C. L. DEPOLLIER.

WATCHCASE.

APPLICATION FILED OCT. 6, 1917.

1,268,821.

Patented June 11, 1918.

Fig. 1.

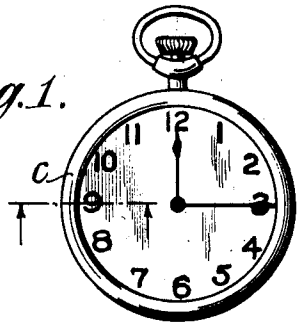


Fig. 2.

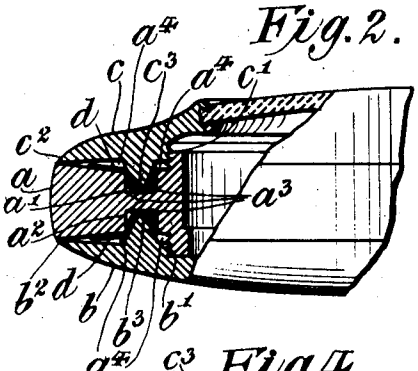


Fig. 3.

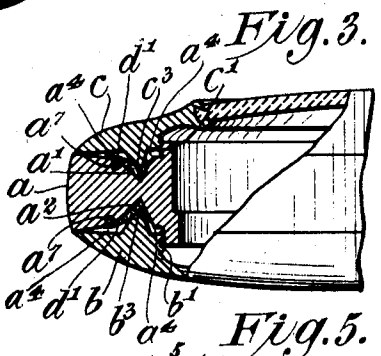


Fig. 4.

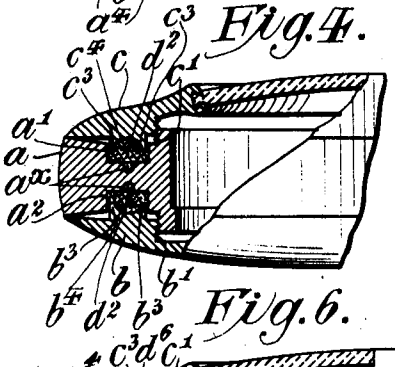


Fig. 5.

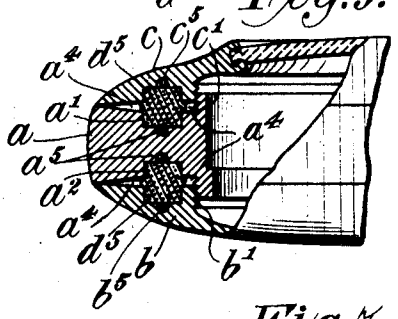


Fig. 6.

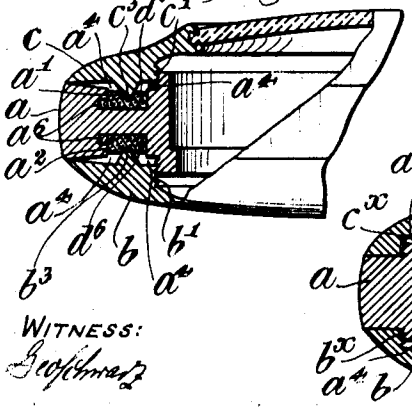


Fig. 7.

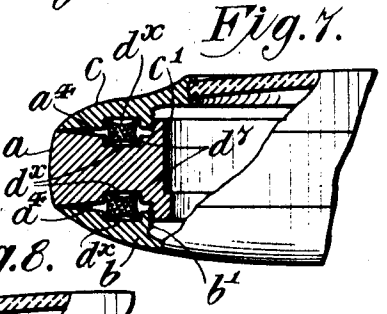
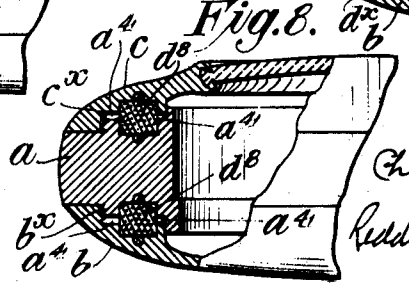


Fig. 8.



WITNESS:

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UNITED STATES PATENT OFFICE.

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WATCHCASE.

1,268,821. Specification of Letters Patent. Patented June 11, 1918.

Application filed October 6, 1917. Serial No. 195,020.

To all whom it may concern:

Be it known that I, CHARLES L. DEPOLLIER, 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 Watchcases, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

For many years there has been a demand for waterproof watchcases, that is, watchcases which should absolutely prevent the access of water to the works of the watches even though they might be completely submerged in water. With the very general use of wrist-watches by soldiers and others engaged in the open, the demand for waterproof watches has become much more insistent and the fact that the demand still exists unsatisfied is itself an indication that a reliable waterproof watch has not yet been produced. One reason for this failure to meet the demand has probably been due to the fact that a watchcase may be waterproof when it leaves the hands of the maker but quickly loses its waterproof quality after it reaches the user and has been opened a few times. Another reason for this failure has been that the packing material used to seal the joint eventually loses much of its water repellent properties or becomes hard and glazed on the surface so that after a few openings of the case it no longer serves its intended purpose. Still another reason has been that the user of the watch, after opening the case, does not always screw up the case again as tightly as it should be screwed up in view of the fact that the packing employed has lost some of its resilience. It is the object of this invention to produce a watchcase which shall retain its waterproof quality for a very long period of time. To this end the back or bezel of the watch, as the case may be, has a screw-threaded engagement with the watchcase center, as has been known heretofore, and is not only provided with a packing between the proximate faces but is constructed so as to have as well a smooth contact of metal to metal. Furthermore, the construction is such that there is provided between the proximate faces of metal a recess or chamber for the reception and storage of a surplus of the water repellent, of oil or other liquid, hereinafter referred to as the saturant, with which the packing of leather or other suitable absorbent material is saturated, so that, notwithstanding many openings of the case, the packing shall remain in a saturated and resilient condition and shall not become dry or hard as to its contacting face with the lapse of time. The invention will be more fully explained hereinafter with reference to the accompanying drawing in which it is illustrated in several different but practical embodiments and in which,—

Figure 1 is a view in front elevation of a watch embodying the invention.

Figs. 2, 3, 4, 5, 6, 7 and 8 are detail views in section and on a larger scale than Fig. 1, showing different embodiments of the invention.

The invention is illustrated, in its several embodiments, as applied to a watch which has the usual center a, the usual back b, and the usual bezel c, the back having a screw-threaded engagement with the center as at b', and the bezel having a screw-threaded engagement with the center, as at c'. The center, back and bezel are formed so as to have continuous contact of their opposing faces, as at b^2 and c^2. All of these features of construction are known in the art and are common to the several embodiments of the invention illustrated and therefore need not be further described herein.

In accordance with the invention not only is there provided a packing between the proximate faces, between the center and back or center and bezel, as the case may be, intended to prevent the passage of water therethrough, especially when the packing is subjected to pressure between opposing parts of the case, but provision is made for a storage recess between the opposing parts of the case in which may be received a surplus of the water repelling liquid, with which the packing is saturated, so that the packing shall remain always soft and resilient and therefore capable of excluding moisture. Obviously this may be accomplished in various ways, some of which are illustrated in the several figures of the drawing. In the construction shown in Fig. 2 a recess a', a^2 is formed in each face of the center,

between the screw-threaded portion and the outer edge, and the corresponding member of the case, such as the back b or the bezel c, is provided with an annular rib b^3 or c^3, as the case may be, to enter the annular recess a' or a^2. Between the two opposing members is laid an annular strip of packing material d, which is pressed into the annular recess by the annular rib. The annular rib in this case does not conform to the annular groove in the opposing member but leaves a recess or chamber a^3, for the reception and storage of a surplus of the water-repellent liquid with which the packing is saturated. In this instance the packing is shown as a relatively thin but broad strip which is pressed into the rectangular groove a^2 and is subjected to pressure along three lines, namely, the line of the apex of the rib c^3 and the two lines formed by the angular shoulders of the groove a^2. Between these lines of contact the packing is preferably free from pressure and therefore retains its softness and resilience. It will be observed also that the space a^3 for the reception of the surplus liquid is covered by the packing so that, when the watchcase is opened, the surplus liquid is not likely to be lost. Preferably the proximate faces of opposing parts of the case are slightly beveled, so as to secure a contact at b^2 and c^2 as nearly perfect as possible, and such beveling leaves a space or chamber a^4 in which surplus liquid might be received, but such surplus liquid in the space or chamber a^4 is likely to be wiped off when the watchcase is open and therefore is not retained to saturate the packing. It is therefore desirable that the storage space for the liquid be covered by the packing, as suggested. In the construction shown in Fig. 3 also one of the opposing members is formed with an annular recess a' or a^2, in this instance triangular in cross-section, which receives a packing strip d', while the other opposing member is formed with an annular rib b^3 or c^3 which is intended to be pressed into the packing material. In this instance the recess or chamber for the reception of surplus saturant, is formed as at a^7 so as to be covered by the packing material, such recess or chamber being annular so as to retain a substantial quantity of the saturant.

In the embodiment of the invention shown in Fig. 4 the annular recess a' or a^2 is rectangular in cross-section, a recess a^x is formed in the bottom thereof, so as to be covered by the packing strip d^2, and another chamber for the storage of surplus saturant may be formed as at b^4 or c^4 in the annular rib b^3 or c^3.

In the construction shown in Fig. 5 the packing d^5 is received partly in an annular chamber a', a^2, rectangular in cross-section, formed in the center a, and partly in an annular chamber formed in the corresponding part of the case. Annular recesses for the reception of the saturant may be formed at a^5 in the center and at b^5 and c^5 in the back and bezel respectively, being covered by the packing.

The construction shown in Fig. 6 is substantially like that shown in Fig. 3, the packing d^6 being received in an annular groove a', a^2, rectangular in cross-section, formed in the corresponding side of the center a, and the annular recess for the surplus saturant being formed at a^6 so as to be covered by the packing.

The construction shown in Fig. 7 is generally similar to that shown in Fig. 5, the packing strip d^7 being seated in annular grooves formed partly in each of the opposing members of the case. In this embodiment of the invention, however, the chamber for the surplus saturant, while formed between the packing and the proximate face of one of the watchcase members, and covered and protected by the packing, is formed, as indicated at d^x, by holding the packing d^7 so that it shall have a concave face next the adjacent case member.

In each of the embodiments of the invention thus far described the screw-threaded portions b' and c' are located between the packing or sealing device and the center of the watch, whereas in the construction shown in Fig. 8 the screw-threaded portions c^x and b^x are located between the packing or sealing device d^8 and the circumference of the watchcase. In other respects the packing or sealing device is the same as already described with respect to Fig. 5.

It will be observed that in addition to the space provided for the storage of the saturant, there is provided in every illustrated embodiment of the invention a space, such as that indicated at a', a^2, and a^4 in Fig. 2, at a^4 in Figs. 3, 5, 6 and 8, at b^4, c^4, in Fig. 4 and at a^4 and d^x in Fig. 7 into which the packing material may flow under pressure. This is an important consideration, for if the packing material is subjected to pressure between opposing members of the watchcase, without opportunity to flow, that is, to be displaced, the saturant is squeezed out of it and it quickly becomes hard and incapable of resisting the passage of water, especially if the surface has become scratched when the case is opened.

Various other embodiments of the invention will readily suggest themselves as being within the scope of the invention, as indicated in the appended claims.

I claim as my invention:

1. A watchcase having separable members, provided with an annular seat for packing material between proximate faces, and a saturated packing between the proximate faces, one of such case members being

formed also with a recess for the reception of the surplus saturant.

2. A watchcase having separable members, provided with an annular seat for packing material between proximate faces, and a saturated packing between the proximate faces, one of such case members being formed also with a recess for the reception of the surplus saturant, said recess being covered by the packing material.

This specification signed this 5th day of October 1917.

CHARLES L. DEPOLLIER.