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(54) **Bearing element made of cold-rolled or extruded steel section and welded for forming modular structures such as scaffoldings and the like**

(57) A bearing cold-drawn or extruded steel section element, used for forming modular structures, such as scaffoldings and the like, characterized in that it has a profile on the whole in squared or rectangular form, and having near the external edges two projections obtained by bending and forming with end surfaces of the edge two housings for inserting and for bearing the structure connecting linings, and having on the two end faces at least a plurality of central through holes foreseen for the insertion and the support of load support elements or brackets and manufactured welding two symmetrical pieces.

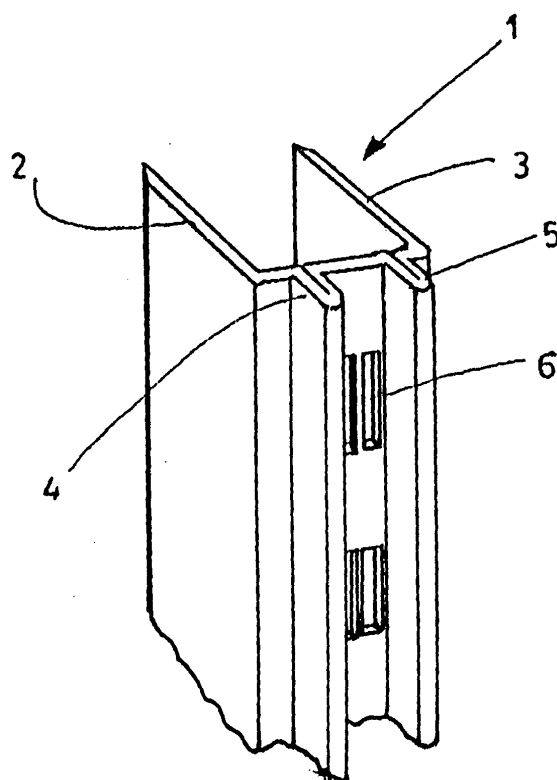


FIG. 2

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Description

[0001] This invention refers to improvements made in modular bearing structures such as scaffoldings (e.g. for supermarkets and the like) and, in detail, in bearing elements or uprights for said modular structures. More specifically, the invention concerns a cold-rolled element, particularly suitable for forming the vertical bearing columns and having modular structures and, according to the invention, forming also a guide means or limit end for the support and connection elements and further for supporting load elements (brackets).

[0002] The main characteristic of the section element is that it is made-up of bearing cold-rolled or extruded steel section, for forming modular structures such as scaffoldings and the like, having near the external edges two projections formed by bending and forming with side end surfaces two hollow spaces for the insertion and for the bearing of linings for connecting the structure, and the two end faces having at least a plurality of central through holes foreseen for the insertion and the bearing of supports or brackets holding the load. The main novelty of this invention is the fulfilment of a section made up of two symmetrical pieces, that are welded in its ends without requiring to make a bearing edge bended for directing the welding, as happened in preceding solutions used for making similar products.

[0003] The section is made up of two support elements substantially squared or rectangular in form, that are welded with one another in the head side. Evidently the cold-rolled section is made-up of a sole homogeneous section in continuous form, that allows to use at the maximum extent the characteristics of the used material, holding two stiffening ribs made by bending and using a proper bending machine, then they are made completely by cold machining and without welding in this work phase. The section, owing to its form with external projections or ribs, can be combined with metal linings, or with linings of any other material that is applied also in said hollow spaces made in the same section.

[0004] The column or upright, being made of a sole welded body joining two symmetrical parts, assures the maximum stiffness and lightness.

[0005] Further the same profiling machine can make profiles having different width so that they can satisfy well-established exigencies, as it is also possible to join specularly the two sections with evident material economy and reduction of stocking dimensions.

[0006] Further characteristics and advantages will be evident from the following description of some preferred, but not exclusive embodiments of the section element according to the present invention, shown for the sole aim of description, but not limiting in any manner the invention, according to different practical applications shown in the annexed drawing, in which:

Figure 1 shows a half-section element of an embodiment, in horizontal section in plan view;

Figure 2 shows the same section element in assembled perspective view, showing also the slots for inserting the connecting elements;

Figure 3 shows the section element in object in a perspective view in assembled condition with two panels joined to the upright.

[0007] With reference in particular to Figure 1, the steel cold-rolled or extruded section shown with the general reference 1 has an opened squared or rectangular form with wings 2 and 3 and a central element obtained by bending for forming two projections 4, 5 and two free plane faces 7, 8 for resting the panels supported by said element.

[0008] The two projections 4, 5 are obtained by bending/extrusion applying a suitable mechanical cold machining.

[0009] The two projections limit one or more rows of rectangular through equidistant slots 6, foreseen for cooperating with hanging teeth of support brackets, that are well-known, or with teeth of metallic panels used as covering 9, these last ones having in plan view a section CO (Figure 3) conjugated to said projections 4, 5 and locking said projections.

[0010] Normally the panel 9 height is lesser than the whole height of the upright. Making now reference to Figure 3, it must be observed that the connection of two elementary sections, as the ones shown in Figure 1, is made in a specularly symmetrical layout, obtaining in this manner a total section having a resistance higher than the one supplied by a sole section element, and its assembly procedure is simplified with respect to known solutions.

[0011] Making reference to Figures 1 and 3, it can be observed that there are foreseen two chamfers K for making easier the welding of the two ends of elementary sections.

[0012] It is clear from Figure 3 that the two projections 4, 5, as a first aspect, supply a great stiffness to the upright, while as a second aspect, they allow to make hollow spaces for limit end 7, 8 of the covering panels 9. Making the head welding K it is avoided the drawback of the preceding constructions that were required to have a support edge between the two sections in the contact ends, while this new solution allows to spare a fair material quantity (ab. 5-10%) and further a bending machining, therefore it is obtained, when working a great material quantity, a big money spare both for the manufacturer and for the user. Further the weight of the uprights having a length of 2-3 metres is highly lower than the ones of traditional solutions.

Claims

1. A bearing cold-drawn or extruded steel section element, used for forming modular structures, such as scaffoldings and the like, **characterized in that**

it has a profile on the whole in squared or rectangular form, and having near the external edges two projections obtained by bending and forming with end surfaces of the edge two housings for the insertion and for the bearing of structure connecting linings, and having on the two end faces at least a plurality of central through holes foreseen for the insertion and the support of load support elements or brackets, and further **characterized in that** it is manufactured by head-welding of two head-bended pieces. 5 10

2. Element according to claim 1, **characterized in that** the slot width is lower than the opening of the open side. 15
3. Element according to any one of preceding claims, **characterized by** the combination of two identical or similar elements, welded specularly in conjunction with the open side by head welding. 20
4. Element according to any one of preceding claims, **characterized in that** it has an identical profile on the opposed sides showing two projections or ribs that form between them the space for insertion slots of further construction elements. 25
5. Cold-rolled element **characterized in that** the fulfilment of the welding ends is made creating a 30-45° chamfer and the welding is made in continuous process, avoiding the need of any internal bearing support. 30
6. Cold-rolled bearing element according to preceding claims and substantially as described and shown in the annexed drawing, for the above mentioned aims and for scaffoldings including said element. 35

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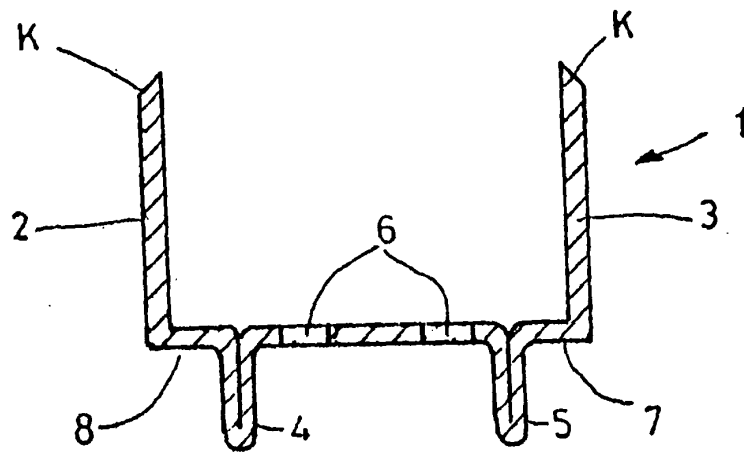


FIG. 1

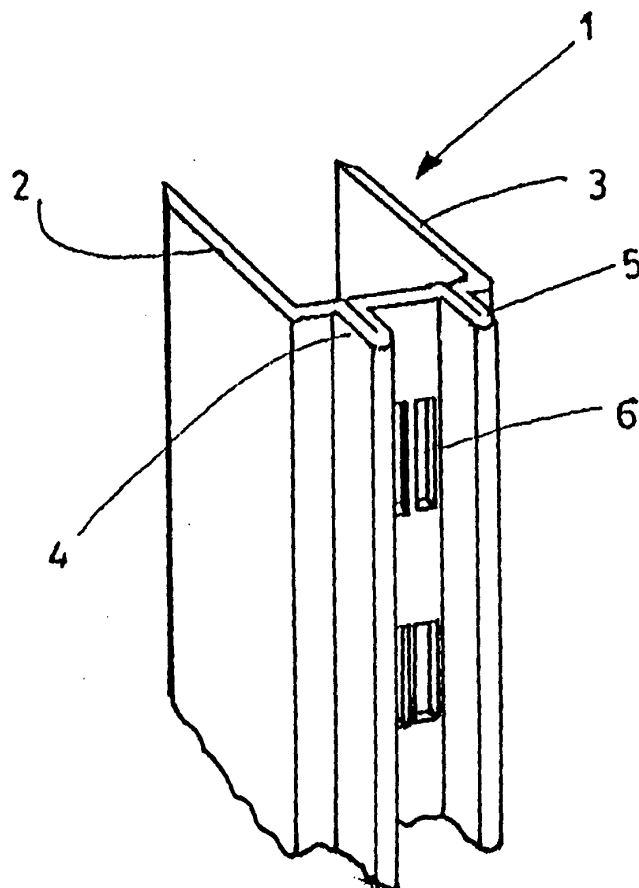


FIG. 2

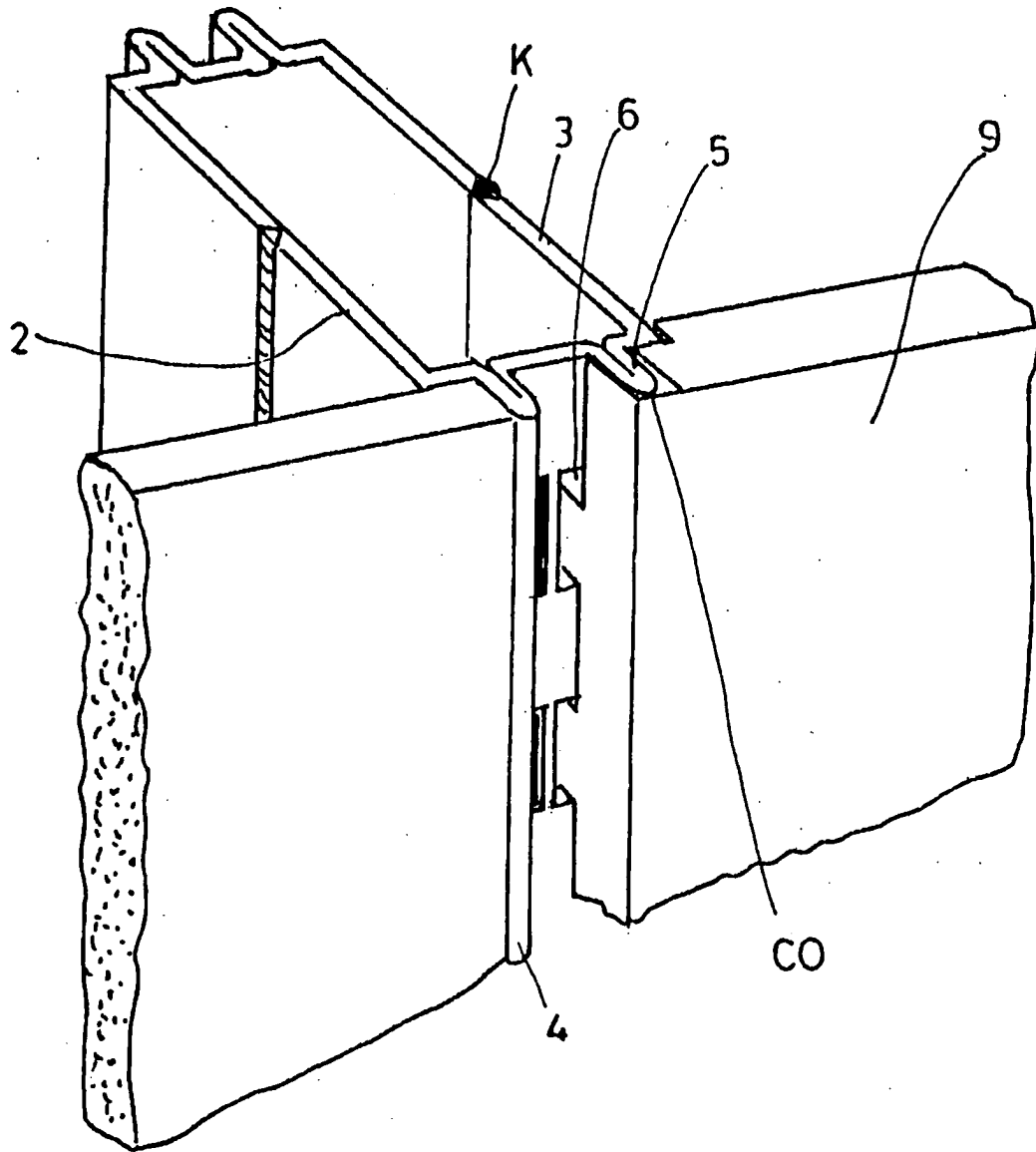


FIG. 3