June 8, 1948. M. DE VRIES 2,442,920

WRENCH FOR WATERPROOF WATCH CASES

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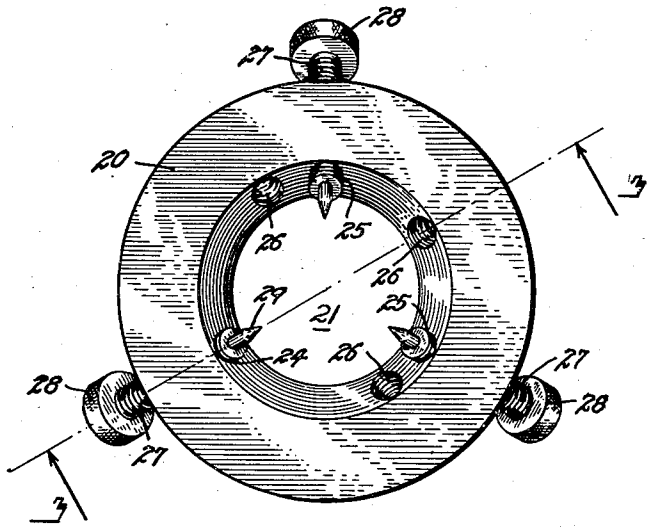


Fig. 1.

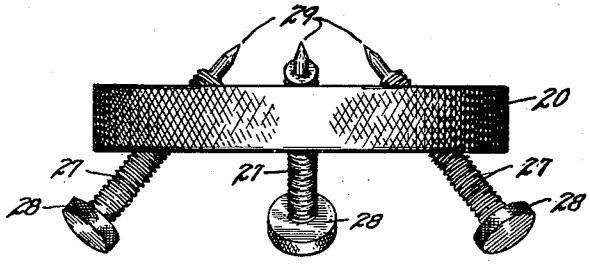


Fig. 2.

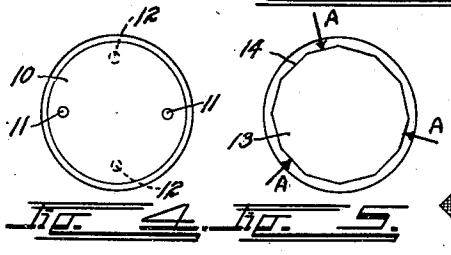


Fig. 4. Fig. 5.

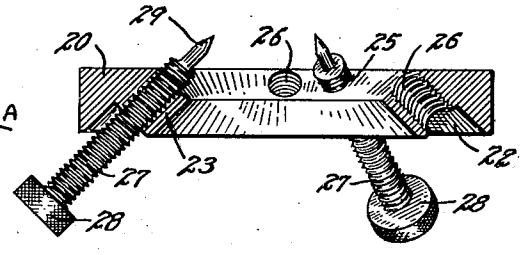


Fig. 3.

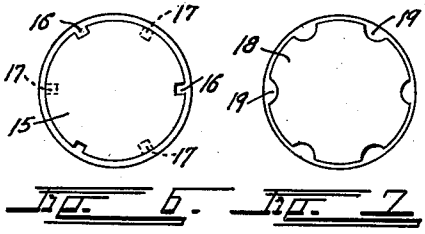


Fig. 6. Fig. 7.

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WRENCH FOR WATERPROOF WATCHCASES

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2 Claims. (Cl. 81—6)

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This invention relates to a wrench for removing the backs from water-proof watch cases.

The backs of water-proof watches are threaded into the cases and are provided with a wide variety of designs for engagement with various wrenches. Due to this wide variety of designs, it is necessary for a watch maker to carry a large number of different types of wrenches in order to open the different cases.

The principal object of this invention is to provide a water-proof watch case wrench which will be adaptable for use on all varieties of backs.

Another object of the invention is to so construct the device that it can be quickly and easily adjusted to suit any given back and which will be simple to use and positive in its operation.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a face view of the improved wrench for water-proof watch cases;

Fig. 2 is a side view thereof;

Fig. 3 is a cross section, taken on the line 3—3, Fig. 1; and

Figs. 4 to 7, inclusive, illustrate various types of case backs to which the improved wrench is adaptable.

In describing the construction and usefulness of the improved wrench, it is helpful to consider some of the various types of watch backs encountered by the modern watchmaker. In Fig. 4, a type is illustrated at 10 provided with counter-sunk wrench sockets 11. Backs of this type, in some cases, have two of the sockets 11 positioned at 180° from each other. In other cases there are four of the sockets positioned at 90° from each other, as indicated in broken line at 12, in Fig. 4. A second style of watch back is illustrated at 13, in Fig. 5, provided with flat wrench faces 14. In some cases, the faces 14 are positioned at 30° intervals, as illustrated, and in other cases they will be positioned at 45° intervals. In Fig. 6 another form of water-proof watch case back is illustrated at 15 provided with square peripheral notches 16. In some cases these notches are spaced at 120° intervals, as

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illustrated in solid line, and in other cases at 60° intervals, as indicated in broken line at 17. Still another form of water-proof case back is illustrated at 18 in Fig. 7 provided with semi-circular wrench notches 19 spaced at either 60° or 45° intervals. These are only illustrative of a few of the various case backs encountered by a watchmaker.

This improved wrench is designed to handle all of the known forms of case backs. It consists of an annular frame member 20 having a central opening 21 of larger diameter than the diameter of the largest expected watch case. The upper and lower portions of the opening 21 are beveled at angles of 45°. The lower surface of the frame member 20 contains an annular V-shaped socket 22, the sides of which are also positioned at 45° angles. This provides an annular lug portion 23 about the opening 21 through which a plurality of radially positioned, threaded screw openings extends at 45° with the axis of the frame so that their projected axes will intersect the projected axis of the frame member 20 at a common point and to one side of the plane of the member 20. The upper bevel around the opening 21 and the similarly beveled side on the socket 22 provide flat surfaces on the lug portion 23 at right angles to the axis of the screw openings to facilitate drilling and tapping the openings.

One of these openings will be herein designated the basic opening 24. Two additional openings 25 are positioned around the lug portion 23 at 120° intervals from the basic opening 24 and three additional threaded openings 26 are positioned at 90° intervals from the basic opening 24. These openings receive threaded studs 27 each of which is provided with a knurled head 28 and a pointed extremity 29.

For use on case backs such as illustrated in Fig. 5, having the faces 14 at 30° intervals, three of the studs 27 are used, one threaded into the basic opening 24 and one in each of the openings 25, as illustrated in Fig. 1, until they contact the faces 14 as indicated by the arrows "A" in Fig. 5. By relative rotation between the case and the frame 20, the back 13 may be screwed into or unscrewed from the case.

The three screws illustrated in Fig. 1 can also be applied to the notches 16 of Fig. 6 or the notches 19 of Fig. 7. Should the faces 14 or the notches 16 or 19 be positioned at 45° angles, however, four of the threaded studs 27 are used, one threaded into the basic opening 24 and one in each of the openings 26 thus placing four studs at 90° intervals. They can then be used on any

case having wrench engaging means at 45° intervals.

For use on a case such as illustrated in Fig. 4 having two of the sockets 11, the stud 27 in the basic opening 24 and another in the opposite opening 26 are adjusted until their points engage in the sockets 11. Thus, it may be seen that watch cases of any size and having any given number of wrench engaging means can be opened and closed by use of the improved tool.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. A wrench for unscrewing a back from a water-proof watch comprising: an annular frame having a central opening larger than said back; inclined threaded members threaded through said frame at an angle so that their axes will intersect at a common point on the projected axis of said frame to one side of the plane thereof; and pointed extremities formed on said threaded members for engaging said back, the incline of said threaded members acting to cause said pointed extremities to approach each other as the members are threaded through said frame.

2. A wrench comprising: a circular, flat frame member; a plurality of inclined, threaded screw openings extending through said frame member about a common axis, the axes of all of the openings intersecting said common axis at a common point to one side of said frame member; a plurality of threaded studs threaded through said openings and being directed towards said common point at their one extremity at one side of said frame member; points formed on said latter extremities; and finger-engaging means formed on the other extremities of said studs at the other side of said frame member.

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