

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements relating to Watches

We, KABUSHIKI KAISHA SUWA SEIKOSHA, a Japanese company, of 5—19, 4-chome, Ginza-Nishā, Chuo-ku, Tokyo, Japan, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns improvements relating to watches, and more particularly, but not exclusively, improvements in securing the movement of a waterproof watch in the watch case.

Known methods of securing movements in watch cases usually necessitate the use of one or more case screws for screwing the movement to a ring. However, the diameter of a case screw head has to be limited in size owing to the limited space available for the movement itself. Moreover, the entire weight of the movement is borne by the case screw or screws which in time can lead to the screw breaking or becoming loose.

The present invention seeks to eliminate the above disadvantages.

According to the present invention there is provided a watch having a case body, a back cover and a movement secured to said case body, the said case body having secured to the interior thereof an annular first ring, there being also a second ring, the said rings being axially spaced apart to define a recess which is adapted engagingly to receive a projection in the form of an annular, radially outwardly extending collar on the movement so as to enable the movement to be secured to said case body without the use of case screws.

The back cover may be provided with a thrust surface for transmitting pressure to said second ring so that, when the back cover is attached to said case body, the said thrust

surface causes the projection to be tightly engaged in the recess.

Said thrust surface may engage the said second ring directly when the back cover is attached to said case body.

Alternatively, said watch is a waterproof watch, there being an annular sealing ring between said case body and said back cover. In this case, said thrust surface or attachment of the back cover to the case body preferably exerts pressure on said second ring via the said sealing ring.

The invention will be described, merely by way of example, with reference to the accompanying drawings, in which:—

Figure 1 is a somewhat diagrammatic sectional view of part of a known waterproof watch,

Figures 2 to 4 are sectional views respectively illustrating the various stages of assembly of the movement and the watch case of a waterproof watch in accordance with the present invention, and

Figure 5 is a sectional view illustrating a further embodiment of the present invention.

Referring first to Figure 1 of the accompanying drawings, there is shown a known waterproof watch having a movement 1 secured to the watch case which comprises a back cover 2 and a case body 3 between which is provided a gasket or sealing ring 20. The watch is provided with the usual glass cover 21 mounted above a dial 22. The radially inner wall of the case body 3 is undercut to provide a face 7 into which fits an annular ring 5, (also referred to as a second ring, there being a first ring 11 described below) the lower end of which (as seen on the Figure) abuts against a thrust surface 6 of the back cover 2. The radially inner part of the ring 5 engages with the movement 1 and with a case screw 4 which extends in a tapped bore in the movement 1.

[Price 5s. 0d.]

It will be appreciated on inspection of Figure 1 that the construction illustrated therein imposes space limitations on the diameter of the head of the case screw 4 for engaging the ring 5, since in order not to increase the overall dimensions of the watch itself, the radial dimensions of the movement 1 must be kept within reasonable limits.

Referring now to the first embodiment of the present invention illustrated in Figures 2 to 4, the movement 1 is provided with an integral radially extending annular collar 8 having axially spaced upper and lower faces 9, 10 respectively. As can be seen in Figure 3, the case body 3 is provided with an inwardly extending shoulder on the upper surface of which the glass cover 21 may be mounted. The case body 3 has a lower face 7 also which face has an annular ring 11 mounted against it.

The annular second ring 5 is mounted on the interior wall of the casing body 3 such that it is axially spaced from the annular first ring 11 to define a recess therebetween, which recess is adapted to receive the projection or collar 8 on the movement 1. In Figure 3, the back cover 2 has not yet been attached to the case body 3.

However, Figure 4 shows the next stage of assembly in which the back cover 2 has been brought into threaded engagement with the case body 3, and in doing so its thrust surface 6 exerts an upward pressure on the case ring 5 so as to urge it into close engagement with the face 10 of the collar 8, thereby also urging into engagement the face 9 of the collar 8 with the ring 11 and the ring 11 with the face 7 of the case body 3.

Referring now to Figure 5, there is shown an alternative embodiment of the present invention, in which the thrust surface 6 of the back cover 2 does not act directly on the ring 5, but acts thereon via a sealing gasket or ring 12. The ring 5 is undercut so as to be engaged by the gasket 12, but in other respects the construction according to this embodiment is similar to the construction according to the embodiment of Figures 2 to 4.

It will be appreciated that the constructions for waterproof watches in accordance with the illustrated embodiments of the present invention eliminate the necessity of case screws, which has the advantage not only of saving space, but also of eliminating play be-

tween the case and the movement due to a case screw becoming loose or breaking or becoming worn.

Thus the movement can be secured to the casing for a much longer duration. Of course, the elimination of the case screw eliminates the necessity for providing a space therefor, thereby enabling the watch to become smaller. Moreover, the construction of the movement and the ring is made simpler since no tapped bores are now necessary.

WHAT WE CLAIM IS:—

1. A watch having a case body, a back cover and a movement secured to said case body, the said case body having secured to the interior thereof an annular first ring, there being also a second ring, the said rings being axially spaced apart to define a recess which is adapted engagingly to receive a projection in the form of an annular, radially outwardly extending collar on the movement so as to enable the movement to be secured to said case body without the use of case screws.

2. A watch as claimed in claim 1 wherein the back cover is provided with a thrust surface for transmitting pressure to said second ring so that, when the back cover is attached to said case body, the said thrust surface causes the projection to be tightly engaged in the recess.

3. A watch as claimed in claim 2 wherein said thrust surface engages the said second ring directly when the back cover is attached to said case body.

4. A watch as claimed in claim 1 or claim 2 wherein said watch is a waterproof watch, there being an annular sealing ring between said case body and said back cover.

5. A watch as claimed in claim 4 wherein said thrust surface on attachment of the back cover to the case body exerts pressure on said second ring via the said sealing ring.

6. A watch substantially as hereinbefore described with reference to and as shown in Figures 2 to 4 or Figure 5 of the accompanying drawings.

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2. A watch as claimed in claim 1 wherein the back cover is provided with a thrust surface for transmitting pressure to said second ring so that, when the back cover is attached to said case body, the said thrust surface causes the projection to be tightly engaged in the recess.
3. A watch as claimed in claim 2 wherein said thrust surface engages the said second ring directly when the back cover is attached to said case body.
4. A watch as claimed in claim 1 or claim 2 wherein said watch is a waterproof watch, there being an annular sealing ring between said case body and said back cover.
5. A watch as claimed in claim 4 wherein said thrust surface on attachment of the back cover to the case body exerts pressure on said second ring via the said sealing ring.
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