

Jan. 19, 1971

E. PIQUEREZ

3,555,812

FLUIDTIGHT AND TAMPER-PROOF TIMEPIECE CASE

Filed Dec. 20, 1968

2 Sheets-Sheet 1

FIG. 1

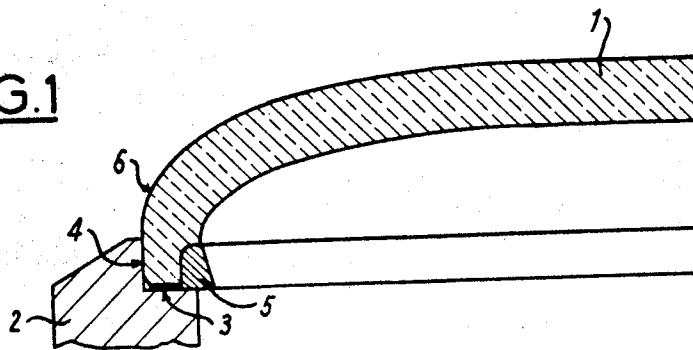


FIG. 2

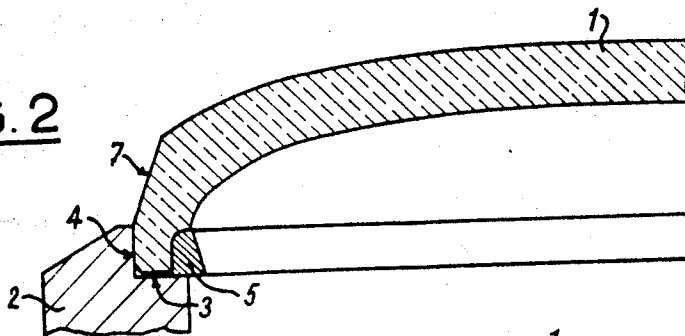


FIG. 3

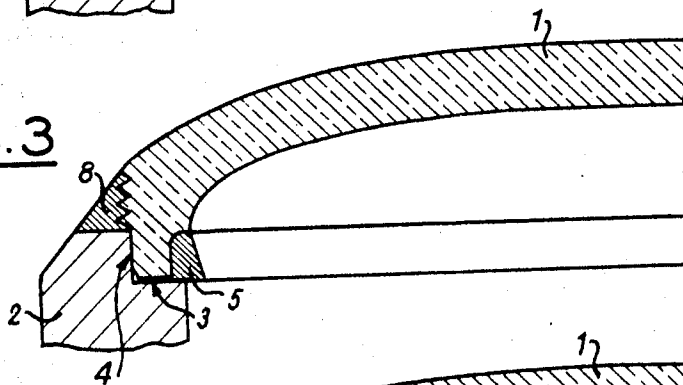
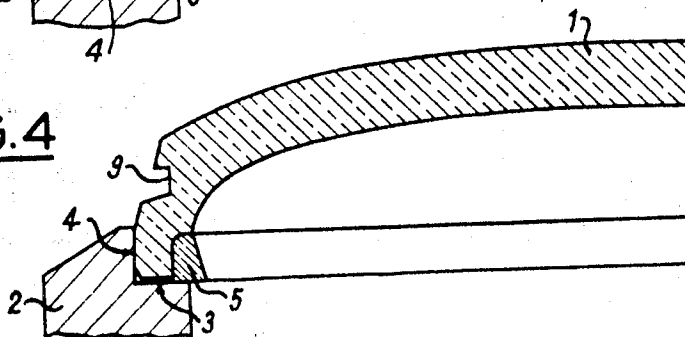


FIG. 4



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FIG. 5

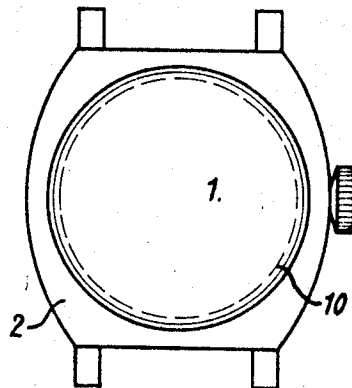


FIG. 6

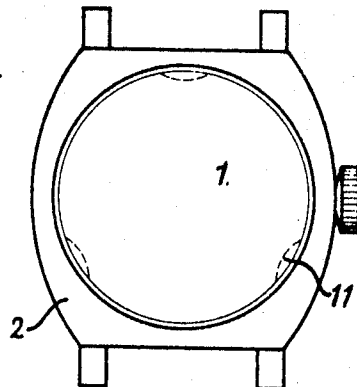
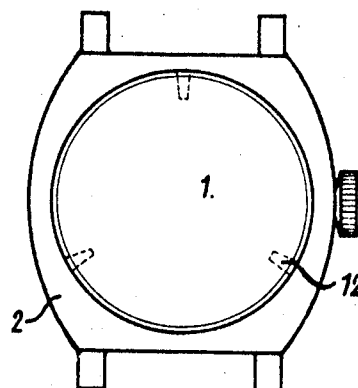


FIG. 7



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FLUIDTIGHT AND TAMPER-PROOF TIMEPIECE CASE

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18,201/67

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U.S. Cl. 58—90

2 Claims

ABSTRACT OF THE DISCLOSURE

Timepiece case in which the bottom and/or the crystal are driven in suitable hollows in the middle and wherein the said bottom or said crystal have a shape which resists all grasping aimed at removing them from their housing, the opening of the case requiring the making of at least one notch to allow the removal of the bottom or of the crystal.

This invention is concerned with a fluidtight and tamper-proof timepiece case.

There are known different types of fluidtight timepiece cases in which the bottom is driven in a corresponding hollow made in the middle with or without joints intended to improve the fluidtightness and in which the crystal is driven into a corresponding hollow of the middle, where the metallic tensioning ring aiding to strongly compress the edge of the glass against the shoulder of the hollow.

In these constructions, the bottom of the crystal in question must be provided with notches, grooves, shoulder or at least must have on their periphery a sufficiently large cylindrical surface to make possible their grasping by means of a suitable tool and their extraction from their housing, the presence of these extracting means allowing naturally anyone having the tool to open the case in question, and in particular, people not competent enough to effect possibly required repairs. Moreover, upon re-assembly, it can happen that these people may not be able to close the case with the care or a technique which would give the previous fluidtight disposition.

The present invention precisely has for its object a fluidtight timepiece case in which the bottom and/or the crystal are driven in suitable hollows in the middle and which has for its purpose to obviate these drawbacks.

This timepiece case is characterised by the fact that the said bottom and/or said crystal have a shape which opposes itself to all grasping aimed at removing them from their housing, by the fact that the opening of the case requires the previous making of at least one notch to allow the removal of said bottom and/or said crystal.

The accompanying drawing represents by way of example several embodiments of the present invention.

The different figures of this drawing refer all to the utilization of the invention in a watch crystal but the illustration of the application of the invention to the bottom of a timepiece case can be deduced therefrom without difficulty.

FIGS. 1 and 2 are partial cross-sectional views of a timepiece case according to the invention for two embodiments thereof.

FIG. 3 is a partial cross-sectional view of a timepiece case having an extraction ring screwed on the crystal.

FIG. 4 is a partial cross-sectional view of a timepiece case with a temporary crystal.

FIGS. 5, 6 and 7 are plane views showing respectively three ways for removing the crystal of FIGS. 1 and 2.

In these different figures, 1 identifies the crystal, 2 the middle, 3 the horizontal side of the housing made in the middle while 4 is the vertical side of this housing against which tensioning ring 5 presses the heel of the crystal

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while ensuring its fastening and the fluidtightness of the assembly.

An outer shoulder and a crystal shown in FIG. 1 has a rounded shape 6 intended to prevent grasping of this crystal by means of an appropriate plier. In FIG. 2, on the contrary, a conical part 7 fulfills the same function.

FIG. 3 shows a timepiece case having an extraction ring 8 screwed in crystal 1. This ring 8 will have gripping means, for example, holes when it is desired to remove it.

FIG. 4 shows an example of a temporary crystal with which the case according to the invention can be provided until it is delivered to the client. This crystal has a circular groove 9 allowing its ready removal by a watch-maker before the placing of the final crystal and delivery to the client.

These nicks can be conceived in different manners as it will appear from FIGS. 5, 6 and 7. FIG. 5 shows a notch made in the shape of a groove along the complete periphery of the crystal, FIG. 6 shows a solution where there has been made three notches in the shape of the segment of the circle positioned 120° one from the other, while FIG. 7 shows a solution which is applicable only to organic glasses where there have been made three pointed notches 12 also at 120° one from the other, by means of a heated tool.

Under these conditions, the watch can be protected as soon as it leaves fabrication by means of a temporary inexpensive crystal which has means allowing its ready removal before sale of the watch. It is thus possible to immediately effect before delivery the checking necessary to the good operation of the mechanism. Once the checks have been made, the temporary glass is replaced by a final crystal which is without means allowing its removal. At the moment of repair or of checking, only a competent specialist can make on the final glass the notches which make possible its removal. It is evident that the glass in question is then no longer usable but this procedure ensures that upon each repair the crystal is replaced by a new crystal and that the same is put in place by a specialist who is competent which is an essential condition for obtaining a long lasting fluidtightness.

The crystals made according to the invention can be made either of natural or organic glass. The only difference will be in the means used for making the notches which allow removal of the crystal.

The embodiments given above which are limited to the crystal of the timepiece according to the invention, apply equally to the making of the bottom of a timepiece case which has the same characteristics.

It is evident that the invention is applicable to so called single shell timepiece cases, where the bottom and the middle are made in a single piece and where consequently only the crystal can be made in accordance with the invention.

What is claimed is:

1. A watch casing comprising a middle ring, a back cover attached to one side of said middle ring, and a crystal attached to the other side of said middle ring, said cover and crystal each having smooth continuous outer surfaces and sloped peripheries externally of said middle ring, whereby said cover and crystal are secure within said middle ring and said smooth continuous surfaces oppose all grasping action of a tool intended for use in removing said crystal and cover.

2. A watch casing comprising a middle ring, a crystal attached to said middle ring, and an extraction ring positioned in grasping contact with the periphery of said crystal and in contact with said middle ring, said crystal having smooth continuous surfaces and a sloped periphery externally of said extraction ring and middle ring.

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