G. F. EBERHARD.

DIAL AND DIAL HOLDER FOR WATCHES AND THE LIKE.

APPLICATION FILED MAR. 21, 1914.

1,310,523. Patented July 22, 1919.

Fig. 1.

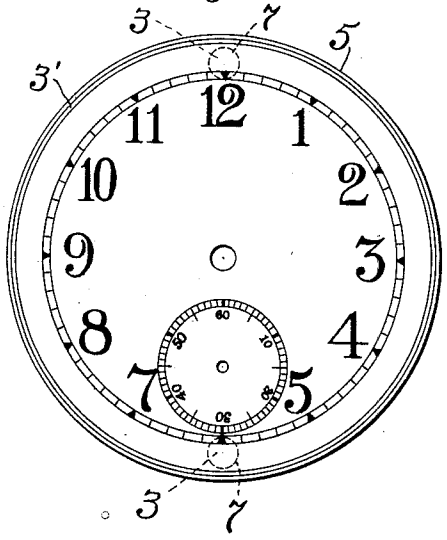


Fig. 2.

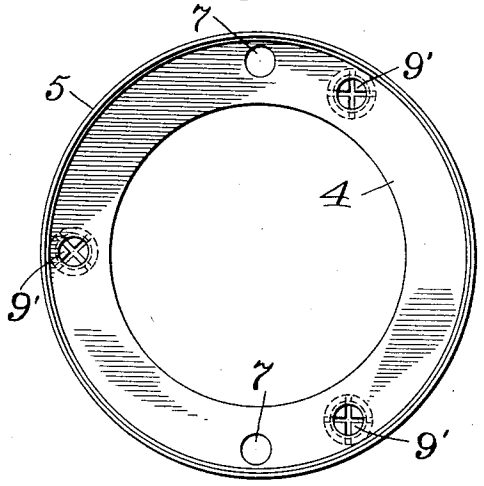


Fig. 8.



Fig. 4.

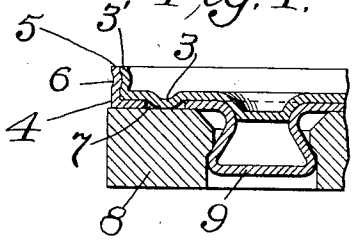


Fig. 9.

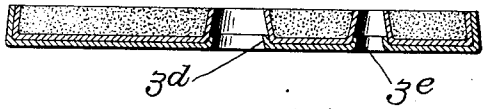


Fig. 3.

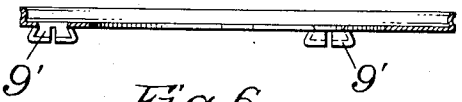


Fig. 5.

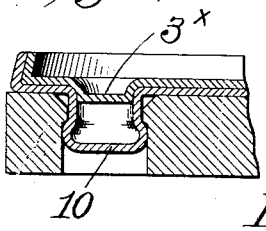


Fig. 6.

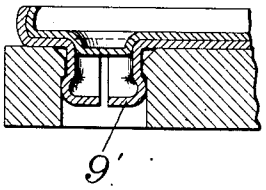
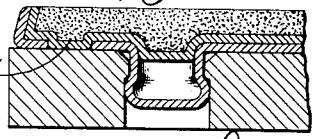


Fig. 7.



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UNITED STATES PATENT OFFICE.

GEORGE F. EBERHARD, OF TRENTON, NEW JERSEY, ASSIGNOR TO ROBT. H. INGERSOLL & BRO., A JOINT-STOCK ASSOCIATION.

DIAL AND DIAL-HOLDER FOR WATCHES AND THE LIKE.

1,310,523. Specification of Letters Patent. Patented July 22, 1919.

Application filed March 21, 1914. Serial No. 826,345.

To all whom it may concern:

Be it known that I, GEORGE F. EBERHARD, a citizen of the United States, residing at Trenton, New Jersey, have invented certain new and useful Improvements in Dials and Dial-Holders for Watches and the like, of which the following is a specification.

My invention is designed to provide a dial and dial holder organization for watches and the like, which is of simple construction and which will enable ready and accurate attachment of the dial to the dial holder, and the ready and accurate attachment of these parts to the dial plate, and the invention consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the appended claim.

In the accompanying drawings—

Figure 1 shows a dial with my improved holder in connection therewith;

Fig. 2 is a plan view of the holder detached;

Fig. 3 is a sectional view of the holder;

Fig. 4 is an enlarged view of a portion of the holder with the dial in place;

Figs. 5 and 6 are views of modifications;

Figs. 7, 8 and 9 are views of modified means of centering the dial and dial holder.

The dial may be made of a plate covered with enamel, as in ordinary practice, or it may be made of material adapted to be stamped with any desired ornamentation. The dial is preferably provided as shown in Fig. 4 with projections or studs 3 formed on or in its copper 3′, and these are preferably located radially in line with the twelve hour mark and six hour mark, as indicated in dotted lines in Fig. 1. The holder 4 for attaching this dial removably to the dial plate consists of a metallic member preferably in the form of a ring having an upstanding flange 5 adapted to receive the dial within it. This flange is left intact, and it is bent in or indented around its circumference or at desired points to hold the dial in place, this indentation or indentations being indicated at 6, Fig. 4, and being of any suitable number or, if desired, it may be continuous. At the points 7 the dial holder is provided with openings or recesses which receive the centering or locating projections 3 of the dial, or dial copper, which thus accurately determine the location of the dial in relation to said dial holder.

The dial holder in turn is accurately located in relation to the dial plate 8 by projections or feet 9 hereinafter referred to. It will be observed that the dial is held entirely by the upstanding rim, no cement being employed in making the attachment. For retaining this holder to the dial plate I provide as above stated the feet or projections 9 preferably of a snap-spring character. These spring feet are formed by first drawing up the metal in the form of a cup and pressing it back to laterally spread the lower portion of the cup. By making a saw cut or cuts in this projection, a two-part or a four-part spring-snap foot will be provided, as shown at 9′ in Figs. 3 and 6.

I do not limit myself to the extent of the intact portion of the upstanding rim of the fastener which is bent into connection with the fastener, as the entire rim may be bent or pressed inwardly into engagement with the dial as in Fig. 4, where the dial copper 3′ is held to the dial by being pressed into a circumferential groove thereof, and the flange of the fastener in turn engages the groove of the outer side of the dial copper. The centering openings 7 of the dial holder may be formed by punching out the metal at the same time the feet 9 or 9′ are drawn up from the metal of the said dial holder.

It will be clear that to unite the parts it will simply be necessary to center the dial and fastener in relation to each other by the stud or studs on the dial or dial copper and the centering opening or openings 7, and then exert the necessary pressure to snap the parts together. This snap construction will involve the formation of the bead or indented portion of the flange of the fastener shown in Fig. 4, previous to assembling the dial therewith, but it will be understood that with the dial and its copper provided with the external groove it would be possible for the workman, after having centered a dial in the dial holder, to himself press in the metal of the flange of the dial holder or fastener either all the way around or at any desired points, getting thereby the same result, substantially, as where the flange of the dial holder or fastener is previously provided with an indented bead intermediate of

its height, that is, the dial will be held against vertical displacement in relation to the flange of the fastener while the centering points will hold the parts together against circumferential displacement, or the flange of the fastener may be indented or spun into connection with the dial at any suitable point in the manufacture of the article. The fastener in all cases may have an integral foot of the form above described, *i*, *e*., by drawing up the metal of the base of the fastener to form a cup, and this cup may be used in a form to hold by frictional engagement with the wall of an opening in the dial plate or it may be upset and scored as described to provide a spring snap button.

Furthermore, the fastener and the dial can be held together by spinning the upstanding flange of the fastener into engagement with the dial, in which case the edge of the dial would be rounded or tapered upwardly slightly and the flange bent or spun in, as indicated in Figs. 5 and 6.

Instead of forming the locating projection 3 as shown in Fig. 4, this projection may be formed as shown in Fig. 7 at 3^a. As shown in Fig. 8 the dial copper may have a central opening and a second opening 12, and the dial fastener or holder will have upstanding portions of its shell at 3^b, 3^c, to enter these openings and thus center the dial and its fastener. Again, as shown in Fig. 9, the dial copper may have a central tapered opening and a second tapered opening, the shell of the said copper being carried up at these points, and into these openings the tapered projecting rim portions 3^d and 3^e extend to get the centralizing effect. In all the above forms it will be noticed that the centering projections and openings or recesses are formed in the base plate of the dial and fastener respectively; also that the projections are formed by pressing the metal from said base up as shown in Figs. 8 and 9, or down, as shown in Figs. 4 and 7.

It will be understood that either of the forms of centering means can be used with either of the forms of flanges shown and the same is true of the feet for securing the dial holder to the dial plate.

As shown in Fig. 5 the centering projection 3^x of the dial copper may be positioned so as to enter the opening in the dial holder which is formed by drawing the feet 10, and it will be understood that this may be used in place of the separately formed projection 3, or in connection therewith, as shown in Fig. 4, and this feature may be applied to any of the forms of the invention described.

In all the forms, the flange of the holder does not extend above the upper surface of the dial, but yet in each case there is an interlocking connection between the holder and the dial or dial copper due to the flange of the holder being bent in and over the portion of the dial with which it contacts.

The pressed in portion of the flange of the holder may be said to overlie the adjacent portion of the dial copper, and this is true whether the flange of the holder is pressed into a groove in the dial copper all the way around the circumference or only at intervals, or whether the flange of the holder is pressed in, as shown in Figs. 5, 7, 8, and 9, to lie flat against the inclined or upwardly tapered edge of the dial copper or as shown in Fig. 6, in which the holder fits the curved edge of the dial copper.

I claim as my invention:—

In combination with a dial and its copper, a dial holder of sheet metal having an upstanding rim and having cup-shaped feet struck out of its base portion and extending downwardly to engage the movement plate, said dial copper having centering projections entering the open top portions of the cup-shaped feet, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEO. F. EBERHARD.

Witnesses:

HOWARD M. GROFF,

CHARLES H. MARGERUM.