Nov. 25, 1969 J. STEIMANN 3,479,771

WATCHCASE

Filed Oct. 13, 1967

Fig.1

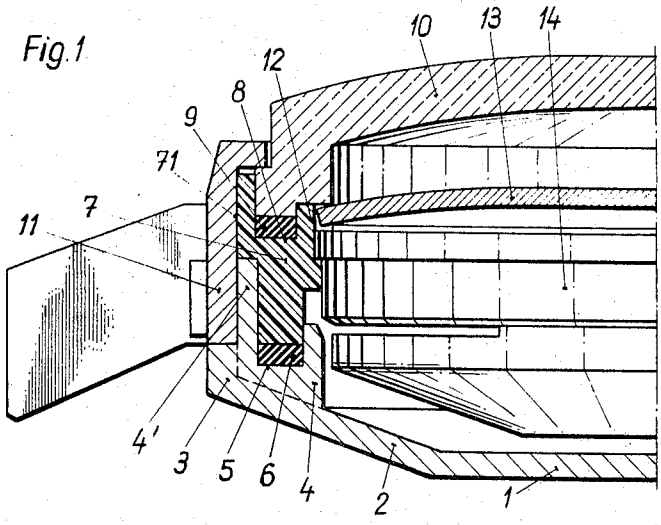


Fig.2

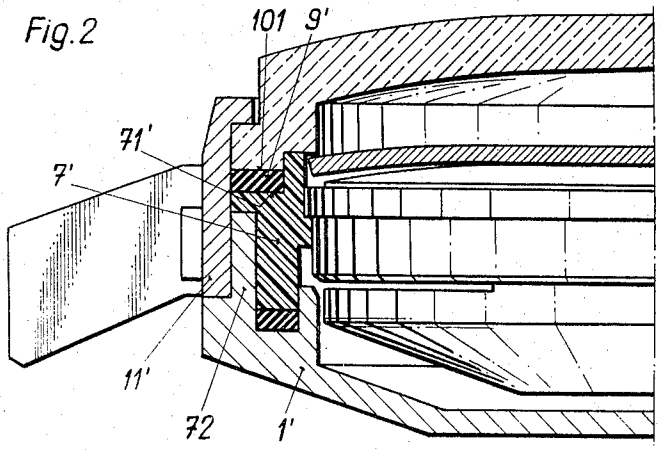
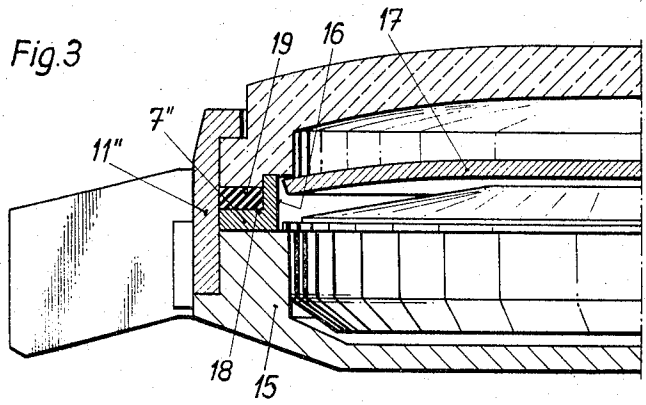


Fig.3



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WATCHCASE

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U.S. Cl. 58—90 6 Claims

ABSTRACT OF THE DISCLOSURE

A watchcase for a waterproof watch has an annular portion which supports the movement and has an upstanding inner rim which positions the dial and a shoulder with a sealing ring. The watch crystal has an edge portion which seats on the sealing ring with an inner shoulder engaging the top of the upstanding inner rim and an outer shoulder engaged by a bezel.

This invention relates to watchcases.

Watertight watchcases have already been suggested comprising a body made at least partially of plastic material in which the glass is inserted, a bezel surrounding said body and having an internal projection the shape of a truncated cone acting upon that part of the casing body of plastic material surrounding the rim of the glass, and a base, resting at least indirectly upon the casing body in order to exert upon the bezel an axial traction by means of which part of the casing body is elastically deformed and thus closely applied against the glass to ensure the tightness of the assembly.

Casings of this kind have been described in Swiss Patent 343,949.

Experience has shown that the cross-section of the proposed plastic body is not sufficient to ensure sufficient tightness of the case in all cases, particularly when this plastic material is not easily deformed and when there are considerable external stresses.

Although these cases ensure excellent tightness against atmospheric action and humidity, and easily withstand relatively complicated because it in necessary to provide a bezel having an inclined inside wall, which is not easy to achieve where shaped cases are concerned.

It is the specific object of the present invention to overcome this drawback.

The main aspect of the invention comprises a watchcase comprising: a hollow casing member adapted to receive the watch movement, and comprising a base portion and a cylindrical casing portion part of which remote from the base portion is of reduced cross-section to receive the bezel and which carries an internal annular support, an intermediate annular member resting on said internal annular support on the casing member, a packing gland carried by the outer face of said intermediate annular member, a watch glass formed with a rim having front and rear annular surfaces, the rear annular surface of which rests on the said packing gland, and an annular bezel of L-shaped cross-section the cylindrical leg of which embraces said cylindrical casing part of reduced cross section and the periphery of the watch glass, and the annular base of which engages the front annular surface of the watch glass rim.

The present invention will be more clearly understood with reference to the accompanying drawings which, by way of non-limitative example, represent three particular embodiments thereof, in which:

FIGS. 1, 2, 3 are partial axial cross-sections of each of the three embodiments.

First of all referring to FIG. 1, the case comprises a

base **1**, connected by a truncated conical portion **2** to a cylindrical casing portion **3**, and constituting a hollow casing member, inside which is welded a part **4** having a groove **5** in which is arranged a packing land **6** an intermediate annular member **7** compresses said packing gland **6** and is supported upon a cylindrical peripheral extension **4'** of the part **4** constituting a part of the cylindrical casing of reduced cross-section. The member **7** has on its upper portion a groove **8** in which a packing gland **9** is pressed by the glass **10** axially held by the positioning of the bezel **11**, which is fixed to the base, either by screws or by any other suitable fixing system.

The watch glass **10** is formed with a rim having front and rear annular surfaces, the rear annular surface of which rests on the packing gland **9** and the front annular surface is pressed axially by the bezel **11**. The watch glass rim comprises two successive cylindrical portions of which that near the glass face has the smaller diameter so as to form an outer front-facing shoulder constituting said front annular surface and an inner rear-facing shoulder constituting said rear annular surface.

The member **7** which may be of metal or synthetic material, has an outer wall **71** cooperating with the shaped inner wall of the bezel **11**. The inside cylindrical surface of the member **7** has an upper portion **12** of the same shape as the edge of the dial **13** which it surrounds, while a central internal ring on the inside surface of the member **7** acts as a support for the movement **14**.

The alternative embodiment shown in FIG. 2 differs, firstly, from that of FIG. 1 in this way, that the member **7'** no longer has on its upper portion a groove, but a shoulder **71'** on which the packing gland **9'** is arranged.

Moreover the member **7'** is directly supported upon the shoulder **72** of the base **1'**. This is a particularly interesting solution since it makes it possible to gain space laterally in comparision with the embodiment of FIG. 1.

In the embodiment of FIG. 3 the member **7''** is directly supported on an integral shoulder of the base and its inner wall **16** reproduces the outer shape of the dial **17**, which also rests on the shoulder **15**. This member **7''**, like that represented in FIG. 2, has a shoulder **18** for the support of a packing gland **19**.

It will be noted that in these three embodiments the bezel **11**, **11'**, **11''** respectively, has an inner shaped vertical wall, of relatively easy construction.

Finally, in the embodiments described in FIGS. 1 and 2, the tube of the winding stem is prefabricated with the member **7**, **7'** respectively.

In the embodiment of FIG. 3 on the other hand, this tube is welded to the bezel.

Of course, the invention can be applied to round or polygonal cases as required.

What I claim is:

1. A waterproof watch having a case with a back and an annular portion having an upstanding rim and a shoulder radially outside of and below said rim, a movement received in said case, a dial surrounded and laterally positioned by the inner surface of said rim, a compressible sealing ring on said shoulder, a crystal having a depending peripheral rim having an inner rearfacing shoulder portion seating on top of said rim of said annular portion and on a peripheral edge portion of said dial to retain said dial, and a depending outer portion extending down radially outside of eaid rim and engaging said sealing ring to provide a seal, and a bezel retaining said crystal.

2. A watch according to claim **1**, in which the peripheral edge portion of the crystal comprises two successive cylindrical portions of which that nearer the crystal face has a smaller diameter so as to form an outer front-facing shoulder engaged by said bezel and said inner rear-facing

shoulder seating on said inner rim of said annular portion.

3. A watch according to claim 1, in which said annular portion comprises an annular plastic member.

4. A watch according to claim 1, in which said watch-case comprises a back portion and a separate annular member constituting said annular portion and in which a second sealing ring forms a seal between said back portion and said annular member.

5. A watch according to claim 4, in which said back portion is formed near its periphery with a front-facing groove receiving said second sealing ring and a portion of said annular member.

6. A watch according to claim 1, in which said annular portion has a radially inwardly projecting shoulder on which said movement is supported.

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