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(54) **Metal upright used to obtain bearing frames for prefabricated modular partition walls.**

(57) The present invention relates to a metal upright used to obtain bearing frames for prefabricated modular partition walls, which has a double-T section in which the horizontal parallel wings (1) are box-shaped and com-

posed of two opposite symmetrical bodies with basically rectangular tubular structure, connected by a central element (2), it being provided that the sides (1 a) of the said box-shaped wings (1) have a series of slots (3).

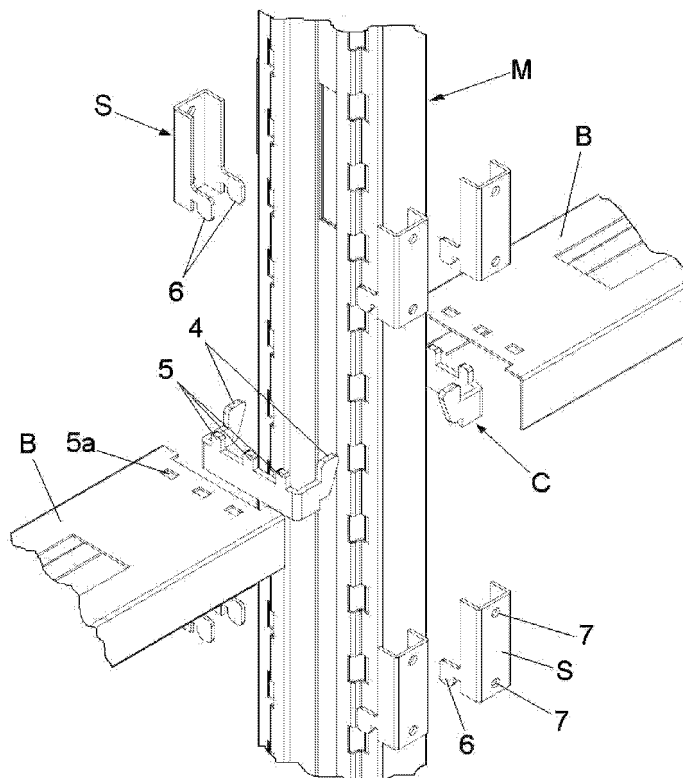


FIG. 4

Description

[0001] The present patent application for industrial invention relates to a metal upright used to obtain bearing frames for prefabricated modular partition walls.

[0002] The upright of the invention is designed to be used to build partition walls of the type formed of a bearing frame covered on both sides by panels of any type of material.

[0003] The bearing frame is composed of a sequence of uprights, in which a series of slots is provided to act as fixing points for the support hook bolts of the horizontal beams used to make the transversal connection between two adjacent uprights.

[0004] The said frames are then provided with covering panels supported by suitable brackets fixed to the upright by means of the series of slots.

[0005] Uprights are currently made of press-folded metal sheet and provided with tubular structure, with transversal rectangular or square section, with the four square-cut inwards-folded corners in such a way that their 90° concave angle faces the external of the upright.

[0006] A series of regularly spaced identical shaped slots is obtained on the corners, extending astride the two L-shaped wings that border the inwards-folded corners.

[0007] The slots act as fixing points for the beam-supporting hook bolts or for the brackets that support the covering panels.

[0008] The design of prefabricated modular walls aims at giving the finished product high strength and rigidity, as well as good sound insulation properties.

[0009] The poor sound insulation capacity of the metal sheet uprights that are currently used to obtain the said walls, however, impairs the sound insulation that is normally obtained by filling the partition wall with sound proof materials.

[0010] Moreover, the structural configuration of the said uprights must be studied in such a way that the partition wall can withstand as much as possible the transversal pressures that are discharged on it, such as accidental shocks against the wall or the weight of a person leaning on it.

[0011] The purpose of the present invention is to provide an upright used to obtain bearing frames for prefabricated modular partition walls that, without altering the structural configuration of the frame, is able to give higher rigidity to the entire partition wall.

[0012] Another purpose of the present invention is to provide an upright used to obtain bearing frames for prefabricated modular partition walls provided with good sound proof properties because of its innovative structural configuration.

[0013] These and other purposes have been achieved with the upright of the invention, whose main characteristics are illustrated in the first claim.

[0014] The upright of the invention is composed of two specularly opposite identical bodies with tubular struc-

ture connected by a central element.

[0015] The upright has a transversal double-T section, in which the horizontal parallel wings are box-shaped.

[0016] Each box-shaped wing has a basically rectangular section with a pair of sides, a right-hand side and a left-hand side, and a pair of lateral sides, an external side and an internal side.

[0017] The internal side is designed to be opposed and connected to the corresponding internal side of the other identical box-shaped wing by means of the said central element.

[0018] The two corners at the two ends of the external side of each tubular body are L-folded inwards and a series of regularly-spaced identical slots is obtained on the said folded corners, extending astride the two wings that border each L-shaped corner.

[0019] The series of slots is used as fixed points for the beam-supporting hook bolts or for the ordinary brackets used to support the covering panels.

[0020] The upright of the invention is therefore provided with two external sides and two internal sides, all parallel, which represent four sound-proof barriers, unlike the uprights that are currently available on the market, which are provided with only two sound-proof barriers on the external sides.

[0021] The frame obtained with the upright of the invention is much more rigid than the ones that are currently available, since its double-T structure with box-shaped wings ensures great strength and high resistance to transversal pressure.

[0022] For major clarity the description of the metal upright according to the present invention continues with reference to the enclosed drawings, which are intended for purposes of illustration only and not in a limiting sense, whereby:

- figure 1 is a top view of the upright of the invention;
- figure 2 is a perspective sectional view of the upright of the invention;
- figure 3 is a view of the upright of the invention provided with ordinary brackets to support covering panels and with beam-supporting hook bolts;
- figure 4 is an exploded view of figure 3.

[0023] With reference to figures 1 and 2, the upright (M) of the invention has a double-T section, in which the horizontal parallel wings (1) are box-shaped and composed of two opposite symmetrical bodies with basically rectangular tubular structure connected with a central element (2).

[0024] Each box-shaped wing (1) is composed of a pair of sides (1 a), an external side (1b) and an internal side (1 c), which is opposed and connected to the corresponding internal side (1 c) of the other identical box-shaped wing (1) by means of the central element (2).

[0025] The external side (1b) is shorter than the internal side (1c) and the transversal side (1a) used for con-

nction is folded inwards.

[0026] As shown in fig. 1, the transversal side (1a) includes a first section (1d) adjacent to the internal side (1c) and a second section (1e) adjacent to the external side (1b) that are square-connected with a short intermediate section (1f).

[0027] Each transversal side (1a) is provided with a series of regularly-spaced identical slots (3), as shown in fig. 2.

[0028] Each slot (3) entirely covers the intermediate section (1 f) and a small part of the sections (1 d and 1 e) adjacent to it.

[0029] As shown in figs. 3 and 4, the slots (3) act as fixing points for ordinary hook bolts (C) used to support the connection beams (B) between adjacent uprights (M), or for ordinary brackets (S) used to support covering panels, which are not shown in the figure for convenience purposes.

[0030] Each hook bolt (C) has catches (4) for fixing to the upright (M), designed to be inserted inside the slots (3) and teeth (5) for fixing and centring of the connection beams (B) that are provided with corresponding slots (5a) designed to be coupled with the teeth (5).

[0031] Each bracket (S) has hooks (6) designed to be inserted inside the slots (3) and holes (7) for the insertion of the screws designed to fix the said brackets on the back of the panels.

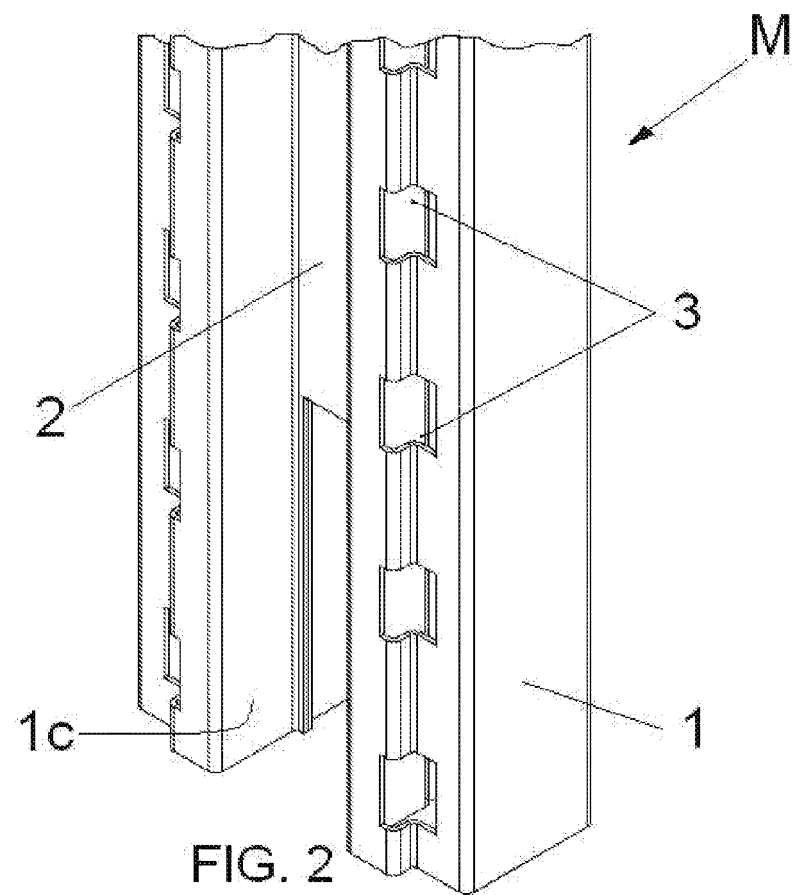
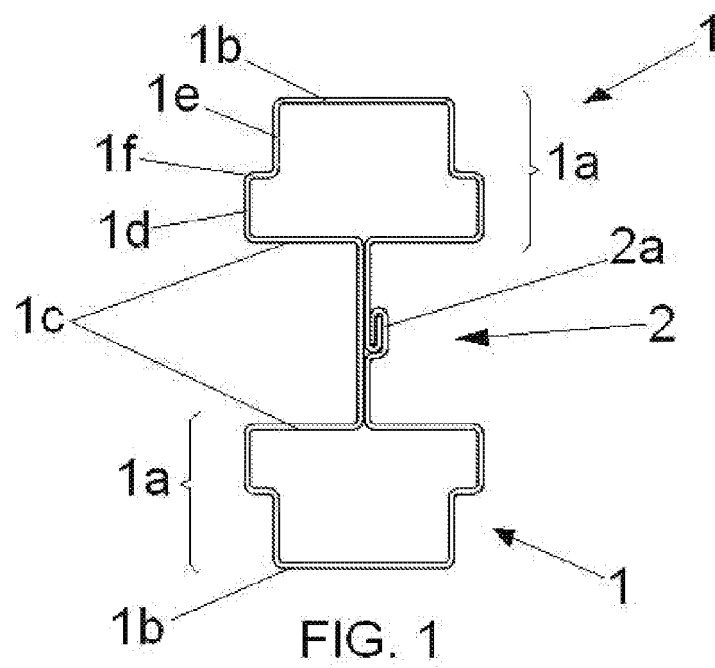
[0032] According to a preferred constructive embodiment, the upright (M) is obtained by folding a flat metal sheet, which is folded over and closed with hammering (2a) on the central element (2), as shown in fig. 1.

[0033] According to an alternative constructive embodiment, the upright (M) is obtained with pressing from a single piece of metal material.

3. Upright as claimed in the above claim, **characterised in that** the transversal side (1 a) includes a first section (1d) adjacent to the internal side (1c) and a second section (1e) adjacent to the external side (1b) that are square-connected with a short intermediate section (1f) and **characterised in that** each transversal side (1a) is provided with a series of regularly-spaced identical slots (3), each of them covering entirely the intermediate section (1f) and a small part of the sections (1 d and 1 e) adjacent to it.

Claims

1. Metal upright used to obtain bearing frames for prefabricated modular partition walls, **characterised in that** it is provided with double-T section, in which the horizontal parallel wings (1) are box-shaped and composed of two opposite symmetrical bodies with basically rectangular tubular structure, connected by a central element (2) and **characterised in that** the sides (1 a) of the said box-shaped wings (1) have a series of slots (3).
2. Upright as claimed in the above claim, **characterised in that** each box-shaped wing (1) is composed of a pair of sides (1a), an external side (1b) and an internal side (1c), which is opposed and connected to the corresponding internal side (1c) of the other identical box-shaped wing (1) by means of the central element (2) and **characterised in that** the external side (1 b) is shorter than the internal side (1 c) and the transversal side (1 a) used for connection is folded inwards.



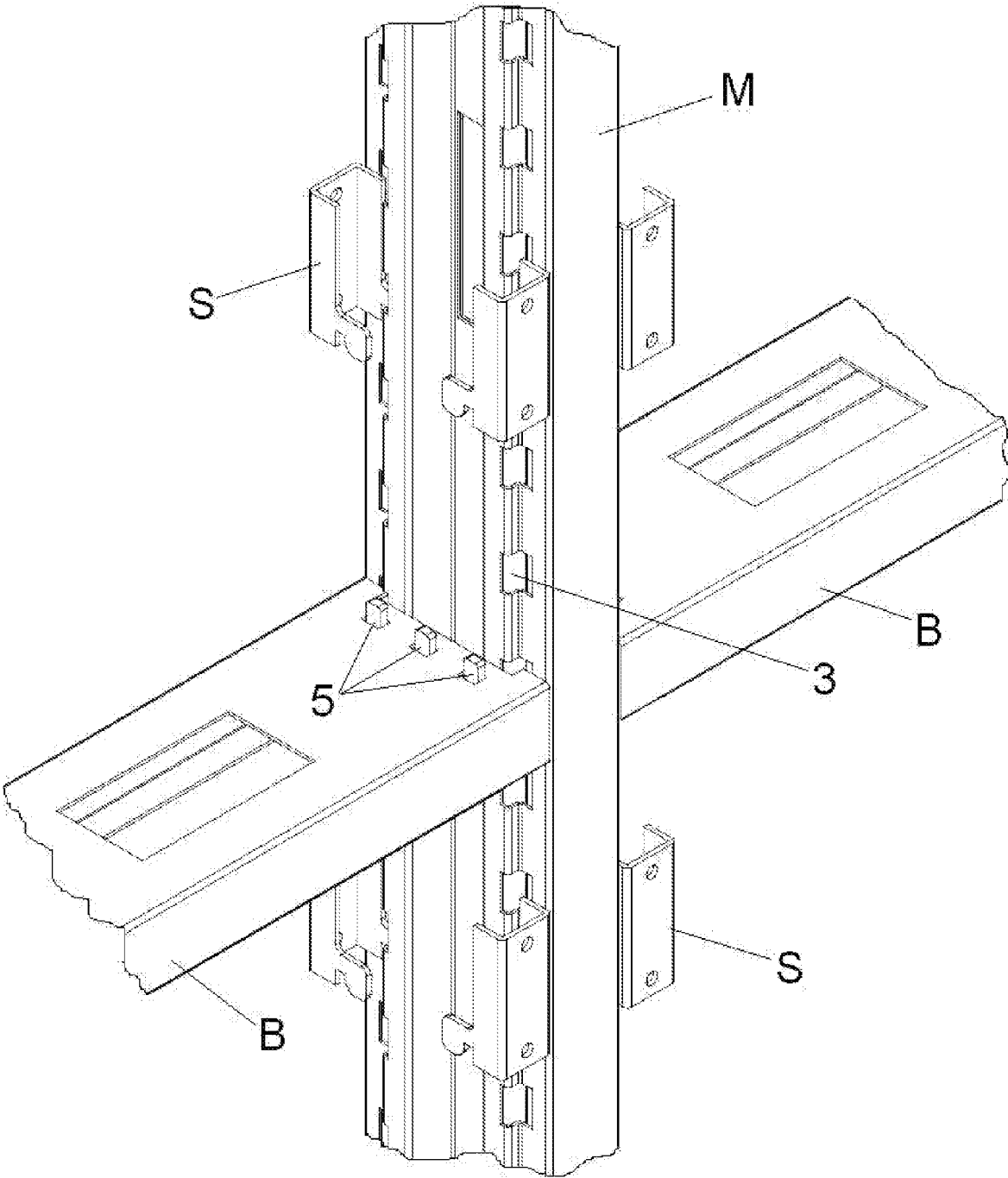


FIG. 3

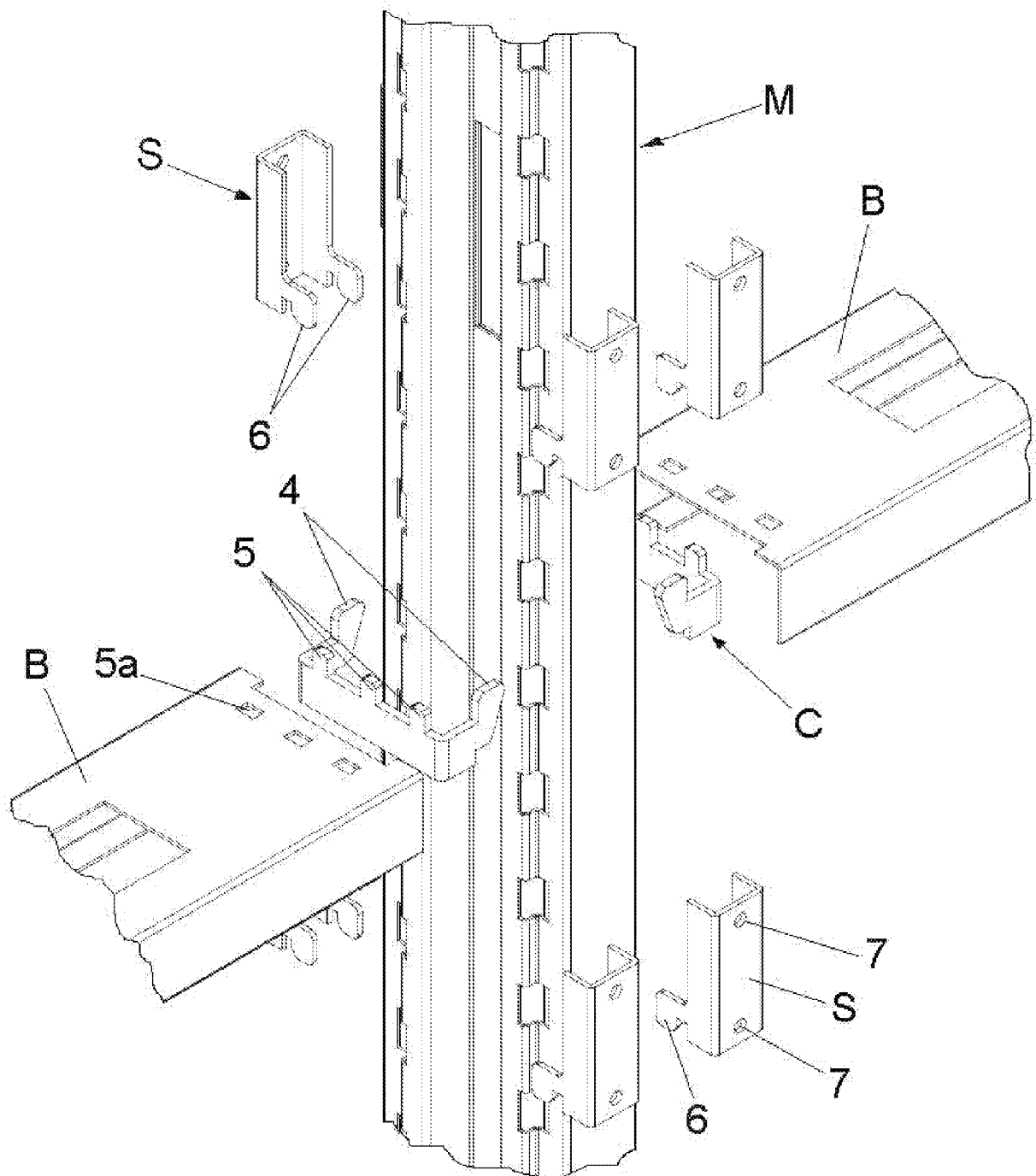


FIG. 4



EUROPEAN SEARCH REPORT

Application Number
EP 08 10 5500

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X	DE 20 2004 000900 U1 (STRAEHLE WERNER [DE]) 18 March 2004 (2004-03-18) * paragraph [0016] - paragraph [0022]; figures 1-4 *	1-3	TECHNICAL FIELDS SEARCHED (IPC) E04C E04B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 26 February 2009	Examiner Zuurveld, Gerben
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			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 08 10 5500

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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