Dec. 1, 1953

L. R. BURGHOFF

2,660,857

CASE FOR TIMEPIECES AND THE LIKE

Filed Aug. 21, 1951

Fig. 2.

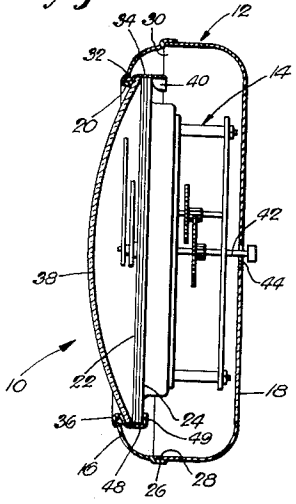


Fig. 3.

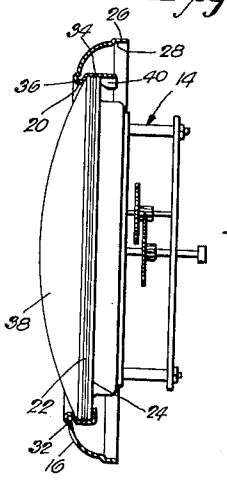


Fig. 1.

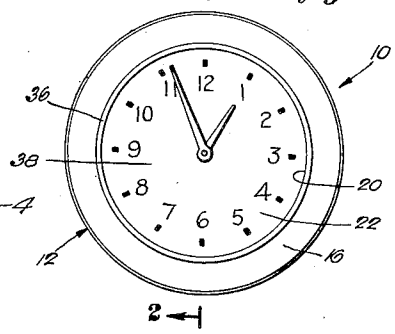


Fig. 5.

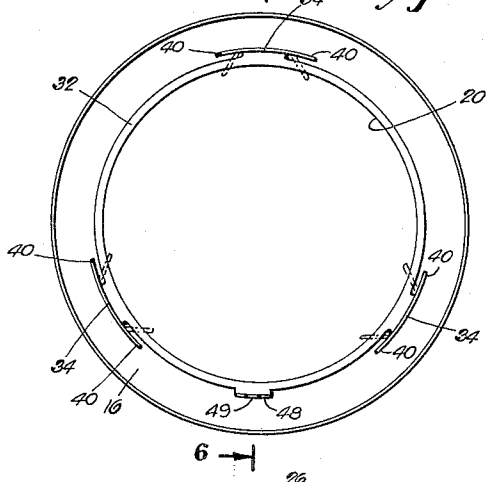


Fig. 4.

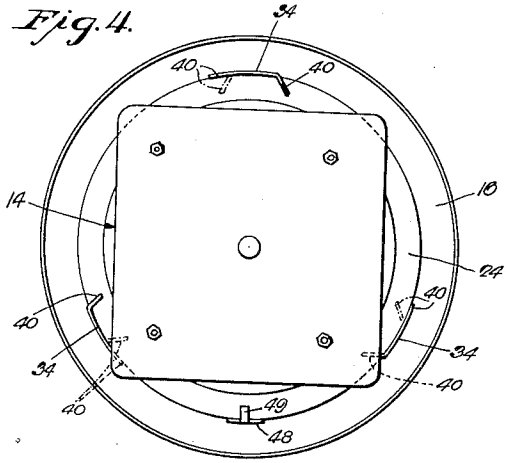


Fig. 7.

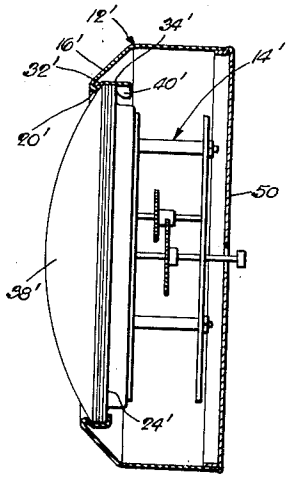
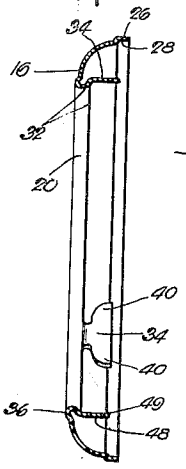


Fig. 6.



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CASE FOR TIMEPIECES AND THE LIKE

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Application August 21, 1951, Serial No. 242,894

5 Claims. (Cl. 58—53)

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This invention relates generally to dial-instruments, and more particularly to timepieces.

It is an important object of the present invention to construct a case for a timepiece, and to make provisions thereon for mounting a movement therein, so that the timepiece is less apt to be disturbed in its performance, or damaged by shock or vibration, than previous timepieces.

It is another object of the present invention to provide the front face of the case of a timepiece with an inwardly-spaced dial-aperture of which the surrounding border serves for the sole support of the entire movement, whereby the movement is isolated from the surrounding case, except near the dial-aperture thereof, so that the case will act as a shock-absorber and assimilate to a maximum extent whatever shock or vibrational forces it may be subjected to before the remainder of these disturbing forces is transmitted to the movement.

Another object of the present invention is to shape the apertured front face of the case so as to lend pronounced spring-characteristics to the same, thereby to enhance the shock and vibration-proof characteristics of the timepiece.

A further object of the present invention is to fold back the front face of the case at the aperture thereof into the form of an interior endless flange and to continue the formation of the same into a recessed seat of which the latter serves for the quick central location of the movement, in its installation, relative to the dial-aperture and the entire case as well, while the flange forms around the dial-aperture a border which is devoid of any sharp edges and pleasantly offsets the customary dial-covering crystal that may conviently be located in the recessed seat also.

It is another object of the present invention to use the interior flange at the dial-aperture of the case as the bottom of the aforementioned recessed seat for the movement, while the remainder of the recessed seat is formed by angularly-spaced rearwardly projecting lug extensions on the flange which after location of the movement on the seat are simply and conveniently bent into interlocking relation with the movement for securely mounting the latter on its seat.

It is a further object of the present invention to form each of the lug extensions on the interior flange of the case with oppositely projecting cam-shaped wings of which one wing of each lug extension may simply be bent inwardly in order securely to wedge the located movement to its seat in a shock and vibration resistant fashion,

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while the other wing of each lug extension may be held in reserve for future use if the companion wing on the same lug-extension should break off in the course of initially mounting the movement, or removing the movement for repair or any other purpose and remounting it in the case.

A further object of the present invention is to construct the above-featured front face of a case for a timepiece in the form of a separate bezel with which the movement may be preassembled in a facile and expeditious manner before the bezel is readily assembled with the open front end of a case of any desired shape without any regard to the mounted movement.

Another object, alternative to the object just mentioned, is to form the featured front face of a case for a timepiece integrally with an open-back case, so that the latter may, after facile installation of the movement therein, be closed by a simple back-cover.

Still another object of the present invention is to provide at the aforementioned seat in the front of a case for a timepiece a locating element with which the movement may, in the course of its installation, be readily oriented for its accurate angular location in the case.

Other objects and advantages will appear to those skilled in the art from the following, considered in conjunction with the accompanying drawings.

In the accompanying drawings, in which certain modes of carrying out the present invention are shown for illustrative purposes:

Fig. 1 is a front elevational view of a timepiece having a case which embodies the present invention;

Fig. 2 is an enlarged section taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view, partly in elevation, of a certain pre-assembled unit of the timepiece;

Fig. 4 is an end-elevation of the pre-assembled unit of the timepiece as viewed in the direction of the arrow 4 in Fig. 3;

Fig. 5 is a rear-elevational view of a prominent part of the case of the timepiece shown in Fig 2;

Fig. 6 is a section taken on the line 6—6 of Fig. 5; and

Fig. 7 is a sectional view, partly in elevation, of a timepiece having a case which embodies the present invention in a modified manner.

Referring to the drawings, and more particularly to Figs. 1 and 2 thereof, the reference numeral 10 designates a timepiece which comprises a case 12 and a conventional time movement 14 therein. The case 12 is, in the present instance,

formed by a bezel 16 and a back cover 18 of which the former forms the front-wall, and the latter forms the side and back-walls, respectfully, of the case.

The ring-shaped bezel 16 which may be made of sheet metal or any other suitable slightly resilient material, is provided with an aperture 20 for the exposure of a time dial 22 which is carried by the movement 14 in close proximity to the front or mounting plate 24 thereof. A peripheral portion 26 of the bezel 16 may be offset outwardly to form a recess 28 for the fitted reception of the open end 30 of the back cover 18 which may be made of a similar material as the bezel 16 and formed into the general cup-shape shown in Fig. 2.

An inner marginal portion of the bezel 16 which surrounds and extends to the dial-aperture 20 is turned or folded back to form an annular flange 32 which is provided with several, in this instance three, equi-angularly spaced integral lugs 34 (Figs. 2, 5 and 6). The return bend in the bezel 16 at the dial-aperture 20 thereof may be such as to form around the latter an endless bead-like protrusion 36 (Figs. 1 and 2).

As shown in Fig. 2, a peripheral margin of a crystal 38, the time-dial 22 and the front-plate 24 of the movement 14 are seated on the interior flange 32 of the bezel 16, and are located thereon by and between the rearwardly extending lugs 34 on the flange 32 (Fig. 4). The crystal 38, time-dial 22 and movement-plate 24 are firmly secured to the bezel-flange 32 by inwardly bent wing-portions 40 of the lugs 34 (Figs. 2 and 4).

The movement 14 with the time-dial 22 and the crystal 38 are thus mounted solely on the bezel 16, and more particularly on the interior flange 32 immediately surrounding the dial-aperture 20 thereof, so that the movement 14 is spaced from any external wall of the case 12. Any shaft or shafts for control or operating knobs of the movement, such as the shaft 42, for instance, may extend with considerable clearance through apertures in the back cover 18 of the case, such as the aperture 44, for instance.

By virtue of the mounting of the movement 14 on the inturned bezel flange 32 in spaced relation with any external wall of the case 12, the latter acts as an effective shock absorber which will assimilate to a considerable extent any shock or vibrational forces it may be subjected to before the remainder, if any, of these disturbing forces is transmitted to the movement 14. The shock and vibration-absorbing properties of the instant case 12 are enhanced by the cross-sectionally curved shape of the bezel 16 which lends it distinct spring characteristics, and also by the bead-like protrusion 36 around the dial-aperture 20 which adds to the spring characteristics of the bezel. Moreover, the lugs 34 and inwardly-bent wing portions 40 thereof have spring characteristics which even further enhance the shock- and vibration-absorbing properties of the case 12.

Aside from achieving the important objective of rendering the timepiece 10 exceedingly shock and vibration-proof by the specific construction of the case 12, including the bezel 16, and the specified mounting of the movement in the case, the formation of the bezel 16 as a separated part permits the most facile pre-assembly of the latter with the movement 14. Thus, the rearwardly extending lugs 34 on the bezel flange 32 serve for the quick and accurate location on the latter of the crystal 38 and the front movement-plate 24, whereupon the same are firmly secured in place on simply bending one of the wing-portions 40 of each lug 34 inwardly in the fashion shown in Figs. 3 and 4. The wing-portions 40 on each lug 34 are, in the present instance, cam- or wedge-shaped so that they will, when bent inwardly as described, securely clamp the movement-plate 24 and the crystal 38 to the bezel flange 32. To facilitate the correct angular alignment of the movement 14 with the bezel 16 in the course of its installation therein, the latter is provided at its internal flange 32 with a preferably integral locating finger or element 48 (Figs. 2 to 5) with which a distinguishing mark on the time dial 22, such as the hour indicium "6," for instance, may be aligned. After mounting the movement 14 in the bezel 16 as previously described, the end 49 of the locating element 48 may be bent into firm engagement with the movement-plate 24 (Fig. 3). While only one wing-portion 40 on each lug 34 is sufficient for the purpose of firmly securing the movement 14 to the bezel 16, as previously explained, two wing-portions are preferably provided on each lug so that one wing-portion thereof may be held in reserve for future use if the companion wing-portion on the same lug should break off in the course of initially mounting the movement, or removing the movement for repair or any other purpose and remounting it in the bezel. After mounting the movement 14 and crystal 38 on the bezel 16 as described, the unit thus pre-assembled may in an equally facile manner be assembled with the back cover 18 without any regard whatever to the mounted movement.

Reference is now had to Fig. 7, in which there is shown a modified embodiment of the present invention in the form of a case 12' which is open at its back-end and has an integral bezel portion 16' that embodies all structural features of the previously described bezel 16. Thus, the bezel portion 16' of the case 12' is of frusto-conical shape to lend it distinct spring characteristics, and is also provided at its dial-aperture 20' with an inwardly turned annular flange 32' which serves as a seat for the crystal 38' and the front plate 24' of the movement 14'. The interior flange 32' of the bezel portion 16' of the case 12' is also provided with several, preferably three, equi-angular spaced integral lugs 34' which serve for the quick and accurate location of the superposed parts 38' and 24' on the flange 32', while the inwardly bent wing-portions 40' of the respective lugs 34' securely hold these parts on the flange 32'. To close the instant case 12', any suitable cover plate 50 is applied to the open back-end thereof.

The invention may be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. A timepiece, comprising a case having outer back, side and front walls of slightly resilient material of which said front-wall is provided with a dial-aperture spaced inwardly from said side-wall, and a wall extension integral with said front-wall and surrounding said dial-aperture and being at the latter folded back into the case in spaced relation with said front-wall to form in said case an endless flange extending

from said dial aperture toward said side wall; a movement; and means solely mounting said movement in said case on said flange therein so that said movement is spaced from any of said outer walls.

2. A timepiece as set forth in claim 1, in which said mounting means comprise spaced lugs integral with and projecting rearwardly from said flange and being in interlocked relation with said movement.

3. A pre-assembled unit of a timepiece, comprising a bezel of slightly resilient material adapted for attachment with its circumference to an open-front case of a timepiece and being provided with a front wall having a dial-aperture spaced inwardly from the bezel's circumference, and a wall extension integral with said front wall and surrounding said dial-aperture and being folded back at the latter to form an endless flange spaced from said front-wall and extending from said dial aperture toward the bezel's circumference; a movement; and means mounting said movement on said flange.

4. As an article of manufacture, a bezel of slightly resilient material adapted for attachment with its circumference to an open-front case of a timepiece and being provided with a front-wall having a dial-aperture spaced inwardly from said circumference, and a wall extension integral with said front-wall and surrounding said dial-aperture and being folded back at the latter to form an endless flange

spaced from said front-wall and extending from said dial aperture toward the bezel's circumference, said flange being adapted to serve as a seat for a movement.

5. As an article of manufacture, a single-piece open-back case for a timepiece, said case having side and front walls of slightly resilient material of which said front-wall is provided with a dial-aperture spaced inwardly from said side-wall, and a wall extension integral with said front-wall and surrounding said dial-aperture and being at the latter folded back into the case in spaced relation with said front-wall to form in said case an endless flange extending from said dial aperture toward said side wall, said flange being adapted to serve as a seat for a movement.

LOUIS R. BURGHOFF.

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