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(54) Stud wall constructions

(57) In a stud wall construction, a U-shaped bracket (R) is fixed within a horizontal channel member (C) and has, at its outer ends, a pair of flanges (13, 15) formed with pockets which receive the inturned flanges (M) of a channel-section upright stud (S): the horizontal channel member (C) is free to move vertically relative to the stud (S) but the stud is restrained against moving sideways; because the sides of the bracket, between its base (10) and its flanges (13, 15), are fixed to the opposite sides of the channel member (C), the bracket effectively secures the two sides of the channel member against sideways deflection.

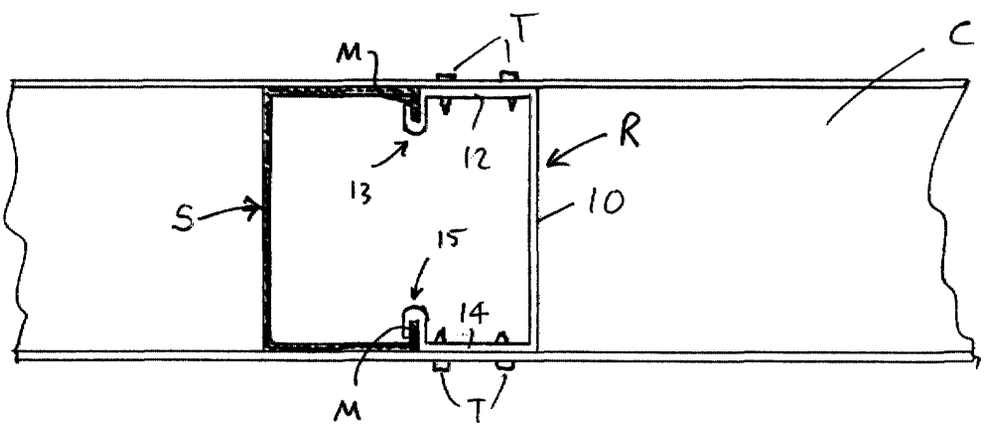

Figure 5

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Description

[0001] The present invention relates to stud wall constructions and to a bracket for use in such constructions.

[0002] In stud wall constructions, the upper ends of upright metal studs are commonly received in a horizontal channel member (the head channel) which is fixed to the underside of the overlying floor slab or of an overlying concrete beam. The ends of the upright studs are not fixed to the head channel, so that the head channel is left free to move vertically relative to the upright studs: however, the studs are restrained from moving sideways by a pair of horizontal bracing strips which are fixed to the studs on both their inner and outer sides; further, blocks are positioned between the pair of bracing strips at intervals, and the bracing strips are fixed to these blocks, to prevent the bracing strips bowing inwardly or outwardly.

[0003] The above-described arrangements are relatively complicated and time consuming to construct: moreover because of the presence of the bracing strips, uneven surfaces are presented, on both sides of the studs, for application of internal and external cladding panels.

[0004] In accordance with the present invention, there is provided a stud wall construction which comprises a horizontal channel member and at least one channel-section upright stud having opposite sides which terminate with inturned margins, and a bracket serving to restrain said stud against moving sideways whilst allowing said horizontal channel member against deflection of its opposite flanges, said bracket comprising a channel-section member having a base and opposite sides projecting from said base, said opposite sides terminating with inwardly-extending flanges which are formed to provide a pair of pockets, the bracket being disposed within said horizontal channel member with its said pockets receiving said inturned margins of said stud and with said sides of the bracket, between its said base and its said flanges being fixed to the respective flanges of said horizontal channel member.

[0005] Preferably each flange of the bracket is bent to form a first portion which projects inwardly, and a second portion which projects outwardly, these two portions lying parallel to each other and spaced apart to form the respective pocket. Preferably the bracket is formed from sheet metal.

[0006] Preferably the bracket is fixed to the horizontal channel member by means of self-tapping screws inserted into holes drilled through the flanges of the horizontal channel member: preferably two such screws are used, in staggered positions, on each side of the channel member.

[0007] It will be appreciated that the installation of such brackets, one for each stud, is less complicated and saves time compared with the conventional arrangements. Also, a more even surface is provided, on both sides of the upright studs, for the application of cladding panels. Further, the bracket effectively secures the opposite sides or flanges of the horizontal channel member together, so providing additional support.

[0008] An embodiment of the present invention will now be described by way of example only and with reference to the accompanying drawings, in which:

FIGURE 1 is an isometric view showing a conventional stud wall construction;
FIGURE 2 is an isometric view showing the use, in a stud wall construction, of a bracket in accordance with the present invention;
FIGURE 3 is an isometric view of a bracket in accordance with the present invention;
FIGURE 4 is a plan view, on an enlarged scale, of the bracket shown in Figure 3; and
FIGURE 5 is a sectional view through an upright stud of the wall construction shown in Figure 2, showing the engagement of the upper end of the stud by the bracket.

[0009] Referring to Figure 1 of the drawings, a conventional stud wall construction is shown, in which the upper ends of upright metal studs S are received within a head channel C which is fixed to the underside of a concrete floor slab F. The ends of the studs S are not fixed to the head channel C, and the head channel is therefore free to move up and down in the vertical plane. In order to restrain the studs S from moving sideways in the vertical plane, bracing strips B are fixed to the opposite sides of the studs: further, to prevent the bracing strips B from bowing inwardly or outwardly, blocks L are positioned between them in some of the spaces between adjacent studs, and the bracing strips B are fixed to the blocks L.

[0010] In a stud wall construction in accordance with the present invention, and referring to Figure 2, the upper ends of the metal studs S are restrained against sideways movement by brackets R, which still allow vertical movement of head channel C relative to the studs S.

[0011] As shown in Figures 3 to 5, each bracket R is generally of U-or channel-shape in cross-section, having a flat rectangular base 10 and two rectangular sides 12,14 projecting from the opposite ends of the base 10 at right angles to it. Respective flanges 13,15 project from the outer ends of the sides 12,14, each flange being bent through 180° to form two portions parallel to each other and with a small gap between them: thus, the respective flanges 13, 15 have first portions 13a, 15a which project inwardly towards each other from the outer ends of the sides 12, 14, and second portions 13b, 15b which project outwardly again from the inner ends of the portions 13a, 15a; the two portions of each flange thus define a pocket P which is open down the outer edge of the flange. The bracket R is positioned in the head channel C, outside of the stud S, with the base 10 of the bracket disposed in the vertical plane and its sides

12, 14 disposed against the inner surfaces of the opposite sides or flanges of the head channel C. In particular, the length of the base 10 of the bracket R, and accordingly the spacing of the outer surfaces of the sides 12, 14 of the bracket, correspond with the spacing between the inner surfaces of the opposite sides or flanges of the channel C: also, preferably the height of the base 10 and sides 12, 14 corresponds with the depth of the channel C. The bracket R is fixed in position by means of self-tapping screws e.g. T inserted into holes drilled through the sides or flanges of the channel C and the sides 12, 14 of the bracket, between the base 10 and flanges 13, 15 of the bracket: preferably two such screws T are used in each side, in staggered manner, as shown.

[0012] It will be noted that the inturned margins M of the opposite sides of each stud S are received in the pockets P formed between the two parallel portions of the two flanges 13, 15 of the bracket. This allows relative sliding movement between the bracket R and the stud S in the vertical direction, but restrains the stud S from sideways displacement.

[0013] The use of the brackets R simplifies the construction of the stud wall. Also, a more even surface is provided, on both sides of the studs, for the application of cladding panels. Moreover, because the sides of the bracket, between its base 10 and its flanges 13, 15, are fixed to the respective flanges of the horizontal head channel C, the bracket effectively secures the two sides or flanges of the head channel C together and so strengthens the head channel against sideways deflection of its opposite flanges.

Claims

1. A stud wall construction which comprises a horizontal channel member (C) and at least one channel-section upright stud (S) having opposite sides which terminate with inturned margins (M), and a bracket (R) serving to restrain said stud (S) against moving sideways whilst allowing said horizontal channel member (C) to move vertically relative to said stud (S) and also strengthening said horizontal channel member (C) against deflection of its opposite flanges, said bracket (R) comprising a channel-section member having a base (10) and opposite sides (12, 14) projecting from said base, said opposite sides (12, 14) terminating with inwardly-extending flanges (13, 15) which are formed to provide a pair of pockets (P), the bracket being disposed within said horizontal channel member (C) with its said pockets (P) receiving said inturned margins (M) of said stud (S) and with said sides (12, 14) of the bracket, between its said base (10) and its said flanges (13, 15), being fixed to the respective flanges of said horizontal channel member (C) .

2. A stud wall construction as claimed in claim 1, in which said bracket (R) is fixed to said horizontal channel member (C) by means of self-tapping screws (T) inserted into holes drilled through said flanges of said horizontal channel member and through said sides (12, 14) of the bracket.

3. A bracket for a stud wall, the bracket (R) comprising a channel-section member having a base (10) and opposite sides (12, 14) projecting from said base, said opposite walls (12, 14) terminating with inwardly-extending flanges (13, 15) which are formed to provide a pair of pockets (P), the bracket being arranged for positioning within a horizontal channel member (C) with its said sides (12, 14), between its said base (10) and its said flanges (13, 15), fixed to respective opposite flanges of said horizontal channel member (C), and with its said pockets (P) receiving respective inturned margins (M) of a channel-section upright stud (S), such that said horizontal channel member (C) is free to move vertically relative to said stud (S) whilst said stud is restrained from moving sideways and said horizontal channel member (C) is strengthened against deflection of its said opposite flanges.

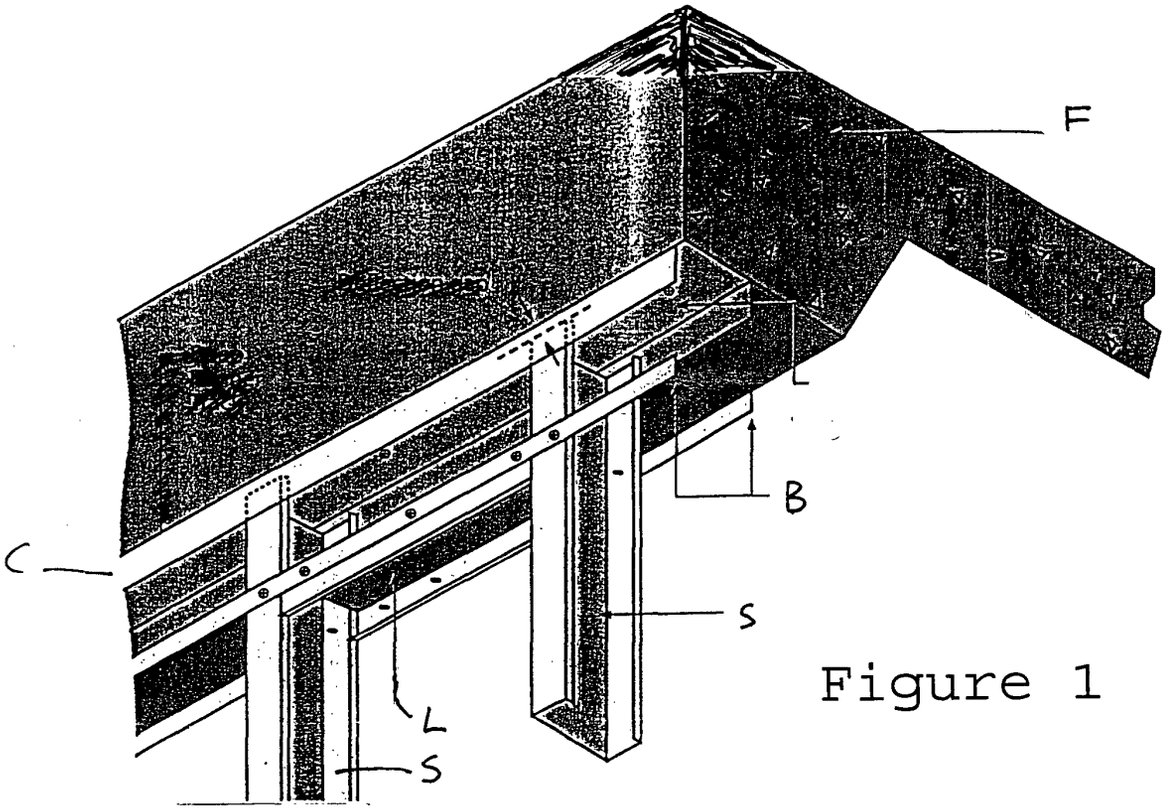

Figure 1

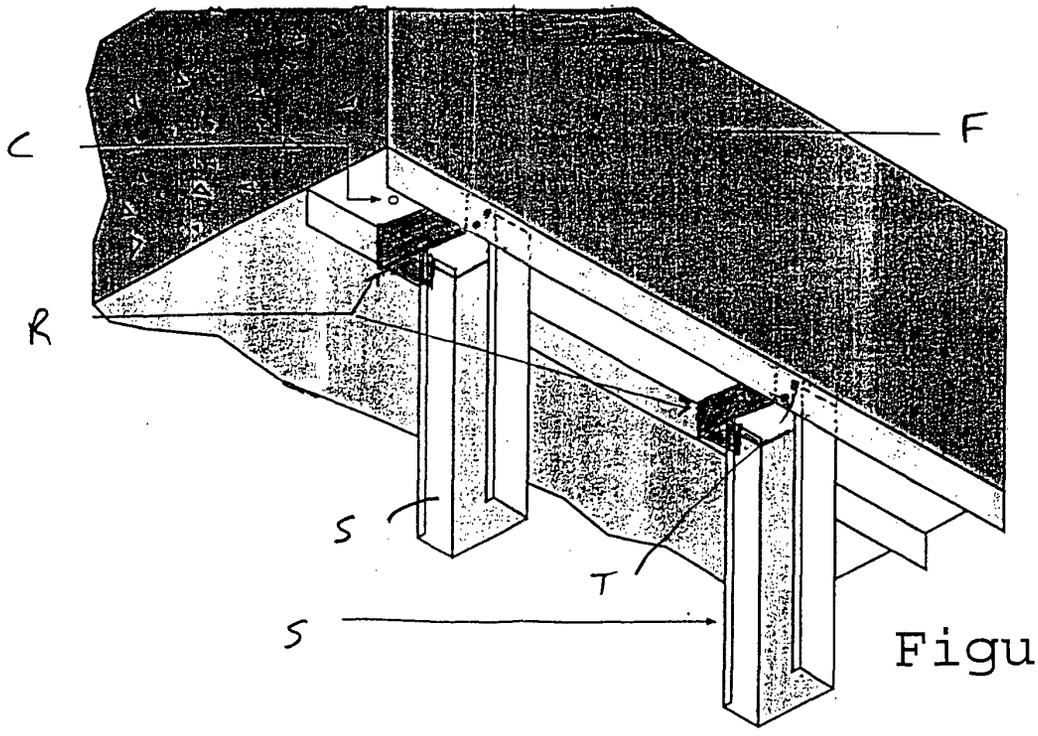

Figure 2

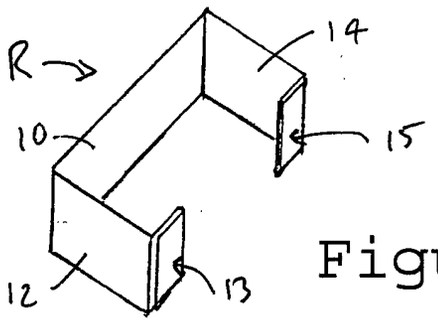

Figure 3

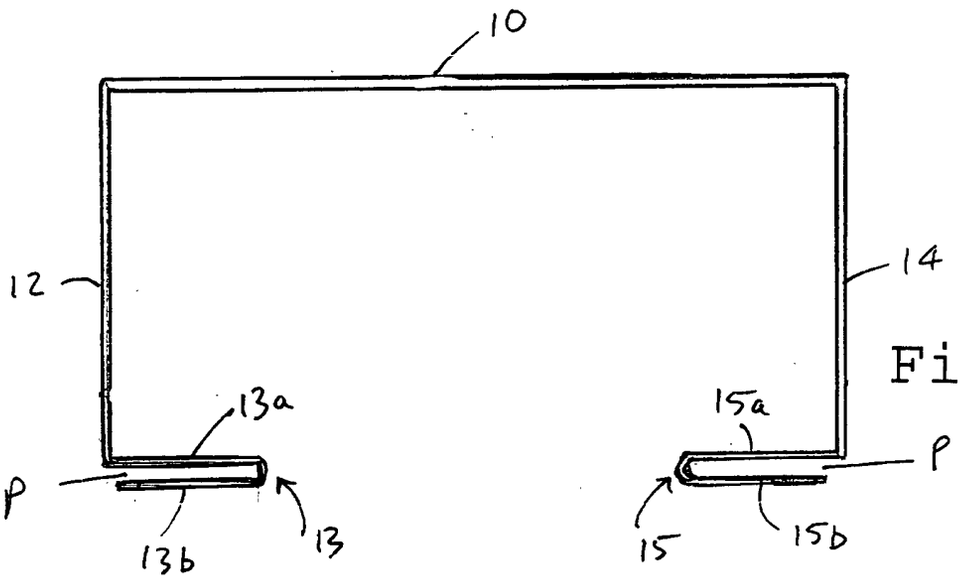

Figure 4

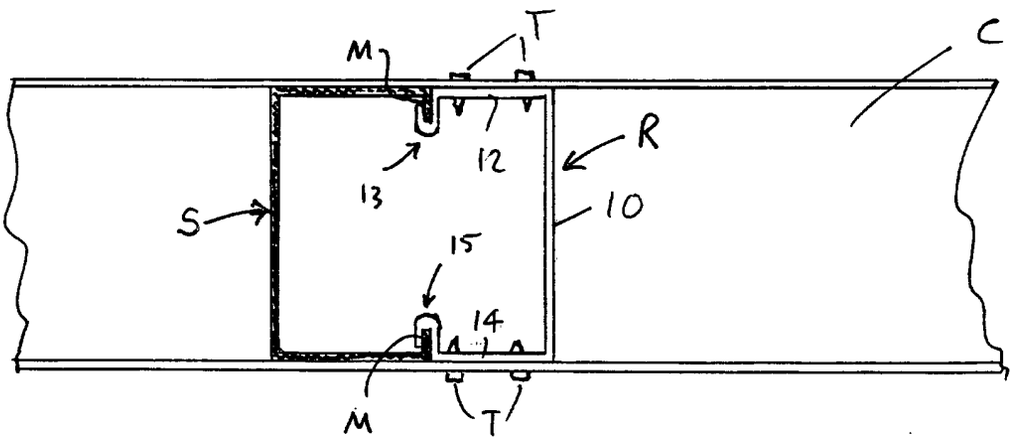

Figure 5

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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 4877

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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X	DE 40 36 859 A (SOMMER METALLBAU STAHLBAU GMBH) 21 May 1992 (1992-05-21) * figure 7 *	3	
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7) E04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	18 September 2001	Rosborough, J

CATEGORY OF CITED DOCUMENTS

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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