

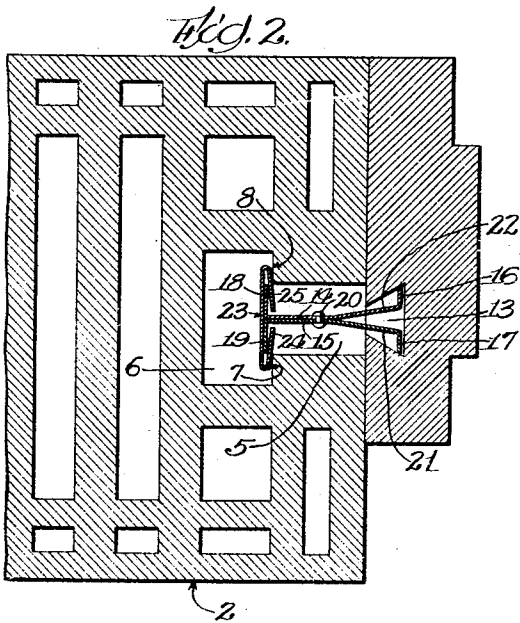
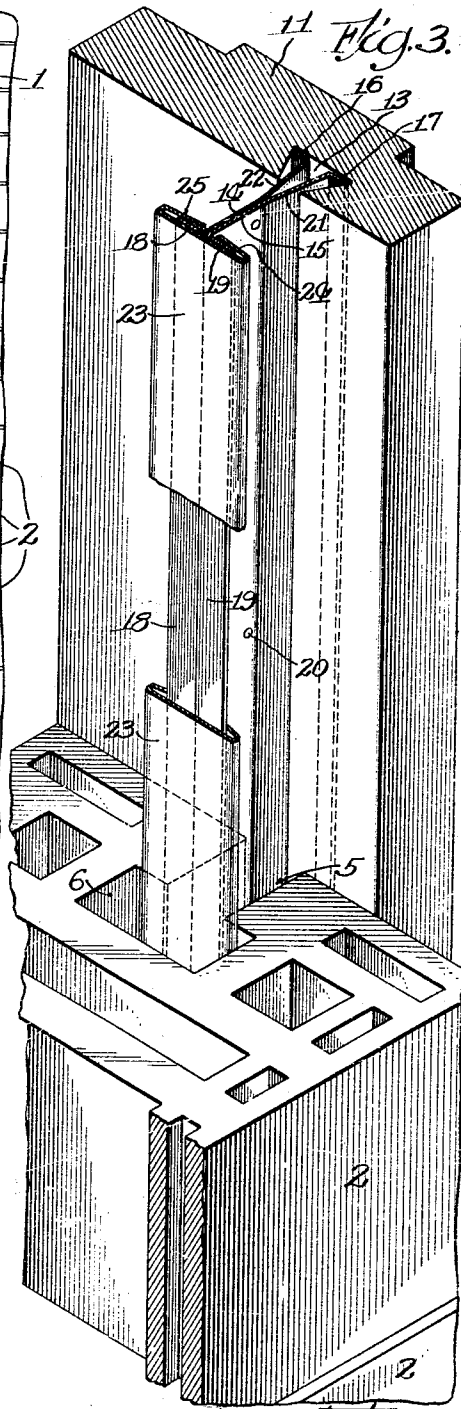
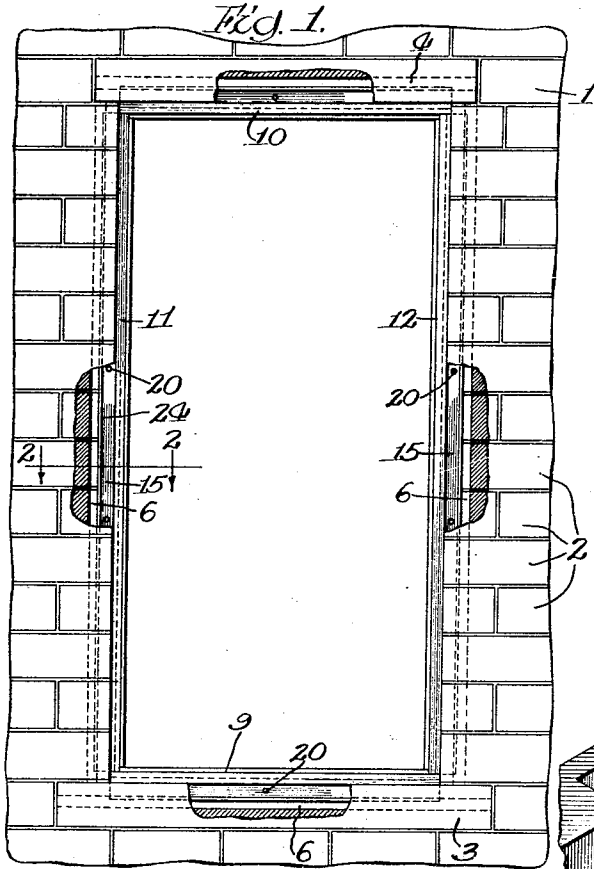
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O. T. ANDERBERG

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BUILDING CONSTRUCTION

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UNITED STATES PATENT OFFICE

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BUILDING CONSTRUCTION

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The present invention is to provide a novel device for the holding, connecting and securing of a frame in an opening in a wall, comprising a novel connecting means associated with the wall and cooperative with grooves or channels in the frame and wall, and in which the connecting means may extend, and means for holding the connecting means in place. A locking means may be used for holding the portion of the connecting means, which extends into a channel, in proper position, and also for holding the connecting means spaced from the sides of the channels, for providing insulating spaces. The locking means may be engaged between the shouldered parts of the wall channel and flanged parts of the connecting means, and the part of the connecting means in the frame groove may have resilient or yieldable and flanged portions which may be flexed to permit ready entry of the connecting means into the frame groove, yet expand therein for engaging the side walls of the groove and for holding the connecting means in proper position. The connecting means is preferably adjustable to accommodate or compensate for variation and tolerances between the frame and the walls of the opening with which the frame is to be associated. Such adjustability may be effected by reason of the yieldability or resiliency of the parts of the connecting means and the relation thereto of the cooperative parts of the channels or grooves in the frame and wall portions.

Other objects, capabilities, advantages and features are comprehended by the invention as will later appear and as are inherently possessed thereby.

Referring to the drawings, Fig. 1 is a view in vertical elevation of a window in a wall with parts broken away showing the application of the invention.

Fig. 2 is a transverse sectional view through a part of the structure, and as represented by line 2—2 in Fig. 1 of the drawings; and

Fig. 3 is a view in broken perspective or isometric view of a mode of employing the invention.

Referring to the drawings more in detail, the embodiment selected to illustrate the in-

vention is shown in connection with a wall 1, which may be of precast material, such as concrete, or made up of a plurality of blocks or tile 2, in the usual manner to form an opening in the wall, such as a door or window. At the base of the opening is provided one or more sill members 3 and at the other part of the opening may be provided one or more lintel members 4, and at the sides of the openings the concrete or tiles form the jambs for the opening. In the jamb portions, and the lintel and sill members, are provided, adjacent to the opening, channels 5 communicating with enlargements 6 of the channels so as to provide between each channel part 5 and the enlargement 6, a pair of shoulders 7 and 8, the purpose of which will be later explained.

Within the opening is disposed a frame having a base piece 9, a head piece 10 and side pieces or jamb members 11 and 12. Each one of these pieces or members, is disposed to cooperate with the respective sill 3, lintel 4, and the jambs at the sides of the opening. Each frame member or piece has in the face adjacent the wall, a channel or groove 13 which is preferably deeper or wider in the frame member, and tapering toward the surface of the frame member. The channel or groove 13 may be located opposite with the channel 5 as shown in Fig. 2 of the drawings.

For the purpose of holding or connecting the frame piece to the respective wall portion, there is located a connecting means or member comprising a pair of channel shaped members 14 and 15 having flange portions 16 and 17 at one side and flange portions 18 and 19 at the other side, the web portions of these members being suitably connected together as by rivets or the like 20 or by spot welding or otherwise, when metal is used, at any selected number of points or along a line, as desired. Part of the web portions are preferably disposed in divergent relation, such portions 21 and 22 being resilient or springy. These portions 21 and 22 may be compressed together so that the flanges 16 and 17 thereof may be inserted through the opening of the groove 12, and when released, the

flanges 16 and 17 then press laterally against the oblique walls of the groove 13. The connecting means also will extend through the channel portion 5 and have its flanges 18 and 19 disposed in spaced relation with the shoulders 7 and 8, as shown in Fig. 2.

Within the channel portion 6 is placed a locking member 23 having bent back resilient flange portions 24 and 25 adapted to press against the shoulders 7 and 8 and be interposed between such shoulders and the flanges 19 and 18 of the connecting means, as clearly shown in Fig. 2. In this way, there is a resilient connection between the shoulders 7 and 8 and the flanges 18 and 19, so as to impress a stress upon the connecting member so as to hold the same tightly against the oblique side walls of the groove 13 of the frame member, and hence constantly press the frame member closely against the adjacent wall portion of the wall. It will be noted that the web portion of the connecting means is disposed substantially in the middle of the channel 5 so as to provide on each side thereof an insulating space which may be filled either with air, or with insulating material as desired. The connecting means acts as a weather strip between the frame and the wall, thus sealing against leakage of air or wind, rain, or the like, therebetween. The flanges 18 and 19, as also flange flanges 16 and 17, may be yieldable, or resilient, so that when variations occur between the frame and associated wall portions, these flanges may be more or less flexed to compensate or accommodate for such variations. Such adjustability may also be effected by the moving of the flanges 16 and 17 over or along the angular side walls of the channel 13, the parts 21 and 22, and flanges 16 and 17 flexing for such purpose according to the degree of adjustment.

When assembling the device, the wall, or the rows or layers of tile, may be built up to the layer to include the sill 3. A connecting member may then be placed in the groove 13 of the base piece 9 by pressing together the flexible or resilient parts 21 and 22 so that the flanges 16 and 17 may be made to enter the groove 17. The flanges will press against the inclined side walls of the groove 13.

The frame may then be placed upon the sill 3 so that the connecting means with its flanges 18 and 19 will extend into and through the channel portion 5 of the sill 3. The workman may then apply the locking member 23 lengthwise through the channel portion 6 of the sill. The resiliency of flanges 24 and 25 will cause the connecting means to be drawn tightly with the flanges 16 and 17 against the inclined side walls of the groove 13 and thus hold the frame in upright position. Flexing of the flanges 18 and 19, and 16 and 17, and the parts 21 and 22 will be effected more or less depending upon the extent of adjustability required to make the frame fit in place.

The wall at the ends of the sill and above sill 3 may then be built or laid and the side jambs of the opening be then built or laid progressively upwardly. Before the jambs are built or laid, connecting means may be connected to the side members 11 and 12 of the frame by inserting the flexible parts 21 and 22 with their flanges 17 and 18 in the grooves 13 of the side members 11 and 12 of the frame. As the jambs are built on the tiles are put into place, they are positioned so as to pass over the connecting means and their flanges 18 and 19, the connecting means in this case being in upright position. When the upper part of the jambs or the upper tiles at the upper end of the frame are built or are placed in position, the workman may then slide downwardly in the channel portions 6, the locking means 23, so as to interpose the flexible flanges 24 and 25 between the shoulders 7 and 8 and the flanges 19 and 20 of the connecting means.

In the upper part 10 of the frame may then be placed the upper connecting means for inserting the flexible parts 21 and 22 into the groove in the frame part 10 in the same way as in the other parts. The connecting means will then extend upwardly. The lintel may then be placed over this connecting means so that the connecting means will enter into the channel portions 5 and 6 thereof. The workmen may then apply the locking member 23 longitudinally through the channel portion 6 of the lintel 4 so as to lock the connecting means in place and to hold the lintel tightly to the frame member 10. The remaining wall parts or tiles may then be built or laid to continue the upper structure of the wall.

While I have herein described and upon the drawings shown an illustrative embodiment of the invention, it is to be understood that the invention is not limited thereto but may comprehend other constructions, arrangements of parts, details and features without departing from the spirit thereof.

Having thus disclosed the invention, I claim:

1. A device for holding a frame at an opening in a wall, the wall and frame having channels at the opening and connecting means extending into said channels for holding the frame in place, a channel having shoulders, and a locking means engaging said shoulders and connecting means for holding the connecting means in place, said connecting means being spaced from the sides of said channel to provide insulating spaces adjacent said connecting means.

2. A device for holding a frame at an opening in a wall, the wall and frame having channels at the opening, and connecting means extending into said channels for holding the frame in place, said connecting means having flanged portions located in said channels, and locking means in a channel and en-

gaging the flange portions located therein for holding said connecting means in spaced relation with respect to the sides of said channel to provide insulating spaces on both sides of said connecting means.

5 3. A device for holding a frame at an opening in a wall, the opening and the frame having channels and connecting means extending into said channels for holding the frame in place, said connecting means having flanged portions located in said channels, a channel having shoulders spaced from flanged portions in said channel, and locking means engaging said flanged portions and said shoulders for holding the connecting means in place.

10 4. A device for holding a frame at an opening in a wall, the wall and frame having channels at the opening, and yieldable connecting means extending into said channels for holding the frame in place and for adjustment for compensation of variations in said wall and frame.

15 5. A device for holding a frame at an opening in a wall, the wall and frame having channels at the opening, and connecting means extending into said channels for holding the frame in place, said connecting means having flexible portions for yielding in compensation to variations in said frame and wall.

20 6. A devices for holding a frame at an opening in a wall, the wall and frame having channels at the opening, and connecting means extending into said channels for holding the frame in place, said connecting means having flange portions in said channels, said flanged portions being flexible for compensating for variations in the frame and wall.

25 7. A device for holding a frame at an opening in a wall, the wall and frame having channels at the opening, and connecting means extending into said channels for holding the frame in place, said connecting means having flexible portions yieldably engaging inner parts of said channels.

30 8. The combination with a wall having an opening therein and of a frame within said opening, said wall and said frame having channels therein at said opening, of a connector member, the body of which has portions located in the respective channels, said connector member having its longitudinal edges provided with retaining means engaging complemental portions of the walls of said channels, so as to hold the frame within said opening, the width of said channels being greater than the thickness of said connector member so as to provide insulating spaces on both sides of the connector member.

35 9. The combination with a wall having an opening therein and of a frame within said opening, said wall and said frame having channels therein at said opening, one of said channels having shoulders, of a connector

member the body of which has portions located within the respective channels and having its longitudinal edges provided with retaining means engaging complemental portions of the walls of said channels, so as to hold the frame within said opening, and locking means engaging said connector member and said shoulders, said connector member also having retaining portions engaging with the walls of the other channel.

40 10. The combination with a wall having an opening therein and of a frame within said opening, said wall and said frame having channels therein at said opening, of a connector member having resilient retaining means engaging complemental portions of the walls of said channels, so as to hold the frame within said opening.

45 11. The combination with a wall having an opening therein and of a frame within said opening, said wall and said frame having channels therein at said opening, of a connector member having retaining flanges engaging complemental portions of the walls of said channels so as to hold the frame within the opening, and a locking member slidably engaging said connector and also engaging complemental portions in one of said channels.

50 12. The combination with a wall having an opening therein and of a frame within said opening, said wall and said frame having channels therein at said opening, a connector formed of channel shaped members, means connecting the webs of said members, the edges of said channel shaped members engaging complemental portions of the walls of said channels, so as to hold the frame within the opening, portions of said connector being resilient so as to yieldably engage said complemental portions.

55 In witness whereof, I hereunto subscribe my name to this specification.

OSCAR T. ANDERBERG.

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