Nov. 17, 1942. E. MORF 2,302,340

WATERPROOF WATCH-CASE

Filed Oct. 10, 1941

Fig. 1.

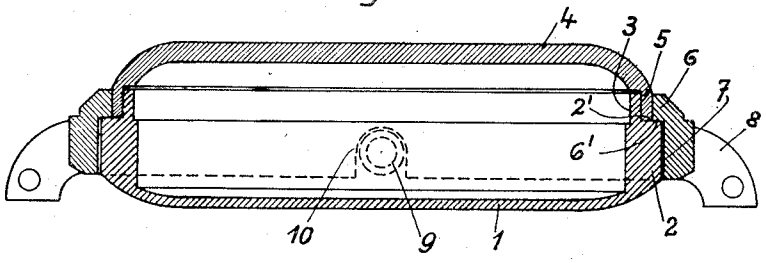


Fig. 2.

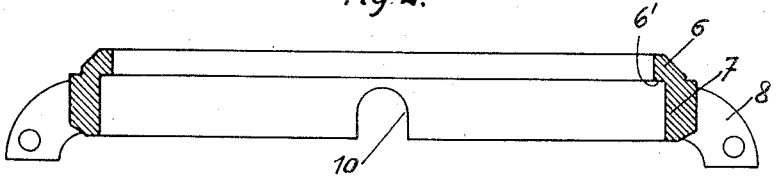


Fig. 3.

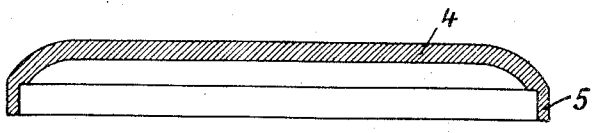
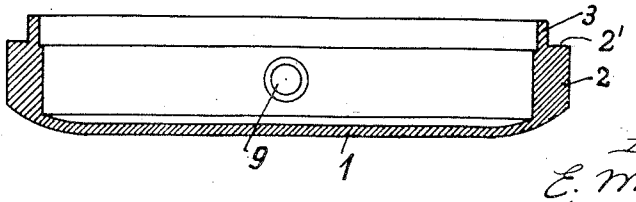


Fig. 4.



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WATERPROOF WATCHCASE

Ernest Morf, La Chaux-de-Fonds, Switzerland

Application October 10, 1941, Serial No. 414,535
In Switzerland October 31, 1940

2 Claims. (Cl. 58—90)

The present invention relates to improvements in watch-cases and has for its principal object to provide a watch-case which is simple, efficient, economical to manufacture, durable and highly satisfactory in preventing dust, moisture and other matter from entering the case.

Another object of my invention is to reduce to a minimum the number of parts necessary in the construction of waterproof watch-cases and more particularly to omit the usual resilient packing rings, the hermetical fit being obtained by the crystal itself and the parts of the watch-case according to my invention being constructed so as to permit the same to be readily and easily assembled or disassembled without weakening the tightness of the connection between the parts of the case.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the accompanying drawing wherein like numerals indicate like parts throughout the several views of the same,

Fig. 1 is a vertical sectional view of the watch-case entirely assembled.

Fig. 2 is a sectional view of the combined bezel and center.

Fig. 3 is a sectional view of the crystal.

Fig. 4 is a sectional view of the back.

The case is shown as being round in shape, but it will be understood that the invention is just as well applicable to watches of any other shape.

In the drawing 1 designates the back of the watch-case having an annular rim 2 extending perpendicularly to the plane of the watch movement and being adapted to receive and hold said movement which is inserted from the front of the case. This annular rim 2 is prolonged by an upward extending annular flange 3, the external diameter of which is somewhat smaller than the external diameter of the rim 2 so as to manage an external abutment shoulder 2' on said rim.

The crystal 4 of slightly compressible material such as transparent polyacrilic or polyvinylic resin has a tubular flange 5 adapted to engage the periphery of the flange 3 of the back.

The combined bezel and center 6, 7 is made in one piece, for example, by die casting. It comprises an upper portion 6 performing the function of a bezel adapted to engage the tubular flange 5 of the crystal, and a case band 7 adapted to engage the rim 2 of the back over its whole depth. The bezel 6 has a rectangular shoulder 6' so that it rests upon the abutment shoulder 2' of the rim 2 when the combined bezel and center 6, 7 is held in assembled position. The internal surface of the case band 7 is of substantially the same size as the external surface of the rim 2 of the back. The relative diameters of the bezel 6 and the flanges 5 and 3 are such that, when the combined bezel and center is held in place, the flange 5 of the crystal will be squeezed and compressed against the flange 3 of the back just strongly enough to provide a perfectly tight joint without injuring the specific compressibility of the material of which the crystal is made.

The combined bezel and center 6, 7 is provided with bracelet holding lugs 8, which lugs can be formed as an integral part of said bezel and center or suitably attached thereto, as desired to form a rigid unit.

A bore 9 is provided in the rim 2 of the back for the winding stem, and for the same purpose a notch 10 is also cut out in the case-band 7 of the combined bezel and center.

It will thus be seen from the foregoing description that the number of parts necessary for the construction of this waterproof watch-case is reduced to three and that other means than the compressible flange of the crystal itself are not necessary for clamping the back and the combined bezel and center together and thus for efficiently preventing the entrance of water through the connection therebetween.

What I claim is:

1. In a watertight watch case, a back including a rim perpendicular to the plane of the movement and a flange perpendicular to the plane of the movement, extending from the free end of said rim, a center comprising a bezel and a caseband, the latter surrounding said rim, a groove of rectangular cross section between said flange and said bezel and perpendicular to the plane of the movement, and a crystal made of slightly compressible material ending in a tubular flange pressed into and filling up said groove to clamp said back and said center watertightly together.

2. In a watertight watch case, a back including a rim perpendicular to the plane of the movement and a flange perpendicular to the plane of the movement extending from the free end of said rim and a shoulder on said free end and outside said flange, a center comprising a bezel and a case band, the latter surrounding said rim, said bezel having an abutment surface in engagement with said shoulder, a groove of rectangular cross section between said flange and said bezel and perpendicular to the plane of the movement, and a crystal made of sligthly compressible material ending in a tubular flange pressed into and filling wholly up said groove and with its free end making contact with said shoulder to clamp said back and said center watertightly together.

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