

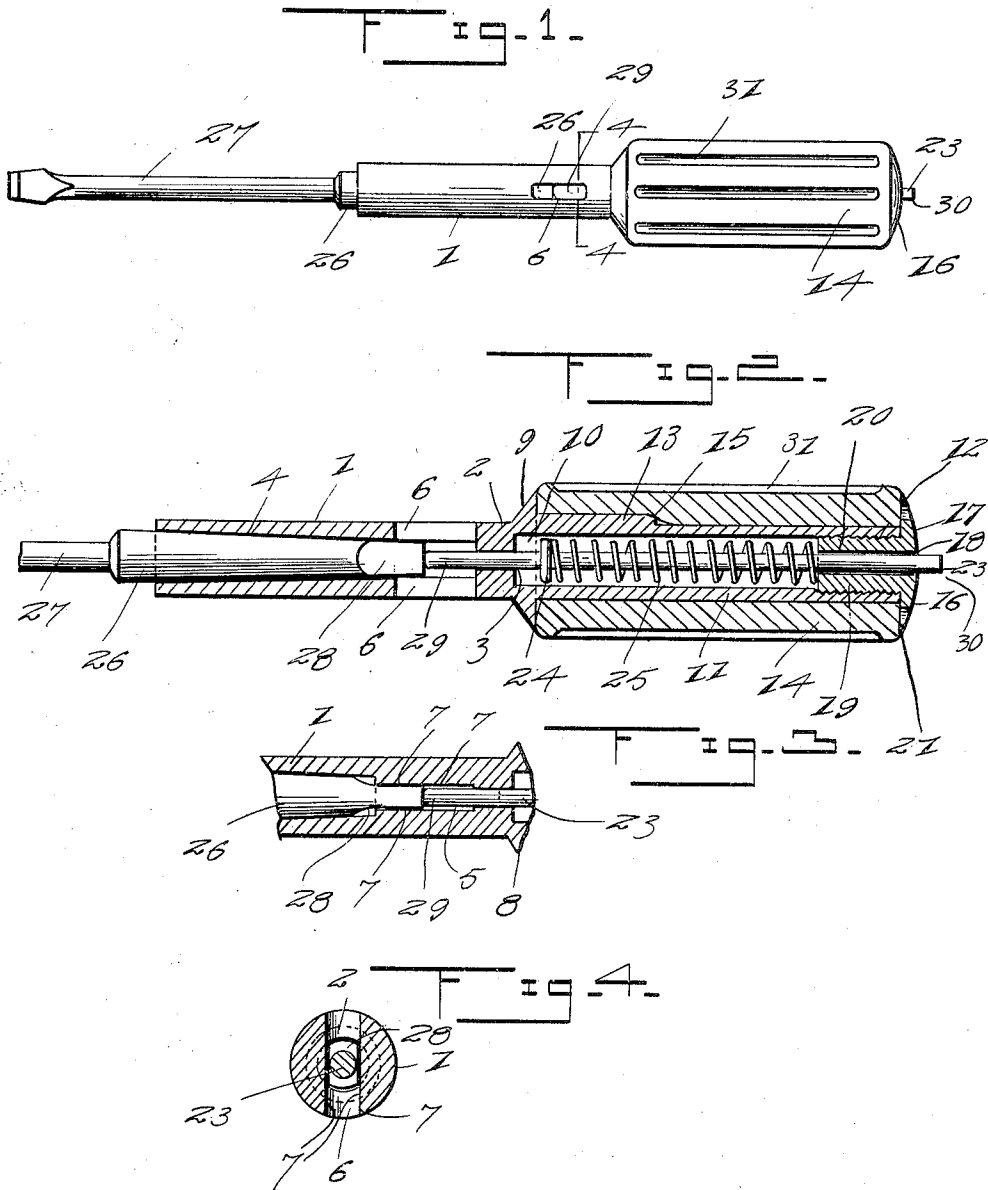
R. E. PERRINE.

TOOL HANDLE.

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1,317,455.

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TOOL-HANDLE.

1,317,455.

Specification of Letters Patent. Patented Sept. 30, 1919.

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To all whom it may concern:

Be it known that I, RICHARD E. PERRINE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Tool-Handles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in tool handles.

The object of this invention is the provision of a handle equipped with a tapered socket, which is adapted to receive therein tapered heads, screw bits, reamers, taps, scrapers, screwdrivers and the like, and has arranged in its handle portion a rod constituting an ejector, which extends into the socket, whereby tools of various characters may be ejected from the socket, so that a tool of another character may be replaced therein.

A still further object of this invention is the provision of a tool handle which embodies a tapered tool-receiving socket and a sleeve at one end of the socket, which is adapted to have secured thereon a handle, and ejecting rods arranged longitudinally in the sleeve and having one end projecting into the socket, said tapered socket being adapted to receive tapered ends of various tools, such as drills, reamers, taps, scrapers, driver bits and the like, which have a standard taper therein, the inner end of the tapered head of the tool abutting the inner end of the ejecting rod and frictionally secured in the socket, and may be ejected therefrom by pressure on the opposite end of the rod when another tool of different character may be placed therein.

A still further object of this invention is to provide a tool handle of this character, which is simple, practical and comparatively inexpensive in construction, and one that can be manufactured and sold at a low cost.

With this and other objects in view, the invention consists in the novel combination and arrangement of parts hereinafter more fully described and set forth in the claim hereto appended.

In the drawing:

Figure 1 is a side elevation of my improved tool handle made in accordance with this invention,

Fig. 2 is a longitudinal sectional view taken through the same, illustrating the manner in which the tool is arranged in the socket,

Fig. 3 is a fragmentary sectional view, illustrating the manner in which the inner end of the tool head is arranged in the socket and has engagement with the inner end of the ejecting rod,

Fig. 4 is a sectional view, taken on the line 4-4 of Fig. 1.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

Referring more particularly to the drawing the numeral 1 designates a cylindrical socket, which has one end provided with a wall 2, and which is provided with a central opening 3. The opposite end of the socket 1 is fully open and has an inwardly tapering bore 4, which bore is reduced at its inner end, as at 5, the purpose of which will be hereinafter more fully described.

The end of the socket adjacent to the wall 2 is provided with diametrically opposed elongated slots 6, which extend transversely through the cylindrical socket member 1. The slot 6 forms a substantially rectangular inner wall 7, the purpose of which will be hereinafter more fully described.

A retaining flange 8 is formed integrally with the closed end of the socket 1 and projects laterally beyond the walls thereof, the under side of the flange being inclined, as at 9, and is provided centrally with a bore 10, which is concentrically related with the opening 3 in the wall 2 of the socket member 1. A handle supporting sleeve 11 is formed integrally with the outer face of the retaining flange 8 and the bore of the sleeve 11 is in direct alinement with the bore 10, and is concentrically related with the opening 3 in the wall 2 of the socket member 1.

A key 13 is formed exteriorly on the handle supporting sleeve 11 adjacent the flange 8, one end of the key terminating in the flange, as clearly shown in Fig. 2 of the drawing.

A wooden handle 14 is slidably mounted on the sleeve member 11 and is provided on its inner end with a longitudinally extending slot 15, which is adapted to receive the key 13 therein, thus preventing the handle from rotating on the sleeve member 11, while permitting the handle to be rotated by rotating the sleeve and socket therewith, it being understood that the handle 14 can be made of wood, leather, fiber or any other material suitable for the purpose.

A screw cap 16 having a convex outer surface or flange 17 is provided with a central opening 18. An exterior screw threaded socket 19 is formed integrally with the under side of the flange 17 centrally thereof and is provided with a longitudinally extending bore 20, which is in direct alignment with the opening 18 in the flange 17 of the cap, the purpose of which will be hereinafter more fully described.

The cap 16 is screw threadedly fitted in the end of the sleeve-supporting member 11 and has its opening 18 in alignment with the opening 3 in the wall 2 of the socket member 1, thus permitting the ejecting rod to be arranged in the sleeve member 11 and socket 1 to be hereinafter more fully described.

The cap 16 is provided adjacent its periphery at diametrically opposite points with openings 21 which are adapted to receive therein the ends of a spanner wrench for securing the cap against the end of the handle 14 also within the sleeve supporting member 11.

The ejecting rod is designated 23 and is arranged longitudinally in the handle supporting sleeve 11, and has its inner end extending through and beyond the wall 2 of the socket 1 and terminates at a spaced distance from one end wall of the slot 6, as clearly shown in Fig. 2 of the drawings. A supporting stop cuff 24 is secured to the rod adjacent its inner end and is located in the bore of the sleeve 11. A relatively weak coil spring 25 surrounds said rod and has one end secured to the stop cuff 24 and its opposite end abutting the inner end of the stud 19 of the cap 16, which will be hereinafter more fully described.

The socket member 1 is adapted to receive the tapered head 26 of the tool shank 27 therein, which shank is illustrated in the drawings as a screwdriver. The tapered head 26 has its extreme end beveled on opposite sides, as at 28, and is adapted to frictionally engage the side wall 7 formed by the slot 6, when the head is inserted in the socket member 1. The head 26 is tapered, as shown, and is frictionally fitted in the socket member 1 and has its angular faces 28 aligned with the reduced portion of the socket 1 formed by the walls 7, and is

inserted therein and its extreme inner end abuts the inner end 29 of the rod 23, thus forcing the same outwardly beyond the cap 16 against the tension of the spring 25, and thus it will be seen that to release the tool from the socket member 1 it will be only necessary to invert the handle and socket and strike the outer end 30 of the rod 23, thus ejecting the tool from the socket 1, so that a tool of another character may be inserted in the socket 1 when desired.

The handle member 14 is provided with a plurality of longitudinally extending grooves 31, which are arranged at a spaced distance apart around the exterior thereof, so that a firm grip may be applied to the handle when desired.

In assembling the device the handle is arranged upon the supporting sleeve 11. The ejecting rod is positioned within the handle and socket, and the cap 16 is screw threadedly fitted in the sleeve 11 and removably secured to the outer end of the handle. The tool, whether it be a drill, screwdriver or the like, has a tapered head 26, which is of the standard type, inserted into the tapered bore of the socket member 1, and has its inner end abutting the inner end of the rod 23, thus forcing the same outwardly and beyond the flange of the cap 16 when the device is ready for use. When it is desired to remove the tool from the socket 1 pressure is applied to the outer end of the rod 23 either by striking the same with a hammer or hitting the same upon some support, driving its inner end into engagement with the inner end of the head 26 of the tool, thus ejecting the same from the socket 1.

What is claimed is:

In a tool handle, a cylindrical metallic member having a front portion provided with a tapered bit receiving socket and a rear portion provided with a socket opening out through its rear end, said member having a relatively narrow passage located between and establishing communication between said sockets, a portion of the inner wall of the socket in the rear portion being screw threaded, an annular flange formed on the outer side of and extending outwardly from the member adjacent the front end of said rear portion to provide a shoulder, a key formed on the outer side of the rear portion and extending rearwardly from and formed integrally with said shoulder, a grip applied to said rear portion and provided with a groove to receive said key, a hollow nut adapted to be threaded into said rear socket and having a relatively large flange adapted to engage the rear end of said grip, the threading of the nut into said socket forcing the grip upon said rear portion over the key and

against said shoulder, a pin slidably mounted in the socket of said rear portion and having its ends located in said passage and nut, a shoulder carried by said pin adjacent
5 said front end, and a spring surrounding said pin between said shoulder and nut.

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

RICHARD E. PERRINE.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."