Dec. 3, 1940. H. S. CURREN 2,223,338

DOOR OR WINDOW FRAMING

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Fig. 1

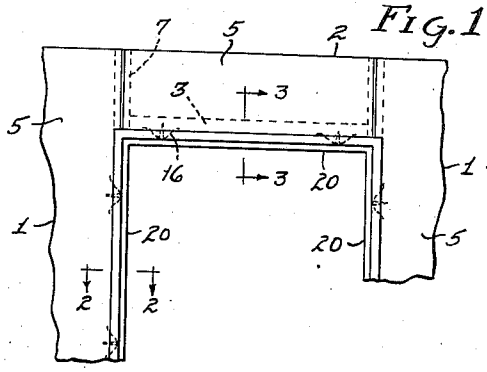


Fig. 3.

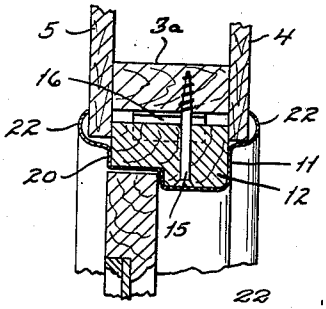


Fig. 2

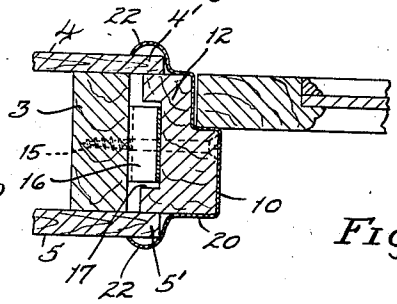


Fig. 10

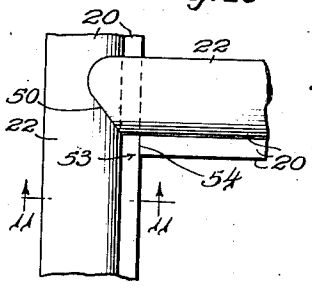
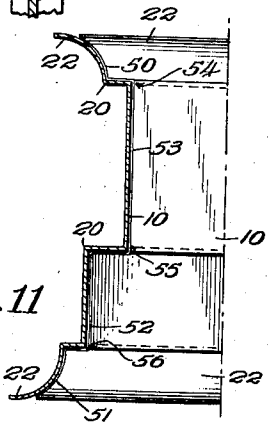


Fig. 11



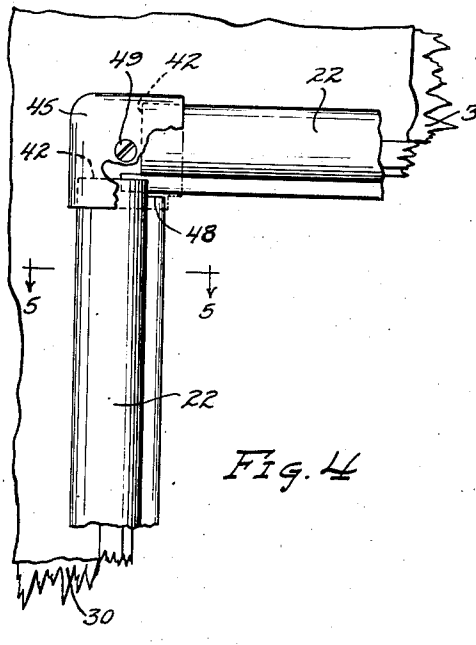


Fig. 4

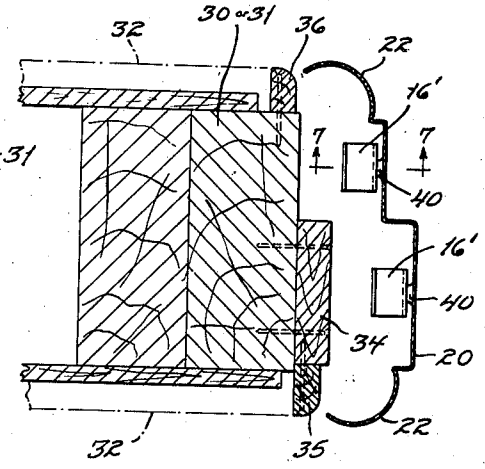


Fig. 5

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DOOR OR WINDOW FRAMING

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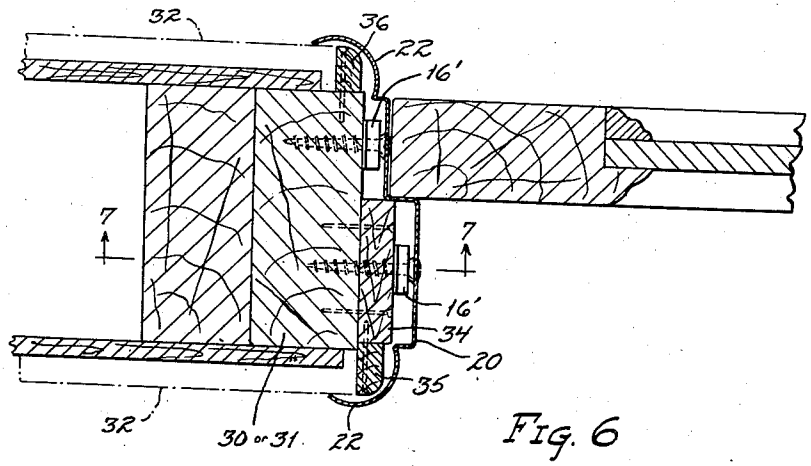


Fig. 6

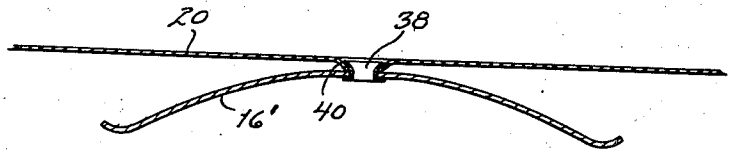


Fig. 7

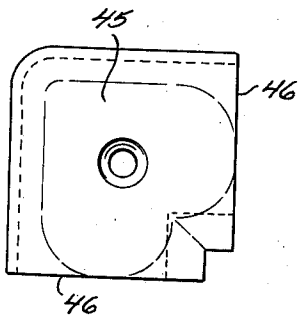


Fig. 8

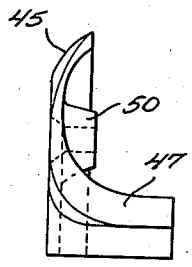


Fig. 9

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Patented Dec. 3, 1940 2,223,338

UNITED STATES PATENT OFFICE

2,223,338

DOOR OR WINDOW FRAMING

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Application August 17, 1937, Serial No. 159,461

6 Claims. (Cl. 20—12)

This application is a continuation in part of my prior application, Serial No. 107,931, filed October 28, 1936, now Patent 2,094,265, issued September 28, 1937, entitled "Building construction." The divisional matter is shown herein in Figs. 1 to 3, and the remaining figures relate to the continuation matter.

The principal object is to provide an improved framing construction for building wall openings, which construction is adapted to receive and support closures, such as doors, windows, transoms and the like. A more specific object is to provide a framing construction which will allow doors, windows, transoms, etc., to be manufactured, prefitted and prefinished completely, and then readily and easily assembled into the openings, on the site, without requiring cutting, fitting or special skill.

A further object is to provide a framing construction which may be easily and quickly applied to wall edges, as in finishing openings for closures such as doors, windows and the like, and which will allow adjustment to be made inexpensively in case the closures change in size after original installation, or in case interchangeable use of closures varying somewhat in dimensions is desired.

Other objects and features of the invention will become apparent from the following description, relating to the accompanying drawings, showing a preferred form. The essential characteristics are summarized in the claims.

In the drawings, Fig. 1 is a fragmentary view, showing portions of a wall having an opening framed in accordance herewith; Figs. 2 and 3 are horizontal and vertical transverse sectional views respectively, as indicated by the lines 2—2 and 3—3 on Fig. 1; Fig. 4 is a relatively enlarged view, corresponding generally to Fig. 1, showing a modified framing construction at an upper corner of an opening, specifically adapted to serve as a doorway; Fig. 5 is a sectional view taken substantially along the line 5—5 on Fig. 4, and showing a portion of the framing in separated relationship to the fixed parts of a wall; Fig. 6 is a similar view, showing the framing applied to the wall in final position, subject to adjustment; Fig. 7 is a view taken in the plane of the wall, substantially along the line 7—7 on Fig. 6, showing the preferred construction of springs for use with the present invention; Figs. 8 and 9 are detail views, showing a corner piece for finishing angularly extending adjacent frame parts; Fig. 10 is an assembly view of adjacent portions of two channel members, one coped to fit the other, and Fig. 11 is a sectional bottom plan view of the assembly as indicated by the line 11—11 on Fig. 10.

The construction herein shown may be used with pre-fabricated wall or partition units, such as shown and claimed in my patent, above identified. While not in any way confined to such use, the divisional matter is similarly shown herein. Referring to Figs. 1 to 3, the character 1 represents pre-fabricated panel units on each side of a door opening, and 2 represents a similar panel unit interposed between the panels 1 so that the three units form the doorway. As shown in Figs. 1 and 2, the units 1 may comprise a framework including side, top and bottom wooden core pieces in rectangular arrangement and suitably fastened together. One such core piece is shown at 3. Adjacent the door opening, on each side of each core piece, and fastened thereto are facing or backing panels 4 and 5, which may extend beyond the core pieces as at 4' and 5', respectively. The facing or backing members may be identical or different on the two sides of the unit; plywood, plaster board, composition or insulation board of any kind being examples of practically usable material to form the unit covering.

The unit 2 represents a short partition or wall section, made similarly to the unit 1 and having a horizontal core piece 3a passing over the door opening, with the facing or backing members 4 and 5 depending therebeyond, as already described. Thus, the entire perimeter of the doorway, exclusive of the floor, is in channel effect, and the jamb and head members of the door framing, indicated generally at 10 and 11, respectively, may fit or partially occupy the channel effects as guides. The adjacent edges of the sections 1 and 2 may be held in alignment by keys 7 (fully shown in my patent identified above) as indicated in dotted lines on Fig. 1, the keys occupying the oppositely facing channels formed by extensions 4' and 5' of the covering. The construction of the head and jamb members or units is substantially identical, as shown, and description of one will suffice for both.

Inner or normally concealed members of the heads and jambs may comprise wooden or other core strips 12, opposite edge surface portions of which may be made generally to fit and be guided by the channel effects between the wall covering extensions 4' and 5'. The surfaces of the core strips which face the doorway in the plane of the wall may be determined by the desired shape of trim cover or molding, with provision for reinforcing such cover at portions thereof which are

abutted by or which guide closure members, such as doors, windows and the like; the actual shape depending upon the nature of the closures. The expression "trim," as used herein, includes such core strips and the reinforcement. The strips 12 may be held in position by screws 15, which may enter the members 3 or 3a, or suitable screw-threaded inserts therein. The screws do not hold the head and jamb members tightly against the fixed frame work, but instead compress yielding means shown as relatively stiff leaf springs 16, which may be retained in sockets or running channels 17 on the faces of the core strips 12 remote from the central region of the wall opening. Such sockets or channels hold the leaf springs in generally parallel relationship with the plane of the wall. The leaf springs, as shown, are bowed and centrally apertured to receive the screws, so as to be held in position, at least in part, thereby. The free ends of the springs, as shown, bear tightly on the members 3 or 3a and the intermediate portions bear tightly in the bottoms of the sockets or channels 17, throughout the life of the framing.

The trim cover or molding, as shown, comprises spring-metal channel shapes 20, the web portions of which may generally fit the inside and corner surfaces of the cores 12, portions of the flanges tightly abutting the opposite side edges of said core members. Outwardly from the corner portions there are flange extensions 22, which may be sprung over the facing or backing members 4 and 5 of the wall unit, and moved back and forth as desired in snug contact therewith. The flanges 22 curl inwardly toward the wall in C-shape, as shown, but may be of any other sectional shape, for instance such as those on conventional door trim facing strips.

By the above described arrangement it will be seen that the doorway may be made somewhat smaller or larger either vertically or horizontally, as desired, without rendering the framing unstable, simply by turning the screws in the proper direction but without materially altering the active compressive force of the springs. Likewise, adjustment for irregularities of door edge surfaces (e. g. non-parallelism of sides, etc., as in the event the door is not truly rectangular) may be effected by manipulation of screws in different regions of a single trim unit without touching the other screws of that unit.

The use of special corner trim cover devices to close gaps and the expedient known as mitering may be obviated by coping the end portions of one of the channel members 20, for instance the two ends of the upper channel member. Such upper trim channel as shown particularly by Fig. 11 is simply cut substantially to fit the configuration of both side trim sections and applied while the springs 16 of the jamb framing are compressed beyond what they normally would be in supporting the closure member such as the door. The illustrations show one end of an upper channel 20 cut back, as at 50 and 51, at respective side margins to fit the rounded marginal portions 22 of the adjacent vertical channel section, additionally at 52 and 53 complementary to the door seat and jamb portions of the vertical channel section, and also at the parallel connecting portions, viz. 54, 55 and 56, so that said connecting portions abut the adjacent matching portions of the vertical channel section in edge to face contact. Such abnormal compression of the springs 16 as above mentioned could be used in widening the effective door frame sufficiently to receive the coped ends of the upper or head trim without danger of scratching the finish on the side trim if temporarily held in place to effect trial fitting of the door.

It is to be understood that, the spring adjustment for the jambs may be provided at one side of the framing only since movement of either jamb strip 12 will effect narrowing or widening of the doorway.

When the upper trim is in place, then the doorway may be narrowed by manipulation of the screws so that the upper exposed faces of the side or jamb trim cover members will substantially abut the coped edges of the upper or head trim. The channels 20 of the jamb trim cover are finally snapped into place as illustrated, completing the framing. All the metal covers 20 may finally be secured to the core structure or inner framework as by screws, not shown, or (in general accordance with the modified construction described below) by the same screws that hold the core strip 12.

Referring to the modified construction, it may be assumed that the walls 4 delineating the opening to be framed, are of conventional construction, for example, studding, lath and plaster; tile and plaster, with fixed (e. g. wooden, metal or masonry) head and jamb framing as at 30 and 31. A plaster finish 32 is diagrammatically indicated by broken lines. It may be assumed that the head construction is substantially the same as that of the jamb, as shown in Figs. 4, 5 and 6.

Each fixed frame member 30 and 31, in the case of a door, may be built out, as at one side of the central plane of the door opening parallel to the wall, as by a strip 34, suitably fastened to the members 30 or 31, as the case may be. These locate and reinforce the trim cover which in general form is the same as that previously described. Plaster-ground strips 35 and 36 for the wall portions 32 (e. g. to gauge the plaster and prevent chipping of it) may be nailed onto the fixed framework. As shown the strips 35 are attached to the strips 34 and the strips 36 directly to the fixed framing 30 or 31, as the case may be. The strips 34, 35 and 36 run substantially continuously around the door opening, exclusive of the floor, which latter may be finished as usual, with or without a threshold. In actual practice the upper ends of the vertically extending strips 34 and 35 are cut back about 1½" at the top, to afford greater clearance for the top molding or trim cover, in sliding it into position. 36 may also be cut back.

It will be observed that the rounded edges of the strips 35 and 36 serve as guides over which the flanges 22 of the cover members 20 can easily be sprung by pressing the members toward the framing in the direction of the plane of the wall. The e. g. rounded edges act to cam the flanges 22 outwardly the necessary distances. Decorative treatment such as wall paper can be brought smoothly around the strips 35 or 36 and will not be scuffed by the flanges 22 when the cover members 20 are applied. Redecoration can be accomplished easily right up to or under the flanges by moving the flanges back short distances from their set positions. Incidentally doors do not, in most cases, have to be taken off their hinges to permit such movement of the frame cover members to facilitate redecoration.

In order properly to apply the strips 34, 35 and 36 the following procedure is recommended. The ground strip 36 is applied first, making sure that

it is plumb. This may necessitate cutting or shimming of the members 30 or 31 if out of plumb. The strip 34 is then applied using a suitable gauge to locate it with reference to the ground strip 36. The ground strip 35 is then seated in the corner afforded by the strip 34 and the framing 30 or 31; after which the wall covering (e. g. plaster) is applied flush with the edges of the ground strips. The above procedure results in the formation of parallel and plumb plaster surfaces for abutment by the edges of the cover or molding portions which correspond to the usual trim facings of door or window framing or trim.

Referring to the section of trim cover illustrated in Fig. 5, the various portions similar to the previously described construction are numbered as in connection with Figs. 1 to 3; and it will be noted that the C-shaped flange extensions 22, before application to the wall, span slightly less space than the width of the wall over which they are adapted to be sprung. Each of the relatively stepped web portions of each trim cover member at one side of the doorway and at the top, has a set of springs 16'; mainly to reduce the tendency of the cover members to rock about the springs as might be the case if only a single row of springs were to be used on a cover. The springs are preferably secured by metal eyelets 38 to the respective web portions of the channel. Such eyelets may be headed tightly in retaining relationship to the springs, at counter-punched screw-head-receiving effects 40 on the web, as illustrated in Figs. 5 and 7, so that the springs, eyelets and channels form a self-sustaining unit or sub-assembly. The attaching screws are preferably oval-headed wood screws, adapted to enter the permanent framing 30 or 31, but the character of the screws depends on the fixed framing which may be wood, metal or masonry. The principal difference between the two constructions described is the omission of rigid movable cores such as 12 from the modified construction, and the supporting of springs directly on the cover or molding portions of the trim. It should be noted that the springs need not be mounted on any part of the trim, but could be secured to or supported in operating position by the fixed framing in suitable fashion. Ordinarily, only one side and one top trim cover assembly for each opening is equipped with springs. The others are plain but with attaching screw openings. The eyelets hold the springs in parallel relationship during placement of the trim covers.

Due to the peculiar shape of the extensions 22 of the trim covers, it is difficult to make joints simply by coping the head trim member and accordingly the edge portions are both cut off straight or at right angles as at 42, Fig. 4. If something of a gap is left between the horizontal and vertical trim members, intermediately of the flanges 22, this enables the doors to be more easily widened or narrowed horizontally, in the event the door swells or shrinks after mounting. It always does one or the other. Such small gap is not unsightly, nor is it otherwise disadvantageous. In the previously described construction, the head frame could be raised or lowered readily, but, in the event of installation with tightly abutting relationship of head and jamb trim, it would require recoping in order to narrow the doorway a substantial distance; say in compensating for horizontal shrinkage of the door. In the revised construction the top end of each side molding member 22 is coped (generally complementary to the surface effects presented by the exposed upper molding) so that the side molding can be moved freely toward and away from the wall edge as much as could ever be required for adjustment to compensate for door variations. After the side moldings are set in final position to fit the door, the head molding is then lowered until it abuts the coped surfaces of the side molding, closing the joint at each upper door corner. It may have to be raised slightly if the upper edge of the door is too high when set.

The gap caused by the cutting away of the spring flange portions 22 of the trim cover members at right angles, see Fig. 4, may be effectively closed by corner pieces or braces (two at each corner, i. e. one inside and one outside) such as indicated at 45 in Figs. 4, 8 and 9. These, as shown, are made hollow (preferably as metal castings or stampings) and have right angularly disposed open end portions 46, which are partially flanged inwardly at 47 and formed generally complementary to the flanges 22 at the edges, so as to fit over them. A small gap 48 is shown in Fig. 4 above the coped edges of the side molding member 20. This, usually, would be closed at both upper corners of the frame by lowering the upper molding section 20, as above mentioned, and would only be present in case the door is found oversize in height. Each corner piece or brace 45 may be secured by a single screw 49, extending through an inside boss 50 on the casting or stamping and into the fixed framework already described. The corner piece is located so as to bring the edge surfaces of it which are complementary to the flanges 22 into close fitting relationship to said flanges after final adjustment. Application of door supports lock plates etc., to the exposed parts of the trim covers and securement of such to the fixed framework as by screws is of course also accomplished after fitting of the framing to the door.

Application of the above principles of construction and adjustment to openings or wall edges other than those of doors is believed obvious in view of prior knowledge and the disclosure hereof, hence, no further illustration is deemed necessary. It will be seen that all the trim and the doors can be furnished prefitted without requiring close manufacturing tolerances, that there is no liklihood of marring the finish in installation and adjustment, and that the arrangement permits any householder to service the closures, to interchange them as he may desire, and to readjust for snugness, simply by the use of a screw driver.

I claim:

1. A door or window trim, comprising a plurality of molding members adapted to extend around an opening in a fixed wall structure to finish the wall edge surfaces, one of which members is a sheet-metal molding with spring flanges adapted snugly to embrace the wall surfaces at each side of its edges, a reinforcing strip adjacent the concealed face of the molding, a series of springs interposed between the reinforcing strip and a fixed portion of the wall, and screws, the heads of which are concealed by the molding, and which pass through the reinforcing strip into such fixed wall structure.

2. A door or window framing, in accordance with claim 1, wherein the springs comprise bowed leaf members bearing oppositely against retaining recesses in the reinforcing strip and the wall

structure, and held against dislocation relative to the wall opening by such recesses.

3. A door or window framing construction comprising separate sheet-metal upper and side trim sections of generally channeled shape with flanges adapted for fitting over and concealing respective edge portions of a building wall opening, the webs of the channels being struck out for forming closure stops, the web at the end of one section being cut back from the flanges thereof so that such end of the section may partially embrace an end portion of an adjacent section, positioning means including springs adapted to force one section away from the wall edge which it conceals, said positioning means also including fastening members which limit outward movement of the section as moved by the springs, corner finishing members for such adjacent sections having branch portions covering flange parts of both said sections, said finishing members having openings for screws between the branch portions, whereby the corner finishing members may be secured to the building wall with the branch portions in the same relationship to the flanges of the two sections on one side of such wall.

4. A door or window trim construction for a building wall, comprising a fixed framework bounding an opening in the wall, ground strips attached to the fixed framework and having surfaces adapted to be positioned so as to terminate flush with the external decorative surfacing of such wall on one side of it, and trim covers having flanges adapted to be sprung over the framework to conceal the ground strips, said surfaces of the ground strips extending toward the central principal plane of the wall opening so that the surfaces can act to cam at least one flange of such cover into position as the cover is applied over the framework.

5. Trim for a framed building opening adapted for adjustment to snugly receive closures which may vary in size both in height and width comprising channel-shaped sheet metal jamb and head trim members, springs mounted within said members, attaching means extending through said members whereby said members may be adjustably mounted in the frame opening, adjacent end portions of the members lying in overlapping and slidable relation to each other to permit adjustment, and cap members covering said adjacent end portions and permitting adjustment of said members without exposing the ends of same.

6. A door or window frame trim comprising a plurality of molding members, one of which has a web adapted to be disposed in covering relation to an edge of a fixed wall at least on one side, bowed leaf springs, each having a hole, positioned on the normally concealed side of the web, the holes in the springs registering with openings in the web and concentric means securing said springs to said web, said registering openings being adapted to receive attaching screws which may extend into portions of the fixed wall and compress the springs while securing the molding members in operative position.

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