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Description

[0001] The present invention relates to a luggage case and more particularly to a soft luggage case according to the preamble of claim 1.

[0002] As used in the present disclosure and the accompanying claims, the term "soft luggage case" is intended to designate a luggage case having a frame covered with fabric sheets (e.g. made of polyester, nylon, etc.) or fabric materials combined with foam materials. These types of luggage cases differ from hard luggage cases (formed by mutually articulated plastic shells) in that, with the same available volume, they have a smaller weight.

[0003] Nevertheless, luggage cases must be formed with shock-resistant frames, namely in so-called "critical" areas (i.e. sides and shoulders), while maintaining light weight and handiness.

[0004] For instance, US 6 131 713 discloses a soft luggage case having a frame with two plastic plates, a bottom plate and a top plate, each having stiffening corner reinforcements. The two plates are joined together by four metal posts connected at the stiffening corner reinforcements. The frame is also equipped with a pull-out handle and two wheels, the latter being located at the lower corner reinforcements.

[0005] While this arrangement provides a luggage case having a frame with a plurality of reinforcement portions, generally increasing the resistance of the luggage case, it has a very complex assembly due to the huge amount of parts to be joined, which involves high manufacturing costs.

[0006] Therefore, the object of the present invention is to provide luggage case that has such structural and functional features as to fulfill the above needs, while obviating the drawbacks of the prior art.

[0007] This object is fulfilled by a luggage as defined in claim 1.

[0008] Further characteristics and advantages of the luggage case of the present invention will be apparent from the following description of a few preferred exemplary embodiments thereof, which are given by way of illustration and without limitation with reference to the accompanying figures, in which:

- Figure 1 is a perspective view of the luggage case and the frame associated therewith according to the present invention,
- Figure 2 is a top perspective view of the baseboards of the luggage case of Figure 1,
- Figure 3 is a bottom perspective view of the baseboards of Figure 1,
- Figures 4 and 5 are top perspective views of the stiffening shoulders and the posts of the luggage case of Figure 1,
- Figure 6 is a lateral perspective view of the first and second left stiffening shoulders,
- Figure 7 is a lateral perspective view of the first and

second right stiffening shoulders,

- Figure 8 is a detail perspective view of the first left stiffening shoulder,
- Figure 9 is a perspective view of the luggage case of Figure 1, with no pull-out handle.

[0009] Referring to the accompanying figures, numeral 1 generally designates a luggage case having first 1A and second 2A frames, which are adapted to be jointed together and are designed to be covered with a plurality of fabric sheets using conventional techniques that will not be described herein.

[0010] The frames 1 A, 2A are designed to be connected to each other using zippers or hinges.

[0011] As shown in the example of Figure 1, the first frame 1A has a first baseboard 10 connected to two lateral upper stiffening shoulders 20, 30 via first connection means 41, 42, 43, 44.

[0012] The first connection means 41, 42, 43, 44 include a plurality of posts. Particularly, first 41, second 42, third 43 and fourth 44 posts are provided, which extend in a vertical direction Y-Y.

[0013] Likewise, the second frame 2A has a second baseboard 110 connected to two lateral upper stiffening shoulders 120, 130 via second connection means 45, 46, 47, 48.

[0014] The second connection means 45, 46, 47, 48 include a plurality of posts. Particularly, fifth 45, sixth 46, seventh 47 and eighth 48 posts are provided, which extend in a vertical direction Y-Y.

[0015] Referring to Figures 1 and 2, and as seen by a viewer, a first left upper stiffening shoulder 20 and a first right upper stiffening shoulder 30 are defined in the first frame 1A.

[0016] The stiffening shoulders 20, 30 are connected to each other by at least one upper cross member. For example, two or more upper cross members 5, 6 may be provided.

[0017] Likewise, a second left upper stiffening shoulder 120 and a second right upper stiffening shoulder 130 are defined in the second frame 2A.

[0018] The stiffening shoulders 120, 130 are connected to each other by at least one upper cross member. For example, two or more upper cross members 7, 8 may be provided.

[0019] Referring to the examples as shown in Figures 1 and 2, the first baseboard 10 substantially extends on a horizontal plane P1 defined by a longitudinal direction X-X and an orthogonal direction Z-Z. The baseboard 10 is bounded by a front side 10a, a rear side 10b and two opposed lateral sides 10c, 10d. A top surface 10u and a bottom surface 10z are also defined in the first baseboard 10.

[0020] The second baseboard 110 also substantially extends on a horizontal plane P1 defined by a longitudinal direction X-X and an orthogonal direction Z-Z. The second baseboard 110 is bounded by a front side 110a, a rear side 110b and two opposed lateral sides 110c, 110d.

A top surface 110u and a bottom surface 110z are also defined in the second baseboard 110.

[0021] Advantageously, the first 10 and second 110 baseboards are formed of one piece.

[0022] Four vertices are defined in the first baseboard 10, namely a left front vertex 11v, a right front vertex 12v, a right rear vertex 13v and a left rear vertex 14v, as seen by a viewer.

[0023] Likewise, four vertices are defined in the second baseboard 110, namely a left front vertex 111v, a right front vertex 112v, a right rear vertex 113v and a left rear vertex 114v, as seen by a viewer.

[0024] As shown in the example of Figure 1, the second frame 2A may be equipped with a rear pull-out handle 50 connected to the top surface 110u of the second baseboard 110 via appropriate slide guides 52 and is used to conveniently drag the luggage case without lifting it from the ground.

[0025] For this purpose, the second baseplate 110 has lower housings 19, which are designed to receive the lower ends of the guides 52 of the pull-out handle 50.

[0026] In one embodiment, the lower housings 19 protrude from the second baseboard 110 substantially at the rear side 110b.

[0027] The housings 19 extend along axes Y_{19} substantially parallel to the vertical direction Y-Y.

[0028] Advantageously, the housings 19 are directly formed in the second baseboard 110.

[0029] One of the upper cross members 7, 8 of the second frame 2A may have upper through housings 8a, 8b for receiving the upper ends of the guides 52 of the pull-out handle 50.

[0030] Referring to the first frame 1A, for connection to be established between the first baseboard 10 and the two first upper stiffening shoulders 20, 30, the frame 1 is advantageously designed such that:

- the first post 41 connects the left front vertex 11v of the first baseboard 10 to the first left upper shoulder 20,
- the second post 42 connects the right front vertex 12v of the first baseboard 10 to the first right upper shoulder 30,
- the third post 43 connects the right rear vertex 13v of the first baseboard 10 to the first right upper shoulder 30, and
- the fourth post 44 connects the left rear vertex 14v of the first baseboard 10 to the first left upper shoulder 20.

[0031] Thus, the posts 41, 42, 43, 44 and the first stiffening shoulders 20, 30 are directly connected together.

[0032] Likewise, referring to the second frame 2A, for connection to be established between the second baseboard 110 and the two second upper stiffening shoulders 120, 130, the frame 1 is advantageously designed such that:

- the fifth post 45 connects the left front vertex 111v of the second baseboard 110 to the second left upper shoulder 120,
- the sixth post 46 connects the right front vertex 112v of the second baseboard 110 to the second right upper shoulder 130,
- the seventh post 47 connects the right rear vertex 113v of the second baseboard 110 to the second right upper shoulder 130, and
- the eighth post 48 connects the left rear vertex 114v of the second baseboard 110 to the second left upper shoulder 120.

[0033] Thus, the posts 45, 46, 47, 48 and the first stiffening shoulders 120, 130 are directly connected together.

[0034] It shall be noted that the posts 41, 42, 43, 44, 45, 46, 47, 48 have a preferably cylindrical shape. In one embodiment, the posts 41, 42, 43, 44, 45, 46, 47, 48 have a tubular shape.

[0035] The posts 41, 42, 43, 44, 45, 46, 47, 48 have a diameter ranging from 1 mm to 10 mm. Preferably, the posts 41, 42, 43, 44, 45, 46, 47, 48 have a diameter of 5 mm.

[0036] As shown in the example of Figure 2, the first baseboard 10 comprises first 11, second 12, third 13 and fourth lower seats 14, which are each shaped to at least partially accommodate the lower ends of the posts 41, 42, 43, 44.

[0037] Referring to the first frame 1A, the seats 11, 12, 13, 14 transversely protrude from the first baseboard 10 substantially at the vertices 11v, 12v, 13v, 14v of the first baseboard 10. Particularly, the first seat 11 is located substantially at the left front vertex 11v, the second seat 12 is located substantially at the right front vertex 12v, the third seat 13 is located substantially at the right rear vertex 13v and the fourth seat 14 is located substantially at the left rear vertex 14v.

[0038] Referring to the second frame 2A, the seats 111, 112, 113, 114 transversely protrude from the second baseboard 110 substantially at the vertices 111v, 112v, 113v, 114v of the second baseboard 110. Particularly, the first seat 111 is located substantially at the left front vertex 111v, the second seat 112 is located substantially at the right front vertex 112v, the third seat 113 is located substantially at the right rear vertex 113v and the fourth seat 114 is located substantially at the left rear vertex 114v.

[0039] It shall be further noted that the lower seats 11, 12, 13, 14, 111, 112, 113, 114 mainly extend along axes Y_{11} , Y_{12} , Y_{13} , Y_{14} , Y_{111} , Y_{112} , Y_{113} , Y_{114} substantially parallel to the vertical direction Y-Y.

[0040] Advantageously, the lower seats 11, 12, 13, 14, 111, 112, 113, 114 are directly formed in the first 10 and second 110 baseboards respectively.

[0041] In one embodiment, the front side 10a and the rear side 10b of the first baseboard 10 are substantially rounded and form a front extension 17 and a rear extension 18.

sion 18, each extending in the vertical direction Y-Y.

[0042] Likewise, the front side 110a and the rear side 110b of the second baseboard 110 are substantially rounded and form a front extension 117 and a rear extension 118, each extending in the vertical direction Y-Y.

[0043] It shall be noted that, when the luggage case is in the closed configuration, the rear side 10b of the first baseboard 10 and the front side 110a of the second baseboard 110 are in facing relationship.

[0044] As a whole, the first 10 and second 110 baseboards have a substantially U-shaped cross section.

[0045] In order to reduce the overall weight of the frame 1, the first 10 and second 110 baseboards advantageously have a plurality of through openings 15 extending along axes Y_{15} substantially parallel to said vertical direction Y-Y.

[0046] In one embodiment, the through openings 15 have a polygonal shape and are arranged substantially all over the surface of the baseboards 10, 110.

[0047] Preferably, the through openings 15 are in side-by-side relationship.

[0048] In one embodiment, the through openings 15 may be also provided at the front extension 17 and the rear extension 18.

[0049] Advantageously, the through openings 15 have a hexagonal shape and together form a so-called "honeycomb" configuration.

[0050] In one additional embodiment, the trough openings 15 can be each inscribed in a circle whose diameter ranges from 10 mm to 40 mm. Preferably, the trough openings 15 can be each inscribed in a circle having a diameter of 25 mm.

[0051] As shown in the example of Figure 4, each through opening 15 comprises a rib 16 that radially protrudes from the opening. Particularly, the rib 16 is located on the bottom surface 10z, 110z of the baseboards 10, 110.

[0052] The baseboards 10, 110 have a thickness ranging from 1 mm to 3 mm. Preferably, the baseboards 10, 110 have a thickness of 1,5 mm.

[0053] Referring to the example of Figure 2, the baseboards 10, 110 may be equipped with a plurality of wheels (not shown), located at the bottom surfaces 10z, 110z of the baseboards 10, 110 respectively. Particularly, the first baseboard 10 has a plurality of wheel seats 4a designed for wheel support. Such wheel seats 4a extend along axes substantially parallel to the vertical direction Y-Y.

[0054] In order to form a luggage case designed for use by a user, the frames 1A, 1B are at least partially covered with sheet coverings (made of fabric materials or combined fabric and foam materials), with a plurality of wheels being connected thereto for carrying the luggage case.

[0055] Advantageously, the wheel seats 4a are directly formed in the baseboards 10, 110.

[0056] Referring to the example as shown in Figure 6, the first left upper stiffening shoulder 20 has a front seat 21 and a rear seat 22. The seats 21 and 22 are located

at the ends of the first left upper stiffening shoulder 20. Likewise, the first right upper stiffening shoulder 30 has a front seat 31 and a rear seat 32. The seats 31, 32 are also located at the ends of the first right upper stiffening shoulder 30.

[0057] Still referring to Figure 6, the second left upper stiffening shoulder 120 has a front seat 121 and a rear seat 122. The seats 121 and 122 are located at the ends of the second left upper stiffening shoulder 120. The second right upper stiffening shoulder 130 has a front seat 131 and a rear seat 132. The seats 131, 132 are also located at the ends of the first right upper stiffening shoulder 130.

[0058] The seats 21, 22, 31, 32, 121, 122, 131, 132 mainly extend along axes Y_{21} , Y_{31} , Y_{22} , Y_{32} , Y_{121} , Y_{131} , Y_{122} , Y_{132} substantially parallel to the vertical direction Y-Y. Such seats 21, 22, 31, 32, 121, 122, 131, 132 are also shaped for accommodating the lower ends of the posts 41, 42, 43, 44, 46, 47, 48.

[0059] Particularly, the left front seat 21, right front seat 31, left rear seat 22 and right rear seat 32 of the first stiffening shoulders 20, 30 are shaped to at least partially accommodate the upper ends of the first post 41, second post 42, third post 43 and fourth post 44 respectively.

[0060] Likewise, the left front seat 121, right front seat 131, left rear seat 122 and right rear seat 132 of the second stiffening shoulders 120, 130 are shaped to at least partially accommodate the upper ends of the fifth post 45, sixth post 46, seventh post 47 and eighth post 48 respectively.

[0061] The stiffening shoulder 20, 30, 120, 130 have a substantially inverted U shape. Particularly, each stiffening shoulder 20, 30, 120, 130 has two parallel front end 20a, 30a, 120a, 130a and rear end 20b, 30b, 120b, 130b portions extending in the vertical direction Y-Y and a transverse connecting portion 20c, 30c, 120c, 130c extending in the longitudinal direction for connecting the two parallel portions 20a, 30a, 120a, 130a and 20b, 30b, 120b, 130b.

[0062] As shown in the examples of Figures 6 and 7, each upper stiffening shoulder 20, 30, 120, 130 is integrally formed.

[0063] The stiffening shoulders 20, 30, 120, 130 have a thickness (as determined in the direction Y-Y) ranging from 1 mm to 3 mm. Preferably, the stiffening shoulders 20, 30, 120, 130 have a thickness of 1.5.

[0064] Advantageously, each first stiffening shoulder 20, 30 also has at least one cross member receiving seat 25a, 25b, 35a, 35b which is shaped to at least partially accommodate the end of the upper cross member 5, 6. The cross member receiving seat 25a, 25b, 35a, 35b mainly extends transverse to the first shoulders 20, 30 along axes X_{25} , X_{35} substantially parallel to the longitudinal direction X-X.

[0065] Likewise, each second stiffening shoulder 120, 130 also has at least one cross member receiving seat 125a, 125b, 135a, 135b which is shaped to at least partially accommodate the end of the upper cross member

7, 8. The cross member receiving seat 125, 135 mainly extends transverse to the second shoulders 120, 130 along axes X_{125} , X_{135} substantially parallel to the longitudinal direction X-X.

[0066] The seats 21, 22, 31, 32 extend perpendicular to the cross member receiving seats 25a, 25b, 35a, 35b. Particularly, the axes Y_{21} , Y_{22} , Y_{31} , Y_{32} and the axes X_{25} , X_{35} along which the seats 21, 22, 31, 32 and the cross member receiving seats 25, 35 extend are perpendicular to each other and lie on planes transverse to the horizontal plane P1, such transverse planes being defined by the longitudinal X-X and vertical Y-Y directions.

[0067] Likewise, the seats 121, 122, 131, 132 extend perpendicular to the cross member receiving seats 125a, 125b, 135a, 135b. Particularly, the axes Y_{121} , Y_{122} , Y_{131} , Y_{132} and the axes X_{125} , X_{135} along which the seats 121, 122, 131, 132 and the cross member receiving seats 125, 135 lie on planes transverse to the horizontal plane P1, and oriented in the longitudinal direction X-X.

[0068] Referring to the example as shown in Figure 9, the first left stiffening shoulder 20 has:

- a first cross member receiving seat 25a interposed between the front end portion 20a and the transverse connecting portion 20c,
- a second cross member receiving seat 25b interposed between the rear end portion 20b and the transverse connecting portion 20c.

[0069] Referring to the example as shown in Figure 7, the first right stiffening shoulder 30 has:

- a first cross member receiving seat 35a interposed between the front end portion 30a and the transverse connecting portion 30c,
- a second cross member receiving seat 35b interposed between the rear end portion 30b and the transverse connecting portion 30c.

[0070] Referring to the example as shown in Figure 6, the second left stiffening shoulder 120 has:

- a first cross member receiving seat 125a interposed between the front end portion 120a and the transverse connecting portion 120c,
- a second cross member receiving seat 125b interposed between the front end portion 120b and the transverse connecting portion 120c.

[0071] Referring to the example as shown in Figure 7, the second right stiffening shoulder 130 has:

- a first cross member receiving seat 135a interposed between the front end portion 130a and the transverse connecting portion 130c,
- a second cross member receiving seat 135b interposed between the rear end portion 130b and the transverse connecting portion 130c.

[0072] In a preferred embodiment, the first stiffening shoulders 20, 30 are connected together by two upper cross members 5, 6. Particularly:

- the first cross member 5 is rigidly connected between the first cross member receiving seat 25a of the first left shoulder 20 and the first cross member receiving seat 35a of the first right shoulder 30,
- the second cross member 6 is rigidly connected between the second cross member receiving seat 25b of the first left shoulder 20 and the second cross member receiving seat 35b of the first right shoulder 30.

[0073] Referring to the second frame 2A, the second stiffening shoulders 120, 130 are connected together by two upper cross members 7, 8. Particularly:

- the first cross member 7 is rigidly connected between the first cross member receiving seat 125a of the second left shoulder 120 and the first cross member receiving seat 135a of the second right shoulder 130,
- the second cross member 8 is rigidly connected between the second cross member receiving seat 125b of the second left shoulder 120 and the second cross member receiving seat 135b of the right shoulder 130.

[0074] Preferably, to receive the upper ends of the guides 52 of the pull-out handle 50 the upper through housings 8a, 8b are provided in the second cross member 8 of the second frame 2A.

[0075] Referring to the example as shown in Figure 8, the cross member receiving seats 25a, 25b, 35a, 35b, 125a, 125b, 135a, 135b advantageously comprise snap fit means which are adapted to removably engage with corresponding engaging means (not shown) at the ends of the cross members 5, 6, 7, 8. This will allow connection of the shoulders 20, 30, 120, 130 to the cross members 5, 6, 7, 8 without using screw or rivet fasteners.

[0076] According to one embodiment, the front end portions 20a, 30a of the first left 20 and right 30 upper stiffening shoulders are curved. Particularly, the front end portions 20a, 30a have radiuses of curvature R_1 ranging from 30 mm to 75 mm. Preferably, the radius of curvature R_1 has a length of 60 mm.

[0077] Likewise, the rear end portions 120b, 130b of the second left 120 and right 130 upper stiffening shoulders are curved. Particularly, the front end portions 120b, 130b have radiuses of curvature R_2 ranging from 30 mm to 75 mm. Preferably, the radius of curvature R_2 has a length of 45 mm.

[0078] Concerning the materials for making the frames 1A, 2A of the present invention, it shall be understood that the parts of the frames 1A, 2A, i.e. the baseboards 10, 110, the stiffening shoulders 20, 30, 120, 130, the cross members 5, 6, 7, 8 and the posts 41, 42, 43, 44, 45, 46, 47, 48 may be made from the same material. For

example, the frames 1A, 2A may be made from a polymeric material by thermoforming or injection molding.

[0079] In a preferred embodiment, the frames 1A, 2A are made from polycarbonate by injection molding.

[0080] Further materials for making the frames 1A, 2A may be selected, for example, from the group comprising PA6, PA66, PE, PP, ABS, PC, PC/ABS. In one embodiment, if the above materials are chemically compatible, they may be melted together to provide hybrid materials (such as polycarbonate and ABS).

[0081] In one embodiment, the posts 41, 42, 43, 44, 45, 46, 47, 48 may be made of fiberglass, carbon fiber, wood or metal. In an additional embodiment, the posts 41, 42, 43, 44, 45, 46, 47, 48 may be made from polycarbonate by extrusion.

[0082] Referring to the example as shown in Figure 9, the first frame 1A may have:

- a height D1 ranging from 500 mm to 800 mm,
- a depth D2a ranging from 50 mm to 150 mm,
- a width D3 ranging from 350 mm to 550 mm.

[0083] Still referring to the example as shown in Figure 9, the second frame 2A may have:

- a height D1 ranging from 500 mm to 800 mm,
- a depth D2b ranging from 80 mm to 220 mm,
- a width D3 ranging from 350 mm to 550 mm.

[0084] In one embodiment, the first frame 1A has a depth D2a smaller than the depth D2b of the second frame 2a.

[0085] The posts 41, 42, 43, 44, 45, 46, 47, 48 preferably have a length D4 ranging from 330 mm to 680 mm.

[0086] In one embodiment, the first 41, second, seventh 47 and eighth 48 posts have a smaller length than the third 43, fourth 44, fifth 45 and sixth 47 posts.

[0087] As clearly shown in the above description, the luggage case of the present invention fulfills the needs and obviates the drawbacks of the prior art as set out in the introduction of this disclosure.

[0088] Obviously, the embodiments and examples as disclosed and illustrated herein shall be only intended by way of example, and those skilled in the art will appreciate that a number of changes and variants may be made to the luggage case of the invention as described hereinbefore, including for instance a combination of said embodiments and examples to meet specific needs, without departure from the scope of the invention, as defined in the following claims.

Claims

1. A luggage case (1) having a first frame (1A) comprising:

- a first integrally formed baseboard (10) which

substantially extends over a plane (P1) defined by a longitudinal direction (X-X) and an orthogonal direction (Z-Z),

- first left (20) and first right (30) upper stiffening shoulders (30), each being integrally formed,
- first connection means for connecting said baseboard (10) to said first left (20) and first right (30) stiffening shoulders, **characterized in that** a second frame (2A) is designed to be jointed to said first frame (1A), said second frame (2A) comprises:

- a second integrally formed baseboard (110) which substantially extends over said plane (P1),
- second left (120) and second right (130) upper stiffening shoulders (30), each being integrally formed,
- second connection means for connecting said baseboard (110) to said second left (120) and second right (130) stiffening shoulders.

2. A luggage case (1) as claimed in claim 1, wherein:

- said first connection means comprise first (41), second (42), third (43) and fourth (44) posts extending in a vertical direction (Y-Y) for connection of said first baseboard (10) to said first left (20) and first right (30) upper stiffening shoulders, and
- said second connection means comprise fifth (45), sixth (46), seventh (47) and eighth (48) posts extending in said vertical direction (Y-Y) for connection of said second baseboard (110) to said second left (120) and said second right (130) upper stiffening shoulders.

3. A luggage case (1) as claimed in claim 2, wherein said posts (41, 42, 43, 44, 45, 46, 47, 48) have a length ranging from 350 mm to 700 mm.

4. A luggage case (1) as claimed in any claim from 2 to 3, wherein said first baseboard (10) has a left front apex (11v) a right front apex (12v), a right rear apex (13v) and a left rear apex (14v) defined therein, and wherein:

- said first post (41) connects the left front apex (11v) of the first baseboard (10) to the first left shoulder (20),
- said second post (42) connects the right front apex (12v) of the first baseboard (10) to the first right shoulder (30),
- said third post (43) connects the right rear apex (13v) of the first baseboard (10) to the first right shoulder (30),
- said fourth post (44) connects the left rear apex

(14v) of the first baseboard (10) to the first left shoulder (20).

5. A luggage case (1) as claimed in any claim from 2 to 4, wherein said second baseboard (110) has a left front apex (111v), a right front apex (112v), a right rear apex (113v) and a left rear apex (114v) defined therein, and wherein:

said fifth post (45) connects the left front apex (111v) of the second baseboard (110) to the second left shoulder (120),
 said sixth post (46) connects the right front apex (112v) of the second baseboard (110) to the second right shoulder (130),
 said seventh post (47) connects the right rear apex (113v) of the second baseboard (110) to the second right shoulder (130),
 said eighth post (48) connects the left rear apex (114v) of the second baseboard (110) to the second left shoulder (120).

6. A luggage case (1) as claimed in any claim from 2 to 5, wherein said first baseboard (10) comprises first (11), second (12), third (13) and fourth (14) lower seats, said lower seats (11, 12, 13, 14) transversely projecting out of said first board (10) substantially at said apices (11v, 12v, 13v, 14v), said lower seats (11, 12, 13, 14) mainly extending along their own axes (Y_{11} , Y_{12} , Y_{13} , Y_{14}) substantially parallel to said vertical direction (Y-Y), said lower seats (11, 12, 13, 14) having such a shape that each can at least partially accommodate the lower end of said first (41), second (42), third (43) and fourth (44) posts respectively.

7. A luggage case (1) as claimed in any claim from 2 to 6, wherein said second baseboard (110) comprises first (111), second (112), third (113) and fourth (114) lower seats, said lower seats (111, 112, 113, 114) transversely projecting out of said second board (110) substantially at said apices (111v, 112v, 113v, 114v), said lower seats (111, 112, 113, 114) mainly extending along their own axes (Y_{111} , Y_{112} , Y_{113} , Y_{114}) substantially parallel to said vertical direction (Y-Y), said lower seats (111, 112, 113, 114) having such a shape that each can at least partially accommodate the lower end of said fifth (45), sixth (46), seventh (47) and eighth (48) posts respectively.

8. A luggage case (1) as claimed in any claim from 1 to 7, wherein said first (10) and second (110) baseboards (10) have a plurality of through openings (15) extending along their own axes (Y_{15}) substantially parallel to said vertical direction (Y-Y).

9. A luggage case (1) as claimed in claim 8, wherein said through openings (15) have a polygonal shape and are arranged substantially all over the surface of said first baseboard (10).

10. A luggage case (1) as claimed in claim 8 or 9, wherein said through openings (15) can be each inscribed in a circle having a diameter from 10 mm to 40 mm.

11. A luggage case (1) as claimed in any claim from 8 to 10, wherein each of said through openings (15) comprises a rib (16) that radially projects to the interior of said opening (15) and is located on the bottom surface (10z) of said first baseboard (10).

Patentansprüche

1. Koffer (1) mit einem ersten Gestell (1A), umfassend:

- eine erste, einteilig ausgebildete Sockelleiste (10), die sich im Wesentlichen über eine Ebene (P1) erstreckt, die durch eine Längsrichtung (X-X) und eine Orthogonalrichtung (Z-Z) definiert wird,
- erste linke (20) und erste rechte (30) obere Versteifungsschulter (30), die jeweils einteilig ausgebildet sind,
- erste Verbindungsmittel zur Verbindung der Sockelleiste (10) mit der ersten linken (20) und der ersten rechten (30) Versteifungsschulter, **dadurch gekennzeichnet, dass** ein zweites Gestell (2A) dazu bestimmt ist, mit dem ersten Gestell (1A) verbunden zu werden,

wobei das zweite Gestell (2A) Folgendes umfasst:

- eine zweite, einteilig ausgebildete Sockelleiste (110) die sich im Wesentlichen über die Ebene (P1) erstreckt,
- zweite linke (120) und zweite rechte (130) obere Versteifungsschulter (30), die jeweils einteilig ausgebildet sind,
- zweite Verbindungsmittel zur Verbindung der Sockelleiste (110) mit der zweiten linken (120) und der zweiten rechten (130) Versteifungsschulter.

2. Koffer (1) nach Anspruch 1, wobei:

- die ersten Verbindungsmittel erste (41), zweite (42), dritte (43) und vierte (44) Pfosten umfassen, die sich in eine vertikale Richtung (Y-Y) zur Verbindung der ersten Sockelleiste (10) mit der ersten linken (20) und der ersten rechten (30) oberen Versteifungsschulter erstrecken, und
- die zweiten Verbindungsmittel fünfte (45), sechste (46), siebte (47) und achte (48) Pfosten

- umfassen, die sich in die vertikale Richtung (Y-Y) zur Verbindung der zweiten Sockelleiste (110) mit der zweiten linken (120) und der zweiten rechten (130) oberen Versteifungsschulter erstrecken.
3. Koffer (1) nach Anspruch 2, wobei die Pfosten (41, 42, 43, 44, 45, 46, 47, 48) eine Länge im Bereich von 350 mm bis 700 mm aufweisen.
4. Koffer (1) nach einem der Ansprüche 2 bis 3, wobei die erste Sockelleiste (10) einen linken vorderen Scheitelpunkt (11v), einen rechten vorderen Scheitelpunkt (12v), einen rechten hinteren Scheitelpunkt (13v) und einen linken hinteren Scheitelpunkt (14v) aufweist, die hierin definiert sind, und wobei:
- der erste Pfosten (41) den linken vorderen Scheitelpunkt (11v) der ersten Sockelleiste (10) mit der ersten linken Schulter (20) verbindet, der zweite Pfosten (42) den rechten vorderen Scheitelpunkt (12v) der ersten Sockelleiste (10) mit der ersten rechten Schulter (30) verbindet, der dritte Pfosten (43) den rechten hinteren Scheitelpunkt (13v) der ersten Sockelleiste (10) mit der ersten rechten Schulter (30) verbindet, der vierte Pfosten (44) den linken hinteren Scheitelpunkt (14v) der ersten Sockelleiste (10) mit der ersten linken Schulter (20) verbindet.
5. Koffer (1) nach einem der Ansprüche 2 bis 4, wobei die zweite Sockelleiste (110) einen linken vorderen Scheitelpunkt (111v), einen rechten vorderen Scheitelpunkt (112v), einen rechten hinteren Scheitelpunkt (113v) und einen linken hinteren Scheitelpunkt (114v) aufweist, die hierin definiert sind, und wobei:
- der fünfte Pfosten (45) den linken vorderen Scheitelpunkt (111v) der zweiten Sockelleiste (110) mit der zweiten linken Schulter (120) verbindet, der sechste Pfosten (46) den rechten vorderen Scheitelpunkt (112v) der zweiten Sockelleiste (110) mit der zweiten rechten Schulter (130) verbindet, der siebte Pfosten (47) den rechten hinteren Scheitelpunkt (113v) der zweiten Sockelleiste (110) mit der zweiten rechten Schulter (130) verbindet, der achte Pfosten (48) den linken hinteren Scheitelpunkt (114v) der zweiten Sockelleiste (110) mit der zweiten linken Schulter (120) verbindet.
6. Koffer (1) nach einem der Ansprüche 2 bis 5, wobei die erste Sockelleiste (10) erste (11), zweite (12), dritte (13) und vierte (14) untere Sitze umfasst,
- wobei die unteren Sitze (11, 12, 13, 14) quer aus der ersten Sockelleiste (10) im Wesentlichen an den Scheitelpunkten (11v, 12v, 13v, 14v) auskragen, wobei die unteren Sitze (11, 12, 13, 14) sich hauptsächlich längs ihrer eigenen Achsen (Y_{11} , Y_{12} , Y_{13} , Y_{14}), im Wesentlichen parallel zur vertikalen Richtung (Y-Y) erstrecken,
- wobei die unteren Sitze (11, 12, 13, 14) eine derartige Form aufweisen, dass sie jeweils das untere Ende des ersten (41), zweiten (42), dritten (43) und vierten (44) Pfostens mindestens teilweise aufnehmen können.
7. Koffer (1) nach einem der Ansprüche 2 bis 6, wobei die zweite Sockelleiste (110) erste (111), zweite (112), dritte (113) und vierte (114) untere Sitze umfasst,
- wobei die unteren Sitze (111, 112, 113, 114) quer aus der zweiten Sockelleiste (110) im Wesentlichen an den Scheitelpunkten (111v, 112v, 113v, 114v) auskragen, wobei die unteren Sitze (111, 112, 113, 114) sich hauptsächlich längs ihrer eigenen Achsen (Y_{111} , Y_{112} , Y_{113} , Y_{114}), im Wesentlichen parallel zur vertikalen Richtung (Y-Y) erstrecken,
- wobei die unteren Sitze (111, 112, 113, 114) eine derartige Form aufweisen, dass sie jeweils das untere Ende des fünften (45), sechsten (46), siebten (47) und achten (48) Pfostens mindestens teilweise aufnehmen können.
8. Koffer (1) nach einem der Ansprüche 1 bis 7, wobei die erste (10) und die zweite (110) Sockelleiste (10) eine Vielzahl von Durchtrittsöffnungen (15) aufweisen, die sich längs ihrer eigenen Achsen (Y_{15}) im Wesentlichen parallel zur vertikalen Richtung (Y-Y) erstrecken.
9. Koffer (1) nach Anspruch 8, wobei die Durchtrittsöffnungen (15) eine polygonale Form haben und im Wesentlichen über die gesamte Oberfläche der ersten Sockelleiste (10) hinweg angeordnet sind.
10. Koffer (1) nach Anspruch 8 oder 9, wobei die Durchtrittsöffnungen (15) jeweils in einem Kreis eingeschrieben werden können, der einen Durchmesser zwischen 10 mm und 40 mm aufweist.
11. Koffer (1) nach einem der Ansprüche 8 bis 10, wobei jede Durchtrittsöffnung (15) eine Rippe (16) aufweist, die radial in das Innere der Öffnung (15) hineinragt und auf der Bodenfläche (10z) der ersten Sockelleiste (10) angeordnet ist.

55 Revendications

1. Valise (1) ayant un premier châssis (1A) comprenant :

- un premier plateau de base formé d'une seule pièce (10) qui s'étend sensiblement sur un plan (P1) défini par une direction longitudinale (X-X) et une direction orthogonale (Z-Z),
- des premiers épaulements raidisseurs supérieurs (30) gauche (20) et droit (30), chacun étant formé d'une seule pièce,
- des premiers moyens de connexion pour connecter ledit plateau de base (10) auxdits premiers épaulements raidisseurs gauche (20) et droit (30),

caractérisée en ce qu'un deuxième châssis (2A) est conçu pour être uni audit premier châssis (1A), ledit deuxième châssis (2A) comprend :

- un deuxième plateau de base formé d'une seule pièce (110) qui s'étend sensiblement sur ledit plan (P1),
- des deuxièmes épaulements raidisseurs supérieurs (30) gauche (120) et droit (130), chacun étant formé d'une seule pièce,
- des deuxièmes moyens de connexion pour connecter ledit plateau de base (110) auxdits deuxièmes épaulements raidisseurs gauche (120) et droit (130).

2. Valise (1) selon la revendication 1, dans laquelle :

- lesdits premiers moyens de connexion comprennent des premier (41), deuxième (42), troisième (43) et quatrième (44) montants s'étendant dans une direction verticale (Y-Y) pour la connexion dudit premier plateau de base (10) auxdits premiers épaulements raidisseurs supérieurs gauche (20) et droit (30), et
- lesdits deuxièmes moyens de connexion comprennent des cinquième (45), sixième (47), septième (47) et huitième (48) montants s'étendant dans ladite direction verticale (Y-Y) pour la connexion dudit deuxième plateau de base (110) auxdits deuxièmes épaulements raidisseurs gauche (120) et droit (130).

3. Valise (1) selon la revendication 2, dans laquelle lesdits montants (41, 42, 43, 44, 45, 46, 47, 48) ont une longueur allant de 350 mm à 700 mm.

4. Valise (1) selon une quelconque revendication de 2 à 3, dans laquelle ledit premier plateau de base (10) a un sommet avant gauche (11v), un sommet avant droit (12v), un sommet arrière droit (13v) et un sommet arrière gauche (14v) définis dans celui-ci, et dans laquelle :

- ledit premier montant (41) connecte le sommet avant gauche (11v) du premier plateau de base (10) au premier épaulement gauche (20),

- ledit deuxième montant (42) connecte le sommet avant droit (12v) du premier plateau de base (10) au premier épaulement droit (30),
- ledit troisième montant (43) connecte le sommet arrière droit (13v) du premier plateau de base (10) au premier épaulement droit (30),
- ledit quatrième montant (44) connecte le sommet arrière gauche (14v) du premier plateau de base (10) au premier épaulement gauche (20).

5. Valise (1) selon une quelconque revendication de 2 à 4, dans laquelle ledit deuxième plateau de base (110) a un sommet avant gauche (111v), un sommet avant droit (112v), un sommet arrière droit (113v) et un sommet arrière gauche (114v) définis dans celui-ci, et dans laquelle :

- ledit cinquième montant (45) connecte le sommet avant gauche (111v) du deuxième plateau de base (110) au deuxième épaulement gauche (120),
- ledit sixième montant (46) connecte le sommet avant droit (112v) du deuxième plateau de base (110) au deuxième épaulement droit (130),
- ledit septième montant (47) connecte le sommet arrière droit (113v) du deuxième plateau de base (110) au deuxième épaulement droit (130),
- ledit huitième montant (48) connecte le sommet arrière gauche (114v) du deuxième plateau de base (110) au deuxième épaulement gauche (120).

6. Valise (1) selon une quelconque revendication de 2 à 5, dans laquelle ledit premier plateau de base (10) comprend des premier (11), deuxième (12), troisième (13) et quatrième (14) sièges inférieurs, lesdits sièges inférieurs (11, 12, 13, 14) faisant saillie transversalement hors dudit premier plateau de base (10) sensiblement au niveau desdits sommets (11v, 12v, 13v, 14v), lesdits sièges inférieurs (11, 12, 13, 14) s'étendant principalement selon leurs propres axes (Y_{11} , Y_{12} , Y_{13} , Y_{14}) sensiblement parallèles à ladite direction verticale (Y-Y), lesdits sièges inférieurs (11, 12, 13, 14) ayant une forme telle que chacun peut loger au moins partiellement l'extrémité inférieure respectivement desdits premier (41), deuxième (42), troisième (43) et quatrième (44) montants.

7. Valise (1) selon une quelconque revendication de 2 à 6, dans laquelle ledit deuxième plateau de base (110) comprend des premier (111), deuxième (112), troisième (113) et quatrième (114) sièges inférieurs, lesdits sièges inférieurs (111, 112, 113, 114) faisant saillie transversalement hors dudit deuxième plateau (110) sensiblement au niveau desdits sommets (111v, 112v, 113v, 114v), lesdits sièges inférieurs

(111, 112, 113, 114) s'étendant principalement selon leurs propres axes (Y_{111} , Y_{112} , Y_{113} , Y_{114}) sensiblement parallèles à ladite direction verticale (Y-Y), lesdits sièges inférieurs (111, 112, 113, 114) ayant une forme telle que chacun peut loger au moins partiellement l'extrémité inférieure respectivement desdits cinquième (45), sixième (47), septième (47) et huitième (48) montants. 5

8. Valise (1) selon une quelconque revendication de 1 à 7, dans laquelle lesdits premier (10) et deuxième (110) plateau de base (10) ont une pluralité d'ouvertures passantes (15) s'étendant selon leurs propres axes (Y_{15}) sensiblement parallèles à ladite direction verticale (Y-Y). 10 15

9. Valise (1) selon la revendication 8, dans laquelle lesdites ouvertures passantes (15) ont une forme polygonale et sont agencées sensiblement sur toute la surface dudit premier plateau de base (10). 20

10. Valise (1) selon la revendication 8 ou 9, dans laquelle lesdites ouvertures passantes (15) peuvent être inscrites chacune dans un cercle ayant un diamètre de 10 mm à 40 mm. 25

11. Valise (1) selon une quelconque revendication de 8 à 10, dans laquelle chacune desdites ouvertures passantes (15) comprend une nervure (16) qui fait saillie radialement vers l'intérieur de ladite ouverture (15) et est située sur la surface inférieure (10z) dudit premier plateau de base (10). 30

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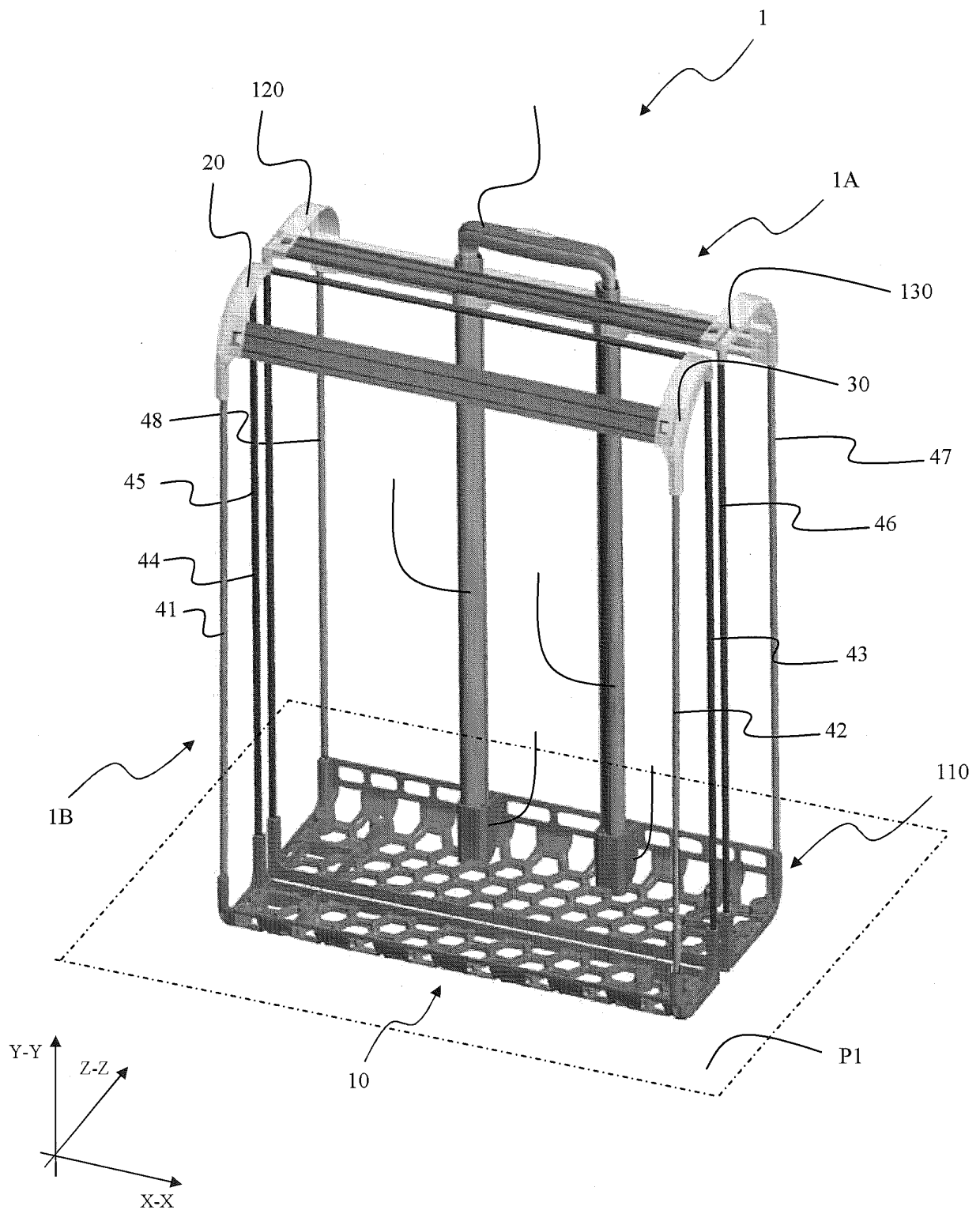


Fig.1

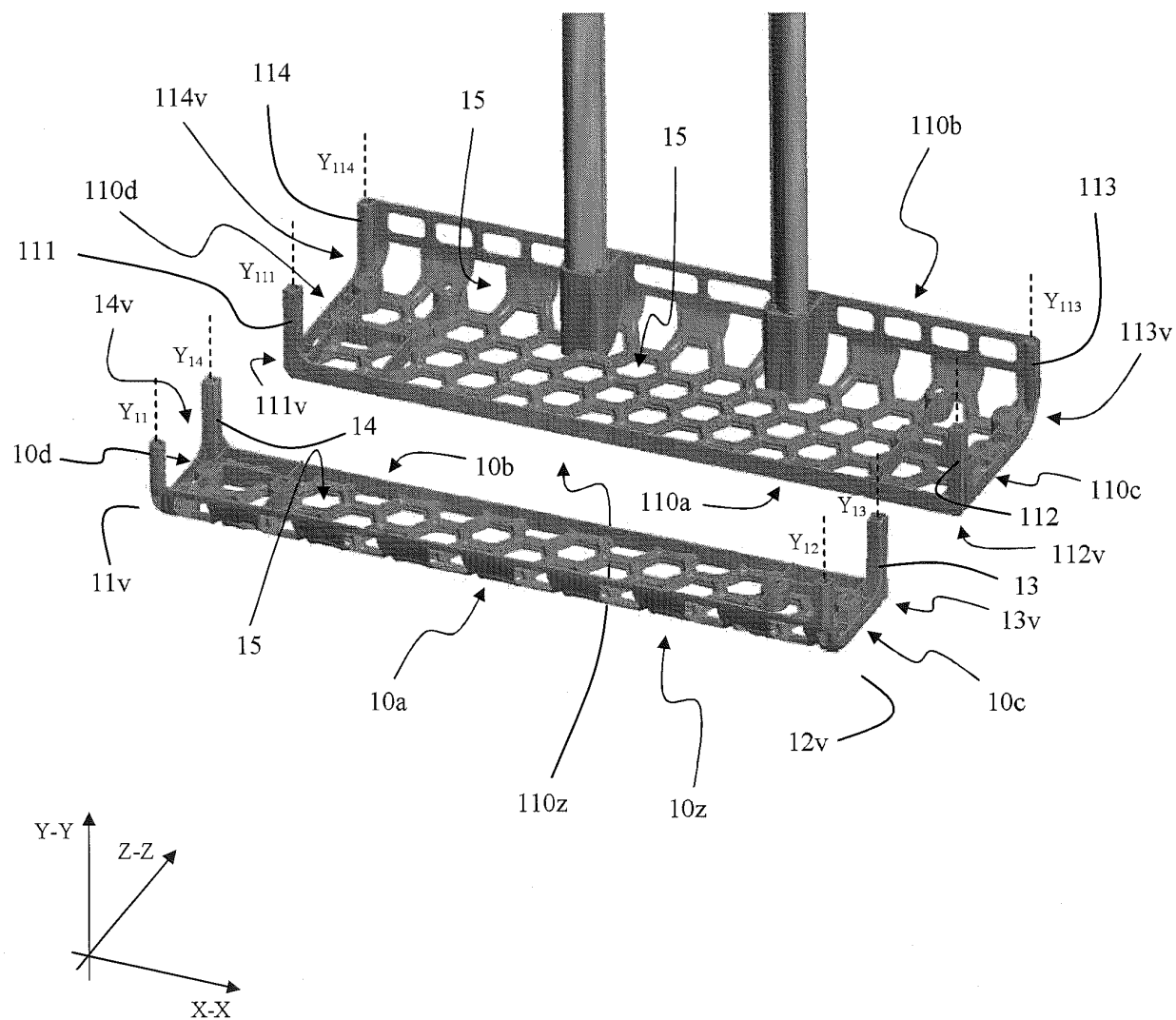


Fig.2

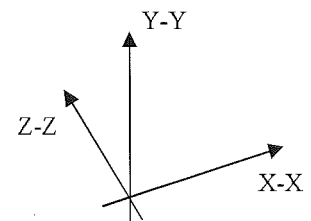
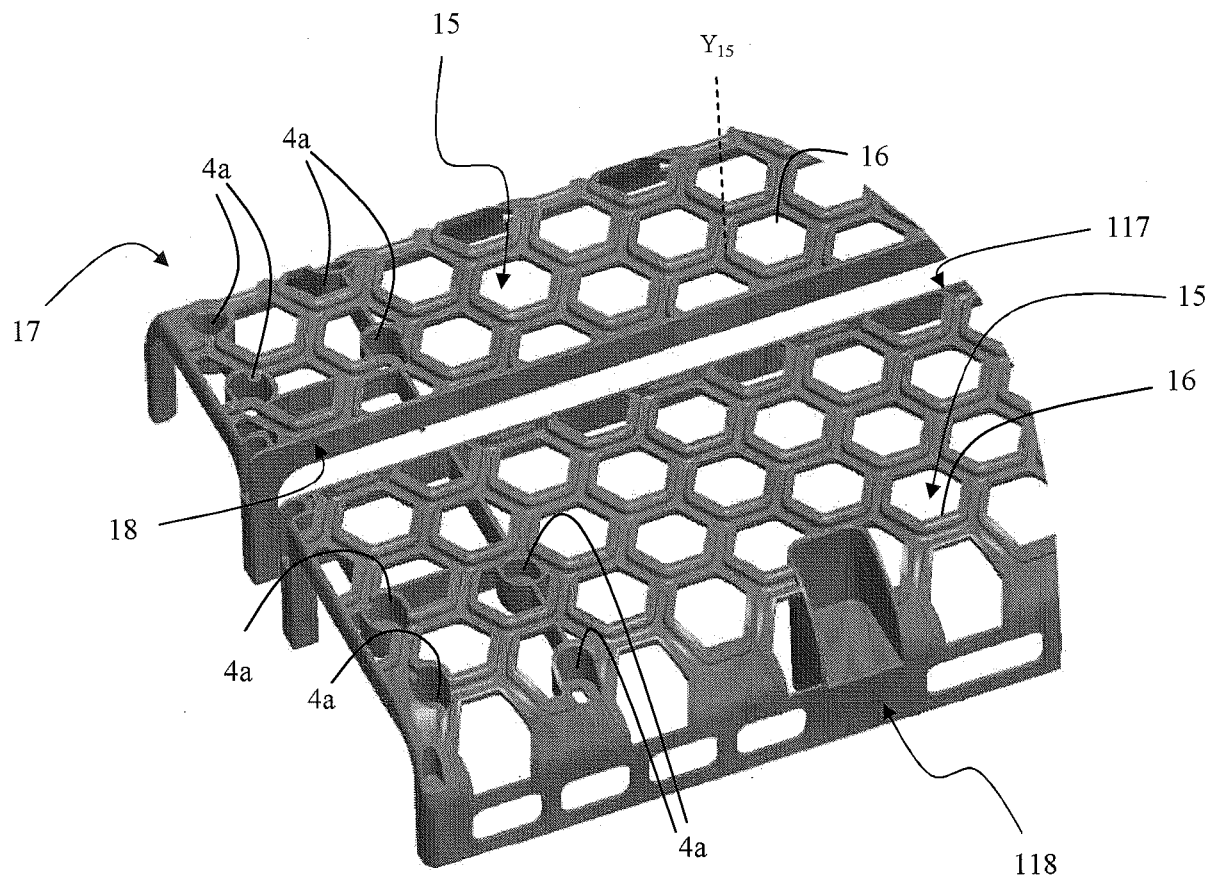


Fig.3

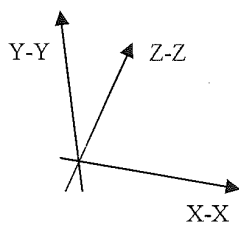
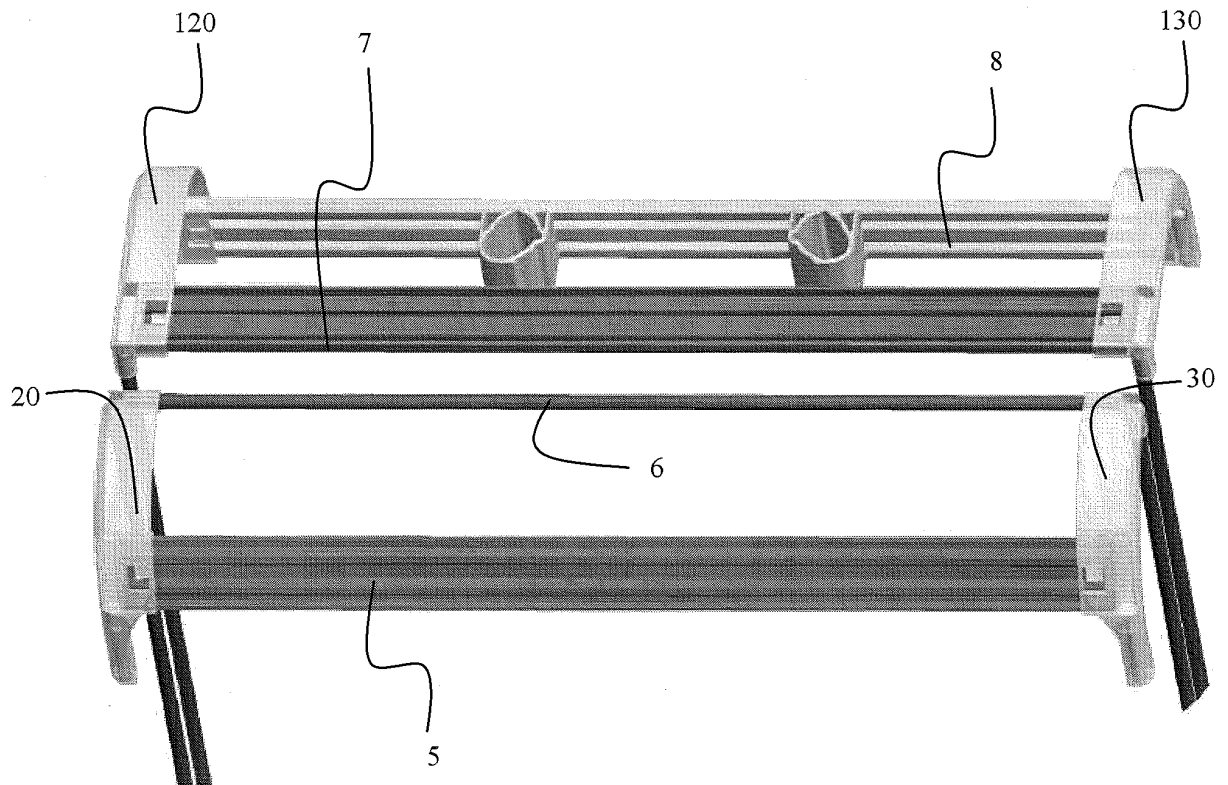


Fig.4

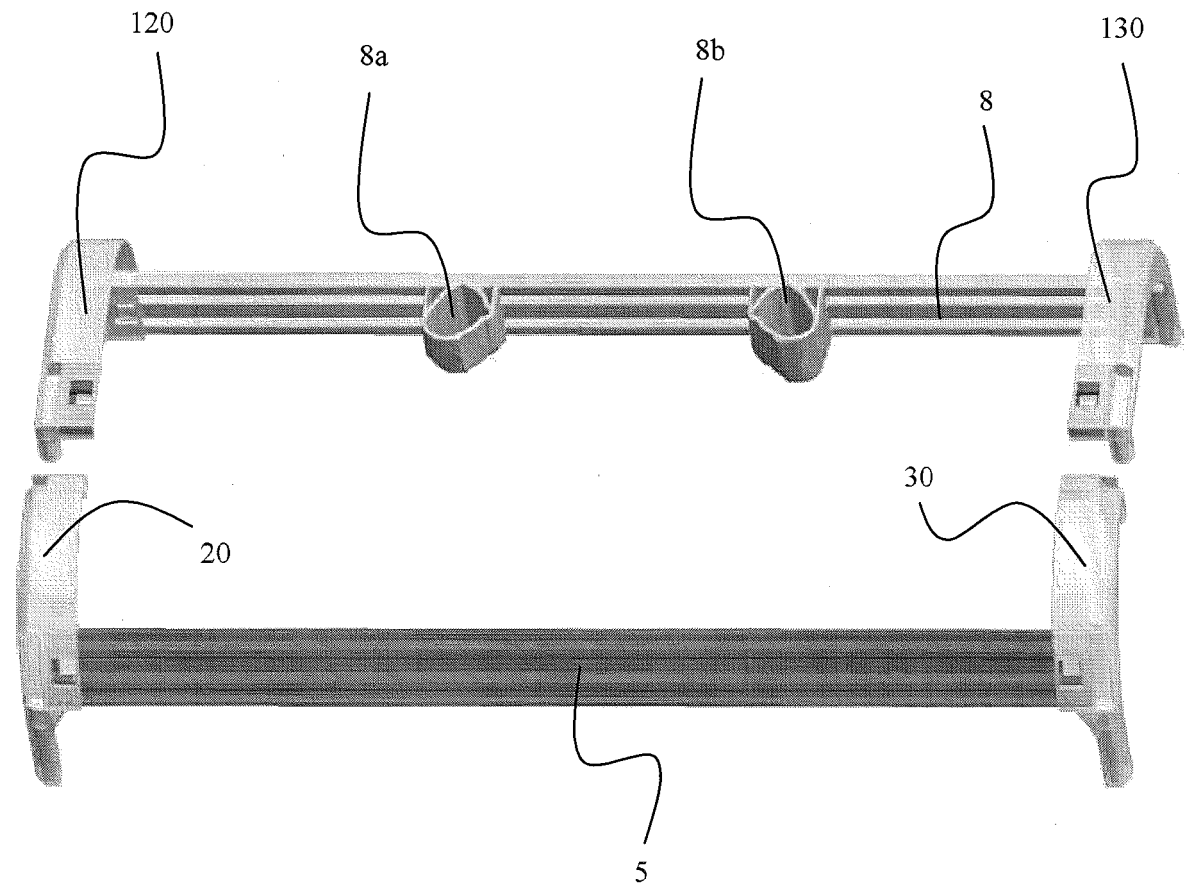


Fig.5

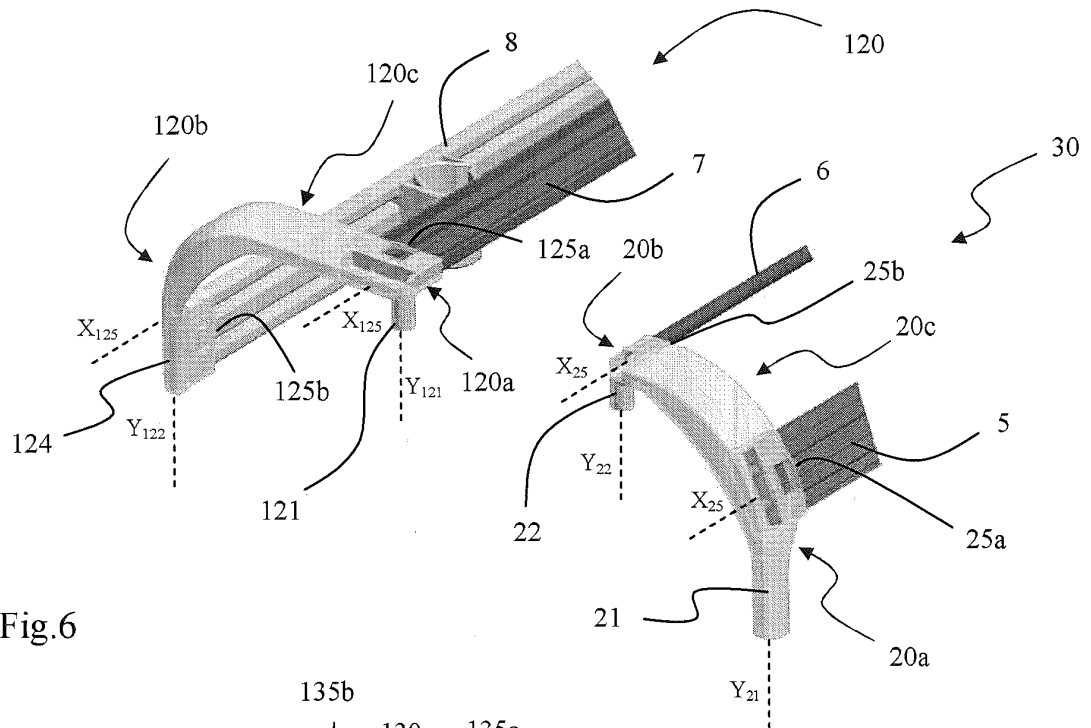


Fig.6

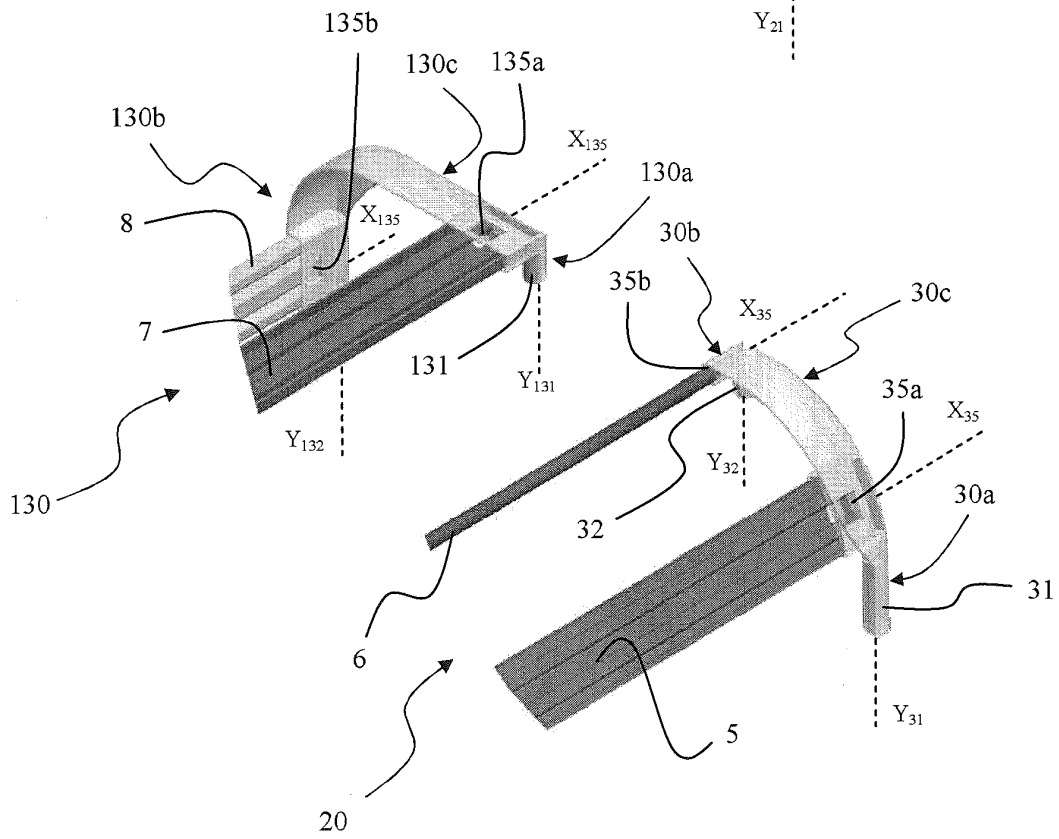
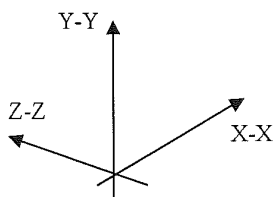


Fig.7



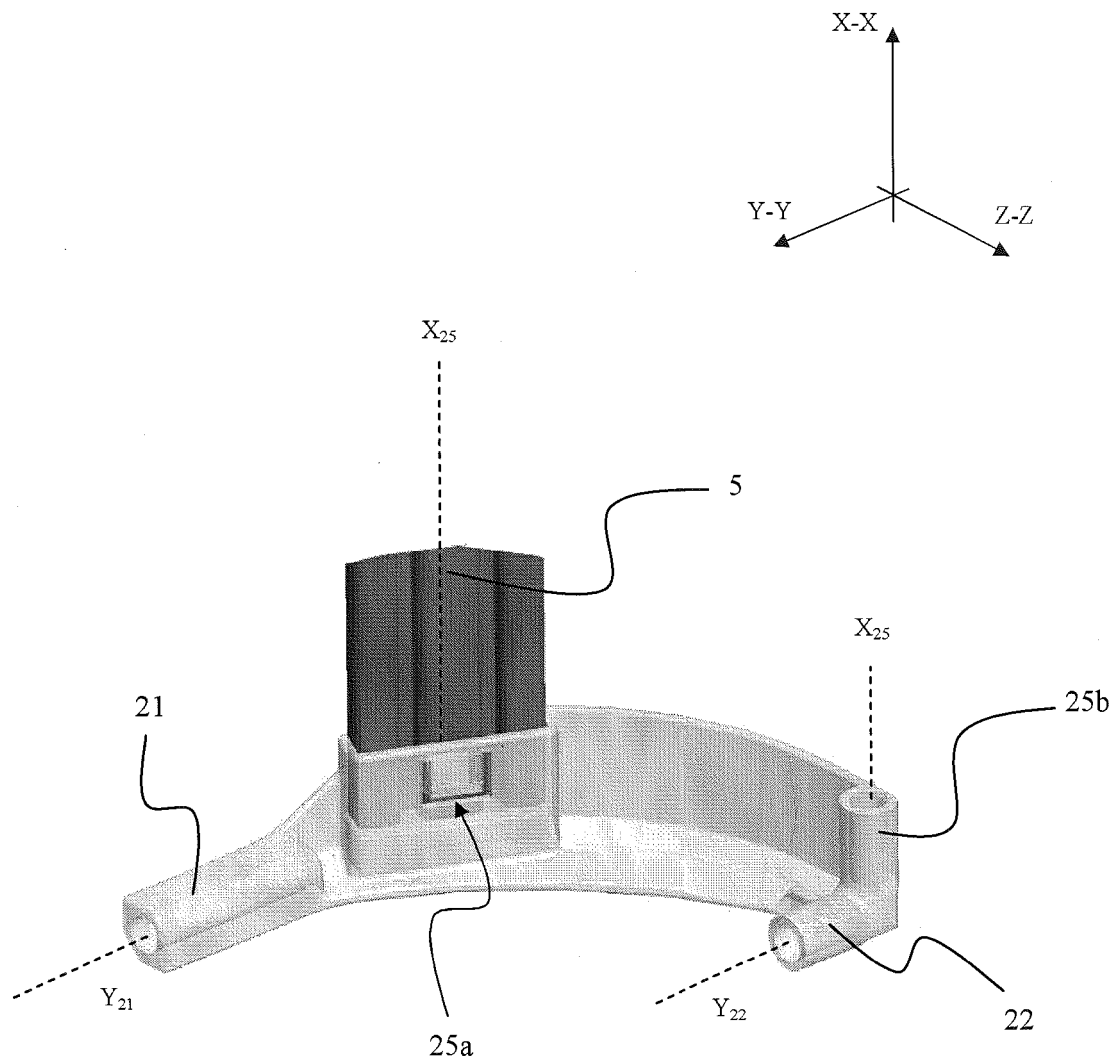


Fig.8

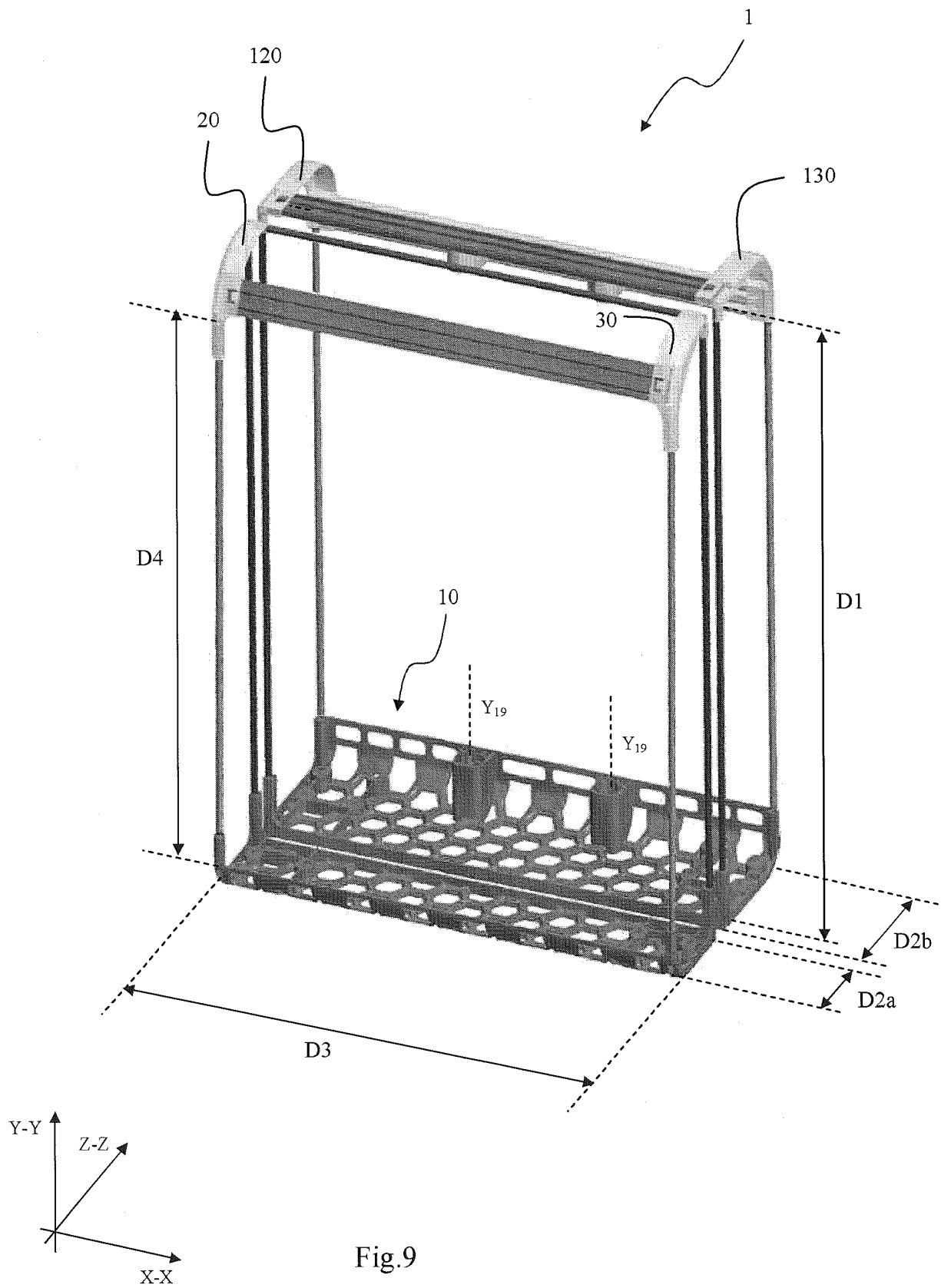


Fig.9

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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