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## (54) Ring assembly

(57) The present invention relates to a ring assembly allowing a fast and accurate assembly in order to provide a ring, particularly a solitaire ring.

Particularly, the present invention relates to a ring assembly (1), which can be assembled to provide a ring, comprising a bezel (2) and a ring body (3) having a seat (4) for said bezel (2), characterized in that said bezel (2) comprises a fixing portion (9a) being complementary to the seat (4) of said ring body (3) and an anchorage portion (9b) for a gem, wherein said anchorage portion (9b) changes according to the gem size, whereas said fixing portion (9a) and said seat (4) have a complementary, predetermined and unvariable configuration regardless of the size of said ring body (3) or said gem.

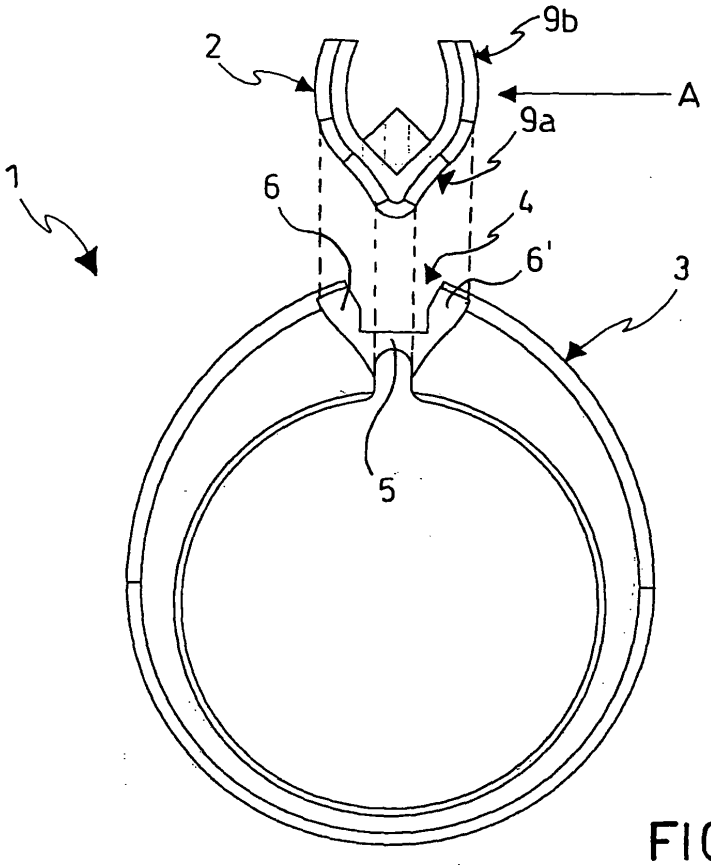


FIG.1

EP 1 621 096 A1

## Description

**[0001]** The present invention relates to a ring assembly allowing a fast and accurate assembly providing a ring, particularly a solitaire ring.

**[0002]** The solitaire ring, tipically a diamond, is by far the most widespread type of ring in the world. In fact, it is the traditional engagement gift and, in some cases, is given more than once in a lifetime, on the occasion of particularly important anniversaries.

**[0003]** Therefore, it is understood that ring manufacturers should always keep in stock a number of solitaire rings. In fact, rings of various sizes are required to be available in order to fit the customers' fingers. Furthermore, the carat weight range of the diamond should be a quite assorted one in order to meet different requirements. There are ten sizes commonly used with rings, while the most in demand diamond carat weights are five. This means that a manufacturer of such type of rings should always keep fifty rings in stock, i.e. rings of the ten above-mentioned sizes per each diamond carat weight. One may easily imagine what a considerable cost a manufacturer has to bear to keep such a stock, in consideration of the high value of the rings (either of gold or platinum) and above all of diamonds.

**[0004]** A first problem to which the the present invention is addressed is thus to allow a ring manufacturer to abate the stocks while being able to meet its customers' requirements.

**[0005]** Such a problem is solved by a ring assembly such as described in the independent claim annexed herein and by a method for manufacturing rings such as described in claim 12.

**[0006]** The inventive ring assembly consists of only two parts, i.e. the ring body and the bezel holding the gem. As will be better described below, thanks to the particular construction of the assembly according to the invention, a manufacturer in this field will be able to keep in stock only ten ring bodies of various sizes and five bezels with the gems of relative carat weight, according to a normal assortment. Obviously, this means a considerable saving in costs.

**[0007]** A further problem to which the present invention is addressed is to achieve a fast and accurate assembly of the bezel to the ring body.

**[0008]** This problem is solved in accordance with an embodiment of the invention such as described in the dependent claims.

**[0009]** Further characteristics and advantages of the ring assembly forming the object of the present invention will be made more apparent from the description of a preferred embodiment, which is provided herewith below by way of a non limiting example, with reference to the following figures:

Figure 1 shows an exploded plan view of the ring assembly according to the invention;

Figure 2 shows a perspective view of the bezel of the assembly from figure 1;

Figure 3 shows a view of the bezel from figure 2 according to direction A from figure 1;

Figure 4 shows a view of the bezel from figure 2 according to direction B from figure 3;

Figure 5 shows a perspective view of the ring body of the assembly from figure 1;

Figure 6 shows a view of the ring assembly of the invention, in an assembled condition, according to direction A from figure 1;

Figure 7 shows a perspective view of the ring assembly from figure 1, wherein the gem is outlined;

Figure 8 shows a plan view of the ring assembly in an assembled condition, wherein several possible sizes both of the bezel and the ring body are depicted.

**[0010]** With reference to the figures, the ring assembly forming the object of the present invention will be now described.

**[0011]** The ring assembly, being indicated as a whole with numeral 1, consists of a bezel 2 and a ring body 3.

**[0012]** As shown in figures 1 and 5, the ring body 3 has a substantially rectangular section, with substantially flat sides, (outer) convex upper face and concave lower face (in contact with the finger). The ring body 3 comprises a seat 4 for the bezel 2 and has a greater thickness at said seat 4 and a diminishing thickness as moving away from the seat 4.

**[0013]** The seat 4 for the bezel 2 has a substantially V-shaped notch and comprises a bridge portion 5 joining both flaps of the notch. The bridge portion 5 continues in two ribs 6, 6', the contour of which comprises a first portion departing from said bridge portion 5 forming a right angle and a second portion developing, substantially parallel to the V-shaped contour of the notch, until the outer edge of the ring body 3. The element formed by bridge portion 5 - ribs 6, 6' has a smaller width than the width of the ring body 3, thereby a shoulder 7 is formed on both sides of said element, on both flaps of the notch (only one shoulder 7 can be seen in fig. 5).

**[0014]** The bezel 2 comprises anchorage means for the gem. Said anchorage means 8, in the embodiment illustrated in figures 2, 3 and 4, comprise two anchorage elements 8 which are substantially V-shaped and of a complementary shape to the contour of the notch of seat 4 on the ring body 5. In the particularly preferred embodiment as shown in the figures, these anchorage means 8 comprise two arms 9 which, by originating from a vertex in common, develop outwardly with a concave contour by approximatively half the length thereof and with a convex contour by the remaining part of the length thereof. The notch of seat 4 will obviously have a matching contour. This shape allows the bezel 2 to be properly abutted against the ring body 3 and precisely against the shoulders 7.

**[0015]** Both anchorage elements 8 are joined to each other by means of a rod 10, which in the example has a

substantially rhomboid section, which is fixed within the groove between both arms 9. The rod 10 holds both anchorage elements 8 apart by a distance substantially corresponding to the width of bridge portion 5 and ribs 6, 6' of seat 4.

**[0016]** The rod 10 has, in the centre thereof, a concave depression 11 provided with a hole 12. The assembly of said depression 11 and said hole 12 forms an anchorage means for the gem, particularly to house the lower cusp thereof.

**[0017]** As shown in fig. 8, the bezel 2 comprises a fixing portion 9a to the ring body 3, which is complementary to said seat 4 provided on the ring body, and an anchorage portion 9b, 9b', 9b" for the gem. The anchorage portion 9b, 9b', 9b" has a number of different sizes according to the size of the gem to be mounted, whereas the fixing portion 9a has a predetermined size such as dictated by the size of seat 4. Particularly, the arms 9 of the anchorage elements 8 comprise said first fixing portion 9a intended to match the contour of the shoulder 7 of seat 4 and said second anchorage portion 9b, 9b', 9b'' of the gem where the distance between the arms 9 of a same anchorage means 8 is a function of the gem diameter.

**[0018]** The ring assembly according to the present invention is assembled by placing the bezel 2, which is selected depending on the gem to be matched to the ring, astride the bridge portion 5 and the ribs 6, 6' of the ring body 3 - which is in turn selected depending on the customer's finger size - and by fixing the whole, preferably by laser welding. The gem can be fixed on the bezel 2 either before or after being assembled with the ring body 3.

**[0019]** Ring body 3 and bezel 2 are normally made of gold, preferably 24 kt gold, or platinum.

**[0020]** The advantages of the present invention are promptly understood from the description above.

**[0021]** Both the diameter of the ring body 3 and the size of the anchorage portion 9b of bezel 2 change according to a customer's requirements, whereas the seat 4 provided on said ring body 3 and the fixing portion 9a of bezel 2 have in any case the same size. This allows a ring body 3 of a desired size to be matched with a gem of a desired carat weight, which is mounted on the corresponding bezel 2. Thus, the ring manufacturer should keep in stock only ten sizes of the ring body 3 and five sizes of the bezel 2 (corresponding to the most in demand five carat weights), rather than fifty rings as would result from said combinations.

**[0022]** Furthermore, the assembly of both parts of the inventive ring assembly is fast, solid and accurate, thanks to the particular structure of seat 4 and the corresponding fixing portion 9a of bezel 2. The shape and width of the abutment surface on seat 4 for the bezel 2 is such to ensure an extremely solid and accurate positioning of the latter.

**[0023]** It is understood that what has been described is only a particular embodiment of the ring assembly forming the object of the present invention, to which those skilled in the art will be able to bring about all those modifications required to adapt it to particular conditions, without thereby departing from the scope of protection as claimed.

**[0024]** For example, it may be possible to configure the seat 4 of the ring body 3 and the corresponding anchorage portion 8 of bezel 2 other than what has been shown above, such as with an exact V-shaped, inverted trapezium or semi-cylindrical configuration.

**[0025]** The rod 10 may have shapes other than those shown above, such as a rounded, square or polygonal section, and also may not protrude from the ring side, thereby meeting the most various aesthetic requirements without imparing the functionality of the assembly.

## Claims

1. A ring assembly (1), to be assembled in order to provide a ring, comprising a bezel (2) and a ring body (3) having a seat (4) for said bezel (2), **characterized in that** said bezel (2) comprises a fixing portion (9a) complementary to the seat (4) of said ring body (3) and an anchorage portion (9b, 9b', 9b'') of a gem, wherein said anchorage portion (9b, 9b', 9b'') changes according to the gem size, whereas said fixing portion (9a) and said seat (4) have a complementary configuration, which is predetermined and invariable regardless of the size of said ring body (3) or said gem.

2. The ring assembly (1) according to claim 1, wherein said seat (4) for the bezel (2) has a substantially V-shaped notch and comprises a bridge portion (5) joining both notch flaps.

3. The ring assembly (1) according to claim 2, wherein said bridge portion (5) comprises two ribs (6, 6'), the contour comprises a first portion departing from said bridge portion (5) forming a right angle and a second portion developing, substantially parallel to the notch V-shaped contour, until the outer edge of the ring body (3).

4. The ring assembly (1) according to claim 3, wherein the element formed by bridge portion (5) - ribs (6, 6') has a smaller width than the width of the ring body (3), thereby forming a shoulder (7) on both sides of said element, on both notch flaps.

5. The ring assembly (1) according to any of claims 1 to 4, wherein said bezel (2) comprises anchorage means for the gem comprising two substantially V-shaped anchorage means (8) of a shape complementary to the contour of the notch of seat (4) on the ring body (3).

6. The ring assembly (1) according to claim 5, wherein

said anchorage means (8) comprise two arms (9) which, by originating from a vertex in common, develop outwardly with a concave profile approximatively by half the length thereof and with a convex profile by the remaining part of the length thereof, said arms (9) comprising a fixing portion (9a) to the seat (4) of the ring body (3) and an anchorage portion (9b, 9b', 9b'') for said gem.

**7.** The ring assembly according to claim 5 or 6, wherein said anchorage elements (8) are joined by a rod (10) which is fixed within the groove between both arms (9) and which holds said anchorage elements (8) apart by a distance substantially corresponding to the width of the bridge portion (5) and the ribs (6, 6') of seat (4).

**8.** The ring assembly (1) according to claim 7, wherein said rod (10) comprises anchorage means for the gem.

**9.** The ring assembly (1) according to claim 8, wherein said anchorage means for the gem comprise, in the middle of said rod (10), a concave depression (11) being provided with a hole (12).

**10.** The ring assembly (1) according to any of claims 1 to 9, wherein said ring body (3) and said bezel (2) are made either of 24 kt gold or platinum.

**11.** The ring obtained from the ring assembly (1) according to any of claims 1 to 10, wherein said bezel (2) and said ring body (3) are assembled by laser welding.

**12.** A method for manufacturing rings from ring assemblies (1) such as claimed in any of claims 1 to 10, comprising the steps of:

- providing a series of ring bodies (3) of various sizes;
- providing a series of bezels (2) for stones of various carat weights;
- selecting a ring body (3) from said series of ring bodies (3) and a bezel (2) from said series of bezels (2);
- assemblying said selected ring body (3) and said bezel (2) by laser welding.

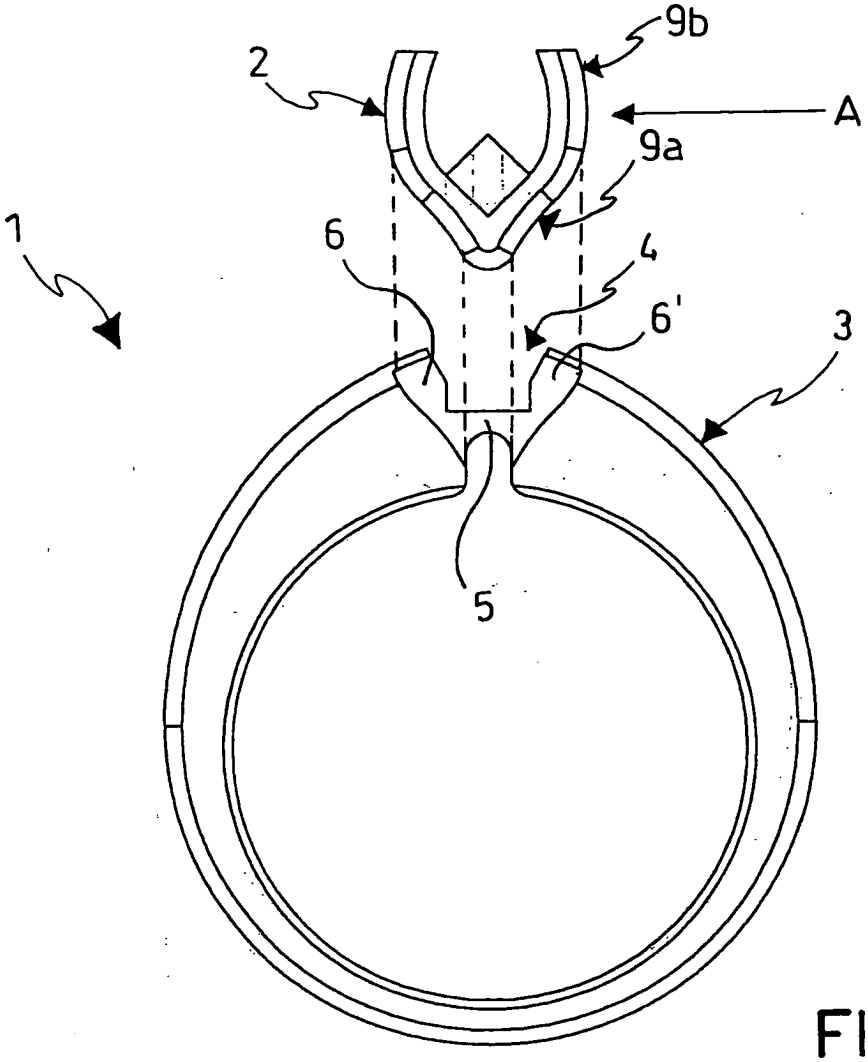


FIG.1

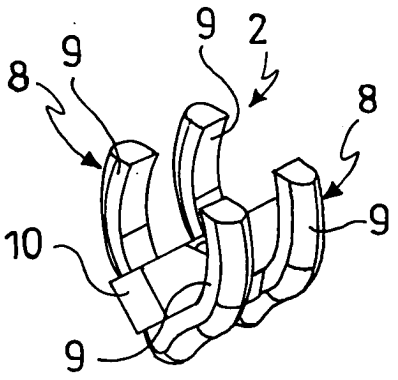


FIG.2

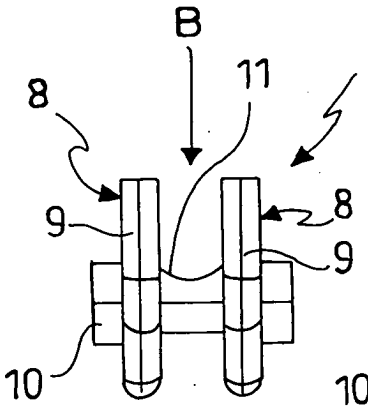


FIG.3

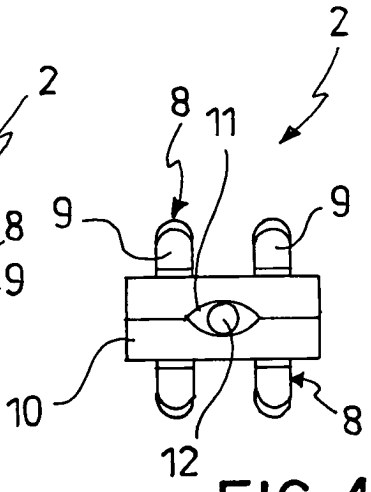


FIG.4

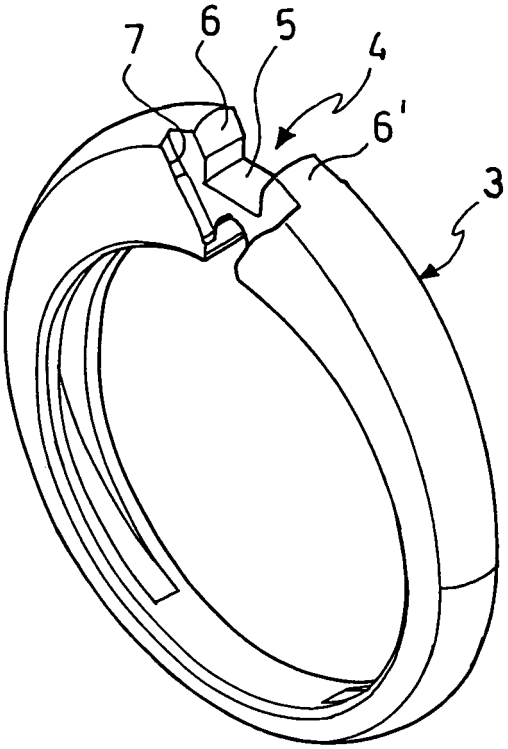


FIG. 5

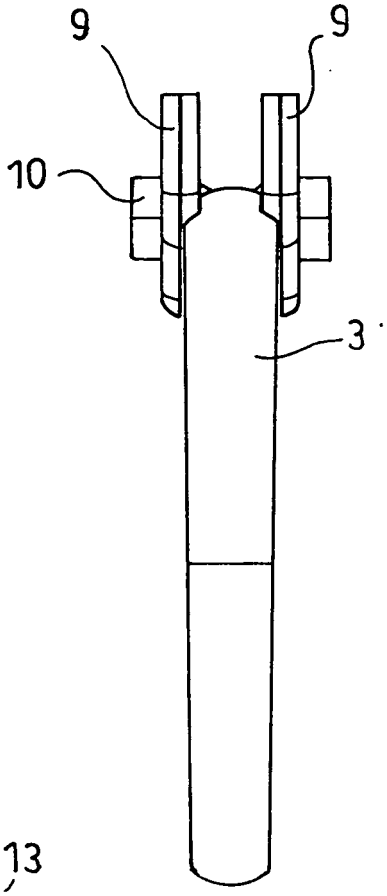


FIG. 6

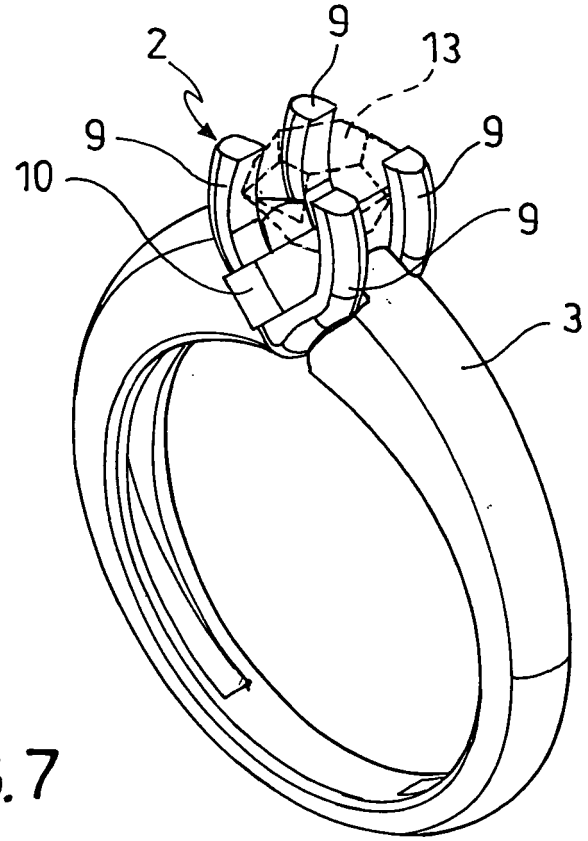


FIG. 7

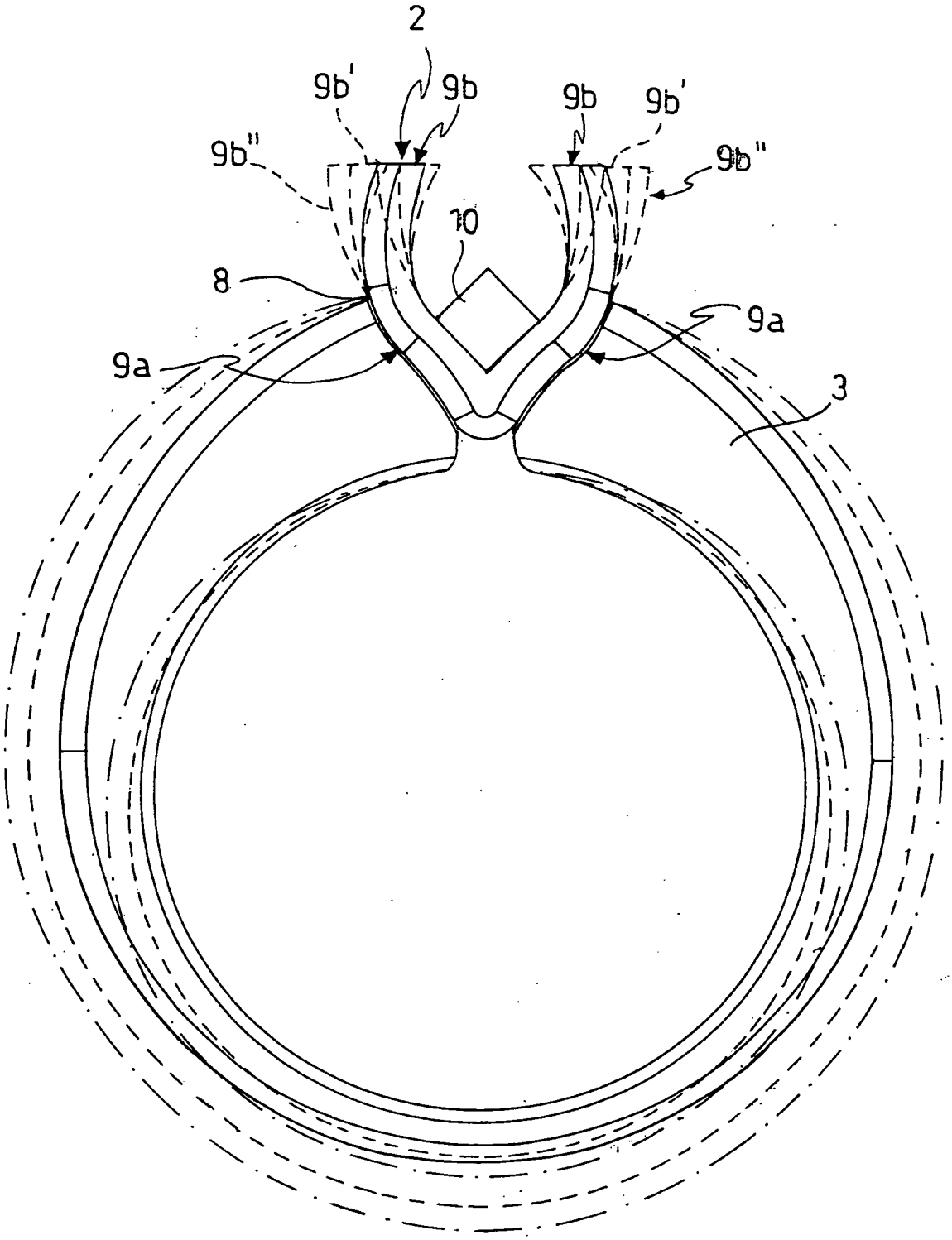


FIG.8

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# EUROPEAN SEARCH REPORT

Application Number
EP 04 01 8162

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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Munich | 12 January 2005 | Horubala, T |

CATEGORY OF CITED DOCUMENTS

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 01 8162

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82