Dec. 11, 1956 JEAN-MICHEL FROIDEVAUX 2,773,347

WINDING CROWN FOR TIMEPIECE MOVEMENT

Filed Aug. 13, 1954

Fig. 1

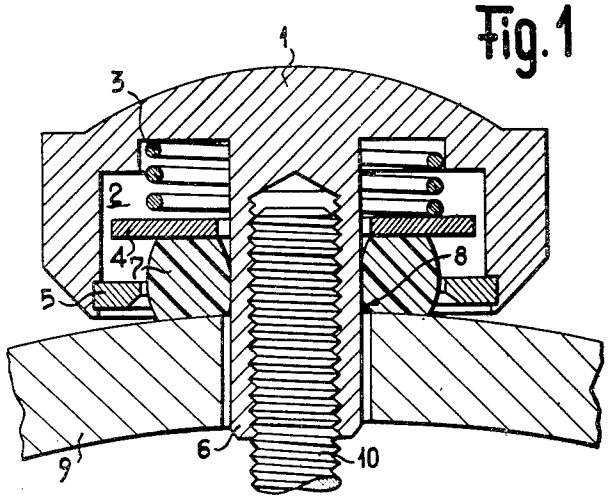
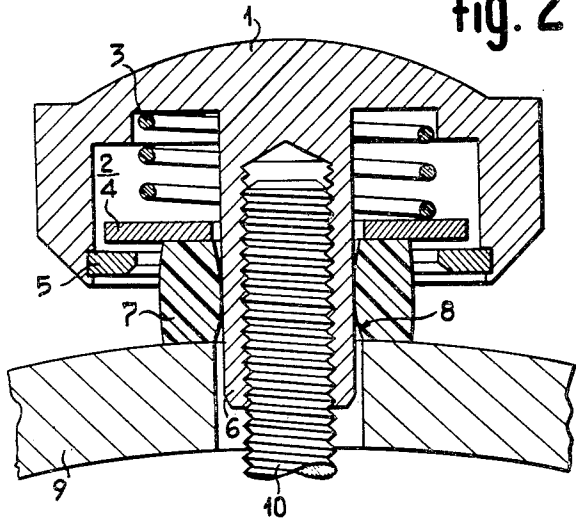


Fig. 2



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WINDING CROWN FOR TIMEPIECE MOVEMENT

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6 Claims. (Cl. 58—90)

There are already known in the art crowns for tubeless watch-cases, having a movable sealing member placed around the sleeve of the crown and adapted to come into contact with the watch-case under the action of a spring, in order to seal or obturate the passage for the winding stem and thus prevent, for instance, dust or other materials to penetrate into the watch-case through this opening.

In the known arrangements, the movable sealing member is generally made of metal. Sometimes, it is provided at its base with a thin washer of flexible material, adapted to act as a packing between the metallic member and the watch-case.

The small thickness of this packing makes impossible its taking the shape of the watch-case and if a suitable tight joint is to be obtained, it is necessary to subject the cases which do not present a plane surface near the edge of the opening for the winding stem to an operation such as turning or milling for creating this plane surface.

On the other hand, the known crowns with a movable sealing member are not tight between the movable member and the sleeve of the crown, but render merely more difficult the penetration of dust into the watch by the fact that this passage along the sleeve forms more or less a labyrinth.

The present invention relates to a winding crown for timepiece movement, which aims at overcoming these drawbacks.

To this end, it comprises a flexible and elastic sealing member, springily arranged on its sleeve, this member being subjected to the action of a spring which urges it against the center of the watch-case.

The accompanying drawing shows schematically and by way of example, an embodiment of the invention.

Fig. 1 shows the crown in the winding position.

Fig. 2 shows the crown in the setting position.

The crown 1 has an inner recess 2 within which is arranged a spring 3. This spring bears on the one hand upon the bottom of the recess 2 and, on the other hand, upon a rigid washer 4 adapted to slide in the axial direction in the recess 2. On the edge of the recess 2 is mounted a second washer 5 serving as a stop for the first washer 4, thus preventing it from going out of the crown.

On the sleeve 6 is arranged a sealing member 7 of annular shape, made of a flexible and elastic material. This member 7 exerts a springy radial pressure on the sleeve 6 and is subjected to an axial pressure by the spring 3 which applies it against the center 9 of the watch-case.

As shown in the drawing, when the member 7 is in unstressed condition, its inner wall 8 is curved in axial section, so that the pressure exerted on the sleeve 6 is not too great when the ring 7 is compressed axially.

Owing to this arrangement, the watch-case is made water-tight and dust-tight at the place where it is traversed by the winding stem 10, while allowing the crown

to be turned easily, as well in the winding position as in the setting position of the latter.

While the invention has been described and illustrated with reference to a specific embodiment thereof, it will be understood that other embodiments may be resorted to without departing from the invention. Therefore, the form of the invention set out above should be considered as illustrative and not as limiting the scope of the following claims.

I claim:

1. A tight watch-case crown construction comprising, in combination, a tubeless case having a stem opening in the side of the same, a crown having a tubular screw post of less diameter than said opening and extending freely therethrough, said crown having an inner annular recess about the post, a helical spring located in the recess and surrounding the post, an annular packing sleeve of compressible elastic material in close fitting engagement about the post, the inner surface of the packing sleeve being curved in axial section, a rigid washer arranged between the spring and the packing sleeve and axially movable within the recess of the crown, said sleeve being subjected to the action of the spring which urges it against the center of the watch-case about said stem opening therein and sealing the space between the case and the screw post extending therethrough, and a stop member arranged within the recess of the crown near the edge thereof in order to limit the displacements of the said washer.

2. A tight watch-case crown construction comprising, in combination, a tubeless case having a stem opening in the side of the same, a crown having a tubular screw post of less diameter than said opening and extending freely therethrough, said crown having an inner annular recess about the post, a helical spring located in the recess and surrounding the post, an annular packing sleeve of compressible elastic material in close fitting engagement about the post, a rigid washer arranged between the spring and the packing sleeve and axially movable within the recess of the crown, said sleeve being subjected to the action of the spring which urges it against the center of the watch-case about said stem opening therein and sealing the space between the case and the screw post extending therethrough, and a stop member arranged within the recess of the crown near the edge thereof in order to limit the displacements of the said washer.

3. A tight watch-case crown construction comprising, in combination, a tubeless case having a stem opening in the side of the same, a crown having a tubular screw post of less diameter than said opening and extending freely therethrough, said crown having an inner annular recess about the post, a helical spring located in the recess and surrounding the post, an annular packing sleeve of compressible elastic material in close fitting engagement about the post, the inner surface of the packing sleeve being curved in axial section, and a rigid member arranged between the spring and the packing sleeve and axially movable within the recess of the crown, said sleeve being subjected to the action of the spring which urges it against the center of the watch-case about said stem opening therein and sealing the space between the case and the screw post extending therethrough.

4. A tight watch-case crown construction comprising, in combination, a tubeless case having a stem opening in the side of the same, a crown having a tubular screw post of less diameter than said opening and extending freely therethrough, said crown having an inner annular recess about the post, a helical spring located in the recess and surrounding the post, an annular packing sleeve of compressible elastic material in close fitting engagement about the post, and a rigid member arranged between the spring

and the packing sleeve and axially movable within the recess of the crown, said sleeve being subjected to the action of the spring which urges it against the center of the watch-case about said stem opening therein and sealing the space between the case and the screw post extending therethrough.

5. In a watch-case, a winding crown having a tubular post and an inner annular recess about the post, comprising, in combination, a spring arranged within said recess, a flexible and elastic sealing member springily arranged on the tubular post, this member being subjected to the action of the spring which urges it against the center of the watch-case, a rigid member axially movable within said recess, the spring acting on the sealing member through said rigid member, and a stop member arranged within the recess of the crown near the edge thereof in order to limit the displacements of the rigid member.

6. In a watch-case, a winding crown having a tubular post and an inner annular recess about the post, comprising, in combination, a spring arranged within said recess, and a flexible and elastic sealing member springily arranged on the tubular post, this member being subjected to the action of the spring which urges it against the center of the watch-case, the sealing member being formed by an annular member the inner surface of which is curved in axial section.

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