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2,392,787

WATER RESISTANT WATCH CASE

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FIG. 1.

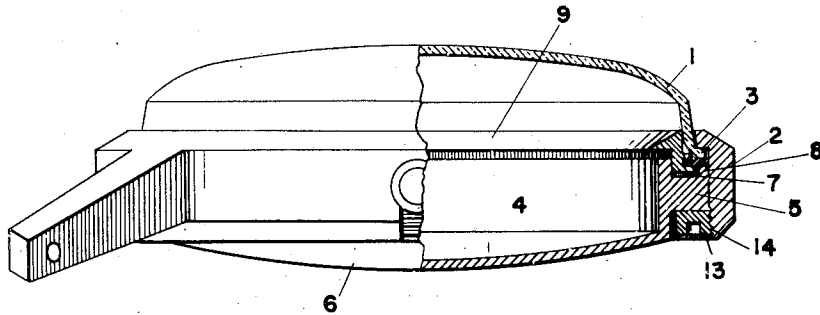


FIG. 2.

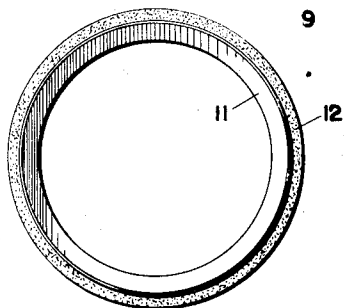


FIG. 3.

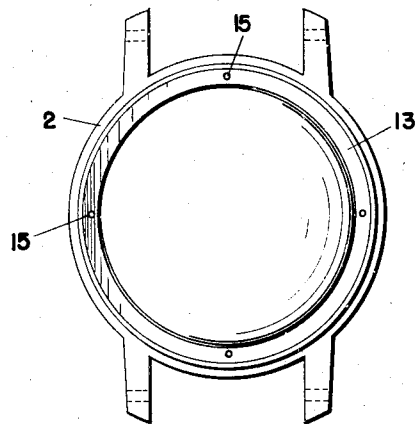
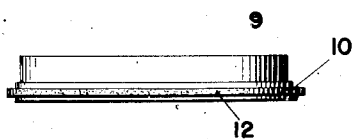


FIG. 4.



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WATER RESISTANT WATCHCASE

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6 Claims. (Cl. 58-90)

This invention relates to a new type of water, dust and moisture resistant watch case and is designed to seal the movement with a single case sealing means.

The object of the invention is to provide a watch case which may be made waterproof, with the thought of simplifying assembly—providing easy accessibility to the movement for repairs or adjustment—minimizing replacement parts, and at the same time present a pleasing appearance.

It has been found that in the making of waterproof watches it is necessary to add seals and gasket rings making the watch necessarily thicker. This materially reduces the sales value of the watch as the tendency in the trade leans towards thinner and more attractive watches.

It is the object of this invention therefore to eliminate one of the sealing points and present a watch case which may be sealed at only one point.

It is a further object of the present invention to utilize a reflector ring as a means for holding the sealing means, making it easier to assemble the movement in the case, and provide positive location of said sealing means to insure maximum of protection against penetration of water, dust, moisture, etc.

It is a still further object of the present invention to utilize a single piece pressed back designed to fit within a bezel and secured to the bezel by means of a threaded ring. This particular single piece pressed back also carries a pendant tube formed integrally to insure as near perfect as possible a support to the semi-universal joint stem and insures correct concentricity.

It is a still further object of the present invention to provide a waterproof case so designed that the movement may be assembled from the back. The movement may be assembled into the back in a dial-upward position rather than the usual method of casing the movement in a downward position, thus eliminating damage to hands or movement.

It is a still further object of the present invention to provide a waterproof watch case having a separate threaded back ring, the removing of which allows the entire assembled case to be dismantled, and thus avoid damage to back of case.

The invention is shown in the accompanying drawing in which:

Fig. 1 is a side view partly in section.

Fig. 2 is a top plan of the reflector ring and sealing ring.

Fig. 3 is a back view of the watch.

Fig. 4 is a side elevation of the reflector ring and sealing ring.

Referring more particularly to Fig. 1 the watch case comprises a crystal 1 formed of plastic material which is held in place by a bezel 2 engaging the flange 3 of the crystal 1. The back 4 is pressed from a single piece of metal and is formed with an integral annular ring 5 and a bulged portion 6. The annular ring 5 is formed with a recess portion 7 and an upstanding annular rim 8. A reflector ring 9 is formed with a washer retaining groove 10 and an angle reflecting surface 11. Carried in the retaining groove 10 is a Koroseal washer 12, an annular back ring 13 threads into the bezel at 14 and bears against the annular ring 5 of the back 4 to provide a means of forcing the back against the Koroseal washer. Holes 15 in the back ring are used with a special tool for assembling or disassembling the watch case.

In assembling the movement in a watch case of the usual waterproof design it is necessary that the movement be put in the case, dial down, and while in this position the winding stem passed through the bezel and secured in position by tightening the set screw. This operation requires the skill of a watchmaker and results a great many times in the bending of the hands, due to the fact that the operator is unable to watch the hands as the movement is in a dial down position.

With the waterproof watch case, which is the subject of this invention, the movement is first cased with a split stem, that is the stem has a semi-universal joint which allows the stem to be separated in one position. In assembling the movement in the case of the present invention the stem is first applied through the bezel and the position of the stem fixed. The watch movement is then placed in the bezel so that the section of stem affixed to the watch movement and the section passing through the bezel will be joined. This is done in a dial up position with no danger of bending or mutilating the hands. The reflecting ring 9 is then placed over the cased movement, the crystal over the reflecting ring and the bezel 2 placed over the entire assembly, engaging the flange 3 of the crystal and closely embracing the shoulder 5 of the back 4. The annular back ring is then threaded into the bezel and engaging the shoulder 5 of the back 4 forces the annular rim 8 against the sealing washer 12 which engages the flange 3 of the crystal held by the shoulder of the bezel and forms a perfect seal preventing any entrance of outside moisture to the watch movement.

The assembly of the present invention is not only simpler and one which may be done by an unskilled operator but assures the assembly of the watch without damage to the hands, one of the difficulties of assembling waterproof watch cases of the usual design.

The assembling of the waterproof watch case of the usual design also involves the packing of a sealing washer into a small groove. Applicant has overcome this difficulty by providing the sealing washer assembled on a metal reflector ring. This reflector ring 9 is formed with a washer retaining groove which firmly holds the washer in the position in which it is applied to the assembly. This assures ease of application for the operator and prevents any buckling or distortion of the washer during the application. It makes possible the assembling of three watches of the type of the present design in the time that one watch of the usual waterproof design could be assembled.

What is claimed is:

1. A waterproof watch case comprising a back formed with an annular shoulder, a reflector ring fitting said back and seated on said annular shoulder, a crystal overlying said reflector ring and formed with an annular flange directly overlying the annular shoulder of said back, a sealing means between said annular shoulder and the flange of said crystal and means for forcing said shoulder and said crystal into sealing relationship.

2. A waterproof watch case comprising a back formed with an annular shoulder having an upstanding rim thereon, a reflector ring formed with an exterior washer retaining groove, a sealing washer carried in said groove and seated on the upstanding rim of said shoulder, a crystal formed with an annular flange fitting over said reflector ring and contacting said sealing washer, a bezel interiorly threaded at one end and formed with an exterior flange at the other end, said flange engaging the flange of said crystal, and a back ring threaded into said bezel and engaging the shoulder of said back, forcing the flange of said crystal and the upstanding rim of said back shoulder into sealing engagement with said sealing washer.

3. A waterproof watch case comprising a back formed with an annular shoulder having an annular recess and an upstanding rim formed on said shoulder, a reflector ring formed with an exterior annular groove, a sealing washer carried

in said groove, a crystal overlying said reflector ring and seated on said sealing washer and the means for forcing said crystal and said upstanding annular rim into sealing engagement with said sealing washer.

4. A waterproof watch case comprising a back formed with a central opening for receiving a watch movement having the usual dial therewith, said back being formed with an annular shoulder having an annular groove and an upstanding exterior rim formed thereon, a reflector ring overlying said back and bearing against the dial of said watch movement, said reflecting ring having an exterior annular groove and adapted to fit within the annular groove of the shoulder of said back, a sealing washer carried in the annular groove of said reflector ring, a crystal overlying said reflector ring and seated on said sealing washer, a bezel formed with an interior flange engaging said crystal and means threadedly engaging said bezel and forced into contact with said back so as to bring said crystal and upstanding rim of the annular shoulder of said back into sealing relationship with said sealing washer.

5. In a waterproof watch case having a crystal and a back adapted to be brought into sealing engagement with said crystal, a reflector ring comprising a vertical portion formed with spaced exterior annular flanges to provide a washer receiving groove there-between, a reflecting portion of said ring extending from the crystal interiorly to beyond the inside rim of the back portion, a sealing washer carried in said groove and between said crystal and said back and means of forcing said crystal and back into sealing relationship with said sealing washer.

6. In a waterproof watch case having a hollow back portion adapted to receive a watch movement and a crystal adapted to overlie said back and to be brought into sealing relationship with said back, a reflector ring comprising a vertical portion formed with a comparatively narrow upper annular flange and a comparatively wide lower annular flange, said flanges forming a washer receiving groove there-between, a reflecting portion contacting said crystal and overlying the hollowed portion of said back, a sealing washer carried in the groove formed between said upper and lower flanges and means for forcing said back and said crystal into sealing relationship with said sealing washer.

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