

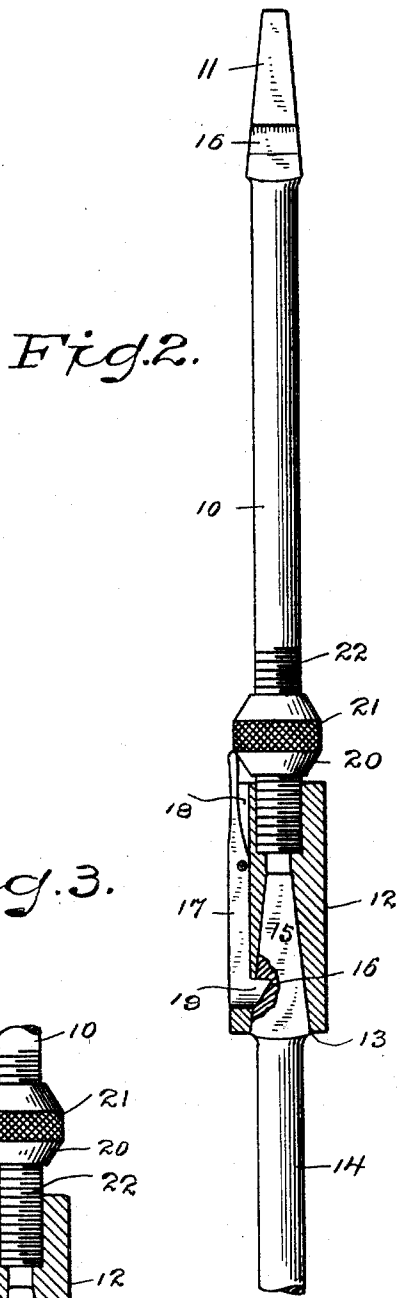
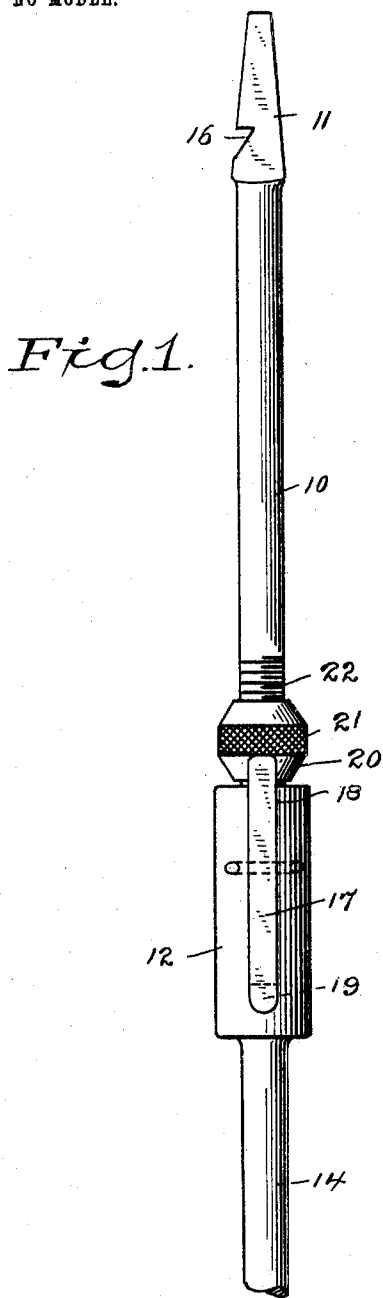
No. 759,042.

PATENTED MAY 3, 1904.

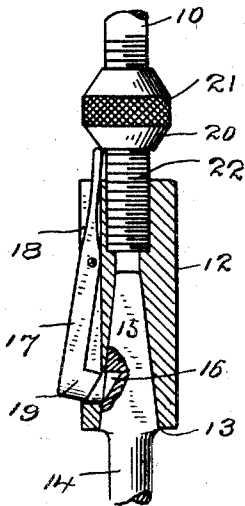
W. B. SWAN.  
BIT EXTENDER.

APPLICATION FILED JAN. 2, 1904.

NO MODEL.



*Fig. 3.*



WITNESSES.

*H. F. Lamb.*  
*S. W. Arthurton*

INVENTOR.

*William B. Swan*  
By *A. M. Wooster*  
*Att'y.*

# UNITED STATES PATENT OFFICE.

WILLIAM B. SWAN, OF SEYMOUR, CONNECTICUT.

## BIT-EXTENDER.

SPECIFICATION forming part of Letters Patent No. 759,042, dated May 3, 1904.

Application filed January 2, 1904. Serial No. 187,430. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM B. SWAN, a citizen of the United States, residing at Seymour, county of New Haven, State of Connecticut, have invented a new and useful Bit-Extender, of which the following is a specification.

My invention has for its object to provide a simple and inexpensive device adapted to be carried in a tool-chest with bits and a brace, whereby bits may be extended—that is, projected forward from the brace—my novel extender being an intermediate part having a socket to receive the shank of a bit and itself having a suitable shank for attachment to a brace. It is of course well understood that it is frequently necessary to use a bit in places that are wholly out of reach with an ordinary bit and, furthermore, that extra long bits are not only more expensive than bits of ordinary length, but are not adapted to an ordinary tool-chest and are exceedingly inconvenient to carry around.

My present invention provides an intermediate implement to which a bit may be attached and which may itself be attached to a brace or to another extender and which may be readily carried in an ordinary tool-chest. I thus provide at slight expense convenient means for extending every bit in a set without to the slightest extent impairing their efficiency or affecting their convenience in ordinary use.

With these and other objects in view I have devised the simple and novel bit-extender which I will now describe, referring to the accompanying drawings, forming part of this specification, and using reference characters to indicate the several parts.

Figure 1 is an elevation of my novel bit-extender, having a bit attached thereto and itself ready for attachment to a brace; Fig. 2, a similar view with the head of the extender in section, the parts having been given a quarter-turn; and Fig. 3 is a view corresponding with Fig. 2, except that the locking-catch is in the unlocking position, as when a bit is to be removed or has just been inserted and not locked in place.

My novel extender comprises a threaded shank 10, having the usual tang 11 for attachment to a brace, and a head 12, having a threaded recess to receive said shank. Said head is also provided with a socket 13 to receive a tang and means for locking the tang in the socket.

14 denotes the shank of a bit and 15 the tang, said shank and tang being identical with the shank and tang of the extender, and each of said tangs being provided with a recess 16, which in the present instance I have shown as provided with an abrupt wall at its upper end, the lower wall thereof being an incline, as clearly shown in the drawings. As a means of locking the tangs of bits and extenders in the socket, I have shown the head as provided with a pivoted lever 17, lying in a recess 18 in one side thereof and having at its lower end a projection 19, correspondingly shaped to recesses 17 in the tangs and adapted to engage said recesses to lock the tang of a bit or extender in the socket. The upper end of lever 17 is cut away on its inner face and extends upward beyond the head, and the cut-away portion thereof is adapted to be engaged by a bevel 20 on a nut 21, which engages a thread 22 on the shank of the extender.

The operation of my novel extender will be obvious from Figs. 2 and 3. When the nut is turned upward on the shank, as in Fig. 3, the rear end of the lever by reason of the cut-away portion may be tilted downward, which will withdraw projection 17 on the locking-lever from socket 13, and consequently from the recess in a tang should there be one in the socket. Having placed the tang of a bit or extender in the socket, with the recess 16 therein in position to register with recess 18 in the head, nut 21 is turned downward on the shank, the bevel thereon engaging the rear end of the lever, tilting said lever and forcing the projection thereon into engagement with the recess in a tang lying in the socket.

It will be noted that the diameter of nut 21 is less than that of head 12, whereby said nut

will not come in contact with the walls of a hole being made by the bit, and thereby become unscrewed.

Having thus described my invention, I  
5 claim—

10 1. A bit-extender comprising a threaded shank having a tang for attachment to a brace, a recessed head mounted on said shank and provided with a socket to receive the tang of  
15 a bit, a pivoted locking-lever mounted in the recess of said head and provided with a projecting end having a cut-away portion, and a nut working on said shank, and engaging the cut-away portion of said locking-lever.

20 2. A bit-extender comprising a threaded shank having a tang for attachment to a brace, a head having a threaded recess to receive said shank and provided with a socket to receive the tang of a bit, a locking-lever pivotally mounted in said head and provided with

a projecting end, and a nut working on said threaded shank and engaging said locking-lever.

3. A bit-extender comprising a threaded shank having a tang for attachment to a brace, 25 a recessed head mounted on said shank and provided with a socket to receive the tang of a bit, a pivoted locking-lever mounted in the recess of said head and provided with a projecting end having a cut-away portion, and a 30 nut of smaller diameter than said head and working on said threaded shank, said nut having a beveled portion adapted to engage the cut-away portion of said locking-lever.

In testimony whereof I affix my signature in 35 presence of two witnesses.

WILLIAM B. SWAN.

Witnesses:

GEO. A. DIVINE,

CORNELIUS A. HAMMOND.