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3,199,285

WATCHCASE

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Fig. 1

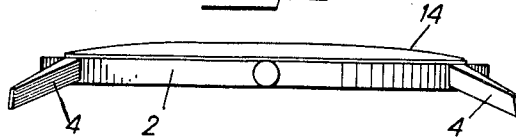


Fig. 2

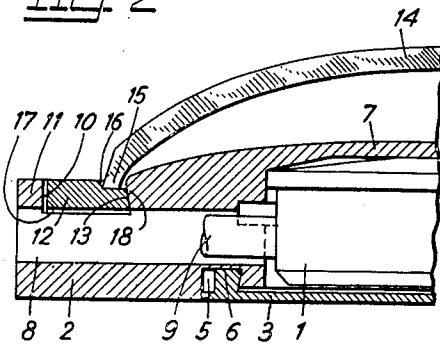


Fig. 3

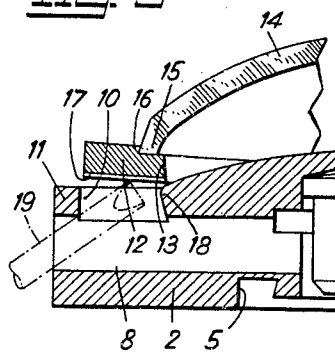


Fig. 5

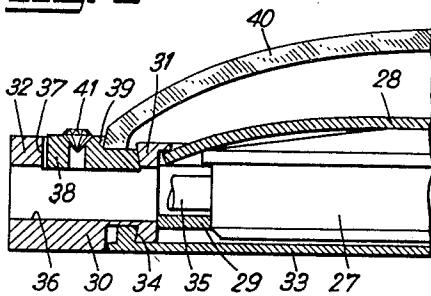


Fig. 4

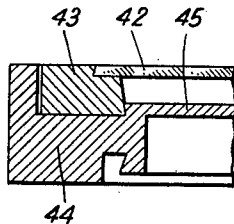
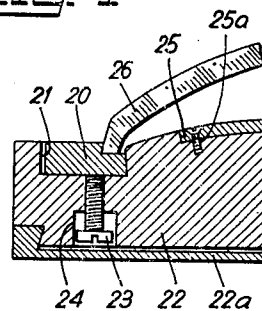


Fig. 6

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WATCHCASE

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This invention relates to watchcases comprising a case-band which surrounds a hollow space arranged for receiving a movement, and a removable bezel carrying a glass.

Watchcases of this type are already known in the art. They are often used with watches, the movement of which is set in place from the upper side. In this case the case-band can for instance be made in one piece with the bottom. It has, however, also been suggested to use such casings with watches in which the dial does not depend on the movement but is directly secured to the case-band. With the watchcases of the last mentioned type, the movement is set in place from the watchcase bottom side before the indicating members have been mounted thereon and these members are set on to their shafts once the movement lies in its casing. The latter can be closed afterwards by setting the bezel in place.

With all the casings of the above mentioned type, which are known in the art, the bezel has at least a part extending above the case-band. The bezel is generally snap-fitted to the case-band and it comprises an outwardly projecting rim which appears to be a part of the case-band upper surface. The bezel can be removed by introducing a thin blade under the outer rim of the bezel.

Furthermore, the case-band height must absolutely have a minimum value which depends, on the one hand, on the watch movement sizes, and, on the other hand, on the fact that the watchcase stiffness must be ensured by the case-band. A bezel extending above the case-band thus necessarily increases the watchcase height beyond the minimum case-band height above mentioned. With casings arranged for receiving flat movements, the provision of a bezel extending above the case-band must thus be considered as a drawback. This is the case in particular with wrist-watches provided with wrist-band attaching lugs, since the case-band thickness has to be chosen great enough at the periphery of the case-band to ensure a rigid connection of the lugs thereto.

It is therefore an object of this invention to remove these drawbacks by providing a watchcase of the type above mentioned, in which the bezel thickness has not to be added to that of the case-band, because the bezel is wholly set within the case-band.

The watchcase according to the invention is characterized in that its case-band comprises a rim extending all around the case band periphery and in that the bezel is located within said rim, the upper surfaces of the bezel and of said rim being at least approximately flush.

The annexed drawing shows, by way of example, four embodiments of the watchcase according to the invention.

FIG. 1 is an elevational view on a reduced scale of a watch provided with the first embodiment;

FIG. 2 is a part axial section of this first embodiment;

FIG. 3 is a section view similar to that of FIG. 2, the bezel being removed from its lodging;

FIG. 4 is a part axial section analogous to that of FIG. 2, but showing the second embodiment;

FIG. 5 is a part axial section analogous to those of FIGS. 2 and 4, showing the third embodiment; and

FIG. 6 is a part axial section analogous to the preceding ones, showing the fourth embodiment.

The watch represented in FIGS. 1 to 3 is a very flat

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wrist-watch. This watch comprises a movement 1 which is located in a casing comprising a circular case-band 2, which surrounds the movement 1 and which is provided with wrist-band attaching lugs 4. A removable bottom 3, snap-fitted to the lower part of case-band 2, closes, on the lower side, the lodging in which the movement 1 is located. This bottom is therefore provided with an engaging sleeve 6 which extends upwards from a bottom portion surrounded by a peripheral flange. The inner side face of sleeve 6, which has a truncated conical shape, engages the inner side wall of an annular groove 5 provided in the lower surface of case-band 2, said inner side wall also having a truncated conical shape. The outer flange of bottom 3 also extends within groove 5, so that the lower surface of the bottom and that of the case-band 2 are flush. A notch (not shown) provided in the outer edge portion of groove 5 permits to remove the bottom 3 from the case-band 2 and to render the movement 1 accessible.

The case-band 2, which constitutes the most rigid part of the watchcase disclosed, is made in one piece with a dial 7. The latter is slightly bulged. Its thickness decreases from the periphery towards the center, so that it has great mechanical resistance. Since the dial is made in one piece with the case-band 2, it gives the watchcase a great stiffness. The dial is provided with a central opening (not shown) to ensure the passage of the shafts of movement 1, which receive the indicating members (not shown) and which project above dial 7. A cylindrical opening 8 provided through case-band 2 in a radial direction serves as passage for a winding and hand setting stem 9 connected to the watch movement 1 in the usual manner.

An annular groove 10 is provided in the upper surface of case-band 2. This groove 10 is surrounded by a rim 11 of case-band 2. It has a substantially rectangular cross-section. Its inner side wall is slightly conical and thus constitutes a retaining portion 13 at the periphery of an annular portion of case-band 2 which extends around dial 7 and carries a part of the horal divisions of the dial.

An annular bezel 12 is located in groove 10. Its cross-section is the same as that of groove 10. Thus the bezel 12 comprises an inner side wall 13, which is slightly conical and which engages the case-band portion 13. A glass lodging 16 is formed in the upper inner edge of bezel 12 and a peripheral rim 15 of glass 14 is located in said lodging. Since the sizes of bezel 12 are the same as those of groove 10, this bezel is wholly located within groove 10, when said bezel has been set in place. In other words, the bezel upper surface is then flush with the upper surface of rim 11. In a modification, the case-band portion retaining bezel 12 could also be provided on rim 11. The bezel 12 can be secured to the case-band 2 in a very easy manner by snap-fitting it into groove 10. It can also easily be removed from groove 10. The latter has indeed such a depth that its bottom portion communicates with opening 8 of the winding stem 9. The bezel 12 lies on the bottom of groove 10. It is, however, provided with a notch 17 corresponding to the sizes of opening 8 and located opposite said opening, so that bezel 12 does not interfere with opening 8. To remove bezel 12, it suffices to introduce a pointed tool such as tweezers' branch or a screw-driver 19 into opening 8 and to lift the bezel 12, as shown in FIG. 3.

Assembling the watch described can be done in the following manner: the movement 1 is first set in place without its indicating members by putting it into case-band 2 from the lower side thereof. Stem 9 is then passed through opening 8 and secured to movement 1 in the usual manner. The bottom 3 is then set into

groove 5. After this operation the indicating members are mounted on their shafts which project above dial 7 through the central opening thereof. Finally, the bezel 12 carrying glass 14, as indicated above, can be set in place. To remove the watch movement from its casing, the operations indicated above are reversed in the following manner: the bottom 3 is first removed in order to enable releasing the winding stem 9. The bezel 12 is then lifted by means of tool 19 (FIG. 3). Upon removing the indicating members, the movement 1 can be taken out of case-band 2.

Instead of having the bottom of groove 10 communicating with opening 8 of the winding stem, it could also, in another embodiment, communicate with another opening, specially provided through case-band 2, in a direction perpendicular to its axis, said opening being normally closed by a screw. The bottom surface of groove 11 could also be broken by an opening extending in parallel to the watchcase axis. The watch represented in FIG. 4 accordingly comprises firstly a casing composed of a case-band 22 and the bezel 20, which carries the glass 26. The bezel 20 extends in its entirety within an annular groove 21 provided in the upper surface of case-band 22. The bezel 20 is secured to case-band 22 by snap-fit. Openings 24, which are provided in an axial direction through a peripheral portion of case-band 22 and extend up to groove 21, permit removing bezel 20. For this purpose the latter needs only be pushed upwards by means of a tweezers' branch introduced into one of the openings 24. The latter are normally closed by screws 23. To remove bezel 20, the screws 23 can also be screwed as far as possible into openings 24. The watch described is provided with a bottom 22a which extends to the outer lower edge of case-band 22 and which thus covers the heads of screws 23. Moreover, the watch comprises a dial 25 which, instead of being made in one piece with the case-band 22, is rigidly secured thereto by screws 25a. The dial could however also be snap-fitted to the case-band. The upper surface of dial 25 is also flush with the upper surface of case-band 22.

Since the bezel described above is entirely located within the case-band, the watchcase has a minimum height. Such a watchcase is therefore particularly convenient for flat watches, every part of which must have a minimum thickness. The case-band can nevertheless be made with a sufficient thickness at its periphery to enable providing for a rigid connection to the lugs 4. The height of lugs 4 can be exactly the same as that of the case-band and no further metallic part needs be provided above the case-band upper surface.

Further embodiments of the watchcase described above are also particularly convenient for fancy or luxury watches. Thus the watch represented in FIG. 5 comprises a golden casing carrying gems. This watch comprises a flat movement 27 which carries a usual dial 28. The movement 27 is carried by a ring 29 secured to the case-band 30 in the usual manner. The latter, which has a square outer shape, comprises, on the one hand, an inner rim 31 which extends above the periphery of dial 28 and serves as axial stop therefore, and, on the other hand, an outer rim 32. Lugs (not shown) are connected to the case-band 30. Their upper surfaces are flush with that of rim 32 and their lower surfaces are on the level of the lower surface of case-band 30, which is planar. A bottom 33 snap-fitted into a groove 34 of case-band 30 also extends on the same level as the lower surface of case-band 30. The movement 27 comprises a winding stem 35 extending through a cylindrical radial opening 36 provided through case-band 30. Rims 31 and 32 form an annular groove 37 similar to groove 10 of the first embodiment described above. A bezel 38 provided with a glass lodging 39 is snap-fitted into groove 37. A glass 40 having a bulged shape is removably fixed in lodging 39. A row of diamonds 41 are set

around the glass 40 into the upper surface of bezel 38. In this embodiment groove 37 has also its bottom face broken by an opening extending from the outer side surface of case-band 30, this opening serving as passage for stem 35.

In still another embodiment the glass, instead of being bulged, could finally also be absolutely flat. Thus the casing represented in FIG. 6 comprises a flat glass 42 secured to a removable bezel 43. The latter is entirely set within the case-band 44, which has a rectangular cross-section. This case-band 44 is made integral with the dial 45 which extends below glass 42 at a distance therefrom great enough to arrange the indicating members (not shown) between the dial 45 and the glass 42. Like with the embodiments disclosed above, the lower surface of bezel 43 can be engaged by means of a pointed tool which has been passed through an opening (not shown) provided in case-band 44. This opening could either be the passage of the winding stem or a tapped opening provided in an axial direction in the case-band and extending up to the lower surface of bezel 43, this opening being normally closed by a screw. In a modification the opening in question could also be provided in the case-band in a radial direction and opens in the bottom of the groove in which the bezel 43 is located. The opening considered could also be normally closed by a screw.

The watch of FIG. 6 has a simple shape and it does not comprise any outwardly projecting portion. Since it consists of gold or of another precious metal, it constitutes a luxury watch having a particularly good aesthetic appearance.

The watch casings described above have a plurality of substantial advantages. Besides the fact that the total height of the metallic watchcase parts is reduced to a minimum and the fact that the height of the wrist-band attaching lugs can be equal to said total height, the bezel is perfectly protected by the outer rim of the case-band. It can also be made very thin without any risk of tearing it away inadvertently.

Moreover, since the case-band weakening caused by the groove in which the bezel is located is overbalanced by the rigid connection of the dial to the case-band, so that the stresses which the case-band is subjected to are also supported at least in part by the dial, the watchcases according to the invention have a mechanical resistance which is sufficient to avoid any deformation thereof. These watchcases can therefore also be made with a height smaller than those of the casings known till now with very flat watches.

Various modifications in the sizes, shape and arrangement of parts will still appear obvious to those skilled in the art within the scope of the appended claims.

We claim:

1. A watchcase comprising a case band arranged for removably receiving a watch movement, and a removable glass carrying bezel snap fitted to said case band, said case band being provided in its upper portion with an annular groove in which the bezel is wholly located, and said bezel having a glass lodging provided in its upper portion, the bottom surface of said glass lodging extending lower than both upper edges of said groove.

2. A watchcase according to claim 1, further comprising at least one opening axially extending through said case band, from the bottom surface of said groove down to the under surface of said case band, and a removable bottom fixed to said case band and covering said opening.

3. A watchcase according to claim 2, said opening being threaded and provided with a screw for removing the bezel from said recess.

4. In a watchcase comprising a case band, a glass carrying bezel snap fitted to said case band and a removable bottom, at least one opening axially extending through said case band from a portion of the upper surface of the case band which lies under the bezel, down

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to a portion of the under surface of the case band which is covered by the bottom.

5. A watchcase according to claim 4, said opening being threaded and provided with a screw, the head of which extends between the bottom and the case band.

6. A watchcase comprising a case-band provided with an inner ring portion arranged for removably receiving a watch movement, a dial having its periphery extending above said inner ring portion of the case-band, a bezel ring removably fixed to said case-band by snap fit and a glass permanently fixed to said bezel ring and covering said dial, said case-band having a peripheral upper rim integral therewith and extending all round the periphery thereof and said bezel being entirely located within said rim and outwardly of said inner ring portion, its upper surface being substantially flush with that of said upper rim.

7. A watchcase according to claim 6, said case-band being further provided with at least one opening extending up to the under surface of said bezel to permit removing thereof for dismounting of the movement and said opening being normally covered by a removable outer member of the case.

8. A watchcase according to claim 7, said outer member of the case being constituted by a bottom removably fixed to said case-band.

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9. A watchcase according to claim 8, said opening being threaded and provided with a screw for removing the bezel.

10. A watchcase according to claim 6, further comprising a bottom removably fixed to the case-band.

11. A watchcase according to claim 10, said dial being made integral with said case-band.

12. A watchcase according to claim 6 comprising wrist band attaching lugs made integral with said case-band each having an upper surface on the level of the upper surface of said rim.

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