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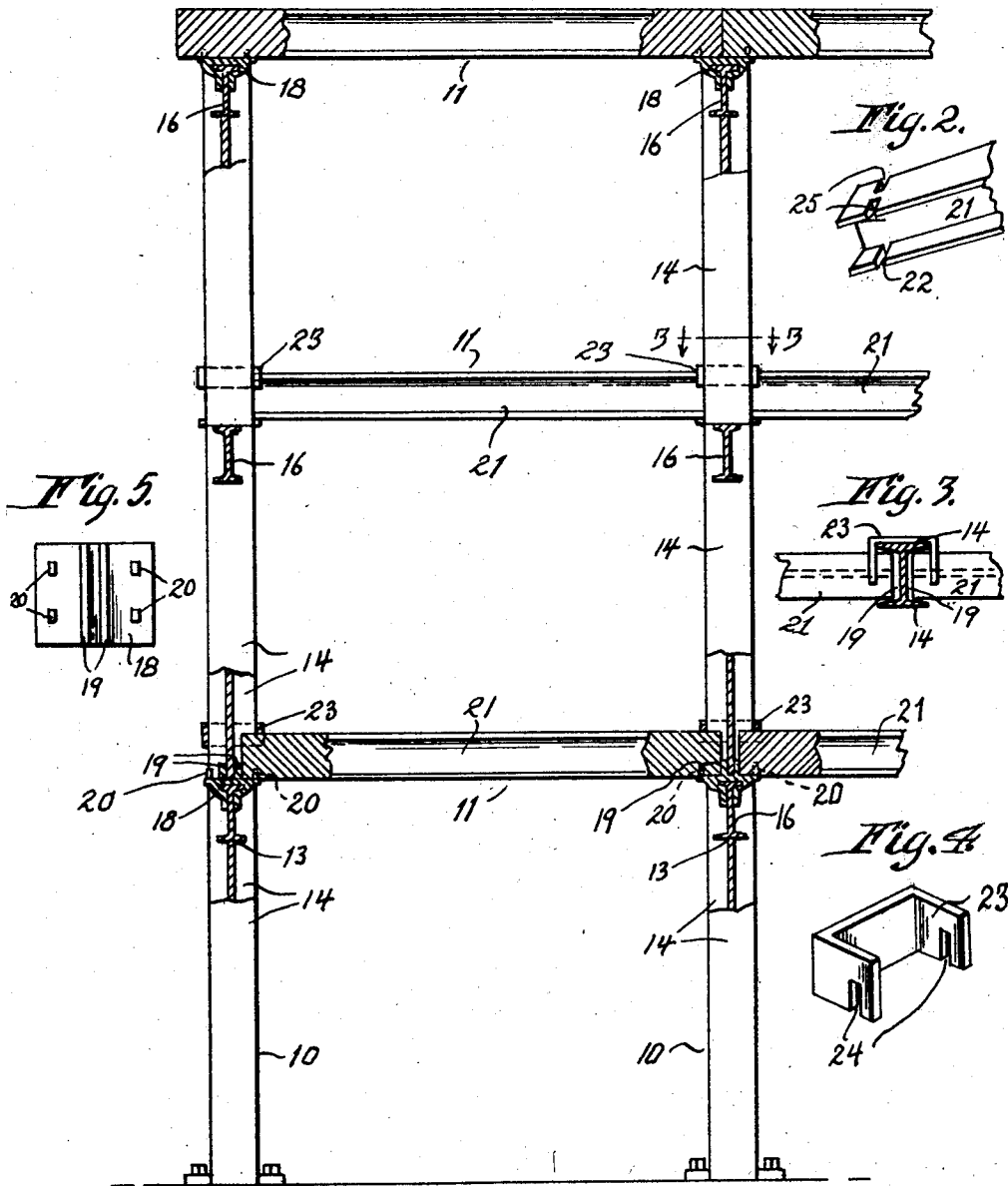
W. WAIT

INTERLOCKING JOINT FOR METALLIC FRAMES

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Fig. 1.



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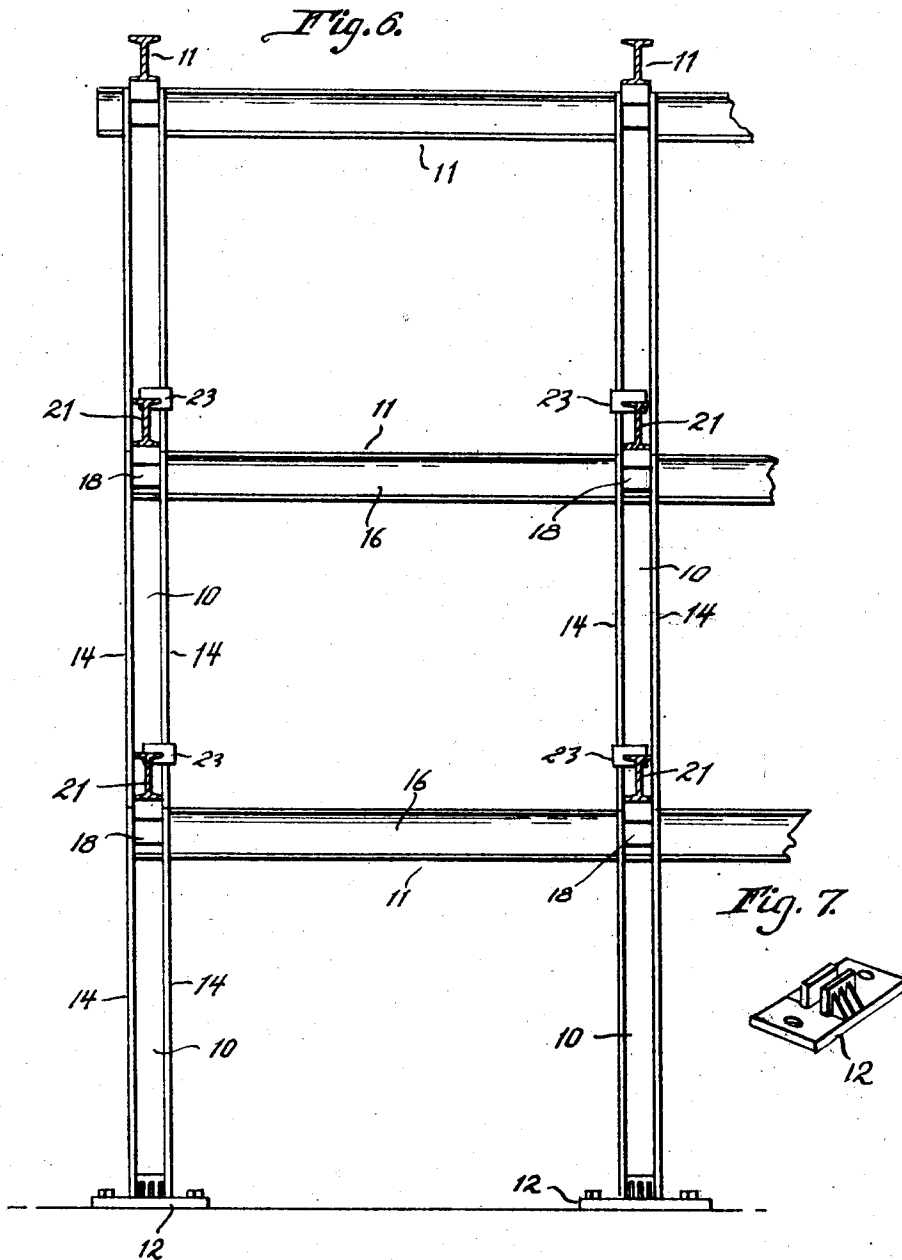
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2 Sheets-Sheet 2



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INTERLOCKING JOINT FOR METALLIC FRAMES.

Application filed February 9, 1927. Serial No. 167,007.

This invention relates to improvements in interlocking joints for metallic frames employed in building construction and more particularly to a joint particularly adapted to column and girder connections. It has for its object the provision of a joint in which the several parts can be assembled in engaged relation and which will strongly hold the parts together without the use of bolts or rivets. A structural embodiment of the invention is described in detail hereinafter and illustrated in the accompanying drawings and the novelty of the invention is defined in the appended claims.

In the drawings, in which similar reference characters designate corresponding parts:

Fig. 1 is a side elevation, partly in section, of a metallic frame embodying the invention.

Fig. 2 is a detail perspective view, showing an end of one of the girders.

Fig. 3 is a detail sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a detail perspective view showing one of the clamps for holding a girder in place.

Fig. 5 is a detail view, showing a plan of one of the chairs for supporting girders on its column.

Fig. 6 is a side elevation, partly in section, of a side of the frame at right angles to that shown in Fig. 1.

Fig. 7 is a detail perspective, showing one of the column steps.

Referring to the drawings in detail, 10 designates the columns and 11 the girders of a metallic frame, such as used in building construction. These structural members are of I-section in cross-area. The lower ends of the columns are seated in steps 12, (Fig. 7) secured to a suitable foundation. Each step comprises a base plate and upwardly projecting flanges between which is positioned the lower end of the column with the flanges of the base fitting between the flanges of the column. Each column comprises sections placed end to end and secured together to be held in vertical alinement. The web at the upper end of each section is cut away, as at 13, between the flange sides 14 of the section. Each of the flange sides is vertically slotted, as at 15, at its upper end to the depth of the recess 13. In the upper end of each section is seated an end of the girder 16 of I-shape in cross-area. The flanges of

the girder are notched, as at 17, so that the girder can drop into the slots 15 of the column section with the flange sides 14 of the column section engaging the notches 17. In this position the web of the girder takes the place of the removed web of the column section and the column section and the girder are firmly locked together.

Seated on the end of the girder 16, between the side flanges of the column section, is the chair 18. In assembled position, this chair fits between the flanges of the column section and clamps the upper flanged part of the girder, the lower jaws of the clamp extending around the flanges of the girder and abut the opposite sides of the web of the girder. The walls of the chair have considerable thickness to provide the necessary strength and its extensive engagement with the flanged top and web of the girder provide a purchase to withstand displacing strain. The upper face of the chair is flat and projecting upwardly from this face are the jaws 19. The upper column section is positioned on the lower column section with the ends of the flanged sides 14 of the two sections abutting each other. The web of the upper section is seated between the jaws 19 and the latter fit between the side flanges of said section so that relative lateral displacement of the joined ends of the two column sections is impossible so long as the engaged parts maintain their integrity. In mounting the chair 18, it is first slipped on the end of the girder 16 before the latter is seated in the upper end of the lower column section.

Projecting from the upper face of the chair 18, adjacent the corners thereof, are the lugs 20 spaced apart from the jaws 19. The purpose of these lugs is to engage the ends of the girders 21 extending in a direction at right angles to that of the girders 16. Each of the girders 21 has opposite slots 22, (Fig. 2) in the lower flanges at the end to be connected, and with these slots engage the lugs 20 on one side of the chair and the extreme end of the girder abuts one of the jaws 19.

Slidable on the upper column section above the girder 21 is the yoke 23 (Figs. 3 and 4), extending part way around the section. The yoke has a slot 24 in the lower edge of one of its arms engaging the top of the girder 21, the flanges of which are recessed at 25 (Fig. 2) to admit the clamp.

Where the clamp engages two alined girders 21, there is a notch in each arm of the clamp so that a single clamp can be employed to hold the two girders. The clamp serves to hold the upper part of the girder to prevent sideways tipping and, together with the connection of the girder with the chair 18, holds the girder against longitudinal displacement.

10 What I claim is:

1. In an interlocking joint for metallic frames, the combination with a column of I-section, a transverse support between the flanges on one side of the column, a girder having an end positioned on the transverse support between the flanges of the column, and a yoke carried on the column and engaging the girder to hold the latter in upright position on the support.

20 2. In an interlocking joint for metallic frames, the combination with a column of I-section, a transverse support between the flanges on one side of the column, a flanged

girder having an end positioned on the transverse support between the flanges of the column, said girder having a notch in a flange adjacent the supported end of the girder, and a yoke carried on the column and having a notched edge engaging the notched flange of the girder to hold the latter on the support and to maintain the same in upright position.

3. In an interlocking joint for metallic frames, the combination with a column of I-section having its web recessed between the flange sides, a chair seated in the recess of the column between the flange sides thereof, said chair having lugs on its upper face spaced apart thereon, a girder of I-section seated at an end on the chair between the lugs and having notches in its flanges registering with the lugs, and a yoke carried on the column and engaging the girder end.

In testimony whereof I affix my signature.

WESLEY WAIT.