ABSTRACT

A watch stem in a calendar watch has a number of grooves thereon. One end of a spring, fastened at the other end to a base plate, is seated resiliently in one of the grooves. Movement of the watch stem in an axial direction requires that the seated end of the spring ride up on the walls of the grooves which are tapered. The resistance which must be overcome in moving the watch stem from one position to another can be varied by changing the angle of the groove walls and by changing the height of the walls between adjacent grooves.

4 Claims, 2 Drawing Figures
STEM CONSTRUCTION IN A CALENDAR WATCH

BACKGROUND OF THE INVENTION

In the conventional construction of a watch, the resistance to movement of the watch stem from one position to another is exerted by a spring lever which presses against a setting lever pin. The spring-mounted lever has a number of grooves therein, into any one of which the pin of the setting lever can be moved. To move from one groove to an adjacent groove, the pin must climb one wall of the groove and lodge in the next groove. The force which must be exerted to move the watch stem from one position to another, involving transfer of the pin from one groove to the next, depends on the height of the wall which must be climbed and the steepness of the wall.

The calendar watch which has recently become so popular, requires several stops in the movement of the crown for adjustment of the day, date and the time and for winding the watch. It is desirable that the operator should be able to discriminate between the force necessary to pass from the first step to the second step and from the second step to the third step. For example, in a conventional watch, the force required for going from the first step to the second step may be 300g whereas the force necessary to go from the second step to the third step may be 800g. This differentiation is made possible by proper selection of the heights of the peaks between the grooves and by varying the steepness of the groove walls. However, as the height of the peaks is increased, the distance through which the pin of the setting lever must travel is correspondingly made larger. As a result, the angle through which the setting lever must rotate is increased. Consequently the space required by these larger elements and for increased distances to be traversed, is increased. This is a serious disadvantage since minimization of the size of a watch is always an objective to be striven for. In addition, the suggested changes in the contours of the members increases the likelihood of breakage; furthermore, the press-mold necessary for manufacture of the components is difficult to make.

SUMMARY OF THE INVENTION

To provide for movement of a watch stem to any of a plurality of positions, a corresponding number of annular grooves are formed in the watch stem. The watch stem is mounted for axial as well as rotational movement on a base plate, and a spring, at least part of which is sheet-like in form is also mounted on the base plate in such a relationship to the watch stem that one end of the spring can be seated resiliently in any of the grooves. The watch stem can be moved in an axial direction by exerting enough force thereon to cause the resiliently seated end of the watch spring to move outwardly from the axis of the watch stem as the wall of the groove passes thereunder. As the motion continues, the spring then seats in the next groove. The force required to move the watch stem from one position to the next is established by controlling the steepness of the groove walls and the height of said walls.

Accordingly, an object of the present invention is to provide a simple construction for a watch stem movable to any of a plurality of positions.
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mechanism is reduced. These features are effective in decreasing the overall size of the system and in reducing the cost, particularly in large scale manufacture.

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 construction 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 drawing 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.

What is claimed is:

1. A construction for holding a watch stem in a watch at any of at least three positions with respect to said watch, comprising a watch stem having thereon at least three annular grooves, and spring means adapted to seat resiliently in any of said grooves, at least a portion of said spring means being sheet-like in form, and positioned to flex transversely of said sheet-like portion for holding said watch stem in any of said positions and permitting manually effected alteration of the position of said watch stem inwardly or outwardly of said watch by causing said spring means to move over the surfaces of said sloping walls away from and toward the axis of said stem, the walls of said grooves sloping at different angles.

2. The construction as defined in claim 1, wherein said watch stem has a crown wherein the angle of the wall and the height of the peak between each successive pair of grooves increases with distance from the crown.

3. A construction for holding a watch stem in a watch at any of at least three positions with respect to said watch, comprising a watch stem having thereon at least three annular grooves, and spring means adapted to seat resiliently in any of said grooves, at least a portion of said spring means being sheet-like in form, and positioned to flex transversely of said sheet-like portion for holding said watch stem in any of said positions and permitting manually effected alteration of the position of said watch stem inwardly or outwardly of said watch by causing said spring means to move over the surfaces of said sloping walls away from and toward the axis of said stem, the peaks between said grooves being of different heights.

4. The construction as defined in claim 3, wherein said walls of said plurality of grooves slope at different angles and said peaks have different heights.

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