(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 135 519 A1

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
23.12.2009 Bulletin 2009/52

(51) Int Cl.:
A44C 17/02 *(2006.01)*

(21) Application number: **08158433.6**

(22) Date of filing: **17.06.2008**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

(71) Applicant: **Wachtmeister, Ms Marie-Ann**
24561 Staffanstorp (SE)

(72) Inventor: **Wachtmeister, Ms Marie-Ann**
24561 Staffanstorp (SE)

(74) Representative: **Kitzler, Michael**
IPQ IP Specialists AB
Mailbox 550
114 11 Stockholm (SE)

(54) **Jewelry setting for detachable ornament and jewelry comprising such setting**

(57) An ornament setting (1) comprising spatially separated and mutually facing ornament holders (3) extending from a setting base (2), wherein the ornament holders (3) on their respective mutually facing sides (4) are provided with an ornament confining structure (6) defining a position for attachment of a detachable ornament (10) between the ornament holders (3), having a detachable clamp ring (8) adapted to mate with a clamp ring confining structure (7) provided on the outside of the ornament holders (3).

EP 2 135 519 A1

Description

Field of the invention

[0001] This invention relates generally to settings for precious stones or similar ornaments in jewelry. More particularly it relates to jewelry settings for detachable and exchangeable mounting of such ornaments in a piece of jewelry.

Background of the invention

[0002] A number of different gemstone settings of widely varying designs are known in the art. These settings are used to confine and fix precious stones or similar ornaments to a piece of jewelry. The settings are made of more or less intricately shaped holding parts which typically require substantial skill of the jeweler, rendering the setting process time consuming and expensive. Traditionally the setting comprises a base with a number of protrusions extending upwardly from the base, with the protrusion ends folding back over the stone or ornament to confine it. The number of protrusions and their distribution depends on the size and shape of the stone.

[0003] Such ornament settings and similar commonly used settings typically require skill and specialized equipment to properly mount the ornament to the piece of jewelry. Hence, the detachment and replacement of gems and ornaments from such settings are difficult, rendering jewelry comprising such settings static in nature. In addition, for design and aesthetic reasons, the visible parts of protrusions or similar structures that fold over the stone and partially cover it may not be desirable.

[0004] It is known in the trade to mount precious stones or other ornaments to pieces of jewelry made in titanium in a gem setting that renders the perception of the gem hovering in the air. The gem setting comprises two ornament holders similar to wings which are connected through a base structure and face each other. On each of the inner mutually facing surfaces of the two ornament holders there is arranged a notch or groove designed to grip the precious stone or ornament. When an ornament of a suitable size is mounted, the ornament holders have to be prized open or levered apart to allow edges of the ornament to slip into the groves whereupon the holding parts are released and spring back to press against the ornament. The ornament is dimensioned slightly to large for the ornament fitting such that it is held in place through the grooves and by inwardly directed forces being executed by the ornament holders as they strive to return to their original position. This construction works for titanium gem settings since this is a material that is capable of storing the tensions that arise when the ornament holders are levered apart and thus elastically deformed. The construction requires special tools for mounting a gem and its use is restricted to materials that have a high capability of storing tension forces.

[0005] There is a demand for jewelry settings which allow for easy and safe detachment and exchange of stones or other ornaments to a piece of jewelry, primarily without any need for tools or special skills and that enables the use of a wide range of materials.

Related art

[0006] Examples of different replaceable gem stone settings presently existing in the jewelry field are found in the following publications.

[0007] Patent document US3653227 describes an interchangeable gem setting comprising two filiform circles contacting each other at a position secured in the piece of jewelry, and inclined so as to face each other with an angle. The diameter of the circles and their intermediary distance is smaller than the diameter of the gem to be mounted. The removability and retention of gem is rendered possible by the ability of the circles to be spread apart and spring back to encircle the gem and exert pressure against it.

[0008] Patent document US20010032481 A1 describes a replaceable gem stone setting in which the gem stone is held in place by a casing and a hinged bottom cover.

[0009] Patent document FR2740948 A1 describes a ring where a stone is held between two wings, where the wings comprise a rib and a notch for grasping the stone. A support is also placed at the base of the stone, by means of lower notches, to support the stone from beneath and prevent it from jiggling.

[0010] Patent document FR2870690 A1 describes a jewel with a setting where the stone is held between two wings and a hinged support, supporting the stone from beneath.

[0011] Other examples of related art are found in the patent documents GB2215181 A, DE20306830 U1, US4800738 A and CH341345 A.

Object of the Invention

[0012] The overall object of the present invention is to provide a solution to the problem of providing a jewelry setting which enables easy and safe detachment and exchange of stones or other ornaments to a piece of jewelry made of a wide variety of materials.

[0013] An aspect of the problem is to provide such a jewelry setting that enables exchangeable ornaments in a piece of jewelry made in a soft metal, such as gold or silver.

Brief description of the drawings

[0014] The invention will be explained in more detail in the following description, referring to the enclosed figures, where:

Fig 1a and 1b show the jewelry setting according to two embodiments of the invention;

Fig 2 shows different pieces of jewelry comprising the setting according to examplifying embodiments of the invention.

Detailed description

[0015] Fig. 1a shows a jewelry setting 1 with two ornament holders 3 a, 3b which are coupled to a setting base 2 of a piece of jewelry here exemplified by a ring. The ornament holders 3 a, 3b each have an inner surface 4a, 4b and an outer surface 5a, 5b. They are connected to the setting base 2 so that the inner surfaces 4a, 4b face each other. The inner surfaces 4a, 4b are arranged with ornament confining structures 6a, 6b, cavities that are shaped to hold the stone or ornament. The outer surfaces 5a, 5b comprise clamp ring confining structures 7a, 7b, grooves that are arranged to hold a clamp ring 8. The clamp ring 8 is a detachable ring of suitable material which is arranged to fit tightly around the ornament holders 3a, 3b when the ornament 10 is held in place by the ornament confining structures 6a, 6b.

[0016] The assembled jewelry setting 1 thus comprises ornament holders 3, ornament confining structures 6 on the inner surfaces 4 of the ornament holders, a stone or other ornament 10, which is grasped by the ornament confining structures 6, clamp ring confining structures 7 and a clamp ring 8, which can tightly encircle the ornament holders 3 and is held in place by the clamp ring confining structures 7. The stone or ornament is in a preferred embodiment confined to the piece of jewelry by combined shape locking functions and spring forces exerted by the ornament confining structures 6 and the clamp ring 8.

[0017] The setting in accordance with the invention works for soft materials that have a small elastic modulus and a short elastic range before entering into plastic deformation, such as gold or silver. In an example with a setting made in gold, the ornament holders are plastically deformed when they are levered apart to allow insertion of an ornament into the position intended for the ornament. The ornament holders are levered back into a position where they form a shape locking structure for the ornament. The clamp ring has a dimension in relation to the ornament holders such that it has to be elastically deformed when it is pulled over the ornament holders, and thereby tension forces are introduced and stored in the clamp ring. The clamp ring is positioned over and springs into the grooves of the holders, but still remains elastically tensed such that spring forces are exerted towards the ornament holders while the clamp ring is shape locked in position by the grooves.

[0018] Other combinations of highly elastic and less elastic materials in the clamp ring and the ornament confining structure, respectively, are conceivable within the inventive concept. For example, the spring forces may instead or complementary be stored in the ornament holders in combination with a less elastic or non-elastic clamp ring.

[0019] In one embodiment, the ornament holders and the clamp ring are adapted to employ primarily a shape locking function. For example by the clamp ring having a shape and dimension freely fitting over the ornament holders in a first orientation, and shape locking in a second orientation for example after having been rotated.

[0020] The ornament holders 3 can be of a variety of shapes Their inner shape will depend on the shape of the stone or set of stones or other ornaments 10 that are to be used with the particular piece of jewelry and can e.g. be bowed, flat, v-shaped or have any other shape which matches the shape of the ornament. Their outer shape can be varied according to the desired appearance of the piece of jewel, but must be matched with the shape of the clamp ring 8. The number of ornament holders 3 is typically two but may also be varied in order to match the shape of the ornament or to create an attractive appearance. Additionally, the height of the ornament holders 3 can vary, but will typically be in the range of a millimeter to a couple of centimeters.

[0021] The ornament confining structures 6 are shaped to fit the edge or circumference of the desired ornament or set of ornaments 10. They may e.g. be made as indentations, such as recesses, grooves or notches, on the inner surface 4 of the ornament holders 3. Alternatively, they may be arranged as shoulders or elevations extending somewhat from the inner surfaces 4 of the ornament holders 3. In the latter case the ornament 10 will be supported from underneath by a lower elevation or other support structure, such as the setting base, and will be held in place from above by an upper elevation. In other embodiments the ornament confining structures 6 may comprise a combination of indentations and elevations.

[0022] The clamp ring confining structures 7 are shaped to fit the inner shape of the clamp ring 8. They may e.g. be made as indentations, such as recesses, grooves or notches, on the outer surface 5 of the ornament holders 3. Alternatively, they may be arranged as shoulders or elevations extending somewhat from the outer surface 5 of the ornament holders 3, whereby the clamp ring 8 will be supported by a lower elevation or support and held in place by an upper elevation. In other embodiments the clamp ring confining structures 7 may comprise a combination of indentations and elevations.

[0023] The size of the clamp ring 8 is constrained in so far that it has to exert pressure on the ornament holders 3. Its inner shape must match the shape and arrangement of the ornament holders 3 as well as the shape of the clamp ring confining structures 7. Besides those constraints the clamp ring 8 can vary widely in shape and material, e.g. to create a desired aesthetic impression. The clamp ring 8 can e.g. be made of metal, rubber, wood, textile or tempered glass. Its outer shape can vary from round to oval to square, star shaped, flower shaped or any other shape. The clamp ring 8 may also be further decorated with e.g. precious stones or other decorations.

[0024] The ornament 10 may be any kind of ornament

that creates the desired impression of the piece of jewelry. It may e.g. be a precious or gem stone, a semi-precious stone, a stone imitation, or any other ornament made of e.g. metal, wood, glass or any other synthetic or natural material. It must however have a circumferential shape that matches the ornament confining structures 6, so that it is firmly grasped by the confining structures 6 when the setting 1 is assembled.

[0025] The setting base 2, as well as the ornament holders 3, may be made of any metallic material suitable for jewelry. The setting base 2 and the ornament holders 3 may be made in one continuous piece or may be made of separate pieces, of the same or different material, attached to one another. The shape of the setting base 2 may also vary widely to suit different types of jewelry, e.g. a ring, bracelet, amulet or brooch.

[0026] The jewelry setting 1 is assembled by placing an ornament 10 between the ornament holders 3, so that it is hooked by the ornament confining structures 6. While exerting inwardly directed pressure on the ornament holders 3, to prevent the ornament 10 from falling out, the clamp ring 8 is pushed over and around the ornament holders 3. The clamp ring is placed in the clamp ring confining structures 7 to keep it in place and prevent it from being pushed off or from simply falling off. The clamp ring 8 will now exert an inwardly directed force on the ornament holders 3, further putting pressure on the ornament 10, such that it is held firmly in place by the ornament confining structures 6. To replace the ornament 10 the clamp ring 8 is withdrawn from the ornament holders 3, so that the pressure upon the holders 3 and thus the ornament 10 is removed, whereby the ornament 10 can be removed and replaced with another ornament as above.

[0027] Fig. 2 shows examples of jewelry with replaceable ornaments, comprising a jewelry setting. The examples are shown with the same reference numbers as in Fig 1, and as shown the ornament holders, the clamp ring and the ornament may have different shapes. Different kinds of jewelry include rings, pendants or amulets, bracelets and brooches. They may be made of any metal suitable for jewelry, such as gold, silver, titanium or different alloys, or even plastic materials. The ornament may be any kind of desired ornament, as described above.

Claims

1. An ornament setting (1) comprising spatially separated and mutually facing ornament holders (3) extending from a setting base (2), wherein
the ornament holders (3) on their respective mutually facing sides (4) are provided with an ornament confining structure (6) defining a position for attachment of a detachable ornament (10) between the ornament holders (3), **characterized in**
a detachable clamp ring (8) adapted to mate with a clamp ring confining structure (7) provided on the outside of the ornament holders (3).

2. An ornament setting according to claim 1, wherein
the ornament confining structure (6) is arranged to fit an edge or circumference of the ornament 10.

3. An ornament setting according to claims 1 or 2, wherein
a clamp ring confining structure (7) is arranged to fit an inner shape of the clamp ring (8).

4. An ornament setting according to any of the claims 1-3, wherein
the ornament holders (3) are made of soft metal, such as silver or gold.

5. An ornament setting according to any of the claims 1-4 , wherein
the clamp ring is made of an elastic material such as metal, rubber, wood, textile or tempered glass.

6. An ornament setting according to any of the claims 1-5, wherein
the clamp ring and the ornament holders are shaped and dimensioned to enable a combined shape locking and tension locking mating between the clamp ring and the ornament holders.

7. An ornament setting according to any of the claims 1-6, wherein
the clamp ring and the ornament holders are shaped and dimensioned to enable a combined shape locking mating between the clamp ring and the ornament holders.

8. A piece of jewelry with an ornament setting (1), the ornament setting (1) comprising spatially separated and mutually facing ornament holders (3) extending from a setting base (2), wherein
the ornament holders (3) on their respective mutually facing sides (4) are provided with an ornament confining structure (6) defining a position for attachment of a detachable ornament (10) between the ornament holders (3), **characterized in**
a detachable clamp ring (8) adapted to mate with a clamp ring confining structure (7) provided on the outside of the ornament holders (3).

9. A piece of jewelry according to claim 8, wherein
the ornament confining structure (6) is arranged to fit the edge or circumference of the ornament 10.

10. A piece of jewelry according to any of the claims 8 or 9, wherein
clamp ring confining structure (7) is arranged to fit inner shape of the clamp ring (8).

11. A piece of jewelry according to any of the claims 8-10, wherein
the ornament holders (3) are made of soft metal, such as silver or gold.

12. A piece of jewelry according to any of the claims 8-11 , wherein
the clamp ring is made of an elastic material such as metal, rubber, wood, textile or tempered glass.

13. A piece of jewelry according to any of the claims 8-12, wherein
the clamp ring and the ornament holders are shaped and dimensioned to enable a combined shape locking and tension locking mating between the clamp ring and the ornament holders.

14. An ornament setting according to any of the claims 8-13, wherein
the clamp ring and the ornament holders are shaped and dimensioned to enable a combined shape locking mating between the clamp ring and the ornament holders.

Amended claims in accordance with Rule 137(2) EPC.

2. An ornament setting according to claim 1, wherein the ornement confining struture (6) is arranged to fit an edge or circonference of the ornement 10.

3. An ornement setting according to claim 1 or 2, wherein
a clamp ring confining structure (7) is arranged to fit an inner shape of the clamp ring (8).

4. An ornement setting according to any claim 1-3, wherein
the ornement holders (3) are made of soft metal, such as silver or gold.

5. An ornement setting according to claims 1-4, wherein
the clamp ring is made of an elastic material such as metal, rubber, wood textile or tempered glass.

6. New claim, based on old claim 8

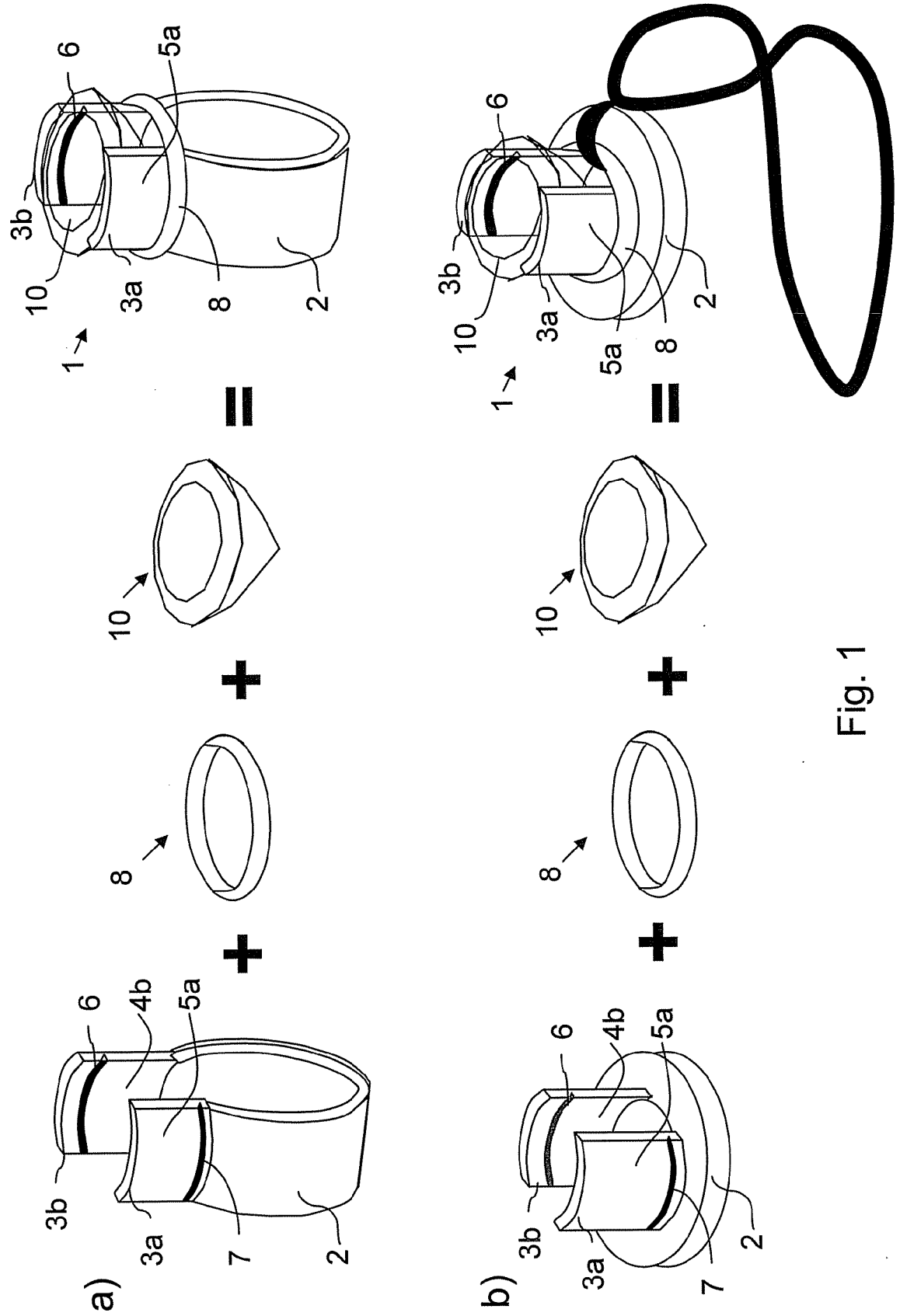

Fig. 1

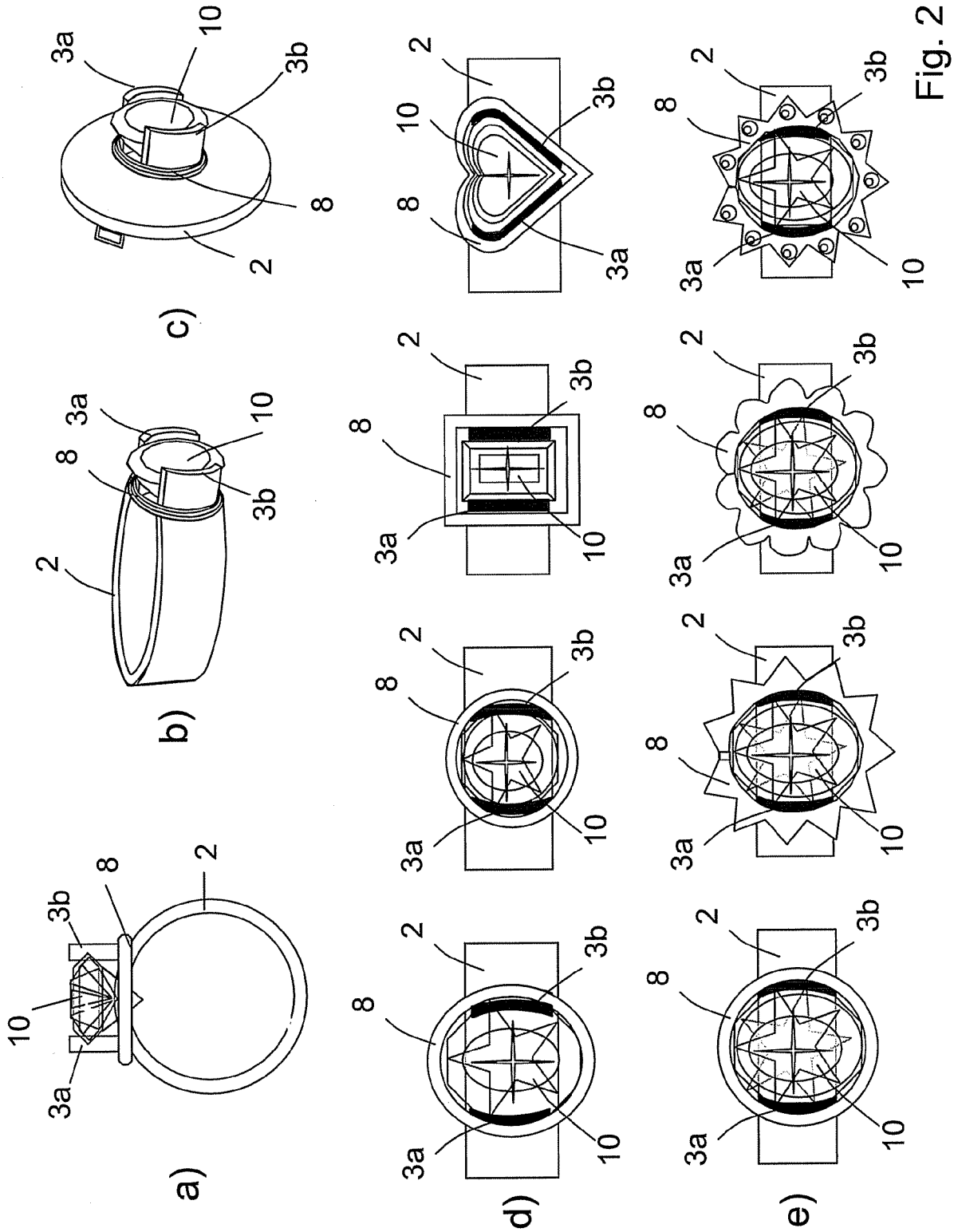

Fig. 2

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 08 15 8433

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 2005/210920 A1 (A.M. KOURAKIS) 29 September 2005 (2005-09-29) * paragraphs [0008] - [0013] * -----	1-5, 7-12,14	INV. A44C17/02
A	US 2007/095104 A1 (TSE-AN WANG) 3 May 2007 (2007-05-03) * paragraphs [0014] - [0016] * -----	1,2,8,9	

TECHNICAL FIELDS SEARCHED (IPC)

A44C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	31 October 2008	Goodall, Colin

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 15 8433

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

31-10-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005210920 A1	29-09-2005	NONE	
US 2007095104 A1	03-05-2007	NONE	

EPO FORM P0459

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

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 3653227 A **[0007]**
- US 20010032481 A1 **[0008]**
- FR 2740948 A1 **[0009]**
- FR 2870690 A1 **[0010]**
- GB 2215181 A **[0011]**
- DE 20306830 U1 **[0011]**
- US 4800738 A **[0011]**
- CH 341345 A **[0011]**