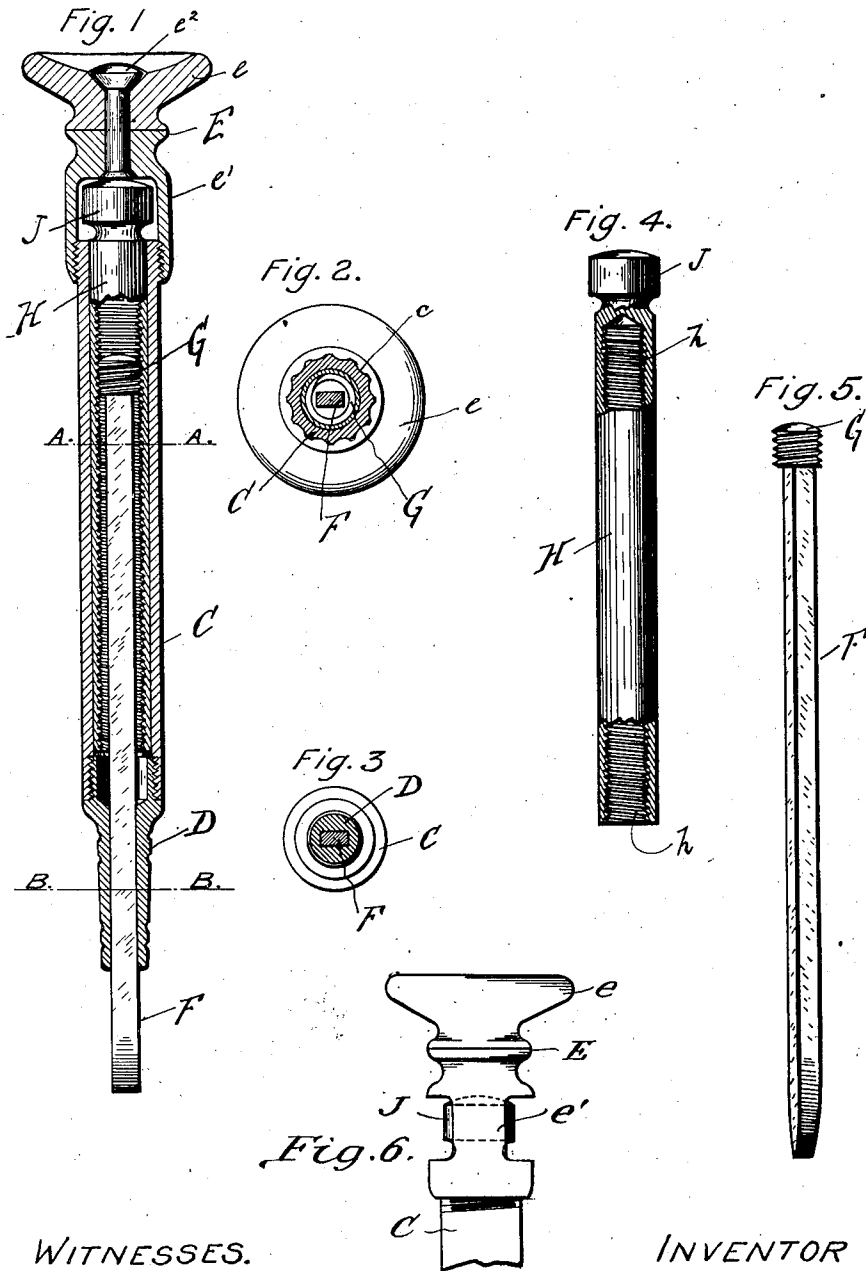


L. E. F. WACHTER.
WATCH SCREW DRIVER.
APPLICATION FILED APR. 29, 1908.

1,057,101.

Patented Mar. 25, 1913.



WITNESSES.

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UNITED STATES PATENT OFFICE.

LOUIS E. F. WACHTER, OF HARTFORD, CONNECTICUT.

WATCH SCREW-DRIVER.

1,057,101.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed April 29, 1908. Serial No. 429,904.

To all whom it may concern:

Be it known that I, LOUIS E. F. WACHTER, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Watch Screw-Drivers, of which the following is a specification.

This invention relates to tools and more particularly to screw drivers, while the principal object is the construction of a screw driver for use of watch makers or jewelry repair purposes.

For some special purposes the blade of a screw driver wears at the end which engages the screw, and particularly is this the case in the use of screw drivers for watch repair where frequently it is intended that the blade should not be quite as hard as the metal of the screw, so as not to bur the slot in a screw, or otherwise injure the article being handled. In these cases the end of the blade is sharpened by the operator, and in practice results in rapidly using up the blade.

To meet such and other requirements in practice, my invention comprises a screw driver handle with a blade of unusual length, and so arranged that as fast as it is worn and resharpened, the blade may be very conveniently and simply projected outward, while at all times the operative end of the blade is securely held by the handle so that the turning effort of the operator is transmitted to the blade near its projecting end.

I have illustrated one embodiment of my invention in the accompanying drawings, forming a part hereof, in which:

Figure 1 is a longitudinal section; Fig. 2 is an enlarged section at A—A in Fig. 1; Fig. 3 is an enlarged section at B—B in Fig. 1; Fig. 4 is a view of the adjusting sleeve partly broken away; Fig. 5 is a view of the blade; Fig. 6 is a detailed view of cap *e*.

In the drawings C is the body of the handle, D is the driving end of the handle, E is the cap or push end of the handle, comprising the cap *e* and the ferrule *e'* which screws onto the sleeve C, *e* and *e'* being riveted together by the rivet *e*².

F is the blade with its head G. The adjusting sleeve H has a head J which may be knurled, while the interior of the adjusting sleeve is threaded as at *h*.

In this particular embodiment of my invention, the turning end or tip of the driver D is screwed to the sleeve C, or it may be otherwise permanently secured thereto or formed integral therewith. The blade F is then inserted in the sleeve C, and fits in an angular hole passing axillary through the tip or driving end D. The adjusting sleeve H is then inserted and fits closely in the sleeve C, and its internal threads *h* engage the threads on the head G of the blade, while H is screwed onto the blade head thereby pulling the blade, held against rotation by its fit in the angular hole in the tip D, so that the blade will recede from the end of the tip leaving sufficient projection for proper operation of the blade end. The cap or head E is then screwed onto the head C, and may be semi-permanently secured to prevent accidental loosening. This cap is recessed so as to fit over the head J of the adjusting sleeve H, and bring the base of the recess in thrust bearing engagement with the head J of the sleeve H. The head J may be knurled or otherwise roughened to be conveniently turned by thumb and finger, and opposite this head the side of the cap *e'* is cut away so that the thumb and finger may engage the head J of the adjusting sleeve. It will thus be seen that the cap portion *e* of the head E is adapted to receive the pressure of the finger necessary to hold the screw driver in engagement with the screw. When the blade tip wears off and is ground or sharpened, the adjusting sleeve H can be turned by means of its head J and the threaded interior engaging with the head G of the blade will project the blade outwardly, thereby permitting its adjustment to the desired extent as fast as the blade is worn away. In order that the fingers may secure an effective purchase on the sleeve C it may be fluted or otherwise corrugated or roughened, as, for instance, shown at *c* in Fig. 2.

While the ready adjustment of the screw driver blade, as described, is very efficient, convenient and practical, particularly for such purposes as watch makers' screw drivers, it will be seen that by my construction it is possible to entirely renew the blade, only a small part of the device, without the renewal of the entire screw driver. By the use of my device a watch maker becoming accustomed to a particular form of handle can always use the same handle and

simply renew the blades as they wear. Furthermore, as an operator becomes accustomed to work with a certain length of projecting blade, he can likewise keep the projecting blade, and therefore the total length of his screw driver uniform in spite of constant wear.

It will be evident that various modifications may be made from the particular form illustrated in my drawings and particularly described herein, without departing from my invention, but

What I claim and desire to secure by Letters Patent is:

1. In a screw driver, a hollow handle, a restricted angular opening at one end, a blade of a cross-section adapted to fit said opening, a threaded portion on one end of said blade, a threaded sleeve within said hollow handle adapted to engage the threaded portion of said blade, revoluble in said handle to feed said blade, a pusher cap on one end of said handle having a bearing for the end of said sleeve.

2. In a watch maker's screw driver, a

pusher cap, a hollow handle adapted throughout its length to receive a blade, a sleeve within said blade handle, a blade and means of engagement between said sleeve and blade whereby the same may be fed, a projection on the end of the sleeve extending beyond the handle and into the pusher cap, an opening in the cap beside the projecting end of said adjusting sleeve, whereby access is had laterally to the projecting end of the sleeve for the purpose described.

3. In a watch maker's screw driver, a hollow body portion adapted to receive throughout its length a blade, a blade, a feeding sleeve within said body portion, a cap at one end of said body portion presenting a thrust bearing for said feeding sleeve, an angular restricted opening at the opposite end of said body portion.

Signed this 27th day of Apl., 1908.

LOUIS E. F. WACHTER.

Witnesses:

M. O. WELLS,

HERMANN F. CUNTZ.