

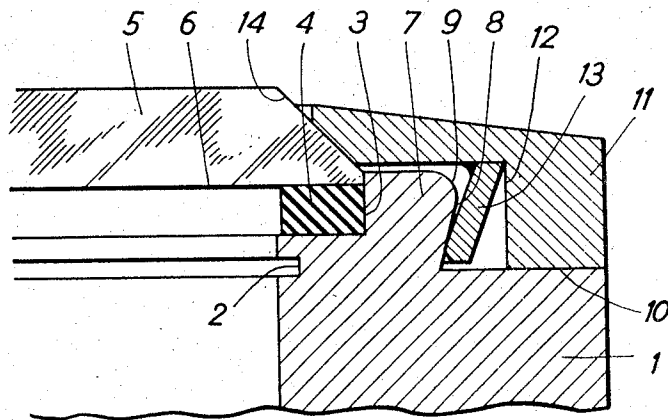
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WATCHCASE

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WATCHCASE

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This invention relates to watchcases and in particular to watchcases having two sections removably fixed together by means of a snap fit.

With the known watchcases of this type each watchcase section comprises a slightly truncated conical annular surface and a flat annular shoulder adjacent to the truncated conical surface. The truncated conical surfaces of both watchcase sections are adapted to each other in such a way that they come into mutual engagement upon a slight elastical deformation of at least one of said sections and remain gripped to each other due to the resistance opposed to a deformation by the material of the watchcase sections. Fixing devices by means of such a snap fit are commonly used in the practice for securing for instance a bezel, a bottom, a watch movement or an enlargement ring to a case-band or a glass to a bezel. They are excessively simple, easy to manufacture, safe and permit aesthetical pieces to be conceived and made. They cannot, however, be used when the watchcase sections are made of a material which is so hard that it allows no noticeable elastical deformation. Thus, sapphire glasses could hardly be snap fitted correctly to watchcases made of steel. The same difficulty also arises when another section of the watchcase is made of a very hard material such as a crystalline, ceramic or sintered material.

It is therefore an object of the invention to provide a watchcase with snap fitting means which can also be used when one section of the watchcase is so hard that it cannot be deformed elastically in a noticeable way.

A more specific object of the invention consists in providing a watchcase with an elastically yieldable ring having a truncated conical surface portion and fixed to one of said watchcase sections, and an annular surface portion located on the other watchcase section and having a shape adapted to the truncated conical surface portion of said one watchcase section for constituting a snap fit herewith.

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

One embodiment of the watchcase according to the invention is represented diagrammatically and by way of example in the accompanying drawings.

In the drawings, the single figure is a part axial section of the watchcase according to the invention.

The watchcase represented comprises a first section which constitutes the case-band 1. This case-band 1 is circular and it is made in one piece with a bottom part (not shown) constituting the watchcase bottom as well known to those skilled in the art. An annular groove 2 is provided in the inner surface of case-band 1 for fixing a watch movement therein by means of standard latching members. An annular cylindrical shoulder 3 having a flat bottom surface is also provided in the same case-band surface and a plastic tightening gasket 4 of rectangular cross-section is located within shoulder 3. A sapphire glass 5 having a flat lower surface 6 is also placed within shoulder 3 so that the glass periphery lies on gasket 4. The first watchcase section comprising case-band 1 and the glass thus fully enclose a space in which the watch movement is located. The glass 5 is firmly retained within shoulder 3 while pressing gasket 4 by the atmospheric pressure. For this purpose a depression

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is formed in the watch movement space in a well known manner.

Shoulder 3 is surrounded by an annular rib 7 which forms part of a snap fit. Therefore rib 7 has an outer side surface 8 which is slightly truncated conical and oriented so as to open upwards. Surface 8 ends upwards in a rounded edge 9. Around rib 7 the case-band further comprises an upper flat surface 10. Surface 10 serves as abutting shoulder surface to a bezel 11 constituting a second watchcase section removably fixed to the first watchcase section comprising case-band 1. Bezel 11 constitutes a means which retains glass 5 in place and prevents the same from falling out of its lodging if the air pressure accidentally increased in the watch movement space. An inner bezel portion therefore extends over a chamfered peripheral area 14 of glass 5. Bezel 11 is provided with an annular lodging 12 having a cylindrical wall surface on the inside of bezel 11 and a flat bottom surface adjacent to this cylindrical wall and forming an edge therewith. An annular ring 13 is soldered to bezel 11 in the edge of lodging 12. As shown in the drawings ring 13 has substantially a rectangular cross-section and a truncated conical shape. The inner large surface of ring 13 has substantially the same opening angle as surface 8. A small free space thus remains between ring 13 and the cylindrical wall of lodging 12 so that the lower free portion of ring 13 can yield elastically in said space.

Bezel 11 and case-band 1 can both be made of a very hard material. Ring 13 always permits the bezel to be removably fixed to the case-band exactly in the same way as the bezel is snap fitted to the case-band with standard watchcases and this in spite of the fact that neither section 1 nor section 11 of the watchcase can yield to any noticeable extent.

Instead of soldering ring 13 in lodging 12 along one of its small sides one could, in a modification, use a V-shaped and secure one of its branches against the cylindrical wall of lodging 12 for instance by soldering, by gluing or in any similar manner.

With a further modification the bezel section of the watchcase could also have a portion surrounding the case-band. In this event this bezel section would advantageously carry wrist-band attaching lugs.

With still another modification the watchcase could of course comprise a removable bottom snap fitted to the case-band in exactly the same way as bezel 11 is snap fitted to case-band 1.

The watchcase according to the invention has not only the advantage that all its parts can be made of very hard materials, but also that of comprising fixing means to secure the watchcase parts to each other, which are extremely simple and enable a safe and aesthetic assembling of the watchcase.

With still a further modification, ring 13 instead of being made of a well yieldable metal such as silvernickel or steel could also be made of an elastically yieldable plastic such as hardened natural or synthetic rubber. This ring could thus be given an O-shape and the side wall of lodging 12 be accordingly made truncated conical.

It should finally be observed that the elastically yieldable ring of the watchcase could also be secured to the corresponding watchcase section by heating this section, freely inserting the cold ring therein and cooling.

While the embodiment and different modifications have been described hereabove, further modifications can obviously be resorted to by those skilled in the art without departing from or sacrificing the advantages of the invention defined by the appended claims.

I claim:

1. In a watchcase having two relatively hard rigid sections removably fixed together by means of snap fit, in combination, an elastically yieldable ring having a trun-

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cated conical surface portion and being formed of a separate piece from and fixed to one of said watchcase sections, the other watchcase section being provided with an annular surface portion having a shape adapted to fit the truncated conical surface portion of said ring for constituting a snap fit therewith.

2. In a watchcase according to claim 1, the annular surface portion provided on said other watchcase section being truncated conical.

3. In a watchcase according to claim 2, the truncated conical annular surface portion provided on said other watchcase section and the truncated conical surface portion of said elastically yieldable ring being parallel and engaging each other to constitute said snap fit.

4. In a watchcase according to claim 1, one section of the watchcase constituting a case-band and the other section constituting a bezel, said ring being fixed to said bezel.

5. In a watchcase having two relatively hard rigid sections removably fixed together by means of a snap fit, in combination, an annular shoulder provided in one

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of said watchcase sections said shoulder having a cylindrical wall surface turned towards the inside of said one watchcase section and a bottom surface forming an edge with said cylindrical wall surface, a truncated conical thin elastically yieldable ring, of softer, more pliable material than said sections, having a rectangular cross-section and being fixed along one of its small sides to said one watchcase section in said edge of the shoulder thereof, and an annular surface portion provided on the other watchcase section and having a shape adapted to fit said truncated conical ring for constituting a snap fit therewith by cooperation with one of the large surfaces thereof.

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