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DEVELOPMENT FOR SECURING INTERSECTING METAL FRAMES

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Witness:

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DEVICE FOR SECURING INTERSECTING METAL FRAMES

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My invention relates to building construction, and particularly to a novel device for securing intersecting metal frames for openings.

An object of my invention is to provide a simple and effective means for preventing the separation of a pair of intersecting metal frame members, which can be readily used by inexperienced workmen.

My invention is intended for use in cooperation with a pair of intersecting metal frames and comprises a tongue struck out of the metal of one member, and adapted to be bent through a registering aperture in the complementary frame member, thus securing the two members against separation.

My invention will be more readily understood by reference to the accompanying drawings in which:

Fig. 1 is a side elevation showing a horizontal and two vertical intersecting frame members and my invention in cooperation therewith;

Fig. 2 is a side elevation partly in section showing my fastening device;

Fig. 3 is a plan view;

Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 1.

Referring to the drawings, it will be seen that I have illustrated vertical frame members 10 and a horizontal frame member 11. Interfitting, sliding, interlocking engagement of the members is effected by the gusset or plate having the right angular portion 12. The frame members 10—11 are each provided with bent flanges 13 for the reception of the bent flanges 14 of the right angular portion 12. The gusset may be formed as a right angular projection of either the vertical or the horizontal frame members, whichever form is most convenient, the free projection of the gusset being adapted to slidably engage the complementary frame member.

As illustrated, best in Fig. 2, the vertical frame member is provided with inwardly projecting tongues 15 on each side of the channel 16, the tongues being struck out of the metal of the channels.

The aperture from which the tongue is struck out is elongated at 15a for the purpose to be later described. On the sides of the gusset 12, I provide an aperture 19 which, when the frame members are in their final position, will register with the tongue 15 and aperture 15a in the complementary member. For convenience in ascertaining the point at which the frames are in perfect final position, I provide the registering apertures 17—18 through which a nail or pin may be inserted for temporary holding. If desired, the frame members may be provided with the struck out ribbon projections 20 which will serve as anchors for plaster. These plaster anchors are more fully described in my copending application Serial No. 304,811 filed of even date herewith.

When the frame members are temporarily set by means of the pins in the apertures 17—18 a simple tool is inserted through the apertures 19 and 15a the tongue hooked and drawn through the aperture 19 of the projection 12. The tongue is then bent down against the channel 16 of the member 10 thus covering the lower flange of the projection 12 and preventing the separation of the frame members, as shown in dotted lines in Fig. 2.

If desired, a wood block, not shown, may be inserted within the channels 16 and secured by nails passing through the apertures 17 and 18.

As best seen in Fig. 2, the tongue 15 is projected slightly inwardly from the face of the channels thus avoiding the possibility of the tongue catching the lower edge of the projection 12 when assembly is being effected.

As shown at 15b on the right hand side of Fig. 1, the tongue is slit farther downward than the bottom of the opening 19 in the plate. Thus the tendency in bending the tongue over will be to pull downward on the plate and insure a tight joint.

Thus it is seen that my invention contemplates a simple and economical means of securely maintaining intersecting frame members against separation. By the use of my device frame members such as illustrated can be simply and economically set up by unskilled labor with a great saving of cost.
Obviously the gusset may be formed as a part of one of the frame members or may be formed separate and one leg thereof welded to the frame member. It is obvious also that the tongue clip may be formed on either the horizontal or the vertical frame member, or on one vertical frame member and on the horizontal frame member.

Modifications and variations may thus be made of the invention herein disclosed within the skill of the mechanic, and I do not wish to be limited except as indicated in the appended claims.

I claim:

1. In metal frame construction, the combination of a pair of intersecting frame members, one of said frame members having a right angular projection adapted for sliding interlocking cooperation with the complementary frame member, said projection having an aperture, and a tongue in said complementary member, said tongue being in register with said aperture when the frame members are in their final position, and adapted to be bent through said aperture to maintain said frame members in such position.

2. In metal opening construction, the combination of a pair of intersecting frame members, one of said members having a right angular projection thereon adapted for sliding interlocking cooperation with the complementary frame members, said projection having an aperture therein, and a metal tongue formed out of the metal in said complementary frame member, said tongue being bent away from the contacting faces of the complementary member and projection and being of a length less than the aperture formed by said tongue, said tongue registering with said aperture in said projection, and adapted to be bent outwardly and downwardly through said aperture when said frames are in their final position of adjustment, to prevent the separation thereof.

In testimony whereof he has affixed his signature.

ISAAC A. BAUM.