

[54] **CURSOR RING FOR A WRIST WATCH**

3,431,722 3/1969 Haas 58/88 R

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[30] **Foreign Application Priority Data**

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[58] Field of Search **58/88 R, 145 R, 145 K,**
58/152 R; 235/61 R, 61 F, 61 PS

[56] **References Cited**

UNITED STATES PATENTS

3,241,308 3/1966 Forney 58/152 R

[57]

ABSTRACT

A wrist watch having a cursor ring rotatably mounted thereon, said cursor being formed with a first laterally projecting portion having a cursor line thereon for setting scales on said watch, and a second projecting portion for manual engagement for the selective rotation and positioning of the cursor ring. A bezel having graduations on its surface may be rotatably mounted relative to a fixed graduated circle on said watch with the first projecting portion of the cursor ring in overlapping relation therewith.

8 Claims, 3 Drawing Figures

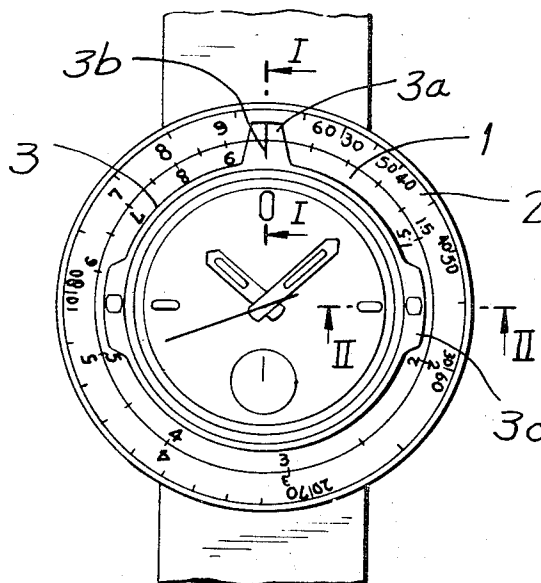


FIG. 1

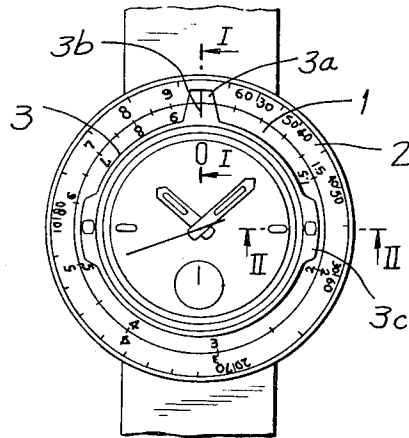


FIG. 2

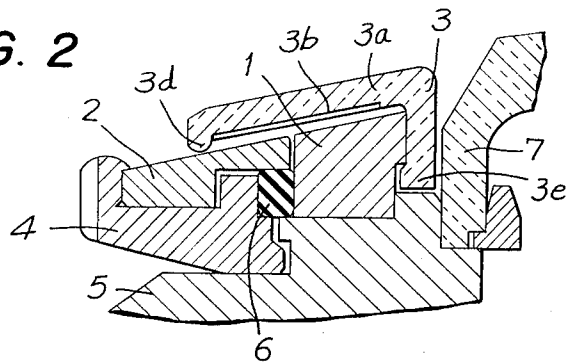
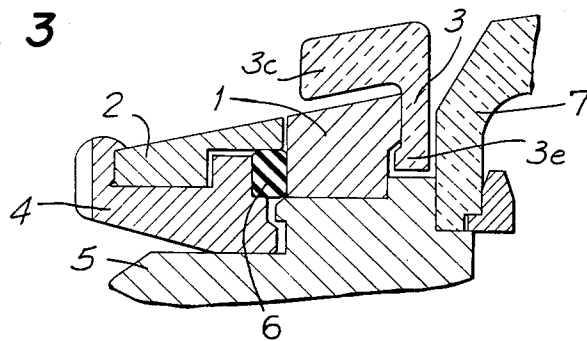


FIG. 3



CURSOR RING FOR A WRIST WATCH

BACKGROUND OF THE INVENTION

Generally speaking, in the course of the invention, this invention relates to wrist watches having calculating scales thereon. Conventional wrist watches having a calculating scale thereon have not been provided with cursors so that it has proved difficult to read said calculating scales. Where the scales only included a logarithmic scale, reading of said scales was possible, further, where special scales such as a trigonometrical function scale or a weights and measure conversion scale is also mounted on a wrist watch, it is extremely difficult to read the results of the calculation without a cursor.

SUMMARY OF THE INVENTION

Generally speaking, in accordance with the invention, a wrist watch is provided having scale means and a cursor ring rotatably mounted on said wrist watch, said cursor ring means being formed with a first protruding portion in overlapping relation to said scale means having a cursor line thereon for reading said scale means, said cursor ring means also being formed with a second projecting portion for the manual rotation and positioning of said cursor ring.

Said scale means may include a bezel having graduations on its surface rotatably mounted on said watch and a fixed graduated circle on said watch, said cursor ring first projecting portion overlapping both said fixed and bezel graduations. Said watch may include a gasket rotatably supporting said bezel on said fixed graduated circle. Said bezel may be rotatably mounted on the outer periphery of said fixed graduated circle, said cursor ring means being rotatably mounted on the inner periphery of said fixed graduated circle.

Accordingly, an object of the present invention is to provide a cursor ring on a wrist watch for permitting fast, easy and accurate continual calculations through the use of calculating scales on said wrist watch.

A further object of the present invention is to provide a wrist watch having special scales such as calculating and conversion scales and having means for rapidly, easily and accurately performing continual multiplication, division or the like, utilizing logarithmic and/or trigonometric scales.

Still other objects and advantages of the invention will in part be obvious and will in part be apparent from the specification.

The invention accordingly comprises the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the constructions hereinafter set forth, and the scope of the invention will be indicated in the claims.

BRIEF DESCRIPTION OF THE DRAWING

For a fuller understanding of the invention, reference is had to the following description taken in connection with the accompanying drawing, in which:

FIG. 1 is a plan view of a wrist watch incorporating the preferred embodiments of the arrangement according to the invention; and

FIGS. 2 & 3 are partial cross-sectional views taken along lines I — I and II — II, respectively of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIG. 1, the wrist watch according

to the invention is provided with a fixed circle 1 having graduations on an upper side thereof, said fixed circle being secured to the watch case body 5 by an adhesive or the like. A rotatable circle 2 is also provided with graduations on its upper side, which graduations are aligned with the graduations of said fixed circle and positioned adjacent the outer periphery thereof. In the embodiment of FIGS. 1 — 3, the rotatable circle is secured in a groove in the upper surface of a rotative bezel 4 by means of caulking or an adhesive, said bezel being rotatably mounted on watch case body 5.

A cursor ring 3 is rotatably mounted on the inner periphery of fixed circle 1. Said cursor ring is formed with a first laterally extending protrusion 3a having a radially extending cursor line 3b formed in the undersurface thereof. Said cursor line overlaps the graduations on both fixed circle 1 and rotatable circle 2 and serves as an index for setting said scales. Cursor ring 3 is also formed with an outwardly projecting portion 3c which may be manually engaged by the finger of the wearer for the selective rotation and positioning of the cursor ring.

Referring now to FIG. 2, first projecting portion 3b is formed with a projection 3d on the outer periphery of the bottom surface thereof. Said projection is provided to protect cursor line 3b from abrasion by the graduations on the fixed and rotatable circles.

As shown in FIGS. 2 and 3, cursor ring 3 is mounted on the inner periphery of fixed circle 1 by means of an annular projection 3e which engages a corresponding notch in said fixed circle. Bezel 4 is rotatably mounted on the watch by means of gasket 6 secured between said bezel and fixed circle 1. Said gasket serves to control the rotative torque required to rotate said bezel. A watch crystal 7 is also mounted on watch case body 5.

Cursor ring 3 is preferably formed of a transparent synthetic resin, and the torque required to rotate said cursor ring is controlled by the degree of the interference engagement between said cursor ring and fixed circle 1.

Cursor ring 3 may be secured to the exterior of the rotative bezel 4, rather than being positioned on the inner periphery of fixed circle 1 adjacent glass 7. The projection 3d on first projecting portion 3a may be omitted if said cursor is formed and mounted so as to avoid engagement between cursor line 3b and the graduations on the bezel 4 and the fixed circle 1.

The arrangement according to the invention permits continual calculation utilizing scales on said fixed circle and rotative bezel, such as continual multiplication and division. Such continual calculations can be easily, rapidly and accurately performed through the use of the cursor ring according to the invention. Additional special scales (not shown) can be fixed on the wrist watch in addition to the conventional logarithmic scale usually set forth on said fixed circle and bezel. Such special scales can include a trigonometrical function scale and a conversion scale. Accordingly, the arrangement according to the invention offers the advantage of great flexibility.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above constructions without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying draw-

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ing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:

1. A wristwatch comprising scale means formed in an upper surface thereof; cursor ring means rotatably mounted on said wrist watch, said cursor ring means having a first outwardly projecting portion formed with a radially extending cursor line overlapping said scale means and a second projecting portion for manual rotation and positioning of said cursor ring relative to the scale means, said scale means including a bezel having graduations on its surface, said bezel being rotatably mounted on said watch and fixed graduated circle means, graduations of said bezel and said fixed circle means being substantially aligned, said cursor line of said cursor ring being in overlapping relation to at least a portion of both the graduations on said bezel and the graduations on said fixed ring, said rotatable bezel being mounted on the outer periphery of said fixed circle.

2. A wrist watch as recited in claim 1, wherein said cursor ring is rotatively mounted on the inner periphery of said fixed circle.

3. A wrist watch as recited in claim 1, including a gasket means intermediate said bezel and said fixed circle for supporting said bezel and controlling the torque required for the rotation thereof.

4. A wrist watch comprising a case body; a circle

member fixed to said case body and having graduations on the outer surface thereof; a bezel rotatably mounted on said case body adjacent the outer periphery of said circle member, said bezel having graduations on the outer surface thereof substantially aligned with the graduations on said circle member; and cursor ring means rotatably mounted on the inner periphery of said circle member and formed with a laterally projecting portion having a radially extending cursor line formed therein, said cursor line being in overlapping relation with at least portions of the graduations on both said bezel and circle member.

5. A wrist watch as recited in claim 4, wherein said cursor ring means includes a further projecting portion for manual manipulation to rotate and position said cursor ring means relative to said graduations.

6. A wrist watch as recited in claim 4, including gasket means intermediate said bezel and said fixed circle member for controlling the torque required for the rotation of said bezel.

7. A wrist watch as recited in claim 4, wherein said cursor has a bottom surface on which is disposed an annular, outwardly projecting protrusion and said fixed circle has a correspondingly positioned notch, whereby said cursor is rotatably held by said fixed circle through engagement of said protrusion in said notch.

8. A wrist watch as recited in claim 4, wherein said wrist watch further comprises additional scales graduated for trigonometric and conversion calculations and said bezel is grooved to receive any chosen scale at the discretion of the wearer.

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