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(54) **Piece of jewellery, in particular bracelet, with improved spring locking device**

Schmuckstück, insbesondere Armband, mit verbesserter Federschliessung

Bijou, en particulier un bracelet, avec un ressort de verrouillage

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(73) Proprietor: **PESAVENTO S.r.l.**
36100 Vicenza VI (IT)

(72) Inventor: **Pasavento, Marino**
36100 Vicenza VI (IT)

(74) Representative: **De Gregori, Antonella et al**
Ing. Barzano & Zanardo Milano S.p.A.
Via Borgonuovo 10
20121 Milano (IT)

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EP 0 974 284 B1

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Description

[0001] The present invention provides a piece of jewellery, such as a bracelet, a necklace or the like, consisting of two hinged arms or bars and spring means keeping the jewels in their locking position.

[0002] The jewel is characterized by the particular configuration of these spring locking devices, which, besides being aesthetically preferable to the ones known in the art, have the considerable advantage of preventing the skin from being pinched or pricked when locking the jewel.

[0003] More particularly, the bracelet of the invention is provided with a spring member which, at one of its ends, is welded to the inside of one of the bars forming the bracelet, gets out of this bar a little before the hinge area and has the second end bent inwards and getting into a corresponding opening in the second bar.

[0004] In the hinge area a cam member is integral with one of the bars, said cam member having such a configuration that, when the bracelet is opened, the spring acts on this cam member to return the bracelet into its locking position.

[0005] The assembly has such dimensions that the bent end portion of the spring acts as a stop means to limit the excessive opening of the arms forming the jewel.

[0006] Several kinds of jewels are known, in particular bracelets, necklaces, ear-rings or the like, comprising two folded arms or bars being hinged with each other at one end and being subject to the action of elastic means which keep them in their locking position, by tightening each against the other.

[0007] The use of spring devices provides several advantages both for the manufacturer, who no longer needs clips or the like which imply functional problems and higher production costs, and for the user, for whom the jewel is much more practical since, to put it on or off, it is sufficient to open wide the arms which then are closed again due to the force from the spring.

[0008] A known embodiment, which is disclosed, for example, in EP-A-0 375 565 and which is shown in figure 1, utilizes a spring located inside the arms, which are indicated with numerals 1 and 2 in figure 1.

[0009] The arms are joined by a hinge 3 and a spring 4 is placed inside, said spring 4 tightening the arms each against the other.

[0010] A further known embodiment is provided with a spring member, an end of which is fastened, by means of rivets or the like, to the outer surface of one of the arms.

[0011] This spring member is then passed inside the bar, from which it gets out near the hinge to contact the second arm.

[0012] However, both known embodiments have several drawbacks.

[0013] The embodiment with the inner spring has the drawback that the two hinged arm ends tend to pinch

the user's skin when the jewel is closed and they do not keep opened wide when the user opens the jewel to put it on.

[0014] The second embodiment, with the spring getting out of one of the bars to contact the second arm, is considerably complicated to assemble and it also has some drawbacks since, when the arms are opened, the spring end tends to move slightly away from the arm on which it rests, with the risk, when the jewel gets closed, of pinching or pricking the user's skin.

[0015] The present invention falls within this field by providing a jewel with improved spring locking devices which can overcome the above mentioned drawbacks.

[0016] In particular, according to the invention, a spring is used an end of which is welded inside one of the bars and gets out a little before the hinge, up to the other arm where the second, bent spring end gets into an opening in the arm wall.

[0017] In the hinge area a cam is provided which engages the spring whereby, when opening the arms, the spring, by acting on the cam, tends to close the jewel.

[0018] These and other features of the present invention will become more apparent from the following detailed description, provided by way of non restrictive example, with reference to the accompanying drawings in which:

- figure 2 schematically shows a bracelet according to the invention;
- figure 3 shows a detail of a partial cross-sectional view of the closed bracelet;
- figure 4 shows a detail of a partial cross-sectional view of the opened bracelet;
- figure 5 is a schematic perspective view of the two disassembled bars forming the bracelet.

[0019] With reference to figure 2, numeral 10 shows a jewel, specifically a bracelet, comprising a pair of arms or bars 12 and 13 joined by a hinge 14.

[0020] According to the invention, a spring member 15 acts on the arms 12 and 13 to keep them in their locking position.

[0021] In particular an end of the spring member 15 is welded at numeral 16 to the inside of the two bars, it goes on inside the bar for a certain length and it gets out of the bar at an opening 17 near the hinge 14, to pass on said hinge and contact the second arm 13.

[0022] Here the spring end 18 is bent inwards and it gets into a corresponding opening 19 in the wall of the bar 13.

[0023] A cam member 20 being engaged by the spring 15 is integral with the bar 13.

[0024] The cam member 20 has an outline with two oppositely sloping inclinations on which the the spring acts respectively in the opening and closing position, so that the force from the spring tends to keep the bracelet respectively open or closed.

[0025] When the arms 12 and 13 are rotated to open

or close the bracelet, the cam lifts the spring during the first motion part, until the dead centre is passed, after which the force from the spring helps the arm motion to bring the bracelet in the open or closed position.

[0026] Substantially, owing to the cam 20, the spring tends to keep the bracelet in the opening or closing position by opposing the rotation of the arms 12 and 13 until the dead centre is passed, after which the spring opposes the motion in the opposite direction.

[0027] This configuration has several advantages with respect to the known embodiments, both from an aesthetic point of view, since only a part of the spring gets out of the arms, and only in the hinge area, and because the risk of skin pinching is considerably reduced, since the spring no longer moves away from the bracelet with the risk of pinching the user's skin when closing the bracelet.

[0028] The invention has been described with specific reference to a bracelet, but clearly the same solution may be effectively applied to other jewels such as necklaces, ear-rings and the like. The same invention may then be carried out in several different ways.

[0029] For instance, with jewels comprising a plurality of bars placed side by side a single pin may be provided which joins several bars, one or more of them receiving the springs which act on cams being integral with the pin and the second bar.

[0030] Likewise, the dimensions, as well as the materials being used, may change according to the needs.

Claims

1. A jewel (10) comprising two arms (12, 13), which are joined by a hinge (14) at one of their ends, and spring means for tightening said arms (12, 13), an end (16) of said spring means being attached to a first arm (12) of the jewel (10) and the other end (18) of said spring means engaging a second arm (13) of the jewel (10), wherein said ends (16, 18) of the spring means are placed respectively inside said first (12) and second (13) arms, from which they get out at the hinge (14) area, **characterised in that** said spring means comprise a spring member (15), which gets out of said first arms (12, 13) at the hinge (14) area and goes beyond said hinge (14), a first end (16) of said spring member (15) being welded inside said first arm (12) and a second end (18) of said spring member (15) being bent and getting into a corresponding opening (19) of said second arm (13).
2. A jewel (10) as claimed in claim 1, **characterised in that** a cam member (20), which is integral with one of said arms (12, 13), engages said spring member (15) to deform it when rotating the arms (12, 13) to bring the jewel (10) from its opening position to its closing position or vice versa, an outline

of said cam member (20) having two oppositely sloping sides, whereby, when the jewel (10) is in the opening or closing position, said spring member (15) engages either side, keeping said arms (12, 13) in said opening or closing position.

3. A jewel (10) as claimed in claim 2, **characterised in that** said second end (18) of the spring member (15) engages said cam member (20) when the jewel (10) is opened, acting as a travel end means to limit the arms (12, 13) opening out.

Patentansprüche

1. Schmuckstück (10) mit zwei Armen (12, 13), die durch ein Scharnier (14) an einem ihrer Enden verbunden sind, und einer Federeinrichtung zum Festziehen der Arme (12, 13), wobei ein Ende (16) der Federeinrichtung an einem ersten Arm (12) des Schmuckstücks (10) angebracht ist, das andere Ende (18) der Federeinrichtung in einen zweiten Arm (13) des Schmuckstücks (10) eingreift und die Enden (16, 18) der Federeinrichtung jeweils innerhalb des ersten (12) und des zweiten (13) Arms angeordnet sind, von wo sie in den Bereich des Scharniers (14) hinausragen, **dadurch gekennzeichnet, daß** die Federeinrichtung ein Federelement (15) aufweist, das von dem ersten und dem zweiten Arm (12, 13) in den Bereich des Scharniers (14) und über diese hinaus ragt, ein erstes Ende (16) des Federelements (15) innerhalb des ersten Arms (12) verschweißt ist und ein zweites Ende (18) des Federelements (15) gebogen ist und in eine entsprechende Öffnung (19) des zweiten Arms (13) eingreift.
2. Schmuckstück (10) nach Anspruch 1, **dadurch gekennzeichnet, daß** ein an einen der Arme (12, 13) angeformtes Nockenelement (20) in das Federelement (15) eingreift, um es bei Drehung der Arme (12, 13) zu verformen und so das Schmuckstück (10) von seiner geöffneten in seine geschlossene Position oder umgekehrt zu bringen, und ein Umriß des Nockenelements (20) zwei entgegengesetzt geneigte Seiten aufweist, wodurch, wenn das Schmuckstück (10) in der geöffneten oder geschlossenen Position ist, das Federelement (15) in eine der Seiten eingreift, wobei es die Arme (12, 13) in der geöffneten oder geschlossenen Position hält.
3. Schmuckstück (10) nach Anspruch 2, **dadurch gekennzeichnet, daß** das zweite Ende (18) des Federelements (15) in das Nockenelement (20) eingreift, wenn das Schmuckstück (10) geöffnet ist und so als Endstück zum Begrenzen der sich nach außen öffnenden Arme (12, 13) wirkt.

Revendications

1. Bijou (10) comprenant deux bras (12,13) qui sont reliés par une articulation (14) à l'une de leurs extrémités, et des moyens formant ressort pour resserrer lesdits bras (12,13), une extrémité (16) desdits moyens formant ressort étant fixée à un premier bras (12) du bijou (10) et l'autre extrémité (18) desdits moyens formant ressort coopérant avec un second bras (13) du bijou (10), dans lequel lesdites extrémités (16,18) des moyens formant ressort sont placées respectivement à l'intérieur desdits premier (12) et second (13) bras, d'où ils sortent au niveau de la zone d'articulation (14), **caractérisé en ce que** lesdits moyens de ressort comprennent un élément de ressort (15) qui sort desdits premier et second bras (12,13) au niveau de la zone d'articulation (14) et va au-delà de ladite articulation (14), une première extrémité (16) dudit élément de ressort (15) étant soudée à l'intérieur dudit premier bras (12) et une seconde extrémité (18) dudit élément de ressort (15) étant pliée et pénétrant dans une ouverture correspondante (19) dudit second bras (13).

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2. Bijou (10) selon la revendication 1, **caractérisé en ce qu'un** élément formant came (20) qui est solidaire de l'un desdits bras (12,13) coopère avec ledit élément de ressort (15) pour le déformer lors de la rotation des bras (12,13) pour amener le bijou (10) de sa position d'ouverture à sa position de fermeture ou vice versa, un profil dudit élément formant came (20) présentant deux côtés inclinés opposés, de sorte que, lorsque le bijou (10) est dans la position d'ouverture ou de fermeture, ledit élément de ressort (15) coopère avec l'un ou l'autre côté, maintenant lesdits bras (12,13) dans ladite position d'ouverture ou de fermeture.

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3. Bijou (10) selon la revendication 2, **caractérisé en ce que** ladite seconde extrémité (18) de l'élément de ressort (15) coopère avec ledit élément formant came (20) lorsque le bijou (10) est ouvert, pour servir de moyen de fin de course pour limiter l'ouverture des bras (12,13).

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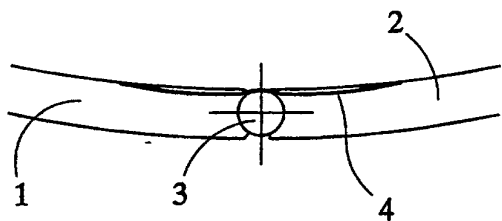


Fig. 1

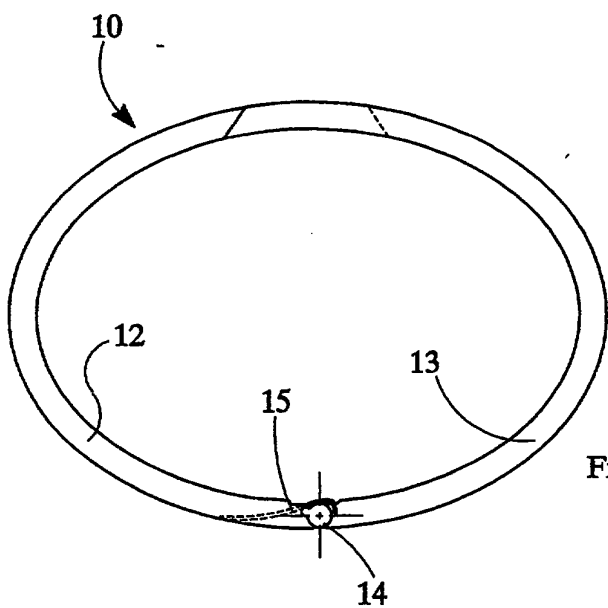


Fig. 2

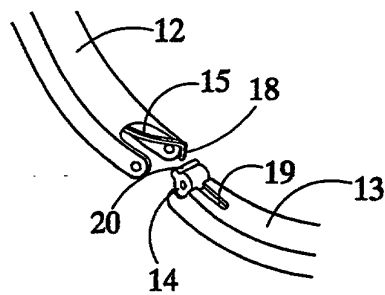


Fig. 5

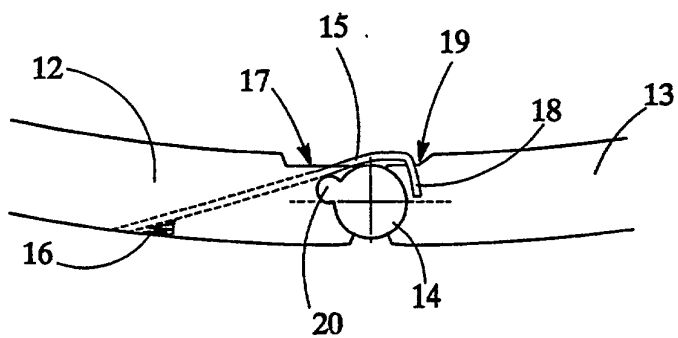


Fig. 3

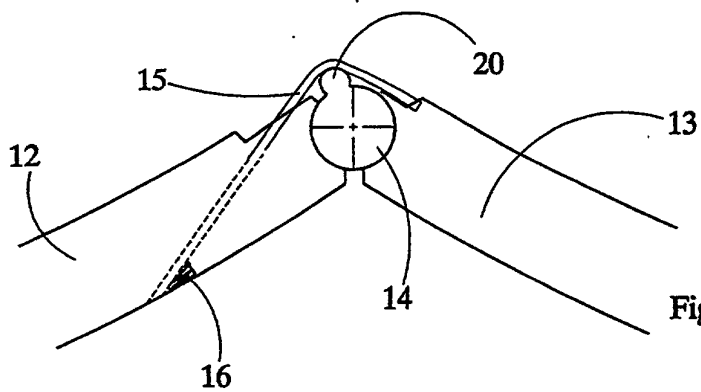


Fig. 4