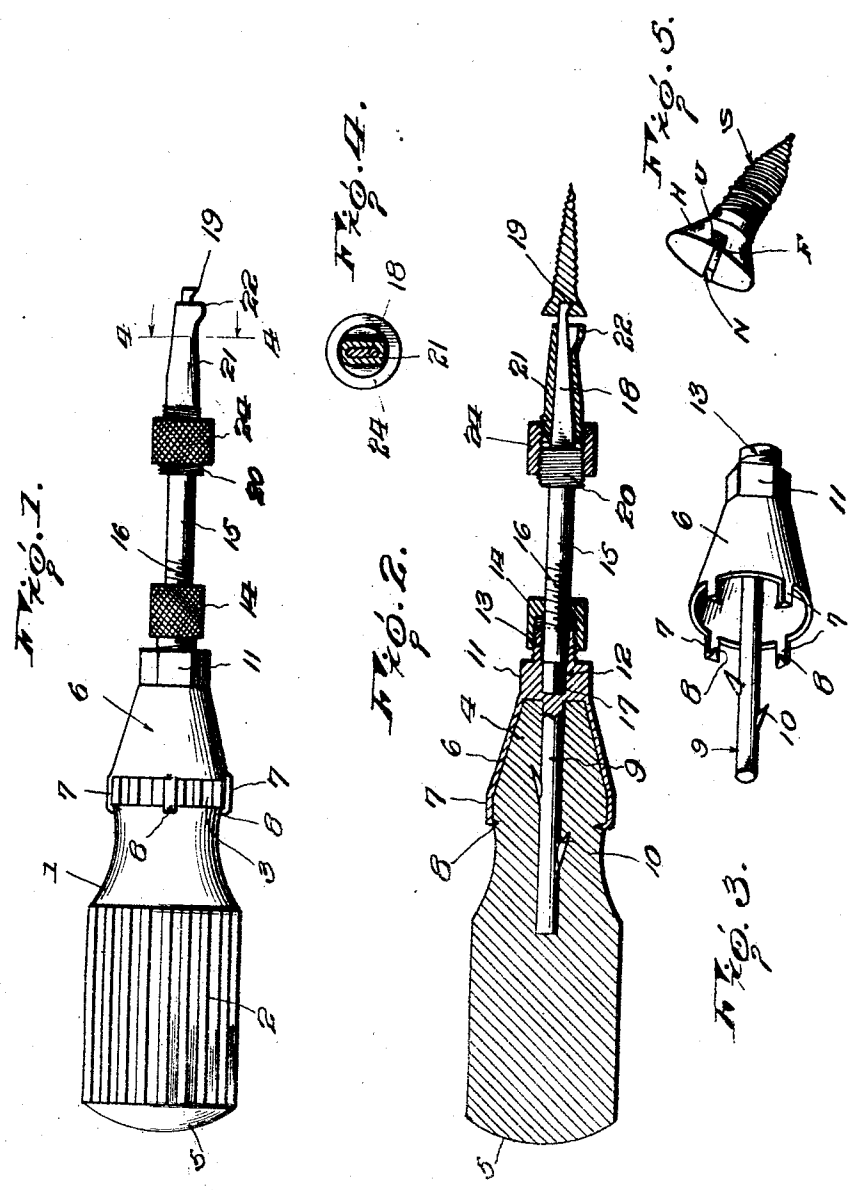


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 SCREWDRIVER.
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1,366,341.

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UNITED STATES PATENT OFFICE.

DAVID E. ANDERSON, OF SPOKANE, WASHINGTON.

SCREWDRIVER.

1,366,341.

Specification of Letters Patent.

Patented Jan. 25, 1921.

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To all whom it may concern:

Be it known that I, DAVID E. ANDERSON, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Screwdrivers, of which the following is a specification.

This invention relates to wood working tools, and more especially to screwdrivers; and one object of the same is to provide special means for positively locking the bit to the screw or unlocking it therefrom at will, while another object is to provide improved means for holding the shank of the screwdriver detachably in the handle.

The screw-holding means consists specifically in a peculiar dove-tailed formation at the tip of the bit coacting with a dove-tailed groove or nick in the head of the screw, in conjunction with which a shell is operated longitudinally upon the bit as will be explained below.

The handle attaching means consists preferably in the structure hereinafter more specifically set forth and claimed. Referring to the drawings:—

Figure 1 is a side elevation of this tool complete.

Fig. 2 is a longitudinal section thereof.

Fig. 3 is a perspective view of the ferrule and stem.

Fig. 4 is a cross section through the bit and shell on the line 4—4 of Fig. 1.

Fig. 5 is an enlarged perspective view of the screw showing the nick in its head.

The handle 1 which is preferably of wood has grooves 2 in its body, a reduced waist, beyond the same a second set of grooves 3, and is then tapered as at 4 toward its inner end, being provided with an axial bore leading from said inner end inward to receive the stem described below. The outer end or butt of the handle is preferably enlarged and rounded as shown at 5 so as to comfortably rest within the palm of the hand, and the two sets of grooves afford a firm grasp. Over the tapered inner end 4 slips the ferrule 6 which is preferably retained in place by fingers 7 having inturned pointed tips 8 as shown, and the ferrule by preference carries an integral stem 9 from which are struck prongs 10 inclining in the direction seen in Fig. 2 so that the stem may be driven into the bore of the handle when the prongs will engage with the walls of said bore while the

fingers will pass through certain of the grooves 3. The tips of the fingers may then be bent over and embedded in the waist. The inner end of the ferrule beyond the stem is thickened as seen in Fig. 2 to form a head and said head is externally hexagonal as at 11 for the application of a wrench when great force is required in turning the screw driver. Formed in the head is a squared socket 12 and projecting from said head is a tubular nipple 13 here shown as externally threaded in one direction. A coupling in the shape of a nut 14 has its upper end internally threaded to engage the threads on the nipple, and its lower end reduced and threaded in the opposite direction.

The shank 15 of the screw driver is threaded near its upper end as at 16 to correspond with the threads in the reduced end of the coupling nut 14, and its extreme upper end is squared as at 17 to engage the squared socket 12. Therefore, when the shank is inserted and the coupling turned, it acts as a turn buckle to force the shank through the nipple and into the socket. However, other means might be employed for detachably connecting the tool shank with the handle. At its lower or working end this shank has a screw driver bit 18 which is flattened as seen in Fig. 4 and tapered as seen in Fig. 2, and its tip is made dove-tailed by being flared as at 19, although it is necessary to have its dove-tail or flared portion on only one side. Uniting the bit and the shank is an integral enlargement 20, externally threaded. Slidable longitudinally on the bit is a shell 21 which at its upper end portion is externally threaded in a direction opposite to the thread of the enlargement. The shell is flattened toward its lower end portion to slidably coact with the bit and at its lower end is offset at one side into a lip 22. A coupling in the form of a sleeve 24 is, at its upper end portion, internally threaded in one direction to engage the threaded enlargement 20 while at its lower end portion the sleeve is internally threaded in the opposite direction to engage the threaded upper end portion of the shell so that rotation of the sleeve in one direction advances the shell and in the other direction retracts it.

The screw shown in Fig. 5 has its shank S threaded almost or quite up to its head H, and across the top or the face of the head is cut a slot or nick N which is herein shown

- as having one flat or upright wall F and the other wall undercut a little as shown at U, thereby producing a dove-tailed effect, although the dove-tail is only at one side.
- 5 Of course, the dove-tail might be at both sides, and the tip 19 might be shaped to correspond. The nick might also taper from one end to the other, but these details may be left to the manufacturer.
- 10 For engaging the screw driver with a screw, the dove-tailed tip 19 is passed into the nick N of the screw at the larger end of the nick if the latter tapers as suggested, and then the shell 21 is run down by turning the coupling nut 24 in the proper direction. This causes the lip 22 to bear on the head of the screw and strain the same downward on the dove-tailed tip, with the effect of locking the screw to the tool so that
- 20 it may be driven with ease or so that it might be removed in case it had already been driven. To disconnect, it is only necessary to retract the shell to about the point shown in Fig. 2, and then move the tip out of the
- 25 nick N in the screw head. I desire to be understood as reserving the widest latitude as to changes in details, so long as they fall within the spirit of the subjoined claims, and especially is this applicable with respect to the exact shape of the tip 19 herein called "dove-tailed" and the nick in the

screw which it fits, as well as the means for moving the shell if the same be employed.

Having thus described the invention, what is claimed as new is:

1. In a screw driver for use with a screw having a dove-tailed nick, the combination with a bit dove-tailed at its tip to fit said nick, of a shell non-rotatable upon the bit and having a screw engaging lip at its lower end, and means for advancing or retracting the shell at will.

2. In a screw driver for use with a screw having a dove-tailed nick, the combination with a bit dove-tailed at its tip to fit said nick and having a flattened body, of a shell flattened to slidably inclose the body of the bit but incapable of rotation thereon, a head on said shell, and a reversely threaded coupling sleeve engaging the shank of the screw driver and said head.

3. In a screw driver, the combination with a shank having a handle at one end, a flattened bit at the other end, and an externally threaded enlargement between the shank and bit, the tip of the latter being dove-tailed, of a shell slidable but non-rotatable on said bit and having a lateral lip at its lower end, and a reversely threaded coupling sleeve connecting the shell with said enlargement.

In testimony whereof I affix my signature.

DAVID E. ANDERSON. [L. s.]