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(54) **IMPROVED GLASS**

(57) A glass (1) is provided, comprising a support (2), a bowl (4) which is suitable to contain a fluid (5) and defining a central axis (4a), a labile connector (3) fastened to said support (2) and to said bowl (4), said labile connector (3) allowing said cup (4) to rotate eccentrically with respect to said support (2).

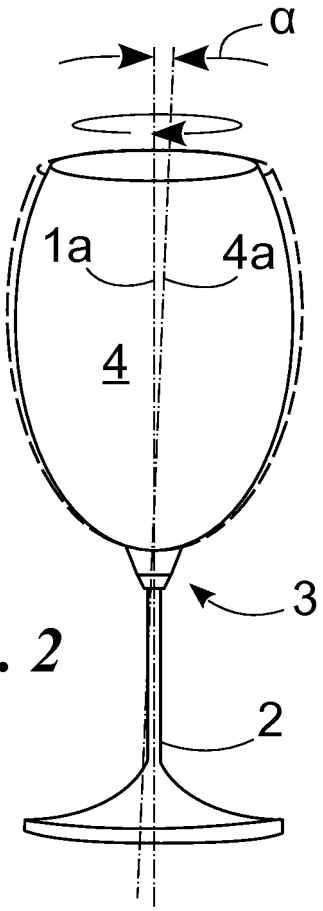

Fig. 2

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Description

[0001] The present invention relates to a glass of the type specified in the preamble of the first claim.

[0002] There are known glasses in the state of the art.

[0003] They may be ordinary containers designed for containing and used for various beverages or they may be containers comprising mechanisms suitable to perform specific additional functions.

[0004] For example, there are some commercially available types of glasses made from Aura Glass™ in which the glass can rotate around a central hub.

[0005] The patent applications CN-Y-201365774, EP-A-0562310, GB-A-1421680, US-B-7299743, US-B-8430023, US-A-649118, JP-U-S533780, and WO-A-2015/063319 should also be noted.

[0006] The documents CN-Y-201365774 and EP-A-0562310 describe a glass consisting of a fixed support containing an electric motor suitable to rotate a bowl to mix the liquid or liquids present inside the bowl.

[0007] The document GB-A-1421680 describes a glass consisting of a bowl resting on a stem and comprising a substantially cone-shaped well extending into the stem, suitable to allow the liquid, typically champagne, contained therein to release a column of bubbles located above the area delimited by the well.

[0008] The document US7299743 describes a decanter comprising a sphere suitable to accept the wine, and a dispensing valve on the bottom of the container. In particular, the device allows the aeration and filtering of the wine poured therein.

[0009] Finally, the document US8430023 describes a fluid aerator comprising a wine receiving bowl, apertures at the bottom of the bowl, and a perforated fluid flow path extending to the bottom of a support supporting the aerator.

[0010] In particular, the wine is aerated at the top of the device on which the bowl is arranged and the wine can be selectively delivered to the bottom thanks to the controlled opening of the dispensing apertures.

[0011] The prior art described above has some significant drawbacks.

[0012] In particular, all the aforesaid devices involve a considerable degree of complexity: the use of rotary mechanisms comprising integrated electric motors which make the glasses described by the abovementioned patents difficult to manufacture.

[0013] In addition, even the simper solutions such as ordinary glasses or the glass described by the document GB-A-1421680 do not add special features to the devices other than to allow a user to drink from it.

[0014] For example, in these cases, the aeration of the wine remains conditional on the experience and competence of the user.

[0015] Focusing again on the more complex solutions, another important drawback is the aesthetic one. All the solutions presented have a structure which in itself is not very customisable, as well as being largely unmodifiable.

[0016] In conclusion, another significant drawback derives from the fact that the glasses equipped with additional functionality described in the patents cited are expensive. In these circumstances, the technical task underlying the present invention is to devise a glass capable of substantially remedying the said drawbacks.

[0017] Within the scope of the said technical task, an important objective of the invention is to obtain a glass which in itself provides additional functions with respect to ordinary glasses and a very simple manufacture.

[0018] Another important object of the invention is to provide a glass that makes it possible to perform the additional functions irrespective of the experience or ability of the user of the multifunctional glass according to the invention.

[0019] Finally, a further aim is to provide a glass which is inexpensive to manufacture. The technical task and the objectives specified are achieved by the multifunctional glass as claimed in the appended claim 1. Examples of preferred embodiments are described in the dependent claims.

[0020] The characteristics and advantages of the invention will be clarified in the following detailed descriptions of some preferred embodiments of the invention, with reference to the accompanying drawings, in which:

Fig. 1 shows an axonometric view of the glass according to the invention;

Fig. 2 shows a view in use of the glass according to the invention;

Fig. 3a is a detail of the glass according to the invention in exploded view; and

Fig. 3b is a detail of the glass according to the invention.

[0021] In the present document, the measures, values, shapes, and geometric references (such as perpendicularity and parallelism), when associated with words like "about" or other similar terms such as "almost" or "substantially", are to be understood as excluding measurement errors or inaccuracies due to production and/or manufacturing defects and, especially, excluding a slight difference from the value of the measure, of the shape or of the geometric reference with which it is associated. For example, these terms, if associated with a value, preferably indicate a difference of not more than 10% of the value itself.

[0022] Furthermore, when used, terms such as "first", "second", "top", "bottom", "main" and "secondary" do not necessarily identify an order, a priority of relationship or relative position, but can simply be used to more clearly distinguish between their different components.

[0023] With reference to the Figures, the improved glass according to the invention is indicated overall with the number **1.**

[0024] The glass 1 is suitable to be arranged in a resting configuration, in which it is arranged resting on its main base, designed for that purpose, in a horizontal

plane. In said resting configuration the glass 1 defines a vertical axis **1a,** preferably coincident with the gravitational direction, a first horizontal axis **1b,** and a second horizontal axis **1c**.

[0025] The first horizontal axis 1 b and the second horizontal axis 1 c are in the same plane and are both perpendicular to the vertical axis 1 a. In addition, the first horizontal axis 1 b is perpendicular to the second horizontal axis 1 c.

[0026] The glass 1 comprises a support **2,** a labile connector **3,** and a bowl **4.**

[0027] The support 2 is a part preferably centred on the vertical axis 1 a which can have varying shapes and sizes, comprising the said supporting base.

[0028] More preferably, the support 2 is a stem of the type typically present in commercially available wine glasses.

[0029] Alternatively, the support 2 may be spherical or conical or other provided that the option of attaching the said support 2 so it can be rested on a flat surface is ensured. In particular, the stem is preferably made of glass, however it could also be made of ceramic or polymer or metal or other.

[0030] In addition, the support 2 can comprise any decoration or coloured paint, for example used for purely aesthetic purposes.

[0031] The bowl 4 defines a central axis **4a** and is preferably an open container suitable to accommodate a fluid. The central axis 4a is preferably the axis of symmetry of the bowl 4, which in glasses of the traditional type is vertical. The bowl 4 therefore defines an inner volume inside which at most a quantity of fluid corresponding to the said inner volume can be accommodated. It can have different shapes and dimensions, it may for example be a cylindrical container, or it can be a cubic or even a prismatic container. The bowl 4 preferably has a substantially rounded or spherical shape of the type conventionally used for making wine glasses.

[0032] The bowl 4, like the support 2, can comprise decorations or coloured paints or other for purely aesthetic purposes.

[0033] The labile connector 3 is preferably a part centred on the vertical axis 1 a and suitable to connect the support 2 with the bowl 4.

[0034] In particular, the labile connector 3 is integrally attached to both the support 2 and the bowl 4, and is suitable to allow the eccentric rotation about the vertical direction with respect to the support 2. The central axis 4a of the bowl 4 and the vertical axis 1 a of the support 2 are substantially offset from one another.

[0035] The fastenings between the labile connector 3 and the support 2, and between the labile connector 3 and the bowl 4, can for example comprise adhesive. This adhesive can for example be an adhesive with low viscosity whose polymerisation is achieved rapidly by means of exposure to ultraviolet (UV) rays.

[0036] As a result of the aforesaid, the support 2 and the bowl 4 are preferably attached to each other in a labile manner by means of the labile connector 3.

[0037] The labile connector 3 allows the bowl 4 to rotate with respect to the support 2.

[0038] In particular, the labile connector 3 preferably consists of a fixed portion **30** and a rotating portion **31.**

[0039] The fixed portion 30 can, for example, be a cylindrical ring centred on the vertical axis 1 a comprising a guide on its inner surface.

[0040] The support 2 is preferably integrally attached to the fixed portion 30, while the bowl 4 is integrally attached to the rotating portion 31.

[0041] In addition, the bowl 4 is appropriately attached to the rotating portion 31 of the offset connector 3, i.e. the central axis 4a of the bowl 4, and the vertical axis 1a of the support 2, are mutually offset or non-coincident, so as to allow the eccentric rotation. The offset between the two axes when parallel is preferably between 0.5 mm and 3 mm.

[0042] When the bowl 4 is moved with respect to the support 2 the central axis 4a preferably forms a tilt angle α with respect to the vertical axis 1a, and the title angle α is preferably not zero and is between 3° and 15°. To achieve this tilt angle α, it is sufficient to have a bearing, such as a sleeve bearing, with ample play in the radial direction along its entire circumference.

[0043] In this way, a tilt is defined, given by the tilt angle α, which also tilts the rotation of the fluid 5 present inside the volume 40 of the bowl 4. During the rotation, the glass 1 thus defines a precessing motion.

[0044] Bearings **32** or lubricating parts can be arranged between the fixed portion 30 and the rotating portion 31 to allow rotation. The bearings 32 preferably consist of a ball bearing. The bearings 32 have a first portion **32a,** integral with the fixed portion 30, and a second portion **32b,** integral with the rotating portion 31.

[0045] The said bearing 32 is preferably inherently symmetrical and regular. In addition, the first portion 32a preferably rests on a non-flat surface, for example consisting of a ring **33** having different thicknesses in different circumferential areas.

[0046] The size of the area of the fluid 5 in direct contact with the outside air is thus changed.

[0047] In particular, when the bowl 4 is at rest with respect to the support 2, the fluid 5 defines a first area of exposure. In addition, when the bowl 4 is in motion with respect to the support 2, the fluid 5 defines a second area of exposure.

[0048] Therefore, the second area of exposure comprises an extension surface different from, and preferably greater than, the size of the first surface of exposure.

[0049] In a second example, the tilt angle α is zero and thus the central axis 4a is parallel to the vertical axis 1a.

[0050] In this latter example, the central axis 4a can be aligned with the vertical axis 1a or parallel and spaced with respect to the vertical axis 1a. In this latter case, the bowl 4 can rotate eccentrically, about the vertical axis 1a, with respect to the said support 2.

[0051] The distance or eccentricity can assume val-

ues, for example, between 2 and 5 mm. The operation of the glass 1 previously described in structural terms is the following. The user can place their finger on the outer surface of the bowl 4, setting it in rotation with respect to the support 2, arranged for example on a flat surface such as a table, by means of the labile connector 3.

[0052] In addition, the moving bowl 4 sets in motion the fluid arranged in the bowl 4.

[0053] By the synergistic effect of rotation and the tilt angle α, the area of exposure of the fluid increases from the first area of exposure to the second area of exposure, allowing the fluid to become oxygenated and thus decanted.

[0054] Alternatively, the synergistic effect of rotation and the offset on the fluid creates an imbalance of the centrifugal force acting on the liquid, increasing its area of exposure, achieving the same result.

[0055] The glass 1 according to the invention delivers significant benefits.

[0056] Indeed, the glass 1 does not require complex mechanisms to perform its functions, but surprisingly uses known properties of the joints or bearings to allow the operational motion of the bowl 4 with respect to the support 2.

[0057] In addition, the functions performed by the glass 1 are easily usable by users of any kind, even those without the relevant experience and knowledge.

[0058] In addition, the particular eccentric rotation of the glass allows a better analysis of the quality of the wine by oenologists or, generally, by consumers.

[0059] In particular, the light reflected in the glass is accelerated by the rotary motion, allowing a better evaluation of clarity, vivacity, and sheen.

[0060] The movement also makes it immediately possible to detect and assess the possible presence of particles or a lack of transparency.

[0061] In addition, the said particular eccentric rotation concentrates a greater surface of wine on the glass. The movement facilitates analysis of shades and hues.

[0062] The particular eccentric rotation also makes it possible to achieve a uniform and homogeneous film of liquid on the wall of the glass. A more thorough and objective evaluation of the speed with which the wine tears fall, the amplitude of the arches, and on how the wine reassembles inside the glass is thus made possible.

[0063] The rotation also makes possible the formation of a more homogeneous aroma funnel. A slow rotation allows an analysis of the bouquet and the evolution of the wine; a subsequent faster rotation makes it possible to characterise the olfactory categories and to better assess intensity, complexity, and palatability of the wine. Finally, the said rotation, as a preliminary step with respect to the gustatory analysis, makes it possible to homogenise the gustatory components of the wine and to refine the perception of soft taste sensations - from sugars and glycerine substances - and hard ones, from acids, salts, and tannins.

[0064] The area of exposure is in fact always increased and can beneficially be further increased by use of a faster rotation of the bowl 4 about the support 2.

[0065] In conclusion, the glass 1 is beneficially manufacturable in an inexpensive way without resorting to costly technologies for moving the bowl with respect to the support.

[0066] The glass also remains stable during use and avoids the inconvenience of possible breakage of the glass due to uncontrolled rotations and changes of trajectory outside of the resting plane.

[0067] The invention is subject to variations falling within the scope of the inventive concept as defined by the claims.

[0068] In this context all the details are replaceable by equivalent elements and the materials, shapes and dimensions can be any.

Claims

1. A multifunctional glass (1), comprising:

   - a support (2) having a defined axis (1a), in normal supporting conditions, a vertical axis,
   - a bowl (4) suitable to contain a fluid (5) and defining a central axis (4a),
   - a labile connector (3), fastened to said support (2) and to said bowl (4),
   - said labile connector (3) allowing said bowl (4) to rotate with respect to said support (2),
   - and **characterised in that** said bowl (4) rotates eccentrically about said vertical direction with respect to said support (2).

2. The glass (1) according to the previous claim, wherein said bowl (4) is attached to said connector (3) in an offset manner, i.e. with said central axis (4a) and said vertical axis (1a) offset from each other, so as to allow said eccentric rotation.

3. The glass (1) according to one or more of the preceding claims, defining a vertical axis (1 a), and wherein said central axis (4a) forms a tilt angle (a) with respect to said vertical axis (1 a) when said bowl (4) is moved with respect to said support (2) around said connector (3), defining a precessing motion.

4. The glass (1) according to at least one preceding claim, wherein said tilt angle (α) is zero.

5. The glass (1) according to at least one preceding claim, wherein said tilt angle (α) is not zero.

6. The glass (1) according to at least one preceding claim, wherein said tilt angle (α) is between 3° and 15°.

7. The glass (1) according to at least one preceding

claim, wherein said connector labile (3) comprises a bearing (32) having a first portion (32a), integral with said support (2), and a second portion (32b), integral with said bowl (4).

8. The glass (1) according to the previous claim, wherein said first portion (32a) rests on a non-flat surface which is part of the labile connector (3).

9. The glass (1) according to the previous claim, wherein said non-flat surface consists of a ring (33) having different thicknesses in different circumferential areas.

10. The glass (1) according to at least one preceding claim, wherein said bowl (4) is manually movable by a user with respect to said support (2), said movable bowl (4) being suitable to decant said fluid (5) comprised within said bowl (4).

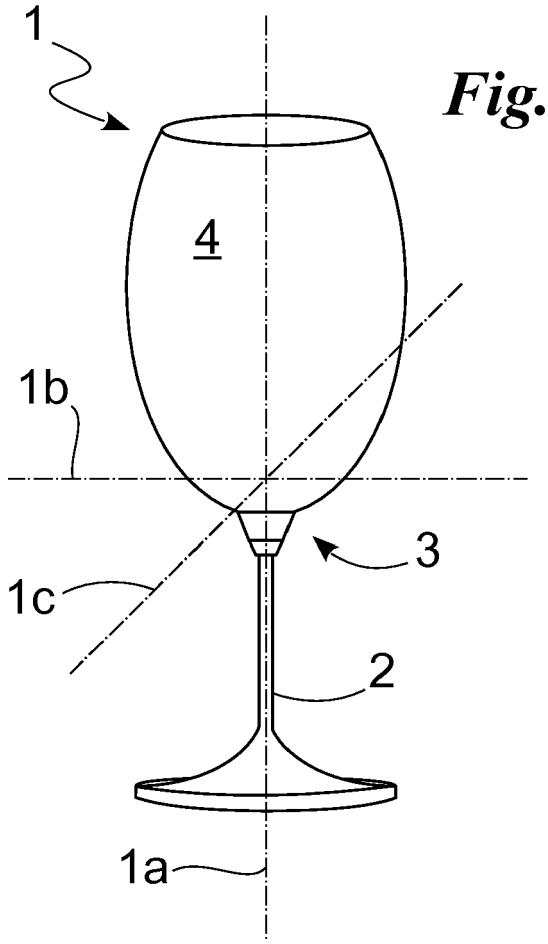


Fig. 1

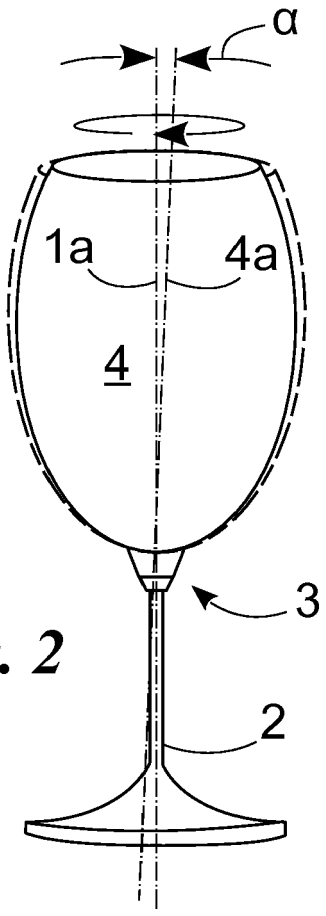


Fig. 2

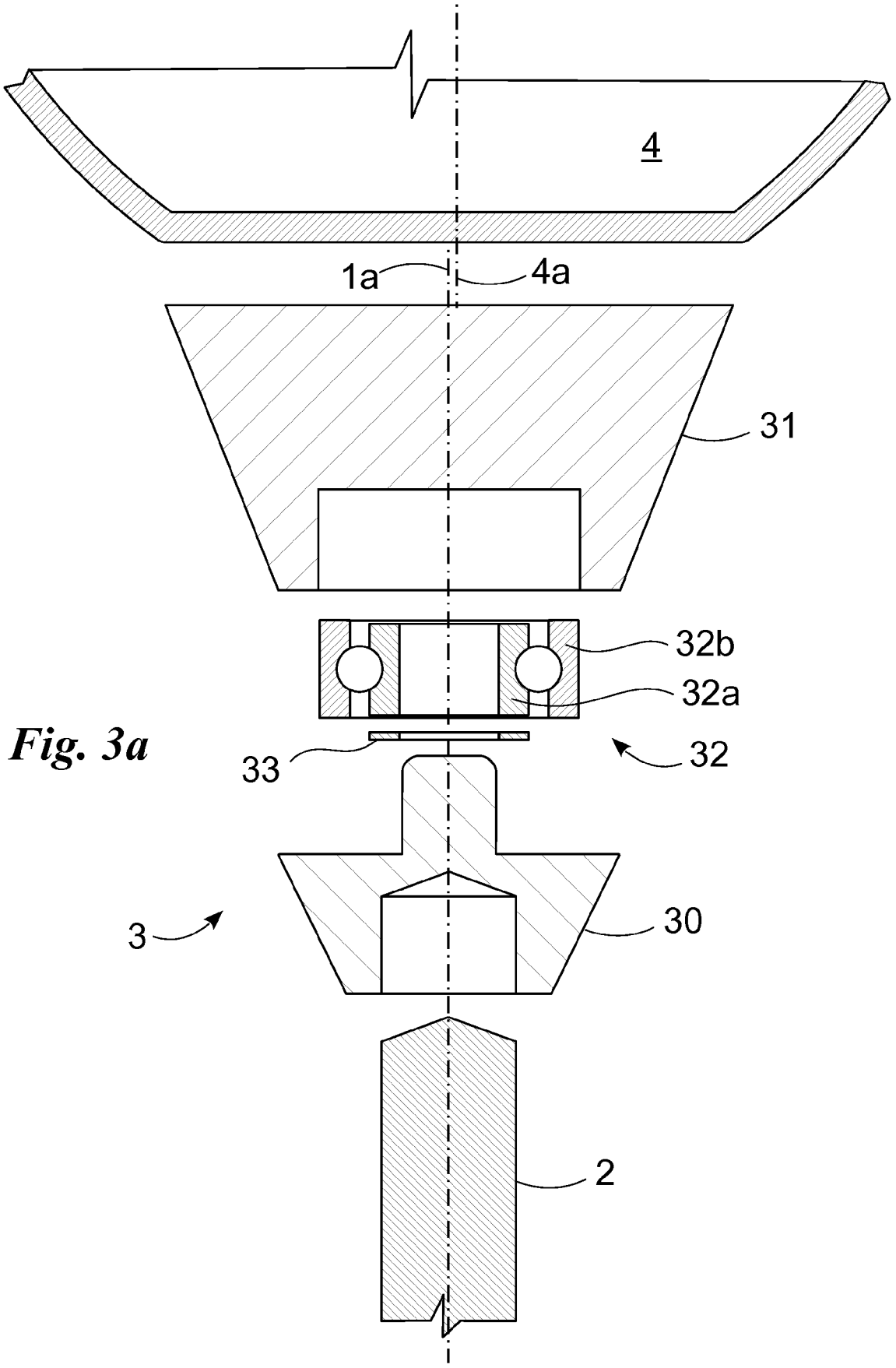
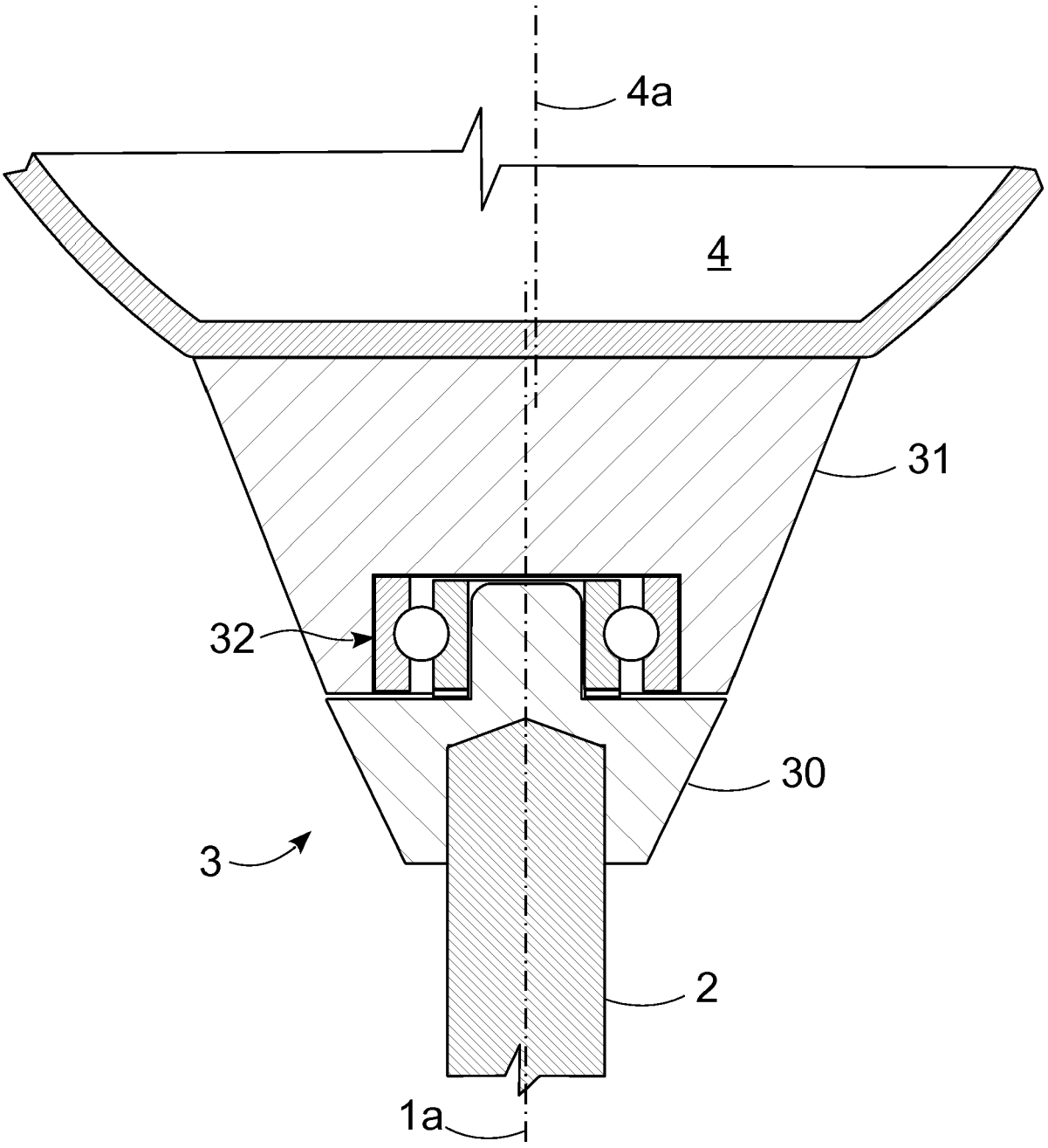


Fig. 3a

Fig. 3b



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EUROPEAN SEARCH REPORT

Application Number
EP 17 18 3727

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 6 491 183 B1 (HUANG I-CHEN [TW]) 10 December 2002 (2002-12-10) * column 2, line 4 - line 44; figures 1-9 *	1	INV. A47G19/22
A	JP S53 3780 U (UNKNOWN) 13 January 1978 (1978-01-13) * the whole document *	1	
A	WO 2015/063319 A1 (EBERHARD THEO [DE]; SAILER KLAUS [DE]) 7 May 2015 (2015-05-07) * page 16, last paragraph - page 18, paragraph 1; figures 4-5 *	1	

TECHNICAL FIELDS SEARCHED (IPC)

A47G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	5 January 2018	Vistisen, Lars

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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