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(71) Applicant: **Treemme S.P.A. Unipersonale**
52100 Arezzo (IT)

(72) Inventor: **Dall'Avo, Marcogino**
52100 Arezzo (IT)

(74) Representative: **Soldatini, Andrea et al**
Società Italiana Brevetti S.p.A.
Corso dei Tintori, 25
50122 Firenze (IT)

(54) **Elastic bracelet**

(57) The present invention refers the field of gold and jewellery products and more specifically it concerns an elastic tennis bracelet. The bracelet comprising an annular concatenation of a plurality of alternating female elements (1, 1') and male elements (2), said female elements (1) having at least two side walls (1c) inclined to one another to define a first angle (α), in a diametrically opposite position on said concatenation, at least two second female elements (1') having side walls (1c') inclined to one another to define a second angle (β) in order to give said bracelet a substantially oval or elliptical shape.

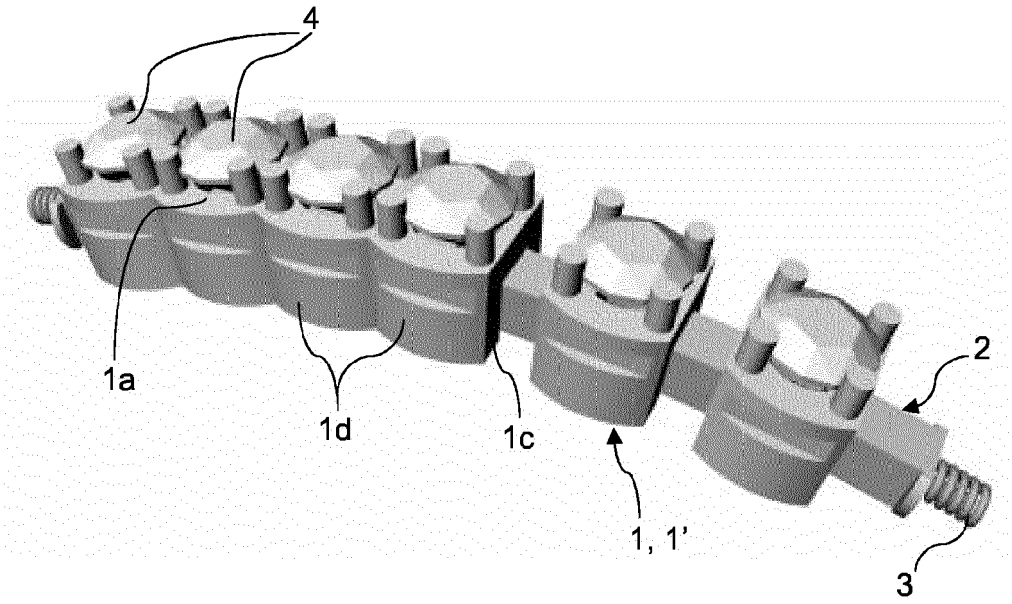

Fig.1

EP 2 712 513 A2

Description

[0001] The present invention refers to the field of gold and jewellery products and more specifically it concerns an elastic "tennis" bracelet.

[0002] So called "tennis" bracelets are conventionally made up of a diamond *rivière* with brilliant cut mounted in a setting (typically made from white gold) for the entire length of the bracelet itself, thus defining a linear continuity of stones. The setting is formed from a concatenation of alternating female elements (collets or prong settings) and male elements engaged with one another so that the bracelet is sufficiently flexible as to allow it to be worn loosely on the wrist of the user; i.e. when the user has his/her arm stretched in front with the palm of the hand facing downwards, the bracelet rests on the back of the wrist hangs below the palm. Variants have also been developed with respect to the tennis bracelet described above that make use of precious stones different from diamonds or even variants of jewellery made from cheaper materials.

[0003] The tennis bracelet is highly appreciated for its neatness, simplicity and comfortable fit, characteristics that make the jewellery item particularly elegant.

[0004] The aforementioned neatness of the conventional tennis bracelet is spoiled by the presence of a clasp that allows the bracelet to be opened (or closed) and thus be worn (or taken off). Such an opening, as well as creating an unattractive discontinuity in the bracelet, brings an increase in production costs; moreover, it is frequently subject to breaking or damage. The clasp is also often difficult to operate for a single user that has to wear (or take off) the bracelet, and therefore the bracelet is particularly uncomfortable to put on (or take off).

[0005] In order to at least partially solve such drawbacks, alternative solutions have been considered. Among these, there are known solutions that provide a concatenation of collets (also called prong setting) joined by elastic elements, so as to thus obtain an elastic or extensible bracelet that can be worn or removed by simply stretching it out (i.e. by moving the collets away from one another). However, such known extensible bracelets also have numerous drawbacks.

[0006] Firstly, they do not ensure a fit comparable to that of the conventional tennis bracelet, and therefore they are of lower quality in terms of appearance; this should be considered an aspect of primary importance given that elegance and the specific fit are, as already mentioned, special characteristics of the conventional tennis bracelet.

[0007] Specifically, the presence of the elastic elements tends to stiffen the bracelet that thus keeps a substantially circular shape even when worn, therefore not hanging from the wrist and not ensuring this loose fit that is so appreciated in the conventional tennis bracelet.

[0008] Known elastic solutions thus substantially aesthetically differ from the conventional tennis bracelet and are consequently not appreciated by the user who does not see such variants as a valid alternative to the conventional tennis bracelet.

[0009] The purpose of the present invention is therefore to provide a tennis bracelet that is elastic but at the same time is comparable in terms of fit, elegance and appearance to a conventional tennis bracelet.

[0010] Another purpose of the present invention is to provide a tennis bracelet that is easy to put on and take off.

[0011] This purpose is achieved with the bracelet according to the present invention the essential characteristics of which are defined in the first of the attached claims.

[0012] The invention will now be illustrated in greater detail with the following description of an embodiment thereof, given as a non-limiting example, with reference to the attached drawings, in which:

- figure 1 is a perspective view of a segment of bracelet according to the invention, wherein a portion of the segment of the bracelet is in an extended configuration, and a portion is in a non-extended configuration;
- figure 2 is a perspective view from below of the segment of figure 1;
- figure 3 shows an exploded view of a section of the bracelet of the previous figures;
- figure 4 is a plan view representation of the bracelet of the previous figures with groups of different collets represented in different shades; and
- figure 5 is a view of the bracelet of figure 4 in which just two groups of different collets are represented, with side walls having a different inclination to one another.

[0013] With reference to the aforementioned figures, the bracelet according to the invention comprises a plurality of female elements or collets 1, 1' and male elements 2 linked together so as to form a linear structure developing along a direction of concatenation, in which the female elements 1, 1' are in an alternate position with the male elements 2. The female elements are box-shaped, i.e. internally hollow, whereas the male elements are tubular to allow the penetration of elastic means, such as a spring 3 that connects the female elements with the male elements indeed defining the aforementioned elastic bracelet.

[0014] The collets 1, 1' are polygonal-shaped and in particular they have a substantially trapezoidal cross section. They have at least one face 1a suitable for allowing a stone 4 to be mounted, in a known manner. From the mounting face 1a some side walls 1c, 1d extend, the free edges of which define, in a position opposite the face 1a itself, an opening 1b of the collet suitable for allowing the insertion of the male elements.

[0015] In detail, the side walls comprise opposite top side walls 1d substantially parallel to the direction of concatenation (defined by the male elements and by the

spring) and opposite and mutually inclined side walls 1c. The top walls 1d are slightly curved (or rounded towards the outside of the collet) and define, with the top walls of the adjacent collets, the flanks of the bracelet exposed to sight of the user. As mentioned, the side walls 1c, on the other hand, are mutually inclined to define the aforementioned trapezoidal section and are in contact, when the bracelet is in relaxed configuration, i.e. not extended, with the side walls of the adjacent collets.

[0016] On the side walls 1c there are substantially rectangular open polygonal seats 10 of dimensions such as to allow the insertion of the male elements 2. The polygonal seats extend from free edges 1c' of the respective side walls, representing an interruption thereof, up to the mounting face.

[0017] In order to avoid the mutual rotation movement between collet and male element around the direction/axis of concatenation, the male elements have a polygonal profile corresponding to that of the seat 10. In particular, the male elements have a substantially square cross section; they have a body 20 with a constant square section the ends of which 21 are enlarged. The polygonal seats 10 have a thickness that is comparable to the width of the body 20, whereas the enlarged ends 21 have increased width.

[0018] As mentioned, each male element 2 is slidably connected to two successive female elements 1; when the bracelet is extended the enlarged ends 21 abut internally on the side walls 1c in such a way defining an end stop against the opening out of the bracelet. In relaxed configuration, on the other hand, the enlarged ends 21 of the two male elements 2 connected to the same collet 1, are alongside one another, close together if not in abutment. Advantageously, the maximum stretching out allowed by the abutments of the enlarged ends of the male elements 2 with the collets 1 is lower than the elastic limit of the elastic element 3 and therefore there is no risk of weakening thereof.

[0019] In order to prevent the male elements 2 from coming out from the respective polygonal seats 20 they are shut at the bottom by block means such as plates 5 that close the aforementioned opening 1b and the seats 10 themselves; when fixedly connected to the collet therefore, the plate defines a lower face 1b' of the same collet, opposite the mounting face 1a.

[0020] Peripherally a stepped groove 11 is formed at the opening 1b, on the side walls 1c, 1d, for abutment by the plate. The latter is finally fixed to the collet in a known way like for example by welding, gluing, etc..

[0021] In order to make it more easily wearable, the bracelet is substantially elliptical or oval in shape, a shape which indeed allows the bracelet to adapt to the wrist of the user wearing it loosely, i.e. resting on the back of the wrist itself. Such a shape is given by the presence on the concatenation of two different types of collet, i.e. a first collet 1 and a second collet 1' that differs from the first only in that it provides side walls 1c' having an increased mutual inclination. In particular, in the preferred embodiment, the side walls 1c' define an angle β that is about 2 degrees wider than the angle α defined by the side walls of the first collets 1. In a possible configuration, the angle α is comprised between 4 and 5 degrees, whereas β is comprised between 6 and 7 degrees.

[0022] The number of second collets 1' is variable; preferably, such a number is substantially analogous or in any case slightly less than that of the first collets 1; the second collets 1' will therefore be inserted in the concatenation so as to form two diametrically opposite groups spaced apart by as many groups of collets 1.

[0023] The bracelet according to the invention can be easily opened out by applying a traction force along its axis of concatenation to stretch the elastic element 3. The opening out of the bracelet is sufficient to allow the user to put the bracelet itself on their wrist by passing their hand through it. Then by allowing the elastic element to go back into its contracted condition, the bracelet narrows to a size sufficient to ensure that it does not come off the wrist involuntarily and, at the same time, ensuring a stable uniformity of appearance of the concatenation.

[0024] Thanks to the matching shape of seats and male elements, which prevents the rotation of the collets with respect to the male elements themselves, the collets stay in the desired position, i.e. with the mounting face 1a facing towards the outside of the bracelet. This solution is particularly advantageous in tennis bracelets in which the mounted stones must be clearly visible.

[0025] Moreover, the closure plates 5 define a substantially neat and smooth inner surface of the bracelet which is particularly appreciated while being worn in contact with the skin of the wrist.

[0026] The particular configuration of the oval bracelet, thanks to the presence of collets having trapezoidal section, allows the bracelet to be worn loosely, so that it rests on the wrist.

[0027] The bracelet according to the invention is thus comparable to a conventional tennis bracelet in terms of fit, linearity and aesthetics, whilst solving its drawbacks, i.e. eliminating the presence of the closure.

[0028] The bracelet according to the invention will thus be easy for the user to put on (or take of), also without the help of other people. At the same time, the bracelet defines a real continuity of stones, since there are no discontinuities or interruptions.

[0029] Furthermore, the bracelet according to the invention is aesthetically pleasing since, thanks to the presence of the spring that keeps the collets stuck together, the stones are always the same distance apart, even when the bracelet is being worn. By adjusting the thicknesses of the collets it is also possible to adjust the distance between the stones.

[0030] It will be obvious to a man skilled in the art that the shape of the female elements can be different from the one illustrated and that it is possible to use precious and non-precious metals for the production of such elements, just as it is possible to provide the use of precious and non-precious stones or, possibly, there can even be

solutions in which the collets do not support any stone; it is also possible to foresee solutions with alternations of stones and collets etc..

[0031] Furthermore, the female elements can have more than four vertical walls, thus having any prismatic shape; the only condition is that they must have at least two diametrically opposite side walls, to ensure the mutual abutment of the collets with the bracelet not tightened. Similarly, each male element and the respective seat can have different shapes from the one described, provided that they can engage together so as not to be rotatable with respect to the axis of concatenation of the bracelet. The male element and the seat can therefore have any polygonal shape (regular and not).

[0032] It is also possible to make various alternations or combinations of female elements in different metals or in the same metal but in different chromatic grades. Moreover, it is possible to use female elements characterised by specific processing and/or surface treatments that are well known by the man skilled in the art. All of these variant embodiments and other equivalent ones are covered by the scope of protection of the invention.

[0033] The present invention has been so far described with reference to preferred embodiments. It should be understood that there can be other embodiments falling within the same inventive concept, as defined by the scope of protection of the following claims.

Claims

1. A bracelet comprising an annular concatenation of a plurality of alternating female elements (1) and male elements (2), said male elements having enlarged ends (21) slidably engaged in two adjacent female elements (1), said male elements being tubular to allow the insertion of an elastic element (3) that extends in said concatenation to keep said female elements close together with the adjacent one, said female elements also being adapted to be moved apart from one another following an axial force suitable for extending said elastic element (3), said bracelet being **characterised in that** said female elements (1) have at least two side walls (1c) inclined to one another to define a first angle (α), on which polygonal seats (10) are formed for the engagement of said male elements (2), the latter having a shape matching said seats so as to define a non-rotary engagement between said male elements themselves and said female elements, said bracelet also having, in a diametrically opposite position on said concatenation, at least two second female elements (1') having side walls inclined to one another to define a second angle (β) that is greater than said first angle (α) in order to give said bracelet a substantially oval or elliptical shape.

2. The bracelet according to claim 1, wherein said female elements (1) are polygonal box-shaped and provide at least one face (1a) suitable for mounting a stone, such a face (1a) facing towards the outside of the bracelet.

3. The bracelet according to claim 2, wherein from said mounting face a plurality of side walls (1c, 1d) extend perpendicularly, of which two opposite ones are said side walls, said side walls defining, in a position opposite said face, an opening (1b) suitable for the insertion of said male element.

4. The bracelet according to claim 3, wherein said opening and at the bottom said seats (10) are intercepted by a closing plate (5) that prevents the accidental extraction of said male elements, said plate being parallel and opposite to said mounting face.

5. The bracelet according to claim 4, wherein a stepped groove (11) is formed in said side walls perimetrically to said opening, said plate resting in abutment on said groove.

6. The bracelet according to any one of claims 3 to 5, wherein said side walls comprise two opposite top walls (1d) arranged parallel to said male elements suitable for defining the flanks of said bracelet, said top walls being curved.

7. The bracelet according to any one of the previous claims, wherein said male elements have a body (20) of size such as to penetrate said seat (20), said enlarged ends having increased dimensions with respect to said body so that when said elastic element is extended, said enlarged ends abut internally on said side walls.

8. The bracelet according to claim 7, wherein said body (20) has a square cross section, said seats being substantially rectangular.

9. The bracelet according to any of the previous claims, wherein said second angle (β) is greater than said first angle (α) by about 2°.

10. The bracelet according to claim 9, wherein said first angle (α) is comprised between 4 and 5 degrees and said second angle (β) is comprised between 6 and 7 degrees.

11. The bracelet according to any of the previous claims, wherein said elastic element is a coil spring.

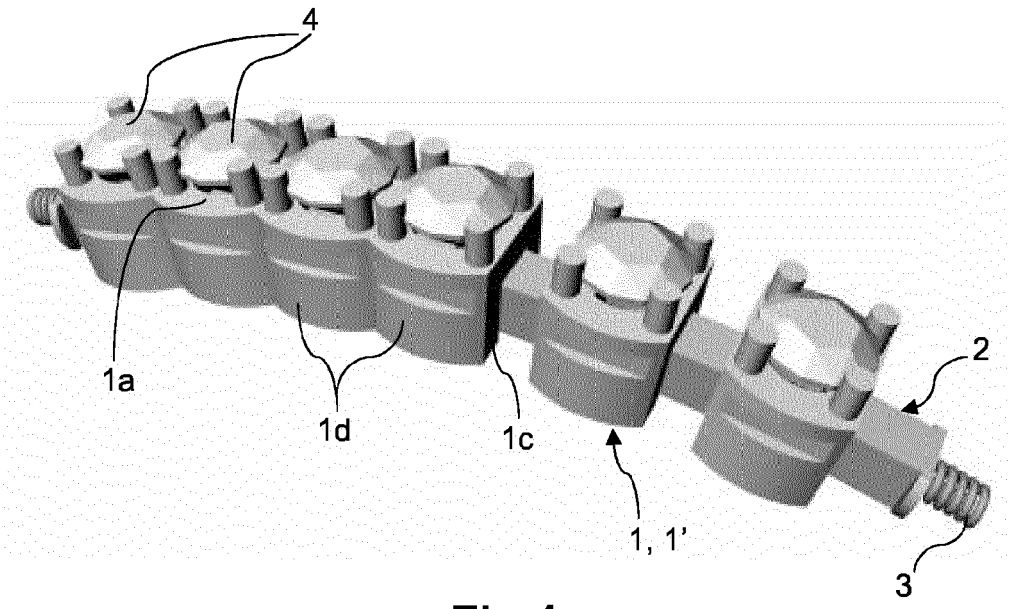

Fig.1

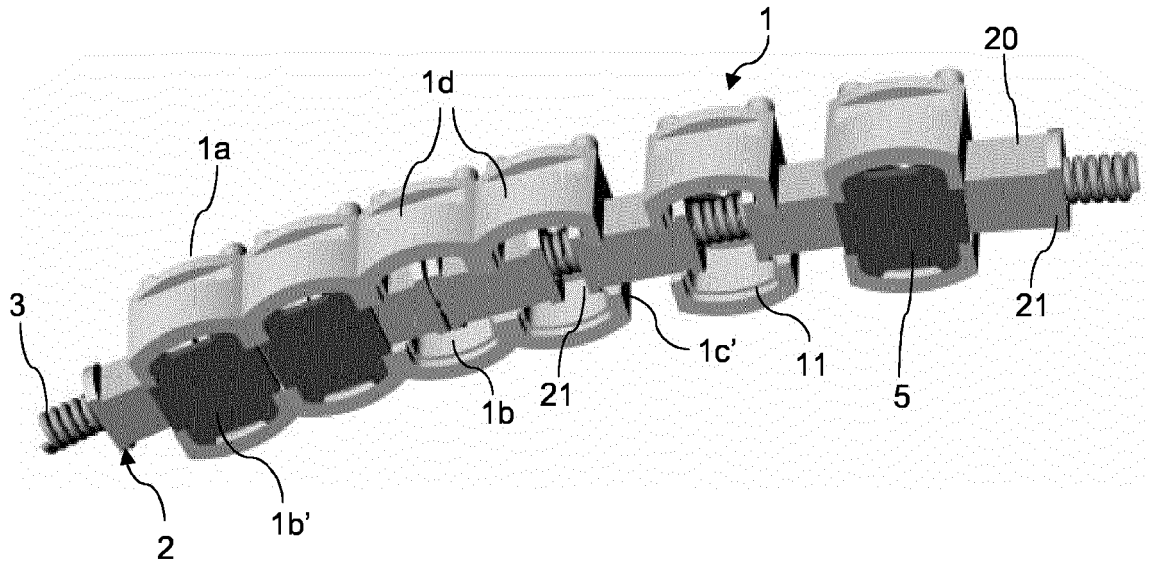

Fig.2

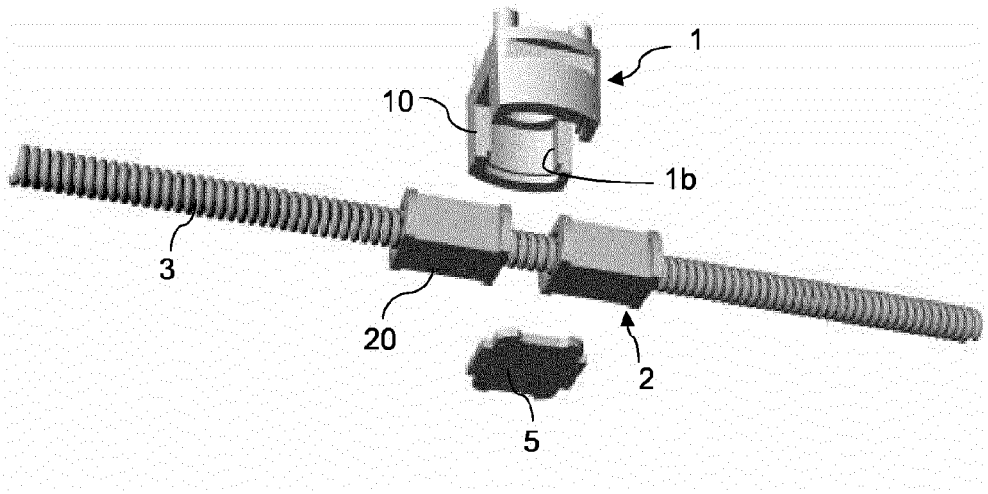

Fig.3

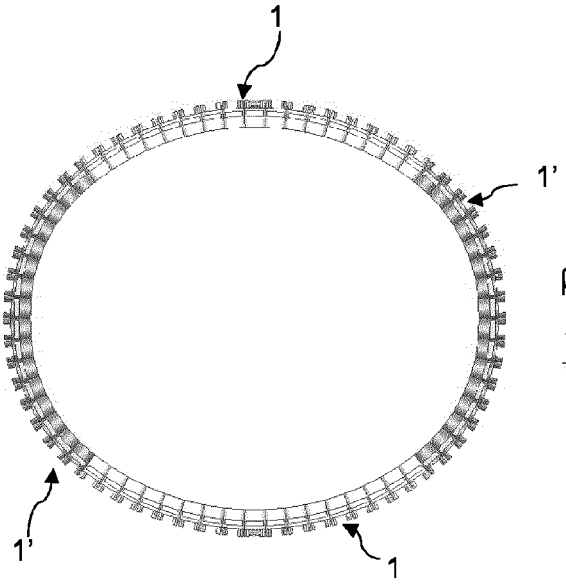

Fig.4

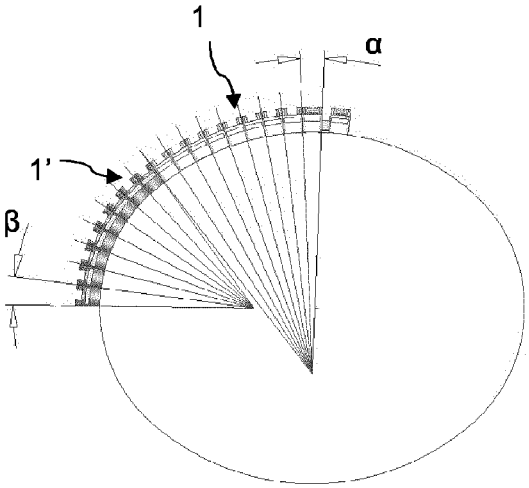

Fig.5