(No Model.)

F. B. CARPENTER.

COMBINED BIT, COUNTERSINK, AND SCREW DRIVER.

No. 385,791. Patented July 10, 1888.

FIG. 1.

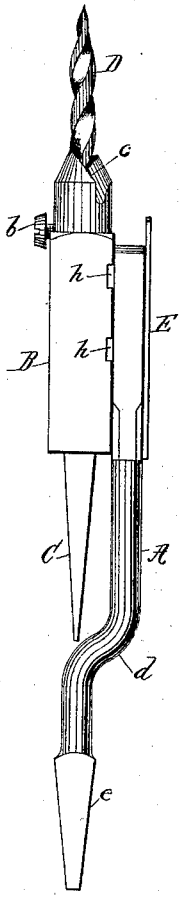


FIG. 2.

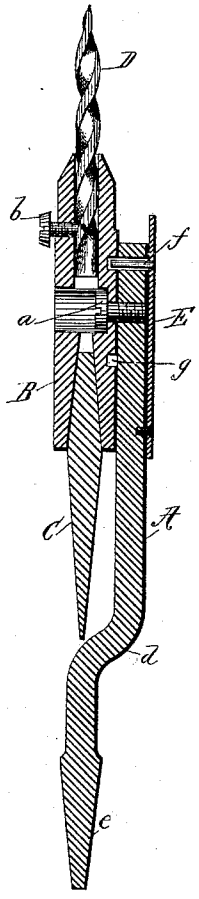


FIG. 3.

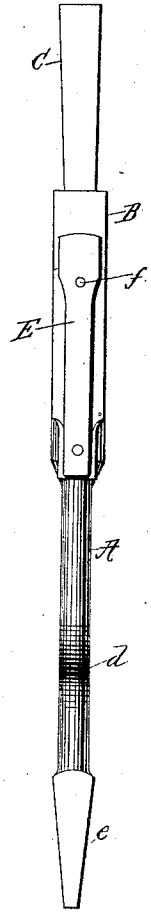
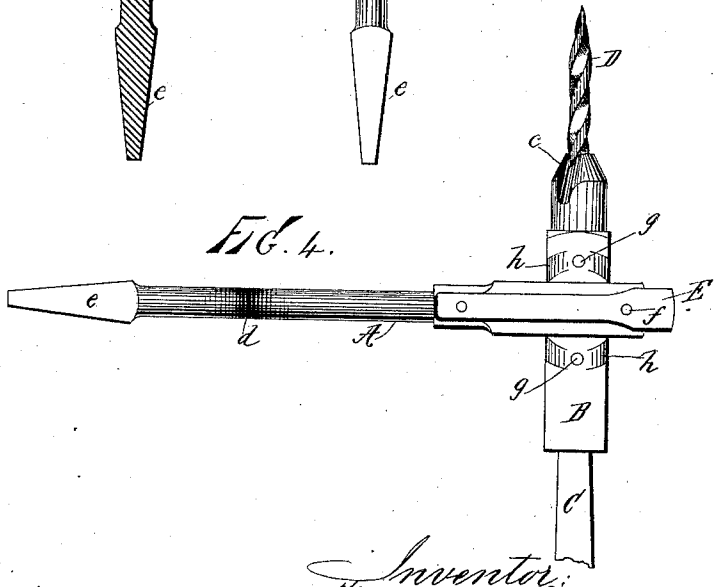


FIG. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

FREDERICK B. CARPENTER, OF MANISTIQUE, MICHIGAN.

COMBINED BIT, COUNTERSINK, AND SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 385,791, dated July 10, 1888.

Application filed March 21, 1888. Serial No. 268,021. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK B. CARPENTER, of Manistique, county of Schoolcraft, and State of Michigan, have invented certain new and useful Improvements in a Combined Bit, Countersink, and Screw-Driver, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to tools or implements employed by carpenters and others for or in connection with the insertion or removal of wood-screws, and has for its object the production of a simple, cheap, efficient, and durable tool combining in one structure a bit or gimlet, a countersink or reamer, and a screw-driver, the construction and arrangement being such that either tool required may be instantly and conveniently presented in position for work and securely held, the one tool in no way detracting from the capabilities of the other, and the whole arranged for use in a common bit-stock or equivalent handle.

To accomplish all of this my improvements involve certain new and useful peculiarities of construction and relative arrangements or combinations of parts, as will be herein first fully described, and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation of one face of my improved device, and Fig. 2 a view partly in section and partly in elevation. Fig. 3 is an elevation showing the side or face on which the detent-spring is located, (for convenience here called the "top" face.) Fig. 4 is a view in elevation showing the socket piece or block turned at right angles to the shank and exposing the face of this block, in which are the perforations for the holding pin or detent and the inclined channels in which the detent may ride.

In all these figures like letters of reference wherever they occur indicate corresponding parts.

A is the shank of the tool or implement, and B the socket piece or block pivoted thereon, as by the pivot-screw *a*, which permits the piece B to revolve, but otherwise holds it firmly in contact with the face of that portion of the shank on which it is to rest. This socket-piece is made hollow in a longitudinal direction to permit the insertion of tools, and also provided with a lateral aperture to permit the introduction of a screw-threaded pivot the head of which is seated in a countersunk recess in the inner wall of the socket-piece.

C is a screw-driver of any of the ordinary forms, seated in one end of the socketed piece B, and D is a bit or gimlet of any of the usual forms, located in the opposite end of piece B and secured in place by a set-screw, as *b*. The end of the piece B which receives the bit or gimlet is tapered and provided with channels, as *c c*, and cutting-edges, constituting a countersink or reamer. The gimlet may be adjusted in its seat to regulate its projecting length, and consequently the depth of hole to be pierced by it.

The shank A is bent, as at *d*, and is provided with a suitable tang, as *e*, by which it may be seated in an ordinary bit-stock or equivalent handle. It should be observed that the bend of the shank is such that the main axis of the tang lies practically in line with the axis of the gimlet, the main axis of the screw-driver, and the axis of the reamer, and the more nearly accurate this alignment the more perfect will be the instrument. Upon the top of the shank, and secured thereon at one end, is a spring, E. This projects a trifle beyond the end of the shank for convenience of handling, and carries a pin or detent, *f*, which passes through the shank and enters one of the perforations *g g* provided for it in the block B. When the detent is in place the block B is rigidly secured to the shank. By lifting the outer end of spring E the block is free to revolve on pivot *a*, so that either end may be turned toward the front or in position for working. The face of the block B next the shank is provided with inclined channels *h h*, so curved as to lie in the path of the pin *f*, the purpose of these channels being to enable the pin to ride easily until it reaches the perforation, into which it enters under influence of the spring E, and so that after the detent is released the block may be snapped around to its desired position without further manipulation by the operator. These curved channels have inclined planes for their bottoms, and, being formed and oper-

ated as above described, contribute to the easy and certain operation of the parts, and at the same time permit them to move in nearly the same plane when they are being adjusted, and thus enable the device to be made in compact and convenient form. Being thus constructed and arranged, the bit is driven into the wood and the hole reamed or countersunk without removing the bit. Then the screw may be inserted, the block turned on its pivot, and the screw-driver presented and applied.

The conveniences and adaptabilities of the combined implement will be sufficiently apparent without being herein enlarged upon.

Of course the driver or bit should not project beyond the bent part of the shank, lest they interfere with the changing or revolving of the tool-holder.

I am aware that a gimlet-holder or socket-block has been provided with a countersink. I am further aware that a cylinder formed in two parts and recessed for the reception of a screw-driver and a gimlet has been combined with a U-shaped stock, and that a disk made in two parts for the reception of three tools in radial apertures has been combined with a bent stock, and I do not claim such devices. In the last-named construction two of the tools when in place project laterally and are liable to be in the way, and, furthermore, no single tool can be removed from the holder without releasing the others. This last objection also lies against the old construction second above mentioned, and said device requires a clamp and other features not employed by me. In my device each tool can be separately released and removed. The pivot can be introduced through a lateral opening without releasing the tools. Its countersunk head leaves the longitudinal opening in the block free for removing chips or dirt or for the adjustment of the tools. The spring is secured to a screw at one end and normally lies close to the shank. The detent rides easily up the inclined channel to enter a suitable hole in either end of the block as the latter is revolved on its pivot, and the construction is simple, easily manipulated, and convenient and certain in operation.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. In combination with the shank provided with the inclined curved channels and the socket-block pivoted thereon and carrying a bit and screw-driver, the detent-spring normally lying close to the shank and the detent near the end of the shank arranged to move in the curved channels and by means of their inclined bottoms to raise the spring until the incline is passed in the sidewise movement of the socket-block around its pivot.

2. In combination, the revolving block made hollow from end to end and provided with a lateral aperture for the introduction of a screw-threaded pivot and having a countersunk recess on the inside for the head of the pivot, said pivot, and the shank whereby the longitudinal opening is left free of obstruction and whereby the pivot may be readily tightened or removed.

3. In combination with the bent shank, the block made hollow from end to end, lying closely against the shank, and provided with inclined curved channels, the countersink, screw-threaded pivot, the spring, and detent, said spring normally lying close to the shank and projecting slightly beyond the end of the same, all substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

FREDERICK B. CARPENTER.

Witnesses:
ED. L. CLAPP,
I. S. SHIPPENY.