

June 10, 1941.

S. K. MITTLEMAN
DOORFRAME CONSTRUCTION

Filed Feb. 20, 1940

2,245,351

2 Sheets-Sheet 1

FIG. 1.

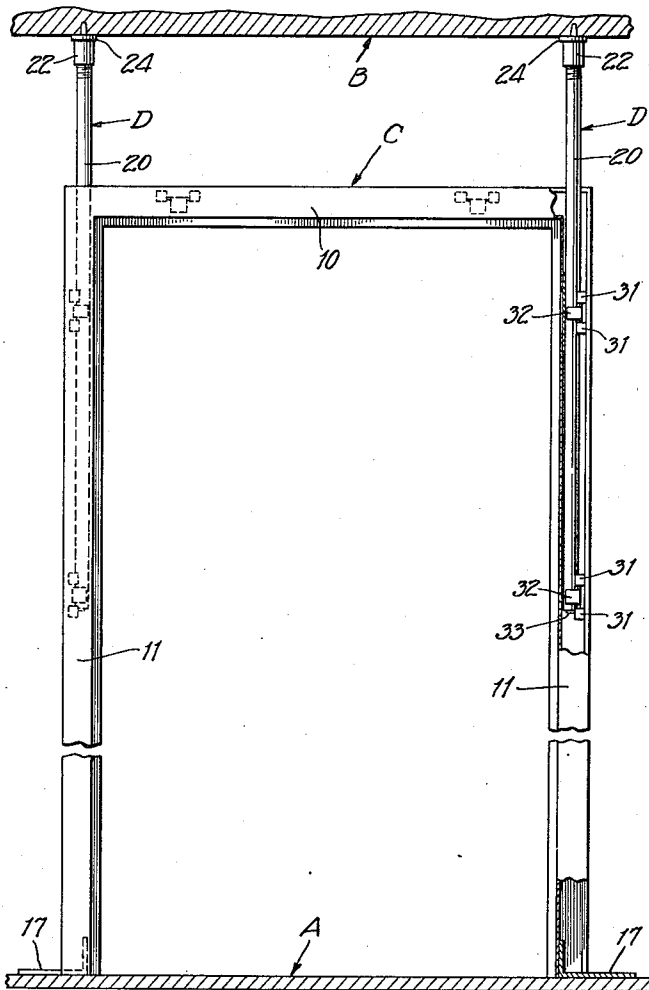


FIG. 2.

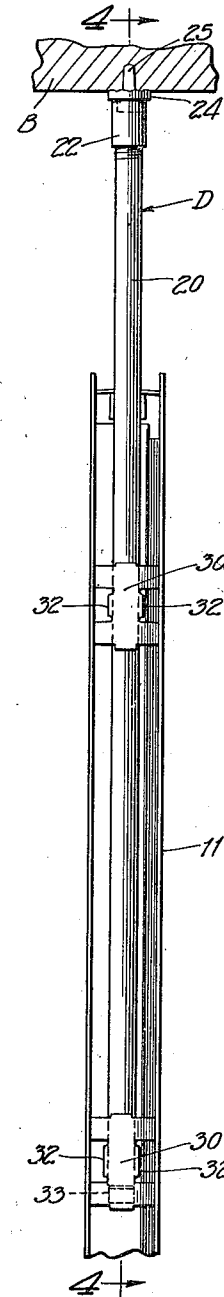
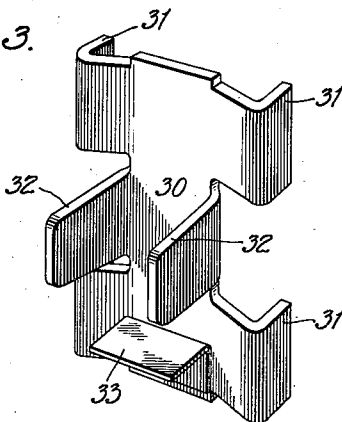


FIG. 3.



WITNESS:
E. H. Mittleman
ATTORNEYS

SAMUEL K. MITTLEMAN.
INVENTOR.

BY *Ely Pattison*

ATTORNEYS.

UNITED STATES PATENT OFFICE

2,245,351

DOORFRAME CONSTRUCTION

Samuel K. Mittleman, New York, N. Y.

Application February 20, 1940, Serial No. 319,825

10 Claims. (Cl. 189—46)

The present invention relates to new and useful improvements in door frame constructions and more particularly it pertains to means for securing door and similar frames in position in such a manner that a wall or partition may be formed therearound.

It is one object of the invention to provide a novel construction for securing a door frame in position between a floor and ceiling of a building prior to the forming of the wall or partition of which the door frame is to become an integral part, to frame an opening therein.

It is a further object of the invention so to construct a door frame that all of the parts, except the actual securing means, are carried by and permanently attached to the frame member.

A further object of the invention resides in a novel construction whereby certain of the wall or partition studs may be secured to the frame member prior to the formation of the wall or partition.

Other objects of the invention will appear as the nature thereof is better understood and reference will now be had to the accompanying drawings and the following detailed description of the constructions therein illustrated.

In the drawings:

Figure 1 is a view in elevation, partly in section, illustrating a door frame constructed in accordance with the present invention and the manner in which the same is secured in position between a floor and ceiling of a building,

Figure 2 is a fragmentary view in elevation of one of the sides of the frame member, the view being taken at right angles to Figure 1,

Figure 3 is a detail perspective view of a guide clip employed to support the rigid securing means,

Figure 4 is a vertical longitudinal sectional view on an enlarged scale, partly broken away, the view being taken substantially on the line 4—4 of Figure 2,

Figure 5 is a transverse sectional view on an enlarged scale taken substantially on the line 5—5 of Figure 4,

Figure 6 is a transverse sectional view on an enlarged scale taken substantially on the line 6—6 of Figure 4,

Figure 7 is a transverse sectional view illustrating a slightly modified form of frame member and guide clip,

Figure 8 is a fragmentary longitudinal sectional view illustrating a modified construction of supporting guide clip, and;

Figure 9 is a detail transverse sectional view illustrating a still further modified form of frame member.

Referring to the drawings by reference character, and particularly to Figures 1 through 7, A designates a floor and B designates the ceiling of a building, C designating a door frame and D designates a means by which the door frame is secured in position between the floor A and ceiling B, in order that a partition wall may be formed around the frame member.

The frame member comprises a head 10 and side members 11, is formed from metal, and as best illustrated in Figures 5 and 6, is of channeled cross-sectional form comprising side walls 12 and a connecting wall 13. The connecting wall is formed with a projecting portion 14 which forms a stop bead for the door, all of which is of more or less conventional frame structure.

In the present construction, the connecting wall 13 of one of the side members is cut out as at 15, and backing up said cut out portion and mounted upon the inside of the connecting wall 13, there is a door hinge mounting plate 16, the hinge being shown in dot and dash lines in Figure 5.

Each of the side members 11 is provided at its bottom with a foot or similar member 17 upon which the frame may rest in an upright position.

Means is provided to secure the frame in position between the floor A and the ceiling B which means is carried by the frame and engages the ceiling B, and I will now describe this means and its manner of operation.

This securing means is designated D in the drawings and consists of a rigid member 20 preferably in the form of a length of pipe, there being one of these rigid members 20 at each side of the frame.

The rigid members 20 each have their upper extremity threaded as at 21 for the reception of a sleeve or collar 22 which is internally threaded, see Figure 4, and in the upper end of which there is a ceiling engaging foot or block 23 which, however, does not have threaded engagement with the sleeve but is, instead, freely movable relatively thereto. The ceiling foot or block 23 has a flange 24 which has engagement with the upper end of the sleeve 22 and the upper face of this flange is roughened for engagement with the ceiling to prevent rotation of the ceiling block upon rotation of the sleeve 22. Also, the ceiling block is provided with an extension or projection 25 which enters the material of the ceiling to pre-

vent sliding or lateral movement of the ceiling block relatively to the ceiling.

The rigid members 20 are removably carried by their respective side members of the frame and I will now describe the manner in which this is accomplished.

At each side of the frame there is a pair of guide clips arranged in spaced relation to each other.

Each of the rigid members 20 is supported by its respective lower guide clip, one of which is illustrated in Figure 3 of the drawings.

By reference to Figure 3 it will be noted that each supporting guide clip comprises a main body portion 30 which is curved throughout its length. Projecting rearwardly from each end of the body portion 30, there are two lugs or extensions 31 for engagement with the side walls of the channel-shaped frame as best illustrated in Figures 5 and 6. These lugs or extensions 31 form the means by which the guide clips may be attached to the frame, the clips being secured to the frame preferably by electric welding although other securing means might be employed. Projecting from the body portion 30 at points intermediate of its ends and in a direction opposite to that in which the lugs 31 project, there are two lugs 32 and extending in the same direction as the lugs 32 from the lower end of the body portion 30, there is a supporting lug or foot 33. The lugs 31 are preferably formed as integral extensions of the body portion 30 while the supporting lug or foot 33 is preferably in the form of a separate member welded or otherwise suitably secured to the body portion 30.

Each of the upper guide clips is of substantially the same construction as the lower guide clips just described with the exception that the supporting lug or foot is omitted and these upper guide clips are secured in position in the frame in the same manner as described for the lower guide clips.

The lugs 32 of both the lower and upper guide clips are adapted to embrace their respective rigid member 20 and the lower end of each rigid member 20 rests upon the supporting lug or foot 33 of its respective lower guide clips as best illustrated in Figure 4 of the drawings.

The embracing lugs 32 of each of the guide clips are so spaced with respect to each other as to receive the rigid members 20 with a snug fit and to have engagement therewith as indicated at 38 in the drawings and the upper guide clip at each side of the frame is so positioned in the frame that its body portion 30 will engage its respective rigid member 20 and force it into engagement with its respective hinge mounting plate 16 as illustrated at 39 in the drawings thus providing means for securing the rigid member 20 against pivotal movement in all directions upon the supporting lugs or feet upon which they rest.

I will now describe the manner in which a door or similar frame member is secured in position by the rigid members 20.

The rigid members 20 are positioned in the sides of the frame with their inner or lower ends in engagement with their respective supporting lugs or feet and with their upper ends projecting above the head C of the frame.

With the parts thus assembled, the frame is placed in an upright position in its permanent location. The sleeves 22 are next adjusted upon their respective rigid members 20 until the projections 25 of the ceiling blocks engage the ceiling

to indicate the points at which recesses for the reception of the projections 25 are to be formed. After the recesses for the reception of the projections have been formed in the ceiling, the sleeves 22 are again adjusted to move the flanges 24 of the ceiling blocks into engagement with the ceiling B as illustrated in Figures 2 and 3 of the drawings.

As the flanges 24 of the ceiling blocks engage the ceiling B, a downward pressure is exerted upon the supporting lugs or feet 33 of the lower guide clips which pressure is transmitted to the frame, forcing the same downwardly upon the floor A with sufficient force securely to retain the frame in its set position.

In addition to providing means for positioning and supporting the rigid members 20 in position relatively to the frame, the guide clips perform another function, namely that of providing anchoring means for adjacent vertical wall or partition studding and this feature is illustrated in Figures 5 and 6 of the drawings.

Referring to Figure 6, it will be noted that the vertical studding which is designated E in said figure, comprises two channel members 41 and 42 arranged with their open sides in confronting relation. At points in registration with the guide clips of the frame, the channel member 42 is provided with openings to receive binding wires 43, the looped portions of which embrace the body portions of their respective guide clips to bind the channel member 42 to the frame, the free ends of the binding wire being twisted as at 44.

While I have illustrated but one of these binding wires and but one vertical studding, it is to be understood that one vertical studding may be employed at each side of the frame and that the studding will be secured to the frame in the manner herein illustrated and described.

By reference to Figures 1 through 6 of the drawings, it will be noted that the outer edges of the side walls of the channel forming the frame, are bent inwardly of the channel as at 50 to provide reinforcing flanges 51 which lie within the channel forming the frame in spaced relation to their respective side walls of the channel.

In Figure 7, I have illustrated a slightly modified form of this last mentioned construction in which modified construction, the side walls of the channel forming the frame are bent as at 52 to provide flanges 53 extending inwardly of the channel, substantially at right angles to their respective side walls thereof.

In Figure 9, there is a still further modified form of frame member construction and in this form, the side walls of the channel are bent inwardly as at 55 providing flanges 56 which extend inwardly of the channel at an angle of substantially forty-five (45°) degrees to their respective side walls.

It will also be noted that in Figure 7, the door stop bead which is designated 14' in said figure, is formed at a point inward of one of the side edges of the connecting wall 13 of the channel instead of at one edge thereof as illustrated in Figure 6. Such a construction is employed when relatively thin doors are to be employed in connection with the frame.

In Figure 8, I have illustrated a slightly modified construction which is employed in certain installations wherein the rigid members 20 are of such length as not to rest upon their respective supporting lugs or feet 33. In such cases, the rigid members 20 are secured to their respective lower guide clips by means of bolts,

screws or similar fastenings 60. When this construction is employed, the body portion of each of the lower guide clips is provided with a suitable opening for the reception of the bolt or screw 60 which also passes through openings provided in the rigid members 20. In cases where screws are employed, one of the openings, such as 61, may be threaded for threaded engagement with the screw. However, in cases where bolts, crosspins or the like are employed, threading of any of the openings is not necessary.

From the foregoing, it will be apparent that the present invention provides a new and novel construction for securing in position, door or similar frames until a wall or partition can be formed therearound, which construction is simple, inexpensive and easily assembled.

The invention has been herein illustrated in its preferred forms, but it is to be understood that it is not to be limited to the specific details herein illustrated and that it may be practiced in such other forms as rightfully fall within the scope of the appended claims.

Having thus described the invention, what is claimed is:

1. Means for securing a door or similar frame in position to form a wall or partition therearound, said means including in combination, a frame member of channel shape cross-sectional form, a guide clip carried by each side of the frame member near its upper end, a second guide clip carried by each side of the frame member at a point below its respective first mentioned guide clip, a supporting foot projecting from each of the second mentioned guide clips, and a rigid securing member resting upon the supporting foot of each of the second mentioned guide clips and extending upwardly through their respective first mentioned guide clips to points beyond the upper end of the frame member.

2. Means for securing a door or similar frame in position to form a wall or partition therearound, said means including in combination, a frame member of channel shape cross-sectional form, a guide clip carried by each side of the frame member near its upper end, a second guide clip carried by each side of the frame member at a point below its respective first mentioned guide clip, a supporting foot projecting from each of the second mentioned guide clips, a rigid securing member resting upon the foot of each of the second mentioned guide clips and extending upwardly through their respective first mentioned guide clips to points beyond the upper end of the frame member, and means for engagement with said rigid securing member for maintaining it in position in said guide clips.

3. Means for securing a door or similar frame in position to form a wall or partition therearound, said means including in combination, a frame member of channel shape cross-sectional form, a guide clip carried by each side of the frame member near its upper end, a second guide clip carried by each side of the frame member at a point below its respective first mentioned guide clip, a supporting foot projecting from each of the second mentioned guide clips, a rigid securing member resting upon the foot of each of the second mentioned guide clips and extending upwardly through their respective first mentioned guide clips to points beyond the upper end of the frame member, and means for engagement with said rigid securing member for maintaining it in position in said guide clips,

said means comprising a hinge mounting plate rigidly secured to the frame member.

4. Means for securing a door or similar frame in position to form a wall or partition therearound, said means including in combination, a frame member of channel shape cross-sectional form, a guide clip carried by each side of the frame member near its upper end, said guide clips being secured to the opposite side flanges of the channel forming the frame member near the outer side edges of the said side flanges, embracing lugs extending from each of said guide clips inwardly of the channel forming the frame member, a rigid securing member extending throughout a portion of each side of the frame member and occupying a position between the embracing lugs of its respective guide clip, and means for supporting each of said rigid securing members within the frame member.

5. Means for securing a door or similar frame in position to form a wall or partition therearound, said means including in combination, a frame member of channel shape cross-sectional form, a guide clip carried by each side of the frame member near its upper end, said guide clips being secured to the opposite side flanges of the channel forming the frame member near the outer side edges of the said side flanges, embracing lugs extending from each of said guide clips inwardly of the channel forming the frame member, a rigid securing member extending throughout a portion of each side of the frame member and occupying a position between the embracing lugs of its respective guide clips, means for supporting each of said rigid securing members within the frame member, said supporting means comprising a guide clip carried by each side of the frame member at a point below and in alinement with its respective first mentioned guide clip, and a supporting foot carried by each of said second mentioned guide clips.

6. Means for securing a door or similar frame in position to form a wall or partition therearound, said means including in combination, a frame member of channel shape cross-sectional form, a pair of guide clips mounted one above the other in each side of the frame member, a supporting foot extending inwardly of the channel from the lower guide clip of each pair of guide clips, embracing lugs extending inwardly of the channel from each of said guide clips, a rigid securing member resting upon the supporting foot of the lower guide clip of each pair of guide clips and extending upwardly through the embracing lugs of its respective upper guide clip, and a hinge mounting plate secured in each side of the frame member at a point opposite to its respective upper guide clip to form with the embracing lugs thereof, a housing to surround and snugly fit its respective rigid securing member.

7. A guide clip of the type described comprising a transversely curved main body portion, a pair of spaced attaching lugs projecting in one direction from each end of the body portion, and a pair of embracing lugs projecting from the body portion at points intermediate the ends thereof in a direction opposite to that of the attaching lugs.

8. A guide clip of the type described comprising a transversely curved main body portion, a pair of spaced attaching lugs projecting in one direction from each end of the body portion, a pair of embracing lugs projecting from the body portion at points intermediate the ends thereof in a direction opposite to that of the attaching

lugs, and a supporting foot projecting from the lower end of the body portion in the same direction as said embracing lugs.

9. Means for securing a door or similar frame in position to form a wall or partition therearound with the frame forming a partial support therefor, said means including in combination, a frame member of channel shape cross-sectional form, a pair of guide clips mounted one above the other in each side of the frame member, a rigid securing means carried by each side of the frame member and retained in position in the

frame member by said guide clips, and a wall or partition stud carried by said guide clips.

10. A structure of the type described comprising in combination, a door or similar frame member, means for securing the frame in position to form a wall or partition therearound, guide clips and supporting clips for supporting and retaining said securing means in operative position in the frame member, and a wall or partition stud secured to said guide and supporting clips.

SAMUEL K. MITTLEMAN.