

DECORATIVE FASHION JEWELLERY COMPRISING A LINING PRESSED INTO CONTACT WITH A CUTOUT PIECE OF METAL PLATE

5 This invention relates to a decorative fashion jewellery item combining several elements that may have different appearances and/or may be made from different materials.

 Modern metal plate cutting methods can be used to make various fine cutouts from metals such as steel, brass, copper, aluminium, silver or gold,
10 in particular different shaped openings, to make jewellery or fashion accessories.

 It is known that a slightly supple lining can be permanently fixed on the inside face of the cut metal plate appearing through openings in this metal plate, with a different appearance and with different colours so as to create an aesthetic decorative effect.

15 Noble materials such as high quality natural or synthetic fabrics or leather are preferably used for the inside lining. The rigid metal plate then controls the general shape of the decorative element and a wear-resistant external appearance that may be gloss, satin or mat, and the inside lining forms a more supple and warmer material for which the nature, appearance and colour
20 provide a contrast with the metal.

 Bracelets, brooches, ear jewellery and open collar necklaces, comprising a cut metal sheet forming a rigid structure can thus be made with specific curves depending on their function. For example, bracelets can be made formed from a wound metal strip with an opening such that the wrist can be
25 passed through in an appropriate manner.

 Additional elements can be fitted on the lining, particularly to facilitate attachment or wearing, such as a cord or a chain around the neck for a pendant, or a pin to fasten a brooch onto clothing.

For jewellery such as bracelets that is directly in contact with the skin, the more supple inner lining gives a more pleasant feel on the skin.

However, one problem that arises with this type of decorative element is that when the internal lining is fixed permanently to the metal plate by
5 different means to assure good support and to press it into contact under the metal plate, this lining cannot be quickly and easily replaced.

Furthermore, detachment of the lining usually requires the use of special tools, particularly to remove clamping screws or rivets, and can damage some of the elements. The disassembly and reassembly operation can be slow
10 and tedious if an impeccable appearance and finish are to be kept, to justify the decorative function.

It is then impossible to make variants of the same jewel or decorative element quickly by replacing the lining or the decorative metal plate, although the trend is increasingly towards customising fashion accessories, for
15 example to adapt them to the clothes being worn, type of activities planned, or a need for frequent renewal to avoid repeatedly wearing the same decoration.

In particular, the purpose of this invention is to avoid these disadvantages of prior art and to enable a reversible attachment of a decorative lining under a rigid structure of a decorative element such as a jewel.

20 A reversible attachment is an attachment that can be made and removed manually without any tools. On the contrary, a permanent attachment is an attachment for which a tool is necessary to make or to remove it (crimping, screwing, gluing, etc.). Thus, an attachment means to make a manual reversible attachment is qualified as a "reversible attachment means" for the purposes of
25 this text.

To achieve this, this invention discloses a portable decorative element with a rigid structure with decorative openings on the back face of which during use there is a lining forming a plate that can be seen through these

openings, that can be elastically bent, this element being remarkable in that the back face comprises reversible attachment means capable of holding the lining in place and clamping this lining, pressing it into contact with the back face of the structure.

5 One advantage of this decorative element is that the attachment means squeezing the lining in the lateral directions of the plate apply a stress on this lining to hold it in place in the structure without play and therefore without wear, and create a pressure that tends to push the plate outwards when it is bent which forces it into contact on the back face to give the required aesthetic effect.

10 An attachment means that does not meet these conditions is for example a U-shape guide in which the lining must be slid to be positioned. Indeed, the sliding causes abrasion of the lining and does not provide its clamping against the back face of the structure since the guide must be greater than the lining height to allow its sliding. If the height is not higher, fixing is not
15 reversible because multiple insertions/outputs are impossible.

 The adjective "lateral" means that stress is applied through the edges of the lining.

 The lining can be easily and quickly disengaged to remove it and replace with another lining, without the use of tools and without damage to
20 any component. This lining can also be used with another metallic structure.

 The portable decorative element according to the invention may also comprise one or several of the following characteristics, that may be combined with each other.

 The rigid structure can be made from a cutout metal plate with
25 decorative openings.

 According to one embodiment, the back face comprises lateral tabs forming attachment means on which the edges of the lining bear. In this

case, the lateral tabs are advantageously formed by bending the edge of the structure metal plate. These lateral tabs are easy to make.

For the purposes of this text, "lateral tabs" means that the tabs are located on the edges of the rigid structure. These tabs may be isolated or they
 5 may form a continuous edge, in which case they form a support cage. The lateral tabs may be arranged on the sides or at the ends of the rigid structure.

According to another alternative or complementary embodiment, the decorative element comprises studs that force the lining onto the back face of the structure. The studs hold the lining in place in the different directions.

10 In this case, the stud advantageously comprises a approximately spherical head fixed on the back face of the structure at a distance such that there is compression through the thickness of the lining underneath this head.

This compression forces the lining into contact with the back face of the structure.

15 Advantageously, the lateral distance between two attachment means following the contour of the back face of the structure, is less than the same corresponding distance on the lining, such that these attachment means apply lateral pressure.

In particular, the decorative element may form a bracelet
 20 comprising a strip of bent plates arranged approximately in a circle, with an opening through which the wrist can pass.

This bracelet advantageously comprises two studs located on the back face of the structure, close to each end of the metal plate strip, and lateral tabs on the sides of this strip forming supports on the edges of the lining. This
 25 result is that the lining is held in place firmly in all directions, while it can be quickly removed.

Alternatively, the bracelet may comprise two lateral tabs called "end" tabs located on the back face of the structure, close to or at each end of

the rigid structure, and lateral tabs on the sides of this structure forming supports on the edges of the lining.

The lateral end tabs may advantageously include a claw structure so that the lining is kept in compression throughout its thickness under the lining under this claw.

In particular, the structure can form a disk comprising folded edges forming attachment means.

In particular, the lining can include two leather faces. The leather faces form a material with good durability and also a pleasant contact with the skin.

Advantageously, the lining has two faces with different colours, designed to be turned alternatively to face the structure. Thus a decorative element with two different appearances can thus be obtained quickly with the purchase of a single lining.

Another purpose of the invention is a decorative lining designed to cooperate with reversible attachment means of a decorative element according to the invention, remarkable in that it comprises means of cooperation with reversible attachment means.

Another purpose of the invention is a decoration kit for a decorative element according to the invention, comprising a plurality of the previous decorative linings, each provided with means of cooperation with reversible attachment means.

The invention will be better understood and other characteristics and advantages will become clearer after reading the following description given as an example, with reference to the appended drawings in which:

- figure 1 shows a bracelet forming a decorative element according to the invention;

- figures 2 and 3 present the metal plate and the leather lining of this bracelet, detached from each other;
- figures 4 and 5 show cross-sectional views of how the lining is fixed on a stud head and a lateral fixing tab for this lining, respectively;
- 5 - figures 6a, 6b and 6c show the assembly of this bracelet;
- figures 7 and 8 show two variants of rings according to the invention;
- figures 9a and 9b show an overview and a detailed view respectively of an open collar necklace according to the invention;
- figures 10a and 10b show a front view and a side view respectively of ear
10 jewellery according to the invention; and
- figures 11 and 12 show an alternative according to the invention of the bracelet in figure 1 and of the leather lining of this bracelet, respectively.

Figure 1 presents a bracelet comprising a rigid structure 2 formed in a cut strip of metal plate that is curved to form a loop with an opening
15 through which the wrist can pass.

Other materials can be used to make the rigid structure, for example wood or a rigid polymer.

The openings 14 may be made by cutting, grinding or by a means other than continuous edge to edge attachment of parts so as to leave
20 open spaces between the parts. For example, parts can be welded to each other so as to obtain the rigid structure with openings according to the invention.

A leather lining 4 in contact with the inside of the metal structure 2 on its back face, forms a rectangle for which the long sides 6 are adjusted on the edges of the metal plate, and the short sides 8 are slightly set back from this
25 metal plate.

The lining 4 forms a plate that can be elastically curved, fixed to the inside of the structure by two studs 10 each located on the centre line of the

strip close to one end of this strip, and two lateral tabs 12 each arranged in the middle of a long side of this structure.

Alternatively, as illustrated on figure 11, the bracelet may comprise two lateral tabs called "end" tabs located on the back face of the structure, close to or at each end 8 of the metal plate strip, and lateral tabs on the sides 6 of this strip forming supports on the edges of the lining. The lateral end tabs 15 may advantageously include a claw structure so that the lining is kept in compression throughout its thickness under the lining.

An example lining compatible with this embodiment is illustrated in figure 12. The decorative lining 4a comprises means 16a of cooperation with the reversible attachment means 15 of the structure. On this example, the cooperation means consist of notches 16a. The lateral tabs 15 can engage in these notches 16a so as to transversely block the lining relative to the rigid structure, and apply a pressure that tends to bend it and push it towards the metallic structure, which forces it into contact with the back face to provide the required aesthetic effect. To achieve this, the distance D2 between the ends of the notches 16a is slightly more than the corresponding distance between the lateral tabs 15 along the back face of the rigid structure 2.

More generally, the attachment means (the studs 10 and the lateral tabs 12, or the lateral end tabs 15 and the lateral tabs 12) squeeze the lining along the lateral directions of the plate: longitudinal along the centre-line passing through the studs; and transverse along the centre line connecting the lateral tabs located on the edges of the rigid structure. They apply a stress on the lining keeping it in contact in the structure without play and therefore without wear, and generate a pressure that tends to bend it and push it towards the metal structure, which forces it into contact on the back face giving the required aesthetic effect.

The thickness of the metal plate of the structure 2 is about 1 to 2mm, the thickness of the leather lining 4 may be up to about 4mm. A slightly supply leather is chosen with an elasticity and shape memory such that it can return to its form after bending. If necessary, a stack of leather pieces can be assembled together making the lining semi-rigid, for example with a flexible central core about 1/10mm thick.

Figure 2 shows the metal plate of structure 2 cut out from a metal strip such as a steel or a brass, comprising aligned openings 14 over its entire surface area, with geometric contours that can occupy more than half of the total surface area. The result obtained is a simple clean pattern, highlighting the motifs forming a sort of metal lace. Other cut types can be used, for example to form writing.

Cuts in the structure 2 can also be combined with stamping or engraving on the metal plate surface, to form other decorative effects such as writing. The surface of the structure 2 may be polished, satin or mat, comprising a metal or a coating with good mechanical strength and resistance to oxidation and chemicals so that it retains its appearance without wear and without deterioration. In particular, a gold, silver, ruthenium, palladium or rhodium coating can be applied.

Figure 3 shows a leather lining 4, forming an approximately rectangular strip with rounded corners, comprising a hole 16 near each end along the main axis of this strip. As a variant, the bracelet may have a different number of studs 10, for example one or three. It does not necessarily have any studs, the lining 4 may be retained by lateral tabs 12 and/or 15 alone, the lining being forced into contact with the inside of the curved structure 2 by its elastic effect that tends to straighten it.

Figure 4 shows the stud 10 with an approximately spherical head 20 fixed to the metal plate of the structure 2 by a short rod 22 welded

vertically onto this metal plate. For a thin lining 4, the spherical head 20 alone can be fixed directly to the metal plate of the structure 2, without a rod. The diameter of the hole 16 in the lining 4 is slightly smaller than the diameter of the head 20.

5 The lining 4 is assembled by placing the hole 16 above the head 20 as shown in position A, and this lining is then lowered by pressing it onto the structure 2 so as to strain the material around the hole and enlarge it, to come into position B bearing on the metal plate. The spherical shape of the head 20 facilitates its insertion into the hole 16, and forms a curved surface that is not
10 aggressive to the skin of the wrist.

 The height of the head 20 can be adjusted as a function of the lining 4 to obtain permanent vertical pressure on the lining by the head, leaving it firmly in contact with the metal plate of the structure 2. Figure 5 shows the lateral tab 12 of the structure 2 that forms a 90° fold, the end 18 of which
15 terminates slightly below the top level of the lining 4 so that it does not project above it and so that it will not irritate the skin of the wrist and will not get caught on anything.

 Figures 6a, 6b and 6c present the assembly method for the bracelet.

20 Figure 6a shows firstly shaping of the lining 4 that is rolled to form a bend with a diameter slightly less than the diameter of the structure 2 below it, shown in figure 6b. The lining 4 is then lowered vertically by axial sliding along the direction of arrow 30, sliding it into the structure 2 to stop in contact with the lower lateral tab located under this structure. At this moment, the
25 upper edge of the lining 4 also goes past the upper lateral tab 12. The lining 4 is then adjusted between the two lateral tabs 12 that form lateral packing in the two directions.

Figure 6c then shows a pressure F applied to the inside of the lining 4 at each stud 10, to engage the studs 20 in the holes in this lining. In making the distance $D2$ between the two holes 16 in the lining 4 slightly larger than the clear distance $D1$ between the two heads 20 along the curvature of the structure, there will be a given lateral pressure between this lining and the metal plate retaining it in place with no play.

In general, the invention advantageously provides that the lateral distance $D1$ between two attachment means (the studs 10 or the lateral end tabs 15) along the contour of the back face of the structure 2 is less than the corresponding distance $D2$ on the lining 4, that is to say the distance $D2$, before fixing, between the points of the lining 4 where the attaching means will be engaged when the lining 4 is fixed and pressed against the back face of the structure: distance $D2$ between two holes 16 (Figure 3), or distance $D2$ between two lateral end tabs 15 (figures 11).

This in order to apply lateral pressure to it and to force it into contact with the back face of the structure by these attachment means.

Furthermore, the slightly elastic shape memory of the lining 4 tends to maintain its separation inside the structure 2, which reinforces the pressure forcing it into contact inside this structure. The fast and simple mounting of the lining 4 without tools, assures efficient positioning that is maintained in the long term.

The result obtained is a bracelet that has the bright and luminous appearance of the metal structure 2 conferring the general shape of the jewellery due to its stiffness, decorated with openings 14 through which the leather lining 4 can be seen contributing colour and softness. In particular, a special relief can be chosen to given an appearance of luxury to the jewellery. The combination of two different technologies, metal decorated with cutouts with a metallic lustre and

the leather of the lining requiring expertise in two different trades, provides a contrast offering unusual modern aesthetics.

The lining 4 is disassembled simply by pulling on its ends to disengage the heads 20 from the holes 16, and then by squeezing the curved
 5 part to disengage the lateral tabs 12 so that it can be extracted by sliding it laterally. It will be noted that no tools are required for disassembly, and that no part is modified or damaged.

Advantageously, there are two different colours on the two faces of the reversible lining 4, so that the same lining can be fitted in one direction or
 10 the other so as to obtain two different effects on the same jewellery.

As a variant, a lining 4 can be made with a surface formed by other materials such as natural or synthetic fabric, or a plastic material. If necessary, a stack of materials is made comprising a plate on the inside with some elasticity to control bending and provide a shape memory.

15 A lining 4 can also be made that projects beyond the sides of the structure at some locations, to be visible and give special aesthetics.

It would be possible to sell linings 4 separately from the rigid structures 2, for example metal structures, so that a large choice of appearances and colours could be available for a lower cost. The lining 4 could also be
 20 removed so that the metal structure 2 can be worn by itself, which gives an additional variant presentation. This could advantageously be done in the form of a decoration kit adapted to each rigid structure (a bracelet, pendant, ring, etc.), comprising a plurality of aesthetically different linings each provided with means (holes 16 or notches 16a) of cooperation with reversible attachment
 25 means (the studs 10 and/or the lateral tabs 12 and/or 15).

Figure 7 shows a ring comprising a metal plate structure 2 wound to a small diameter to be adjusted to a finger, in which openings 14 are made to form a décor. Rows of small bushings 48 formed by stamping, chemical

cutting or engraving of the metal plate finish the décor. In particular, etching can be used to economically create precise markings.

The lining 4 forming a strip is inserted into the structure 2 of the ring after having been wound by elastic deformation. Cavities in the inside
 5 surface of the structure 2, facing the lining 4 and formed by stamping, chemical cutting or engraving over the entire surface of this lining, form a retention cage applying pressure and locking to assure that it is retained in position.

Figure 8 show a decorative ring composed of a plain ring 40 designed to be adjusted around a finger, onto which a circular metallic structure
 10 2 is welded comprising rows of openings 14 at its centre, with a circular rim around it forming a continuous bend facing the ring. The lining 4 is composed of a leather disk that is inserted by click fitting into a cage under the metal plate of the structure 2. The plain ring forming part of the decorative ring 40 holds the lining in its housing so that it is forced into contact under the metal plate of the
 15 structure 2.

Figures 9a and 9b show an open collar necklace comprising a slightly convex metal structure 2 in a croissant shape, of which the tapered ends apply strong pressure to form a circular inner contour forming a passage 46
 through which a person's neck will comfortably fit.

20 The structure 2 comprises rows of openings 14, and rows of small sized bushings 48 between these openings, made by stamping or etching of the metal plate, adding decorative elements. The result is thus a large metal structure 2 that is sufficiently stiff for this type of jewellery made of a single-piece cut metal sheet.

25 The lining 4 is forced into contact on the back face of the metal plate structure 2 by three studs that force the lining into contact with the metal plate of the structure 2 to retain it in place. Figures 10a and 10b show an ear

pendant composed of a flat metal plate structure 2 connected to an attachment pin 52 by a chain 50.

5 The structure 2 comprising rows of openings 14 is provided with tabs 12 at the back around its periphery forming points at which the lining 4 is laterally clamped by click fitting, to hold it in contact with the back face of this structure.

CLAIMS

1. Portable decorative element with a rigid structure (2) with decorative openings (14), on the back face of which during use there is a lining forming a plate that can be seen through these openings, that can be elastically bent (4), characterised in that the back face comprises reversible attachment means (10, 12, 15) capable of holding the lining (4) in place and pressing on this lining, forcing it into contact with the back face of the structure.

2. Decorative element according to claim 1, in which the rigid structure (2) is made from cutout metal plate with decorative openings (14).

3. Decorative element according to claim 1, characterised in that the back face comprises lateral tabs (12, 15) forming attachment means applying pressure to the edges of the lining (4).

4. Decorative element according to claim 3, characterised in that the lateral tabs (12, 15) are formed by bending the edge of the metal plate of the structure (2).

5. Decorative element according to claim 1, characterised in that it comprises studs (10) forcing the lining (4) onto the back face of the structure (2).

6. Decorative element according to claim 5, characterised in that the stud (10) comprises a approximately spherical head (20) fixed on the back face of the structure (2) at a distance such that there is compression through the thickness of the lining (4) underneath this head.

7. Decorative element according to claim 1, characterised in that the lateral distance (D1) between two attachment means (10, 12, 15), along the contour of the back face of the structure (2), is less than the corresponding distance (D2) on the lining (4) so as to apply lateral pressure to it and to force it into contact with the back face of the structure by these attachment means.

8. Decorative element according to claim 1, characterised in that forms a bracelet comprising a metal plate strip approximately around a circle, with an opening through which the wrist can pass.

5 9. Decorative element according to claim 8, characterised in that it comprises two studs (10) located on the inside face of the structure (2), close to each end of the metal plate strip, and lateral tabs (12) on the sides of this strip forming supports on the edges of the lining (4).

10 10. Decorative element according to claim 1, characterised in that it comprises two end tabs (15) located on the back face of the structure (2), at each end (8) of the rigid structure (2), and lateral tabs (12) on the sides of this strip forming supports on the edges of the lining (4).

11. Decorative element according to claim 1, characterised in that the structure (2) forms a disk comprising folded edges (42) forming attachment means.

15 12. Decorative element according to claim 1, characterised in that the lining (4) comprises two leather faces.

13. Decorative element according to claim 1, characterised in that the lining (4) comprises two faces with different colours intended to be turned alternately towards the structure.

20 14. Decorative lining (4, 4a) designed to cooperate with reversible attachment means of a decorative element according to any one of claims 1 to 13, characterised in that it comprises means (16-16a) of cooperation with the reversible attachment means (10, 12, 15).

25 15. Decoration kit for a decorative element according to any one of claims 1 to 13, comprising a plurality of different decorative linings (4) according to claim 14, each provided with means (16-16a) of cooperation with the reversible attachment means (10, 12, 15).