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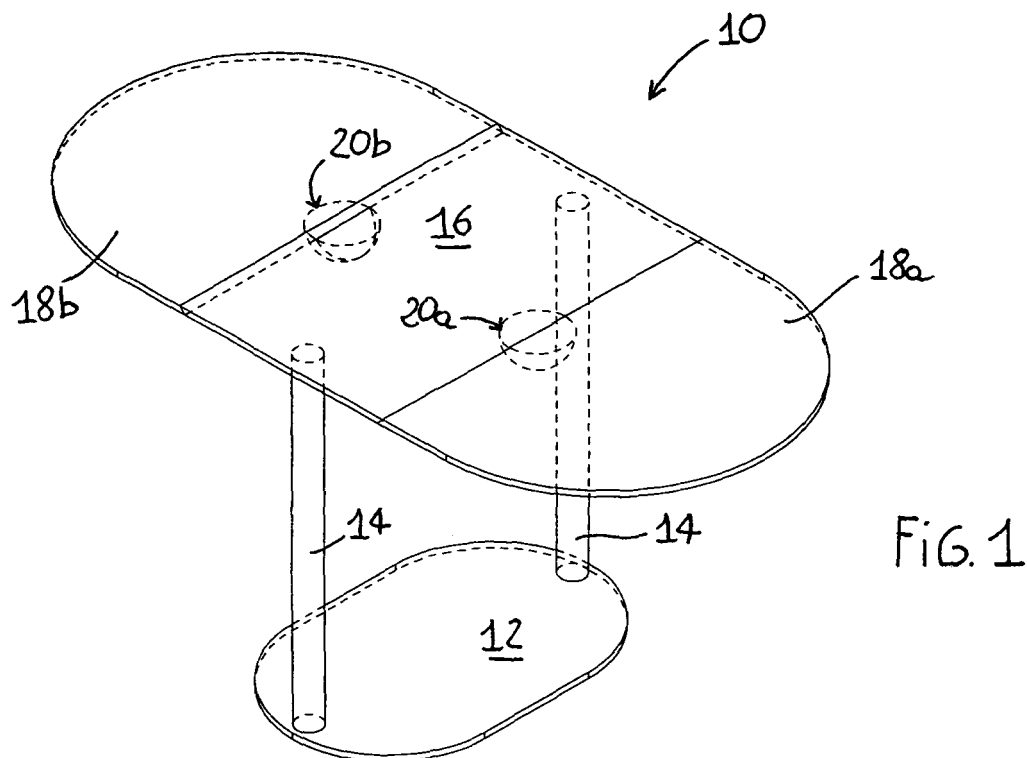
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(54) Table with one or more retractable extensions

(57) Table (10) comprising a tabletop (16) and at least an extension (18a, 18b) displaceable between a first position, in which it is co-planar to, i.e. lies in the same plane as the tabletop (16), and a second position, in which it is retracted under said tabletop (16) in an inclined posture relative thereto, with the aid of an articulated joint (20a, 20b). The articulated joint (20a, 20b) comprises a first block (32) attached to the tabletop (16)

and a second block (34) serving as a support to said at least one extension (18a, 18b). The first block (32) is rotatably connected to the second one (34) so as to be able to rotate about a direct axis (X) between the two blocks that is inclined by an acute angle (β) relative to the tabletop (16). The extension (18a, 18b) is capable of displacing from said first position to said second position, and vice-versa, through a 180°-rotation about said axis (X).



Description

[0001] The present invention refers to a table having one or more retractable extensions.

[0002] The selection of a table having a fixedly shaped worktop implies a thorough consideration of a number of factors, such as the place where to position it and the various furniture fittings which it has to be combined or matched with, to be made by the buyer before purchasing it. In addition, it may quite often occur that buyers of a table of this kind, following a change in their taste and preferences, or even owing to particular needs arising in terms of available space or house decoration, find out that a table having a different shape is what they would actually need. Whenever such considerations or newly arisen needs lead to a table being therefore replaced, this will most clearly involve - further to the resulting waste - an undesired disbursement to be sustained.

[0003] It is a generally known fact that a table designed so as to enable a user to increase the surface area of the related worktop by means of few, simple manipulations, - as is the case with the so-called extensible tables - is highly valued and preferred by the buyers on the marketplace. The reasons for this are fully apparent, in particular when the far greater flexibility and convenience in practical use of such extensible table is considered as compared with a non-extensible one.

[0004] Known in the art are tables that are provided with at least an extension that is capable of being protracted - and retracted - by a simple rotation thereof.

[0005] A table of this kind is disclosed in the International Patent Application WO 02 054 908 filed by this same Applicant, which describes a table comprising a fixed tabletop and at least an extension supported in a cantilever-type manner by a wing that is hinged on to the fixed tabletop with an axis extending orthogonally thereto. The wing is provided with a pin that is hinged on to the extension (the axis of this pin is horizontal and parallel to the floor) and enables the same extension to rotate by tilting downwards. Through the hinge, the extension can then perform a 180°-rotation and move into a retracted position under the fixed tabletop. Such hinge is made by using related bushes and discs, with a spring-type stopping mechanism. For the extension to be retracted, the user has to grasp it with his/her hands at the free end thereof and lift it so as to cause it to tilt. At this point, the user - taking advantage of the hinge - causes the extension to rotate by 180° relative to the fixed tabletop. At the end of this rotation, the extension will find itself in the retracted configuration thereof, i.e. under the fixed tabletop. Through just a few, quite simple manipulations, the user is therefore able to displace the extension from the retracted position thereof to the protracted one, and vice-versa.

[0006] The Applicant is anyway of the opinion that a further simplification in the construction of a table having one or more retractable extensions - along with a further simplification of the manipulations required to protract

and retract these extensions - may prove of particular advantage.

[0007] And this is actually the main object of the present invention, wherein such purpose is reached in a table having:

- a raised tabletop,
- at least an extension associated to said tabletop and displaceable between a first position, in which it is co-planar to, i.e. lies in the same plane, as the tabletop, and a second position, in which it is retracted and lying under said tabletop in an inclined posture relative thereto,
- an articulated joint between said tabletop and said at least one extension, which enables said at least one extension to be displaced to and from said protracted and retracted positions,

characterized in that said articulated joint comprises a first block attached to the tabletop and a second block serving as a support to said at least one extension, the first block being rotatably connected to the second one so as to be able to rotate about an axis directed between the two blocks and inclined by an acute angle relative to the tabletop, such that said at least one extension is capable of displacing from said first position to said second position, and vice-versa, through a 180°-rotation about said axis.

[0008] Anyway, features and advantages of the present invention will be more readily understood from the description of a preferred, although not sole embodiment, which is given below by way of example with reference to the accompanying drawings, in which:

- Figure 1 is a three-quarter view of a table according to the present invention, as shown with protracted extensions ;
- Figure 2 is a side view of the table shown in Figure 1;
- Figure 3 is a three-quarter view of the table shown in Figure 1, however with the extensions thereof in the retracted position;
- Figure 4 is a side view of the table shown in Figure 3;
- Figure 5 is a three-quarter view of an articulated joint for the extension;
- Figure 6 is a side view of the articulated joint shown in Figure 5, in the state in which the extension is protracted;
- Figure 7 is a side view of the articulated joint shown in Figure 5, in the state in which the extension is retracted;
- Figure 8 is a three-quarter, cross-sectional view of the articulated joint shown in Figure 5, taken along the middle vertical section plane I-I in Figure 5;
- Figure 9 is a side view of the representation appearing in Figure 8.

[0009] With reference to the Figures above, a table according to the present invention is generally indicated

at 10. It comprises an (optional) oval-shaped base 12 for two tubular legs 14 that support a rectangular tabletop 16, to which - by means of two similar articulated joints 20a, 20b - there are connected two similar extensions 18a, 18b having a substantially semi-circular shape.

[0010] In particular, Figure 1 and Figure 2 illustrate the table 10 with the extensions 18a, 18b thereof in the protracted position, i.e. juxtaposed to the tabletop 16 in a co-planar arrangement thereto, whereas Figure 3 and Figure 4 illustrate the same table 10 with the extensions 18a, 18b thereof in the retracted position, i.e. turned down under said tabletop 16 in an inclined arrangement relative thereto. It should be noticed that the inclination of the extensions 18a, 18b relative to the tabletop 16 is of 90°.

[0011] Turning now to Figures 5 to 7, these can be noticed to illustrate an enlarged, isolated representation of the articulated joint 20a. This is shown to comprise a semi-spherical body 22 that has a smooth circular surface 30 and is subdivided - along an ideal radial half-plane - into two blocks 32 and 34 in the shape of spherical segments. Relative to the surface 30 (see Figure 6), this ideal plane forms an angle α at 45°, so that the block 32 turns out to be a spherical segment α that is (approximately) equal to one third of the block 34.

[0012] The two blocks 32 and 34 are brought into a mutually juxtaposed arrangement along two corresponding parallel sliding surfaces 36, 38 (as this shall be explained in greater detail further on), while each one of them features a respective resting surface 80, 82, the juxtaposition of which - as seen in Figure 5, with the extensions 18a, 18b in the protracted position thereof - forms the surface 30.

[0013] The two blocks 32 and 34 are held together and connected rotatably (cf. Figures 9 and 10) by means of a threaded pin 40, which is screwed into the block 32 perpendicularly to the surfaces 36, 38 (along an axis X in Figure 10) and coupled to a ball bearing 42 housed in a seat 44 provided in the block 34. In this manner, the block 34 is capable of rotating relative to the block 32, the surface 36 sliding on the surface 38 - see Figures 6 and 7. In this connection, it should be noticed that the axis X forms an angle β of 45° with the surface 80.

[0014] In two seats 50, 52 provided in the surface 36 of the block 34 there are accommodated two dowels 54, 56, respectively, that are biased by respective springs 58, 60 into a recess 62 and a through-bore 64, respectively, wherein said recess is provided in the surface 38 and said through-bore is provided in the body of the block 32. In said through-bore 64 there is contained a small cylinder 66 that protrudes from said block 32 with a free end 68 thereof, while it engages the dowel 56 with the other end portion thereof. In the body of this small cylinder 66 there is provided a longitudinal groove 70, which is engaged by the head 72 of a retaining pin 74 that is arranged inside the block 32 orthogonally to the axis X of the small cylinder 66. In this manner, the small cylinder 66 is capable of displacing with a stroke limited to the interior of the through-bore 64, without being however

able to slide thereoutside. Around the pin 40 in the block 32 there is arranged a collar bearing 45, the role of which is minimizing the friction between the block 32 and the block 34.

[0015] In each one of the articulated joints 20a, 20b, the tabletop 16 is attached to the surface 80 of the block 32, whereas an extension (either the extension 18a or the extension 18b) is attached to the surface 82 of the block 34.

[0016] The way in which the table 10 works is as follows, i.e. when the extensions 18a, 18b are protracted, the surfaces 80, 82 of the blocks 32, 34 (see Figure 6) are co-planar; the same applies to the tabletop 16 and the extensions 18a, 18b. The dowel 56 penetrates the bore 64, thereby preventing the blocks 32, 34 from accidentally rotating relative to each other, so that the mutual position of the tabletop 16 and the extensions 18a, 18b is held and maintained firmly.

[0017] For, say, the extension 18a to be retracted (the same applies to the other one), the user acts on the related articulated joint 20a by pressing upon the free end 68 of the small cylinder 66, thereby pushing the dowel 54 into the seat 52. Owing to the dowel 54 and the related recess 62 are provided there to just alignment purposes, and have no locking or retaining role, the user will at this point be able - by pushing the extension 18a - to cause the two blocks 32, 34 to rotate by 180° relative to each other about the axis X - see Figures 4 and 7.

[0018] At the end of this rotation, given the geometrical relations between the angles α and β , the extension 18a will lie orthogonally to the tabletop 16, as positioned close to the legs 14 - cf. Figure 4. In view of facilitating the displacement of the extensions 18a, 18b, and providing a table 10 having an overall tabletop that is free of any significant interruption, the mutually adjacent sides 90, 91, 92, 93 of the tabletop 16 and the extensions 18a, 18b - see Figures 2 and 4 - can be chamfered along a cutting direction that substantially coincides with the surfaces 36, 38.

[0019] Different inclinations of the extensions 18a, 18b relative to the tabletop 16 may be contemplated in view of providing different table models or designs (by reducing the angle α below 45°, the extensions 18a, 18b can be inclined to a greater extent towards the legs 14 of the table).

[0020] The manipulation required to displace the extensions in the desired direction is therefore very simple, and the articulated joint between said extensions is brought about with the use of a quite uncomplicated mechanism. The table according to the present invention can most advantageously be made considerably shorter in a quite simple and convenient manner, or it may even be placed or leant against the wall, thereby becoming a charming piece of furniture on which decorative or other artefacts may be placed for support.

[0021] The table according to the present invention as described above may be subject to a number of different embodiments and variations thereof, e.g. involving the

shape of both the tabletop 16 and the extensions 18a, 18b, the number of such extensions, the form of the related support stand, and the like. The blocks 32, 34 may themselves be provided in a different shape (e.g., they may be constituted by two blocks that, when joined together, form a cube, a prism or, more generally, a regular or rotation solid), and their hinging axis may be selected so as to even extend along an edge thereof.

[0022] It will be appreciated that all of these further embodiments and variations do anyway fall within the scope of the present invention, so as defined in the following claims, and not depart therefrom.

Claims

1. Table (10) having:

- a raised tabletop (16),
- at least an extension (18a, 18b) associated to said tabletop (16) and displaceable between a first position, in which it is co-planar to the tabletop (16), and a second position, in which it is retracted under said tabletop (16) in an inclined posture relative thereto,
- an articulated joint (20a, 20b) between said tabletop (16) and said at least one extension (18a, 18b), which enables said at least one extension (18a, 18b) to be displaced to and from said protracted and retracted positions,

characterized in that said articulated joint (20a, 20b) comprises a first block (32) attached to the tabletop (16) and a second block (34) serving as a support to said at least one extension (18a, 18b), the first block (32) being rotatably connected to the second one (34) so as to be able to rotate about an axis (X) directed between the two blocks that is inclined by an acute angle (β) relative to the tabletop (16), such that said at least one extension (18a, 18b) is capable of displacing from said first position to said second position, and vice-versa, through a 180°-rotation about said axis (X).

2. Table (10) according to claim 1, wherein said blocks (32, 34) rotate relative to and against each other by sliding on corresponding sliding surfaces (36, 38).
3. Table (10) according to claim 1 or 2, wherein said blocks (32, 34) are two portions of a solid.
4. Table (10) according to claim 3, wherein said solid is a half-sphere (22) and said portions thereof are spherical segments.
5. Table (10) according to any of the preceding claims, wherein said blocks (32, 34) comprise a support surface (80) for the tabletop (16) and/or the at least one

extension (18a, 18b).

6. Table (10) according to any of the preceding claims 2 to 5, wherein said blocks (32, 34) are connected to each other rotatably by a pin member (40), which is fastened in a block (32) perpendicularly to said surfaces (36, 38) and coupled to a bearing member (42) housed in a seat (44) provided in the surface of the other block (34).
7. Table (10) according to any of the preceding claims 2 to 6, wherein the sliding surface (36, 38) of one of said blocks (32, 34) comprises a seat (50) in which there is housed an interposition member (54, 56) biased by spring means (58, 60) into a corresponding alignment recess (62) provided in the sliding surface (36, 38) of the other block (32, 34).
8. Table (10) according to any of the preceding claims 2 to 7, wherein in the body of one of said blocks (32, 34) there is provided a through-bore (54), in which there is housed a stopping member (66) that protrudes from said block (32, 34) with a free end (68) thereof, while with the other end thereof it engages an interposition member (56) biased by spring means (60) into said bore (54), said interposition member (56) being housed in a seat (52) in the sliding surface (36, 38) of the other block (32, 34).
9. Table (10) according to claim 8, wherein in the body of said stopping member (66) there is provided a longitudinal groove (70) that is engaged by the head (72) of a retaining pin (74), said member being capable of sliding through a displacement stroke that is limited by said groove inside said bore (54).
10. Table (10) according to any of the preceding claims, wherein said acute angle (β) is a 45°-angle so that said extension is perpendicular to said tabletop (16) in the position in which it is retracted under said tabletop (16).
11. Table (10) according to any of the preceding claims, wherein said tabletop (16) is raised as supported by at least one central leg (14).

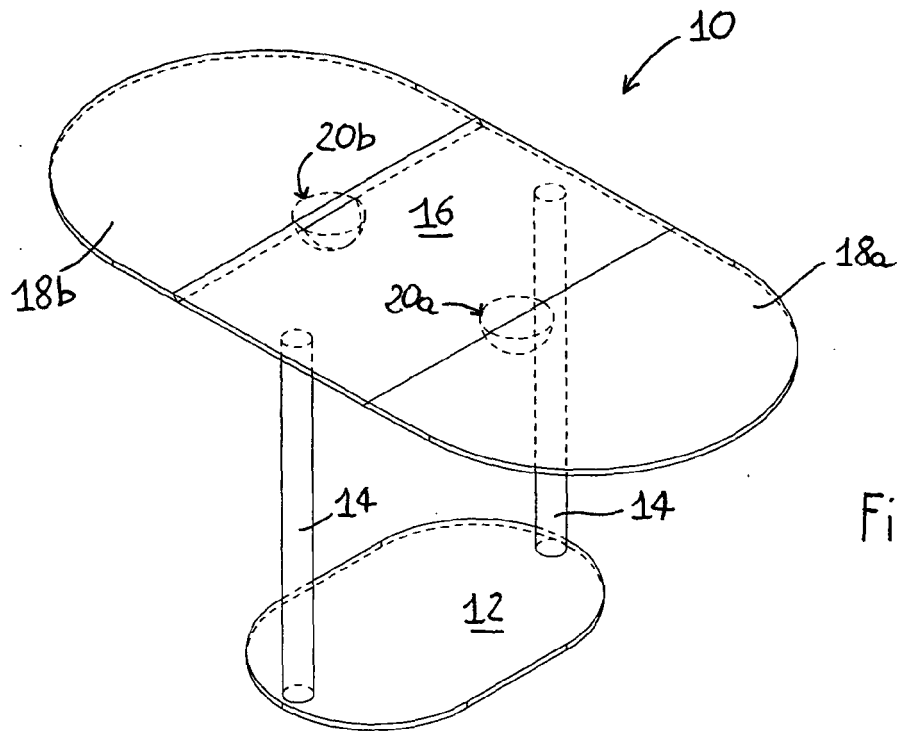


FIG. 1

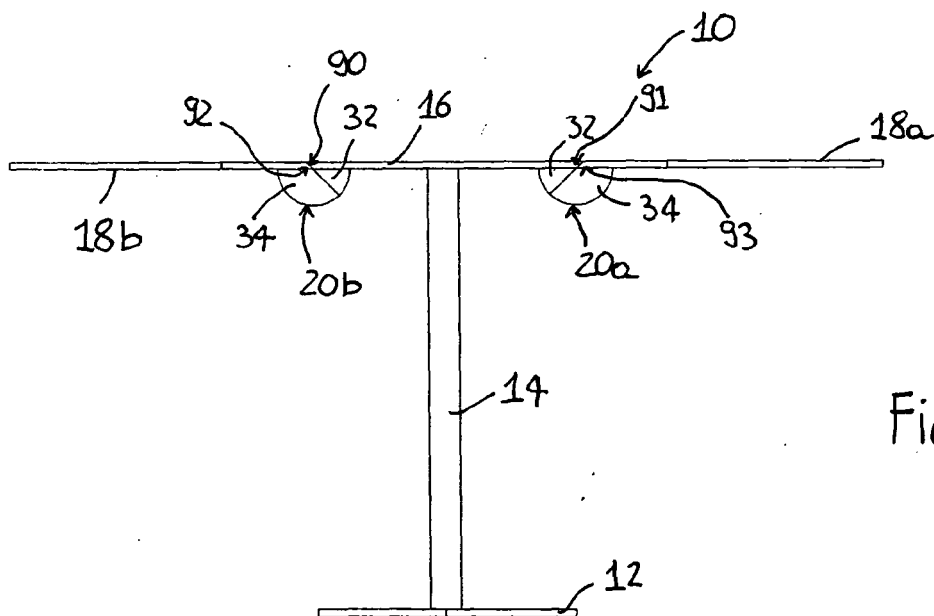
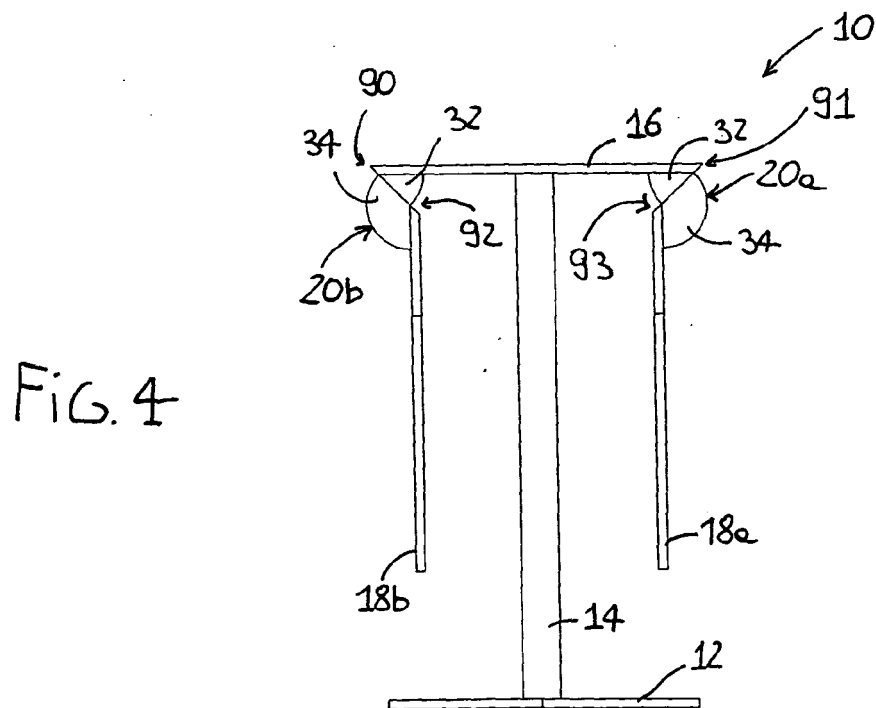
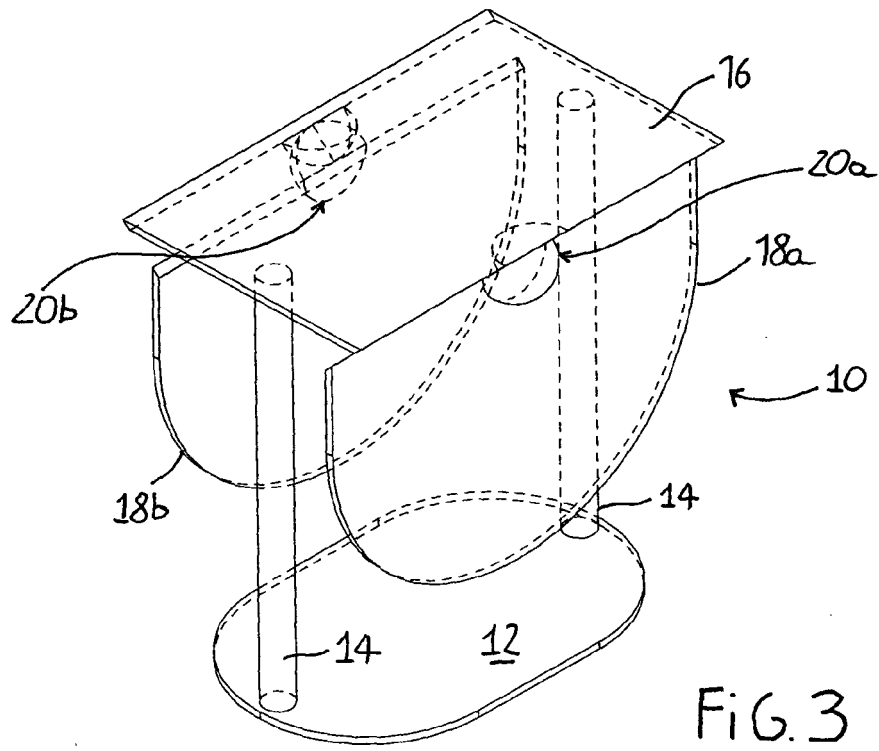


FIG. 2



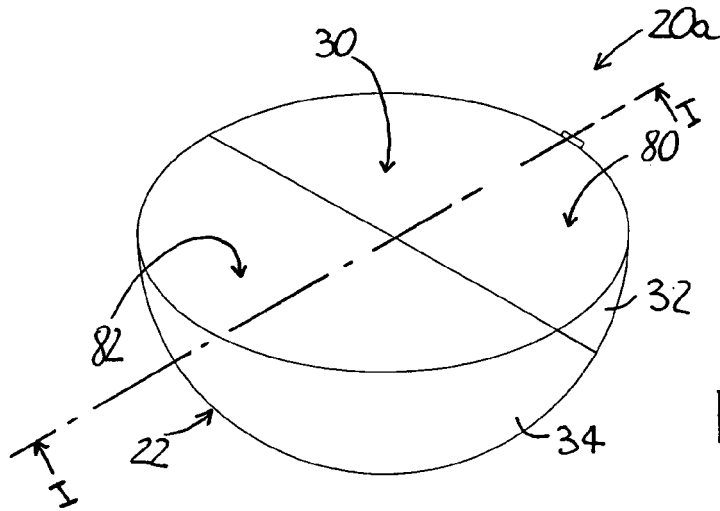


FIG. 5

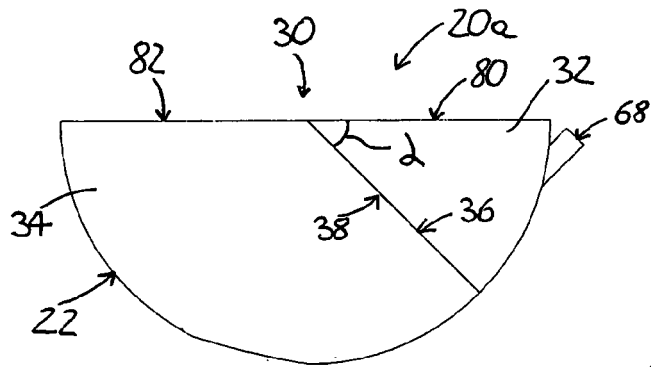


FIG. 6

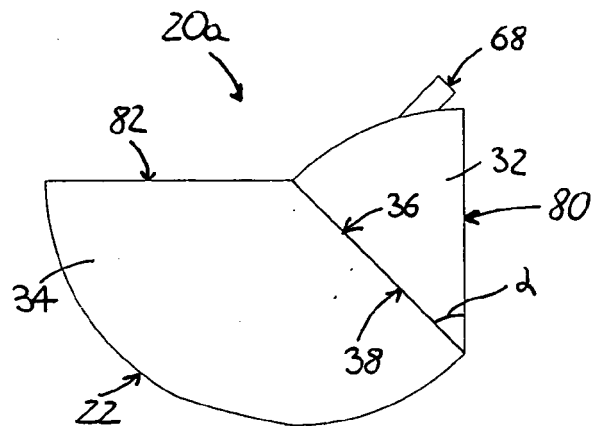


FIG. 7

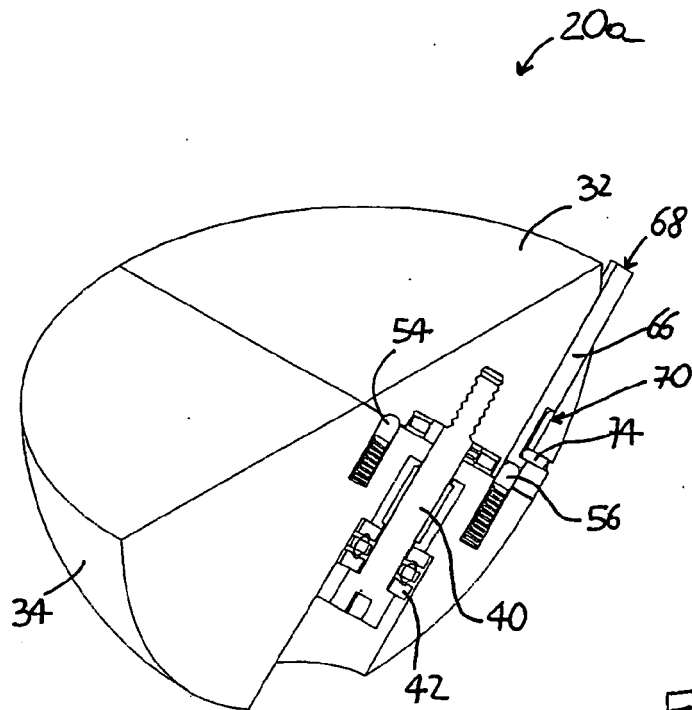


FIG. 8

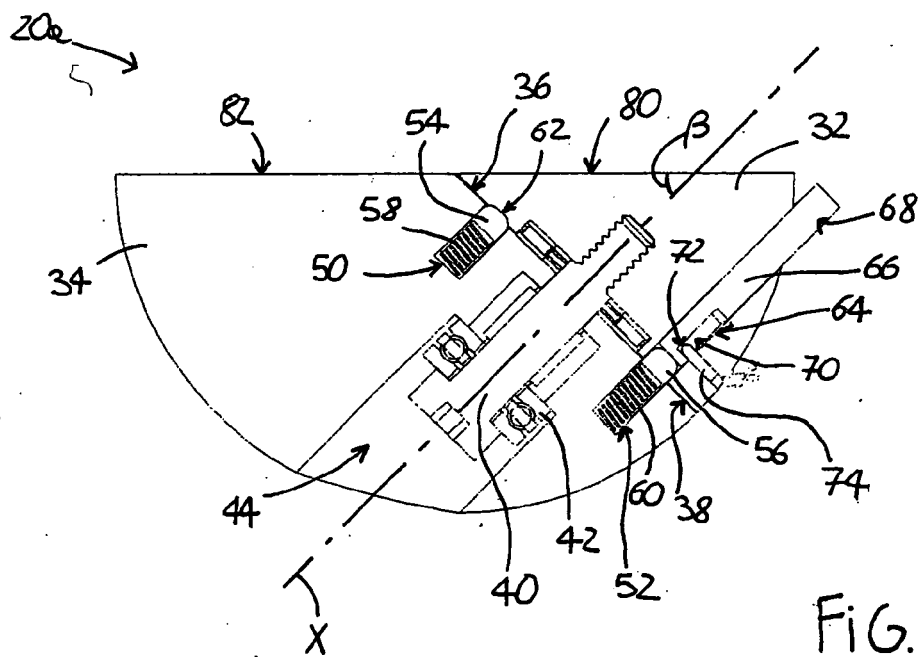


FIG. 9



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 42 5210

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	WO 02/054908 A (SOCIETA' VETRARIA BIANCADESE SAS; LUCATELLO, LUCIANO) 18 July 2002 (2002-07-18)	1-7,10, 11	A47B1/03
A	* the whole document * -----	8,9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A47B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 24 August 2005	Examiner Ottesen, R
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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 05 42 5210

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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24-08-2005

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 02054908 A	18-07-2002	IT TV20010002 U1	12-07-2002
		AT 271808 T	15-08-2004
		CN 1476303 A	18-02-2004
		DE 60200832 D1	02-09-2004
		WO 02054908 A1	18-07-2002
		EP 1349470 A1	08-10-2003
		ES 2224057 T3	01-03-2005
		PT 1349470 T	29-10-2004
		US 2004035333 A1	26-02-2004

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 02054908 A [0005]