June 5, 1945. C. B. GREENBERG 2,377,625

WATCH CROWN FOR WATERPROOF WATCHES

Filed Aug. 19, 1943

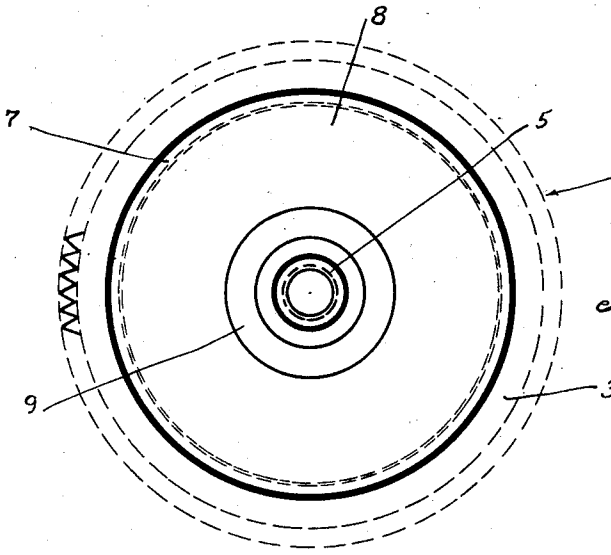


Fig 1

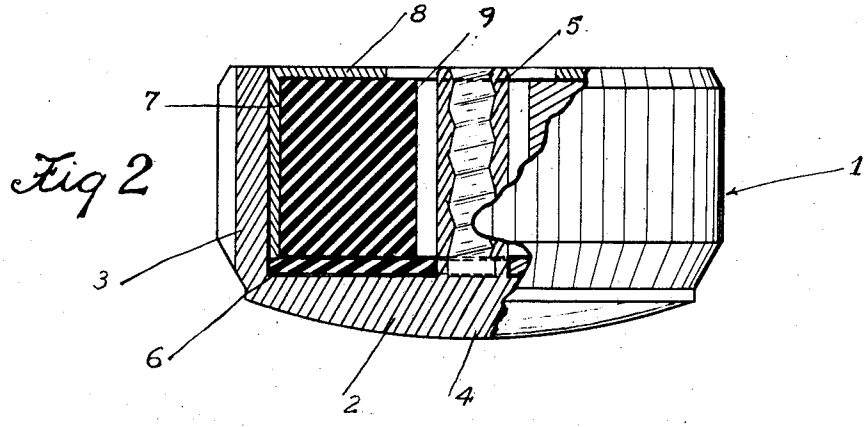


Fig 2

Charles B. Greenberg
INVENTOR

BY William Wolfe
ATTORNEY

Patented June 5, 1945 2,377,625

UNITED STATES PATENT OFFICE

2,377,625

WATCH CROWN FOR WATERPROOF WATCHES

Charles B. Greenberg, New York, N. Y.

Application August 19, 1943, Serial No. 499,239

3 Claims. (Cl. 58—90)

My invention relates to watch crowns and in more detail to waterproof crowns of a type suitable for use with watch cases formed with a winding stem enclosing tube.

As waterproof watch crowns are subjected to considerable wear and hard usage due to the winding and setting of the watch, there is a tendency for the contact parts of the crown and the tube of the watch case to become separated with the result that the crown no longer seals the tube opening and so loses its waterproof character. In addition, due to the small and delicate parts used in forming the present waterproof crown there is little excess material to take up shock and resist wear with the result that the crown cannot bear long, rough usage.

The purpose of my invention is to form a waterproof crown in which the sealing elements adjacent and subject to wear against the tube of the case are of a substantial size and thickness to withstand the frequent settings and windings of the watch. Another purpose is to form my crown with two separate, individual closure elements which act independently and as successive bars to prevent any leakage of water, moisture or dust into the case through the tube opening. A third purpose is to produce a waterproof crown of minimum number of simple parts which can be quickly and inexpensively assembled. A fourth object is to provide a strong, simple and wear resisting waterproof crown.

I accomplish these and many other objects by providing a cup shaped watch crown with a rubber insert resting on the base and fitting snugly against the inner sides and stem of the crown and insert above the rubber washer a second rubber washer partially encased in a flanged tube, the tube fitting snugly against the inner sides of the crown with the flange extending inwardly at the outer end of the tube, the second washer provided with an annular opening at its center to fit snugly against the tube of the watch case.

In the drawing, Figure 1 is a plan view looking into my cup shaped waterproof watch crown and Figure 2 is a side view partly in section showing the crown and its inside structure. In the drawing and in the specifications corresponding numerals indicate the same elements. In the drawing my cup shaped crown 1 is formed with the frame 2 and provided with the circular side extending wall 3, base 4 and the internally threaded post or stem 5 positioned in the center of the base.

An annular ring washer 6 is provided inside the crown frame and resting on the base 2. This washer fits snugly against the sides 3 and the post 5. A flanged tube 7 is positioned by a force fit in the crown opening and presses on the washer 6. The tube at its outer end is provided with the inward extending flange 8. A secondary or bushing washer 9 is provided which rests inside the tube between the flange and the washer 6. This bushing has an annular opening of the proper size to provide a close fit with the tube (not shown) of the watch case. The watch case tube, when inserted, rests with its sides against the inner sides of the bushing and with its end against the face of the washer 6, thus there is provided a double insulation for the tube opening. The washer 6 and bushing 9 are preferably made of rubber, vinylite or the like although any other material or composition which has sufficient resilience can be used.

The crown is assembled by inserting into the crown opening the washer 6 and then adding the bushing 9 and tube 7 previously assembled. The force fit provides a tight closure about the outer edges of the crown opening, and at the same time simplifies assemblage.

The construction of the crown may be varied by changing the flanged tube into an annular washer and increasing the diameter of the washer 9 so that it will rest against the crown frame. For this variation to hold together by a simple force fit the closure washer must be of a substantial thickness to provide a sufficient bearing surface against the crown frame. This increase in thickness in the closure washer results in a decrease in the depth of the resilient elements and so may produce a less efficient crown.

Although I have only shown my waterproof crown in its main form, several variations in addition to the one described are possible without departing from the spirit and scope of the ideas conveyed in the drawing and descriptions, and so I desire to cover all modifications, forms and embodiments of my invention coming within the scope and language of any and all claims.

I claim:

1. A watch crown for use with a watch case provided with a tube, formed with a cup shaped opening therein, a winding post extending in the opening, a resilient washer resting in the opening and fitting against the cup sides and post, a flanged tube in the opening and resting on the washer, the flange extending inwardly thereof, an annular ring resilient washer extending between and resting against both the flange and the first washer, the resilient elements being held together and in the crown frame by the tight fit of

the tube in the cup opening, and the annular opening of the second washer being of such a size as to fit snugly against the sides of the watch case tube.

2. A watch crown for use with a watch case provided with a tube, formed with a cup shaped opening therein, a winding post extending in the opening, a resilient washer resting in the opening and fitting against the cup sides and post, a tube wedged in the opening and resting on the washer, said tube having an inward extending flange, a resilient bushing extending between and resting against both the flange and the first washer and being held in position by the flange, and the internal diameter of the bushing being of a proper size to provide a close fit with the sides of the watch case tube.

3. A watch crown for use with a watch case provided with a tube, the crown formed with a cup shaped opening therein, a winding post extending in the opening, a resilient washer resting in the opening and fitting snugly against the cup sides and post, a tube wedged in the opening and said tube having an inward extending flange, a resilient bushing extending between and resting against both the flange and the first washer and being held in position by the flange, and the internal diameter of the bushing being of a proper size to provide a close fit with the sides of the watch case tube.

CHARLES B. GREENBERG.