(No Model.)

W. H. McCOY & H. L. PRATT.

SPIRAL SCREW DRIVER AND DRILL.

No. 529,401. Patented Nov. 20, 1894.

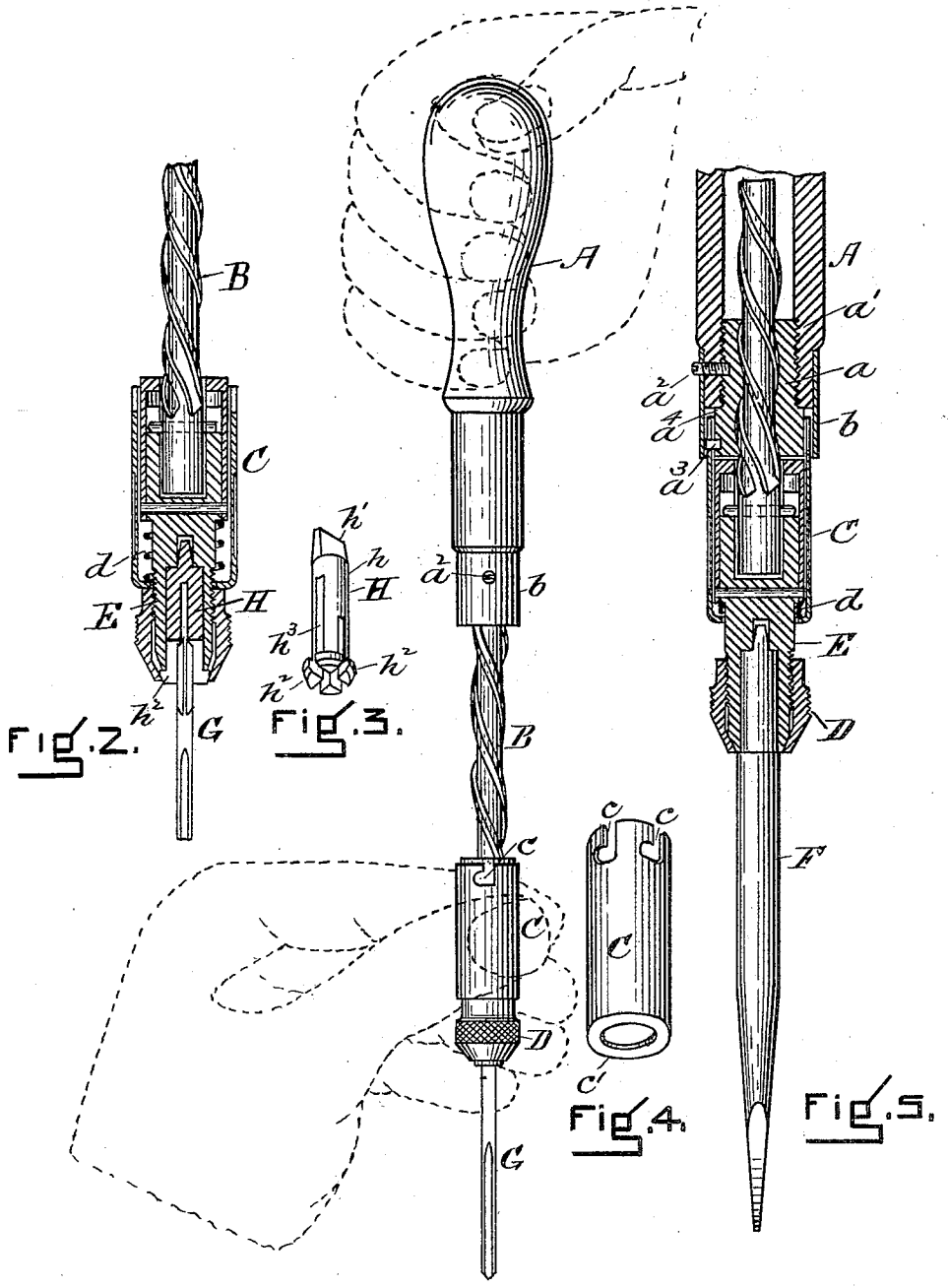

Fig. 2. Fig. 3. Fig. 1. Fig. 4. Fig. 5.

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UNITED STATES PATENT OFFICE.

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SPIRAL SCREW-DRIVER AND DRILL.

SPECIFICATION forming part of Letters Patent No. 529,401, dated November 20, 1894.

Application filed February 21, 1894. Serial No. 501,034. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. McCOY, of Miller's Falls, in the county of Franklin and State of Massachusetts, and HENRY L. PRATT, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Spiral Screw-Drivers and Drills, of which the following, taken in connection with the accompanying drawings, is a specification.

Like letters of reference indicate corresponding parts.

This invention relates to what are known as spiral screw-drivers and drills, and the particular improvements which we have now made have for their object the providing of a suitable sleeve or ring, by which the tool may be better and more efficiently operated; and also a device in connection therewith which interlocks the chuck-holding part to the handle when used as a screw-driver.

In the drawings Figure 1 is a general view of a spiral screw-driver and drill. Fig. 2 is a sectional view of the operative parts of the tool. Fig. 3 represents the drill chuck removed from the holder. Fig. 4 represents our improved loose sleeve or ring. Fig. 5 is a sectional view of the nut in which the screw part moves, and in which is shown the chuck-holding part secured to the handle for use as a screw-driver.

A represents the handle; B, the screw portion; E, the chuck-holder; C, a loose sleeve or ring; D, the thimble; a, the nut; F, the screw-driver blade or bit; G, the drill; H, the drill chuck.

The general use of this class of tools is so well known that the particular description of the method of operating the same is unnecessary. The nut for the screw is secured to the handle by the threads (a') and the screw (a^2), which screw preferably passes through the ferrule (b) and holds it in place. In the lower end of the nut (a) is placed a stud (a^3). The nut being a little smaller than the ferrule, forms an opening around the nut as shown in Fig. 5 at (a^4). The object of this stud will be hereinafter explained.

We place upon the body or chuck-holding part of the tool, the loose sleeve or ring (C). Now, in operation this loose sleeve can be seized by the hand as indicated in Fig. 1 by the dotted lines, while the tool is operated by the other hand, as also indicated in dotted lines in Fig. 1. It is obvious that the chuck-head and parts which revolve in this sleeve and the seizing of the sleeve (C) in order to force the tool against the work, will not materially retard the revolving of the drill. By this means a far greater amount of work can be accomplished and the disagreeable effect of having the chuck parts or head turn in the hand is removed. We deem this one of the most important elements of our present invention.

We preferably place upon the chuck-holder (E) the spiral spring (d), over which the loose sleeve (C) is placed. The spring is prevented from dropping out by the internal rim (c') of the sleeve. We also form upon the opposite end of the sleeve (C) the recesses (c), one or more as desired.

When it is desired to use the tool as an ordinary screw-driver, the handle (A) can be pushed down and by interlocking the recess (c) of the sleeve (C) in the stud (a^3), placed in the lower end of the nut, the two parts will be securely locked together.

The object of the spring (d) is that when in ordinary use the tool is operated, the recess (c) will not catch in the stud (a^3); but when the sleeve is hooked onto the stud, the spring prevents it from falling off.

The drill chuck (H), has a round body (h). The lower end (h') is formed flat in order to prevent the chuck from turning in the chuck-holder. In the body (h) are formed recesses (h^3), and at the lower end are the jaws (h^2). In operation the chuck (H) is placed in the chuck-holder (E) and the drill is placed in the chuck as shown in Figs. 2 and 3. The thimble (D) is then screwed on, compressing slightly the jaws (h^2) and securely holding the drill in the chuck.

When used for a screw-driver blade the chuck (H) is removed, and the shank of the bit (F) is formed to set into the holder and is held in place in the usual manner.

Having now described our improvements, what we claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the nut a, suitably secured to the handle A, and provided with the stud a^3; the ferrule b, also suitably secured to said handle A, and arranged to overlap the lower end of nut a, and to form the recess a^4; the spiral shank connecting said handle and the chuck holding part; the loose sleeve C, secured to the lower part of the tool and provided with a suitable recess or slot, adapted to engage the stud a^3, substantially as and for the purposes set forth.

2. In a spiral screw driver and drill, having a suitable handle and spiral shank, the combination of the nut a, the stud a^3, the loose sleeve C, provided with the interlocking slot c, the spring d, and the chuck holding part E, arranged and adapted to hold the lower part of the tool closely to the lower end of the handle, substantially as and for the purposes set forth.

3. In a spiral screw driver and drill having a suitable handle and spiral shank, a chuck holding part, a loose sleeve, secured to said chuck holding part and suitable means for securing said loose sleeve to the lower part of the handle, and adapt the whole to operate as a rigid screw driver, all combined substantially as and for the purposes set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 14th day of February, A. D. 1894.

WILLIAM H. McCOY.
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