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A. LAMM

METALLIC BUILDING CONSTRUCTION

Filed April 7, 1925

Fig. 1.

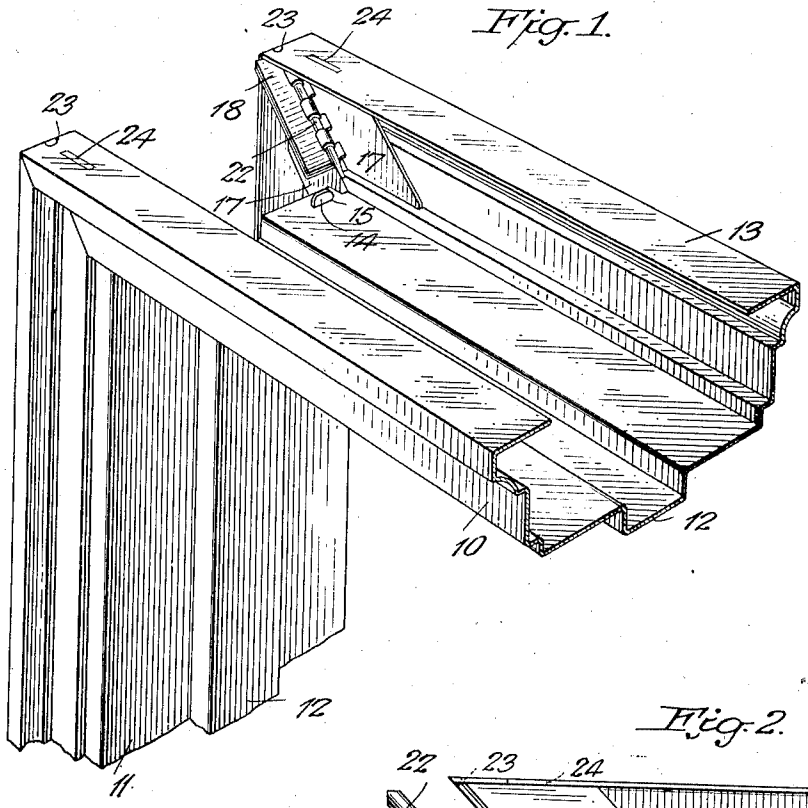


Fig. 2.

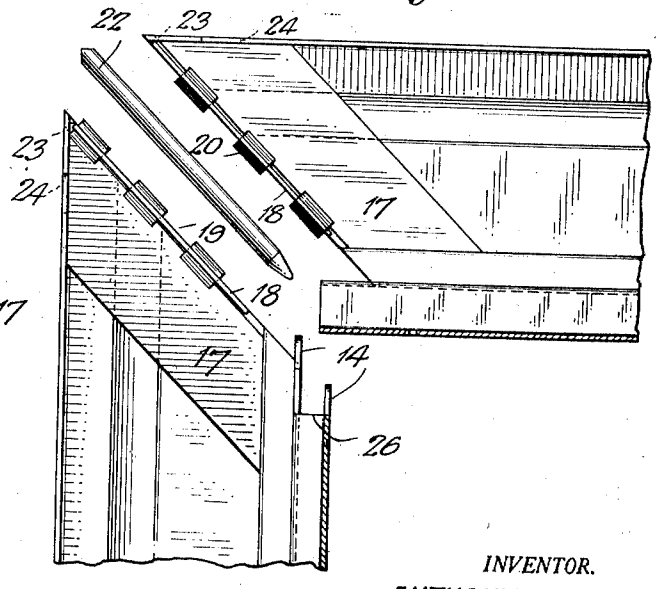
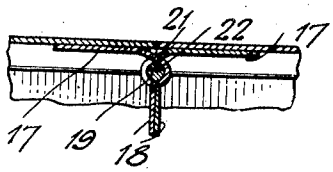


Fig. 3.



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METALLIC BUILDING CONSTRUCTION.

Application filed April 7, 1925. Serial No. 21,268.

This invention relates to sheet metal frames for use in building constructions and is directed to the provision of improved means for detachably securing the members of the frame together.

Heretofore the parts comprising sheet metal frames used in building constructions have usually been permanently secured together at the factory by welding, riveting or other means. Such frames, because of their bulk, are expensive to crate, difficult to handle, and occupy a large amount of space in shipping.

An object of the present invention is to provide a sheet metal frame or casing which may be shipped in knockdown condition and which may be easily assembled without special tools by unskilled workmen into a structure having great strength and rigidity at its points of jointure.

Other objects of the invention will hereinafter appear.

One of the various practical embodiments of the invention is illustrated in the accompanying drawings in which:

Fig. 1 is a perspective of one of the upper corners of a door casing, comprising jambs and a lintel, the members being secured together by improved locking means in accordance with the invention;

Fig. 2 is an elevation of the same, showing the parts separated; and

Fig. 3 is a sectional view showing details of the locking means.

In the illustrated embodiment of the invention, the corner of the frame includes a lintel 10 and a jamb 11 abutting angularly with one another. Each of these members is shown as substantially channel shaped in cross section formed from a single strip of sheet metal by bending the same in the usual manner on lines extending lengthwise thereof. The side walls are shaped in the form of a molding, while the bottom wall of each member is formed with a longitudinally extending rib 12 which acts as a door stop. An inwardly directed finish flange 13 may be provided at the top of each of the side walls.

The abutting ends of the members are partially mitered, and to aid in positioning them for joinder the end of the jamb 11 is provided with tongues 14 which pass through suitable slots 15 in the lintel 10. If desired these tongues may be bent over or clinched after assembly to more firmly lock the assembled parts together.

Means for locking the members together are provided in the form of angle plates secured to the side walls adjacent the mitered edges of the abutting members. Each plate has a flat portion 17 welded or otherwise secured to the inner face of the side walls and another portion 18 bent at substantially a right angle to the welded portion and extending partially but not entirely across the channel. A series of openings 19 are formed in the portion 18 and between the openings the metal is drawn laterally to form partial loops 20. The looped portions of the plate are arranged substantially parallel with and approximately at the mitered edge of the wall to which the plate is attached so that when the members of the frame are assembled the plates of corresponding walls will be disposed in proximity to one another with the partial loops of one plate staggered with relation to those of the other plate of the pair and interfitting with one another as do the two plates of an ordinary door hinge; that is with the partial loops of one plate extending into and through the openings 19 of the opposed plate, thus providing between the partial loops a bore 21 into which a suitable locking pin 22 may be driven. At the corner where the flanges 13 meet, there is provided an opening 23 registering with the bore through which the locking pin 22 may be inserted into the bore. If desired a nail may be used as the locking pin, the head thereof being filed off flush with the face of the flanges after the nail has been driven fully into the bore to lock the parts together.

As an additional means of anchoring the plates to the side walls of the members, one end of the plates may be formed with a tongue 24 which fits into an opening in the flange 13.

The door stop or rib 12 of each jamb terminates short of the mitered ends and is provided with a squared end 26 that forms a butt joint with the face of the door stop on the lintel. Thus a considerable portion of the load on the lintel will be borne by the top of the jamb rib and consequently will have less tendency to separate the lintel and jamb at the mitered joint.

The improved construction enables the

frame to be easily assembled by relatively unskilled workmen and without the use of special tools, it being merely necessary in assembling the parts to tilt the lintel at an acute angle to the jamb to permit the tongues on the jambs to enter the slots in the lintel, after which the lintel may be rocked about such tongues to bring the partial loops on the co-operating locking plates into interfitting relation with one another to form the bore, after which the pin is driven into the bore to securely lock the parts together. If desired the tongues may be bent over slightly prior to assembling the members to facilitate their entrance into the slots.

The invention is further advantageous in that it enables strong rigid joints to be formed between the members of the frame by the use of a minimum amount of metal.

While I have described one of the preferred embodiments of my invention, it is to be understood that various changes in form, material, asembly and other details of construction may be resorted to without departing from the spirit and scope of the invention defined in the appended claims.

I claim:

1. In a building construction, a frame embodying a pair of sheet metal channel members each having a pair of side walls the members being joined together at their abutting ends by a combined miter joint and square butt joint, one of the members having a slot and the other having a tongue entering said slot adjacent the square butt joint, and additional means for locking the miter ends together comprising a separate plate secured to the inner face of each of the walls adjacent to and in alignment with the mitered edge, and means for detachably locking the plates together.

2. In a building construction, a frame embodying a pair of sheet metal channel members having abutting mitered ends, each of the members having a pair of side walls, one of the members having a longitudinal rib provided with a square end forming a butt joint with the other member; a slot in one of the members; a tongue attached to the other member and passing through said slot; a separate plate secured to the inner face of each of the side walls adjacent and parallel with the mitered edge, each plate having loops spaced apart by openings, the loops of one plate being staggered with relation to those of the opposed plate whereby when the members are assembled the loops of one plate will extend through the openings in the opposed plate providing a bore; and a pin inserted in said bore interlocking each pair of opposed plates together.

3. In a building construction, a frame embodying a pair of sheet metal channel members having abutting mitered ends, each of the members having a pair of side walls and flanges inturned therefrom, one of the members having a longitudinal rib provided with a square end forming a butt joint with the other member; a slot in one of the members; a tongue attached to the other member and passing through said slot; a separate plate secured to the inner face of each of the side walls adjacent and parallel with the mitered edge and provided with a lug entering into a perforation on said flange, each plate having loops spaced apart by openings, the loops of one plate being staggered with relation to those of the opposed plate whereby when the members are assembled the loops of one plate will extend through the openings in the opposed plate providing a bore; and a pin inserted in said bore interlocking each pair of opposed plates together.

In witness whereof, I hereunto subscribe my signature.

ANTHONY LAMM.