



(11) **EP 1 917 887 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
07.05.2008 Bulletin 2008/19

(51) Int Cl.:
A47F 5/10 (2006.01)

(21) Application number: **07425670.2**

(22) Date of filing: **25.10.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

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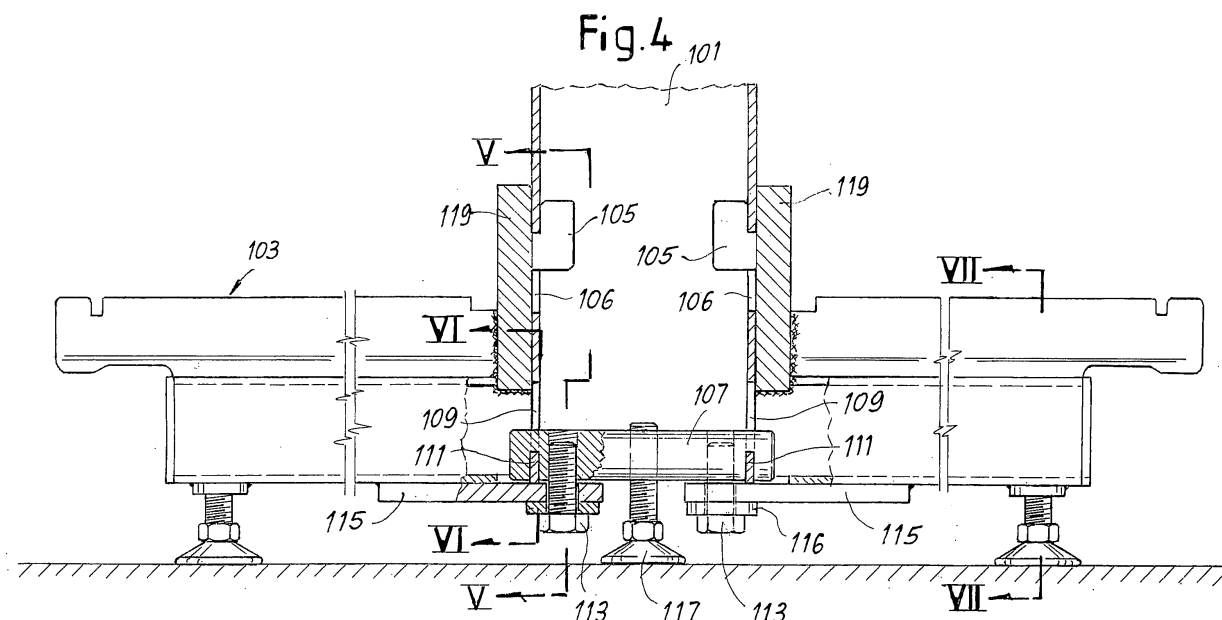
(30) Priority: **31.10.2006 IT FI20060268**

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(54) **A shelving unit of the type utilized in shops, supermarkets and the like**

(57) The shelving unit comprises vertical supporting uprights (101) rigidly connected to respective pairs of opposed bases (103). In particular, to stiffen and reinforce the connection between the uprights and the respective

bases, the shelving unit comprises reinforcing elements (107) each applied at the lower end of a respective upright (101), and fixing means (113) to secure this reinforcing element (107) to the lower end of the upright (101) and to a lower projection (115) of each base (103).



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Description

[0001] The present invention relates to a shelving unit of the type utilized in shops, supermarkets and the like to display goods on sale.

[0002] Shelving units of this type, described for example in the European patent EP 0497741, usually comprise vertical supporting uprights 3 (figure 1), each connected rigidly to a base, for shelving units with only one side, or to a pair of opposed bases 1, for shelving units with two sides, with shelves 5, 5A to hold goods applied to the uprights 3. In general, the uprights and the bases have a box-like structure (see figures 2 and 3) made of steel sheet and are connected to each other by means of end tabs 15, 17 and 19 of the bases, these tabs presenting respective notches 15A, 17A and 19A on the upper side suitable to receive the thickness of the sheet of the upright. In correspondence of these tabs of the bases, the uprights present openings 3A for bayonet insertion of these tabs.

[0003] A shelving unit of this type is sufficient to support moderate loads, but is not suitable for heavy loads, for example in the order of a few quintals for each upright.

[0004] The object of the present invention is to provide a shelving unit with greater strength and rigidity than those of known shelving units.

[0005] According to the invention, the shelving unit comprises a reinforcing element applied to the lower end of each upright and fixing means to secure this reinforcing element to this end of the upright and to a lower projection of each base.

[0006] Preferably, this reinforcing element is horizontally elongated in shape (with the shelving unit erected) and passes through the respective upright by means of openings thereof. Moreover, in proximity of the ends, the reinforcing element presents partial transverse slots, suitable to be placed on the lower edge of these openings of the upright, and threaded holes for clamping screws for securing to projections of the respective bases, these screws being oriented so that, when they are tightened, these partial slots are clamped with the bottom thereof against the lower edge of the opening of the upright.

[0007] This reinforcing element can be cylindrical - for example with a circular cross section - or prismatic in shape, and an adjustable supporting foot can be secured centrally to the reinforcing element

[0008] In an embodiment of the invention, the connection between upright and bases, which have a relatively thin sheet metal box-like structure, is further stiffened and reinforced by providing each base with a vertical reinforcing element integral therewith and with connecting tabs for connection to the upright. Advisably, this reinforcing element is a length of drawn steel tube with a solid rectangular section, of a thickness substantially greater than that of the sheet metal forming the base itself, and to which connecting tabs for connection to the upright are welded. This vertical reinforcing element can also be at least partially covered by a steel sheet sleeve

cut and bent to form these connecting tabs, the sleeve being secured to the vertical reinforcing element and both being secured to the respective base, for example by welding.

[0009] The finding will be better understood by following the description and accompanying drawing, which shows a non-limiting example of this finding. In the drawing:

figure 1 shows a partly sectional side view of a shelving unit of known type;
figure 2 shows the detail II of figure 1, enlarged;
figure 3 shows a view according to III-III of figure 2;
figures 4 and 5 show analogous views to those in figures 2 and 3 respectively, for a shelving unit according to the invention;
figures 6 and 7 show views according to VI-VI and VII-VII of figure 4;
figure 8 shows a view analogous to the one in figure 4 for a constructional variant of a shelving unit according to the invention; and
figure 9 shows a view according to IX-IX of figure 8.

[0010] With reference to figures 4 and 5, the shelving unit comprises vertical supporting uprights 101, each connected rigidly to a pair of opposed bases 103. The uprights and the bases have a box-like structure and at one end the bases present tabs 105 suitable to be inserted by means of bayonet coupling on an edge of respective openings 106 of the upright 101.

[0011] According to the invention, the shelving unit comprises reinforcing elements 107 each applied to the lower end of each upright 101, the reinforcing elements being cylindrical and horizontally elongated in shape (with the shelving unit erected) and passing transversely through the respective upright 101 by means of lower openings 109 thereof.

[0012] In an embodiment of the invention, in proximity of the ends, the reinforcing element 107 presents partial transverse slots 111 suitable to be placed on the lower edge of these lower openings 109 of the upright 101. Moreover, the reinforcing element 107 presents threaded holes for clamping screws 113 for securing to projections 115 of the bases 103 with interposed washers 116, the screws 113 being oriented parallel to the slots 111 so that, when they are tightened, the slots are clamped with the bottom thereof abutting against the lower edge of the opening 109 of the upright. Moreover, the reinforcing element 107 presents a further central threaded hole, to which an adjustable supporting foot 117 is secured.

[0013] With this arrangement, the connection between each upright 101 and the respective bases 103 is particularly rigid and strong, suitable for shelving units intended to support goods of considerable weight.

[0014] Moreover, in the example shown in figures 4 and 5, the bases 103 each have a respective vertical reinforcing element 119, which is welded to the base 103 on one side and to the opposite side of which connecting

tabs 105 for connection to the upright 101 are welded.

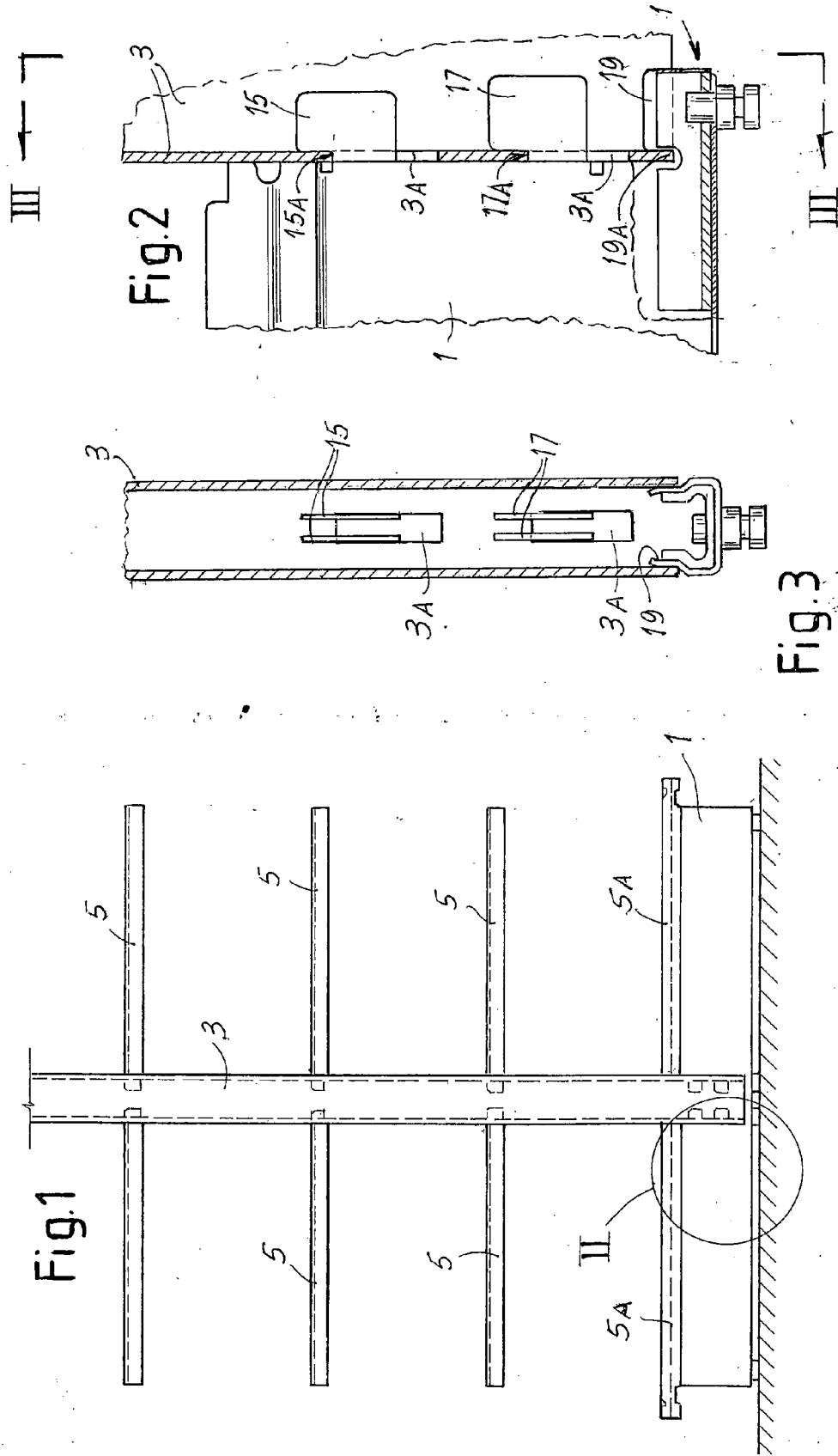
[0015] In a further constructional form, the vertical reinforcing element 219 (figures 8 and 9) is formed of a length of drawn tube 219A with a solid rectangular section, and the length is partially covered with a bent sheet metal sleeve 219B. This sleeve 219B forms connecting tabs 205 for connection to the upright 101. The vertical element 219A is welded to the sleeve 219B along the lower edges thereof and at holes 219C of this sleeve. Moreover, the sleeve 219B and the part of the vertical element 219A projecting from the bottom thereof are welded to the end of the base 103 facing the respective upright 101 also at holes 103A thereof.

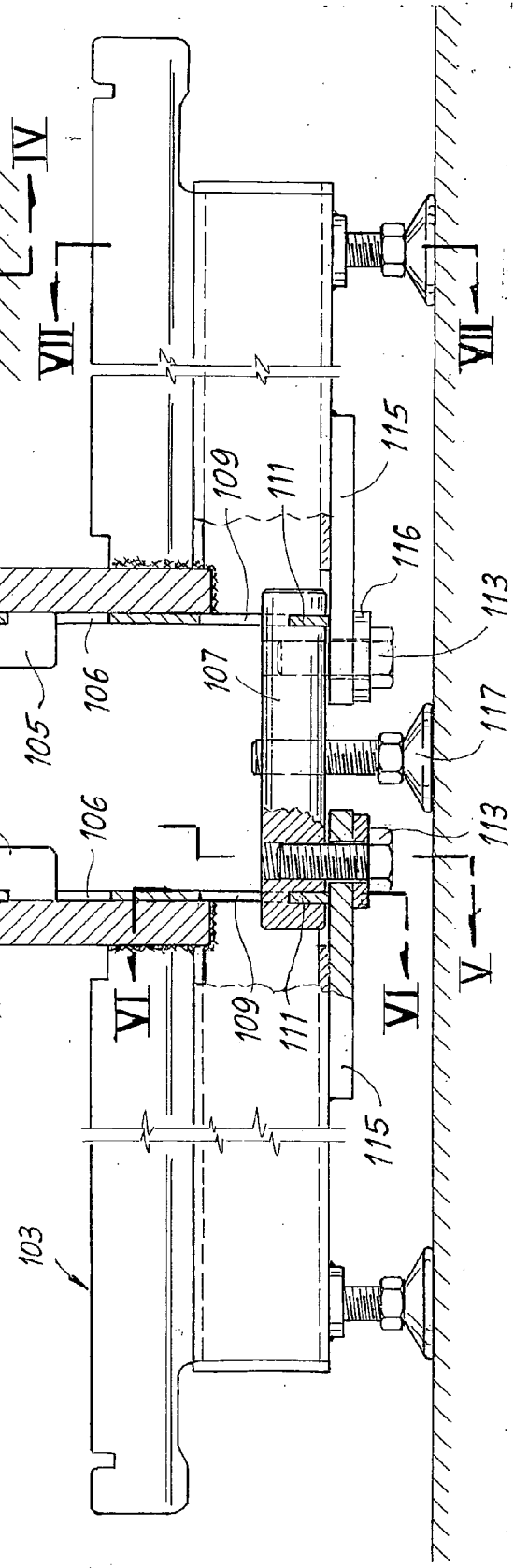
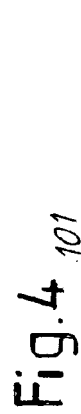
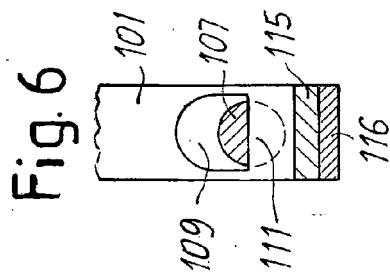
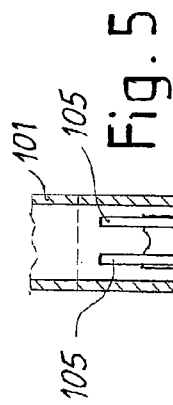
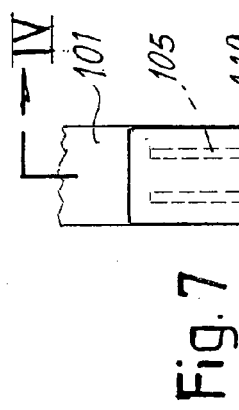
[0016] With this arrangement, the connection of each base with the respective upright is stiffened further with respect to the configuration in figure 2, without occupying the space intended to hold goods.

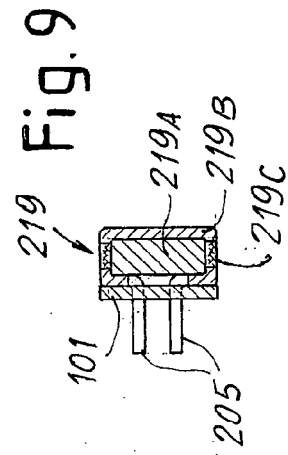
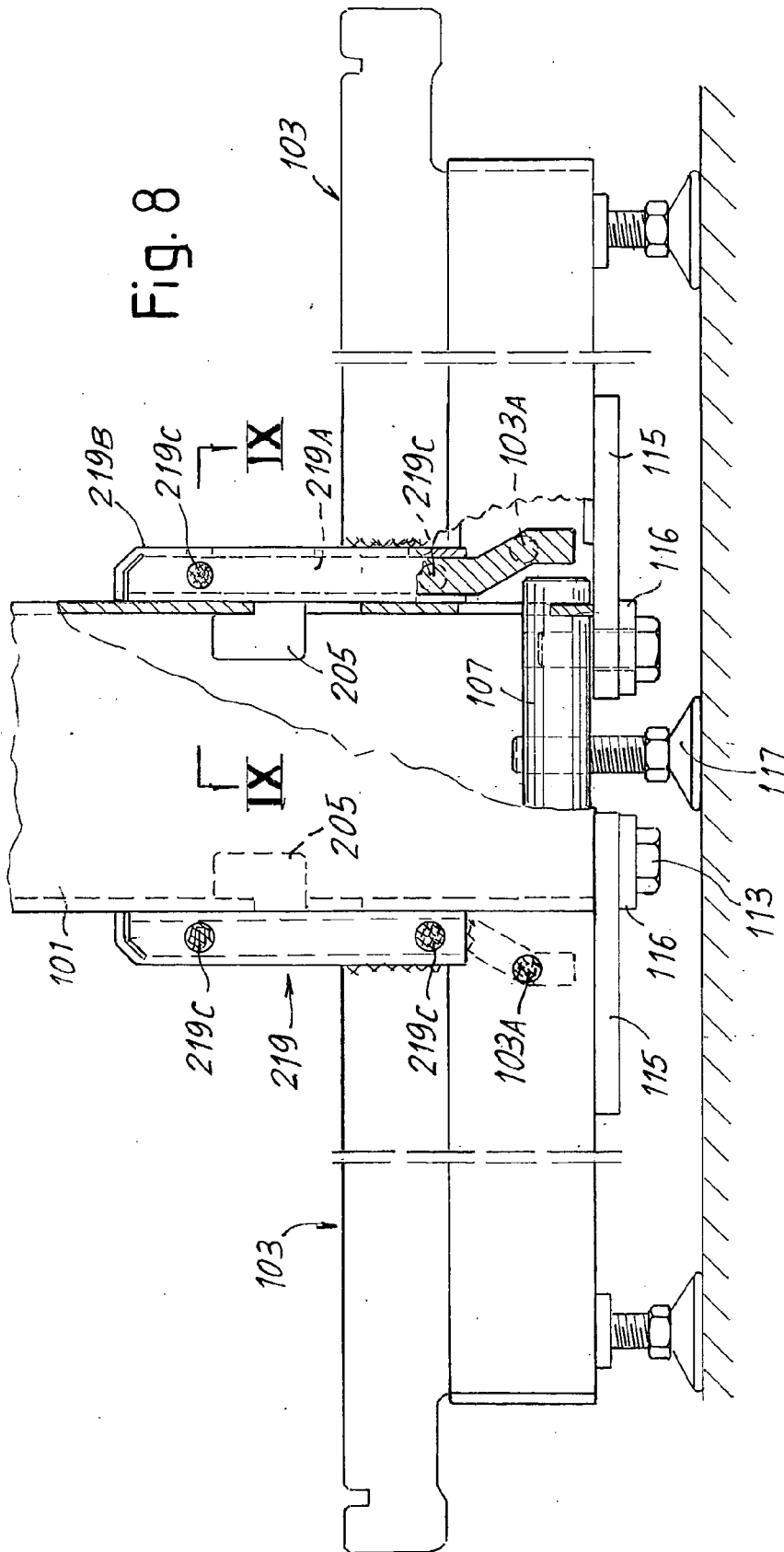
[0017] It is understood that the drawing only shows an example provided by way of a practical arrangement of the finding, and that this finding can vary in forms and arrangements without however departing from the scope of the concept underlying this finding. Any reference numerals in the appended claims are provided to facilitate reading thereof with reference to the description, and do not limit the scope of protection represented by the claims.

Claims

1. A shelving unit of the type utilized in shops, supermarkets and the like to display goods on sale, comprising vertical supporting uprights (101) each connected rigidly to a base (103) or to a pair of opposed bases (103), **characterized in that** it comprises a reinforcing element (107) applied to the lower end of each upright (101), and fixing means (113) for securing said reinforcing element (107) to the lower end of each upright (101) and to a lower projection (115) of each base.
2. Shelving unit as claimed in claim 1, **characterized in that** the reinforcing element (107) is horizontally elongated in shape (with the shelving unit erected) and passes through the respective upright (101) by means of openings (109) thereof.
3. Shelving unit as claimed in claim 1 or 2, **characterized in that** in proximity of the ends, the reinforcing element (107) presents partial transverse slots (111), suitable to be placed on the lower edge (109) of said openings of the upright (101), and threaded holes for clamping screws (113) for securing to projections (115) of the respective bases, said screws (113) being oriented so that, when they are tightened, said partial slots are clamped with the bottom thereof against the lower edge of the opening (109) of the upright.
4. Shelving unit as claimed in claim 1, 2 or 3, **characterized in that** said reinforcing element (107) is cylindrical in shape.
5. Shelving unit as claimed in claim 1, 2 or 3, **characterized in that** said reinforcing element is prismatic in shape.
6. Shelving unit as claimed in one or more of the preceding claims, **characterized in that** an adjustable supporting foot (117) is secured centrally to the reinforcing element (107).
7. Shelving unit as claimed in one or more of the preceding claims, **characterized in that** at the end abutting with the upright (101), each base (103) presents a vertical reinforcing element (119; 219) carrying connecting tabs (105; 205) for connection to the upright, said element comprising a length of drawn tube (119; 219A) with a solid rectangular section.
8. Shelving unit as claimed in claim 7, **characterized in that** said length of drawn tube (219A) is covered by a sheet metal sleeve (219B) integral with connecting tabs (205) for connection to the upright, length (219A) and sleeve (219B) being welded to each other and to the base (103).









European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 07 42 5670

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 1 February 2008	Examiner Alff, Robert
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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01-02-2008

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