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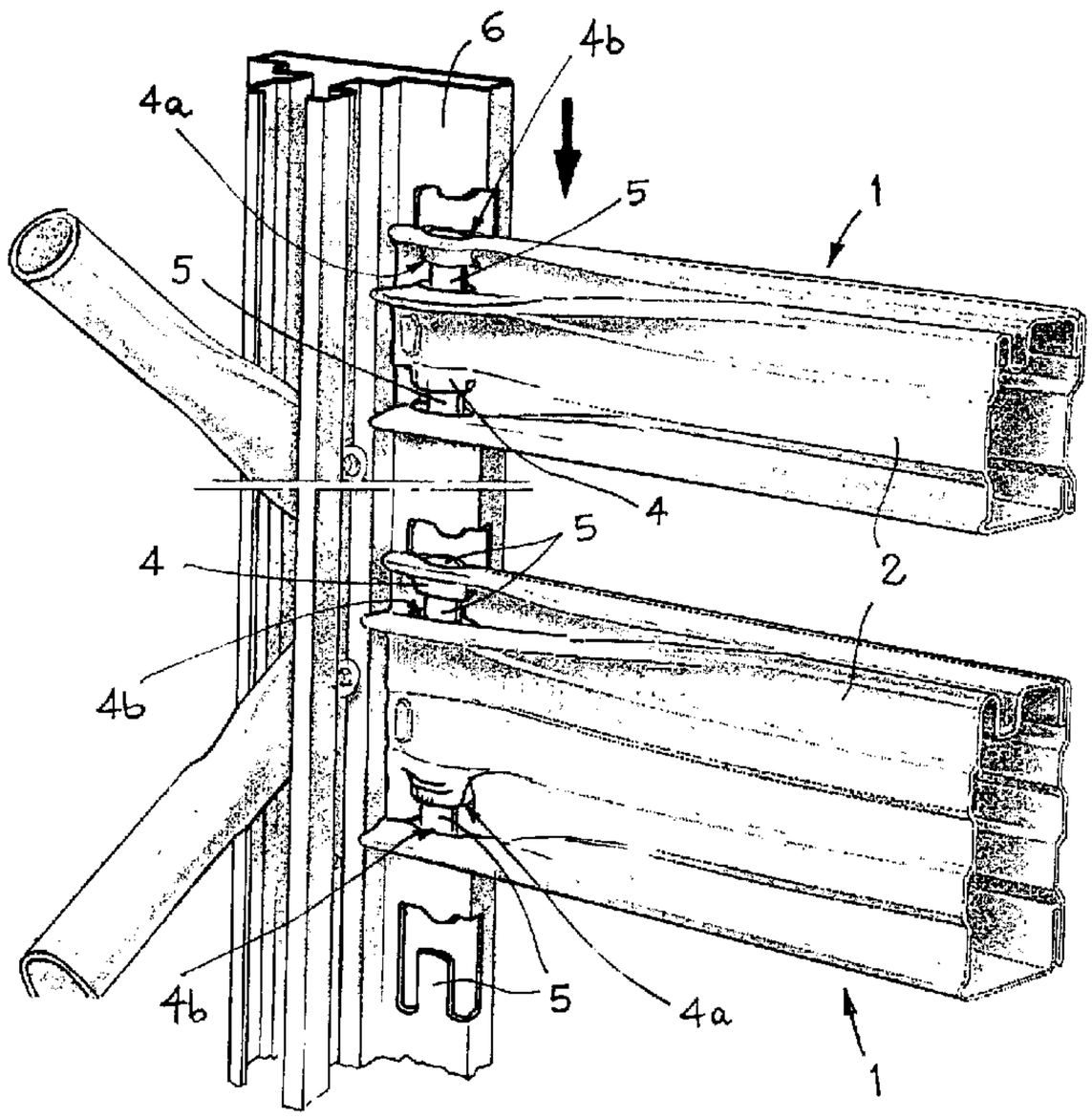
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(54) **ELEMENT DE STRUCTURE PORTEUSE, EN PARTICULIER DES SUPPORTS POUR RAYONNAGE MODULAIRE**

(54) **ELEMENT OF LOAD-BEARING STRUCTURES, ESPECIALLY GIRDERS FOR MODULAR SHELVES**



(57) The two ends (3) of the girders (1) utilised for the formation of modular shelves are provided with superposed double fasteners (4) wherein the inlet (4a) and outlet (4b) eyelets which circumscribe the passage slits, are perfectly equal and coaxial with each other. The couples of fasteners (4), located near the corners of the ends of the girders, engage in restrained relation and correct vertical alignment with as many superposed indentations (5), obtained along the vertical edges of uprights (6). Indentations (5) and couples of fasteners (4) have the same distance between centres and combine with each other, in stable and aligned restrained coupling, thanks to the equal and coaxial configuration of the sections of the passage slits of said fasteners.

ABSTRACT

The two ends (3) of the girders (1) utilised for the formation of modular shelves are provided with superposed double fasteners (4) wherein the inlet (4a) and outlet (4b) eyelets which circumscribe the passage slits, are perfectly equal and coaxial with each other. The couples of fasteners (4), located near the corners of the ends of the girders, engage in restrained relation and correct vertical alignment with as many superposed indentations (5), obtained along the vertical edges of uprights (6). Indentations (5) and couples of fasteners (4) have the same distance between centres and combine with each other, in stable and aligned restrained coupling, thanks to the equal and coaxial configuration of the sections of the passage slits of said fasteners.

Description of the patent application entitled "Element of load-bearing structures, especially girders for modular shelves"

Applicant: METALSISTEM S.p.A.

DESCRIPTION

The present industrial utility model relates to an element of load-bearing structures, in particular to a girder for modular shelves, which is constituted by a metal tubular section whose cross-section, having an almost parallelepiped form with shaped sides and the height greater than the width, has both ends substantially flat on at least one front and provided with superposed couples of fasteners, protruding near to the corners.

The cross-sections of the inlet eyelets and the outlet eyelets which circumscribe the passage slits of said fasteners are perfectly equal and coaxial with each other. The two superposed fasteners of each end are spaced from each other and so configured as to enter in mutual restraining relation, from up downwards, with as many couples of indentations, also spaced, sequentially obtained along vertical uprights of any type intended for the constitution of modular shelves and/or like structures. The indentations of the uprights enter in a restrained relation with the fasteners of the girders, through an introduction

movement from up downwards, which engages them in said inlet and outlet eyelets, through the slits of said fasteners.

The known girders for modular shelves and the like are substantially constituted by sections corresponding to those used for the present invention, except that the couples of superposed fasteners, present at the ends of the girders, have the respective inlet and outlet eyelets different from one another; in particular, the inlet eyelets are generally larger than the outlet eyelets, so that the slits have not the desired constancy of the passage section.

Such condition, even though it allows the connection and the transversal tie of the girders to the uprights, for the constitution of the horizontal supports of shelves, modular containers, separators and the like on the shelves, does not provide a correct, stable and precise positioning of the parts and an adequate restrained engagement with the respective indentations present on the uprights.

Object of this invention is to eliminate the above drawbacks.

The invention, as is characterised by the claims, solves the problem by means of a girders for modular shelves by which the following results are obtained: the couples of fasteners arranged in superposed alignment with each other at the ends of the

girders have inlet and outlet eyelets which circumscribe the passage slits perfectly equal to one another; the couples of fasteners are placed at a distance equal to the one comprised between the indentations sequentially obtained along the vertical uprights utilised for the constitution of modular shelves and/or corresponding structures or the like; the couples of fasteners present at the ends of the girders and provided with inlet and outlet eyelets of the passage slits equal to each other are substantially aligned at the corners of said sections and are obtained by means of direct and simultaneous moulding.

The advantages achieved by the present invention consist essentially in that the tie at the ends of the girders with the corresponding uprights is obtained through the restrained couplings of couples of fasteners with eyelets that are all equal and coaxial on as many couples of indentations, causing all ties to be stable and perfectly aligned.

The invention is described with more details in the following, according to an embodiment solely reported by way of non limiting example, with reference to the attached drawings, wherein:

Figure 1 shows a perspective view of the end couplings of two different types of girders with as many uprights, and Figure 2 shows, in particular, the perspective view of an end of a girder.

The figures refer to girders 1 for modular shelves, said girders being substantially constituted by metal tubular sections 2 whose cross-section, having an almost parallelepiped form with shaped sides having a height greater than the width, has both ends 3 substantially flat and provided with couples of fasteners 4 superposed and protruding near to the corners.

The couples of fasteners 4 are realised, preferably but not limitedly, by means of simultaneous moulding according to the known art of realisation of the components for modular shelves and the like.

In each fastener 4, the lower inlet eyelets 4a and the upper outlet eyelets 4b, which circumscribe the passage slits, are perfectly equal to each other and coaxial aligned in the vertical direction. The distance between centres of the two superposed fasteners 4, present at both ends of each girder, is equal to the distance between centres of indentations 5 sequentially obtained along the complementary vertical uprights 6, designed for the constitution of modular shelves and/or like structures. In this way, the couples of fasteners 4 of each end 3 of girder 1 are engaged in

restrained relation from up downwards, in any one of the adjoining couples of said indentations 5. The combination of superposed restrained engagement of two adjoining indentations with the two superposed fasteners 4 of each end 3 of uprights 1, ensures the latter a more effective engagement of the parts, with the associated stability and alignment of the composite structures; this is obtained thanks to the fact that the inlet eyelets 4a and the outlet eyelets 4b, circumscribing the passage slits of said fasteners, are perfectly equal and coaxial with each other, and restrainingly engage in the same manner along the sides of said indentations.

Said fasteners 4 with inlet eyelets 4a and outlet 4b eyelets having an identical section are advantageously obtained by moulding with simultaneous shearing and drawing.

While the present invention has been described and illustrated according to embodiments solely reported by way of non limiting example, it will be obvious to those skilled in the art that the shapes, the structure and the orientations may be subject to variations, without departing because of them from its spirit and scope.

CLAIMS

1. An element of load-bearing structures, in particular a girder for modular shelves, constituted by a metal tubular section (2) whose cross-section has an almost parallelepiped form with shaped sides and a height greater than the width, whose two ends (3) are substantially flat and provided with couples of fasteners (4) superposed and protruding near to the corner, said couples of fasteners being spaced from one another and so configured as to enter in restrained engagement relation from up downwards, with any couple of indentations (5), also spaced and sequentially present along complementary vertical uprights (6), designed for the constitution of modular shelves and/or corresponding structures and the like, characterised in that the lower inlet eyelets (4a) and the upper outlet eyelets (4b), circumscribing the slit extension of fasteners (4), have sections perfectly equal and coaxial aligned with each other.

2. The element of load-bearing structures, in particular a girder for modular shelves according to claim 1, characterised in that the end tie (3) of said girder with the corresponding uprights (6) is constituted by said double restrained couplings of couples of superposed fasteners (4) on as many couples of sequential indentations (5), by means of inlet eyelets (4a) and outlets eyelets

(4b), circumscribing the passage slits of said fasteners (4), said eyelets being perfectly equal and coaxial aligned with each other.

3. The element of load-bearing structures, in particular a girder for modular shelves, characterised in that the fasteners with inlet eyelets (4a) and outlets eyelets (4b) having an identical section are obtained by means of moulding with simultaneous shearing and drawing.

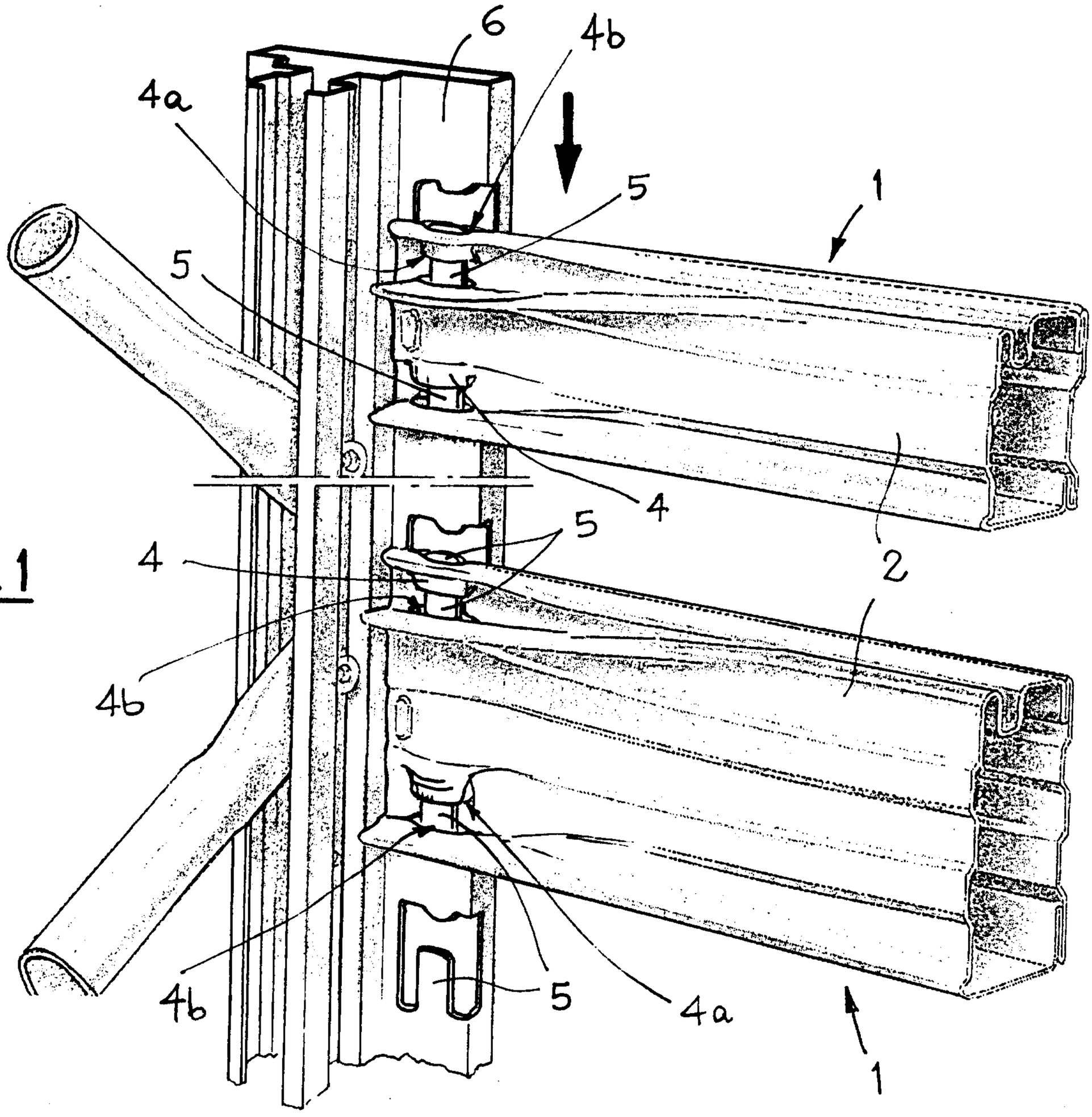


FIG.1

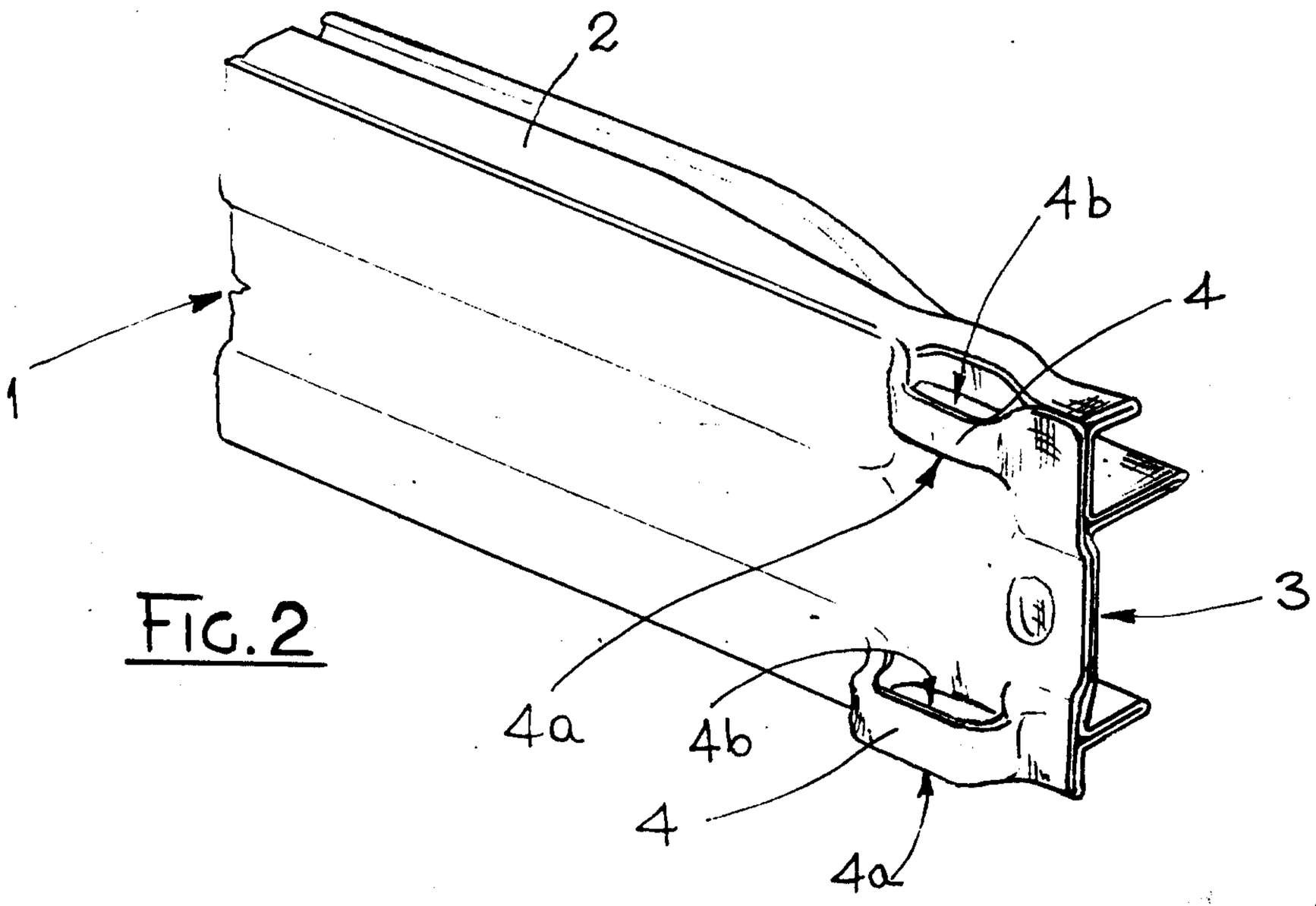
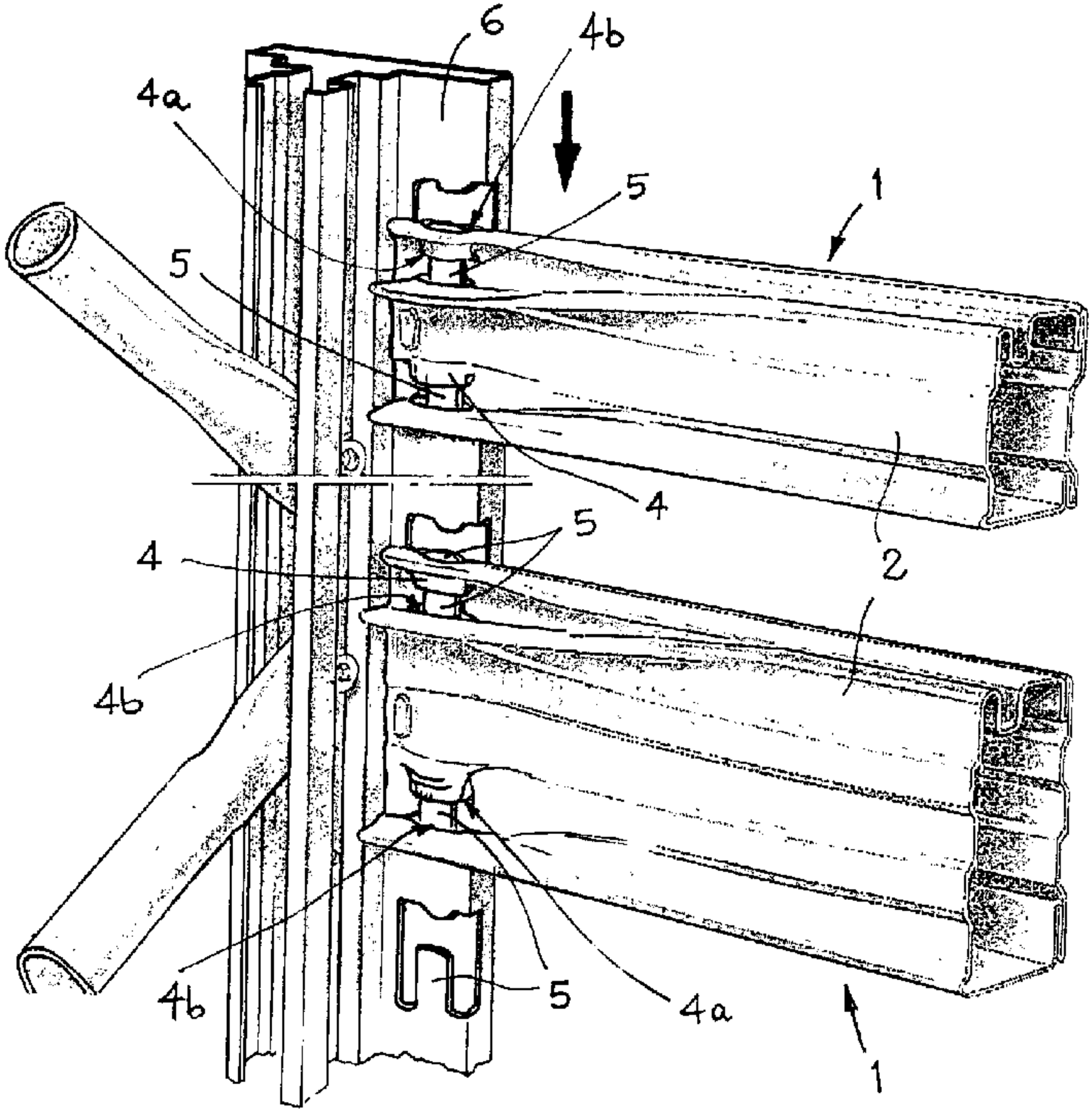


FIG.2


6
4b
4a
5
1
5
4
5
4
2
4b
4b
5
4a
1