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GRAPPLE HOLDER

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Fig. 1.

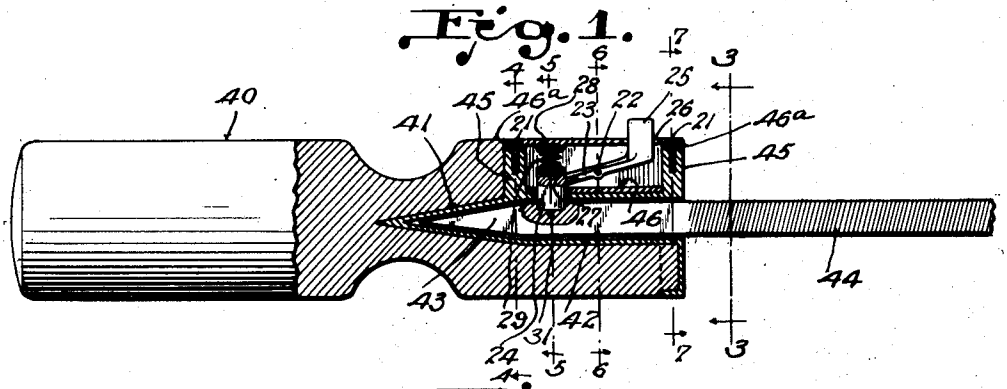

Fig. 2.

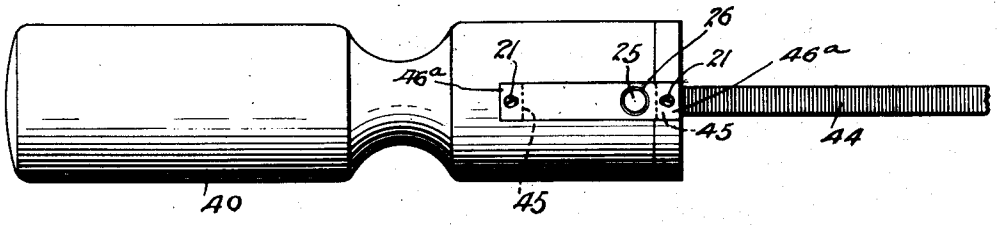

Fig. 3.

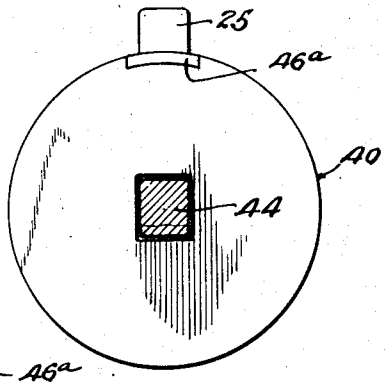

Fig. 3b

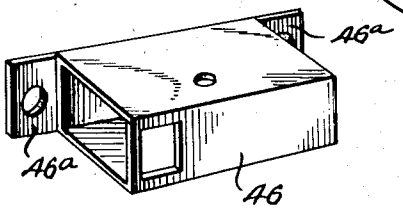

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Fig. 4.

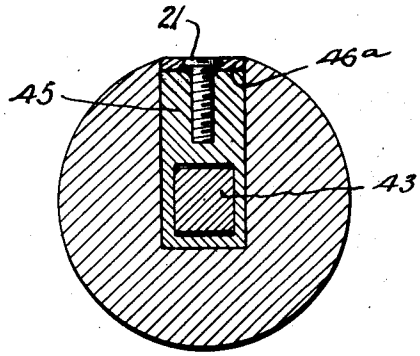


Fig. 5.

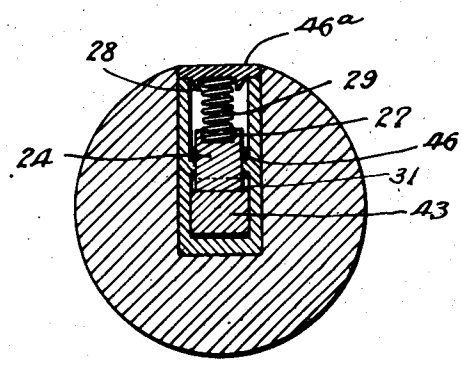


Fig. 6.

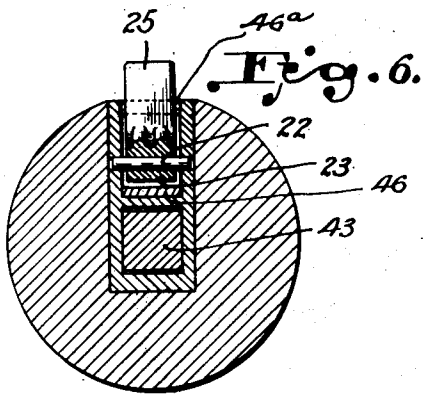
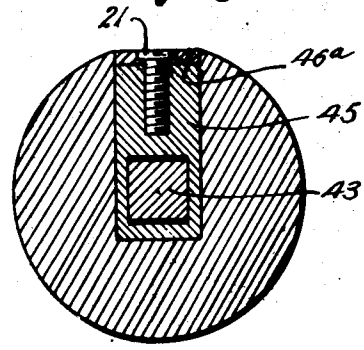


Fig. 7.



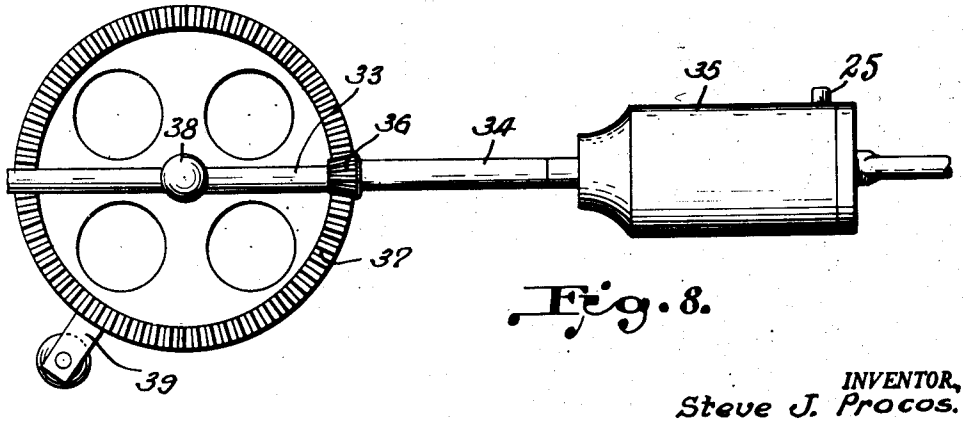


Fig. 8.

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Fig. 9.

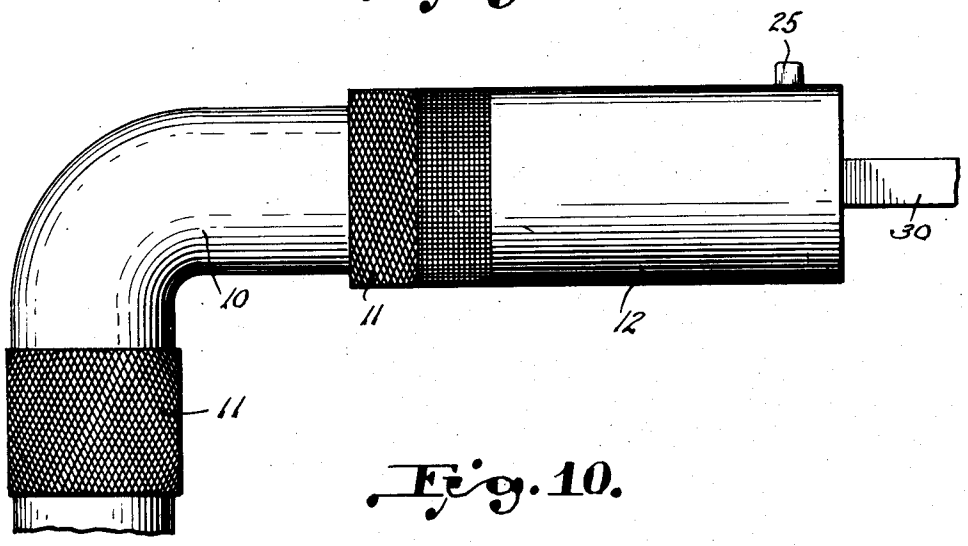
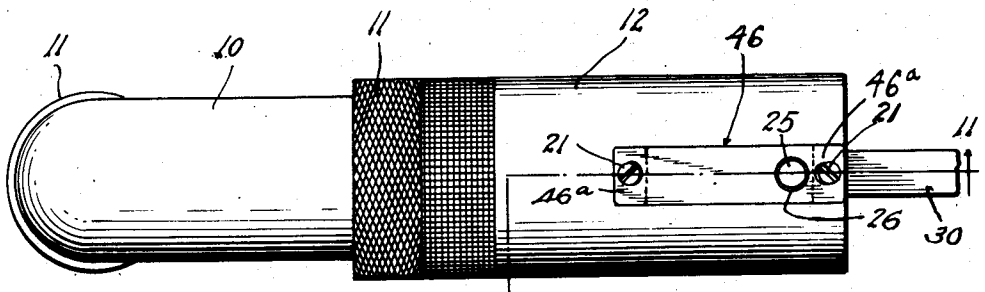


Fig. 10.



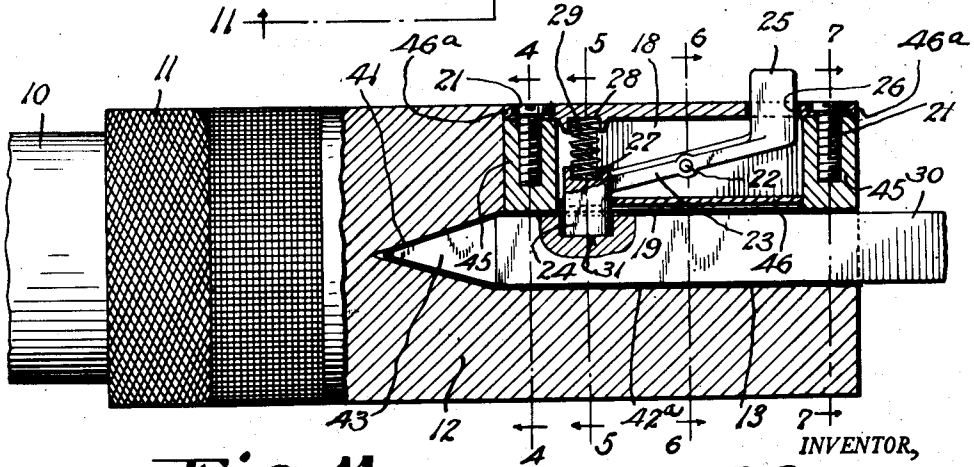


Fig. 11.

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GRAPPLE HOLDER

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Application May 23, 1952, Serial No. 289,461

2 Claims. (Cl. 279—77)

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This invention relates to tool holders or sockets and has special reference to means for securing the shank of a shanked tool securely in place.

One object of the invention is to provide a simple and efficient device wherein a tool is held by the action of a spring pressed plunger.

A second important object of the invention is to provide a novel device having a spring pressed plunger for securing a tool and having a lever, depressible by the user's thumb for releasing the tool shank from the holder.

A third object of the invention is to provide a device of this character having a firm hand grip for the tool holder.

A fourth important object of the invention is to provide a device of this character wherein the tool may be rotated by suitable driving means.

The invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly claimed.

In the drawings:

Figure 1 is a view partly in longitudinal section and partly in side elevation of the tool handle and tool holder, showing a tool held in the tool holder, while

Figure 2 is a top plan view of the same.

Figure 3 is a transverse sectional view, taken on line 3—3, Fig. 1, and looking in the direction of the arrows.

Figure 3b is a perspective view of the box.

Figure 4 is a section on the line 4—4, Figure 1, the view being taken in the direction of the arrows.

Figure 5 is a section on the line 5—5, Figure 1, the view taken in the direction of the arrows.

Figure 6 is a section on the line 6—6, Figure 1, the view being taken in the direction of the arrows.

Figure 7 is a section on the line 7—7, Figure 1, the view being taken in the direction of the arrows.

Figure 8 is a view showing a modification of the invention, wherein the tool and socket are arranged for manual rotation.

Figure 9 is a view in side elevation of another embodiment of the invention, while

Figure 10 is a top plan view of the same.

Figure 11 is an enlarged sectional view like Figure 1, taken on line 11—11, Figure 10, and looking in the direction of the arrows.

Referring to the drawings, in which the preferred form of this invention is shown in Figures 1 to 3, the plastic tool handle 40 is provided in its outer end with a tool holder 41 comprising a hollow body 42 which is adapted to receive the tang 43 of tool 44. Extending upwardly from hollow body 42 are two screw receiving ribs 45. Positioned between said ribs 45 is a box 46 (Fig. 3b) provided with end flanges 46a; said box is open at its two ends.

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A pivot pin or shaft 22 is mounted on the side of box 46, and lever 23 is mounted on said pivot pin 22 within said box 46. On the outer end of lever 23 is a button 25 which passes through an opening 26 formed in the top of box 46. Box 46 is secured in position by screws 21 extending through the flanges 46a and into ribs 45. In the top of plunger 24 there is a recess 27 forming a spring seat, and in the top of the box 46 there is formed a corresponding spring seat 28. A coiled compression spring 29 has its ends seated in said spring seats 27 and 28. The lever 23 and button 25 are normally held as shown in Figure 1 by said spring 29.

The tang 43 of tool 44 is provided with a socket 31, in which plunger 24 is normally seated, holding tool 44 in an operative position.

When it is desired to remove the tool 44 it is merely necessary to depress the push button 25, which will retract the plunger 24 from the socket 31, and thus permit removal of the tool. The tool is preferably provided with a pointed shank so that when the tool is inserted, the point of the shank will act as a cam to force the plunger upward against the spring 29. This makes it unnecessary to press the push button when inserting a tool.

In the form shown in Figure 8, there is provided a shaft 33, on which is rotatably mounted a sleeve 34 carrying the tool holder 35. On the sleeve 34 is likewise mounted a bevelled pinion 36, which meshes with the bevelled gear 37, revolvably mounted on a handle 38. The handle 38 acts to hold the tool steadily while in use, and gear 37 is rotated by means of a crank handle 39 projecting radially from this gear.

Referring to Figures 9 to 11, this form includes an all-metal brace 10, which is knurled at 11. The metal tool holder portion 12 is integral with brace 10, and is shown in detail in the enlarged section, Fig. 11. A socket 42a is formed in body 12 and a tool 30 extends into said socket 42a. There is a great similarity between the embodiments shown in Figures 1 and 11, because 46, 24, 29, 21, and 25 are the same in both embodiments.

While I have described the preferred embodiments of this invention and illustrated the same in the accompanying drawings, certain minor

changes or alterations may appear to one skilled in the art to which this invention relates during the extensive manufacture of the same, and I, therefore, reserve the right to make such alterations as shall fairly fall within the scope of the appended claims.

What I claim is:

1. In a tool holder, the combination of a body having a tool shank socket-opening extending inwardly from one end thereof, said body also provided with a box recess between its ends, said box recess opening into said tool shank socket-opening, a box in said box recess and registering with said tool shank socket-opening, a lever pivotally mounted on said box, said lever provided with a plunger extending into said tool shank socket-opening, and said lever provided with a push button extending through the top of said box.

2. In a tool holder, the combination with a tool handle, of a tool receiving socket in one end of said tool handle, said tool handle provided with two upstanding screw-receiving ribs, a box provided with a top between said ribs and also provided with end flanges, said end flanges on top of said ribs, a pin mounted on the sides of said box, a lever on said pin, screws extending through said end flanges and into said ribs, a plunger on the inner end of said lever and extending through the bottom of said box, a coiled spring between said plunger and the top of said box, and a button on the outer end of said lever and normally extending through the top of said box.

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