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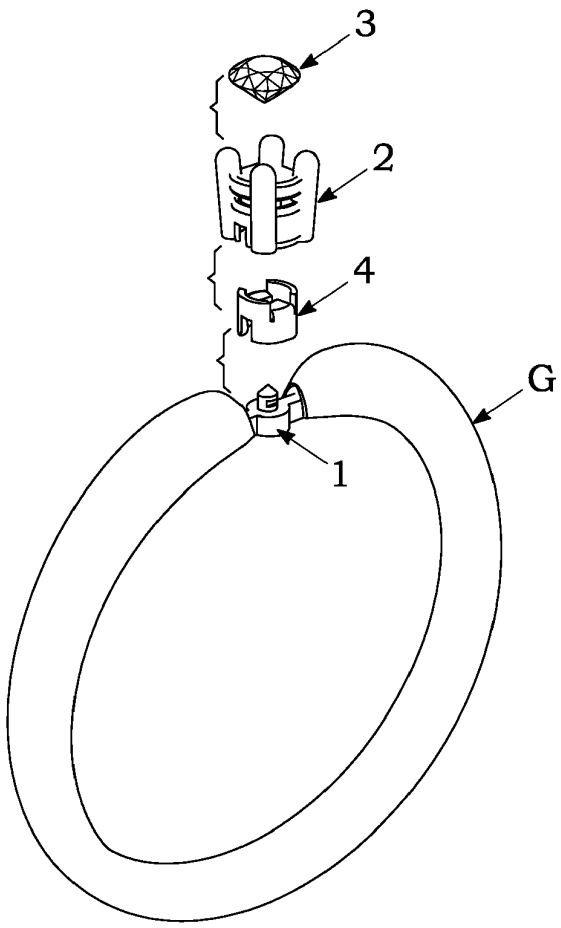
(54) **ASSEMBLY FOR SETTING STONES AND SOLITAIRES**

(57) Assembly for setting stones and solitaires, characterized in that it comprises:
- a setting head (2; 6; 9; 13; 17), made of a material of the type of a metal, even precious, and the like, within which at least one stone (3) can be accommodated, said head (2, 6, 9, 13, 17) being internally provided with fastening means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C);
- a base (G), constituted by a component chosen from among a shank for a ring, a coupling element for an earring, a chain for necklaces, bangles, bracelets, a brooch and the like, of shape and dimensions that are complementary to those of said means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C) of the setting head (2; 6; 9; 13; 17) and provided with means (1; 5; 8; 12; 16) that are complementary to said means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C) of the setting head and which can be coupled thereto;
the union of the setting head (2; 6; 9; 13; 17) with the base (G) making it possible to create personalized modular jewelry.

FIG. 1



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Description

[0001] The present invention relates to an assembly that makes it possible to create a new modular item of jewelry by way of the joining of setting heads with support bases such as shanks for rings, studs or clips for earrings, chains for necklaces or bracelets, brooches, etc., in order to obtain personalized jewelry that is always new and specially composed.

[0002] The term "setting heads" means both settings that have one or more stones applied and also heads without stones, of metal only, with enamel, with pave setting, etc., in different shapes and finishes such as, for example, geometric or fancy designs, with glossy or satin-finish metal or the like.

[0003] This new way of making jewelry with stones and, in particular, jewelry with a single stone, such as the conventional solitaire, but also solitaire earrings and solitaire necklaces, makes it possible to achieve several objectives.

[0004] The first is to assist the jeweler, by enabling him/her to have a stock of jewelry items to show to customers which is more limited and, therefore, less costly than such stocks would usually be, but which still enables the jeweler to offer a wide choice. In fact, by way of the contrivances devised the jeweler can easily, safely and quickly assemble, without the use of adhesives, welding and screws, the setting heads available to him/her on any base, in each instance creating the type of jewelry or the combination desired by the customer, in terms of style and in terms of price band.

[0005] The second objective is to make the customer increasingly play a role in the design process, by being able to choose and personalize their jewelry item in a very short time. The choice of stone, of shape of the setting head or of the supporting base and, last but not least, of coloring and/or finish of the metal, will enable the customer to feel that the item of jewelry is "theirs", created especially for them or designed as a perfect gift.

[0006] These and other characteristics of the invention will be described below with reference to the accompanying drawings which include, for the purposes of non-limiting example:

- Figures 1 and 2, which show, by way of two exploded perspective views, a first example of an item of jewelry created according to the assembly of the present invention;
- Figure 3 which shows, by way of an exploded view, the components of the jewelry item of Figures 1 and 2, in a vertical cross-sectional view taken along the line of longitudinal symmetry of the shank of the ring;
- Figure 4 which shows, by way of the same cross-section of Figure 3, the components already assembled;
- Figures 5 and 6, which show, by way of two exploded perspective views, a second example of an item of jewelry created according to the assembly of the present invention;
- Figure 7 which shows, by way of an exploded view, the components of the jewelry item of Figures 5 and 6, in a vertical cross-sectional view taken along the line of longitudinal symmetry of the shank of the ring;
- Figure 8 which shows, by way of the same cross-section of Figure 7, the components already assembled;
- Figures 9 and 10, which show, by way of two exploded perspective views, a third example of an item of jewelry created according to the assembly of the present invention;
- Figure 11 which shows the horizontal cross-section of the components of the third example of an item of jewelry already assembled and in the act of being secured to the shank of the ring;
- Figure 12 which shows, by way of the same cross-section of Figure 11, the components already made integral with the shank of the ring;
- Figures 13 and 14, which show, by way of two exploded perspective views, a fourth example of an item of jewelry created according to the assembly of the present invention;
- Figure 15 which shows, by way of an exploded view, the components of the jewelry item of Figures 13 and 14, in a vertical cross-sectional view taken along the line of longitudinal symmetry of the shank of the ring;
- Figure 16 which shows, by way of the same cross-section of Figure 15, the components already assembled;
- Figures 17 and 18, which show, by way of two exploded perspective views, a fifth example of an item of jewelry created according to the assembly of the present invention;
- Figure 19 which shows, by way of an exploded view, the components of the jewelry item of Figures 17 and 18, in a vertical cross-sectional view taken along the line of longitudinal symmetry of the shank of the ring;
- Figures 20 and 21, which show, by way of the same cross-section of Figure 19, first the components already assembled (Figure 20) and then in the act of being disengaged from the shank of the ring by way of adapted means inserted from below (Figure 21).

[0007] From an examination of the accompanying drawings, all of which show a setting coupled to a stone, it can be seen that the setting, made of precious metal or common metal, can be paired with a plurality of shanks G.

[0008] Figures from 1 to 4 show a first example of coupling by interlocking between a shank G provided with a fastening base 1, made of an adapted material and preferably of steel, with a setting 2, made of precious metal or common metal, in which to accommodate the stone 3, and also provided inside with an insert 4, which is also preferably made of steel and is shaped for coupling on the base 1.

[0009] The base 1, which is made integral with the

shank G during the manufacturing step thereof by casting, has a lower body 1A from which a pointed raised portion 1B projects upwardly which is provided with an undercut 1C in which, by way of pressure from above, the edges 4A of a slit in the insert 4, through which to insert the pointed raised portion 1B of the base 1 when applying the setting 2 with the stone 3, become locked.

[0010] The insert 4 can be embedded in the setting 2 during the manufacturing step thereof by casting, or it could be applied thereto internally by way of special adhesives, or even spot-welded with a laser, or simply contained by way of adapted tabs of the setting to be folded below the insert after insertion. The possibility is not ruled out, also, of a coupling by interference fit, for example after thermal dilation of the setting.

[0011] Figures from 5 to 8 show a second example of coupling by interlocking between a shank G provided with a fastening base 5, made of an adapted material and preferably of steel, with a setting 6, made of precious metal or common metal, in which to accommodate the stone 3, and also provided inside with an insert 7, which is also preferably made of steel and is shaped for coupling on the base 5.

[0012] The base 5, which is made integral with the shank G during the manufacturing step thereof by casting, is a form of parallelepiped 5A with a mortise 5B in the center and surmounted by a wedge-shaped raised portion 5C. This is so that the insert 7, which is shaped like an upside-down drinking glass and with the base 7A open so that two flaps 7B extend inside the drinking glass which have their ends 7C folded to face each other, can be inserted on the base 5 so that the ends 7C clear the wedge 5C in order to become locked in the underlying mortise 5B. This is in order to obtain the coupling of the setting 6 provided with stone 3 on the shank G, by way of pressure from above.

[0013] Again in this solution, as in the previous solution, it is possible for the insert 7 to be embedded in the setting 6 during the manufacturing step thereof by casting, or rendered integral therewith by way of the techniques listed previously or other adapted techniques.

[0014] Figures from 9 to 12 show a third example of coupling between a shank G provided with a fastening base 8, made of an adapted material and preferably of steel, with a setting 9, made of precious metal or common metal, in which to accommodate the stone 3, and also provided inside with an insert 10, which is also preferably made of steel and is shaped for coupling on the base 8.

[0015] The base 8, which is rendered integral with the shank G during the manufacturing step thereof by casting, has a central raised portion 8A provided with a hole 8B. The insert 10 on the other hand is cylindrical with a full-height vertical slot defined by two edges 10A folded inside and a hole 10B diametrically opposite to the slot, and also provided at the hole 8B of the base 8. In turn, the setting 9 has a hole 9A at the preceding holes 10B and 8B.

[0016] This is so that the setting 9 carrying the stone 3 and the insert 10 can be mounted on the base 8 and locked thereto by the insertion, into the coaxial holes 9A-10B-8B, of a stud 11 which has, proximate to the insertion end, a groove 11A in which to engage the folded edges 10A of the insert 10 (Figure 12).

[0017] Again in this implementation, the insert 10 can be embedded in the setting 9 during the manufacturing step thereof by casting, or rendered integral therewith by way of the techniques listed previously or other adapted techniques.

[0018] Figures from 13 to 16 show a fourth example of coupling between a shank G provided with a fastening base 12, made of an adapted material and preferably of steel, with a setting 13, made of precious metal or common metal, in which the stone 3 is accommodated, and also provided inside with an insert 14, which is also preferably made of steel and is shaped for coupling on the base 12. Similarly to the example described previously, in this case too the locking of the setting 13 with the stone 3 and the insert 14 on the base 12 occurs by way of a stud 15, but the stud is inserted from below through the hole 12A, which is coaxial with the near-cylindrical base 12, and until the groove 15A, which is proximate to the insertion end, engages with the folded edges 14A of the insert 14 (Figure 16).

[0019] Even though, in the drawings, the studs 11 and 15 are shown as being external to the respective settings 9 and 13, in a possible variation of embodiment the studs could be coupled to the settings with adapted means and, therefore, pressed as needed in order to lock the elements concerned between them.

[0020] Figures from 17 to 21 show a fifth example of coupling by interlocking between a shank G provided with a fastening base 16, made of an adapted material and preferably of steel, with a setting 17, made of precious metal or common metal, in which to accommodate the stone 3, and also provided inside with an insert 18, which is also preferably made of steel, shaped for coupling on the base 16. As can be seen from the drawings, the base 16 has a vertical hole 16A in its center and two raised portions 16B which protrude upwardly and are diametrically opposite with respect to the hole 16A. The raised portions 16B are wedge-shaped and have a mortise 16C so that the insert 18, which is shaped like an upside-down drinking glass with the base 18A open so that two flaps 18B extend inside the drinking glass which have their ends 18C folded to face each other, can be inserted on the base 16 so that the ends 18C clear the wedges 16B in order to become locked in the underlying mortises 16C. This in order to obtain the coupling of the setting 17 provided with stone 3 on the shank G, by way of pressure from above.

[0021] What differentiates this solution in particular from the other solutions described previously is that this solution permits, as needed, the set of elements 17-3-18 (setting-stone-insert) to be removed from the shank G.

[0022] In this regard, Figure 21 shows the insertion of a stud 19 through the hole 16A in order to determine the

contraction of the folded ends 18C until they are made to exit from the encumbrance of the mortises 16C and permit, therefore, the removal of the elements 17-3-18, i.e. of the setting with the stone and the insert.

[0023] Even though, in the solutions shown and described, in order to enable the fastening of the setting with its stone to the shank G, a specially-shaped insert 4, 7, 10, 14, 18 is accommodated internally to the setting for this fastening, in a possible variation of embodiment it is possible for the setting itself to be shaped internally with adapted means designed to engage in the undercuts or mortises made in the bases of the shank G.

[0024] Even though all the drawings show a jewelry item with only one stone, it is also possible to apply the contrivances to other types of products with several stones, such as trilogy, rivière, tennis, contrarié and pave.

[0025] Furthermore, as mentioned previously, these contrivances can also be used to create setting heads without stones (of metal only, with enamel, with pave setting, etc.), in different shapes and finishes such as, for example, geometric or fancy designs, with glossy or satin-finish metal or the like.

[0026] It is clear that all the setting heads and the bases can be made both of precious metal (gold, silver, platinum etc.) and of common metal (bronze, copper, various alloys etc.).

[0027] It is clear that, without prejudice to the general characteristics illustrated and described, any modifications or variations within the capabilities of a person skilled in the art will in any case be comprised in the scope of the appended claims.

[0028] The disclosures in Italian Patent Application No. 102015000035802 (UB2015A002292) from which this application claims priority are incorporated herein by reference.

[0029] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. Assembly for setting stones and solitaires, **characterized in that** it comprises:

   - a setting head (2; 6; 9; 13; 17), made of a material of the type of a metal, even precious, and the like, within which at least one stone (3) can be accommodated, said head (2, 6, 9, 13, 17) being internally provided with fastening means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C);
   - a base (G), constituted by a component chosen from among a shank for a ring, a coupling element for an earring, a chain for necklaces, bangles, bracelets, a brooch and the like, of shape and dimensions that are complementary to those of said means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C) of the setting head (2; 6; 9; 13; 17) and provided with means (1; 5; 8; 12; 16) that are complementary to said means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C) of the setting head and which can be coupled thereto;

   the union of the setting head (2; 6; 9; 13; 17) with the base (G) making it possible to create personalized modular jewelry.

2. The assembly according to claim 1, **characterized in that** said setting head (2; 6; 9; 13; 17) comprises said means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C) of the setting head without discontinuities, said means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C) of the setting head being shaped to match the origin in the setting head (2; 6; 9; 13; 17).

3. The assembly according to claim 1, **characterized in that** said means (4A; 7B, 7C; 10A, 10B; 14A; 18B, 18C) of the setting head belong to an element (4; 7; 10; 14; 18) which can be detachably mated with said setting head (2; 6; 9; 13; 17).

4. The assembly according to claim 3, **characterized in that** said element (4; 7; 10; 14; 18) can be mated stably with the setting head (2; 6; 9; 13; 17) by way of a process chosen from among casting, directly during the manufacturing step thereof, adhesive bonding, by way of special adhesives, welding, including by laser, and interlocking by interference fit.

5. The assembly according to claim 1, **characterized in that** said means (1; 5; 8; 12; 16) are rendered integral with the base (G) during the manufacturing step thereof by casting.

6. The assembly according to claim 5, **characterized in that** the means (1) is a fastening base that has a lower body (1A) from which a pointed raised portion (1B) provided with an undercut (1C) projects upward.

7. The assembly according to one or more of the preceding claims, **characterized in that** the means (4A) are the edges of a slit for accommodating the pointed raised portion (1B) of the base (1) with consequent locking thereof in the undercut (1C) upon the application of the setting head (2) by way of the application of a pressure.

8. The assembly according to claim 5, **characterized in that** the means (5) is a form of parallelepiped (5A) which, at the center, has vertical walls and as many mortises (5B) which are surmounted by a wedge-shaped raised portion (5C).

9. The assembly according to one or more of the preceding claims, **characterized in that** the fastening means (7B) are two flaps folded inside a component chosen from between said setting head (6) and said element (7), said flaps folded inside having the ends (7C) folded to face each other so that, after having cleared said wedge (5C), they become blocked in the underlying mortise (5B) upon the application of the setting head (6) by way of the application of a pressure.

10. The assembly according to claim 5, **characterized in that** the means (8) is a form of parallelepiped with a central raised portion (8A) provided with a hole (8B).

11. The assembly according to one or more of the preceding claims, **characterized in that** the fastening means (10A) are the edges of a vertical slot folded inside a component chosen from among the setting head (9), the element (10) and the means (10B), said fastening means (10A) consisting of a hole diametrically opposite to said slot provided at the hole (8B) of the base (8) in order to allow the mounting of the setting head (9) on the base (8) and the corresponding locking with the insertion into the coaxial holes (10B-8B) of a stud (11) having, at the insertion end, a groove (11A) in which the above mentioned folded edges (10A) engage.

12. The assembly according to claim 5, **characterized in that** the means (12) is a substantially cylindrical fastening base with a coaxial through hole (12A).

13. The assembly according to one or more of the preceding claims, **characterized in that** the means (14A) are the edges of a slit inside a component chosen from between the setting head (13) and the element (14), said internal slit for accommodating a stud (15) passing through the hole (12A) of the base (12) until it engages with an adapted groove (15A) in said edges (14A).

14. The assembly according to claim 5, **characterized in that** the means (16) is a form of parallelepiped with, centrally, a vertical hole (16A) and two pointed raised portions (16B) which project upward and are diametrically opposite with respect to the hole (16A), and are also provided with a mortise (16C) below said point.

15. The assembly according to one or more of the preceding claims, **characterized in that** the means (18B) are two flaps that extend inside a component chosen from between the setting head (17) and the element (18) and have the ends (18C) folded to face each other in order to clear said wedges (16B) thus becoming locked in the underlying mortises (16C), upon the act of application of the setting head (17) by way of the application of a pressure.

16. The assembly according to one or more of the preceding claims, **characterized in that** a stud (19) can be inserted in the hole (16A) with consequent contraction of the folded ends (18C) until they exit the encumbrance of the mortises (16C), thus allowing the removal of the setting head from the base (G).

FIG.1

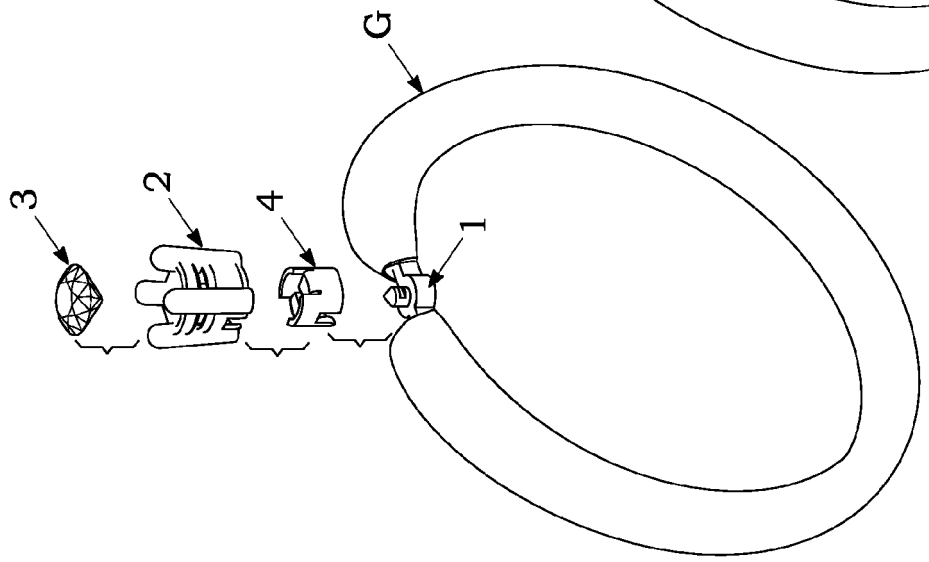


FIG.2

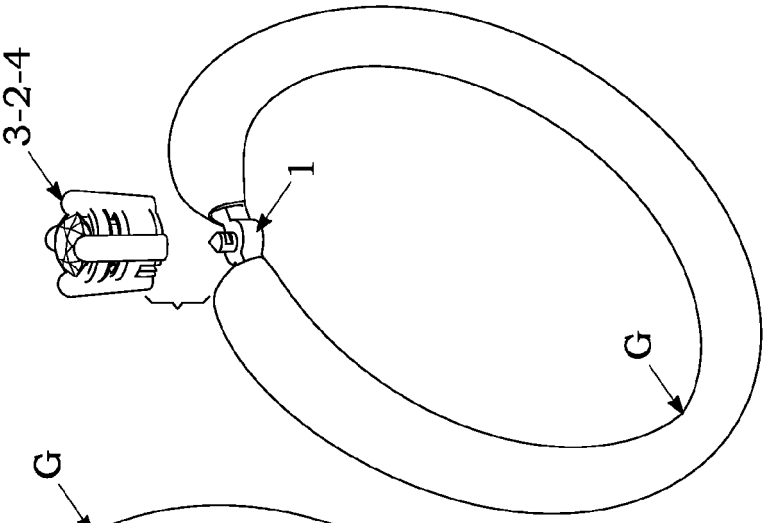


FIG.3

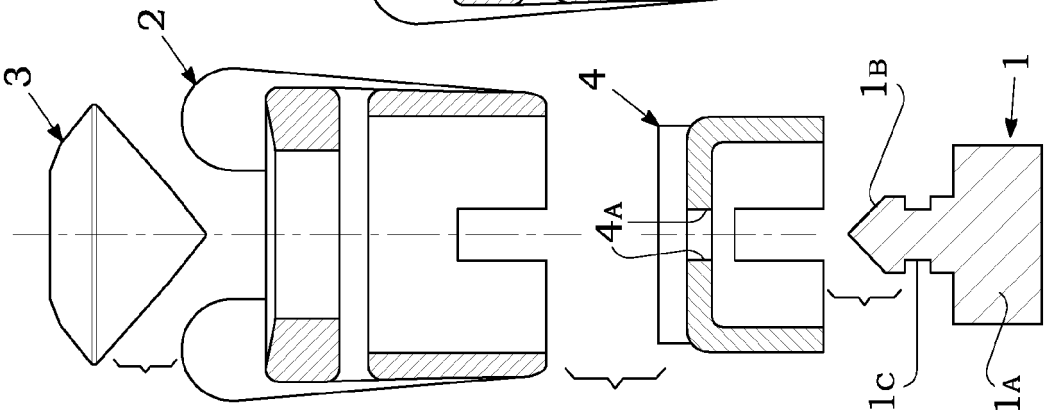


FIG.4

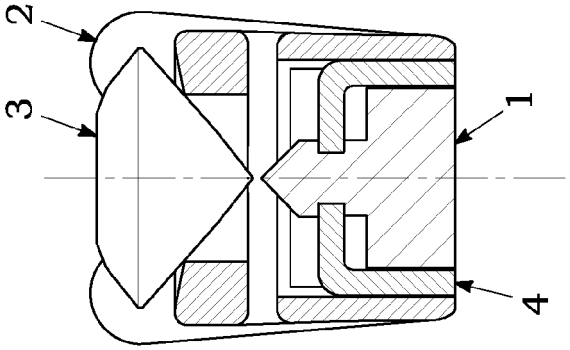


FIG.5

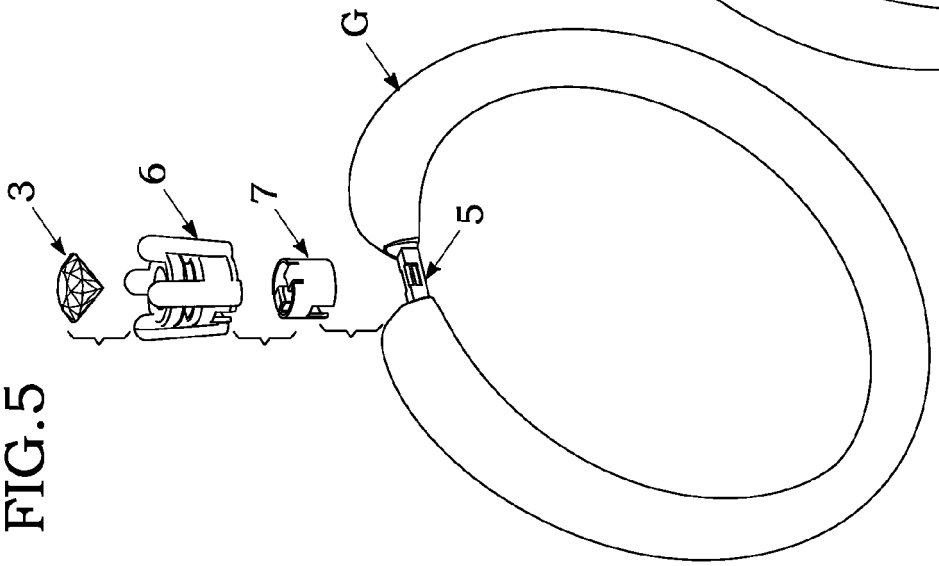


FIG.6

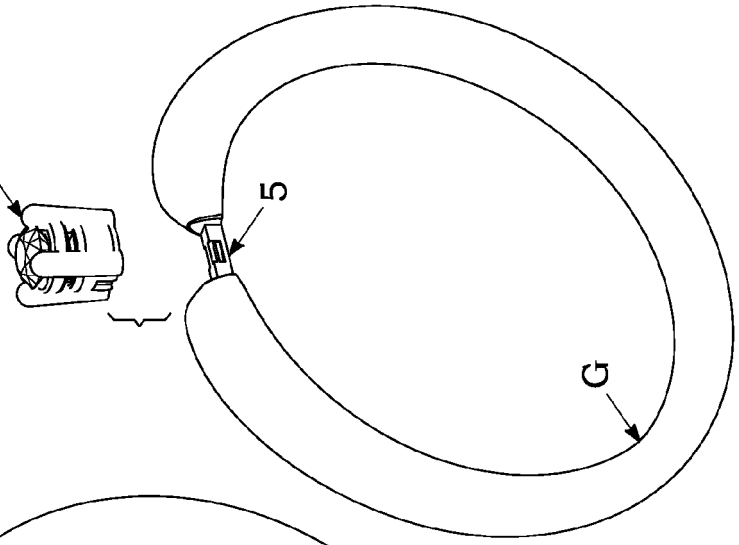


FIG.7

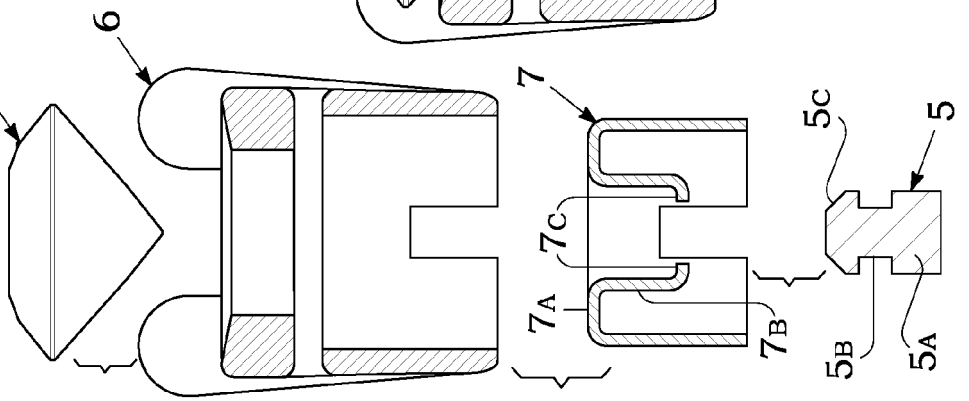


FIG.8

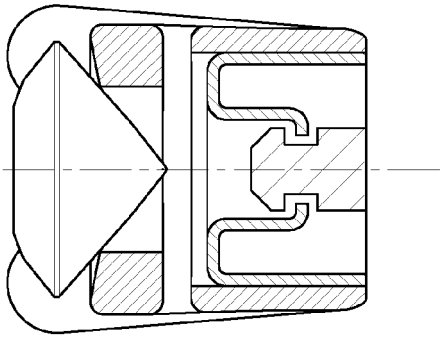


FIG.11

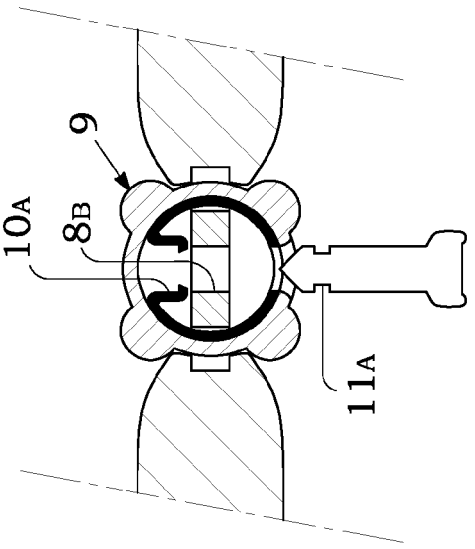


FIG.12

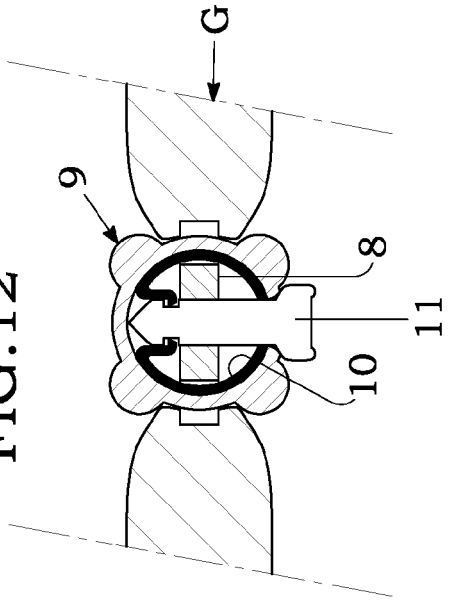


FIG.10

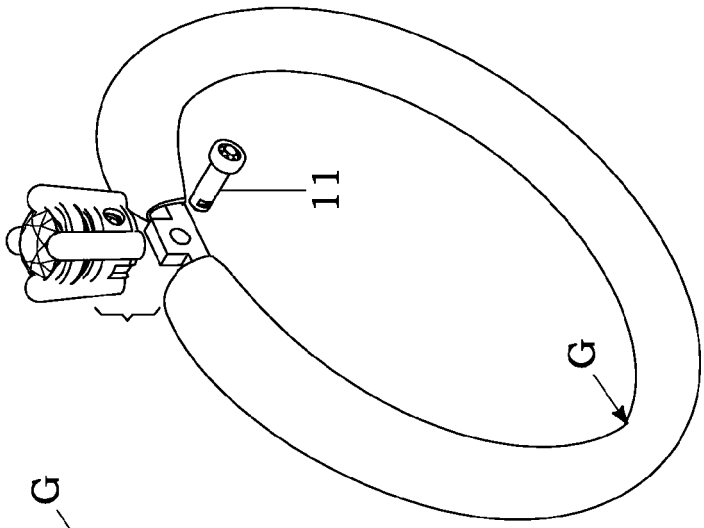


FIG.9

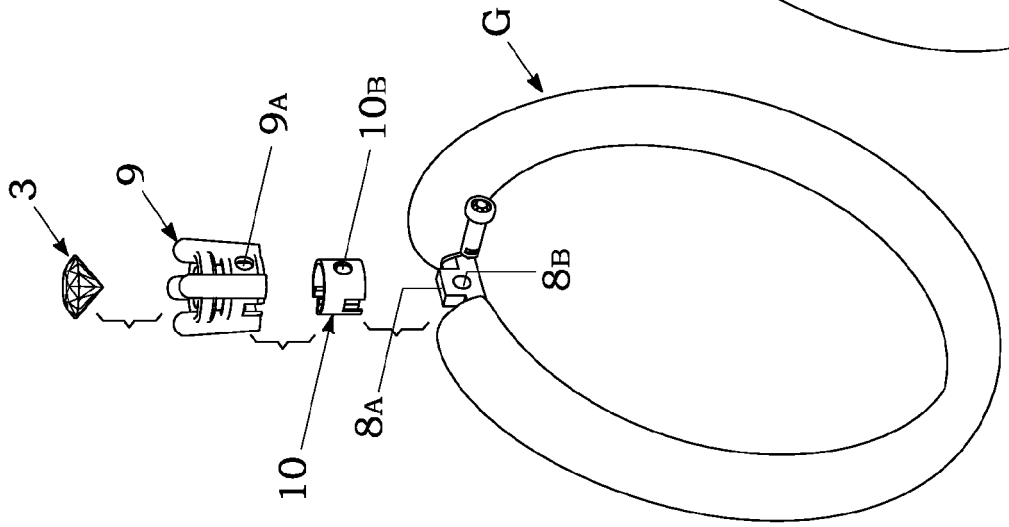


FIG.16

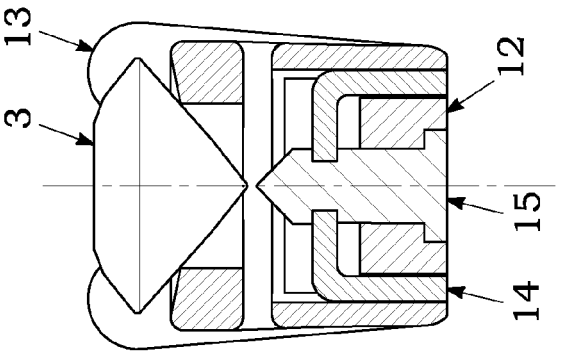


FIG.15

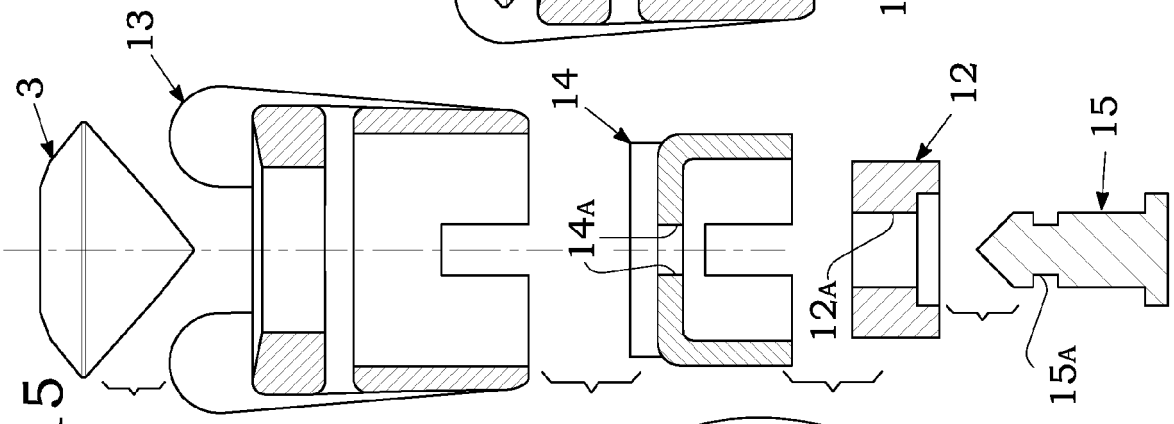


FIG.14

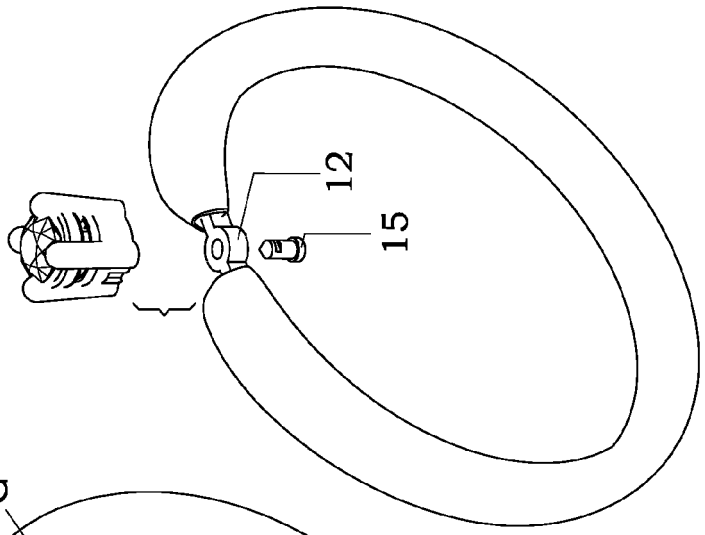
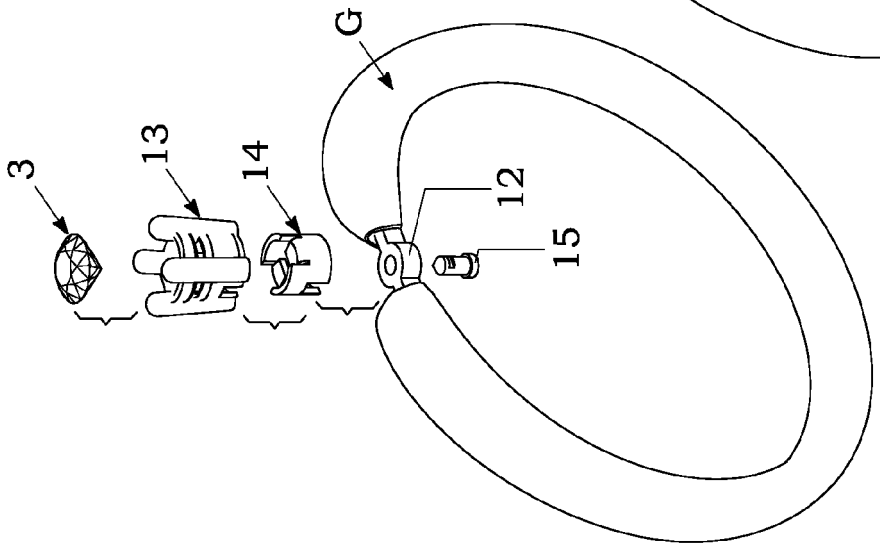


FIG.13



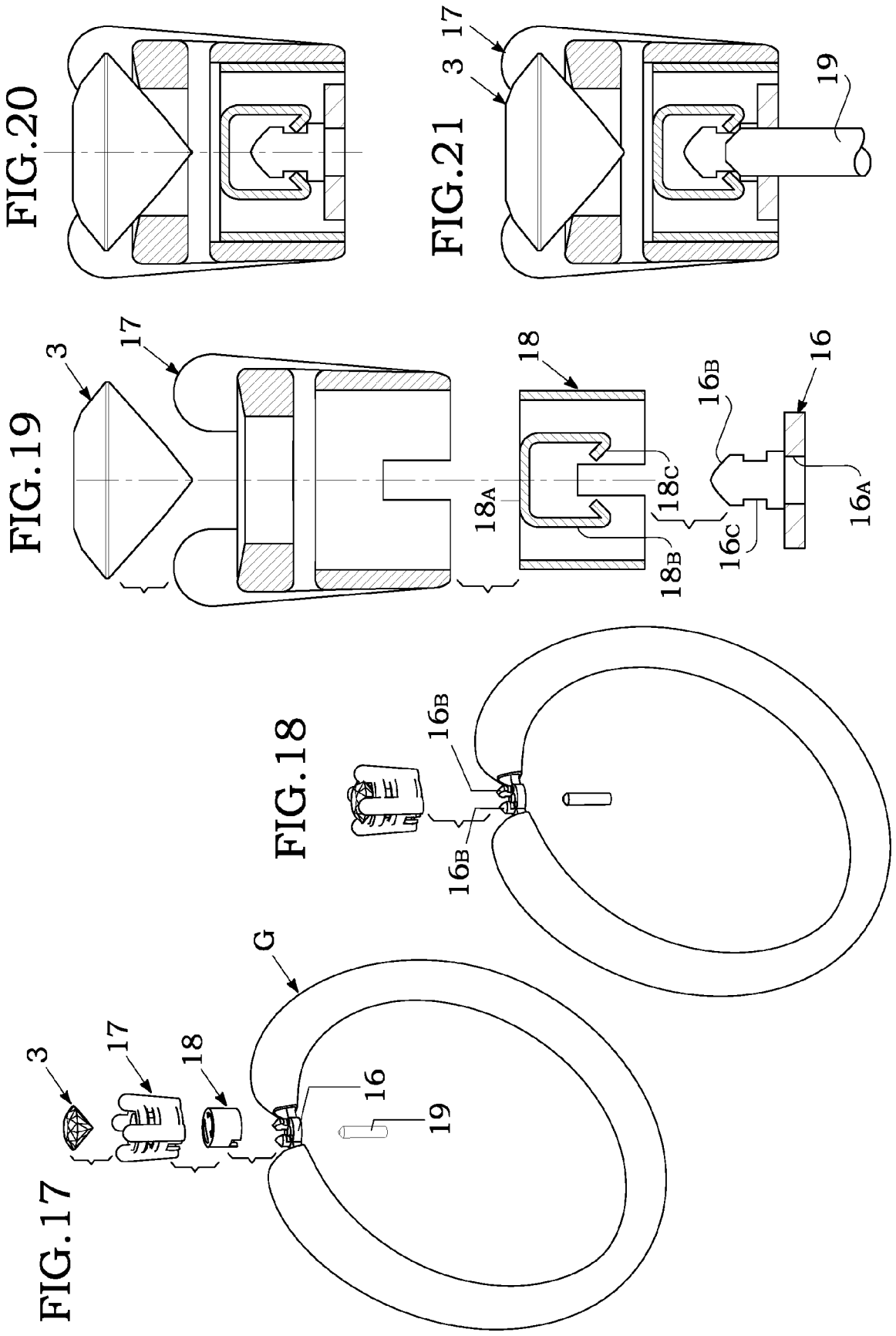


FIG.17
3
17
18
16
19
G
FIG.18
16B
16B
FIG.19
3
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16
16B
18A
18C
18B
16C
16A
FIG.20
FIG.21
3
17
19

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 16 18 0177

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 3 853 416 A (HANAN A) 10 December 1974 (1974-12-10) * abstract; claim 1; figures 1,5,6 *	1-8,10, 12-16	INV. A44C17/02
X	EP 0 900 533 A2 (SWAROVSKI & CO [AT]) 10 March 1999 (1999-03-10) * paragraph [0011]; figure 3 *	1-5	
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X	FR 2 849 356 A1 (ROT PHILIPPE [GB]) 2 July 2004 (2004-07-02) * abstract; claim 1; figures 1,2 *	1-3	
X	FR 2 933 275 A1 (BENCHABATT ELIAS [FR]) 8 January 2010 (2010-01-08) * claims 1,2,4; figure 1 *	1,2,5	
			TECHNICAL FIELDS SEARCHED (IPC) A44C A41B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	28 November 2016	Monné, Eric

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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