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WATER RESISTANT WATCH

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FIG. 1

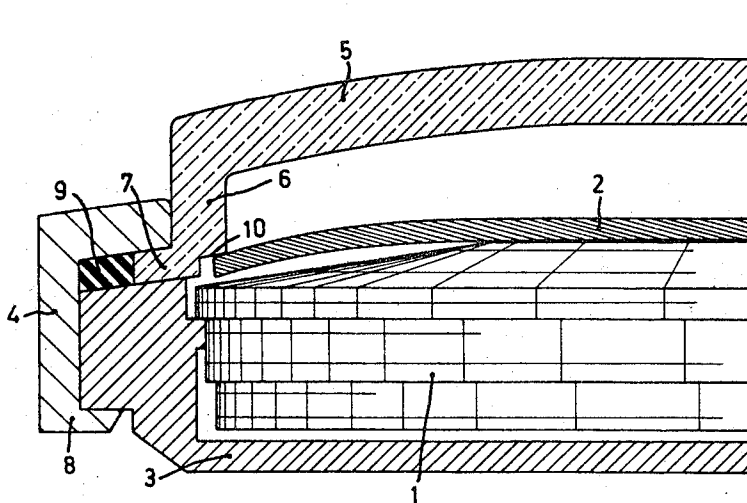


FIG. 2

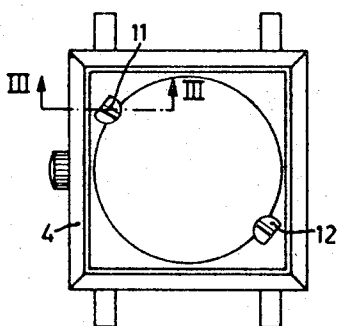
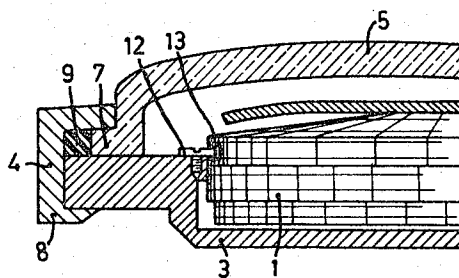


FIG. 3



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WATER RESISTANT WATCH

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9,644/65

4 Claims. (Cl. 58—90)

ABSTRACT OF THE DISCLOSURE

An extra-thin watch made fluid-tight by the incorporation of a fluid-tight packing in a space defined between the upper rim of the middle-bezel and the lateral side thereof, the upper side of the upper surface of the back-calotte and the extremity of the axially extending wall portion of the watch glass. In a modification the previously mentioned arrangement is provided with an adjustable securing device mounted on the back-calotte and projecting inwardly to engage a groove in the watch movement to maintain the same in place.

It has already been proposed to achieve water resistance of watch between the glass and the bezel, by using a joint placed between a frame of engagement and the bezel, these two pieces once assembled, delimiting a housing in which is placed a fluid-tight packing-ring pressed by the heel of the glass. However, in these constructions, the packing-ring is always strongly compressed between the heel of the glass and the middle of the watch case, the pressure exerted risking to cause the deterioration of the packing-ring.

The present invention has for its object an extra-thin fluid-tight watch comprising a back-calotte, a middle-bezel and a glass, assembled hermetically, so that the thickness of the watch be minimal, and its fluid-tight packing-ring does not risk deteriorating.

This watch is characterized by the fact that the glass has a vertical wall terminated by a heel maintained between the back-calotte and the middle-bezel, the water resistance being assured by a packing-ring disposed around the periphery of the said heel, and level with the heel, the compression of this packing-ring being limited axially by the thickness of the heel.

The annexed drawing represents, by way of example, two embodiments of the invention.

FIGURE 1 shows a partial section of a circular water resistant watch;

FIGURE 2 shows a square watch;

FIGURE 3 shows a partial section of the watch according to FIGURE 2.

In FIGURE 1 the movement 1 can be seen, surmounted by the dial 2, the assembly being enclosed hermetically in the envelope constituted by the back-calotte 3, the middle-bezel 4 and the glass 5.

The glass 5 comprises a cylindrical part 6, terminated by a heel 7 maintained between the back-calotte 3 and the middle-bezel 4, the latter being fixed on the back-calotte 3 by a known bayonet type of locking device 8. During its securing, the middle-bezel 4 presses the heel 7 against the edge of the back-calotte. The space formed, delimited by the middle-bezel, the back-calotte and the heel 7, is occupied by a packing-ring of water resistance 9 situated thus at the same level as the heel 7. This fluid-

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tight packing-ring will be submitted to pressures limited by the rigid dimensions of its housing. For it is known that a fluid-tight packing-ring submitted to too great pressures, as is often the case when it must support all the tightening pressure of two pieces before being connected hermetically, deteriorates at the end of a certain time and no longer performs its function of water resistance.

On the other hand, the use of a middle-bezel fixed above the glass by a bayonet device, permits to obtain a heel of a sufficient width to support high tightening pressures.

In this embodiment, the movement is maintained in place by a shoulder 10 of the glass 5 which bears against the edge of the dial 2. The shoulder 10 could be situated higher, so that the dial would penetrate more deeply into the cylindrical part of the glass, the thickness of the watch thus being reduced.

The shoulder represented can be replaced by a rounded housing or simply by a bevel bearing against the edge of the dial.

In another embodiment shown in FIGURES 2 and 3, the case is in the shape of a square. The space left free by the angles of the case permit the movement to be fixed no longer by its dial, but by two screws 11 and 12 whose heads in the shape of a half moon are introduced by an unscrewing movement into a groove 13 formed in the edge of the movement and having a slightly inclined plane. In this way, the dial can be engaged more deeply under the glass, further reducing the total thickness of the watch.

This way of securing the movement can be also used for a circular case, but the absence of dead angles necessitates an increase of the diameter of the watch. Instead of a screw having a half moon head, it can be advantageous to use another eccentric element, for example an element not having a thread.

I claim:

1. In an extra-thin watch, a movement, a back-calotte, a middle-bezel and a glass assembled in water-tight relation, said glass having a horizontally projecting heel of a given thickness and length; said back-calotte having a horizontal periphery with an upper and a lower surface; said middle-bezel having upper and lower rims projecting inwardly towards said glass; the lower side of said lower surface of said back-calotte fitting against the upper side of said lower rim of said middle-bezel and the side wall thereof, thereby providing a space between the upper side of said upper surface of said back-calotte and the underside of said upper rim of said middle-bezel of a thickness such as to receive said heel for the major part of the length thereof, thereby leaving a rigid second space defined by the extremity of said heel, said underside of said upper rim, said lateral side thereof and said upper side of said upper surface of said back-calotte; and a fluid-tight packing in said second space, the pressures exerted on said packing being limited by the rigid dimensions of said second space.

2. Watch according to claim 1, wherein said glass has a peripheral flange for receiving the edge of a dial, fitting against the upper side of said movement.

3. Shaped watch according to claim 1, wherein said movement has a groove with an inclined plane in the edge thereof and an adjustable securing device mounted on said back-calotte and projecting inwardly to engage said groove in said movement to maintain the same in place.

4. Watch according to claim 3, wherein said device

comprises a pair of screws mounted diametrically opposite one another in said back-calotte, said screws having heads with a straight portion fitting in said groove of said movement.

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