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D. J. HEILMAN

2,256,200

WATCHCASE

Filed July 28, 1939

Fig. 1.

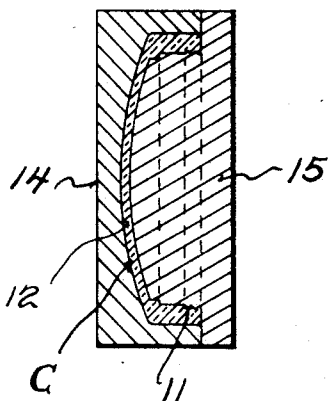


Fig. 2.

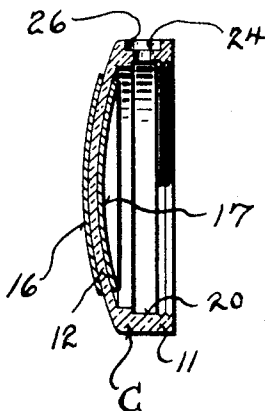


Fig. 4.

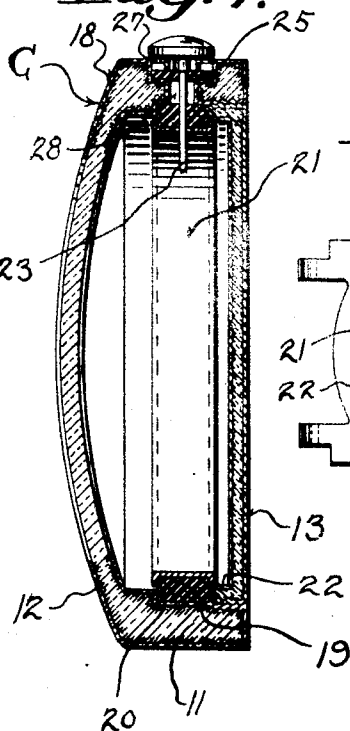


Fig. 3.

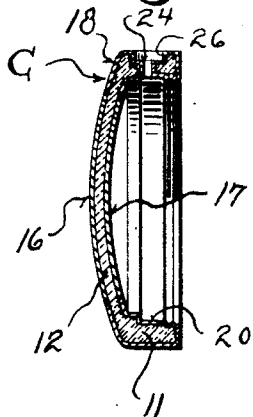


Fig. 5.

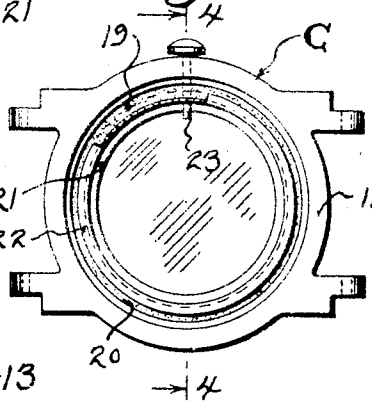
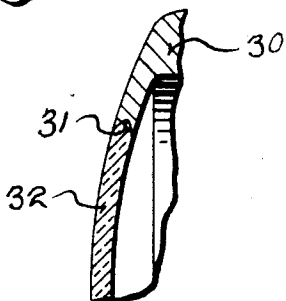


Fig. 6.



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UNITED STATES PATENT OFFICE

2,256,200

WATCHCASE

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3 Claims. (Cl. 58—90)

This invention appertains to watch cases, and more particularly to a novel watch case formed from plastic material, and to a novel method of making the same.

One of the primary objects of my invention is to provide a watch case having its transparent face or crystal formed integral with the case, whereby to form a water-proof watch case of an inexpensive character having an attractive and neat appearance.

Another salient object of my invention is to provide an improved plastic watch case having a transparent face or crystal and a colored opaque or semi-translucent body.

A further object of my invention is the provision of a novel method of constructing the watch case, which consists in moulding the case and crystal together from transparent, plastic material, and then placing a mask over the face or crystal portion of the case, and finally coating the case with a solvent coloring material for impregnating the body of the case around the mask.

A further important object of my invention is to provide novel means for mounting the works in the case, whereby to provide a watch having water-proof and shock-proof qualities.

A still further object of my invention is the provision of novel means for mounting the stem in the watch so that leakage of water around the stem will be prevented, and so that the stem will have movement independent of the case to permit the stem to move with the works in case of shock.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawing, in which drawing:

Figure 1 is a detail, sectional view illustrating the initial step of forming the watch case.

Figure 2 is a detail, sectional view through the partially completed watch case showing the masks placed on the crystal portion of the case.

Figure 3 is a view similar to Figure 2 and showing another step in the formation of the case, the step being the impregnating of the plastic body of the case with a solvent coloring material.

Figure 4 is an enlarged, diagrammatic section through a completed watch case, showing the stem incorporated therewith and the works-supporting ring disposed therein, the view also illustrating the back of the case in its closed position.

Figure 5 is a rear, elevational view of the watch

case with the cover or back removed, the view being on the same scale as Figure 3.

Figure 6 is an enlarged, fragmentary, detail, sectional view illustrating a modified form of the invention.

Referring to the drawing in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter C generally indicates my novel watch case, and, in accordance with my invention, the same is formed from transparent, plastic material and is moulded into the proper shape.

The case includes the integral annular side wall 11 and the integral front wall 12. The back of the case is closed by a cover plate 13, and this cover plate 13 can have a friction fit with the side wall, or the same can be threaded into the side wall, as shown. The back wall or cover 13 is also formed of die-cast, transparent, plastic material.

In order to form my case, I utilize the following method:

The transparent plastic material is pressed or die-cast into shape by means of members 14 and 15, which can be of any desired character. After the body of the watch case is formed with the integral front and side wall, the front and rear faces of the front wall 12 are covered by masks 16 and 17. These masks 16 and 17 can be formed from paper or any other desired material, and the same occupy the area generally occupied by the crystal of a watch case.

The watch case body C is now coated with a colored, translucent or opaque material 18 containing a solvent for the plastic, and, thus, this colored material will slightly impregnate the plastic material. This insures a permanent finish. Obviously, when the masks 16 and 17 are removed, the face of the case is transparent.

If so desired, only the mask 16 can be utilized, and in this instance only the outer surface of the watch case is treated with the coloring matter. The cover 13 is moulded or cast into shape, and the same is also treated with the coloring material.

From the description so far, it can be seen that I have provided a watch case body having an opaque rim portion and an integral, transparent face.

One of the important features of my invention is the provision of novel means for mounting the works within the case, whereby the watch will be substantially shock-proof. Thus, I provide an annular synthetic rubber cushioning ring 19. This ring 19 is fitted snugly against the inner wall of the body of the watch case, and, if de-

sired, the watch case can be provided with an annular shoulder 20, against which the rubber ring can be fitted. This rubber ring 19 carries a metal ring 21 for supporting the watch works. Thus, an effective cushion is provided for the watch works.

It is also proposed to make the watch case water-proof, and, hence, the cover 13 is fitted snugly into the body of the case and is provided with an annular rib 22 for engaging against the cushion band 19, so as to form a water-tight seal therewith.

The stem 23 is also mounted in the body in a novel manner, and the stem is so arranged as to have movement independent of the case, and, thus, the stem can move with the works when the rubber cushion band 19 is compressed. The stem 23 extends through the cushion band 19, and, hence, the stem has a water-proof contact therewith, and it is to be noted that the band also closes the opening 24 through which the stem extends. The stem also extends snugly through a synthetic rubber disc 25, which is fitted tight on a shoulder 26 formed in the bore or opening 24. The disc 25 is held in place by a plastic ring 27 of an L-shape in cross section for encompassing the disc and the ring 27 can be fused to the case by the employment of heat or a suitable solvent.

The space between the cushion rubber band 19 and the synthetic rubber disc 25 can be packed with a congealed lubricant 28, so as to further prevent the seeping of moisture into the watch case along the stem.

In Figure 6 I have shown a modified form of my watch case, and in this form a plastic body 30 is provided, having a bezel 31 formed therein for the reception of a transparent face or crystal

32. The watch face 32 is formed from plastic material, as is the body of the case, and, thus, the transparent plastic face can be integrally connected with the case 30, or heat can be utilized for fusing the face 32 with the case 30.

Other changes in details can be made without departing from the spirit or the scope of my invention, but what I claim as new is:

1. A watch case having an opening therein, a cover, an annular cushioning ring disposed in the case and passing over the opening, the cover having an annular shoulder for engaging the ring to form a seal therewith, and a ring for carrying the watch works mounted within the cushioning ring.

2. A watch case comprising, a body having an opening therein for the stem, a rubber cushioning ring fitted in the case for passing over the opening, a stem extending through the opening and the ring, a rubber sealing disc fitted in the opening against a shoulder formed in said opening, the stem extending through the disc, a plastic sealing ring fitted against the disc and connected with the body, the stem being mounted for free movement in the opening, and a congealed lubricant disposed between the cushion ring and the disc.

3. A watch case formed from plastic material having a body and an integral transparent face, a cushion rubber ring fitted in said body, a works-carrying ring connected with the rubber cushion ring, a removable cover for the case having an annular shoulder for sealing contact with the cushioning ring, a stem extending into the case, and means for preventing the seeping of moisture around the stem.

DONOVAN J. HEILMAN.