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(54) **SUPPORT FOR A POLE AND FOOTREST OF A STOOL**

(57) The present invention relates to a support for a pole and footrest of a stool. The support comprises: a lower body and an upper body, wherein the lower body comprises a lower portion and an upper portion with a recess for inserting the pole and mortises in the side walls for coupling supporting spokes of a footrest; and the upper body comprises side walls and has a through-opening passing through same and a recess aligned with the recess for inserting the pole, wherein the side walls comprise mortises that complement the mortises comprised in the upper portion.

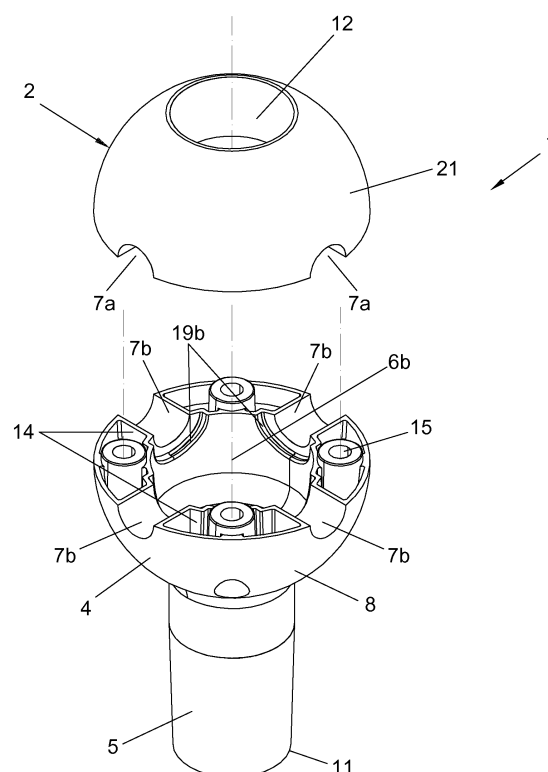


FIG. 2

Description

OBJECT OF THE INVENTION

[0001] The object of the present invention relates to a support for a pole and footrest of a stool, fixed or rotating, with fixed or variable height, which acts as a support for the pole of the seat and in turn as a support for the footrest. This device facilitates the final assembly of the stool and enables the packing and packaging to be considerably optimised for transportation.

[0002] It has a particular application in the industrial field relating to furniture.

TECHNICAL PROBLEM TO BE SOLVED AND BACKGROUND OF THE INVENTION

[0003] Generally, it has been found that a drawback of stools that are currently on the market is that they are made of one whole part or of large parts welded together, which is what prevents the packing and packaging from being optimised for the transportation thereof, this being a very important factor.

[0004] In certain designs of stools, the footrest is supported on spokes welded directly to the pole, which is what prevents the packing elements from being optimised, since it cannot be disassembled; or on spokes joined to a ring which clasps the pole and is fastened to it with one or several tightening screws wherein the system ends up failing and the footrest stops being functional. There are also designs wherein the footrest starts from a fixed element of the base of the stool, also welded, which constructively requires more packaging elements.

[0005] Thus, the present invention comes to solve the aforementioned problems of the state of the art, providing a support for a pole and footrest of a stool wherein the assembly of the stool is made up of parts with a small volume and high robustness, so it allows for an optimal and practical packaging. Furthermore, these parts enable the assembly of the stool to be assembled easily and without tools.

DESCRIPTION OF THE INVENTION

[0006] The present invention relates to a support for a pole and footrest of a stool, comprising a lower body which is joined by fastening means to a complementary upper body. The lower body in turn comprises an upper portion and a lower portion. The upper body and the upper portion comprise recesses which create a cavity for inserting the pole, and mortises arranged in side walls of the upper portion and of the upper body, wherein these mortises are arranged in a complementary manner and configured for coupling spokes which act as support for a footrest.

[0007] The upper portion and the upper body have the shape of complementary semi-spheres. The lower portion is a conic body.

[0008] The upper body comprises side walls and has a through-opening, preferably with a conic shape, passing through same, which is aligned with the recess for inserting the pole, wherein the support is configured to be placed on a base of the stool and support the pole and the footrest of the stool.

[0009] The recesses of the upper body and of the upper portion are centred and surrounded by compartments separated from each other by the mortises, which are preferably semi-circular. The mortises are arranged in the side walls of the upper body and of the upper portion and are equidistant from each other. Additionally, each compartment of the upper portion comprises a hollow lug in the central portion thereof, while each compartment of the upper body comprises a hollow negative configured to fit with the hollow lugs of the lower body.

[0010] The support can comprise, in the upper body and/or in the upper portion of the lower body, four mortises, four compartments, four hollow lugs and four hollow negatives.

[0011] The fastening means of the lower body to the upper body are screws configured to be introduced through the hollow lugs of the upper portion from the bottom upwards and cross through the hollow negatives of the upper body.

[0012] Both the through-opening and the lower portion of the lower body can have a cross section of the lower end that is narrower than the cross section of the upper end, meaning, they preferably have a conic shape.

[0013] The lower portion comprises on the inside thereof a central threaded tubular body connected by means of ribs to several, preferably three, threaded tubular bodies arranged in side walls of the conic lower portion.

[0014] The lower and upper bodies are manufactured by injection, machining or additive manufacturing, and can be manufactured from metal or from plastic.

[0015] The recesses of the upper portion of the lower body and of the upper body have a circular shape.

[0016] In the inner wall of the side walls of the upper body and the upper portion there are stepped portions, which are preferably semi-circular. These stepped portions are situated in the same position of the circular crown as the mortises.

[0017] Another object of the invention relates to the stool incorporating the support device, wherein the stool comprises a seat, a back, a pole and a base. It can also comprise an armrest.

BRIEF DESCRIPTION OF THE FIGURES

[0018] To complete the description, and for the purpose of helping to make the characteristics of the invention more readily understandable, this description is accompanied by a set of drawings constituting an integral part of the same, which by way of illustration and not limitation represents the following:

Figure 1a.- Shows a front view of the support.

Figure 1b.- Shows a top view of the support.

Figure 2.- Shows an exploded view of the support.

Figure 3.- Shows another exploded view of the support.

Figure 4.- Shows a top view of the lower body of the support.

Figures 5a and 5b.- Show longitudinal cross-sectional views of the upper and lower bodies of the support.

Figure 6.- Shows a type of stool with the support.

[0019] Below, a list is provided of the different elements represented in the figures making up the invention:

1. Support.
2. Upper body.
3. Lower body.
4. Upper portion of the lower body.
5. Lower portion of the lower body.
- 6a. Recess in the upper body.
- 6b. Recess in the upper portion of the lower body.
- 7a. Mortise in the upper body.
- 7b. Mortise in the upper portion of the lower body.
8. Side walls of the upper portion of the lower body.
9. Spokes.
10. Footrest.
11. Lower end of the lower portion.
12. Through-opening.
13. Base of the stool.
14. Compartments.
15. Hollow lug.
16. Hollow negative.
17. Tubular body.
18. Ribs.
- 19a. Stepped portion in the upper body.
- 19b. Stepped portion in the upper portion of the lower body.
20. Holes.
21. Side walls of the upper body.
22. Pole.
23. Stool.

DETAILED DESCRIPTION

[0020] One object of the invention relates to a support (1) for a pole (22) and footrest (10) of furniture to sit on, specifically of a stool (23), being useful for an armchair or chair, fixed or rotating, with fixed or variable height, which can act as a support for the pole (22) of the seat and back, and in turn as a support for the footrest (10), as seen in Figure 6. The support (1) is placed on the base (13) of the stool, wherein once it is already placed the assembly of the rest of the stool (23) can then be performed.

[0021] The support (1) comprises an upper body (2) which is joined by fastening means to a lower body (3), wherein both bodies (2,3) are manufactured by injection, machining or additive manufacturing, and are preferably made of metal although they can also be made of plastic.

[0022] The lower body (3) comprises an upper portion (4) and a lower portion (5). Preferably, both portions (4,5) are joined to each other, wherein the upper portion (4) has a semi-sphere shape and comprises a central recess (6b) with a circular shape surrounded by four compartments (14) separated from each other by mortises (7b), preferably four, arranged equidistantly between them in the side walls (8) of the semi-sphere whereon the spokes (9), which can act as a support for the 360° peripheral welt of the footrest (10), are coupled.

[0023] As seen in Figures 1a and 2, the upper body (2) also includes mortises (7a) that complement the mortises (7b) of the upper portion of the lower body (4). Thus, when the upper and lower bodies (2, 3) are joined, the mortises (7a, 7b) face each other forming a circular cross section, wherein tube-shaped spokes (9) can be coupled.

[0024] The upper portion (4) also comprises four hollow lugs (15), each hollow lug (15) arranged in the central portion of each compartment (14) and reinforced with ribs in order to provide them with greater stiffness.

[0025] The inner surface of the side walls (8, 21) comprises one or several stepped portions (19a, 19b), preferably with a semi-circular shape. These stepped portions are situated in the same position of the circular crown as the mortises (7a, 7b) and can help with the fastening of the spokes (9) supporting the pole (22), in particular when these spokes (9) end in an enlargement with a diameter comprised between the diameter formed by the mortises (7a, 7b) facing each other in the upper and lower bodies, and the diameter formed by the stepped portions (19a, 19b) present in the side walls (8, 21).

[0026] The lower portion (5) is a conic body, namely, the cross section of the lower end (11) is slightly narrower than the cross section of the upper end, which is what enables the lower portion (5) to better adapt to the base (13) of the stool (23). Shown in Figures 1a and 2.

[0027] The base (13) of the stool (23) can have different designs such as for example a flat base as shown in Figure 6, a conic base with a fitted plate, or a base with legs.

[0028] In the case of using a flat base (13), the lower portion (5) comprises on the inside thereof threaded tubular bodies (17), specifically a threaded central tubular body (17) connected by means of ribs (18) to three other threaded tubular bodies (17) arranged in the side walls of the lower portion (5), wherein said threaded tubular bodies (17) are useful to fasten the base (13) of the stool (23) by means of screws to the lower body (3). The embodiment shown in the figures comprises three ribs (18) but they could be more. These ribs (18) contribute stiffness and give consistency to the support device (1).

[0029] The upper body (2) is complementary to the lower body (3) and completes the support (1), closing and fastening the spokes (9) with a circular cross section, for example, in a tube shape. Like the lower body (3), the upper body (2) has a semi-sphere shape and comprises four compartments (14) with four hollow negatives (16)

which fit in the hollow lugs (15) of the lower body (3). The compartments (14) are separated from each other by mortises (7a), preferably four, arranged equidistantly between them in the side walls (21) of the semi-sphere. The spokes (9), which are useful as a support for the 360° peripheral welt of the footrest (10), can be coupled in the circular cross section made up of these mortises (7a) and the mortises (7b) comprised in the side walls of the upper portion of the lower body.

[0030] Additionally, the upper body (2) comprises a recess (6a) with a cylindrical cross section which is aligned with the recess (6b) of the upper portion (4) of the lower body (3). The recess (6a) is joined to the through-opening (12) which crosses through the upper body (2) from the upper end to the recess (6a), the cross section of the lower end of the through-opening (12) being narrower than the cross section of the upper end. Shown in Figures 5a and 5b. The function of this narrowing is to facilitate the fastening of the pole (22).

[0031] Preferably, the fastening means joining the lower body (3) to the upper body (2) are screws which are introduced from the bottom upwards through the hollow lugs (15) of the lower body (3) and cross through the hollow negatives (16) of the upper body (2). Figure 3 shows the holes (20) of the upper portion (4) of the lower body (3) through which the screws enter, while Figure 5a shows where the screws arrive in the upper body (2).

[0032] Obviously, the support (1) can have different shapes and geometries as long as it enables the function of support for the pole (22) of the seat and for the spokes (9) of the footrest (10). Even in this same design, the number of compartments (14), lugs (15) and hollow negatives (16) can vary.

[0033] Additionally, the external design of the support (1) can vary, this device being able to be smooth or have different drawings.

[0034] Another object of the invention relates to the stool (23) incorporating the support (1), wherein the stool (23) comprises a seat, a back, a pole (22) and a base (13). It can also comprise an armrest.

[0035] The present invention should not be limited by the embodiment herein described. Other arrangements may be carried out by those skilled in the art based on the present description. Accordingly, the scope of the invention is defined by the following claims.

Claims

1. A support (1) for a pole (22) and footrest (10) of a stool (23), **characterised in that** it comprises:

- a lower body (3) which is joined by fastening means to a complementary upper body (2), wherein the lower body (3) in turn comprises an upper portion (4) and a lower portion (5):
 - the upper portion (4) comprises a recess (6b) configured to insert the pole (22) and mortises

(7a) arranged in side walls (8) of said upper portion (4) and configured for coupling spokes (9) which works as support for a footrest (10),

- the upper body (2) comprises side walls (21) and has a through-opening (12) passing through same and a recess (6a) aligned with the recess (6b) for inserting the pole (22), wherein the side walls (21) comprise mortises (7b) arranged in a manner complementary to the mortises (7b) comprised in the upper portion (4),

wherein said support (1) is configured to be placed on a base (13) of the stool (23) and support the pole (22) and the footrest (10) of said stool (23).

2. The support (1) according to claim 1, **characterised in that** the recess (6b) of the upper portion (4) is centred and surrounded by compartments (14) separated from each other by the mortises (7a), wherein each compartment comprises in the central portion thereof a hollow lug (15).

3. The support (1) according to claim 2, **characterised in that** the recess (6a) of the upper body (2) is centred and surrounded by compartments (14), wherein each compartment (14) comprises in the central portion thereof a hollow negative (16) configured to fit in the hollow lugs (15) of the lower body (3).

4. The support (1) according to claim 3, **characterised in that** it comprises four mortises (7a) in the upper body (2), four mortises (7b) in the upper portion (4), four compartments (14) in the upper body (2), four compartments (14) in the upper portion (4), four hollow lugs (15) and four hollow negatives (16).

5. The support (1) according to claim 1, **characterised in that** the upper portion (4) and the upper body (2) have the shape of complementary semi-spheres.

6. The support (1) according to claim 3, **characterised in that** the fastening means of the lower body (3) to the upper body (2) are screws configured to be introduced through the hollow lugs (15) of the upper portion (4) from the bottom upwards and cross through the hollow negatives (16) of the upper body (2).

7. The support (1) according to claim 1, **characterised in that** the lower portion (5) is a conic body.

8. The support (1) according to any one of claims 1 and 7, **characterised in that** the through-opening (12) and the lower portion (5) have a cross section of a lower end slightly narrower than the cross section of an upper end.

9. The support (1) according to claim 7, **characterised**

in that the lower portion (5) comprises on the inside thereof a central threaded tubular body (17) connected by means of ribs (18) to three threaded tubular bodies (17) arranged in side walls of the cylindrical body (11).

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- 10.** The support (1) according to claim 1, **characterised in that** the lower (3) and upper (2) bodies are manufactured by injection, machining or additive manufacturing.

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- 11.** The support (1) according to claim 1, **characterised in that** the lower (3) and upper (2) bodies are made of metal or plastic.

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- 12.** The support (1) according to claim 1, **characterised in that** the mortises (7a, 7b) are arranged in the side walls (8, 21) of the upper portion (4) and the upper body (2) and are equidistant from each other.

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- 13.** The support (1) according to claim 1, **characterised in that** the recess (6b) of the upper portion (4) of the lower body (3) and the recess (6a) of the upper body (2) have a circular shape.

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- 14.** The support (1) according to claim 1, **characterised in that** in the inner wall of the side walls (8, 21) there are stepped portions, and these are arranged in the same position as the mortises (7a, 7b).

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- 15.** A stool (23) comprising the support (1) described in any one of claims 1 to 14.

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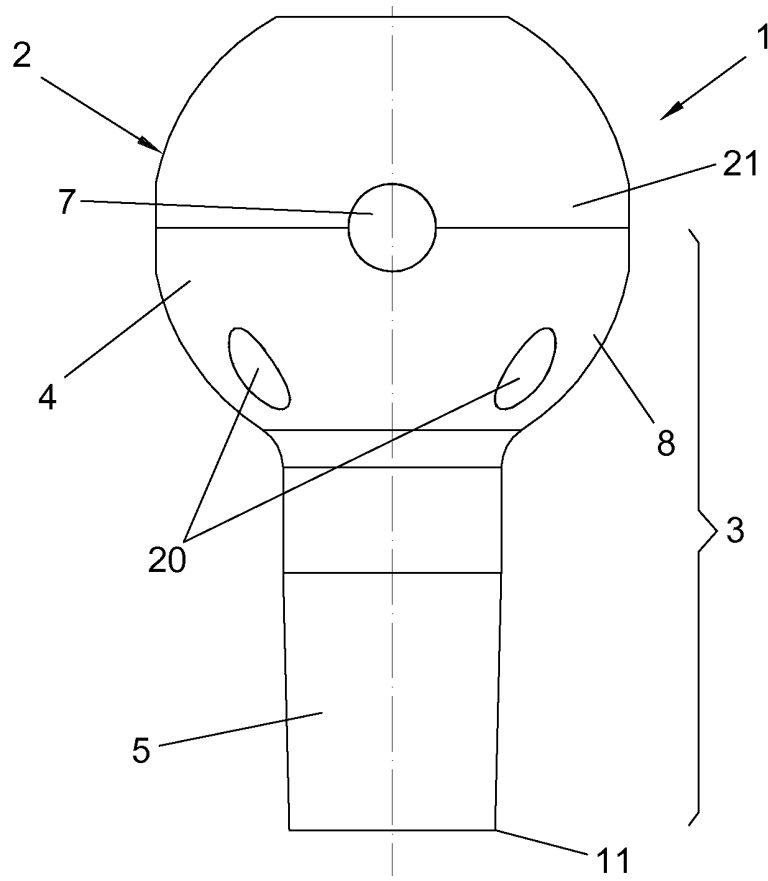


FIG. 1a

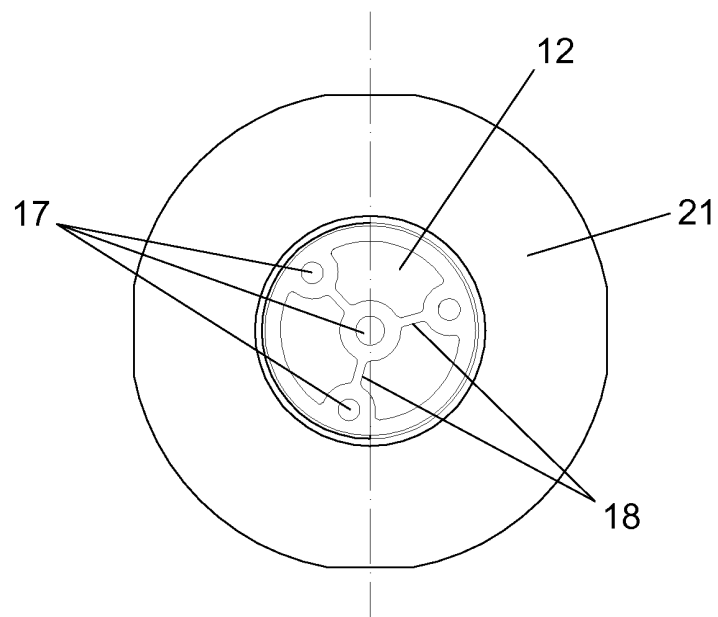


FIG. 1b

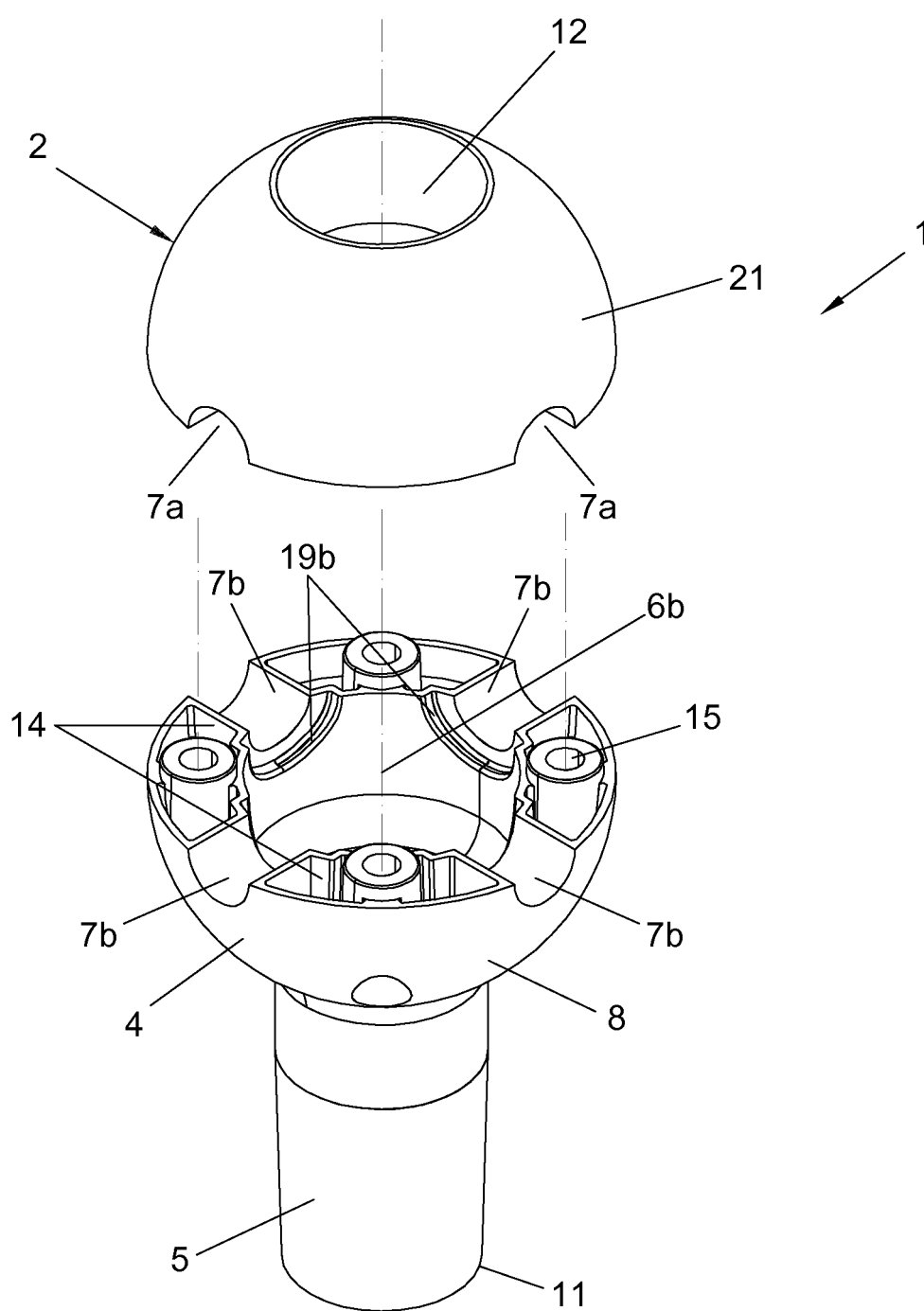


FIG. 2

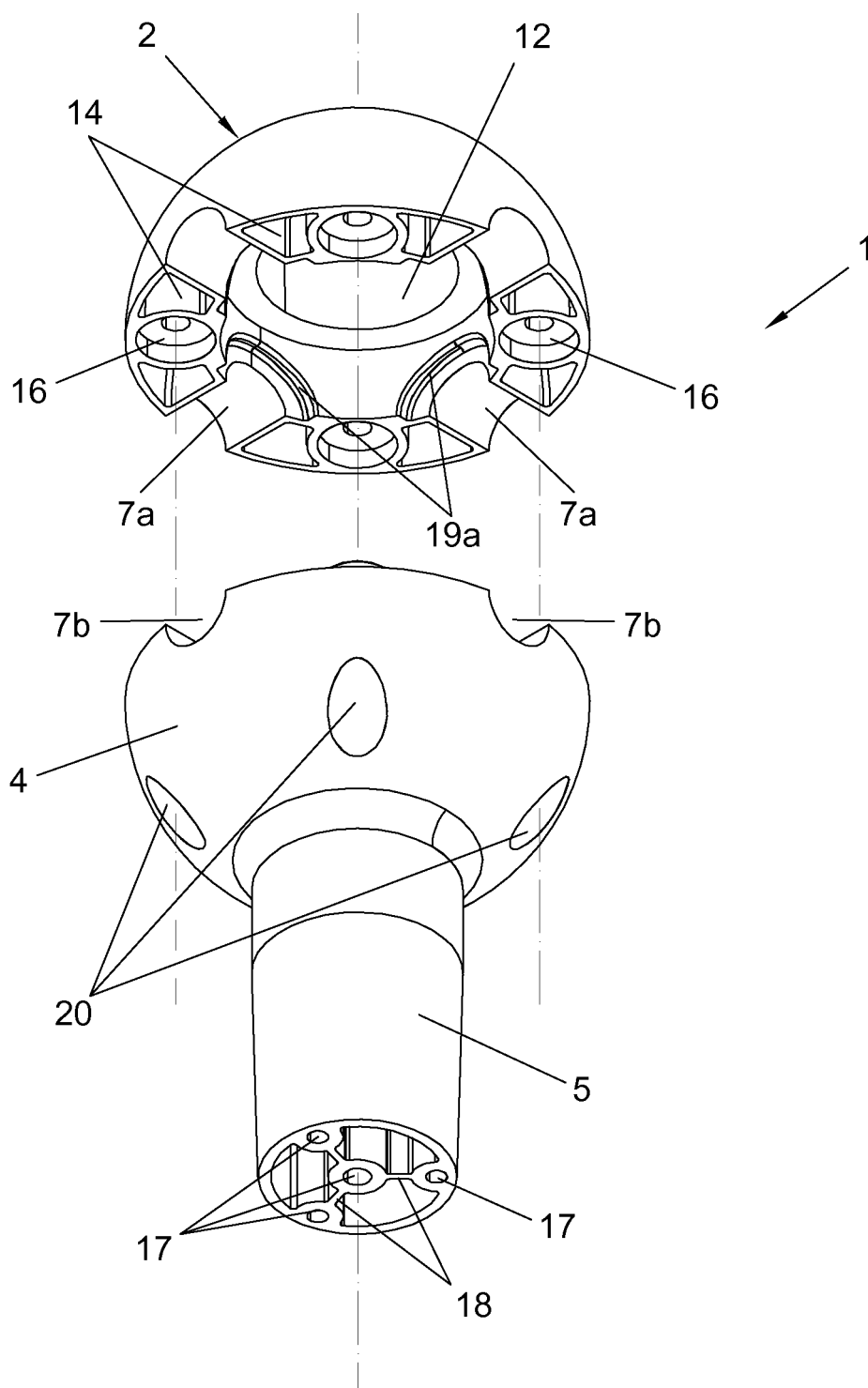


FIG. 3

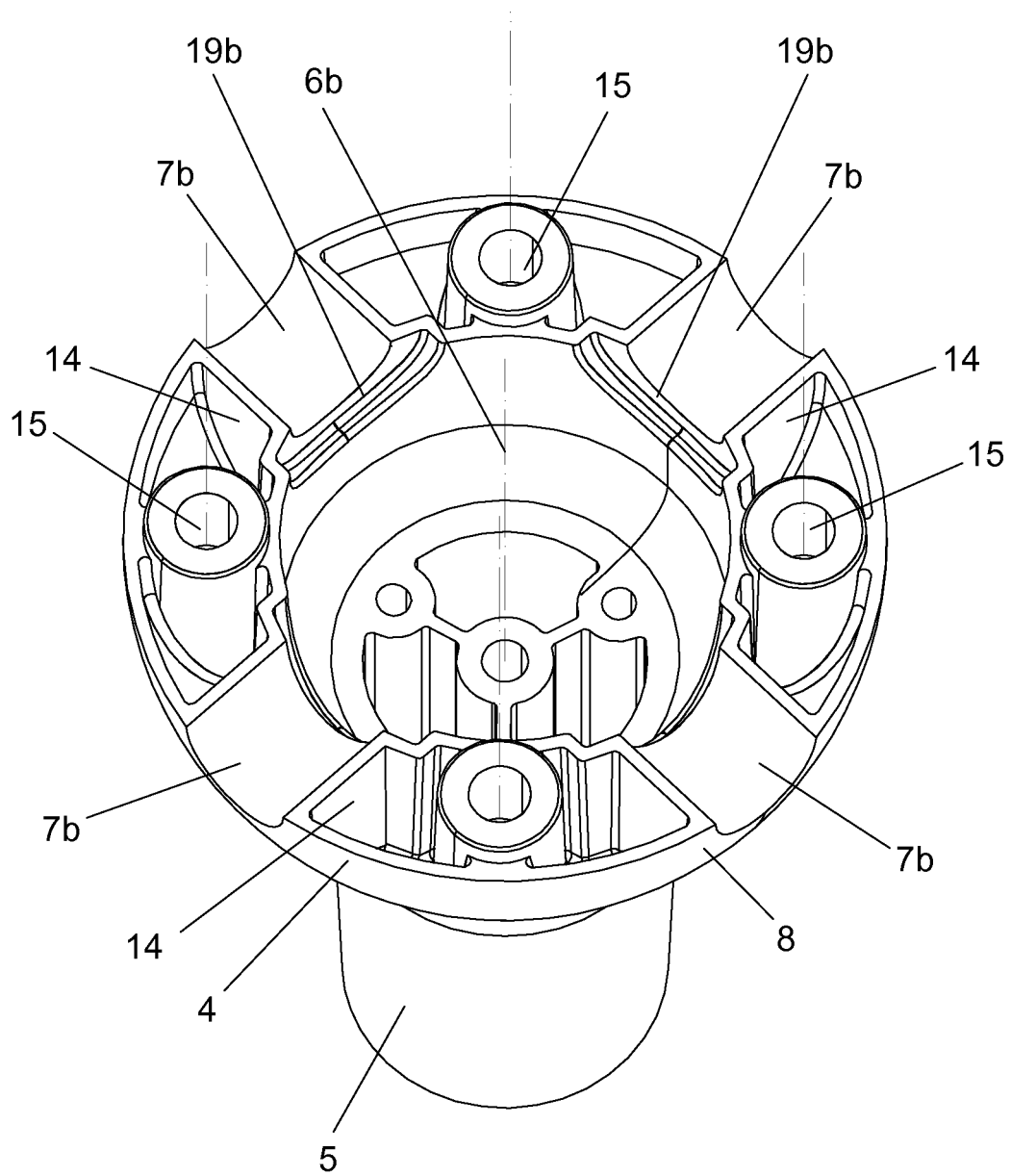


FIG. 4

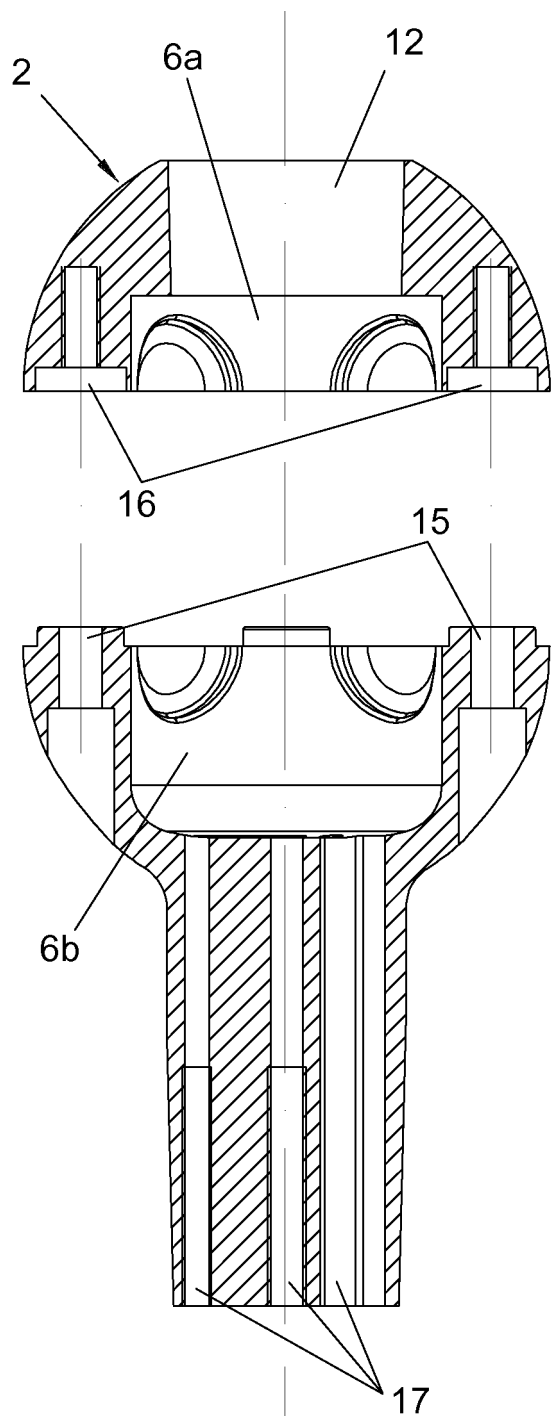


FIG. 5a

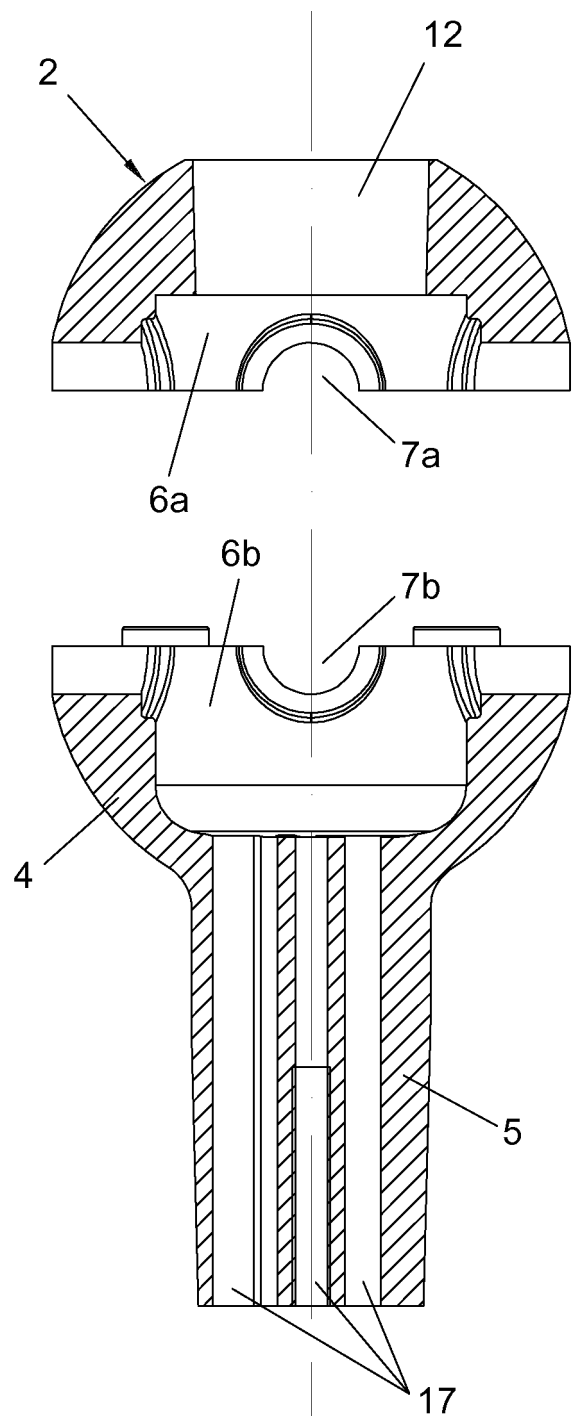


FIG. 5b

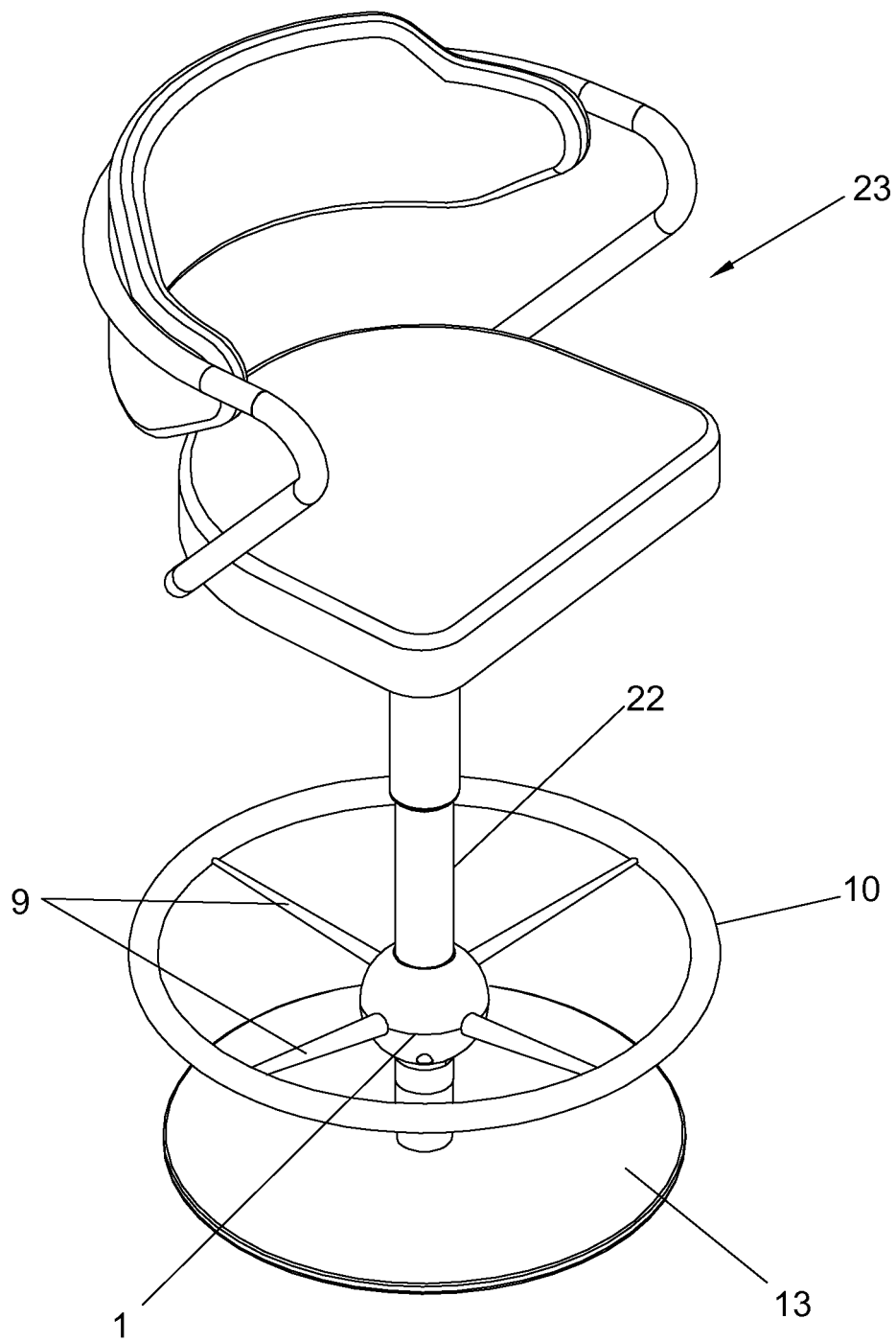


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2018/070190

A. CLASSIFICATION OF SUBJECT MATTER

A47C7/00 (2006.01)

A47C7/52 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A47C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	WO 2012165463 A1 (OKAMURA CORP ET AL.) 06/12/2012, the whole document.	1-15
A	JP H06181827 A (ITOKI CREBIO CORP) 05/07/1994, figures & Abstract from DataBase EPODOC. Retrieved from EPOQUE; AN JP-35569992-A.	1-15
A	US 2017105534 A1 (SU CHIH-CHENG) 20/04/2017, the whole document.	1-15

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Date of the actual completion of the international search
13/06/2018Date of mailing of the international search report
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Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.

Information on patent family members

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