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54 **A fixing system for a channel member.**

57 A fixing system for a channel member (18). The system comprises a bracket (1) which has means to enable securement of the bracket (1) to shuttering (22). There are also means (10, 12 14) on the bracket (1) which co-operate with the channel member (18) to provide a substantially rigid connection between the bracket (1) and the channel member (18). Typically, the means to enable the bracket (1) to be secured to the shuttering (22) comprises a through hole (8) in the bracket (1) to enable a nail (24) to be passed through the bracket (1) to secure the bracket (1) to the shuttering (22).

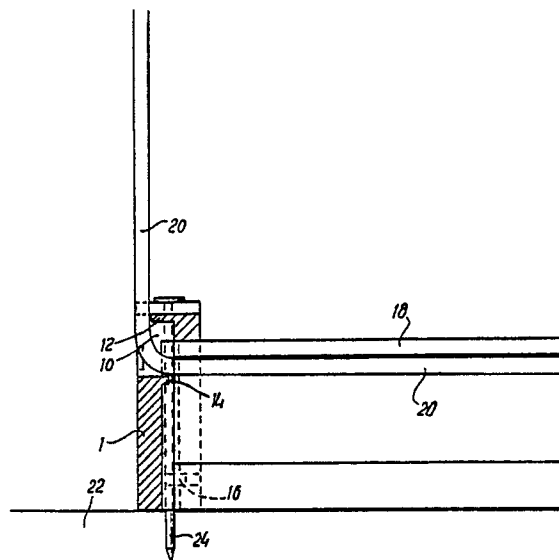


Fig. 5

A Fixing System for a Channel Member

This invention relates to a fixing system for a channel member.

Channel members are used in the building industry as anchorages embedded in concrete, so that on setting of the concrete the channel can receive the head of a tee-headed bolt, to the screw-threaded shank of which is then secured items of machinery, brackets or other fittings.

In order to embed the channel member in the concrete it is necessary to mask the channel against the ingress of the fluid concrete, and to secure the channel member to shuttering defining the desired form of the concrete. At present, the channel is provided with holes in its base, and through these the member is nailed to the shuttering. However, such a securing method does not provide full rigidity of the channel member on the shuttering, and after the concrete has cured and the shuttering removed the nails remain extending into the channel and have to be broken, or bent along the base of the channel, to provide access for the tee-headed bolt.

According to the present invention there is provided a fixing system for a channel member, comprising a bracket having means for allowing its securement to shuttering, and means on the bracket co-operative with the channel member to provide a substantially rigid connection therewith.

Preferably the bracket is engageable with an end portion of the channel member thereby to provide a closure for said end portion during pouring of the concrete.

Typically, the means for allowing securement to the shuttering is provided by a through hole in the bracket for passage of a nail which will secure the bracket and the channel member to the shuttering. Most preferably, the through hole is directed so as to be normal to the base of the channel in use.

The bracket may take the form of a fitment to be secured to the shuttering prior to the application of the channel member thereto. A snap-type connection may be provided between the bracket and the channel member so that after securing the bracket to the shuttering the channel member can be easily fitted to it, and after the concrete has set the bracket is removed from the channel member along with the shuttering, so that there are no residual nails on the channel member which is then ready to receive the tee-headed bolt.

Embodiments of the present invention will now be described by way of example with reference to the accompanying drawings, in which:

Fig. 1 is a front view of a bracket for use in a fixing system of this invention;

Fig. 2 is a side sectional view on A-A of Fig. 1;

Fig. 3 is a top view of the bracket of Fig. 1;

Fig. 4 is an underneath view of the bracket of Fig. 1; and

Fig. 5 is a side sectional view of the bracket of Fig. 1 in use.

Referring to the drawings, a bracket 1 is generally rectangular in front view (Fig. 1) and is formed from 4 mm thick polypropylene. A side wall 2 extends from three sides of the bracket 1, its inner corners 4 being radiused to correspond to the radius of the base of a channel member on which it is to fit. An apertured boss 6 is integrally formed along a portion of the side wall 2, and a through bore 8 within the boss 6 extends parallel to the side portion of the side wall 2.

The through bore 8 has four projections 9 which each have a tapered end 11, which is recessed within the bore 8 adjacent the top end 7 of the boss 6. The four projections 9 extend from the tapered ends 11, along the inside of the bore 8 to a base 13 of the boss 6.

The bracket 1 has a generally rectangular gap 10 defined by its rear and side walls, and a tang 12 projects from the side wall 2 into the gap 10. The lower edge of the gap 10 as defined by the rear wall has a further resilient lip 14 extending inwardly of the bracket 1.

A pair of projections 16 of rectangular cross-section project from a lower part of the rear wall of the bracket inwardly of the bracket 1.

In use, the bracket 1 is installed on a channel member 18 as shown in Fig. 5, with a leg 20 of the channel member being threaded through the gap 10 until the bracket fits tightly around an open end face of the channel member and is held thereon by engagement of the bracket on the outer surface of the channel member's wall. The bracket is then held in position by engagement of the tang 12 and the lip 14 with the leg 20, while the projections 16 engage within respective grooves formed along the channel member by virtue of its side walls being bent inwardly and upwardly to provide a retaining face for the tee-headed bolt.

An identical bracket is installed on the opposite open end of the channel member 18 and the channel member is then installed on shuttering 22 by driving nails 24 through the bore 8 of each bracket into the shuttering. The projections 9 within the bore 8 resiliently grip the nail 24 so that each bracket 1 is firmly mounted on the shuttering 22.

When thus installed, the brackets close off the ends of the channel member to concrete poured into the shuttered volume, and the open channel

itself is closed by abutment against the shuttering; the interior of the channel is thus effectively sealed against ingress of concrete, and when the concrete has set the shuttering can be removed by forcing it free of the nails through which it is held to the channel member. By virtue of the brackets, the nails are positioned at the ends of the channel member and do not interfere with the function of the channel in receiving a tee-headed bolt slidable along the channel. Further, the position of the apertured boss 6 on a side of the bracket ensures that the channel member is secured to the shuttering at diagonally opposed end locations, thus providing full stability for the fixture.

This embodiment of the invention not only avoids the need for deflecting or breaking nails inserted through the base of the channel, but also ensures that the nails are supported within the apertures 8 over a longer distance than with such prior art arrangements, thus providing greater resistance to bending and greater rigidity for the channel member on the shuttering. It also provides for the nails to be supplied already inserted in the aperture 8 and held therein by friction with the aperture wall, thus reducing frustration caused by lack or loss of nails during fitting.

Modifications and improvements may be incorporated without departing from the scope of the invention.

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Claims

1. A fixing system for a channel member comprising a bracket having means for allowing its securement to shuttering, and means on the bracket co-operative with the channel member to provide a substantially rigid connection therewith.

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2. A fixing system according to Claim 1, wherein the bracket is engagable with an end portion of the channel member.

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3. A fixing system according to Claim 2, wherein the bracket is detachably engaged with the channel member.

4. A fixing system according to Claim 2 or Claim 3, wherein the bracket provides a closure for the end portion.

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5. A fixing system according to any of the preceding Claims, wherein the means for allowing securement to the shuttering is provided by a through hole in the bracket which enables passage of a nail to secure the bracket and the channel member to the shuttering.

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6. A fixing system according to Claim 4, wherein the through hole is in a direction which is substantially normal to the base of the channel in use.

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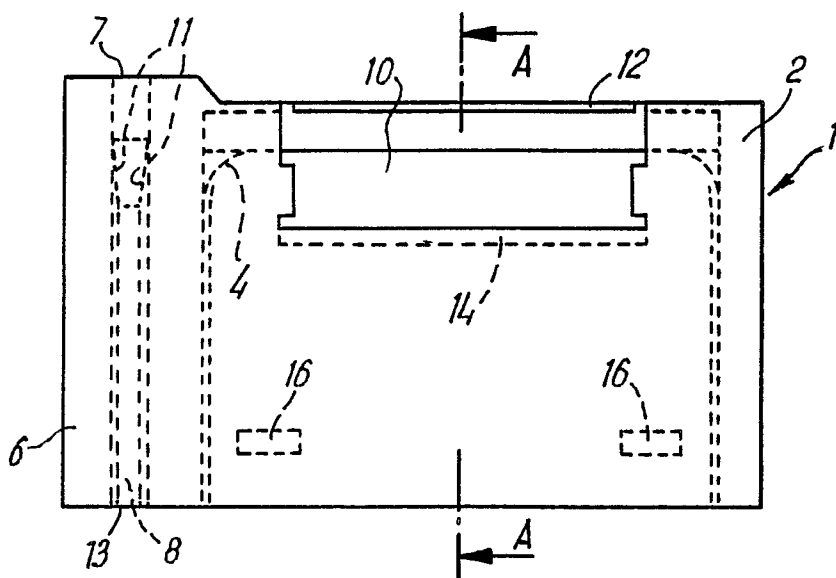


FIG. 1

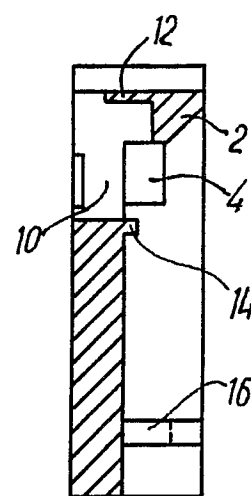


FIG. 2

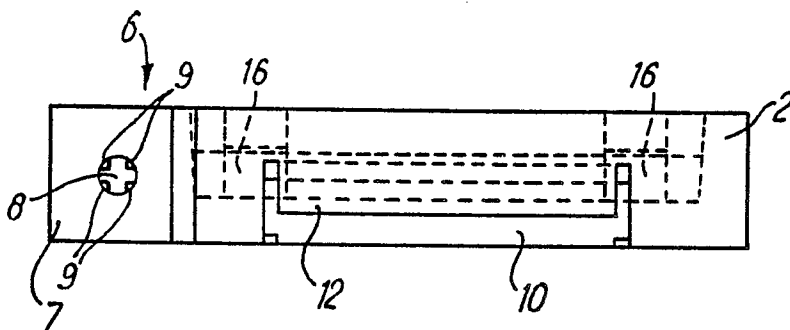


FIG. 3

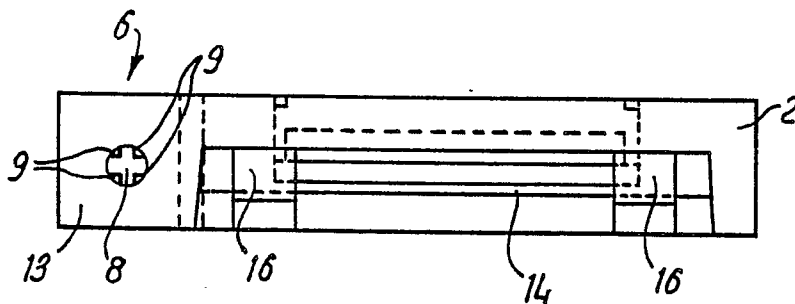


FIG. 4



European Patent
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EUROPEAN SEARCH REPORT

Application Number

EP 90 30 4427

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-B-2 916 005 (FRIMEDA METALL- UND DRAHTWARENFABRIK) * Whole document *	1-6	E 04 B 1/41
A	US-A-3 319 985 (ARNETT) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E 04 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18-07-1990	Examiner PORWOLL H.P.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	