

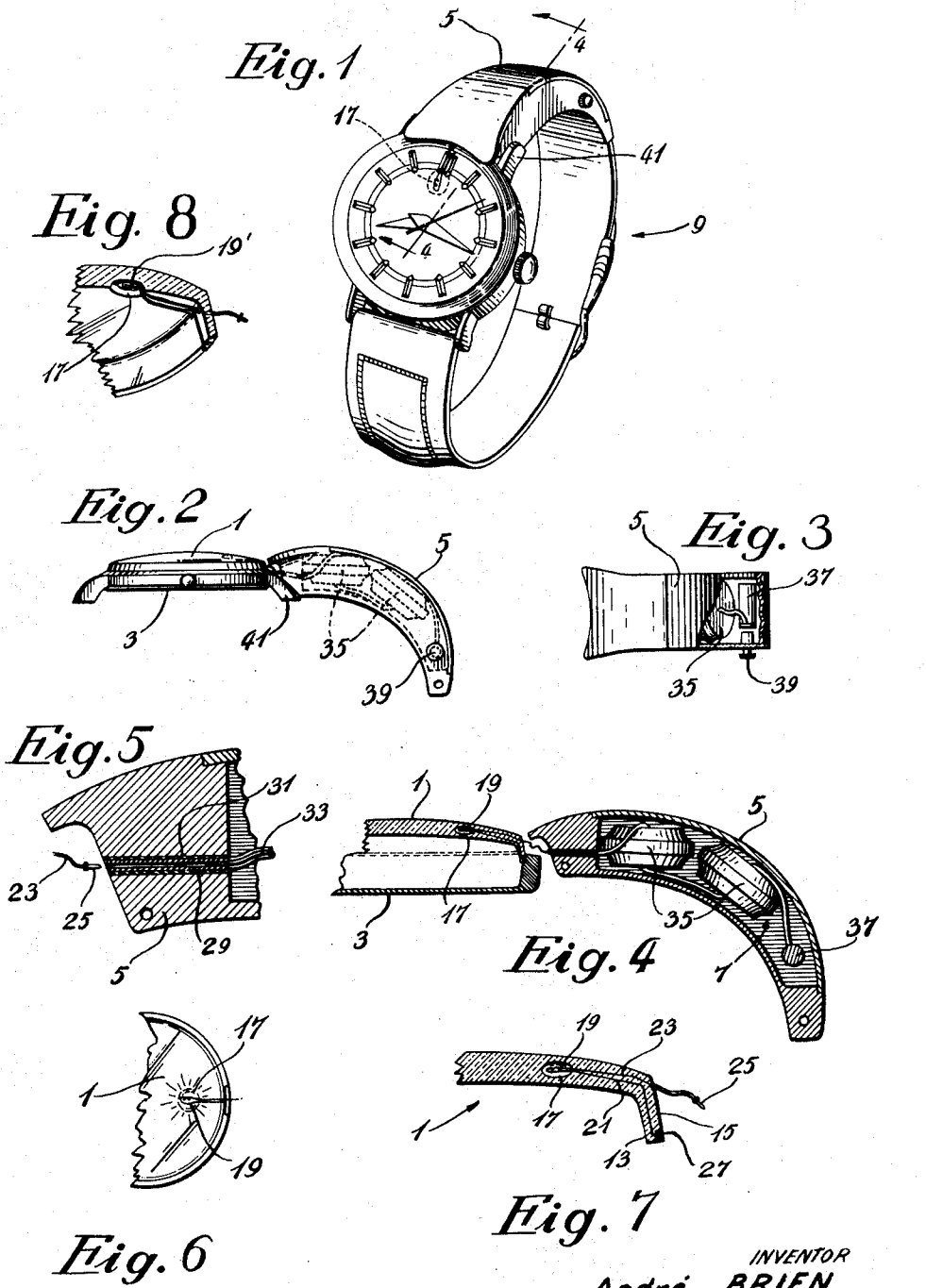
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WATCH DIAL ILLUMINATING DEVICE

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WATCH DIAL ILLUMINATING DEVICE

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3 Claims. (Cl. 58—50)

This invention relates to a watch dial illuminating device and more particularly to a watch glass having an illuminating element fixed into a cavity in the body of the glass in combination with coupling means to a hollow container which houses a power circuit and serves as a wrist band element.

Present day watches with illuminating dials have a serious shortcoming: the glowing of the figures fades away in the dark and after a while of standing in the obscurity it becomes difficult, if not impossible to read the figures. In semi-darkness, the lighting power of the luminous paint is not sufficient to overcome whatever outside light exists so that it becomes impossible to make any reading. With time, the illuminating paint seems to lose its emitting power and the problem becomes even more acute.

The invention proposes to solve this problem by providing positive illuminating means for the dial of the watch whereby time may be read at will and regardless of the darkness.

Another object of the invention lies in the provision of illuminating means for a watch dial which is well protected against shocks and which is sturdy in construction and not likely to break. Further, the illuminating means of the invention eliminates the glare caused by a light shining on the watch glass when projected onto it to read the time such as when using a light bulb set directly over the watch glass.

The inventive idea lies in the provision of a lighting element within a cavity in the body of a watch glass with lead-in wires connected to said element and running out to the lateral edge of said body to be joined to a power circuit which is enclosed in a container. This container is also part of a wrist band and has a novel tubular joint to connect the lighting element to the power circuit or unit.

A better understanding of the invention will be had by the more comprehensive description that follows and which has reference to the annexed drawings wherein:

FIG. 1 is a perspective elevation view of a watch embodying the illuminating means of the invention;

FIG. 2 shows a view, in elevation, of a dial casing and power unit container;

FIG. 3 illustrates, particularly, the electrical switch used to actuate the illuminating means;

FIG. 4 is a cross-sectional view, on a somewhat enlarged scale, of the means of the invention as taken along line 4—4 of FIG. 1;

FIGS. 5, 6 and 7 are detail views of various parts of the invention on an enlarged scale;

FIG. 8 shows a further embodiment of the invention.

The general features of the invention are well depicted in FIG. 4, particularly. As seen, a watch glass 1 mounted over a dial casing 3 is provided with an illuminating element within the body of glass 1. This element or filament is connected to a hollow container 5 which houses a power unit or circuit generally denoted by numeral 7. Container 5 also serves as a portion of a wrist band 9 (FIG. 1); being arcuate in cross-sectional shape.

The watch glass itself is shown as cup-shaped having a base portion 11 and a depending skirt 13 defining a lateral edge 15. A cavity 17 is created within the base portion 11 of the body and preferably close to lateral edge 15 as shown in FIG. 1. It is preferable, of course, that the cavity 17 be vacuum closed.

As aforesaid, an illuminating element or filament 19 is provided within cavity 17 and is fixed to the wall thereof. The ends of filament 19 are connected to two lead-in wires

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21, 23 which travel through the base portion 11 in the direction of lateral edge or outer surface 15 of skirt 13.

Lead-in wire 23 projects freely out of the glass body 1 at the upper part of lateral edge 15 and is provided, at its outer end, with a plug-in member 25. The other lead-in wire 21 follows the contour of skirt 13 and terminates at the lower part of lateral edge 15 by being connected to a metallic member 27 which is always kept in contact with dial casing 3 which, incidentally, is made of metal.

Plug-in member 25 is insertable into a metallic tube 29 extending through the wall of container 5 and insulated therefrom by means of an outer insulating sleeve 31 which can be made of rubber or the like material. At the inner end of tube 29, another wire 33 is plugged-in which is part of the power unit comprising two series-connected batteries 35 which are subsequently connected to the stationary element 37 of the operating switch: the other element being slidable piston or button 39 which is spring-pressed away from element 37, although the spring is not shown here.

Container 5 being made of metal, it closes the circuit by being pressed against band-holding wings 41 (FIGS. 1 and 2) of metallic dial casing 3, itself in physical contact with metallic member 27 embedded in the glass body. Thus by pressing button 39 against switch element 37, the electric current is established and filament 19 lights up in cavity 17.

In the embodiment of FIG. 8, an illuminating member 19' is fixed directly on the watch glass in inwardly open cavity 17. Member 19' may be held in the cavity by gluing or the like.

The above description should be construed as non-limitative examples of the invention, the scope of which is defined in the appended claims.

I claim:

1. A watch glass adapted to be mounted over the dial of a watch comprising: a closed cavity in the body of said glass adjacent the edge thereof; an illuminating filament in said cavity; said filament being fixed to the wall of said cavity and two lead-in wires separately joined to the filament and extending within the glass body to the lateral edge thereof; one of said wires projecting freely out of said glass body while the other is connected to a metallic member embedded in the edge of the body.

2. A watch glass adapted to be mounted over the dial of a watch comprising: a cup-shaped body having a base portion and a skirt forming a lateral edge facing outwardly; a cavity in the base portion of said body closed under vacuum adjacent the lateral edge and overlying said dial; an illuminating filament in said cavity, said filament being fixed to the wall of said cavity and two lead-in wires separately joined to the filament and extending within the glass body to the lateral edge thereof; one of said wires projecting freely out of said glass body at the upper part of said lateral edge and having a plug-in member at the free end thereof, the other wire being connected to a metallic member embedded in the lower part of the lateral edge.

3. A watch glass adapted to be mounted over the dial of a watch comprising: a cup-shaped body having a base portion and a skirt forming a lateral edge facing outwardly; a cavity in the base portion of said body, closed under vacuum, adjacent the lateral edge and overlying said dial; an illuminating filament in said cavity, said filament being fixed to the wall of said cavity and two lead-in wires separately joined to the filament and extending to the lateral edge of said body; one of said wires projecting freely out of said glass body at the upper part of said lateral edge and having a plug-in member at the free end thereof, the other wire being connected to a metallic member embedded in the lower part of the lateral edge; in combination with a metallic casing over which said glass is mounted

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with said metallic member in physical contact with said casing; a metallic hollow container as a part of a wrist band; an aperture through the wall of said container adjacent said glass body; an insulating sleeve fixed in said aperture and a metal tube concentric to and joined to said insulating sleeve inwardly thereof, said tube adapted to receive said plug-in member at the outer end thereof; at least one battery within said hollow container connected to the inner end of said tube; said metallic container being in physical contact with said casing.

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