

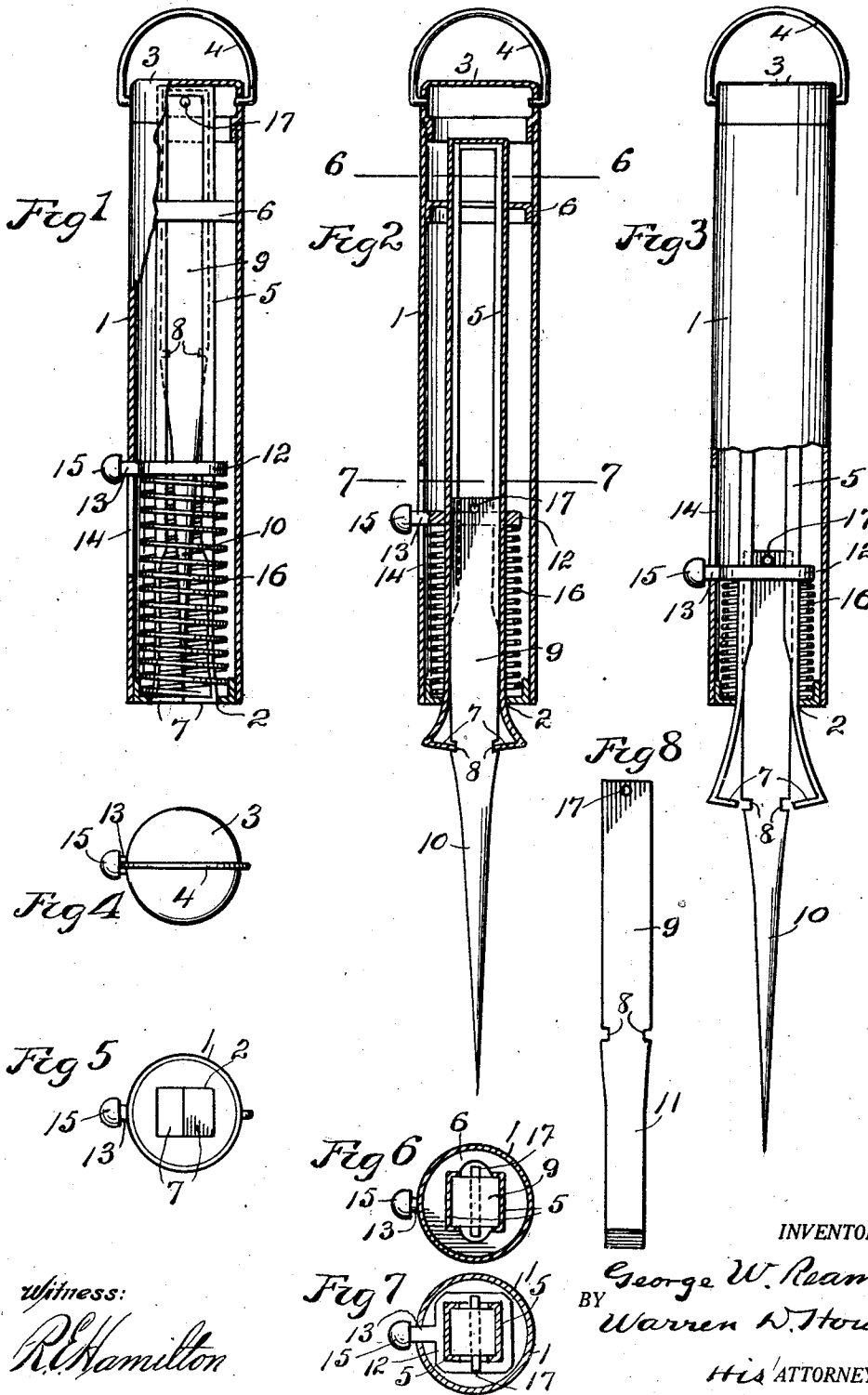
March 12, 1929.

G. W. REAMS

1,705,205

HAND TOOL

Filed April 17, 1926



UNITED STATES PATENT OFFICE.

GEORGE W. REAMS, OF KANSAS CITY, MISSOURI.

HAND TOOL.

Application filed April 17, 1926. Serial No. 102,678.

My invention relates to improvements in hand tools. It is of a type having a bit adapted to be stored in the handle of the implement, when not in use, or to be used with a plurality of bits for different purposes. It is particularly adapted for use as an ice pick, an awl or a stiletto, but may be used as a screw driver or for various other purposes.

One of the objects of my invention is to provide a tool of the kind, which is novel, simple, cheap, durable, not liable to get out of order, and which may have the bit stored in the handle for compactness and to prevent injury to the person or other objects, such as might occur with sharp portions of a bit which has such portions exposed.

The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawing, which illustrates the preferred embodiment of my invention,

Fig. 1 is a view of my improved tool shown partly in vertical section, and partly in elevation, the bit shown being adapted for use as an ice pick, awl or stilette, and being shown stored in the handle.

Fig. 2 is a vertical sectional view of the same, with the bit shown in the operative gripped position.

Fig. 3 is a view similar to Fig. 1, the bit being shown in the projecting released position.

Fig. 4 is a top end view of what is shown in Fig. 1.

Fig. 5 is a bottom end view of the same.

Fig. 6 is a cross section on the line 6—6 of Fig. 2.

Fig. 7 is a cross section on the line 7—7 of Fig. 2.

Fig. 8 is an elevation of a screw driver bit adapted for use with the handle shown.

Similar reference characters designate similar parts in the different views.

The handle of the tool comprises a tubular body 1 having a bottom end opening 2, Fig. 5, and provided with an internally threaded upper end in which is removably fitted a cap 3, which may have pivoted to it a bail 4 for suspending the tool from a nail or a chain.

Slidably mounted in the handle is a bit holder comprising a U-shaped member 5, which extends through and is slidably fitted in a guide ring 6 fastened in and to the body 1. The member 5 is also extended through

and is slidable in the end opening 2. The lower portions of the arms of the member 5 are resilient, and when free so to do diverge outwardly and downwardly, as shown in Fig. 3. The lower ends of the arms of the member 5 are inwardly turned to form two gripping jaws 7 disposed opposite to each other, and are adapted to respectively enter two notches 8 in opposite sides respectively of a shank 9 of a bit, such as an ice pick or an awl bit 10, as shown in Fig. 2, or of a screw driver bit 11, shown in Fig. 8.

The bit shank 9 is slidably fitted between the arms of the U-shaped member 5, so as to be movable from a position wholly within the member 5, or to the gripped position shown in Fig. 2.

The bit holder member 5 is movable from the fully extended position shown in Fig. 3 to the position shown in Fig. 1, in which the jaws 7 will completely close the end opening 2. In the last named position of the member 5, the bit will be wholly within the handle.

Forming a part of the bit holder and encircling the arms of the member 5 in the body 1 is a ring 12, which is rigidly fastened to the arms of the member 5, and which has a lateral projection 13 which extends through and is slidable in a longitudinal slot 14 in the side of the body 1.

The projection 13 may have on its outer end a button 15 for engagement with the thumb, in order that the bit holder may be forced downwardly to the gripping intermediate position and to the release position, shown in Fig. 3.

For automatically forcing the bit holder to the uppermost position in which the jaws 7 will close the opening 2, a coil spring 16 encircles the arms of the member 5, and bears at its lower end on the bottom of the body 1, the upper end having a bearing against the under side of the ring 12.

To prevent the bit from accidentally dropping out of the bit holder when the latter is in the releasing position, shown in Fig. 3, a pin 17 extends through and projects from the shank 9 above the ring 12, so as to engage the latter. This pin is removable, to permit the bit being removed, by turning the body 1 bottom end up, when the holder is in the release position. Fig. 3, upon which the bit will drop against the transverse portion of the member 5. The member 5 is then permitted to be forced by

the spring 16 to the position in which the jaws 7 will close the opening 2. The cap 3 is then unscrewed, when the pin 17 can be removed. The body 1 is then reversed to the upright position, and the holder member 5 is forced to the released position, upon which the bit will drop out. By then reversing this operation, the bit 10 or another bit, such as the bit 11, Fig. 8, may be inserted in the bit holder and the pin 17 extended through the bit shank to retain the bit in the bit holder.

In the operation of the tool, the parts being as shown in Fig. 1, the button 15 is forced downwardly, to a position in which the bit holder will be as in Fig. 3. The bit is then permitted to drop to the position shown in Fig. 2, after which the bit holder with the bit engaged by the jaws 7 is forced upwardly by the spring 12, the body 1 forcing the jaws tightly against the bit in the notches 8.

After use of the tool, the parts may be restored to the position, shown in Fig. 1, by forcing the bit holder to the release position, Fig. 3, then reversing the handle, upon which the bit will drop down against the transverse portion of the member 5, after which the pressure on the button 15 is released and the spring 12 permitted to force the bit holder to the position shown in Fig. 1, in which the opening 2 will be entirely closed by the jaws 7. The bit will thus be retained wholly within the handle.

I do not limit my invention to the structure shown and described, as many modifications, within the scope of the appended claims, may be made without departing from the spirit of my invention.

What I claim is:

1. In a hand tool, a hollow handle having an end opening, a bit holder having bit gripping means and slidable in said opening from a position closing said opening to a projecting bit releasing position, and slidable to an intermediate position engaging the handle and arranged to be forced by the handle to a bit gripping position, the holder having means for being manually forced to said releasing position, means for automati-

cally forcing the holder to said opening closing position, and a bit slidable inwardly in said holder from the gripping position to a position wholly within said holder, the bit having releasable means for engaging the holder to prevent the bit from slipping out of the holder when the latter is in the projecting releasing position.

2. In a hand tool, a hollow handle having an end opening and a side slot, a bit holder comprising a U shaped member having resilient arms provided respectively with inwardly extending gripping jaws, and a ring in said handle fastened to and encircling said arms and having a projection extending through and slidable in said slot for manually depressing said U shaped member, the latter being slidable in said opening from a position in which said arms will close said opening to a projecting position in which the normal tension of said arms will force them away from each other so as to release the jaws from a bit engaged thereby, and movable to an intermediate position in which the arms will engage the handle and be forced thereby to a bit engaging position, a coil spring encircling said arms in said handle and bearing at one end against the latter and at the other end bearing against said ring for forcing the holder to the opening closing position, and a bit slidable between the arms of said U shaped member from a position wholly within the latter to a predetermined projecting position and having two oppositely disposed notches adapted to respectively receive said jaws.

3. In a hand tool, a hollow handle having an open end and a side slot, a U shaped bit holder having resilient arms reciprocative in said handle to and from an open diverging position and having at their outer ends jaws adapted to grip a bit when forced inwardly to a gripping position, and a ring encircling and fastened to said arms and slidable therewith in said handle, and provided with an operating projection extending through and slidable in said slot.

In testimony whereof I have signed my name to this specification.

GEORGE W. REAMS.