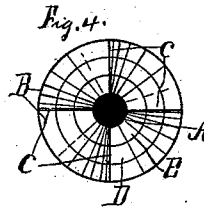
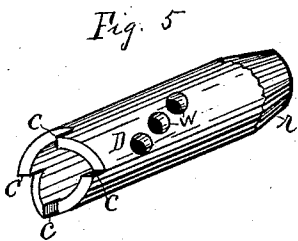
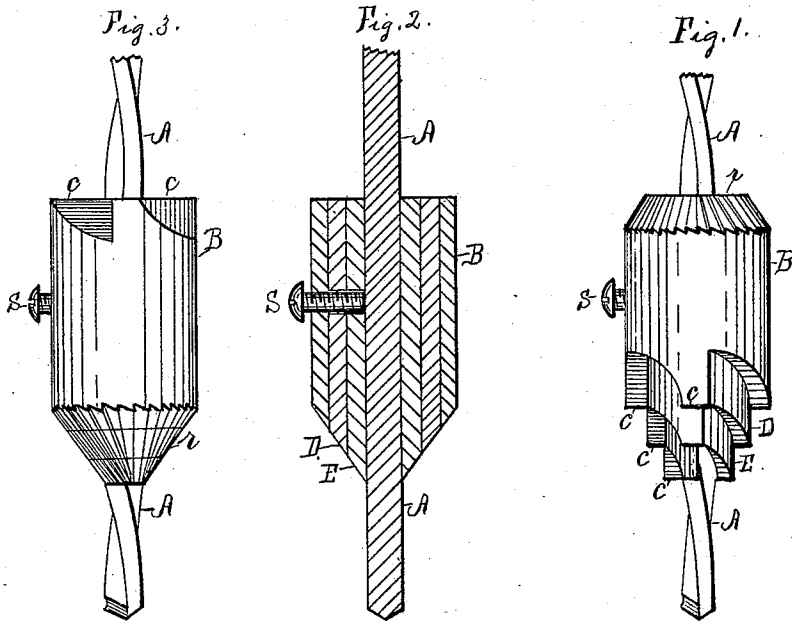


(No Model.)

L. K. & C. A. WILLIAMS.
COUNTERSINK.

No. 468,857.

Patented Feb. 16, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

LEVI K. WILLIAMS AND CHARLES A. WILLIAMS, OF CHICAGO, ILLINOIS.

COUNTERSINK.

SPECIFICATION forming part of Letters Patent No. 468,857, dated February 16, 1892.

Application filed April 27, 1891. Serial No. 390,707. (No model.)

To all whom it may concern:

Be it known that we, LEVI K. WILLIAMS and CHARLES A. WILLIAMS, citizens of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Countersinks, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters and figures of reference thereon, forming a part of this specification, in which—

Figure 1 is a side elevation of the countersink as it would appear applied to an ordinary twist-drill and adapted to countersink a seat for a flat bolt or screw head. Fig. 2 is a central vertical section of the countersink, showing it in a reverse position from that shown in Fig. 1 and as it would appear adapted to countersink a seat for an ordinary screw-head. Fig. 3 is a side elevation of the countersink as it would appear applied to an ordinary twist-drill and adapted to countersink a seat for an ordinary screw-head. Fig. 4 is an end view of the countersink, showing its end for cutting a seat for a flat bolt or screw head; and Fig. 5 is a perspective view of one of the tube-sections of the countersink.

This invention relates to certain improvements in countersinks adapted to be applied to an ordinary twist-drill, gimlet, or bit for countersinking the hole either for screw-heads or for flat bolt or screw heads, and adapted to be adjustable on the drill, which improvements are fully set forth and explained in the following specification and claims.

Referring to the drawings, B is the body proper of the countersink, and consists of a tube having a screw-hole in its side for receiving a set-screw S for securing the tool to the bit or drill, and is provided on one end with vertical offsets *c*, forming cutting-edges for cutting a seat for a flat-headed screw or bolt, and provided on its opposite tapered end with the serrated cutting-edges *r* for countersinking a seat for an ordinary screw-head.

D and E are tubes arranged concentrically within the bore of the tube B, and are provided on their ends with similar cutting-edges to those of tube B. These tubes D and E are provided on their sides with screw-holes W, (shown in Figs. 2 and 5,) through which the set-screw S may enter. These holes may be

arranged in a longitudinal line or spirally, as shown in Fig. 5, for the purpose of permitting said tubes to be vertically adjusted in tube B.

When it is desired to simply countersink a hole for an ordinary screw-head, the countersink is placed on the drill, as shown in Fig. 3, and held in place by turning up the set-screw S to bring it to bear against the drill, as shown in Fig. 2, passing through the tubes D and E, which are provided with screw-holes in line with each other for that purpose.

When it is desired to countersink a hole for a flat bolt or screw head, the tool is placed on the drill in the reverse position, as shown in Fig. 1, and held in place thereon by the set-screw S in the same manner as shown in Fig. 3.

If the countersink in the hole is to be made so as to have vertical offsets, the two tubes D and E are extended from tube B, as shown in Fig. 1, and held in such position by means of the set-screw S, which passes through proper holes in their sides and bears against the drill A, as in the other case.

In case it is desirable to use the device with a larger drill—say of the diameter of the tube E—said tube can be removed, and so, in case it is desirable to use a drill of the size of tube D, the two tubes D and E would then be removed. Any number of such concentric tubes may be used, and thus adapt the tool to be used with any-sized drill or bit corresponding in size with said tubes. The use of these concentric adjustable and removable tubes constitutes the principal novelty in this invention, and we do not wish to be confined to the use of only two such tubes, as shown in the drawings, as any number may be used as stated.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. The countersink shown and described, consisting of the combination of the tube B, having the set-screw S, and the tubes D and E, having different diameters and adapted to be arranged concentrically within tube B, and all said tubes being provided with the cutting-edges *c* and *r* and all adapted to operate substantially as and for the purpose set forth.

2. In combination with a drill or bit, a series

of concentrically-arranged tubes adapted to have longitudinal adjustment within and on each other, respectively, and provided on their ends with countersinking grooves or cutters, substantially as and for the purpose set forth.

3. The combination of the tubes B, D, and E, arranged concentrically one within the other, the tube B having the set-screw S, and the tubes D and E having the screw-holes W for adapting said tubes to have longitudinal adjustment with each other and with the tube B, and all said tubes having the countersinking grooves and cutters *c* and *r*, substantially as and for the purpose set forth.

4. A countersink consisting of a series of removable concentric tubes for adapting the countersink to use with different-sized drills or bits, substantially as set forth.

5. A countersink consisting of a series of adjustable concentric tubes adapted to be adjusted and set to cut a stepped countersink depression, substantially as and for the purpose set forth.

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Witnesses:

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