Feb. 25, 1958 S. GRABER 2,824,419

WRIST-WATCH CASING AND METHOD OF MANUFACTURING THE SAME

Filed Sept. 20, 1954 2 Sheets-Sheet 1

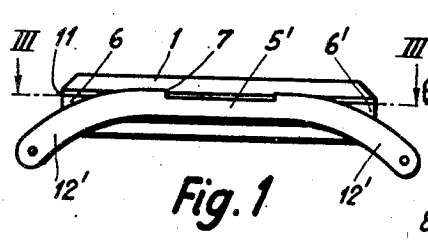


Fig. 1

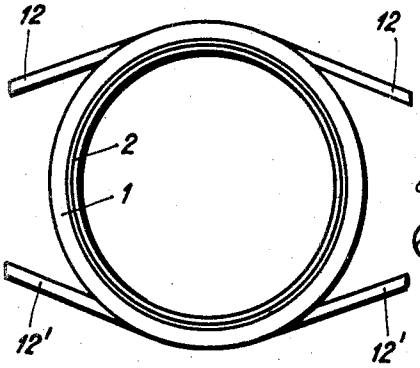


Fig. 2

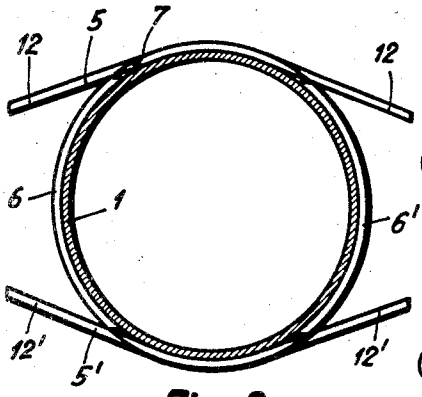


Fig. 3

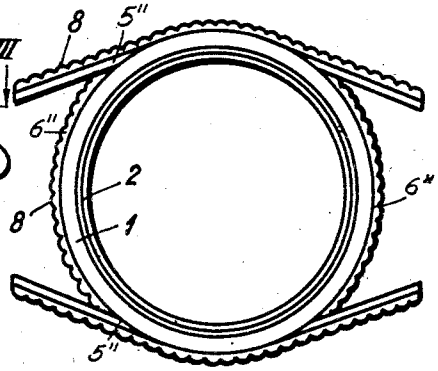


Fig. 4

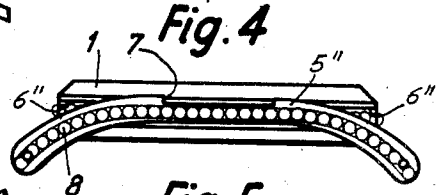


Fig. 5

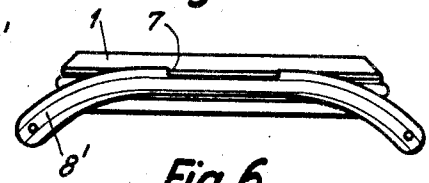


Fig. 6

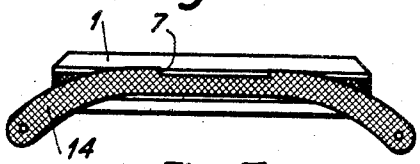


Fig. 7

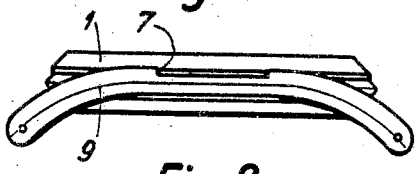


Fig. 8

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WRIST-WATCH CASING AND METHOD OF MANUFACTURING THE SAME

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2 Sheets-Sheet 2

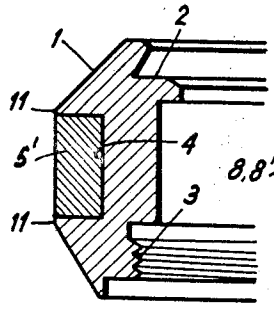


Fig. 9

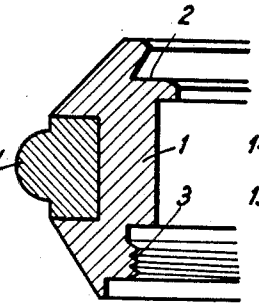


Fig. 10

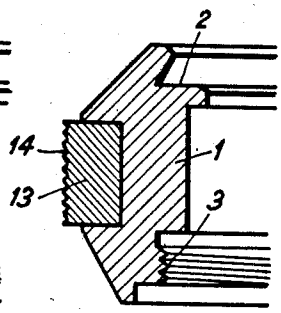


Fig. 11

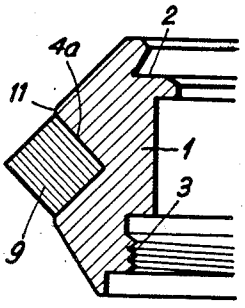


Fig. 12

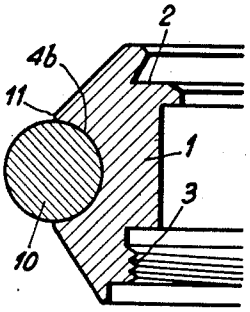


Fig. 13

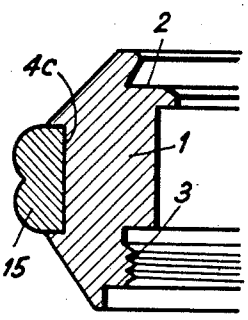


Fig. 14

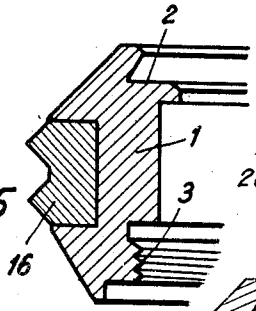


Fig. 15

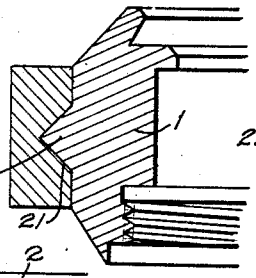


Fig. 17

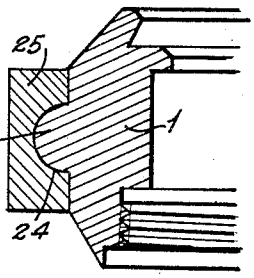


Fig. 18

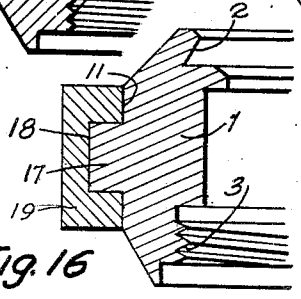


Fig. 16

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WRIST-WATCH CASING AND METHOD OF MANUFACTURING THE SAME

Samuel Graber, St. Imier, Switzerland

Application September 20, 1954, Serial No. 457,107

Claims priority, application Switzerland September 22, 1953

4 Claims. (Cl. 58—88)

This invention relates to wrist-watch casings and to a method of manufacturing the same.

It is an object of this invention to enable manufacturing wrist-watch casings and particularly wrist-watch case bands with different ornaments provided only on a part of the watchcase band, while another part of this band has a standardized form, in order to reduce the costs for the tools with respect to the usual casings with a case band of a single piece. The ornamental designs provided on such a case band require manufacturing a new entire case band every time it is desired to provide another ornamental design.

Another object of the invention is a method of manufacturing such a wrist-watch case band in two parts by forming a ring and separate elements the extremities of at least a part of which constitute the lugs of the watchcase, said ring and said elements constituting respectively the two parts of the case band, by providing a groove in one of these parts, by locating a portion of the other part into said groove, and by rigidly connecting said parts to one another, so as to form a whole in which said elements surround the whole ring.

Still another object of the invention is a wrist-watch casing in which the case band comprises a ring and elements the extremities of at least a part of which constitute the lugs of the case, said ring and said elements constituting each a part of the watchcase, one of these parts being provided with a groove which is filled by a portion of the other part, and said two parts being fixed one to the other by means of said portion, so as to form a rigid body in which said elements surround the whole ring.

Still further objects of the invention will appear in the course of the following description.

Eleven embodiments of the watchcase according to the invention are represented diagrammatically and by way of example in the drawings which are annexed to this specification and form a part thereof.

In the drawings:

Fig. 1 is a side elevation view of the first embodiment,

Fig. 2 is a plan view of the watchcase represented in Fig. 1,

Fig. 3 is a sectional view along line III—III of Fig. 1,

Fig. 4 is a plan view analogous to that of Fig. 2 of the second embodiment.

Fig. 5 is a side elevation view analogous to that of Fig. 1 of the second embodiment,

Figs. 6, 7 and 8 are views analogous to that of Fig. 5 of the third, fourth and fifth embodiments, respectively.

Fig. 9 is a cross-section of the watchcase band represented in Fig. 2, drawn to a greater scale,

Fig. 10 is a cross-section analogous to that of Fig. 9 of the watchcases according to the second and third embodiments,

Fig. 11 is a cross-section analogous to that of Fig. 9 of the fourth embodiment represented in Fig. 7,

Fig. 12 is a cross-section analogous to that of Fig. 9 of the fifth embodiment represented in Fig. 8, and

Figs. 13 to 18 are cross-sections analogous to that of Fig. 9 of the sixth, seventh, eighth, ninth, tenth and eleventh embodiments, respectively.

Referring first to Figs. 1, 2, 3 and 9 which show the first embodiment, the watchcase band represented comprises a ring 1 forming the bezel as well as a first part of the band. This ring may be made very easily and it can obviously be manufactured completely on a lathe. Ring 1 is provided with a snap fit 2 for the watch crystal and a tapped portion 3 arranged for screwing therein a watchcase bottom not represented. A groove 4 is provided in the external cylindrical surface 11 of ring 1. Groove 4 extends all around this ring 1. This groove 4 is arranged in order to receive partly four elements which are identical two by two. These elements are provided with ornamental designs and they form also the watchcase lugs to which the wrist band is attached.

Fig. 3 shows the form of these elements. Element 5 constitutes a peripheral part of the watchcase band and it is made in one piece with the two lugs 12 which are situated each on one side of the watchcase. Element 5' is symmetrical to element 5 and it carries the two lugs 12' which are also situated each on one side of the watchcase. Each end of the wrist band (not represented) may thus be attached in any well known manner to the two lugs 12 and 12' which are situated on the same side of the watchcase. The elements 6 and 6' are also introduced in part into groove 4, each between the two lugs 12 and 12' which are situated on the same side of the watchcase. A cylindrical cutout 7 is provided in each of elements 5, 5' so that when these elements are set in place within groove 4, the parts thereof, which form the lugs 12, 12', project from the watchcase and contact the latter over the whole height of its external cylindrical surface 11.

Elements 5, 5', 6, 6' may be first extruded from a die of a well determined section. Then they may be manufactured so that they receive on the one hand their eventual curvature, and, on the other hand, the desired ornamental designs. Said elements are only fixed (preferably by soldering) to the ring 1 after having been completely machined and polished.

The construction described enables thus manufacturing watchcases and particularly watchcase bands which are provided with quite different ornamental designs while always using the same ring 1 and varying only the form of the ornamental designs provided on said elements.

The other figures of the drawings show several possible designs of the elements fixed to the ring 1.

In the second embodiment represented in Figs. 4 and 5, these elements carry ornamental designs 8 in relief, which are constituted by a garland of hemispherical projections arranged along the central portion of the lateral external surface of said elements. Such an ornamental design may for instance be obtained by stamping. In this case the elements 5'', 5''', 6'', 6''' are extruded from a rectangular die, then stamped and eventually bent in order to give them the same curvature as ring 1.

In the third embodiment represented in Figs. 6 and 10 the elements fixed to the ring 1 are provided with an annular projection 8' having a semi-circular cross-section. These elements may also be extruded from a die the form of which corresponds to their cross-section represented in Fig. 10. These elements need then only be polished and bent in an appropriate manner.

In the fourth embodiment represented in Figs. 7 and 11 the elements 13 analogous to the elements 5, 5', 6, 6' are extruded from a rectangular die as in the first embodiment. A knurling 14 is then provided on their external surfaces, after which the elements 13 may be bent in an appropriate manner and soldered to the ring 1 within groove 4.

In the fifth embodiment represented in Figs. 8 and 12, the elements 9 analogous to elements 5, 5', 6, 6' have a square cross-section and a V-shaped groove 4*a* is so provided in the external cylindrical surface 11 of ring 1 that a diagonal of the cross-section of elements 9 extends in parallel to the axis of ring 1.

In Fig. 13 showing the sixth embodiment, the elements 10 have a circular cross-section and a groove 4*b* of semicircular cross-section is provided in the external cylindrical surface 11 of ring 1.

In the seventh embodiment (Fig. 14) a groove 4*c* extends over the whole height of the external cylindrical surface of ring 1, so that the cutouts 7 will not be necessary with elements 15.

The eighth embodiment shows elements 16 having still another cross-section. These elements 16 may, however, also be extruded directly from a die of an appropriate form.

In the ninth embodiment (Fig. 16) the watchcase band comprises a ring 1 forming the bezel and a part of the band.

A projecting portion 17 having a rectangular cross-section is formed all around the external cylindrical surface 11 of ring 1.

Portion 17 is so arranged that it may be engaged within a groove 18 provided in elements 19 constituting a second part of the watchcase band. The cross-section of groove 18 corresponds to that of portion 17. The four elements 19 are identical two by two. A first pair thereof forms the watchcase lugs to which the wrist band is attached. The two lugs formed by each element of said pair are situated on each side of the watchcase and the central part of these two elements is bent according to the curvature of the ring 1. The two elements of the other pair are also bent according to ring 1 and they extend each between the two lugs of the watchcase which are situated on the same side thereof.

These elements are preferably made by extruding a straight bar from a rectangular die. A groove 18 is then provided in said bar over a length which corresponds to the portion of said elements which is intended to contact the ring 1. These elements may afterwards be machined in order to give them, on the one hand, their eventual curvature, and, on the other hand, the desired ornamental designs. These elements are only fixed (preferably by soldering) to the ring 1 after having been eventually machined.

The tenth and the eleventh embodiments distinguish themselves from the ninth one only by the form of the cross-section of said projecting part of the ring 1 as well as of the groove provided in these elements.

In the tenth embodiment (Fig. 17) the ring 1 is made with a triangular peripheral projecting portion 20, which is engaged within a groove 21 of the same shape provided within said elements, whereas in the eleventh embodiment (Fig. 18) the ring 1 is made with a semicircular projecting portion 22 and the cross-section of the groove 24 made in the elements 25 corresponds to that of projecting portion 22.

It is obvious that the visible surfaces of the elements described in the three latter embodiments may also be provided with any desired ornamental design in relief or not. The general form of these elements need not even be necessarily rectangular.

It is also obvious that the same advantages may be obtained in the case of watchcases in three pieces, i. e. watchcases in which the band and the bezel are separate parts. Eventually the results would still be the same if the bottom, instead of being screwed or fixed with a snap fit on the case band, would be made in one piece with it.

It will be understood that various changes in the form, the shape and the arrangement of the described parts will appear obvious to those skilled in the art so that these changes could be made without departing from the spirit or sacrificing the advantages of the invention, which is only limited by the appended claims.

I claim:

1. In the manufacture of a wrist watch case band unit comprising means adapted for connecting a watch crystal, a watch movement and a watch case bottom together, and provided with external wrist band attaching lugs at its periphery, the method of providing said unit with ornaments, consisting of: lathe turning a ring with means on its inner face adapted to connect the watch crystal, the watch movement and the watch case bottom together, as well as with means on its outer face adapted to rigidly fix elements thereon; forming ornaments at least on one face of a bar; cutting said bar so as to form two pairs of identical elements; providing means for fixing said elements to said ring, at least on one face of said elements opposite the face thereof which is provided with ornaments, these means and those of the outer face of said ring consisting the one of a rim and the other of a groove, the rim being thereby adapted to fill said groove; bending the elements of one of said pairs so that these elements may encompass the ring and extend around two symmetrical peripheral portions thereof, the ornamented faces thereof thereby appearing at least on the convex face of said elements; bending the elements of the other pair first so that a central portion of each element of the second pair may encompass said ring and extend around the two remaining peripheral portions thereof, the ornamented face of these central portions thereby appearing on their convex faces, and secondly so that the two end portions of each element of this pair may extend from said ring so as to form said wrist band attaching lugs; setting said rim and said groove of said elements and of said ring into one another, and soldering said rim into said groove so as to form a rigid unit with said elements and said ring.

2. In the manufacture of a wrist watch case band unit comprising means adapted for connecting a watch crystal, a watch movement and a watch case bottom together, and provided with external wrist band attaching lugs at its periphery, the method of providing said unit with ornaments, consisting of: lathe turning a ring with means adapted to connect the watch crystal, the watch movement and the watch case bottom together, as well as with means on its outer face adapted to rigidly fix elements thereon; forming ornaments at least on one face of a bar; cutting said bar so as to form two pairs of identical elements; providing means for fixing said elements to said ring, at least on one face of said elements opposite the face thereof which is provided with ornaments; bending the elements of one of said pairs so that these elements may encompass said ring and extend around two symmetrical peripheral portions thereof, the ornamented faces thereof thereby appearing at least on the convex face of said elements; bending the elements of the other pair first so that a central portion of each element of the second pair may encompass said ring and extend around the two remaining peripheral portions thereof, the ornamental face of these central portions thereby appearing on their convex face, and secondly so that the two end portions of each element of this pair may extend from this ring so as to form said wrist band attaching lugs, and fixing said elements to said ring so as to form a rigid unit.

3. A wrist watch case band unit comprising means adapted for connecting a watch crystal, a watch movement and a watch case bottom together, and provided with external wrist band attaching lugs at its periphery, said unit consisting of: a ring provided with means adapted to connect the watch crystal, the watch movement and the watch case bottom together; a first pair of identical longitudinal elements soldered to the ring so that they extend around two symmetrical peripheral portions thereof, and a second pair of identical longitudinal elements having each a central portion fixed to said ring and two end portions extending therefrom and forming

said wrist band attaching lugs, said central portions being so soldered to said ring as to extend around the two remaining peripheral portions thereof, which are comprised between the elements of said first pair, a rim and a groove thereby being provided the one in said ring and the other in said elements, so that the rim fills the groove in order to provide a large surface of contact between the ring and the elements for ensuring enough rigidity to said unit, said elements having substantially throughout the same cross-section and covering such a portion of said ring that they constitute an important part of the external visible surface of said watch case band unit.

4. A wrist watch case band unit comprising means adapted for connecting a watch crystal, a watch movement and a watch case bottom together, and provided with external wrist band attaching lugs at its periphery, said unit consisting of: a ring provided with means adapted to connect the watch crystal, the watch movement and the watch case bottom together; a first pair of identical longitudinal elements fixed to the ring so that they

extend around two symmetrical peripheral portions thereof, and a second pair of identical longitudinal elements having each a central portion fixed to said ring and two end portions extending therefrom and forming said wrist band attaching lugs, said central portions being so fixed to said ring as to extend around the two remaining peripheral portions thereof, which are comprised between the elements of said first pair, said elements covering such a portion of said ring that they constitute an important part of the external visible surface of said watch case band unit.

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