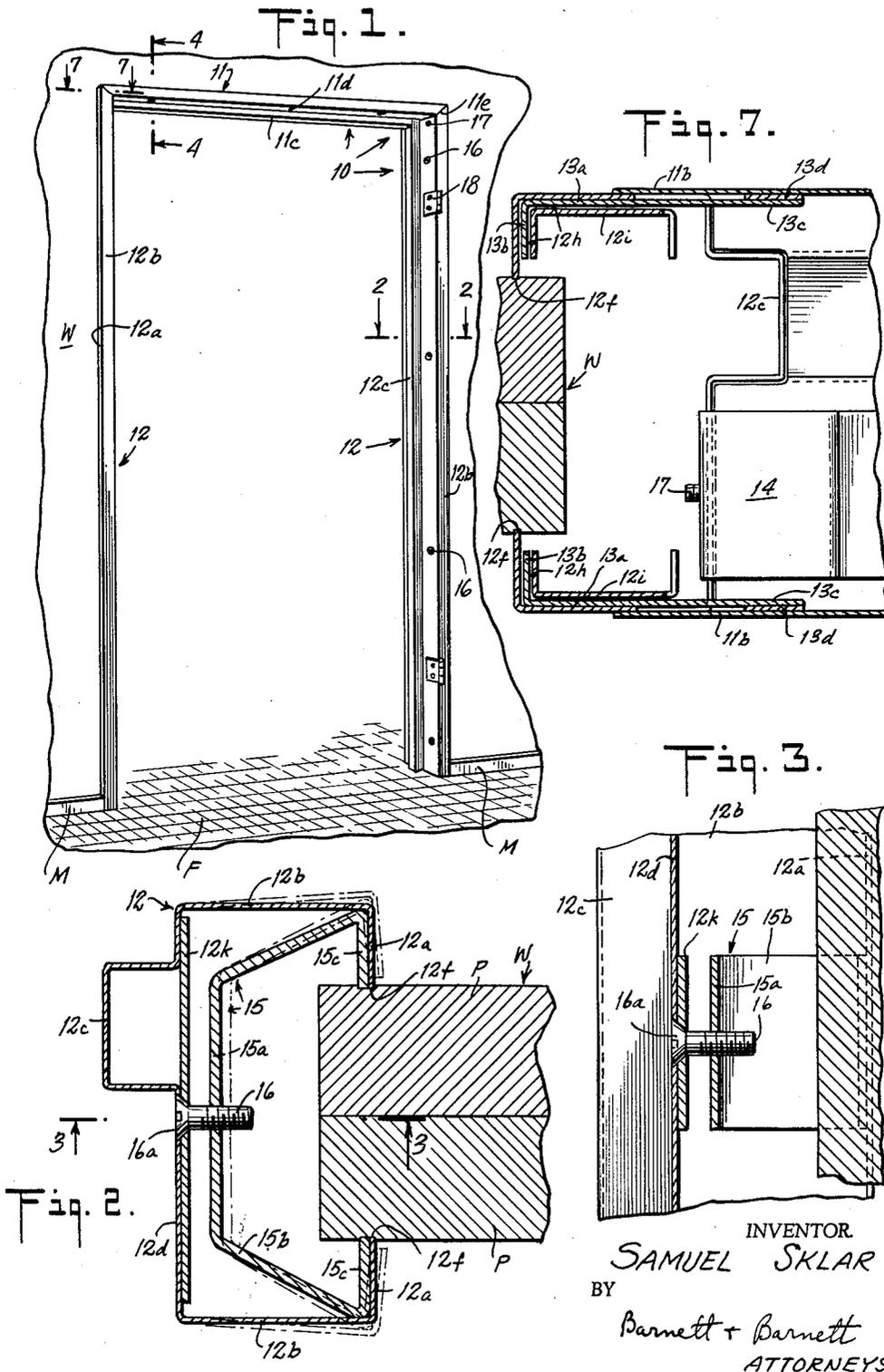
Nov. 10, 1964

S. SKLAR
KNOCK-DOWN DOOR BUCK CONSTRUCTION WITH
ADJUSTABLE WALL CLAMPING MEANS

3,156,331

Filed Oct. 15, 1962

2 Sheets-Sheet 1



INVENTOR
SAMUEL SKLAR
BY
Barnett + Barnett
ATTORNEYS

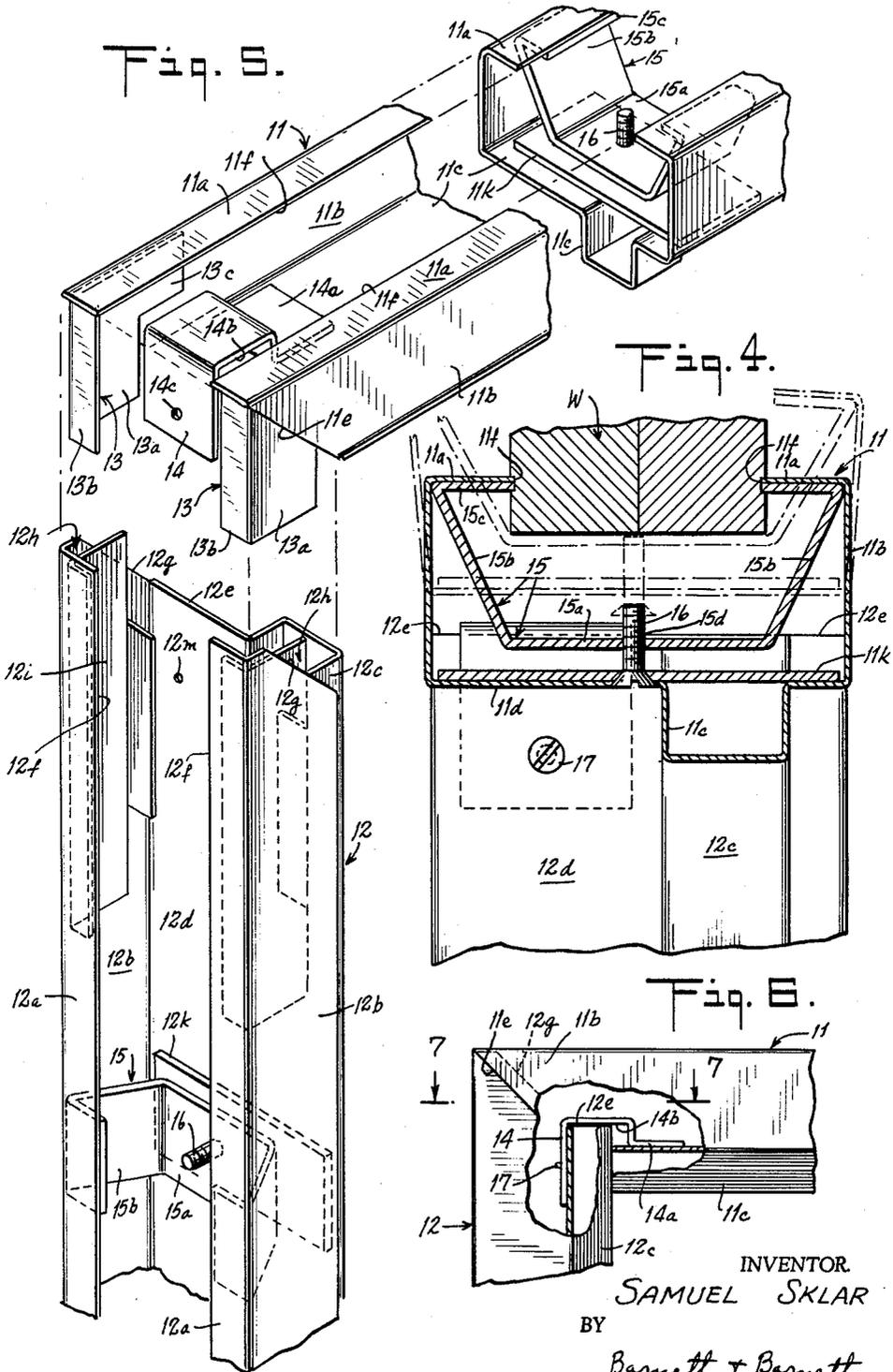
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KNOCK-DOWN DOOR BUCK CONSTRUCTION WITH ADJUSTABLE WALL CLAMPING MEANS

Samuel Sklar, 63—153 Alderton St., Rego Park, N.Y.

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4 Claims. (Cl. 189—46)

This invention relates to door frames, bucks, and the like and more particularly is directed to knock-down door bucks preformed of sheet metal as used in fire resistant portal constructions and is a modification of the constructions described in my previous Patent No. 2,799,370, granted July 16, 1957 and application Ser. No. 11,689 filed February 29, 1960, now Patent No. 3,083,798. The door bucks embodying this invention are for use directly on doorway openings formed in partitions and wall constructions of sheet rock, plaster blocks, cinder blocks, concrete or the like without the utilization of supporting frames of wooden studs and lintels.

Among the objects of the invention is to generally improve door buck constructions of the character described which shall be capable of conforming to requirements of the fire underwriters for fireproof and fire resistant portal construction, which shall comprise three preformed basic parts which require relatively unskilled labor for assembly and installation, which preformed parts in knock-down condition shall require a minimum of shipping space and shall permit easy and rapid installation in an unframed doorway opening formed or cut in a partition or wall construction, which shall be formed with intumed opposite flanges for contacting the partition or wall bordering the doorway opening as a finished joint therewith and have simple improved means for adjusting the spacing between the flanges and clamping the wall therebetween, which shall entirely eliminate the labor and material costs of framing a doorway with studs and lintel prior to installation of the door buck and shall serve to strengthen partitions made of sheet rock and the like which shall provide a novel interconnection between the jambs and head piece including a simulated mitered joint, and which shall be rugged in construction and practical to a high degree in use.

Other objectives of the invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists of features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter disclosed, the scope of the application of which will be indicated in the claims following.

In the accompanying drawings in which an illustrative embodiment of the invention is shown:

FIG. 1 is a fragmentary perspective view of a wall or partition having a doorway formed therein in which a three piece buck embodying the invention is installed.

FIG. 2 is an enlarged sectional view taken on line 2—2 in FIG. 1, showing details of the jamb fitted over and clamping a laminated two ply structure of one inch sheet rock forming the wall or partition and showing the means for reducing the spacing between the inwardly extending flanges to clamp the wall or partition in accordance with the invention, the broken lines indicating the disposition of the jamb parts in an expanded condition to permit mounting on a vertical edge of the doorway prior to tightening the set screw to effect the clamping.

FIG. 3 is a sectional view taken on line 3—3 in FIG. 2 showing other details of the means for reducing the flange spacing.

FIG. 4 is an enlarged sectional view taken along line 4—4 in FIG. 1 showing details of the head piece with associated means for reducing the spacing between the flanges and parts of the interconnection with the jamb,

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the head piece being shown in broken lines in an expanded condition to permit mounting on the horizontal edge of the doorway and in a raised position to permit assembly with the jambs.

5 FIG. 5 is an enlarged exploded fragmentary perspective view of the head piece and jamb showing additional details of construction.

10 FIG. 6 is an enlarged fragmentary front elevational view of a corner of the door buck with parts broken away to show interior construction of the jamb and head piece interconnection and the simulated mitered joint, and

FIG. 7 is a sectional view taken along line 7—7 in FIG. 6.

15 Referring in detail to the drawings, 10 denotes a knock-down door buck or frame constructed to embody the invention seen to include a head piece 11 for extending horizontally across the top of a doorway and interconnecting at opposite ends thereof with vertically extending jambs 12.

20 Head piece 11 as seen in FIGS. 1, 4 and 5 may be formed of sheet metal as a channel-shaped member having opposite side walls 11b each formed with an inwardly bent longitudinally extending flange 11a forming a top finished ledge of the door frame and serving as an element of the improved wall or partition clamping means for the installed buck 10 as hereinafter described. The bottom of head piece 11 is formed with a depressed portion, U-shaped in cross section, forming a horizontal door stop portion 11c, the latter being centrally offset to provide a horizontal door framing portion 11d. In order to serve the intended purpose, head piece 11 has the bottom thereof cut back from, that is, shorter than the overall length of flanges 11a with side walls 11b having opposite tapered end edges 11e extending from flanges 11a to the head piece bottom. As is clear from FIGS. 6 and 7 door stop portion 11c is cut back further and terminates a spaced distance from each end of the bottom. Suitable male components of an interconnection with the open ends of jambs 12 are provided to extend downwardly from head piece 11 at opposite ends thereof. Such components may comprise a pair of lateral tabs 13 and a transverse tab 14 located at each end of head piece 11. Each tab 13 may be L-shaped in cross section to comprise a first plate 13a extending in a plane parallel to and spaced inwardly from side wall 11b and a second plate 13b extending at right angles to plate 13a, the latter having an inverted L-shape to provide a horizontal extension 13c which is spot welded to the interior surface of side wall 11b with a shim 13d interposed to provide the required spacing, plate 13b being positioned to extend in a plane spaced inwardly of the end of flange 11a as is clear from FIG. 5. One transverse tab 14 is spaced from each free end of the head piece bottom and is suitably attached, as by spot welding, to the interior surface of door framing portion 11d by means of a stepped right angle extension 14a and provides a recess 14b from the framing portion 11d to accommodate an end of the jamb portion of jamb 12 as shown in FIG. 6.

60 Jambs 12, which are mirror images of each other but otherwise identical, are likewise formed of sheet metal as channel-shaped members having opposite side walls 12b extending at right angles to the jamb portions thereof, the latter having door stop portions 12c, U-shaped in cross section, projecting therefrom and positioned to provide vertical door framing portions 12d which align with horizontal door portion 11d of head piece 11 when in assembly as shown in FIGS. 1, 4 and 7. The edges of side walls 12b have inwardly bent flanges 12a forming vertical finished edges for jambs 12 and serving as elements of the adjustable wall or partition clamping means embodying the invention.

70 Bottom ends of jambs 12 are squared off, that is, have

edges extending at right angles with respect to the longitudinal axis of the jambs for standing flat on a flooring surface. Upper ends of jambs 12 are seen in FIGS. 4, 5 and 6 to have the upper edges 12e of the jamb portions cut back from the overall length of flanges 12a, with side walls 12b terminating in beveled edges 12g, the latter terminating inwardly of flanges 12a. Lateral trackways 12h, L-shaped in cross section, are provided in the upper end of jambs 12 to telescopingly receive tabs 13 of head piece 11. Trackways 12h may be formed by suitably welding liner plates 12i at the lower ends thereof, to the interior surface of side walls 12b. As seen in FIGS. 5 and 7 liner plates 12i may be formed and cut from channel-shaped stock. Head piece 11 and jambs 12, being formed of channel-shaped stock, permit side walls 11b and 12b, respectively, to be sprung, that is, distorted from a slightly divergent or substantially parallel relation to a convergent relation along the width thereof to decrease the distances between the free inner edges 11f and 12f of flanges 11a and 12a, respectively, and thereby serve as a clamping means for gripping a wall or partition W in which door buck 10 is installed. This clamping action is accomplished by providing stiffening plates 11k and 12k at spaced intervals along head piece 11 and jambs 12, respectively. Stiffening plates 11k, extending transversely along the head piece bottom, are secured to the interior surface thereof, as by welding, and plates 12k, likewise extending transversely across the jamb portions of jamb 12, are similarly secured. A strap 15, cooperating and aligned with each of the plates 11k and 12k and actuated by a threaded set screw 16, serves to adjust the angular relation between side walls 11b and 12b providing a clamping action by flanges 11a and 12a, respectively. Straps 15 may each be formed as a metal strip or plate suitably bent to provide an intermediate section 15a, which extends in a plane substantially parallel to the plane of each stiffening plate 11k and 12k, and a pair of divergent arm sections 15b each terminating in an inwardly bent tab section 15c. The latter may be suitably attached, as by welding, to the interior surface of its respective flange 11a or 12a. A set screw 16 extends through door framing portion 11d and each stiffening plate 11k and through each door framing portion 12d and stiffening plate 12k, engaging a threaded opening 15d formed in each intermediate section 15a.

The utility of the invention will now be apparent. Door buck 10 is particularly adapted for use in any partition or wall structure made of cinder blocks, concrete, gypsum blocks and the like, without the use of a wooden doorway frame and is here shown in combination with a partition W formed as panels of a laminated structure made of two plies of one inch sheet rock or plaster board P, which may be mounted in a floor channel forming molding M, a similar ceiling channel (not shown) and vertical separators of conventional H-shape cross section (not shown) as supporting structure between the panels. A doorway is suitably cut in wall or partition W in the well understood manner to predetermined dimensions corresponding to the size of buck 10 to be used.

Door buck 10 is delivered on the job in a knock-down condition with set screws 16 adjusted to dispose side walls 11b and 12b in a slightly divergent or substantially parallel position to space free inner edges 11f and 12f a predetermined distance apart to snugly accommodate the thickness of wall W therebetween. In this position as indicated in broken lines in FIGS. 2 and 4, intermediate sections 15a of straps 15 are spaced from their respective stiffening plates 11k and 12k. Door buck 10 is then simultaneously installed and assembled with minimum of labor and skill by first holding head piece 11 in position with a horizontal top edge portion of a top of the doorway extending between flanges 11a and the bottom of head piece 11 up against the horizontal free edge of the doorway. Jambs 12 are then brought into position at an angle to the vertical so that lateral tabs 13 align with lateral track-

ways 12h of jambs 12. As jambs 12 are brought into vertical position with the vertical edges of the doorway extending between flanges 11a and the bottom of head piece lateral trackways 12h. The parts will now be in the position shown in FIG. 4 with jamb 12 in full lines and head piece 11 in dotted lines. The interfitting of head piece 11 with jambs 12 is then completed by lowering head piece 11 into substantially the full line position shown in FIG. 4. In this position upper cut back edges 12e of jambs 12 extend upwardly beyond the bottom of head piece 11 into recesses 14b of stepped angle extensions 14a of transverse tabs 14 and beveled edges 12g of side walls 12b underlie opposite tapered edges 11e of side walls 11b. The ends of flanges 11a and 12a meet at right angles but with side walls 11b overlapping side walls 12b, tapered edges 11e form simulated mitered corners as shown in FIGS. 1 and 6. Openings 12m in door framing portions 12d adjacent the upper ends of jambs 12 will now be in registered alignment with openings 14c formed in transverse tabs 14. Jambs 12 and head piece 11 are now secured together by the insertion of suitable screws 17, which may be of self tapping type, through aligned openings 12m and 14c.

The installation of door buck 10 in the doorway of partition or wall W may be completed by rotating set screws 16 in a clockwise direction. Intermediate sections 15a of straps 15 are thereby brought closer to their respective stiffening plates 11k and 12k to exert tension through the flexing of divergent arm sections 15b with respect to intermediate sections 15a and slightly flex side walls 11b and 12b causing inward edges 11f and 12f of flanges 11a and 12a, respectively, to clamp wall W therebetween, as is clear from FIGS. 2 and 4. Set screws 16 have heads 16a countersunk from the exterior surfaces of door framing portions 11d and 12d and may be provided with grooves for a conventional screwdriver or may be formed to receive an Allen wrench or Phillips screwdriver.

The clamping action is accomplished by a relatively small degree of flexing of side walls 11b and 12b whereby the spacing between opposite inward edges 11f and 12f of flanges 11a and 12a, respectively, is reduced on the order of one eighth to one quarter of an inch and provides a rigid attachment between door buck 10 and wall W, the channel shape of the buck also serving to strengthen wall W along the edges of the doorway. It is to be understood that straps 15 may have the ends of divergent arm sections 15b, here shown terminating in tab sections 15c, arranged for flexing side walls 11b and 12b in any other suitable manner, for example, directly secured to side walls 11b and 12b adjacent flanges 11a and 12a, respectively.

One of jambs 12 may be provided with conventional hinge plates 13, which may be suitably pre-attached and recessed from door framing portion 12d in any well understood manner. The other of the jambs 12 may have a conventional opening (not shown) cut out for a bolt socket plate.

As per requirements, jambs 12 are sized in length for installation either before or after the laying of finished floor F.

As will be clear from the drawings and description, door buck 10 may be installed after wall W has its outer finish applied thereto in the same manner as the door buck described in my said Patent No. 2,799,370.

It is thus seen that there is provided a knock-down door buck construction with adjustable wall clamping means of the character described in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention and as various changes might be made in the embodiment above set forth, it is to be understood that all matters herein set forth or shown in the accompanying drawings are to be interpreted as illustrative and not in a limiting sense.

I claim:

1. In a three-piece metal preformed door buck con-

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struction for installing in a doorway cut in a wall, a pair of channel-shaped jambs each integrally formed with opposite side walls for extending over vertical edges of a wall bordering said doorway, flanges inwardly bent toward each other extending from said opposite side walls for clampingly contacting opposite sides of said wall, adjustable means coacting with said side walls to flex the latter and bring said flanges toward each other to effect said clamping contact, each jamb having a jamb portion from which said opposite side walls integrally extend, said adjustable means including a plurality of straps spaced from each other along each of said jamb portions, each strap having an intermediate section and a pair of opposite arm sections, each intermediate section being spaced from and substantially parallel to the jamb portion and having opposite ends thereof formed in bends divergently disposing said arm sections with respect to each other, each of said arm sections having an end opposite said bend attached to one of the opposite side walls, means adjustably interconnecting each intermediate section with the jamb portion to vary the distance therebetween, said strap being otherwise free from contact and engagement with said jamb portion and opposite side walls, said bends being constructed and arranged to flex and decrease the divergence of said arm sections upon bringing the intermediate portion towards the jamb portion by said interconnecting means to effect said side wall flexing and wall clamping by said flanges.

2. The door buck construction defined in claim 1 in which said adjustable interconnecting means between each of said intermediate sections and said jamb portion includes a headed screw for each of said straps extending through said jamb portion and being threaded into said intermediate section to bring the latter towards said jamb portion in said distance variation on tightening the screw.

3. The door buck construction defined in claim 1 including a channel-shaped head piece having a pair of opposite side walls upturned from a bottom portion thereof for extending over a horizontal edge of said wall bordering the doorway, flanges inwardly bent toward each other from said head piece side walls for clamping opposite sides of said wall adjacent said horizontal edge, said head piece having opposite ends formed for interconnecting with upper ends of said jambs, and a plurality of straps similar to said first mentioned straps coacting with said

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head piece side walls to flex the latter and bring said head piece flanges toward each other to effect said clamping contact.

4. In a three-piece metal preformed door buck construction for installing in a doorway cut in a wall, a pair of channel-shaped jambs each integrally formed with opposite side walls for extending over vertical edges of a wall bordering said doorway, flanges inwardly bent toward each other extending from said opposite said side walls for clampingly contacting opposite sides of said wall, adjustable means coacting with said side walls to flex the latter and bring said flanges towards each other to effect said clamping contact, each jamb having a jamb portion from which said opposite side walls integrally extend, said adjustable means including a plurality of straps spaced from each other along each of said jamb portions, each strap having an intermediate section and a pair of opposite arm sections, each intermediate section being spaced from and substantially parallel to the jamb portion and having opposite ends thereof formed in relatively flexible bends divergently disposing said arm sections with respect to each other, each of said arm sections having an end opposite said bend attached to one of the opposite side walls, a transverse stiffening plate attached to the interior of each of said jamb portions in alignment with each of said straps, a headed screw for each of said straps extending through said jamb portion and stiffening plate and threadedly engaging said intermediate section for moving the latter towards said jamb portion on tightening the screw to flex the arm sections at said bends and decrease the divergence thereof to effect said side wall flexing and wall clamping by said flanges, said straps being otherwise free from contact and engagement with said jamb portions and opposite side walls.

References Cited in the file of this patent

UNITED STATES PATENTS

1,068,656	Holmes	July 29, 1913
1,968,890	Huff	Aug. 7, 1934
2,741,344	Herr	Apr. 10, 1956
2,799,370	Sklar	July 16, 1957
2,825,042	Tollefson	Feb. 25, 1958
2,869,695	Herr et al.	Jan. 20, 1959

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,156,331

November 10, 1964

Samuel Sklar

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, lines 17, 38, 57 and 58, for "sheet rock", each occurrence, read -- plaster board --; column 3, line 51, strike out "sheet rock or".

Signed and sealed this 6th day of May 1969.

(SEAL)

Attest:

Edward M. Fletcher, Jr.

Attesting Officer



Commissioner of Patents