July 2, 1946. L. A. CORMIER 2,403,264

JEWELER'S WRENCH

Filed March 15, 1944

Fig. 1.

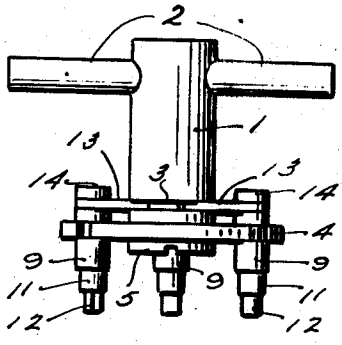


Fig. 2.

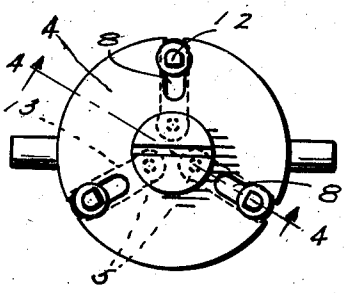


Fig. 3.

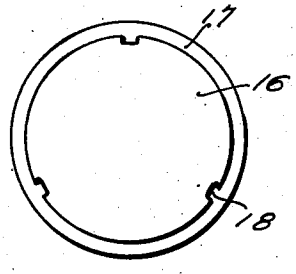


Fig. 4.

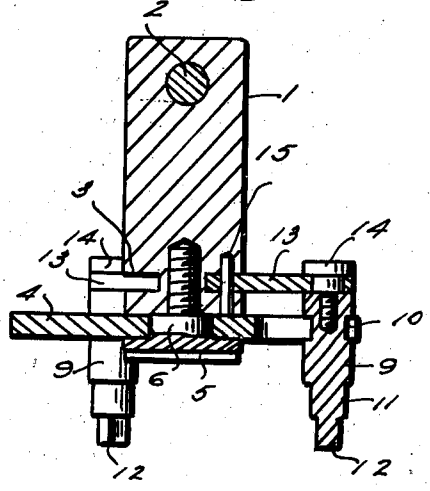


Fig. 5.

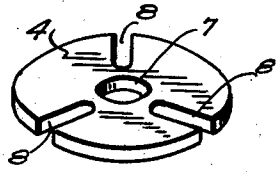
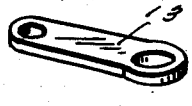


Fig. 6.



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UNITED STATES PATENT OFFICE

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JEWELER'S WRENCH

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Application March 15, 1944, Serial No. 526,560

2 Claims. (Cl. 81—6)

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My invention relates to improvements in jewelers' wrenches for use in unscrewing the back plates of watches, more particularly, although not necessarily, the back plates of waterproof watches provided with edge notches in the plate.

The principal object of my invention is to provide a simply constructed, inexpensive and easily applied wrench adapted to grip the edge of the back plates of watches under turning of the wrench in opposite directions, respectively, and which will not easily get out of order nor slip when the parts have become worn.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvements, will be readily understood when the succeeding description and claims are read with reference to the drawing accompanying and forming part of this specification.

In said drawing:

Figure 1 is a view in side elevation of my improved wrench, in its preferred embodiment,

Figure 2 is a view in end elevation looking at the bottom or working end of the wrench,

Figure 3 is a view in rear elevation of a watch casing of the waterproof type and equipped with the notched back plate,

Figure 4 is a view in longitudinal section taken on the line 4—4 of Figure 2,

Figure 5 is a view in perspective of the guide plate,

Figure 6 is a similar view of one of the links.

Referring to the drawing by numerals, my improved wrench, as illustrated, comprises a cylindrical stem, or shank, 1 having extended through the same adjacent what constitutes the butt end thereof, a diametrical rod forming a pair of radial finger grips 2. The rod may be secured in the stem 1 in any suitable manner. Adjacent the working, or front, end thereof, said stem is provided with a circumferential groove 3.

A disc-like guide plate 4 is secured to the leading end of the stem 1 flat against the same by means of a screw 5 threaded into said stem in the axis of the latter and provided with a reduced circular collar 6 fitting in an axial opening 7 in said plate 4. As will be clear from an inspection of Figure 4, the plate 4 is mounted between the leading end of the stem 1 and the head of the screw 5 for rotation relative to the stem 1. The guide plate 4 is provided with three, preferably, radial slots 8 therein arranged in 120° angular relation and opening onto the edge of said plate.

Grappling studs 9 are slidably mounted on the

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guide plate 4 to extend parallel with the stem 1, and by means of circumferential grooves 10 provided in said studs adjacent the butt ends thereof and interfitting with the grooves 8, respectively, whereby said studs are slidable radially on said plate inwardly and outwardly and maintained parallel with the stem 1. The leading, or front, ends of the studs 9 are stepped down, as at 11, to reduce the size thereof and terminate in squared grips 12.

Means are provided for moving the studs 9 inwardly and outwardly in unison on the plate 4 under relative rotation of the stem 1 and said plate, said means comprising flat links 13 having outer ends pivoted by means of shouldered screws 14 to the butt ends of the studs 9, and inner ends extending into the groove 3 and pivotally mounted therein by means of pins 15 extending into the stem 1 longitudinally of the stem. As best shown in Figure 2, the pins 15 are grouped about the axis of the stem 1 in a concentric series and are spaced apart in 120° angular relation in the series. Also, the length of the links 13 is such that when the pins 15, under relative turning of the stem 1 and the plate 4, are aligned with the slots 8, the studs 9 will be moved into the outer ends of the slots 8. In this position of the pins 15 and links 13, the pivotal connections of the links 13, to the studs 9 and stem 1, are in dead center relation with respect to the axis of the stem 1. Hence, under relative turning of the stem 1 and plate 4, to move the pins 15, or in other words, the pivots of the inner ends of the links 13, out of such dead center relation, the studs 9 will be moved inwardly along the groove 8 to grapple and thereby grip the edge of a watch back plate 16 interposed between said studs 9.

The manner in which the described wrench is used and operated will be readily understood. With the studs 9 moved outwardly, in the manner above described, the wrench is placed over a watch 17 to interpose the back plate 16 between said studs, and the guide plate 4 held stationary with one hand. With the studs 9 so positioned, the stem 1 may be turned or rotated by means of the finger grips 2, in either direction, to thereby rotate the pins 15 so as to cause the links 13 to draw the studs 9 inwardly against the edge of the back plate 16, either to grip, with the grips 12, the edge of the plate, or to enter such grips 12 in notches 18 usually provided in the back plates of waterproof watches. By providing for the described gripping action of the studs 9 in either direction of rotation of the stem 1, back

plates 16, with either right or left hand threads, may be conveniently unscrewed and detached. As will be obvious, further turning of the stem 1 after the studs have gripped the back plate 16 or engaged the notches 18, as the case may be, will result in tightening of the wrench against said back plate and unscrewing of the same.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claims.

What I claim is:

1. A wrench for gripping the edge of the back plate of a watch and unscrewing said plate comprising a stem provided at one end with a finger grip, a disc-like guide plate mounted on the other end of said stem concentrically thereof and for rotation of the stem relative thereto, a plurality of grappling studs carried by said plate to extend parallel with said stem and being grouped around the stem in equidistant angular relation, said studs being slidably mounted on said plate for movement radially of the plate into and from gripping relation to a watch back plate interposed therebetween, and operating connections between said stem and studs for sliding said studs into and from gripping relation upon rotation of the stem relative to the plate, the mounting for said studs comprising radial slots in said plate, and circumferential grooves in said studs interfitting with the side edges of said slots.

2. A wrench for gripping the edge of the back plate of a watch and unscrewing said plate comprising a stem provided at one end with a finger grip, a disc-like guide plate mounted on the other end of said stem concentrically thereof and for rotation of the stem relative thereto, a plurality of grappling studs carried by said plate to extend parallel with said stem and being grouped around the stem in equidistant angular relation, said studs being slidably mounted on said plate for movement radially of the plate into and from gripping relation to a watch back plate interposed therebetween, and means to slide said studs into and from gripping relation under rotation of the stem relative to the plate comprising links having outer ends pivoted to ends of said studs, and inner ends pivoted to said stem.

LOUIS A. CORMIER.