

PATENT SPECIFICATION

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(54) A TIMEPIECE CASE ASSEMBLY

(71) We, KABUSHIKI KAISHA SU-
 WA SBIKOSHA, a Japanese company, of
 3-4, 4-chome, Ginza, Chuo-ku, Tokyo, Ja-
 pan, 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 fol-
 lowing statement:—

This invention relates to timepiece case as-
 semblies and, in particular, although not so
 restricted, to watch case assemblies.

According to one aspect of the present in-
 vention there is provided a timepiece case as-
 sembly including: an annular case band hav-
 ing a radially outer frusto-conical surface and
 a portion which locates a bezel; a glass; and
 a packing element disposed between the glass
 and the said portion whose surface adjacent
 the packing element is radially inwards of the
 frusto-conical surface and is in a plane which
 is more remote from the plane of the glass
 than the plane of that part of the case band
 nearest the plane of the glass.

In one embodiment of the present invention,
 the timepiece case assembly includes a ring,
 the packing element being located in the space
 defined by the ring, the bezel, the glass and
 said portion.

In another embodiment according to the
 present invention, the timepiece case assembly
 includes a ring which has a groove therein de-
 fining a space with said portion in which space
 said packing element is disposed.

Preferably said portion is constituted by a
 groove in said case band.

According to a further aspect of the present
 invention, there is provided a timepiece having
 a timepiece case assembly as recited above.
 Thus, the timepiece may be a watch.

The invention is illustrated, merely by way
 of example, in the accompanying drawings,
 in which:

Figures 1 to 4 are part-sectional views of
 known timepiece case assemblies;

Figure 5 is a part-sectional view of one em-
 bodiment of a timepiece case assembly accord-
 ing to the present invention; and

Figure 6 is a part-sectional view of a second
 embodiment of a timepiece case assembly ac-

cording to the present invention.

Referring first to Figures 1 to 4, there are
 shown various known timepiece case assem-
 blies, each of which has a glass 1, a bezel 2
 which engages with an upstanding flange por-
 tion 3 of a case band 4. When a grinder grinds
 a surface 4a on the case band before the bezel
 2 is in place, there is a tendency for the flange
 portion 3 to be damaged. In order to avoid
 damage to the flange portion 3, it is provided
 with a chamfer 5 the plane of which subtends
 an angle α (Figure 1) to the surface 4a so
 that the surface 4a stands proud of the chamfer
 5. This has the disadvantage that the design
 of the timepiece is somewhat limited. Alterna-
 tively, as shown in Figure 4, an inside case
 band 6 and an outside case band 7 may be
 provided. Accordingly, the surface 4a may be
 ground on the outside case band 7 before it
 is fitted to the inside case band 6 thus avoiding
 damage during grinding to the flange portion
 3. This has the disadvantage that the separate
 inside and outside case bands 6, 7 increase the
 cost of the timepiece case assembly and, furth-
 ermore the inside and outside case bands are
 liable to be damaged when they are fitted to-
 gether and the outside case band 7 results in
 an increased diameter to the whole timepiece
 case assembly.

In the known timepiece case assemblies
 shown in Figures 2 and 3 it will be seen
 that each has a packing element 8 provided
 between the glass 1 and the case band 4. In
 the known timepiece case assembly shown in
 Figure 2 the packing element 8 is disposed
 in a space defined between the glass 1 the
 case band 4 the flange portion 3 and a ring
 9. In the known timepiece case assembly
 shown in Figure 3 the packing element 8 is
 disposed in a space defined between the glass
 1, a ring 9, the flange portion 3 and the bezel
 2. In the case of the known timepiece case
 assemblies of Figures 1 and 4 the ring 9 con-
 tacts a radially inwardly and downwardly pro-
 jecting part of the glass 1.

Referring now to Figure 5, there is shown
 an embodiment of a timepiece case assembly
 according to the present invention which in-
 cludes a glass 10, a bezel 12 which is located

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in a groove in the case band, a part of the groove being formed by an upstanding flange portion 13 of an annular case band 14, and a ring 15. A packing ring 16 is compressingly disposed in the space formed between the ring 15, the bezel 12, glass 10 and flange portion 13, to prevent water or moisture entering the timepiece between the bezel 12 and the glass 10. The arrangement is such that, when a radially outer frusto-conical surface 14a is ground on the case band 14, there is no danger of damage to the flange portion 13 because it is disposed below the uppermost part of the case band 14. That is to say, the surface of the flange portion 13 adjacent the packing element 16 is radially inwards of the frusto-conical surface and is in a plane which is more remote from the plane of the glass 10 than the plane of that part of the case band 14 nearest the plane of the glass. It will be appreciated that any type of design may be placed on the surface 14a.

Referring now to Figure 6, there is shown a second embodiment of a timepiece case assembly according to the present invention. This is similar to that shown in Figure 5 and so it will not be described in detail and like parts with Figure 5 have been designated by like reference numerals. It will, however, be noted that the ring 15 is provided with a groove 18 which, with the case band 14, defines a space within which the packing element 16 is disposed. The ring 15 directly contacts the radially inner surface of the bezel 12.

With the packing element 16 disposed between the glass 10 and the case band 14, it will act as a shock absorber to absorb shock imparted to the glass. Furthermore, it will be seen that the difference between the inside and outside diameters of the bezel 12, that is to say, the width of the bezel 12 is reduced compared with that of the known timepiece case assemblies shown in Figures 1 to 4 and thus a greater flexibility of design is achieved with the timepiece case assemblies of Figures 5 and 6.

It will be appreciated that the above embodiments of the present invention have the advantage that the manufacture of the timepiece case assembly is made simpler and there is greater flexibility of design. Whilst the present invention has been described in relation to timepiece case assemblies, it will be appreciated that it is particularly applicable to watch case assemblies.

WHAT WE CLAIM IS:—

1. A timepiece case assembly including: an annular case band having a radially outer frusto-conical surface and a portion which locates a bezel; a glass; and a packing element disposed between the glass and the said portion whose surface adjacent the packing element is radially inwards of the frusto-conical surface and is in a plane which is more remote from the plane of the glass than the plane of that part of the case band nearest the plane of the glass.

2. A timepiece case assembly as claimed in claim 1 including a ring, the packing element being located in the space defined by the ring, the bezel, the glass and said portion.

3. A timepiece case assembly as claimed in claim 1 including a ring which has a groove therein defining a space with said portion in which space said packing element is disposed.

4. A timepiece case assembly as claimed in any preceding claim in which said portion is constituted by a groove in said case band.

5. A timepiece case assembly substantially as herein described with reference to and as shown in Figure 5 or Figure 6 of the accompanying drawings.

6. A timepiece having a timepiece case assembly as claimed in any preceding claim.

7. A timepiece as claimed in claim 6 wherein the timepiece is a watch.

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2. A timepiece case assembly as claimed in claim 1 including a ring, the packing element being located in the space defined by the ring, the bezel, the glass and said portion.

3. A timepiece case assembly as claimed in claim 1 including a ring which has a groove therein defining a space with said portion in which space said packing element is disposed.

4. A timepiece case assembly as claimed in any preceding claim in which said portion is constituted by a groove in said case band.

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