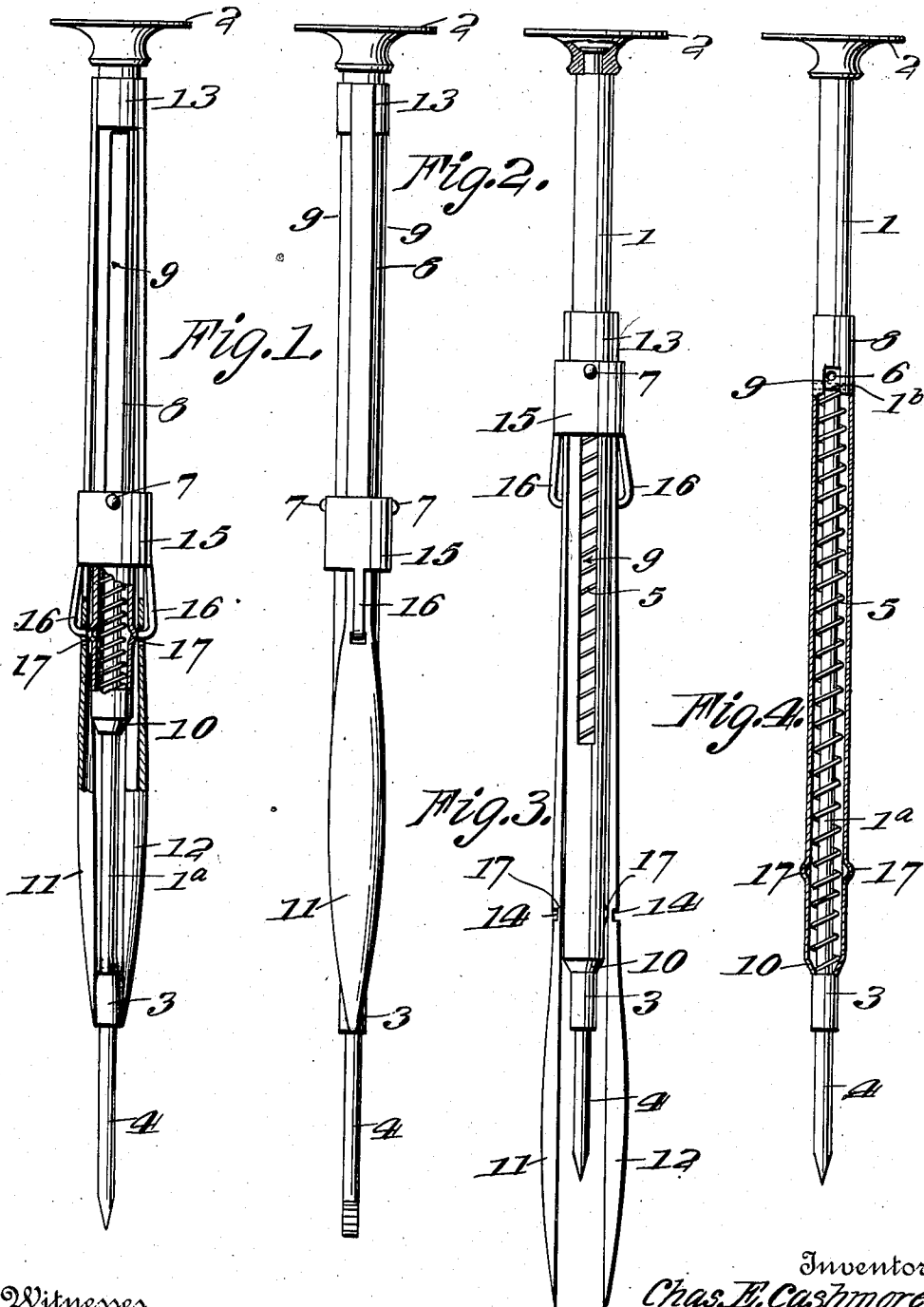


A. BJORN & C. E. CASHMORE.
 COMBINED SCREW DRIVER AND TWEEZERS.
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Witnesses
 C. D. Brown.
 C. H. Giesbauer.

Inventors
 Chas. E. Cashmore
 and Aleth Bjorn,
 by *A. B. Wilson & Co.*
 Attorneys

UNITED STATES PATENT OFFICE.

ALETH BJORN AND CHARLES E. CASHMORE, OF NEW YORK, N. Y.

COMBINED SCREW-DRIVER AND TWEEZERS.

942,373.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed September 8, 1908. Serial No. 452,004.

To all whom it may concern:

Be it known that we, ALETH BJORN, a subject of the King of Denmark, and CHARLES E. CASHMORE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Combined Screw-Drivers and Tweezers; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the construction of an improved tool for watch makers, opticians and other mechanics, provided with means for holding small screws and other articles, and with means for screwing a screw into place.

One of the objects of the invention is to provide a combined screw driver and tweezers which may be composed of any suitable material, and so arranged that the screw driver may be used without difficulty, and the tweezers may be adjusted for use without interfering with the screw driver.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims and in the drawings, in which:

Figure 1 is a front elevation of this improved tool; Fig. 2 is a side elevation thereof; Fig. 3 is a front elevation with the tweezers in an extended or operative position; and Fig. 4 is a front elevation partly in section, with the tweezers removed.

In the embodiment illustrated, the tool shank 1 is shown having a swiveled head 2 and a reduced lower portion 1^a, with an enlarged portion 3 for connecting a tool in the ordinary manner, said tool being herein shown as a screw driver 4. The reduced portion 1^a of the shank 1 has a shoulder 1^b formed at its junction with the upper end 1, and is designed to receive a coiled spring 5 which is positioned around said shank, and bears at one end against the shoulder 1^b. The shank 1 is formed with a transverse aperture 6 extending therethrough adjacent the shoulder 1^b, through which a pin 7 extends. A sleeve or tube 8 formed with longitudinally extending oppositely-disposed slots as 9, and an inwardly bent lower end

10, is mounted on the shank 1, and forms a housing for the spring 5, the lower end of which bears against the inwardly bent end 10.

A pair of tweezers formed with interiorly concaved tapering legs 11 and 12 united at their upper ends by a sleeve 13, is mounted on the tube 8, the sleeve 13 being fixed to the upper end of said tube 8. Each of the legs 11 and 12 is formed with a catch member preferably in the form of oppositely disposed openings, as 14. A clutch ring or band 15 encircles the legs of the tweezers and is connected to the shank 1 by the pin 7, which is adapted to move slidably in the slots 9 of tube 8, and its movement in opposite directions is limited by the opposite ends of said slots. The ring 15 is formed with a plurality of hook members 16 preferably in the form of legs, which are inwardly bent at their free ends, and are adapted to engage with the openings 14 formed in the legs of the tweezers when the ring is in one of its extreme positions to hold the tool projected beyond the legs of the tweezers in operative position.

When the shank 1 occupies an extended position as shown in Fig. 3, the tweezers are brought into operative position, and may be used for any purpose for which they are desired. When the parts are in the position shown in Fig. 3, and it is desired to use the screw driver, the shank 1 is forced inwardly in the sleeve 8 until the clutch legs 16 engage the openings 14 of the tweezers legs 11 and 12, in which position the screw-engaging end 4 of shank 1 extends beyond the tapered ends of said tweezers legs or blades into operative position. When it is desired to use the tweezers, the clutch legs 16 are released from engagement with the tweezers legs by pressing said legs 11 and 12 toward each other, whereby the hook ends of the catch members or legs 16 are disengaged from the openings 14 and the tension of spring 5 is exerted to force shank 1 outwardly into the position shown in Fig. 3, with the pin 7 in engagement with the outer end wall of the slots 9. Lugs, as 17 are preferably formed at opposite sides of the tube 8 in position to register with the openings 14 when the screw driver is in operative position as shown in Fig. 2. These lugs 17 are designed to engage the ends of the members 16 when the tweezer blades 11 and 12 are compressed to hold said ends outward to permit said catch members 16, to be re-

leased from the legs of the tweezers, and permit the ring 15 and the shank 1, to which it is fixed to move outwardly under the tension of spring 5.

5 The use of this improved tool permits a watch-maker or other mechanic to work with greater despatch and accuracy in the execution of delicate work, and the manipulation of the tool requires the use of one
10 hand only. The screw driver 4 carried by the shank 1 may be instantly brought into operative position by forcing the shank inwardly within the sleeve 8, thereby compressing the spring 5 and bringing the catch
15 members or legs 16 into engagement with the openings 14 formed in the tweezers legs, whereby said tool is held in its operative position. Should it be desired to use the tweezers, the tool is returned to inoperative
20 position simply by compressing the tweezers legs to disengage the catch members 16 from the legs 11 and 12, and allowing the spring 5 to expand and force the shank 1 outwardly, whereby the tool is withdrawn into
25 the position shown in Fig. 3.

This improved tool may be constructed very cheaply, and may be composed of any material, such as steel, brass and aluminum, or any other suitable metal.

30 From the foregoing description, taken in connection with the accompanying drawing, the construction and operation of the invention will be readily understood without requiring a very extended explanation.

35 Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle, or sacrificing any of the advantages of the invention as defined in the appended
40 claims.

Having thus described our invention what we claim as new and desire to secure by Letters Patent of the United States is:

1. The combination of a tool shank, a
45 spring mounted on said shank, a sleeve mounted on the shank around said spring and having a longitudinal slot therein, a pair of tweezers carried by said sleeve and a clutch member having a pin arranged to extend through the tool shank, said member
50 being adapted to engage openings formed in the legs of the tweezers.

2. The combination of a tool shank having an enlarged portion with a transverse aperture extending therethrough, a sleeve 55 mounted on said shank and having a longitudinally extending slot arranged to register with said aperture, a spring mounted on said shank and inclosed by said sleeve, a pair of tweezers mounted on the sleeve and having 60 a plurality of blades or legs, each of said blades being formed with an opening therein, and a clutch member provided with clutch devices adapted to engage the openings in the tweezer blades, said clutch member being 65 slidably mounted on said sleeve and secured by a pin arranged to extend through the aperture in the tool shank.

3. A tool shank having an aperture extending transversely therethrough, a sleeve 70 mounted on said shank, a spring mounted on said shank within said sleeve, said sleeve being provided with a longitudinally-extending slot and with laterally-extending lugs, tweezers mounted on said sleeve and having 75 openings adapted to register with said lugs, and a clutch member having a pin extending through the aperture in the shank and having means to engage the openings in the tweezers. 80

4. A tool shank having a spring coiled therearound, said shank having means for engagement with one end of said spring, a sleeve slidable on said shank and having 85 one end engaged with the other end of said spring, tweezers carried by said sleeve, a ring encircling the tweezer blades, and slidable on said sleeve, said ring being mounted to move with said shank, a catch member carried by said ring, a cooperating 90 catch member on said tweezers arranged for engagement by the ring-carried member, when said ring is in one of its extreme positions to hold the tweezers in inoperative 95 position.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

ALETH BJORN.
CHARLES E. CASHMORE.

Witnesses:

HARRY SHOWLER,
CONRAD F. KRUSE.