Nov. 7, 1939. P. H. ENGLISH 2,178,957

CASE CONSTRUCTION FOR TIMEPIECES

Filed June 21, 1938 2 Sheets-Sheet 1

Fig. 1.

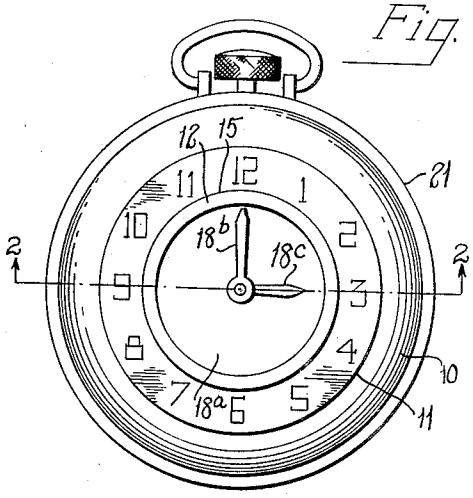


Fig. 3.

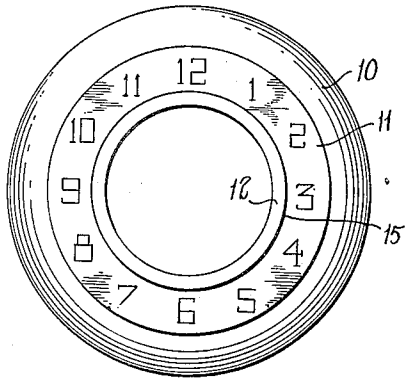


Fig. 2.

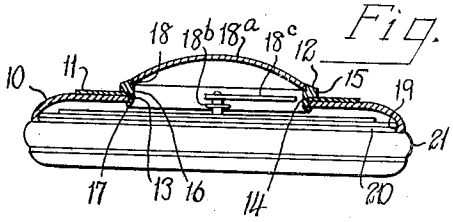


Fig. 4.

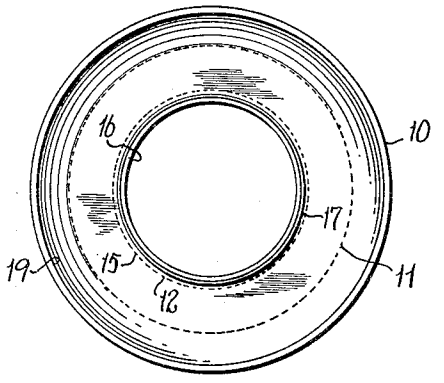


Fig. 5.

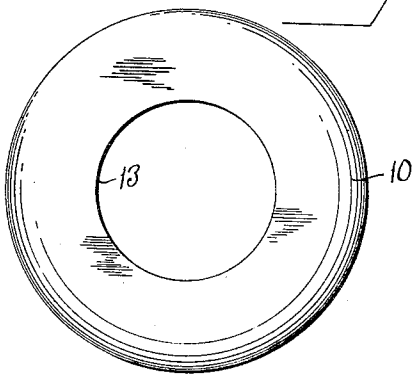


Fig. 6.

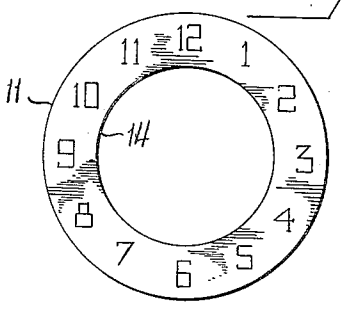
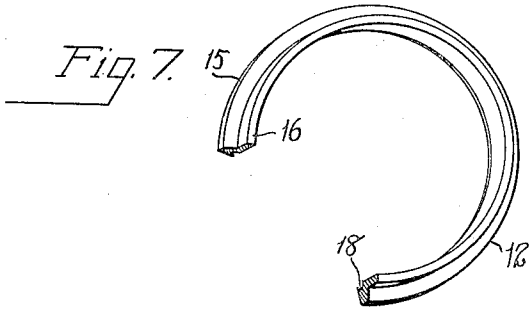


Fig. 7.



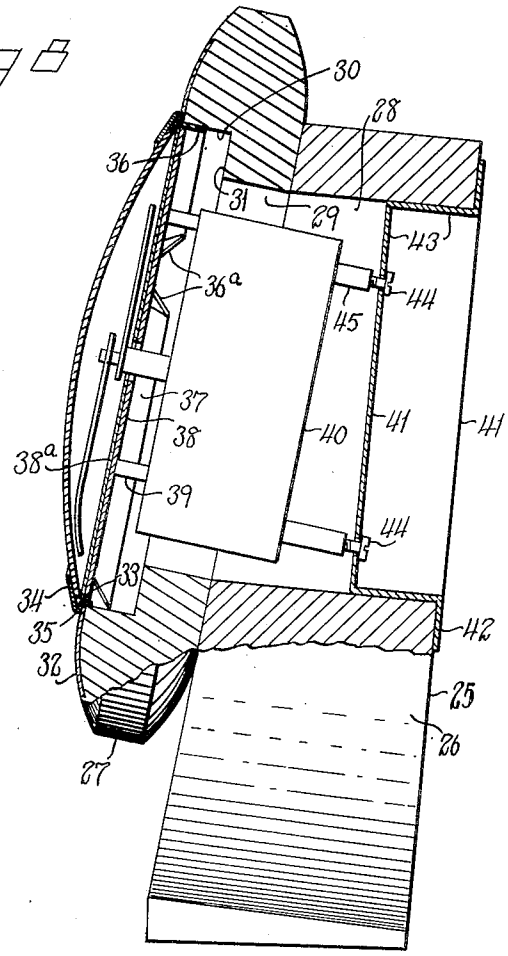
Inventor
By Philip H. English
Seymour Earle Nichols
Attorneys

Nov. 7, 1939. P. H. ENGLISH 2,178,957

CASE CONSTRUCTION FOR TIMEPIECES

Filed June 21, 1938 2 Sheets-Sheet 2

Fig 8



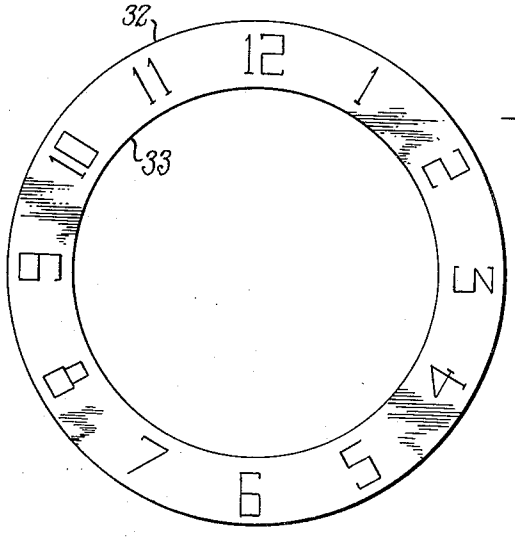


Fig 9

Inventor
By Philip H. English
Seymour Earle Nichols.
Attorneys

Patented Nov. 7, 1939

2,178,957

UNITED STATES PATENT OFFICE

2,178,957

CASE CONSTRUCTION FOR TIMEPIECES

Philip H. English, New Haven, Conn., assignor to The New Haven Clock Company, New Haven, Conn., a corporation of Connecticut

Application June 21, 1938, Serial No. 214,870

5 Claims. (Cl. 58—127)

This invention relates to an improved case construction for measuring-instruments, and is more especially directed to an improved case construction for timepieces, such as clocks and watches.

The invention has for its primary object the provision for a measuring-instrument, such as a watch, clock, or the like, which often undergoes frequent handling, of a front-case assembly which is secure and of superior stability and which will not readily become dislodged or damaged in use.

Another object of the present invention is to provide a front-case assembly comprising a front-case member, a decorative-ring and a bezel-ring, and to also provide means acting through the bezel-ring for securely clamping the decorative-ring in its assembled position and effectively preventing its movement with respect to cooperating indicating-members of a precision instrument.

A further object of the present invention is to provide a superior case construction wherein an exterior decorative- or dial-ring is provided at low cost, and which adds to the attractiveness of the assembly.

Other objects and advantages secured by this invention include the provision of a front-case assembly which comprises but few parts of simple construction which are adapted to easy and secure assembly, and which thereby bring about economies in material, labor and costs.

With the above and other objects in view, as will appear to those skilled in the art from the present disclosure, this invention includes all features in the said disclosure which are novel over the prior art.

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

Fig. 1 is a view in front elevation of a watch embodying a case construction according to the present invention;

Fig. 2 is a view thereof showing the front-case plate, bezel-ring, and dial-ring in section on the line 2—2 of Fig. 1, and showing the remainder of the watch in edge elevation;

Fig. 3 is a front-face view of the front-case-plate assembly;

Fig. 4 is a rear-face view of the assembly of Fig. 3;

Fig. 5 is a front-face view of the front-case plate, detached;

Fig. 6 is a similar view of the dial-ring;

Fig. 7 is a perspective view, mainly from the rear, of the bezel-ring;

Fig. 8 is a view, partly in side elevation and partly in vertical central section of a clock-assembly illustrating another form of the present invention; and

Fig. 9 is a front-face view of the so-called "dial-ring" of the structure of Fig. 8.

The novel features of the present invention reside mainly in the relationship between a bezel-ring, a decorative-ring which for convenience of description will be hereinafter referred to as a "dial-ring," and a case-element which carries both the said bezel-ring and the said dial-ring.

The particular watch-structure herein chosen for the purpose of illustrating one form of the present invention, and as shown in Figs. 1 to 7 inclusive, includes a front-case plate 10, a dial-ring 11 and a bezel-ring 12.

As shown, the front-case plate 10 is provided with a central aperture 13 and the dial-ring 11, which is to be located against the forward face of the front-case plate 10, is also provided with a central aperture 14 arranged to register with the central aperture 13 of the said case-plate. The said apertures 13 and 14 receive a flange of the bezel-ring 12 now about to be described.

The bezel-ring 12 is formed at its forward or outer end with an outwardly-extending annular clamping-flange 15 for overlying a portion of the front face of the dial-ring 11 and with a rearwardly-extending locating-flange 16 which passes rearwardly through the apertures 13 and 14 in the front case-plate 10 and the dial-ring 11 respectively.

In accordance with the invention, means are provided which act through the bezel-ring 12 to draw the clamping-flange 15 rearwardly to clamp the dial-ring 11 between the rear face of the said clamping-flange and the front face of the front-case plate 10. For this purpose, in the embodiment of the invention now being described, the rear end of the locating-flange 16 of the bezel-ring 12 merges into an outwardly-flared annular anchoring-terminal 17 which bears in part against the rear face of the front-case plate 10 around the aperture 14 therein and acts to draw the clamping-flange 15 rearwardly to securely clamp the dial-ring 11 against the front face of the front case-plate 10.

As shown, the locating-flange 16 of the bezel-ring 12 passes through the apertures 13 and 14 and serves as a centering-means for centering the dial-plate 11 on the front-case plate 10 with their respective apertures 14 and 13 in registering relation. The clamping-flange 15 engages a portion of the front face of the dial-plate 11 around the aperture 14 therein, and the anchor-

ing-terminal 17, engaging the rear face of the front case-plate 10 about the aperture 13 therein, acts through the bezel-ring 12 to draw the clamping-flange 15 thereof tightly against the dial-plate 11 to securely clamp the latter in position on the front-case plate 10.

As shown, the clamping-flange 15 of the bezel-ring 12 is provided just inside of its front face with an undercut circumferential groove 18 in which is seated a crystal 18a or other suitable transparent member and through which indicating-hands 18b and 18c may be viewed.

By referring to Figs. 1 and 2, in which merely by way of example the above elements are shown assembled and forming part of the case structure of a watch, desirable features of the described arrangement will become apparent.

As illustrated, the front-case plate 10 is provided in its rear face adjacent its edge with a retaining-shoulder 19 which may be snapped over an annular plate-retaining shoulder 20 formed on a center case-band 21 of the watch-case structure.

Thus, there is provided a securely anchored and stable case construction, the parts of which are few in number and are of simple construction, and which will not become dislodged in use, and which provides for effectively restraining relative movements between the parts.

Figs. 8 and 9 illustrate another mode by which the object of drawing a clamping-flange of a bezel-ring tightly against a dial-ring is secured. Here, and again merely for purposes of illustration, the invention is shown carried out in a case-construction of a clock.

In the arrangement shown in Fig. 8, now to be described, the clock-case is generally designated by the reference character 25 and comprises a body-portion 26 and a front-case member 27 rigidly glued or otherwise secured to the front of the said body-portion 26.

Extending through the upper part of the body-portion 26 is a central passage 28 which registers with a central passage 29 in the front-case member 27 and both of which passages are for the purpose of receiving a timepiece-unit of any suitable type. The front portion of the passage 29 in the front-case member 27 is enlarged as at 30 for the accommodation of a locating-flange to be later described, and results in the formation of an annular shoulder 31 about midway of the depth of the said front-case member.

The forward face of the front-case member 27 has located thereagainst a dial-ring 32 which has a central aperture 33 registering with the enlargement 30 in the passage 29 in said front-case member. The said dial-ring may have hour numerals or decorative features upon its front face, as may be desired.

For the purpose of centering and securely supporting the dial-ring 32 against the forward face of the front-case member 27, a bezel-ring 34 is provided. As in the arrangement previously described, the bezel-ring 34 is formed with an outwardly-extending clamping-flange 35 which engages with a portion of the front face of the dial-ring 32 around the aperture 33 therein, and which is adapted to be brought into clamping relation with the said dial-ring. A locating-flange 36 extends rearwardly from the clamping-flange 35 through the aperture 33 in the dial-ring 32 and into the enlargement 30 of the passage 29 in the case-member 27 and serves as means for centering the dial-ring 32 on the said case-member.

Means are provided whereby the clamping-flange 35 of the bezel-ring 34 is drawn rearwardly to securely clamp the dial-ring 32 against the front face of the front-case member 27.

As shown, there is confined in the opening 37 in the bezel-ring 34, a supporting-plate 38 carrying a dial-disk 38a and suitably secured to the locating-flange 36 of the said bezel-ring, as for instance, by inwardly-bending portions 36a of the said locating-flange. Connected to the supporting plate 38 by means of studs 39 is a timepiece-unit 40 which is located in the openings 28 and 29 of the body-portion 26 and case-member 27 and which may be of any approved type not requiring detailed description herein. At the rear of the body-portion 26, a cup-like supporting-member 41 is mounted. The said supporting-member comprises a flange-portion 42 which engages the back of the body-portion 26 about the opening 28 therein and a cup-like body-portion 43 which is received in the said opening 28. Passing forwardly through the forward wall of the cup-like body-portion 43 are screws 44 which take into threaded studs or pillars 45 on the timepiece-unit 40 and thus secure the said timepiece-unit and the supporting-member 41 together.

In this manner, the bezel-ring 34 is connected with the cup-like supporting-member 41 mounted at the rear of the body-portion 26, through the intermediary of the supporting-plate 38, the studs 39, the timepiece-unit 40, the studs 45 and the screws 44. By the means just referred to, the clamping-flange 35 of the bezel-ring 34 is drawn rearwardly and the dial-ring 32 is tightly clamped between the said clamping-flange 35 and the front face of the front-case member 27.

From the above arrangements, it will be evident that in providing means such as described, whereby a decorative member, such as a dial-ring, is drawn tightly against and securely anchored in place on an associated mounting-member, the possibility of dislodgement, or of movement of the indicating-member, is effectively avoided.

While the invention has been illustrated as applied to one class of measuring-instruments, namely, timepieces, it is to be understood that the use of the present invention is also contemplated with respect to other types of measuring- or precision-instruments in which a separate decorative ring-element may be located on a mounting-member and securely anchored in place thereon. It may also be observed that the use of the term "dial-ring" in the description and claims herein is solely for the purpose of convenience of description, nor is it essential that it bear hour-numerals, as shown for purposes of illustration. It is obvious that various forms of ring-elements may be employed and that any character of indicia or ornamentation, if desired, may be inscribed thereon.

By employing a dial-ring or its equivalent which is physically distinct or separately formed from the bezel-ring and case, it is possible to conveniently stock a large number and wide variety of such dial-rings for selection and combination with the casings of timepieces. In this manner, the need for the expensive stocking of variously-decorated casings is obviated.

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 case construction for timepieces, comprising: a dial-mounting member having an aperture therein; a dial-ring located against the front face of the said dial-mounting member, the said dial-ring having its outer peripheral portion freely engaging the dial-mounting member intermediate the aperture in the said dial-mounting member and the outer periphery thereof and the said dial-ring also having an aperture therethrough registering with the aperture in the said dial-mounting member; a bezel-ring having an outwardly-extending clamping-flange overlying a portion of the front face of the said dial-ring around the aperture therein and also having a rearwardly-extending locating-flange projecting through the respective registering apertures of the said dial-mounting member and the said dial-ring; and anchoring-means acting through the said bezel-ring to rearwardly draw the clamping-flange thereof and clamp the said dial-ring between the latter flange and the said dial-mounting member.

2. A case construction for timepieces, comprising: a dial-mounting member having an aperture therein; a dial-ring mounted on the front face of the said dial-mounting member, the said dial-ring having its outer peripheral portion freely engaging the dial-mounting member intermediate the aperture in the said dial-mounting member and the outer periphery thereof and the said dial-ring also having an aperture therethrough registering with the aperture in the said dial-mounting member; and a bezel-ring provided with an outwardly-extending clamping-flange overlying a portion of the front face of the said dial-ring around the aperture therein, and an integral rearwardly-extending locating-flange projecting through the apertures in the dial-ring and dial-mounting member and centering the said dial-ring on the dial-mounting member, the said bezel-ring also including an integral anchoring-terminal gripping the rear face of the said dial-mounting member to rearwardly draw the clamping-flange of the bezel-ring and clamp the said dial-ring between the said clamping-flange and the front face of the said dial-mounting member.

3. A case construction for timepieces, comprising: a dial-mounting member having an aperture therein; a dial-ring mounted on the front face of the said dial-mounting member, the said dial-ring having its outer peripheral portion freely engaging the dial-mounting member intermediate the aperture in the said dial-mounting member and the outer periphery thereof and the said dial-ring also having an aperture therethrough registering with the aperture in the said dial-mounting member; and a bezel-ring provided with an outwardly-extending flange having a portion overlying a portion of the front face of the said dial-ring around the aperture therein, and a portion provided with an undercut forming a crystal-seat in said clamping-flange, the said bezel-ring also including an integral rearwardly-extending locating-flange projecting through the apertures in the dial-ring and the dial-mounting member and centering the said dial-ring on the dial-mounting member, and the said bezel-ring also including an integral rear anchoring-terminal flange-portion gripping a portion of the rear face of the dial-mounting member around the aperture therein to rearwardly draw the clamping-flange of the bezel-ring and clamp the said dial-ring between the said clamping-flange and the front face of the said dial-mounting member.

4. A case construction for timepieces, comprising: a case having a passage therethrough; a dial-ring mounted on the front face of the said case, the said dial-ring having its outer peripheral portion freely engaging the said front face of the case intermediate the passage in the said case and the outer periphery thereof and the said dial-ring also having an aperture therethrough registering with the passage in the said case; a bezel-ring having an outwardly-extending clamping-flange overlying a portion of the front face of the said dial-ring around the aperture therein, and a rearwardly-extending locating-flange projecting through the aperture of the said dial-ring and into the passage in the said case and centering the said dial-ring on the front of the said case; a front supporting-plate; a rear mounting-member in the rear portion of the passage in the said case; a timepiece-unit; connections between said timepiece-unit and said front supporting-plate and said rear mounting-member for locating and supporting the said timepiece-unit therebetween; and means connecting said front supporting-plate with said bezel-ring, whereby the clamping-flange thereof is rearwardly drawn and clamps the said dial-ring between the said clamping-flange and the front face of the said case.

5. A case construction for timepieces, comprising: a case having a passage therethrough; a dial-ring mounted on the front face of the said case, the said dial-ring having its outer peripheral portion freely engaging the said front face of the case intermediate the passage in the said case and the outer periphery thereof and the dial-ring also having an aperture therethrough registering with the passage in the said case; a bezel-ring provided with an outwardly-extending clamping-flange overlying a portion of the front face of the said dial-ring around the aperture therein, and a rearwardly-extending locating-flange projecting through the aperture of the said dial-ring and into the passage of the said case and centering the said dial-ring on the case; a rear mounting-member secured in the rear portion of the case; and connections between the said bezel-ring and the said rear mounting-member acting through the said bezel-ring to rearwardly draw the clamping-flange thereof and clamp the said dial-ring between the said clamping-flange and the front face of the said case.

PHILIP H. ENGLISH.