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WINDING AND HAND-SETTING STEM ARRANGEMENT IN A WATCHCASE

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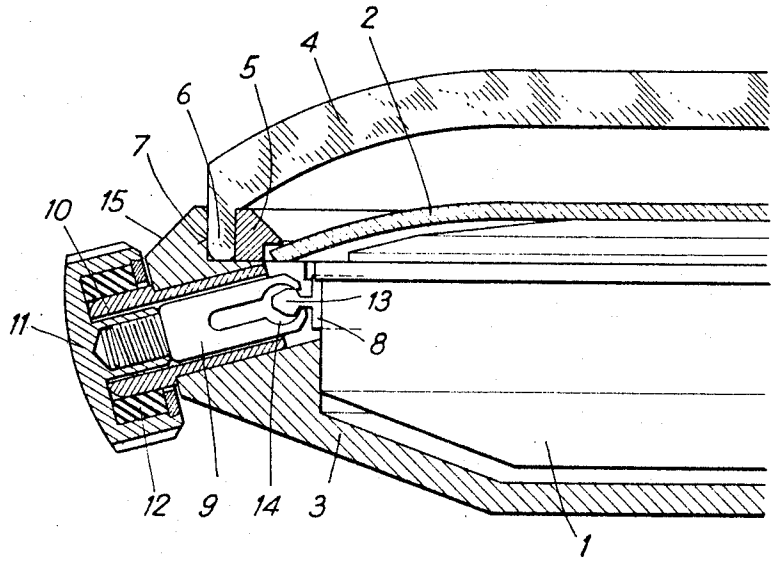


FIG. 1

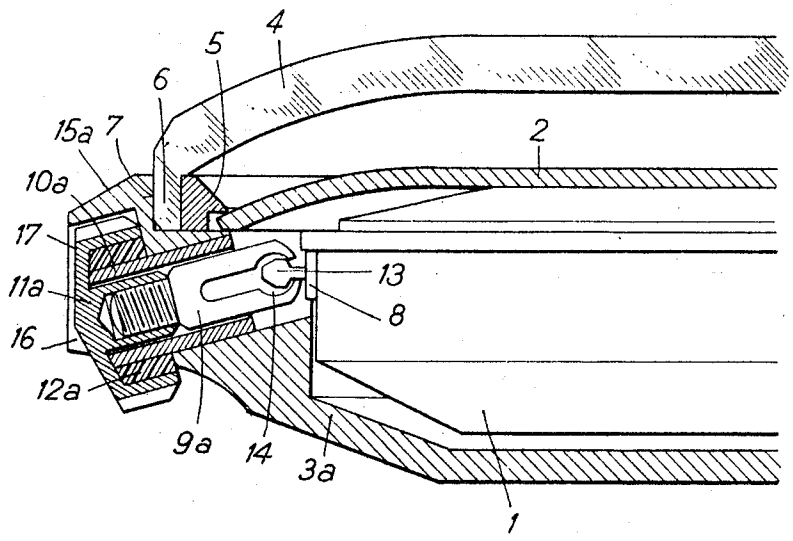


FIG. 2

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WINDING AND HAND-SETTING STEM ARRANGEMENT IN A WATCHCASE

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This invention relates to watches with a winding and hand-setting stem made in two pieces and in particular to watches with such a stem wherein one stem piece is carried by the watch movement and the other stem piece by the watchcase.

The two pieces of the known stems of this type have heretofore been positioned in the watch movement and the watchcase, respectively, so that they were coaxial. Moreover, with the known watches these two stem pieces are usually connected to each other as well known to those skilled in the art by clutching means which can be unclutched by pulling the control crown fixed to the outer stem piece carried by the watchcase, and which can be clutched again by merely pushing this control crown after having positioned the outer stem piece adequately. The two stem pieces have substantially the same diameter. At their adjoining ends these two stem pieces are provided, the one, with a transverse lodging and a slot extending from that lodging to the end of said stem piece in a diametrical plane thereof passing through the axis of said transverse lodging and the other one, with an elongated projection which is perpendicular to the axis of this stem piece and which has sizes corresponding to the transverse lodging of the first stem piece, said projection being connected to the body of the second stem piece by a web.

With the watches which are particularly provided with a self-winding mechanism comprising a winding weight arranged for making complete revolutions around the watch movement, the winding and hand-setting stem is positioned at such a place of the movement that it is nearer to the dial side than to the bridge side thereof. With the known watches comprising a winding and hand-setting stem made in one piece as well as with the known watches wherein this stem comprises two coaxial pieces, this particular arrangement of the stem in the watch movement has as a first consequence that the watchcase manufacturer must either make the watchcase thicker than required by the sizes of the watch movement or use a crown for controlling the stem, which has an exceedingly small diameter, if he will avoid that the crown protrudes above the upper surface of the watchcase.

With watchcases having moreover a metallic section made in one piece and forming thus both the watchcase bottom and the case-band, the glass being removably secured to this metallic section by means of a peripheral glass rim pressed by a strengthening ring against a cylindrical lodging wall of the metallic watchcase section, the particular stem arrangement mentioned above has the additional drawback that the glass peripheral rim cannot deeply extend in the metallic section of the watchcase from the upper inner edge thereof because of the winding and hand-setting stem, so that the watchcase has again to be made thicker than required, in order to provide a wall therein above the stem passage with a sufficient height for retaining the glass satisfactorily.

It is therefore an object of this invention to provide a watch having a watchcase with sizes closely adapted to those of the watch movement while avoiding any increase of these sizes due to the arrangement of the stem in the watch movement.

It is also an object of this invention to provide a watch having a watchcase with sizes closely adapted to those of the watch movement while avoiding any modification of the watch movement as regards the arrangement of the winding and hand-setting stem therein.

A specific object of the invention is to provide a watch with a winding and hand-setting stem made in two pieces in which the stem piece carried by the watchcase is located in an inclined position with respect to a plane perpendicular to the watchcase axis.

Still a more specific object of the invention is to provide a watch with a winding and hand-setting stem made in two pieces whereby the stem piece carried by the watchcase is located in a position having an inclination ranging from 10° to 20° with respect to a plane perpendicular to the watchcase axis.

Still a further object of the invention is to provide a watch with a winding and hand-setting stem made in two pieces in which the two stem pieces are connected to each other by the same means and in the same way as with the known watches in which the two stem pieces are coaxial.

Still further objects of the invention will become apparent in the course of the following description.

Two embodiments of the watch according to the invention are represented diagrammatically and by way of example in the accompanying drawings.

In the drawings:

FIG. 1 is a part diametrical sectional view of the first embodiment, and

FIG. 2 is a similar view of the second embodiment.

The two watches represented in the drawings consist both of round wrist-watches, which are similar to a large extent.

Each comprises a watch movement **1** to which a dial **2** is secured, the watch movement **1** being located in a watchcase comprising a metallic section **3**, **3***a* constituting both the watchcase bottom and the case-band, a glass **4** being removably secured to the metallic section **3**, **3***a* by means of a strengthening ring **55** radially pressing a peripheral glass rim **6** against a cylindrical surface **7** of the metallic section **3**, **3***a*. The strengthening ring **5** simultaneously serves to maintain the watch movement **1** axially in place without metallic watchcase section by bearing on the periphery of dial **2**. Each of the two watches represented in the drawings moreover comprises a winding and hand-setting stem made in two pieces. The first inner stem piece **8** is carried in the usual and well known manner by the watch movement **1** and the second outer stem piece **9**, **9***a* is carried by the metallic section **3**, **3***a* of the watchcase by means of a pipe **10**, **10***a* secured to the metallic watchcase section **3**, **3***a* and of a crown **11**, **11***a* fixed to the stem piece **9**, **9***a* and comprising an annular yieldable gasket **12**, **12***a* tightly encompassing the pipe **10**, **10***a*.

As well known to those skilled in the art with the watches which are particularly provided with a self-winding mechanism including a winding weight capable of carrying out unlimited rotary motions around the watch movement, the location of the winding and hand-setting stem in the movement **1** is positioned nearer to the watch movement face on the dial side than to the watch movement face on the bridge or bottom side. While the location of the winding and hand-setting stem of the watch improved according to the invention is chosen so that the inner stem piece **8** is perpendicular to the watch axis, the pipe **10**, **10***a* is secured to the metallic watchcase section **3**, **3***a* in an inclined position so that the stem piece **9**, **9***a* extending coaxial to and within pipe **10**, **10***a* will also be located in an inclined position with respect to a plane perpendicular to the watch axis.

In spite of the inclined position of stem piece **9**, **9***a*, the two stem pieces are nevertheless clutched to each

other by a male element of stem piece 8 comprising an elongated projection 13 being perpendicular to the axis of piece 8, and a female element provided on piece 9, 9*a* and comprising a transverse lodging 14 perpendicular to the axis of piece 9, 9*a*, as with the known watches wherein the two stem pieces are coaxial. With respect to those known watches the transverse lodging 14 needs only be made with somewhat larger sizes so that projection 13 may be inserted into lodging 14 with a sufficient play. If the inclination of stem piece 9, 9*a* does not exceed 20°, the clutching elements disclosed operate like a universal joint, so that the control crown 11, 11*a* may be actuated without any difficulty.

The inclination of stem piece 9, 9*a* will preferably be chosen so as to range from 10° to 20°. With an inclination of 15° the bottom face of the glass lodging in the metallic watchcase section 3, 3*a* of wrist-watch for men can be arranged on a level located about .02" lower than with the known watches with the same sizes comprising either a winding and hand-setting stem made in one piece or a stem made in two coaxial pieces. The space spared in height for the glass lodging is obviously the more important, the nearer the glass lodging is located to the outer side surface of the metallic watchcase section 3, 3*a*.

In addition to the advantage of the spared place, the inclined position of the stem piece 9, 9*a* has in the first embodiment (FIG. 1), still the advantage that the control crown 11 can be arranged substantially in the middle of the space comprised in height between the uppermost and the lowermost surfaces of the metallic watchcase section 3, thus using this space to the greatest possible extent in order to give the crown 11 a diameter which is substantially larger than that of the crown which should be fixed to an outer stem piece being coaxial to the stem piece 8, if one desired to prevent this crown from protruding above the inclined surface 15 of section 3 to such an extent that the crown would be gripped by foreign bodies and would in particular injure the clothes' arms of the watch owner.

The inclined position of the outer stem piece has an additional advantage which is still more important with watches in which the control crown entirely extends within a lodging of the metallic watchcase section when it is in winding position. The second embodiment (FIG. 2) shows that the lodging 16 for the crown 11*a* can be provided in the metallic watchcase section 3*a* with sufficient sizes in order to receive a crown of a relatively large diameter without interfering with the upper surface 15*a* of section 3*a*. It will be finally observed in FIG. 2 that even the conical outer surface 17 of crown 11*a* does not project out of lodging 16, because of the inclination of stem piece 9*a*. Due to that inclination the watch can thus be provided with a relatively large crown which is nevertheless wholly dissimulated and which can, moreover, easily be actuated. Due to the reduced thickness of the watchcase and the large diameter of the crown, the latter has indeed a relatively large part protruding on the bottom side of the watch, thus facilitating both actuating the crown in winding position and pulling the same into hand-setting position.

Although I have described in detail two embodiments of my invention, various changes in the sizes, shape and arrangement of parts will appear obvious to those skilled in the art within the scope of the appended claims.

I claim:

1. A watch comprising, in combination, a substantially flat watchcase having an axis perpendicular thereto, a watch movement located in said watchcase, a first winding and hand-setting stem piece carried by said watch movement and being perpendicular to the watchcase axis, and a second winding and hand-setting stem piece carried by said watchcase and being connected to said first winding and hand-setting stem piece for transmitting motion thereto upon actuating the second winding and hand-setting stem piece, said second winding and hand-setting stem piece being located in an inclined position with respect to a plane perpendicular to the watchcase axis.

2. A watch comprising, in combination, a substantially flat watchcase having an axis perpendicular thereto, a watch movement located in said watchcase, a first winding and hand-setting stem piece carried by said watch movement and being perpendicular to the watchcase axis, and a second winding and hand-setting stem piece carried by said watchcase and being connected to said first winding and hand-setting stem piece for transmitting motion thereto upon actuating the second winding and hand-setting stem piece, said second winding and hand-setting stem piece being located in a position having an inclination ranging from 10° to 20° with respect to a plane perpendicular to the watchcase axis.

3. A watch comprising, in combination: a substantially flat watchcase having an axis perpendicular thereto and comprising a metallic section forming both the watchcase bottom and a case-band surrounding a watch movement space, and a glass constituting together with said metallic section a closed envelope; a watch movement located in said watch movement space and having a dial side facing said glass and a bridge side facing the watchcase bottom; a first winding and hand-setting stem piece arranged in said watch movement for rotary motion in a position perpendicular to the watchcase axis and being located nearer to the dial side of said watch movement than to the bridge side thereof; and a second winding and hand-setting stem piece having one end removably connected to said first winding and hand-setting stem piece for transmitting motion thereto and extending outwards from said watch movement towards the bottom side thereof in an inclined position with respect to a plane perpendicular to the watchcase axis, said second winding and hand-setting stem piece being mounted for rotary motion on said metallic watchcase section and extending through an opening provided across the case-band thereof.

4. A watch comprising, in combination, a substantially flat watchcase having an axis perpendicular thereto, a watch movement located in said watchcase, a first winding and hand-setting stem piece carried by said watch movement and being perpendicular to the watchcase axis, and a second winding and hand-setting stem piece carried by said watchcase and being located in an inclined position with respect to a plane perpendicular to the watchcase axis, one of said winding and hand-setting stem pieces being provided with a transverse lodging at its end adjoining the other winding and hand-setting stem piece, and said other winding and hand-setting stem piece carrying an elongated transverse projection extending with play within the transverse lodging of said one winding and hand-setting stem piece, thereby connecting both stem pieces to each other for transmitting motion from said second winding and hand-setting stem piece to said first winding and hand-setting stem piece upon actuating said second winding and hand-setting stem piece.

No references cited.

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