

PATENT SPECIFICATION

(11)

1 311 635

DRAWINGS ATTACHED

1 311 635

- (21) Application No. 27705/71 (22) Filed 14 June 1971
(31) Convention Application No. 9323 (32) Filed 19 June 1970 in
(33) Switzerland (CH)
(44) Complete Specification published 28 March 1973
(51) International Classification G04B 37/08 39/00
(52) Index at acceptance
G3T A2B A2C

(19)



(54) WATERTIGHT WATCH CASE

(71) We, AMI SCHOLLER, of 3 rue Hugli, Bienne, Switzerland and EDOUARD BANDELIER, of 10, Neubadrain, 4102-Binningen, Switzerland, 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:—

The present invention relates to the watertight mounting of a glass or bottom in a watch case.

Swiss Patent No. 491,425 describes a watertight watch case wherein the glass is mounted in the bezel with the interposition of a gasket of suitable, relatively soft material, of generally annular configuration and having a substantially V-shaped radial section. This gasket is interposed in fact between the side edge and the base of the glass, on the one hand, and the registering faces of a recess formed in the bezel, on the other hand. One of the arms of the V-shaped radial section, which has a substantially rectangular configuration is adapted to seal the joint between the flat base of the glass and the registering face of the recess, the other arm sealing the joint between the lateral faces of the glass and recess; this other arm provides a complementary sealing action and has a greater cross-sectional area than the recess available therefor, so that when compressed said other arm will lock in position, in the axial direction, the corresponding glass of which the lateral face forms with the flat base an angle of less than 90°.

If the sealing gasket is an integral, single piece of material, the glass is retained in the axial direction only by the frictional force developed between the gasket and the side walls of its recess in the bezel. This force may prove sufficient as long as the gasket exerts a sufficient pressure against these side walls, due to its compression. However, since the gasket consists as a rule of synthetic material, it is most likely that its mechanical properties change with time, thus impairing considerably its glass retaining capacity.

[Price 25p]

It is an object of the present invention to avoid the inconveniences of known prior art devices by providing means adapted to extend the useful life of seals of the above-described type.

According to the invention, there is provided a watertight watch case in which an element such as a glass or bottom is secured in the case by means of a sealing gasket having an L-shaped radial section, this gasket being located in a recess defined between the lateral edge and one of the faces of the element to be secured, on the one hand, and the corresponding faces of a housing in said case, on the other hand, the arm of the L adjacent to said lateral edge having a greater cross-sectional area than said recess between the case and the element thus held in position so that said element is radially and axially locked in position by compression of the gasket, the lateral wall of said housing comprising at least one step extending along at least a portion of the periphery of said recess.

This mounting is applicable both to the mounting of a bottom in a case and to the mounting of a glass in a bezel.

As this stepped mounting is less sensitive to changes in the mechanical properties of the sealing gasket, the reliability of the mounting is increased considerably.

In the accompanying drawings:

Fig. 1 is a fragmentary sectional view of the watertight mounting of a glass in a case or bezel;

Fig. 2a, 2b and 2c illustrate the sequence of fitting a glass in position in its bezel or case.

Referring to Fig. 1, the reference numeral 1 designates a case or bezel in which a glass 2 is fitted in position with the assistance of a sealing gasket 3 of synthetic material, such as ISOFRANE (Registered Trademark). The glass and gasket 2, 3 are fitted in a recess formed in the case or bezel 1, this recess comprising as shown a vertical side wall 4 and a horizontal shoulder or ledge 5. Formed in the vertical side wall 4 is a step 6 engaged by the expanded material of the

compressed gasket 3. This step 6 may extend throughout the circumference of the recess, or along one fraction only thereof. Moreover, two or more steps 6 may be provided, instead of a single one.

5 The glass 2 and gasket 3 are fitted in position by utilizing a diameter reducing ring through which the glass, already provided with its gasket, is inserted. The fitting sequence is illustrated in Figs. 2a, 2b and 2c of the drawing. In Fig. 2a, the gasket 3 is shown separately in its unstressed condition. It has an L-shaped radial section. This gasket 3 is first secured to the glass 2 to which it adheres simply as a consequence of the acute angle formed between the side edge 2a and the base of the glass, as shown in Fig. 2b. Then the glass and its gasket are introduced into a fitting ring 7. This ring comprises a first outflared or funnel-shaped portion 7a and a second cylindrical portion 7b of which the opening, i.e. the diameter for a circular case, is equal to that of the bezel. The fitting ring 7 is laid on the bezel and the glass and gasket assembly is pushed through this ring by means of a push member 8 of suitable synthetic material to avoid scratching the glass. This push member 8 comprises a heel 8a adapted to retain the gasket 3 and prevent the tearing thereof as a consequence of the traction stress exerted thereon. Finally, the gasket reduced to the diameter of the bezel inlet is introduced into this bezel until it expands partially into the step 6.

It is clear that this invention is applicable both to circular cases and to cases having peripheries other than circular.

WHAT WE CLAIM IS:—

1. A watertight watch case in which an element such as a glass or bottom is secured in the case by means of a sealing gasket having an L-shaped radial section, this gasket being located in a recess defined between the lateral edge and one of the faces of the element to be secured, on the one hand, and the corresponding faces of a housing in said case, on the other hand, the arm of the L adjacent to said lateral edge having a greater cross-sectional area than said recess between the case and the element thus held in position so that said element is radially and axially locked in position by compression of the gasket, the lateral wall of said housing comprising at least one step extending along at least a portion of the periphery of said recess.

2. A watertight watch case substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

P. F. JENNISON,
Chartered Patent Agent,
Chancery House Room 310,
Chancery Lane,
London, WC2A 1QU.
Agent for the Applicants.

compressed gasket 3. This step 6 may extend throughout the circumference of the recess, or along one fraction only thereof. Moreover, two or more steps 6 may be provided, instead of a single one.

5 The glass 2 and gasket 3 are fitted in position by utilizing a diameter reducing ring through which the glass, already provided with its gasket, is inserted. The fitting sequence is illustrated in Figs. 2a, 2b and 2c of the drawing. In Fig. 2a, the gasket 3 is shown separately in its unstressed condition. It has an L-shaped radial section. This gasket 3 is first secured to the glass 2 to which it adheres simply as a consequence of the acute angle formed between the side edge 2a and the base of the glass, as shown in Fig. 2b. Then the glass and its gasket are introduced into a fitting ring 7. This ring comprises a first outflared or funnel-shaped portion 7a and a second cylindrical portion 7b of which the opening, i.e. the diameter for a circular case, is equal to that of the bezel. The fitting ring 7 is laid on the bezel and the glass and gasket assembly is pushed through this ring by means of a push member 8 of suitable synthetic material to avoid scratching the glass. This push member 8 comprises a heel 8a adapted to retain the gasket 3 and prevent the tearing thereof as a consequence of the traction stress exerted thereon. Finally, the gasket reduced to the diameter of the bezel inlet is introduced into this bezel until it expands partially into the step 6.

It is clear that this invention is applicable both to circular cases and to cases having peripheries other than circular.

WHAT WE CLAIM IS:—

1. A watertight watch case in which an element such as a glass or bottom is secured in the case by means of a sealing gasket having an L-shaped radial section, this gasket being located in a recess defined between the lateral edge and one of the faces of the element to be secured, on the one hand, and the corresponding faces of a housing in said case, on the other hand, the arm of the L adjacent to said lateral edge having a greater cross-sectional area than said recess between the case and the element thus held in position so that said element is radially and axially locked in position by compression of the gasket, the lateral wall of said housing comprising at least one step extending along at least a portion of the periphery of said recess.

2. A watertight watch case substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

P. F. JENNISON,
Chartered Patent Agent,
Chancery House Room 310,
Chancery Lane,
London, WC2A 1QU.
Agent for the Applicants.

Printed for Her Majesty's Stationery Office by Burgess & Son (Abingdon), Ltd.—1973.
Published at The Patent Office, 25 Southampton Buildings, London, WC2A 1AY
from which copies may be obtained.

