Feb. 19, 1963 G. C. NEUGEBAUER 3,078,364

WRIST BAND ILLUMINATING DEVICE

Filed April 18, 1961

FIG. 1

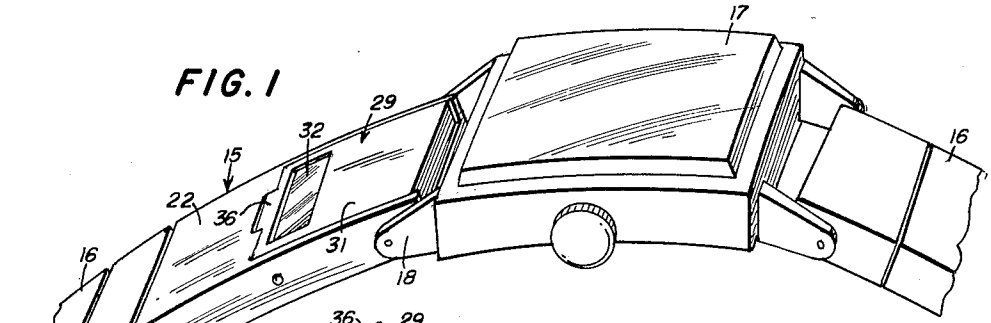


FIG. 2

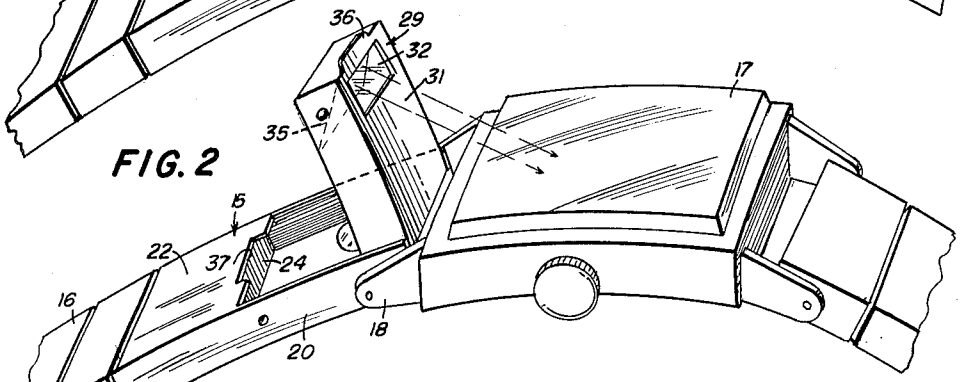
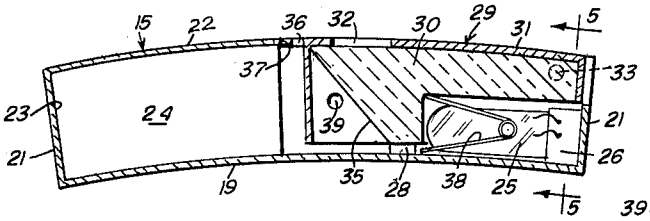


FIG. 3



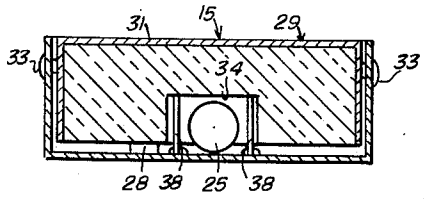


FIG. 5

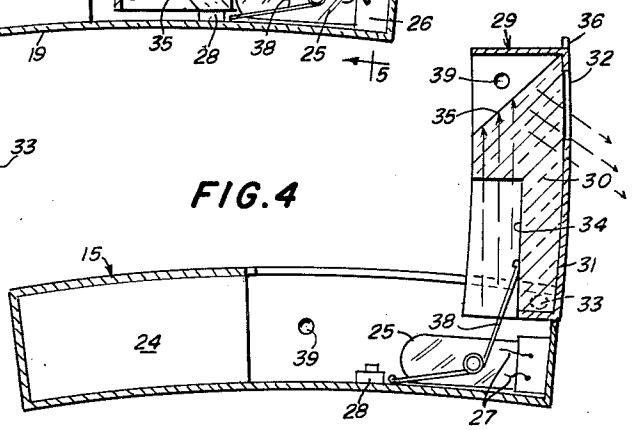


FIG. 4

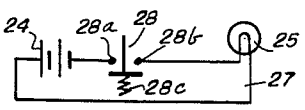


FIG. 6

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WRIST BAND ILLUMINATING DEVICE

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This invention relates to an illuminating device for wrist bands and consists more particularly in new and useful improvements in a device designed to form an integral part of a wrist watch band or similar article and adapted to illuminate the dial of the watch or other object when required.

An object of the invention is to provide an illuminating device of this character which is convenient for the wearer, easy to operate and adaptable to various sizes and shapes to conform to the particular styling of the wrist band, bracelet or other article, and which, when not in operation, is not only inconspicuous but can be designed to enhance the eye appeal of the article.

Another object of the invention is to provide an illuminating device which is energized by replaceable, self-contained batteries or any suitable energy cells and which may be actuated by a simple flip of the wearer's finger.

Still another object of the invention and one of great importance to drivers of motor vehicles, is to provide a wrist watch illuminating device which is easily operable by a driver who frequently finds it necessary when driving at night to ascertain the time. Experience has shown that the vast majority of wrist watches equipped with luminous dials are either difficult to see at night or require a dangerous period of eye focusing to read the time.

Other advantages of the present invention wherein a small bulb is energized by a suitable battery or energy cell, reside in the elimination of radiation danger which is recognized to exist in certain watches provided with luminous dials and also the elimination of hazards for watch manufacturers when working on watches having luminous dials.

While the invention is primarily designed for wrist watch bands, it will be understood that it can be equally useful for wrist compasses, ladies bracelets, identification bracelets and numerous other adaptations.

With the above and other objects in view which will appear as the description proceeds, the invention consists in the novel features herein set forth, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

Referring to the drawings in which numerals of like character designate similar parts throughout the several views:

FIGURE 1 is a fragmentary perspective view of a watch band including one form of the invention embodying a projectible and retractible plastic light directing member;

FIGURE 2 is a similar view showing the light directing member in projected position;

FIGURE 3 is a longitudinal sectional view of the illuminating device shown in FIGURE 1;

FIGURE 4 is a similar sectional view taken through the illuminating device with the parts in the position shown in FIGURE 2;

FIGURE 5 is a transverse sectional view taken on line 5—5 of FIGURE 3; and

FIGURE 6 is a wiring diagram which may be embodied in the illuminating device illustrated in FIGURES 1–5.

As previously stated, the illuminating device of the present invention may be embodied in wrist bands for various uses and for purposes of illustration, the accompanying drawings show the device installed as a part of a wrist watch band.

Referring to FIGURES 1 and 2, the illuminating device may comprise a housing 15 which is contoured to form a part of a conventional wrist watch band 16 and designed to be connected to an adjacent link of the wrist watch band at one end by any suitable means (not shown) and at the other end, to a wrist watch 17, as at 18. The housing 15 is provided with a bottom wall 19, side walls 20 and end walls 21, and one end thereof is enclosed by a top wall 22 which only partially covers the interior of the housing to form a battery receptacle 23 for a small battery 24 or any suitable energy cell. Within the opposite end of the housing 15, a suitable light bulb 25 is mounted in a socket 26 which is connected in circuit with the battery 24 by conductors 27 provided with a switch 28 hereinafter referred to more in detail.

The light directing member of this form of the invention is generally referred to by the numeral 29 and as best seen in FIGURES 3 and 4, consists of a body 30 of a suitable light conducting plastic material such as Lucite. This body of Lucite is preferably covered on its top, sides and ends by a thin casing of metal 31 which, for purposes of appearance, is of a material conforming to that of the wrist band 16 and watch casing 17. An opening or window 32 is provided at one end of the top wall of the metal covering 31 for the purpose hereinafter described.

The plastic body 30 is hingedly connected by pivot pins 33 which extend through the side walls 20 of the housing 15 and the adjacent side walls of the metallic covering 31 and in order to accommodate the bulb 25 when in retracted position, the body 30 is recessed as at 34. The switch 28 is located within the housing 15 at a point on the bottom wall thereof in line for engagement with the bottom surface of the plastic body 30 when the latter is retracted as shown in FIGURE 3, and the switch is preferably of a type which is normally urged outwardly by coil spring 28*c* into circuit making position with respect to contacts 28*a* and 28*b* as shown in FIGURE 6. Thus, when the plastic body 30 is in retracted position, the circuit in line 27 is broken and when the body 30 is swung upwardly and projected, the circuit is automatically completed by the action of the spring 28*c*.

The opposite end of the plastic body 30 is inclined as at 35 and the inclined surface is coated with a suitable reflecting material. The angle of the inclined reflecting surface 35 and its relationship to the opening or window 32 in the covering 31, is such that when the light bulb 25 is energized and the plastic body 30 is in projected position, as shown in FIGURES 2 and 4, the light from the bulb 25 is conducted through the plastic body and reflected angularly by the surface 35 onto the face of the watch 17.

Any convenient means may be employed to facilitate the projection of the plastic body 30 and for retaining the latter in retracted position. For example, a thumb engaging lip 36 may project from the end of the metallic covering 31 and normally lie within a complementary recess 37 in the top wall 22 of the housing 15, whereby the body 30 may be swung upwardly on its pivot 33 by the simple action of a fingernail. A spring member 38 may be employed as shown in FIGURE 4 for completing the outward pivotal movement of the plastic body 30. The body 30 may be retained in retracted position by any suitable fastening means such as coacting dimples 39 at adjacent points in the side walls of the housing 15 and the metallic covering 31 for the light conducting body 30.

From the foregoing, it is believed that this invention may be readily understood by those skilled in the art without further description, it being borne in mind that numerous changes may be made in the details disclosed without departing from the spirit of the invention as set forth in the following claims.

I claim:

1. A combined wrist watch band and illuminating device comprising a wrist watch band, a housing, means for connecting said housing to said wrist watch band in proximity to a wrist watch carried thereby, a light bulb in said housing, an electrical energy cell in said housing operatively connected to said light bulb, a light directing member normally retracted in said housing and pivotally connected thereto at one end, said light directing member comprising a body of plastic material having light conducting properties and disposed with one end thereof in proximity to said light bulb, an angularly disposed reflecting surface at one end of said plastic body arranged to re-direct light rays conducted from said bulb by said body, onto the surface of said wrist watch when said body is pivoted upwardly from said housing.

2. An illuminating device for wrist watch bands and the like, comprising a housing, means for connecting said housing to a wrist band in proximity to a wrist watch, a light bulb in said housing, an energy cell connected to said bulb, a light directing member consisting of a body of plastic material having light conducting properties, pivotally mounted at one end in said housing adjacent said bulb and adapted to swing upwardly at the opposite end in angular relation to said watch, and an angularly disposed reflecting surface at the elevated end of said body arranged to re-direct the light rays from the latter onto the face of said watch.

3. An illuminating device as claimed in claim 2, wherein said body of plastic material is at least partially encased in metal, and a window arranged in the encasing metal to accommodate said re-directed light rays.

4. A combined wrist watch band and watch illuminating unit, comprising a wrist watch band, a unit housing connected at one end of said band and forming a part thereof, means for connecting a wrist watch between said housing and the opposite end of said band, a light bulb, an electrical energy cell in said housing operatively connected to said bulb, a light directing member normally retracted in said housing, at least one end of said member being projectible upwardly and forwardly from said housing with its projected end elevated with respect to a wrist watch connected in said band, means at the projected end of said member for directing the light from said bulb downwardly onto said wrist watch, and electric contact means operable upon the projection of said light directing member for energizing said bulb.

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