

[54] **SOLID STATE WRISTWATCH SLIDE ACTUATOR**

3,823,550	7/1974	Bergey	58/50 R
3,841,080	10/1974	O'Donald	58/23 BA
3,855,784	12/1974	Foellner	58/50 R

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[21] Appl. No.: **557,306**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 543,148, Jan. 22, 1975, and a continuation-in-part of Ser. No. 543,080, Jan. 22, 1975.

[57] **ABSTRACT**

A wristwatch of solid state, the read-out indicia circuit being activatable by hand or wrist action of the arm carrying the wristwatch, by exerting pressure on the improved lever which is mounted on a lateral face of the wristwatch support structure slidably for sliding upward and downward movement either of which will activate the read-out indicia circuit.

[52] **U.S. Cl.**..... **58/50 R**

[51] **Int. Cl.²**..... **G04B 19/30**

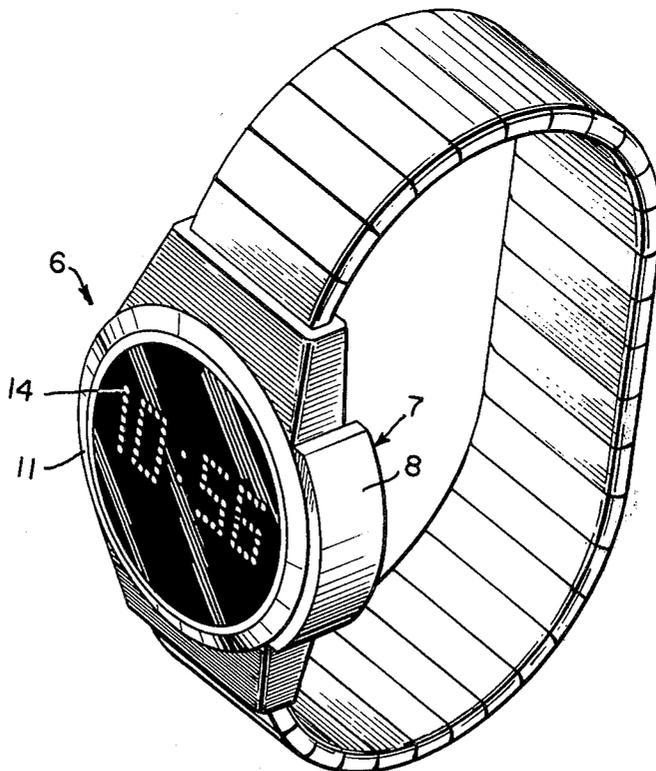
[58] **Field of Search** 58/23 BA, 33, 50 R; 240/6.43

[56] **References Cited**

UNITED STATES PATENTS

3,681,587 8/1972 Brien..... 58/50 R

4 Claims, 6 Drawing Figures



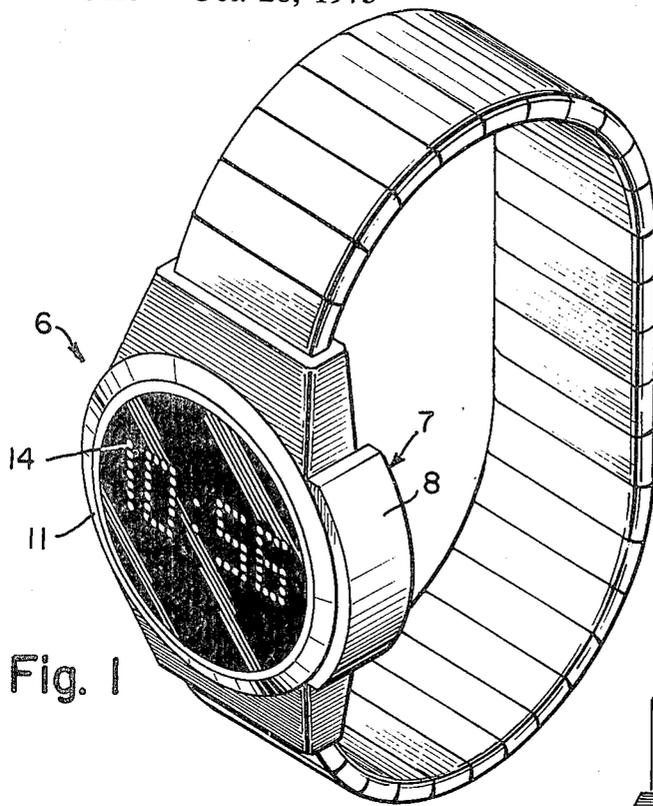


Fig. 1

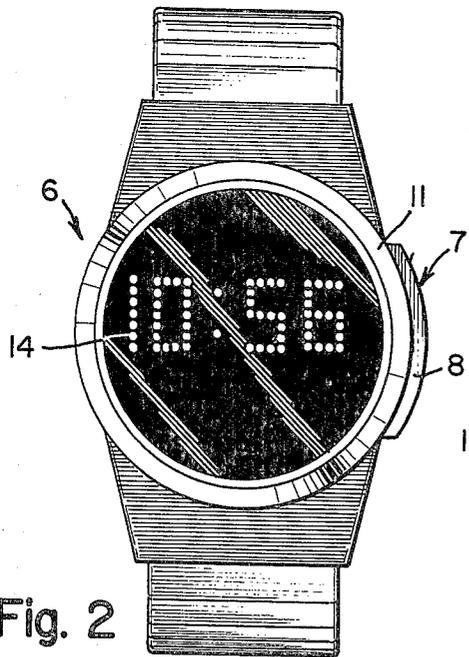


Fig. 2

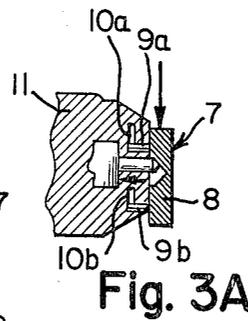


Fig. 3A

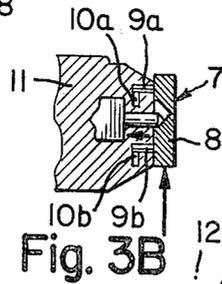


Fig. 3B

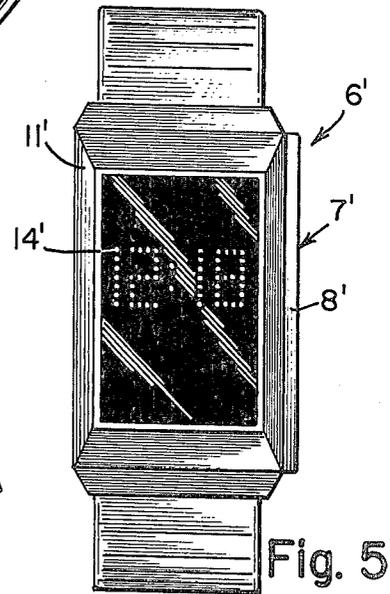


Fig. 5

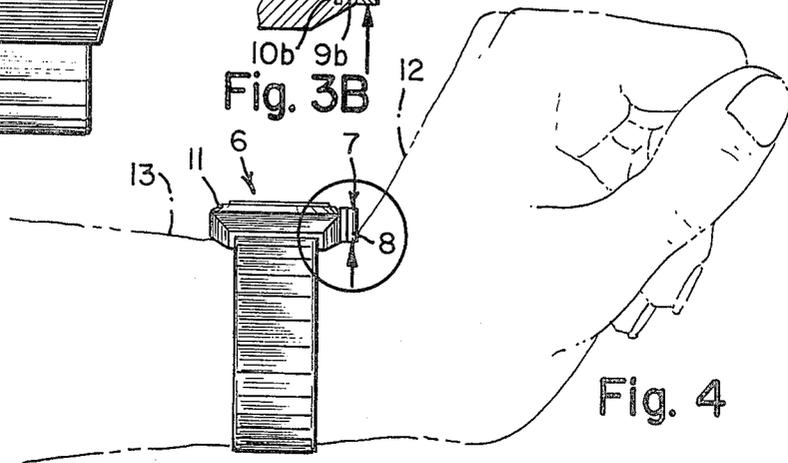


Fig. 4

SOLID STATE WRISTWATCH SLIDE ACTUATOR

This invention relates to a novel switch for a solid state watch, and is a C.I.P. of U.S. Ser. Nos. 543,148 and 543,080 filed Jan. 22, 1975.

BACKGROUND TO THE INVENTION

Because elongated levers are subject to becoming snagged on clothing, broken-off or otherwise damaged, and to possibly even injuring person and/or property, as well as being non-commercial for these above reasons as well as being unsightly.

SUMMARY OF THE INVENTION

Accordingly, objects of the present invention include the obtaining of solutions to and/or avoidance of one or more problems and/or difficulties of the types discussed above, together with the obtaining of other novel advantages.

Another object is to obtain a solid state actuation lever devoid of large size and cumbersome shape and appearance.

Another object is to obtain a solid state actuation lever for actuation of the indicia read-out, by sliding action, upwardly and downwardly.

Other objects become apparent from the preceding and following disclosure.

One or more of the preceding objects are obtained by the invention as defined herein.

Broadly the invention includes the disclosure of the parent patent application identified above, namely WRIST-ACTUATABLE SWITCH of U.S. Ser. No. 543,080, and WRIST POSITION-ACTUATABLE SWITCH of U.S. Ser. No. 543,148, the disclosures of each of which are hereby incorporated by reference into this present disclosure as a part thereof. The present improved inventive solid state watch switch is a slide switch mounted on a lateral face of the wristwatch support structure slidably for upward and downward alternate sliding motion dependent upon pressure from above or from below. For, example, it can be actuated by flexing backwardly the hand or wrist on which the wristwatch is mounted, to thereby press upwardly slidably the slide switch, or alternately by use of the other hand the slide switch may be pressed downwardly. The conical or otherwise angular walls of each of the slide switch and the pin reciprocatably axially having flushly seated wall faces, with the pin — as in the prior application Ser. No. 543,080 identified above having a convention spring conventionally spring-biasing outwardly to the distended position the pin.

The invention may be better understood by making reference to the following Figures.

THE FIGURES

FIG. 1 illustrates in front perspective view a preferred embodiment of the watch of the present invention.

FIG. 2 illustrates a top elevation plan view of the embodiment of the wristwatch of FIG. 1.

FIG. 3A illustrates a diagrammatic side cross-sectional view of the slide switch lever of the invention, showing the mechanism of operation thereof.

FIG. 3B illustrates a diagrammatic side cross-sectional view the same as for FIG. 3A, except in an opposite position of actuation.

FIG. 4 illustrates an elevation side view of the wristwatch embodiment of FIGS. 1-3 as symbolically mounted on a persons wrist, in an actuated state.

FIG. 5 illustrates in elevation top plan view an alternate embodiment of the present invention, differing merely in shape.

DETAILED DESCRIPTION OF THE INVENTION

In greater detail, FIG. 1 in perspective view discloses a wristwatch 6 having a slide lever mechanism 7 for the activation of the diodes of the indicia 14 of the solid state read-out circuit typically of the type circuit discussed in the parent application Ser. No. 543,080 discussed above. FIG. 2 illustrates in top plan view the same embodiment as FIG. 1, further designating the wristwatch support structure 11, FIG. 3A and 3B illustrate the downward movement position in FIG. 3A and the upward movement position in FIG. 3B, in both Figures the illustrated positions resulting in the illustrated depressed state. FIG. 4 illustrates a diagrammatic side view of the same watch 6 mounted on a persons wrist 13 with the upper surface of the hand or wrist designated 12 in the backwardly flexed position against a lower surface of the lever such that the lever is pushed upwardly as shown in FIG. 3B. FIG. 5 illustrates an elevation top plan view of a watch of different shape, as a wristwatch 6' having slide lever mechanism 7' with slide lever 8' thereof, comparable to the lever 8 of the FIG. 3A embodiment.

It is within the scope of the present invention to make such modifications and alterations and substitution of equivalents as would be apparent to a person of ordinary skill.

I claim:

1. A wrist watch switch device comprising in combination with a wristwatch support having a lateral face, wristwatch means for keeping time mounted on the wristwatch support structure, and electrical time-display circuit means for facilitating the observing and reading of time-indicating indicia when the electrical time-display circuit means is actuated, the electrical time-display circuit means including a switch means for making and breaking electrical circuit, the switch means including a switch lever arm mounted on said wristwatch support structure adjacent the lateral edge of the wristwatch support structure and projecting laterally from the lateral edge a first predetermined distance sufficiently for actuation thereof by contact with a person's hand or wrist upon intentional flexing of a persons hand such that the hand or wrist is thereby pressable against the switch lever arm, the improvement being said switch lever arm is slidably mounted on and adapted for vertical sliding movement upwardly and downwardly relative to the lateral face and being actuatable of time-indicating indicia when moved slidably by actuating pressure of a hand or wrist.

2. A wrist watch switch device of claim 1, the improvement further including an indentation defined in a face of the switch lever arm locted to receive a pin in an extended state from within a works space of the wristwatch support, and a pin mounted within an aperture of the wristwatch support and extending into the indentation when in an axially extended state.

3. A wrist watch switch device of claim 1, the improvement further including an axially alternately movable circuit actuation pin having an end thereof with an angular face, such that movement transversely to the longitudinal axis of the pin results in movement of the pin.

4. A wrist watch switch device of claim 3, the improvement further including a conically shaped cavity in a face of the switch lever arm located to receive the pin in an extended state of the pin.

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