M. J. GOLDEN.

WATCH.

APPLICATION FILED OCT. 6, 1917.

1,294,895. Patented Feb. 18, 1919.

Fig. 1.

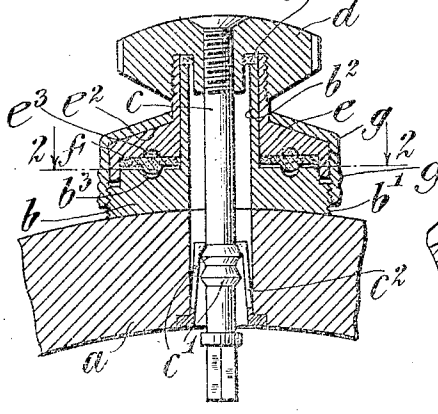


Fig. 6.

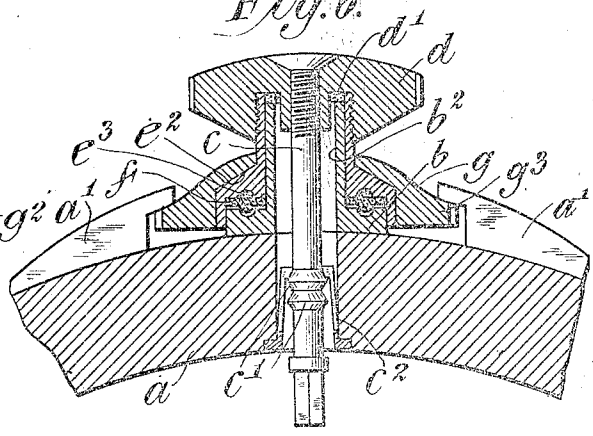


Fig. 2.

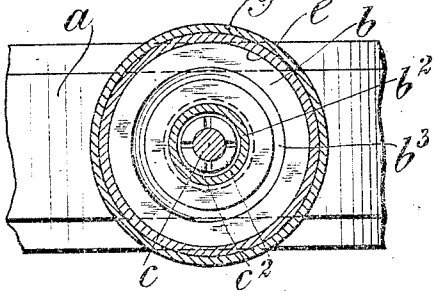


Fig. 7.

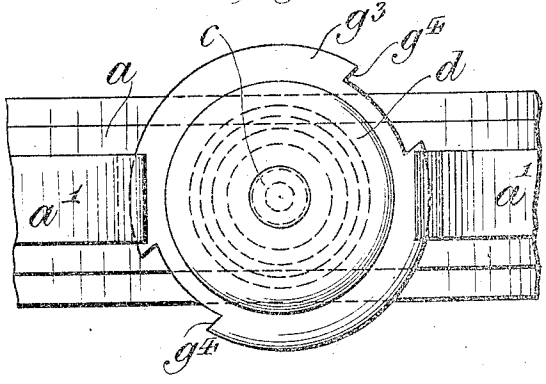


Fig. 3.

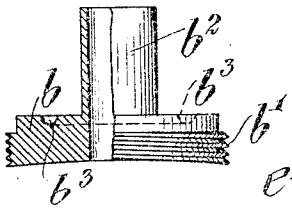


Fig. 4.

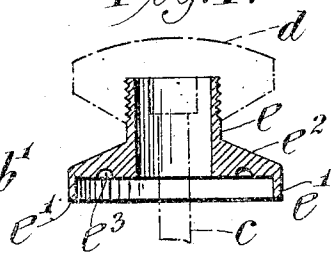
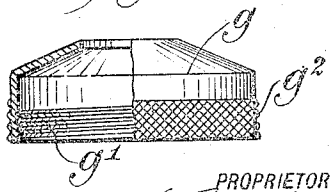


Fig. 5.



WITNESS:
Geo. Thwaites

PROPRIETOR
Mortimer J. Golden
BY
Redding, Ganley & Goodlett
ATTORNEYS

UNITED STATES PATENT OFFICE.

MORTIMER J. GOLDEN, OF BROOKLYN, NEW YORK.

WATCH.

1,294,895. Specification of Letters Patent. Patented Feb. 18, 1919.

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To all whom it may concern:

Be it known that I, MORTIMER J. GOLDEN, a citizen of the United States, and residing in the borough of Brooklyn of the city of New York, in the State of New York, have invented certain new and useful Improvements in Watches, of which the following is a specification, reference being had to the accompanying drawing, forming a part hereof.

In the effort to produce a waterproof watchcase, that is, a watchcase which will not permit, under any conditions of use, the penetration of water to the watch movement, attention is necessarily given, not only to the closures of the case, but to the sealing of the case about the usual winding and setting arbor. The present invention has for its object to provide improved means for sealing a watch effectually against the penetration of moisture about the winding and setting arbor, but without preventing the proper performance of the usual functions of such arbor. Provision is made whereby the arbor can be sealed under sufficient pressure to prevent absolutely the admission of water but can be relieved readily from pressure to permit it to be rotated for the purpose of winding the watch or to be pulled out and rotated for the purpose of setting the watch. The invention will be more fully explained hereinafter with reference to the accompanying drawing in which the invention is illustrated as embodied in convenient and practical structures and in which,—

Figure 1 is a detail view in section through the crown of a watch, with a portion of the watchcase center, the winding and setting arbor being shown in elevation.

Fig. 2 is a view in section on the plane indicated by the broken line 2—2 of Fig. 1, looking in the direction of the arrows.

Figs. 3, 4 and 5 are detail views in section, and partly in elevation as to Figs. 3 and 5, of different parts of the structure shown in Figs. 1 and 2.

Fig. 6 is a view similar to Fig. 1 but showing another embodiment of the invention.

Fig. 7 is a top view of the parts shown in Fig. 6.

In the illustrated embodiments of the invention the watchcase center a is shown as having secured thereto a pendant b which, in the construction shown in Figs. 1–5 is threaded exteriorly at its base, as shown at b', is reduced in diameter for the greater part of its length, as at b^2, to form a sleeve, and receives centrally therein the usual arbor or spindle c which serves to transmit the rotary motion of the crown d to the winding and setting mechanisms, through devices of any usual or suitable construction. The arbor is shown to be provided as usual with tapered shoulders c' for coöperation with a spring detent c^2. A suitable packing washer d' may be placed between the outer end of the pendant sleeve b^2 and the inner side of the chambered crown d. The crown is secured fixedly upon the arbor or spindle c. Also secured fixedly to the crown d is a skirt e, which is preferably flanged as at e' so as to overlap the reduced outer portion of the base of the pendant b, the skirt preferably being conical exteriorly, as indicated at e^2. The base of the pendant and the under side of the skirt e are so proportioned as to receive between them, when in assembled relation, a compressible washer f, of any suitable material, preferably saturated with oil or some other water repellent. The upper side of the base of the pendant b is annularly grooved, as at b^3, to receive a surplus of the oil with which the packing f is saturated and to afford a space for flowage of the packing under pressure, and the under side of the skirt e is provided with a similar annular recess e^3 for a like purpose.

Fitted upon the skirt e is a cap g which is screw-threaded interiorly, as at g', to engage the threaded portion b' of the pendant. Exteriorly the cap g^2 is knurled, or similarly formed, as at g^3, so that it may be grasped firmly by the fingers.

When the watch is in use the cap g is screwed down upon the pendant. This action not only makes a close contact between the under side of the cap and the upper, conical surface of the skirt, but it causes the packing f to be compressed between the under side of the skirt and the base of the pendant and also the packing d' to be compressed between the upper end of the pendant sleeve b^2 and the under side of the crown d. The passage of moisture from without into the central bore of the pendant is therefore effectually prevented. This turning of the cap to prevent access of moisture prevents the outward movement of the arbor c or setting and also the rotation of the arbor for winding. To permit the crown to be rotated for winding, the cap g is backed off slightly and to permit the arbor to be pulled out and rotated for setting the cap

is backed off still further. None of the parts can be separated and lost because the complete separation of the parts is prevented by engagement of the arbor with the usual detent and by the engagement of the crown with the arbor.

Obviously the screw-threaded engagement of the cap with the pendant-base might be replaced by an engagement of the cap with the watchcase center, as indicated in Figs. 6 and 7, in which the cap g is shown as formed with a flange g^3 which is slotted in its periphery, as at g^4, for coöperation with undercut lugs a' secured to the watchcase center a. The upper surface of the flange g^3 may be inclined circumferentially so that when it is engaged with the undercut lugs a' and located it will draw the parts into close contact.

It will be understood that details of construction may be varied to suit different requirements of use without departing from the spirit of the invention as the same is set forth in the accompanying claims.

It is to be noted that the skirt of the crown houses the outer end of the pendant, and that a moisture-tight joint is produced by my described construction between the skirt and the pendant, at the exterior of the latter and distant from its open outer end, that is to say, between said outer end and the base of the pendant. Thus, there is no possibility of water reaching the outer end of the pendant to collect there and enter the pendant when the joint is loosened for winding or setting. In addition, I preferably provide as above described, the second packed joint between the crown and the opposed end surface of the pendant.

I claim as my invention:

1. In a watchcase, the combination of a watchcase center, a pendant, a crown with a winding and setting arbor, a skirt secured to the crown and disposed about the exterior of said pendant, said skirt and pendant presenting laterally extending opposed surfaces adapted to form a tight joint about the pendant distant from the outer end of the latter, and means to draw said skirt toward the pendant to form said tight joint on said opposed surfaces.

2. In a watchcase, the combination of a watchcase center, a pendant, a crown with a winding and setting arbor, a skirt secured to the crown independently of the arbor, said skirt embracing said pendant and the two presenting opposed laterally extending surfaces about the pendant inward from the outer end and at the exterior of the latter, and a cap overlying the skirt provided with means whereby it may be drawn down tightly upon the skirt.

3. In a watchcase, the combination of a watchcase center, a pendant, a crown with a winding and setting arbor, a skirt secured to the crown, said pendant extending in tubular form within said skirt, a cap overlying the skirt and adapted to draw the skirt tightly upon the pendant, and means to form a moisture-proof joint between the skirt and the pendant, inward from the outer end of said tubular pendant portion, by the movement of said cap.

4. In a watchcase, the combination of a watchcase center, a pendant, a crown with a winding and setting arbor, a skirt secured to the crown and embracing said pendant, said skirt and pendant presenting opposed laterally extending surfaces about the exterior of the pendant between the outer end thereof and the said center, a packing interposed between said opposed surfaces, and means to draw the skirt tightly against the pendant to place said packing under pressure.

5. In a watchcase, the combination of a watchcase center, a pendant, a crown with a winding and setting arbor, a skirt secured to the crown, a packing interposed between the crown and the pendant at the outer end of the pendant, a second packing between the skirt and the pendant at the exterior of the pendant, between the outer end of the latter and said center, and a cap overlying the skirt; together with means whereby the cap may be drawn down tightly upon the skirt to simultaneously compress both of said packings.

6. In a watchcase, an arbor, a pendant about the arbor, a crown on said arbor and having a skirt embracing said pendant so that the forward end of the skirt extends about the pendant forwardly of the outer end thereof, said pendant having an enlarged base forward of said skirt, and means to form a packed joint between said base and the forward end of said skirt to thus form a moisture-proof joint forward of the outer end of the pendant.

7. In a watchcase, an arbor, a crown on the latter, a pendant, a skirt on said crown into which the pendant extends at its outer end, said skirt and pendant presenting opposed laterally extending surfaces, forward of the outer end of the pendant adapted to form a water-tight joint about the latter, at the exterior thereof, and optionally movable means engaging said skirt to draw the same toward the pendant to form said tight joint inward from the outer end of the pendant.

8. In a watchcase, a pendant, a crown having a skirt thereon embracing and housing the outer end of said pendant and adapted to form a tight joint with the pendant exteriorly of the latter and distant from the outer end thereof, and means acting on said skirt and optionally movable to move the skirt relatively to the pendant to effect said tight joint.

9. In a watchcase, a watchcase center, a

pendant thereon, a crown having a skirt housing the outer portion of the pendant, and means to simultaneously form a packed joint between the crown and the end surface of the pendant, and a second packed joint between the skirt and pendant about the exterior of the latter and distant from the outer end of the pendant.

10. In a watchcase, a watchcase center, a pendant thereon presenting a tubular neck, and a base extending radially outward from the neck, a crown having a skirt extending in tubular form about the outer portion of the pendant and extending laterally in annular form at the forward end of said tubular portion, and a cap on said annular portion of the skirt and movable to draw said skirt tightly against the base of the pendant.

This specification signed this 5th day of October, 1917.

MORTIMER J. GOLDEN.