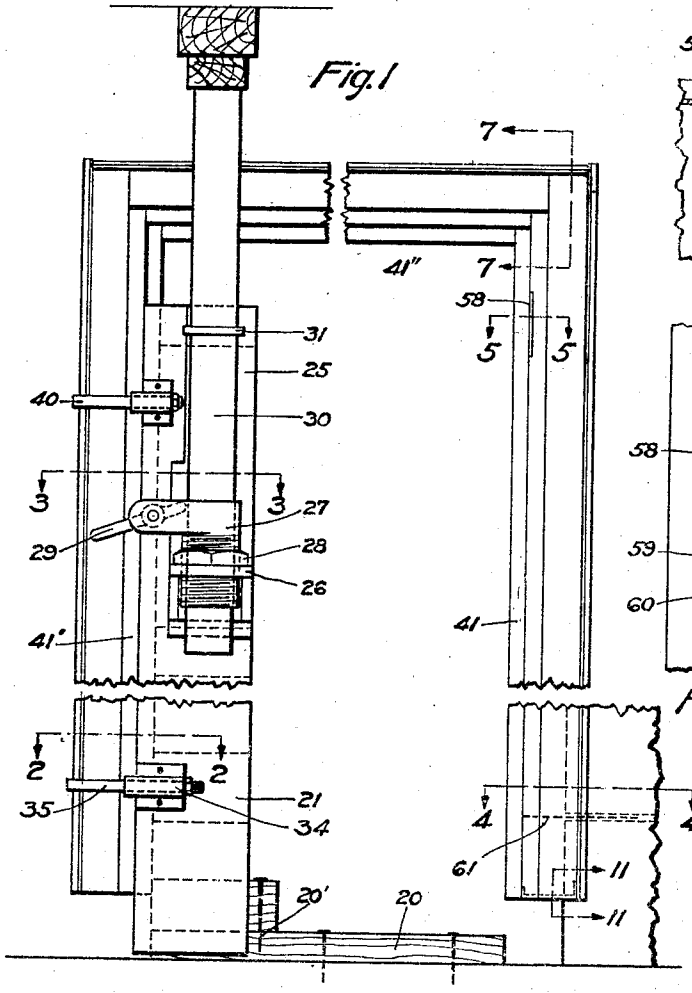
Jan. 24, 1933. A. G. W. WEDBERG 1,895,358

DOOR FRAME CONSTRUCTION

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Fig.1



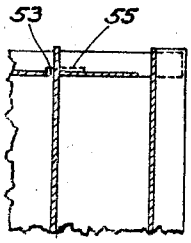


Fig.8

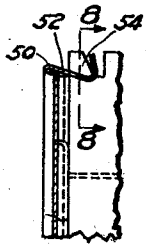


Fig.7

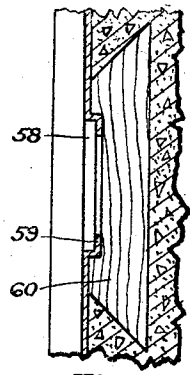


Fig.6

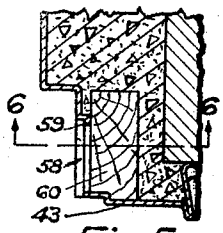


Fig.5

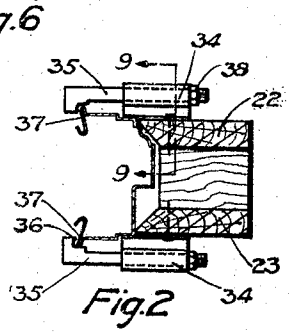


Fig.2

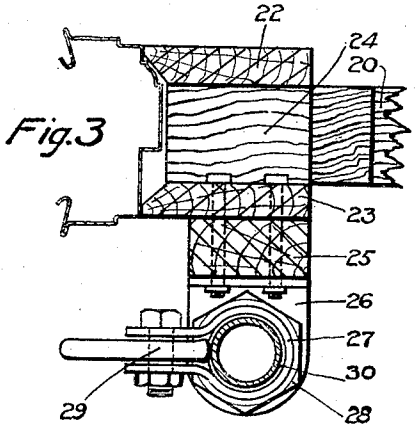


Fig.3

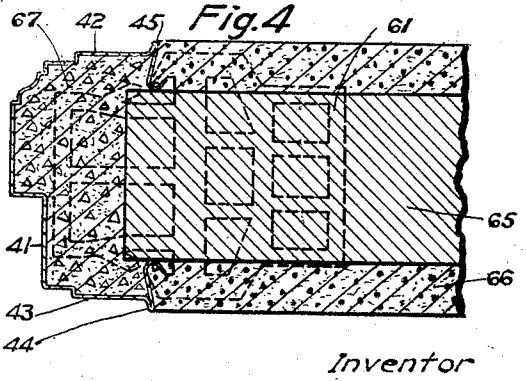


Fig.4

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DOOR FRAME CONSTRUCTION

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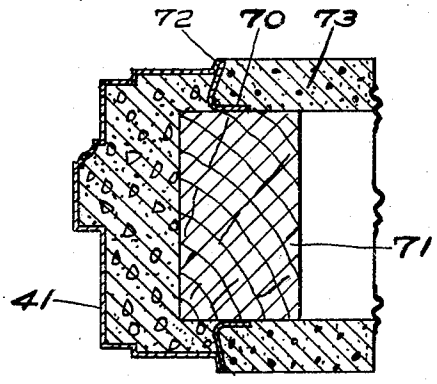


Fig. 10

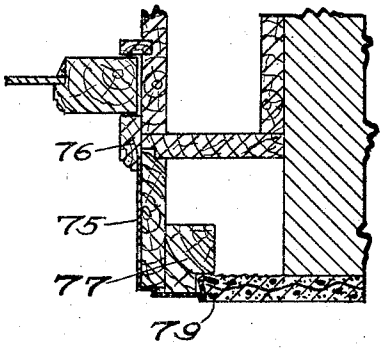


Fig. 11

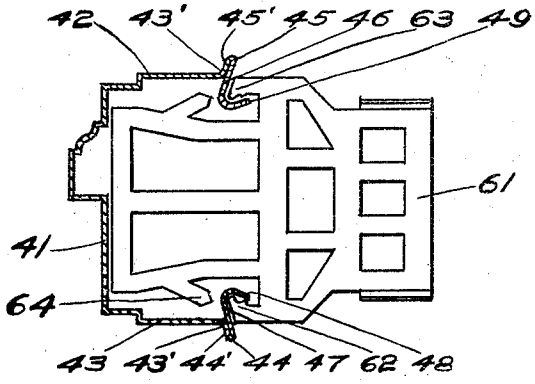


Fig. 9

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UNITED STATES PATENT OFFICE

AXEL G. W. WEDBERG, OF CHICAGO, ILLINOIS

DOOR FRAME CONSTRUCTION

Application filed February 6, 1928. Serial No. 252,164.

My invention relates in general to door frame construction.

One of the objects of my invention is to provide a metal frame for a door opening in such manner that it will form a mould for cement or other mortar, making a homogeneous door frame of very solid construction.

Another object is to provide a metal trim for a concrete door frame that will be firmly anchored in place.

Another object is to provide a metal trim for a door frame that will in addition to forming a mould for the concrete serve to reinforce it.

Another object is to provide a metal trim that will act as a guide or ground to define the plane of the plaster on the adjacent walls.

Another object is to provide improved means for mounting the hinges of the door.

A further object is to provide an improved trim construction so that abutting members may be fastened together very readily.

A still further object is to provide a novel support or guide for holding the metal trim defining the door openings in place during the construction of the wall.

There are other objects of my invention which, together with the foregoing, will be described in the detailed specification which is to follow, taken in conjunction with the accompanying drawings forming a part thereof.

Referring now to the drawings:

Fig. 1 is a front elevation of the metal trim for a door opening, together with the supporting braces necessary to hold it in place during construction;

Fig. 2 is a cross section of one of the door jambs and of the base of the support showing the manner in which the metal trim is held in position by the support;

Fig. 3 is a cross section along the line 3—3 of Fig. 1 looking in the direction of the arrow of the door frame and the associated supports;

Fig. 4 is a cross section of the completed door frame when the wall has been properly built in and plastered, together with the view of the anchor employed to fasten the metal trim to the wall;

Fig. 5 is a cross section along the line 5—5 of Fig. 1 looking in the direction of the arrows showing the manner in which the hinge support is formed;

Fig. 6 is a fragmentary section along the line 6—6 of Fig. 5 showing a detail of the hinge support;

Fig. 7 is a vertical section along line 7—7 of Figure 1 of a portion of the door frame showing the connection between the two members forming the corner of a metal trim;

Fig. 8 is a section along the line 8—8 of Fig. 7 showing a further detail of the corner construction;

Fig. 9 is a cross section of one door frame member with the anchor placed between its flanges;

Fig. 10 shows a cross section of one of the door frames illustrating how it may be applied when wood stud partitions are employed;

Fig. 11 is a cross section of the wall defining a window opening showing the manner in which metal trim may be applied thereto to match the door frame construction.

Referring now to Figs. 1 to 9, inclusive, I shall now describe the manner in which my improved metal trim is placed in position during the construction of a building. A board 20 is nailed to the floor or otherwise suitably attached to the rough concrete floor of the building at the point at which the door opening is to be made. The brace or support is next placed in position on top of board 20 and nailed as at 20′. This support 21 comprises two upright boards 22 and 23 suitably spaced apart and fastened together by nailing a series of wooden blocks 24 between the two uprights 22 and 23. At the upper portion of the supporting member 21, a suitable spacing member 25 is attached in position. A bracket 26 is fastened to the spacing member 25. The bracket 26 contains an opening to receive the sleeve 27. The external surface of the tubular sleeve 27 is suitably threaded and the nut 28 is threaded on the sleeve and is supported by the bracket 26. The sleeve 27 has a cam 29 of a construction for suitably binding to a pipe or tubular extension 30 with it. The pipe 30 is adapted

to be slipped through the sleeve until it engages the ceiling. The cam 29 is then operated to lock the pipe in its extended position. The nut 28 is then turned so that the support 21 is maintained firmly in position by being forced downwardly and the pipe 30 upwardly between the floor and the ceiling. A bracket 31 is attached to the spacing block 25 that has an opening for receiving the pipe 30 thus acting as a guide and support for it. The spacing member 25 is employed so that the support or pipe 30 will not interfere with the construction of the wall and partition above the door. The support 21 just described is adapted to hold one side of the metal frame in its proper position, another support similar to the support 21 holds the other side of the metal frame in position in the same manner as will now be described.

The lower end of the support 21 carries two connecting members or devices suitably affixed to each of the boards 22 and 23. These connecting members consist essentially of a tubular socket 34 that is adapted to receive a clamping bolt 35. The clamping bolt 35 has a projection 36 thereon that is adapted to fit over the metal flanges 37 of the door frame and hold it firmly in place when the nuts, such as 38, are tightened. A similar holding bracket is mounted at the top of the support 21, as is designated in Fig. 1 by the numeral 40.

The surfaces of the door frame consist essentially of light metal having a channel shape with extending sides. This metal frame is shaped as shown in Figs. 4 and 9, wherein the numeral 41 designates the metal frame. The sides 42 and 43 of the metal frame are bent outwardly at 43′ and then back on themselves thus doubling up the metal as shown at 44 and 45. The rear portions 46 and 47 extend inwardly on an incline and parallel to the surfaces 44′ and 45′ of the extension. The extreme edges terminate into a hooked shape, 48 and 49. The inclined surfaces 46 and 47 serve to form a bond for the plaster, preventing the plaster from coming away from the block partition.

The hooked portions 48 and 49 provide an effective key for holding the anchors on to prevent the metal from pulling away from the cement fill. The extensions 44 and 45 define the wall surfaces and therefore serve as guides or are usually termed as grounds for plastics.

Each member of the door frame is formed in substantially the same manner, that is to say, the two sides and the top. The two sides 41, 41′, and the top jamb 41″. The top jamb 41″ is cut away at each end to abut the sides 41 and 41′.

The doubled metal forms a projection 50 (Fig. 7) that extends over the face of the side jambs 41 and 41′. A slot 53 is provided in the top jamb 41″ to permit a lip 54 of the jamb members 41, 41′ to extend through the slots. The portion 54 is then bent over as shown in dotted line at 55 to clinch the side and top members together.

Suitable recesses 58 are formed in the metal of the member 41 as may be seen in Fig. 6. The edges 59 of the recess 58 are bent under so that when the hinges are placed in position, these edges will be suitably covered. A wooden block 60 is suitably placed behind these recesses and temporarily held in any suitable manner until the frame formed by the members 41, 41′ is filled with a suitable mortar, such as cement mortar. It will be seen that the members 41, 41′ and 41″ define a frame which when filled with mortar forms a very rigid structure which to all intents and purposes is integral. The members 41, 41′ and 41″ are of like construction but by reason of their shape are suitably locked by the concrete so that they become part of it and serve to reinforce the concrete.

The filling of this door frame with cement mortar does not take place until the partitions are formed on the sides thereof. In the majority of instances, these partitions are made from hollow tile or gypsum block.

In order to anchor the door frame into the wall suitable anchors, preferably of the shape shown in Fig. 9 numbered 61 are provided. These anchors 61 are provided with forward and rearward extensions and are usually made of metal with suitable openings therethrough to form key spaces for mortar. The rearward extensions are adapted to be held between joints of the gypsum or tile block. The forward extension is provided with openings to form key spaces for binding the anchor in to the cement mortar. Each side of the anchor 61 is provided with two prongs 62 and 63. The prongs 62 and 63 act to hold the hooked portions 48 and 49 of the door frame and to prevent the sides from spreading when the form is filled with mortar or concrete. The prongs such as 64 are bent at an angle, in this case upwardly so as to bind on the edges 46 and 47 of the door frame when the anchoring members are temporarily placed after the door opening members have been placed in position. The anchors such as 61 are placed between each joint of the blocks forming the partitions and the two sides and top of the door opening. Now when the form is filled with concrete, the metal trim defining the door opening is firmly locked to the walls. In this manner a unitary structure is obtained which is in reality a concrete door jamb having a light metal covering. Since light metal is employed, the face of the door frame may be made in any pattern and yet when the mortar is poured in, the whole becomes an integral construction. The projections such as 44 and 45, the forwardly inclined flanges 46 and 47 together with the hooked edges 48

and 49 combine to form a key for the plaster so that it is anchored firmly when placed in position. Since the whole construction forms a unitary door opening, there is no danger of the plaster cracking. This is illustrated very well in Fig. 4. The reference numeral 65 designates the tile or gypsum block forming the partition, while 66 designates the plaster when in position. The manner in which the plaster is keyed to the hooked edges can be readily seen. An anchor 61 has been shown in position and the manner in which the concrete designated by the reference numeral 67 takes the form of the door frame 41 will be obvious. The operation of the anchor in forming the whole into a unitary mass can also be very well seen from this view. It will be appreciated that this construction is such that there is no likelihood of the plaster cracking on either side of the door frame since no vibration is possible by this construction. Since the edges of the member 41 are bent back upon themselves at 44 and 45, they are considerably reinforced at these points. In addition, since thin metal is employed, a sharp edge is formed where they turn back and this prevents any cracking of the plaster at this point, which would be present if a rather rounded surface were formed. It will be appreciated that this form of construction for a door opening is very easily manufactured and can be set in place with a great deal of facility so that the resultant structure is not only greatly superior but is cheaper.

It will be understood, of course, that the support 21 supporting each of the vertical door members 41 and 41′ are removed as soon as the concrete has set.

In some instances, it is desirable to place a door in association with what may be termed stud partitions. This form of construction is shown in Fig. 10. The door frame which is defined by the metal frame is substantially the same as before described; that is, the door member 41 may have substantially the same configuration as before. However, since anchors are not employed the edges of a member such as 41 instead of being hooked, are flat, as may be seen at 70. These edges are then nailed to the wood studs 71. It will be seen that the wood studs 71 project inwardly and are enclosed, at least to some extent, by the metal frame 41. The form is filled in with cement the same as before giving a unitary construction. The forwardly extending flanges such as 72, form a key or anchor for the plaster 73 in a manner similar to that already described. It will thus be seen that the benefits of my improved construction can be obtained with this form of partition also.

Fig. 11 shows the manner in which the metal trim may be applied to an ordinary wooden window to give it the same finish as the door frame. The metal trim member as shown at 75 may be suitably held in place by a moulding 76 and is suitably nailed at its other edge to a block 77. The edge is bent back on itself to form a key-way in the same manner as before for plaster such as 79.

It will thus be seen that I have provided a door frame that not only has a pleasing appearance but one that can be readily placed in position and when placed in position forms a unitary part of the partition. The manner of construction is such that it materially reduces the cost of the building and facilitates the construction.

While I have shown certain specific embodiments in my invention, it will be understood that I am aware that many changes, modifications and deviations may be made and that I desire to protect by Letters Patent all such changes, modifications and deviation as come within the scope of the appended claims.

I claim:

1. In a sheet metal trim, a member of substantially channel cross-section having its side portions folded forming outwardly projecting flanges, the rearward arms of said flanges extending inwardly beyond the forward arms and having their inner edge portions bent into substantially hook-shape in transverse section, an anchor having inwardly projecting angularly placed prongs adapted to cooperate with the hooked portion of said arms to hold the trim firmly in position, said anchor having an extension adapted to be enclosed by said trim.

2. In a sheet metal trim, a member of substantially channel cross-section having its side portions folded forming outwardly projecting flanges, the rearward arms of said flanges extending inwardly beyond the forward arms and having their inner edge portions bent into substantially hook-shape in transverse section, an anchor having inwardly projecting angularly placed prongs adapted to cooperate with the hooked portion of said arms to hold the trim firmly in position, said anchor having a rear projection adapted to be embedded in the mortar joining the blocks forming the wall adjacent the trim.

3. In a wall construction, the combination with a sheet metal trim comprising a sheet metal member of substantially channel cross section having substantially parallel side faces, together with inwardly reaching continuous longitudinally extending flanges connected to the rear edges of said side faces and terminating at their inner edges in outwardly facing continuous longitudinally extending hooked portions, together with an anchor member having inwardly facing side hooks adapted to engage any selected portion of the outwardly facing hooked portions aforesaid and thereby retain the sides of the trim member from spreading apart and to retain the an-

chor member against pulling away from the trim member, substantially as described.

4. An edge construction for a partition comprising a sheet metal end trim located at the end of the partition and being of channel shaped cross section and having its rear edge portions extended inwardly towards each other on acute angles with respect to its side portions and constituting continuous longitudinally extending locking flanges, anchor members extending into the channel shaped trim member and also into the end portion of the partition and engaging said locking flanges and being longitudinallly adjustable along said flanges, and a filling of cement or the like completely filling the body of the sheet metal trim and the acute angular portions thereof adjacent to the inwardly extending rear edge portions and also engaging the anchor members and the end portions of the partition, whereby the sides of the trim member are retained against spreading apart by the cement or the like and the anchor members are held against longitudinal shifting along the flanges and whereby the entire body of the trim member is reinforced and strengthened and connected to the end portion of the partition, substantially as described.

5. A sheet metal trim comprising a sheet metal member of substantially channel cross section, having substantially parallel side faces, the rear edges of the side faces extending in a straight line outwardly from the said side faces on angles obtuse with respect to the side faces and being reversely folded in contact and parallel with the outwardly extending rear edges, establishing double thicknesses from the side face to the extreme edge defining the wall surface, the rear portion of the rear edges extending inwardly beyond the line of the side faces in a line parallel to the outwardly extending rear edges of the sides.

6. A sheet metal trim comprising a sheet metal member of substantially channel cross section, having substantially parallel side faces, the rear edges of the side faces extending in a straight line outwardly from the said side faces on angles obtuse with respect to the side faces and being reversely folded in contact and parallel with the outwardly extending rear edges, establishing double thicknesses from the side face to the extreme edge defining the wall surface, the rear portion of the rear edges extending inwardly beyond the line of the side faces in a line parallel to the outwardly extending rear edges of the sides and the extreme edges of the sheet again bent rearwardly to form a hook portion for contact with the partition blocks, substantially as described.

7. A sheet metal door trim comprising a vertical member and a horizontal member, each member being of substantially channel cross section, having substantially parallel side faces, the rear edges of the side faces extending in a straight line outwardly from the said side faces on angles obtuse with respect to the side faces and being reversely folded in contact and parallel with the outwardly extending rear edges, establishing double thickness from the side face to the extreme edge defining the wall surface, the rear portion of the rear edges extending inwardly beyond the line of the side faces in a line parallel to the outwardly extending rear edges of the sides, the vertical and horizontal members adapted for placement and cooperation with each other in a position at right angles to each other, the said side face on one member cut away to a point where the rear edge of the side face extends outward to permit the end of a corresponding portion of the other member to underlay the rear edge and abut its end against the rear portion of the rear edge that extends inwardly beyond the line of the side face, and means for securing the horizontal and vertical members together in such position, substantially as described.

In witness whereof, I hereunto subscribe my name this 2nd day of February, 1928.

AXEL G. W. WEDBERG.