

DESCRIPTION

The present invention relates to watch cases and more particularly to watch cases comprising a middle cum bezel unit, a glass secured to the middle cum bezel unit and a dish-shaped cap made of a thin sheet (CH-A-352 966). The cap is provided with a bottom opening and a top opening. Such cases are known. Thus, patent specification GB-A-102 641 describes a case that is fitted with a cap covering the middle and that has a pair of wristlet-fastening loops. The cap is secured to the remainder of the case by engaging portions of the wristlet in the loops. A similar arrangement is described in patent specification DE-A-1 099 773.

The drawbacks of such cases cause them to be unattractive. Because the cap is not rigidly and solidly secured, it is liable to move slightly on the middle. More importantly, the danger of the cap being pulled off cannot fully be eliminated. Also, because the cap is fitted after the glass has been assembled with the remainder of the case, it is virtually impossible to avoid having a gap between the glass and the cap, something that is not only inaesthetic but also forms a space into which foreign matter can penetrate while the watch is being worn. This gap further increases the danger of catching. As a result, a watch thus constructed, soon becomes unattractive or worse.

The object of the invention is to cure these drawbacks. More specifically, the case as claimed enables the cap to be secured to the middle cum bezel unit in a particularly rigid manner, the middle cum bezel unit, the glass and the cap together forming a solid and hence durable whole, and no longer an assemblage that gives a cheap case an appearance that rapidly becomes unsightly.

The invention will be better understood on reading the following description, with reference to the drawings, in which :

Figures 1 and 2 are each a cross-sectional view of a case according to a first form of embodiment of the invention, the sections extending respectively through 3 o'clock and 6 o'clock; and

Figure 3 is a cross-sectional view extending through 9 o'clock, of a second form of embodiment of the invention.

The case shown in Figures 1 and 2 comprises a part 10 of organic material, that simultaneously forms a back 12, a middle 14, a bezel 16 and lugs 17 for securing a wristlet to the case. The case further comprises a glass 18 and a cap 20. Glass 18 and part 10 are made of materials that can be bonded to one another. Part 10 may for instance be made of one of the materials commonly referred to as ABS, ASA or SAN. These materials respectively correspond to an acryl butadiene styrene, an acryl styrene acryl ester and styrene acrylonitrile. In this event, the glass is made of a transparent acrylic resin (PMMA) commonly designated by the trade mark "Plexiglas". Glass 18 has a lip 22 of cylindrical shape that is engaged in a groove 24 in the middle-forming portion 14. The tip of lip 22 and the bottom of groove 24 together form an annulus 26, made up of a blend of the materials forming glass 18 and part 10. Annulus 26 is produced during ultrasonic bonding of glass 18 to part 10, which causes the materials of the tip of lip 22 and of the bottom of groove 24 to fuse. Such a process is in particular described in patent specification CH-650 894 and is known to the man of the art. It will therefore not be described in detail here.

Glass 18 also has a heel 28 that extends radially above bezel-forming portion 16 of part 10.

More particularly, heel 28 and bezel-forming portion 16 define an annular groove 30 whose bottom and upper side are respectively defined by the body of glass 18 and by heel 28 while the lower side is defined by the upper surface of bezel 16.

Cap 20 is of metal, e.g. stainless steel or aluminium. It has a generally bell-like shape, with, in its upper portion, a substantially cylindrical opening having a diameter d less than diameter D of the glass and in particular of its heel-forming portion 28. The thickness of cap 20 lies between about 0.2 and 0.4 mm. The difference between

D and d is of the order of 0.5 to 1 mm.

The top edge 32 of cap 20 is rigidly wedged between heel 28 and bezel 16, thereby positioning cap 20 axially and radially. Further, as the outer shape of middle 14 is not defined by a surface of revolution, because in particular of lugs 17, cap 20 is also positioned angularly. In this way, part 10, glass 18 and cap 20 together form a whole that is rigidly assembled in a manner that cannot be dismantled.

Middle 14 is formed in its lower portion with a projection 33 having a height equal to the thickness of cap 20. Since cap 20 and middle 14 are manufactured in a highly accurate manner, there is practically no gap or threshold in the connection between these two elements. It is thus possible to avoid the accumulation of foreign matter and to reduce the danger of catching.

In the arrangement described with reference to Figures 1 and 2 the case is provided with a single cap. It could of course have an additional cap, sandwiched between the outer cap and the middle, as shown in Figure 3. In this figure may be seen part 10 with the portions that form back 12, middle 14 and bezel 16, along with glass 18 and its heel 28 that defines groove 30 in conjunction with bezel 16, and projection 33.

This case is fitted with a pair of caps 34 and 36, both having a bell-like shape, with one, 34, nesting inside the other, 36.

Caps 34 and 36 respectively have an upper edge 38, 40. Both these edges are engaged in groove 30. Caps 34 and 36 are thus positioned axially and radially. Angular positioning is provided by the shape of middle 16 which, because in particular of lugs 17, has a shape other than that of a figure of revolution.

Outer cap 36 is formed with cut-outs 42 through which the sandwiched cap 34 is visible.

If the two caps are made of materials of different colour or appearance, original aesthetic effects can be achieved.

It is also possible to use caps of stainless steel, one polished, the other sand-blasted. If the caps were made of brass, one could be gilded and the other rhodium-plated. By varying the shape of the cut-

outs and the appearance of the caps, it is possible to produce numerous variants.

Other forms of embodiment not shown could also be envisaged. For instance, the cap or caps could have cut-outs through which the sub-jacent middle can be seen.

It is also possible to provide recesses in the middle in which decorative pieces, e.g. stones, are positioned. They are held in place by the cap which is formed with openings whose edges bear on the peripheries of the stones.

Rather than being bonded, the glass could also be stuck. Sticking can also be resorted to to improve the fixing of the cap to the middle and/or of the two overlaid caps.

In each of these examples are to be found the essential advantages of the cases according to the invention, i.e. a solidly secured cap with virtually no danger of catching and the absence of any gap between the glass and the cap.



CLAIMS

1. Watch case comprising a middle cum bezel unit (14, 16), a glass (18) secured to the middle cum bezel unit and a bell-shaped cap (20, 34, 36) made from a thin sheet, having a bottom opening and a top opening, characterized in that said glass (18) has a heel (28) extending radially towards the periphery of the case and defining with the bezel (16) a groove (30) in which the edge portion (32) of the top opening of the cap (20, 34, 36) is held.

2. Watch case according to claim 1, characterized in that the glass (18) and the middle cum bezel unit (14, 16) are of organic material, and the cap (20, 34, 36) is of metal.

3. Watch case according to claim 2, characterized in that the middle cum bezel unit (14, 16) and the glass (18) are made of materials that can be bonded to one another and secured to one another by an annulus (26) made up of a blend of the materials forming the glass (18) and the middle cum bezel unit (14, 16).

4. Watch case according to one of claims 1 to 3, characterized in that it comprises a pair of caps (34, 36) nesting one inside the other, i.e. one outer (36), the other (34) sandwiched between the middle cum bezel unit (14, 16) and the outer cap (36), this latter being formed with cut-outs through which portions of the inner cap are visible.

5. Watch case according to one of claims 1 to 3, characterized in that it further comprises decorative elements positioned in the middle cum bezel unit (14, 16) and kept in place by the cap (20, 34, 36), this latter acting as securing means therefor.