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(54) Locking means for an ear jewel

(57) The invention relates to a locking means for an ear jewel to be inserted into a pierced ear. The ear jewel comprises an ornamental element (10) to be positioned on the outside of the ear and a locking element joint to the ornamental element. The locking element (20) comprises a straight first segment (23) for passing through the ear, which first segment is joint to the ornamental element at a substantially right angle, and a substantially 90°-bent segment (21) joint to the first segment, and a substantially straight tubular segment joint to the bent segment and a movable securing element (30) running through the tubular segment. The securing element (30) comprises adjoining wires (31) which under the influence of a pre-tension deflect away from each other. The wire elements are fashioned from different wire pieces which, at least at a first end, form an angle and are joint to a first coupling element (32).

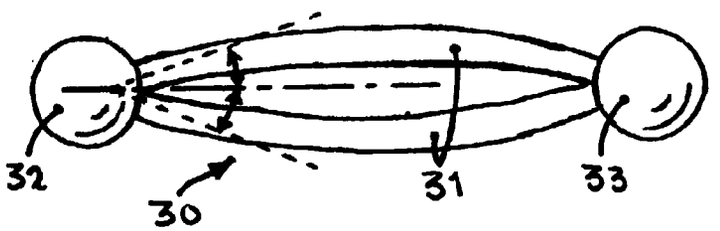

FIG. 1

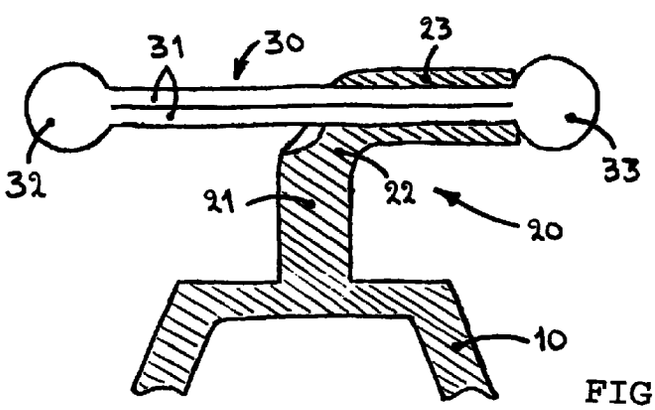

FIG. 2

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Description

The present invention relates to a locking means for an ear jewel to be inserted into a pierced ear, which ear jewel comprises an ornamental element to be positioned on the outside of the ear and a locking element joint to the ornamental element, which locking element comprises a straight first segment for passing through the ear, which first segment is joint to the ornamental element at a substantially right angle, a substantially 90°-bent segment joint to the first segment, a substantially straight tubular segment joint to the bent segment and a movable securing element running through the tubular segment, which securing element comprises adjoining wires which under the influence of a pre-tension deflect away from each other.

Such a locking means is known from the US patent specification US-A-5,201,197. Herein a locking means is described having a securing element that comprises a wire which is bent double. The disadvantage with this is that with time the built-up pre-tension resulting from not completely bending the wire double, clearly decreases and the securing effect of the securing element weakens and finally ceases. As a result the ear jewel may become dislodged from the desired position in the ear and fall out and become lost. Another disadvantage of the known locking means is that it is difficult to grip the securing element with the fingers for moving it into or out of the securing position.

The present invention solves the problems regarding the known locking means by providing a mechanism which is characterized in that the wire elements are fashioned from different wire pieces which, at least at a first end, form an angle and are joint to a first coupling element. By using separate wire pieces the angle between the wire pieces, which provides the pre-tension of the securing element, is better defined, and endures excellently in the course of time, so that the securing effect is ensured for a long time. The desired pre-tension may be chosen by applying a larger angle between the wire pieces or optionally using more than two wire pieces, or by a combination of the two. One thing and another depends on the jewel to be secured and the materials used. The use of the coupling element facilitates gripping the securing element with the fingers for easily moving it into or out of the securing position.

The wire pieces are preferably joint at their other end to a second coupling element. In this way a pre-tension is built up from two ends of the wire pieces due to said wire pieces deflecting lightly outward; as a result, the securing element may be smaller while maintaining the same pre-tension.

In a preferred embodiment the securing means is characterized in that the first and the second coupling element are spherical having a diameter larger than the inside diameter of the tubular segment. This is a simple measure to prevent the securing element from falling out of the tubular segment. The spherical form allows the fingers to easily grip the coupling elements for moving them into or out of the securing position.

It is preferable that the diameter of at least one spherical element is larger than the outside diameter of the tubular segment. This greatly facilitates gripping the coupling element with the fingers, so that it is much easier to move it into or out of the securing position. This may be achieved in particular if the spherical element having a diameter larger than the outside diameter of the tubular segment, is the one which in the secured position forms the end of the tubular segment farthest removed from the ornamental element. The securing element may be moved into or out of the securing position from both ends.

Preferably the wire pieces are joint to the coupling piece by soldering. This ensures a strong connection between the wire pieces and the coupling elements, allowing the desired pretension to be adjusted fairly precisely and preventing the connection from loosening.

The invention will now be explained with reference to the appended drawing in which identical parts are indicated by identical reference numbers and in which

Fig. 1 is a side view of a securing element according to a preferred embodiment of the invention;

Fig. 2 is a partial cross section of an ear jewel with a securing element according to a preferred embodiment of the invention in the securing position;

Fig. 3 is a partial perspective view of an ear jewel with a securing element according to a preferred embodiment of the invention, in the securing position; and

Fig. 4 is a partial perspective view as in Fig. 3, but with the securing element out of the securing position.

With reference to the drawing a description will now be given of a preferred embodiment of a locking means for an ear jewel according to the invention.

A preferred embodiment of the securing element itself is shown in Fig. 1 and as entity is indicated by reference number 30. In the embodiment shown it comprises two wire pieces 31 which at their ends are joined to coupling elements 32 and 33. The wire pieces 31 are placed in the coupling elements 32 and 33 in such a manner that the wire pieces form an angle with a straight line running centrally between the wire pieces 31. This straight line is represented in Fig. 1 as a dash-dot-line. By placing the wire pieces 31 in the coupling elements 32 and 33 in this manner, a pre-tension builds up in the securing element 30 when the wire pieces are moved toward each other, as will be the case when it is slid into the locking means as such. The tension to be built up can be adapted by varying the angle formed by the wire pieces 31 with said straight line. Choosing a larger angle results in a greater pre-tension build-up in

the securing element 30 placed in a locking means.

It is also possible to use more than two wire pieces 31. Using more than two wire pieces 31 allows the pre-tension in the securing element 30 to be increased while maintaining the angle between the wire pieces 31 and said straight line in the centre between the wire pieces 31. If more wire pieces 31 are employed it is possible to build up an equivalent pre-tension while maintaining the same angle and with less deformation of the securing element, which may lengthen the securing element's mechanic life. The pre-tension to be built-up can now be chosen by combining said angle and the number of wire pieces 31. One thing and another will depend on the jewel to be secured and the materials from which the jewel is made.

Apart from using two coupling elements 32 and 33 it is also possible to use only one coupling element 32. The advantage here is that the manufacture of the securing element 30 is less laborious. However, it is preferable to use two coupling elements 32 and 33, as in this case the wire pieces 31 are brought under tension from two sides.

Fig 2. shows a cross section of the securing element 30 shown in Fig. 1, positioned in the locking element 20 of an ear jewel. It is clearly visible that the wire pieces 31 of the securing element 30 are now closer together, thus building up a pre-tension in the securing element 30. This pre-tension causes the wire pieces 31 to be pushed against the interior of the tubular segment 23 of the locking element 20. This causes a frictional force to be built up between the securing element 30 and the tubular segment 23, so that in order to slide the securing element 30 through the tubular segment 23, a force has to be applied on the securing element 30 in its longitudinal direction.

The arrangement is employed as follows. The ear jewel, which comprises an ornamental element 10 as partially shown in the Figures and a locking element 20 with a securing element 30, is intended to be put through a hole pierced in a person's ear. Before positioning the securing element 30 in the ear it has to be taken out of its securing position, as shown in Fig. 4. Now first the portion of the securing element 30 which projects from the tubular segment 23 of the locking element 20 is put through the ear piercing. Then follows the tubular segment 23 and then in succession the bent segment 22 and the first segment 21 of the locking element 20. When putting the bent segment 22 through the ear piercing the ear jewel has to be inclined approximately 90°. When the ear jewel is in position, then the ornamental element 10 is positioned against the outside of the ear and the tubular segment 23 with the securing element 30 are placed against the rear of the ear. When in place, the first segment 21 of the locking element 20 is positioned in the ear piercing. To prevent the ear jewel from coming out of this position, the securing element 30 is put in the securing position into the tubular segment 23, as can be seen in Figs. 3 and 2. There is now a portion of the securing element, which is approximately at right angles to the first segment 21, at both sides of the first segment 21. The first segment 21 is approximately at right angles to the ornamental element 10. In order to prevent the securing element 30 from sliding out of the securing position a frictional force has to exist between the interior of the tubular segment 23 and the securing element 30. This frictional resistance is obtained in the manner already explained above.

In order to prevent the securing element 30 from coming out of the tubular segment 23 during its displacement through said tubular segment 23, the diameters of the spherical coupling elements 32 and 33 are larger than the diameter of the interior of the tubular segment 23. The use of spherical coupling elements 32 and 33 facilitates gripping the securing elements 32 and 33 with the fingers for moving the securing element 30 into or out of the securing position. Making the diameter of the spherical coupling elements 32 and 33 larger than the outside diameter of the tubular segment 23 of the locking element 20, facilitates gripping the securing element 30 even more. The coupling elements 32 and 33 do not need to be exactly spherical. They may be ellipsoidal, so that for instance only the tops of the ellipsoid project past the outside diameter of the tubular segment 23.

The manufacture may be such that the wire pieces 31 of the securing element 30 are attached to the coupling elements 32 and 33 by means of clamping. However, it is preferable to attach the wire pieces 31 to the coupling elements 32 and 33 by means of soldering. This provides a stronger and more secure attachment, ensuring that a built-up pre-tension is maintained, and preventing that the wire pieces 31 come loose from the coupling elements 32 and 33.

It must not be thought that the invention is limited to the above-described embodiment. Various embodiments are possible for a locking element for an ear jewel, which are all deemed to be within the scope of the present invention and the appended claims.

Claims

1. A locking means for an ear jewel to be inserted into a pierced ear, which ear jewel comprises an ornamental element (10) to be positioned on the outside of the ear and a locking element (20) joint to the ornamental element (10), which locking element (20) comprises a straight first segment (21) for passing through the ear, which first segment (21) is joint to the ornamental element (10) at a substantially right angle, a substantially 90°-bent segment (22) joint to the first segment (21), a substantially straight tubular segment (23) joint to the bent segment (22) and a movable securing element (30) running through the tubular segment (23), which securing element (30) comprises adjoining wires which under the influence of a pre-tension deflect

away from each other, **characterized** in that the wire elements are fashioned from different wire pieces (31) which, at least at a first end, form an angle and are joint to a first coupling element (32).

2. A locking means according to claim 1, **characterized** in that wire pieces (31) are preferably joint at their other end to a second coupling element (33).

3. A locking means according to claim 1 or 2, **characterized** in that the first (32) and the second (33) coupling element are spherical having a diameter larger than the inside diameter of the tubular segment (23).

4. A locking means according to one of the preceding claims, **characterized** in that at least one spherical element (32, 33) has a diameter larger than the outside diameter of the tubular segment (23).

5. A locking means according to one of the preceding claims, **characterized** in that the spherical element having a diameter larger than the outside diameter of the tubular segment (23), is the one which in the secured position forms the end of the tubular segment (23) farthest removed from the ornamental element (10).

6. A locking means according to one of the preceding claims, **characterized** in that the wire pieces (31) are joint to the coupling piece (32, 33) by soldering.

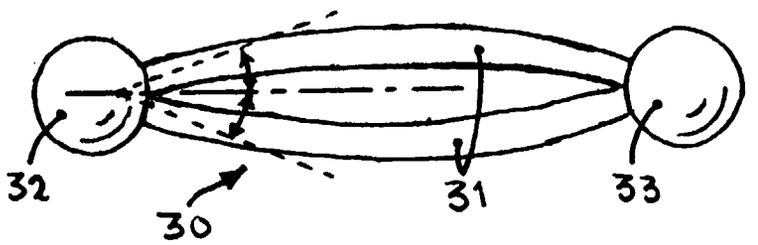

FIG. 1

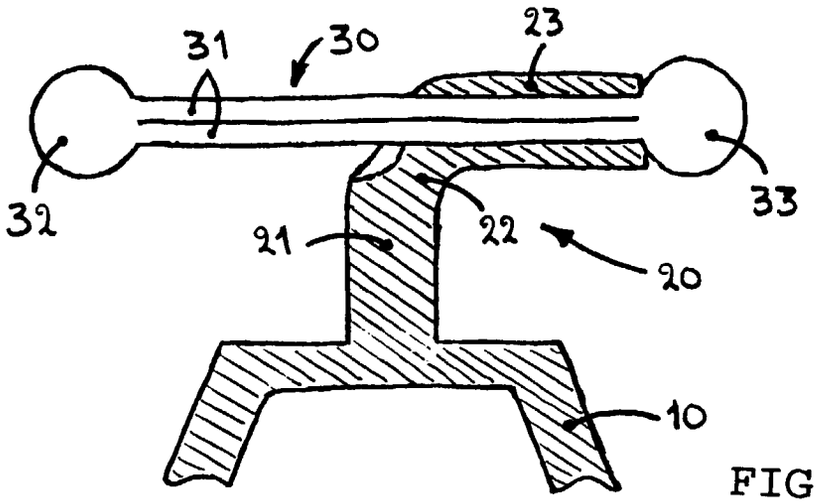

FIG. 2

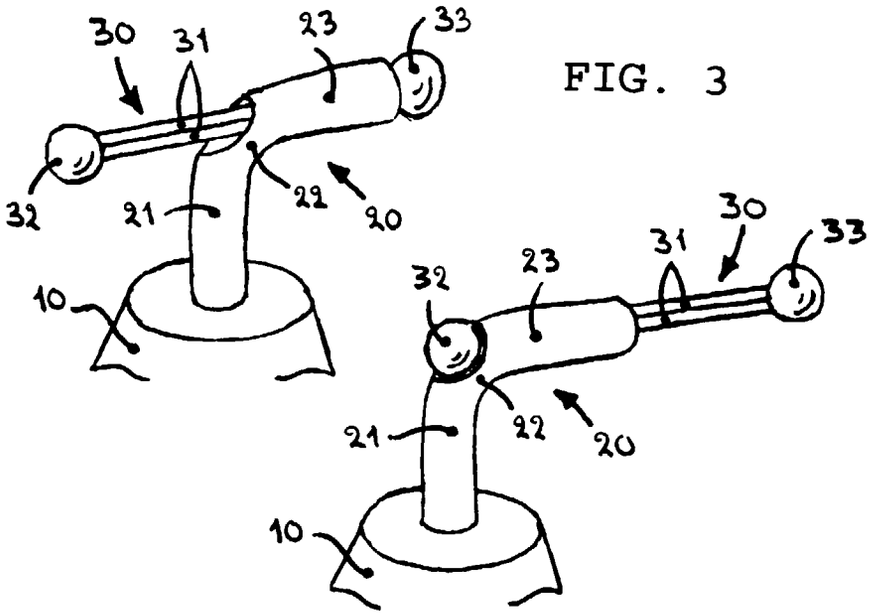

FIG. 3

FIG. 4

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 20 0569

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A,D	US 5 201 197 A (J. G. BAKKER) 13 April 1993 * column 2, line 13 - column 3, line 27; figures 1-4 *	1	A44C7/00
A	US 5 020 338 A (S. M. PAYNE) 4 June 1991 * column 2, line 63 - column 4, line 19; figures 1-10 *	1	
A	US 4 129 998 A (FERRO NOVELTY COMPANY COMPANY) 19 December 1978 * column 1, line 59 - column 2, line 44; figures 1-4 *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A44C
A44B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	18 June 1998	Garnier, F

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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