

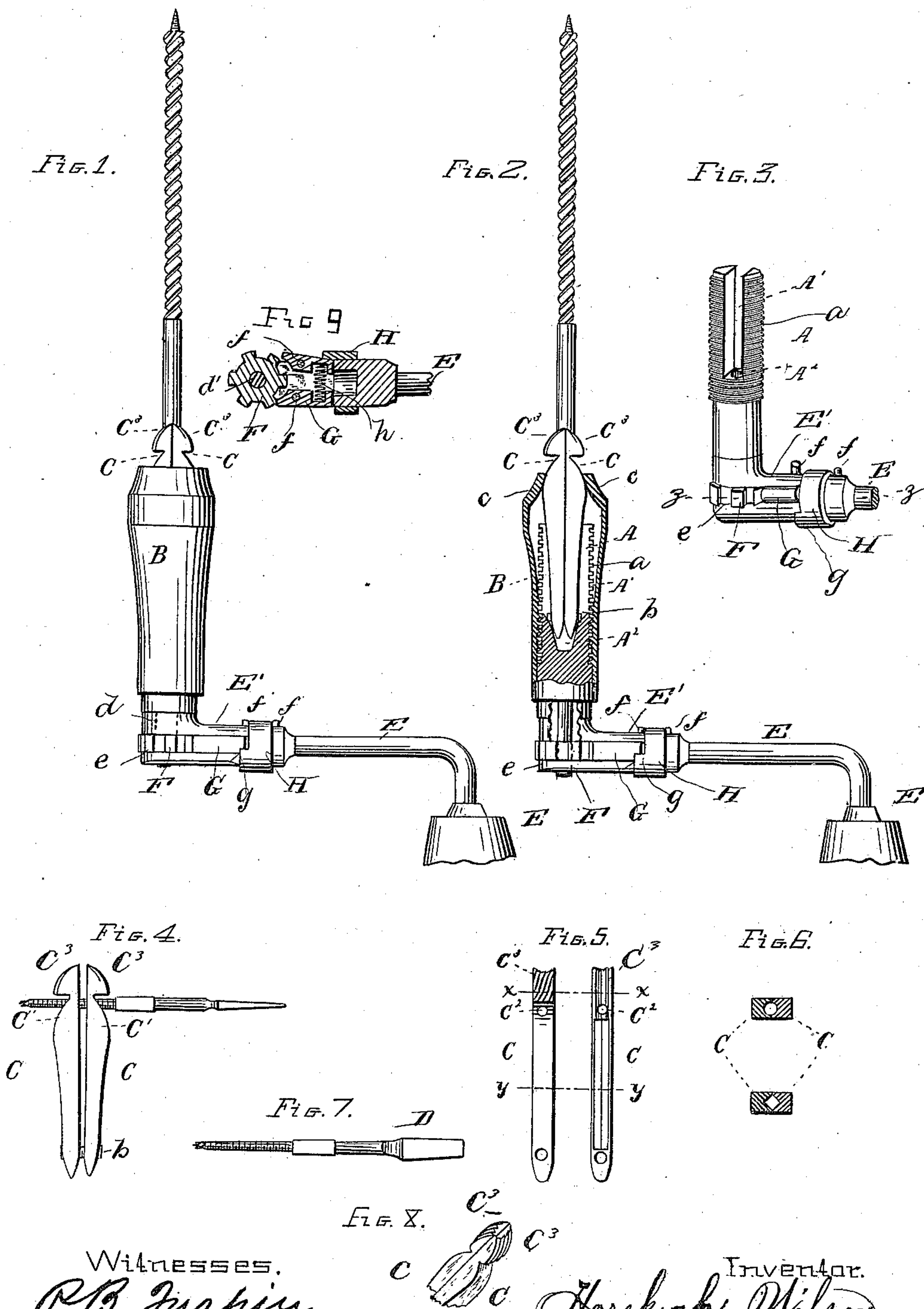
(No Model.)

H. WILSON.

BIT HOLDER.

No. 309,276.

Patented Dec. 16, 1884.



Witnesses.
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UNITED STATES PATENT OFFICE.

HEZEKIAH WILSON, OF KINGSTON, PENNSYLVANIA.

BIT-HOLDER.

SPECIFICATION forming part of Letters Patent No. 309,276, dated December 16, 1884.

Application filed September 13, 1884. (No model.)

To all whom it may concern:

Be it known that I, HEZEKIAH WILSON, a citizen of the United States of America, residing at Kingston, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Bit-Holders, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has for its object, among other things, to effect, together with the boring operation, the forming around the surface edge of the hole thus made of a countersink simultaneously with said boring operation, 15 just about when the latter is being concluded; and, further, to provide for the ready conversion of the boring implement into a reamer or countersink, in addition to permitting of the ready turning of the bit to the right or left, 20 or suitably to effect with facility the withdrawal of the bit as well as the boring operation.

To these ends the invention consists of the parts combined and constructed substantially as hereinafter fully set forth and claimed. 25

In the accompanying drawings, Figure 1 is a side view of my improved auger or bit holding and boring implement, with only a small portion of the handle shown. Fig. 2 is a vertical section in part and a side view in part of the same. Fig. 3 is a detached perspective view of the bit-stock, together with the handle-crank, ratchet-and-pawl connection, and the pawl-retracting collar or cam ring. Fig. 35 4 is a detailed side view of the bit clamping or holding jaws and the reamer or countersink combined, the same having inserted through them the threaded end of a screw-driver which I design using with my invention. Fig. 5 is an inner side view and an outer edge view of one jaw. Fig. 6 is sectional views taken upon the lines *xx* and *yy* of Fig. 5, respectively. Fig. 7 is a side view of the aforementioned screw-driver. Fig. 8 is a detailed perspective view of the jaws, showing most clearly the reamer or countersink formed thereby, the inner portions of said jaws being broken away. Fig. 9 is a section taken on the line *zz* of Fig. 3. 45

50 In the embodiment of my invention I construct the bit-stock A, which is cylindric in

its general outline, with a screw-thread, *a*, which occupies about one-half of its outer surface or length, and which screw-threaded portion is provided with a deep open-ended slot, 55 *A'*, while at the inner end of said slot is a cavity or tapered socket, *A''*, made in said stock.

B is a sleeve, which is fitted upon the stock A, said sleeve having an internal screw-thread near its inner lower end, which enables the screwing of the sleeve upon the screw-threaded portion *a* of the stock A, whereby said sleeve is rendered vertically adjustable. The sleeve B is slightly flared 65 downwardly toward the outer end, its extreme outer end being tapered or inclined inwardly to form a bearing or impinging edge for the jaws, presently described.

C C are the jaws, with their lower ends beveled upon both their inner and outer edges, and connected together, it may be, by a small screw-bolt, *b*, said ends of jaws entering the socket *A''*. The jaws C C are gradually flared upon one side outward, the maximum flare 75 being a short distance from their free ends, as at *c*, whence they are tapered inwardly, and just beyond said taper they are each formed with a semi-conical head, *C'*, which heads are provided with spirally ribbed or serrated surfaces or faces, to enable them to act in the capacity of a reamer or countersink. 80

Through the jaws C at the neck portions, between their heads and body portions, are screw-threaded transverse apertures *C''*, which 85 may receive a screw or the threaded end of the screw-driver D, which it is designed to use in connection with my invention, as shown in Fig. 4, when it is desired to use said jaws as a reamer or countersink alone, in order to separate or hold them fixedly nearer together or farther apart, to vary the size of the cavity or countersink it may be desired to cut or make. The screw-driver D is provided with spirally-arranged cutting lips or ribs upon one end, to enable it to serve also as a reamer or countersink 95 to form a depression or countersink around the surface edge of a hole to receive, for instance, a screw, the depression thus made receiving the under side beveled portion of the screw-head. 100 The inner surfaces or sides of the outer ends of the jaws C are grooved semicircularly, as

seen in the top view of Fig. 6, while inwardly from that point said surfaces of the jaws are provided with V-shaped or angular grooves, as seen in the bottom view of the same figure, the purpose of which is obvious, the inner angular grooves receiving and clasp the angular surface of the shank of the bit or boring implement or screw-driver, (whichever may be used,) and the circular aperture formed by the union of the semicircular grooves fitting and hugging the corresponding or cylindric surface of said bit or screw-driver shank, whereby the same will be firmly held in place as against endwise movement when the sleeve B is screwed or adjusted upon the stock A, so as to cause its contracted or tapered free end to press or impinge against the bulged or flared surfaces *c* of said jaws. This action of the sleeve A upon the jaws B will cause the latter to move toward each other, and to firmly clamp the bit or implement, while by reversing the previous adjustment or screwing action of said sleeve the jaws will separate and the bit or implement can be readily withdrawn.

E is the broken-off handle, with its usual cranked metallic portion provided at its outer end with a socket piece or arm, E, having a bored lateral extension, *d*, both which and the arm receive a cylindric stud, *d'*, formed with the bit-stock A, said extension resting upon the inner end of said bit-stock, while upon said stud is secured a ratchet or toothed disk, F, disposed and bearing within an elongated horizontal slot, *e*.

Within the elongation or extension of the slot *e* are pivoted two pawls, G, with their pivotal points nearer their inner ends, said lateral ends being adapted to protrude laterally from said slot at each side of the arm E, while the outer ends of said pawls are adapted (as presently described) to engage with the ratchet or toothed disk F.

Sandwiched or interposed between and connected to the pawls G is a strong spring, *h*, to automatically put said pawls into engagement with the ratchet or toothed disk F alternately.

H is a cam collar or ring fitted to turn upon

the arm E of the handle-crank, between studs *f f* upon said arm, and having a beveled tooth or projection, *g*, which, by the turning of said ring or collar either one way or the other, will be caused to ride upon one or the other of the pawls G, thus putting one or the other of the pawls out of contact or engagement with the ratchet or toothed disk F, the action of the spring *h* simultaneously with which throwing and holding the released pawl into engagement with that side of the ratchet, according as it is desired to turn the bit either to the right or left, it being of course turned in the former direction to effect the boring operation, and in the latter direction in order to withdraw the bit from the hole thus made after the boring operation. It will be seen that upon nearly completing the boring operation the reamer or countersink will have contact with the surface edge of the hole thus bored, and thereby cut a depression or countersink simultaneously with the finishing of the boring operation.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a bit-holding and boring implement, the jaws having outwardly flared or bulged surfaces and countersinking or reaming heads, in combination with the bit-stock and the sleeve with its free end acting upon the bulged or flared surfaces of the jaws, substantially as and for the purpose set forth.

2. In a bit-holding and boring implement, the jaws having the reaming or countersinking heads and apertures to receive a screw at a point just inwardly from said head, and flared or bulged near said apertures, in combination with the bit-stock and the clamping-sleeve, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HEZEKIAH WILSON.

Witnesses:

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J. R. PERRY.