

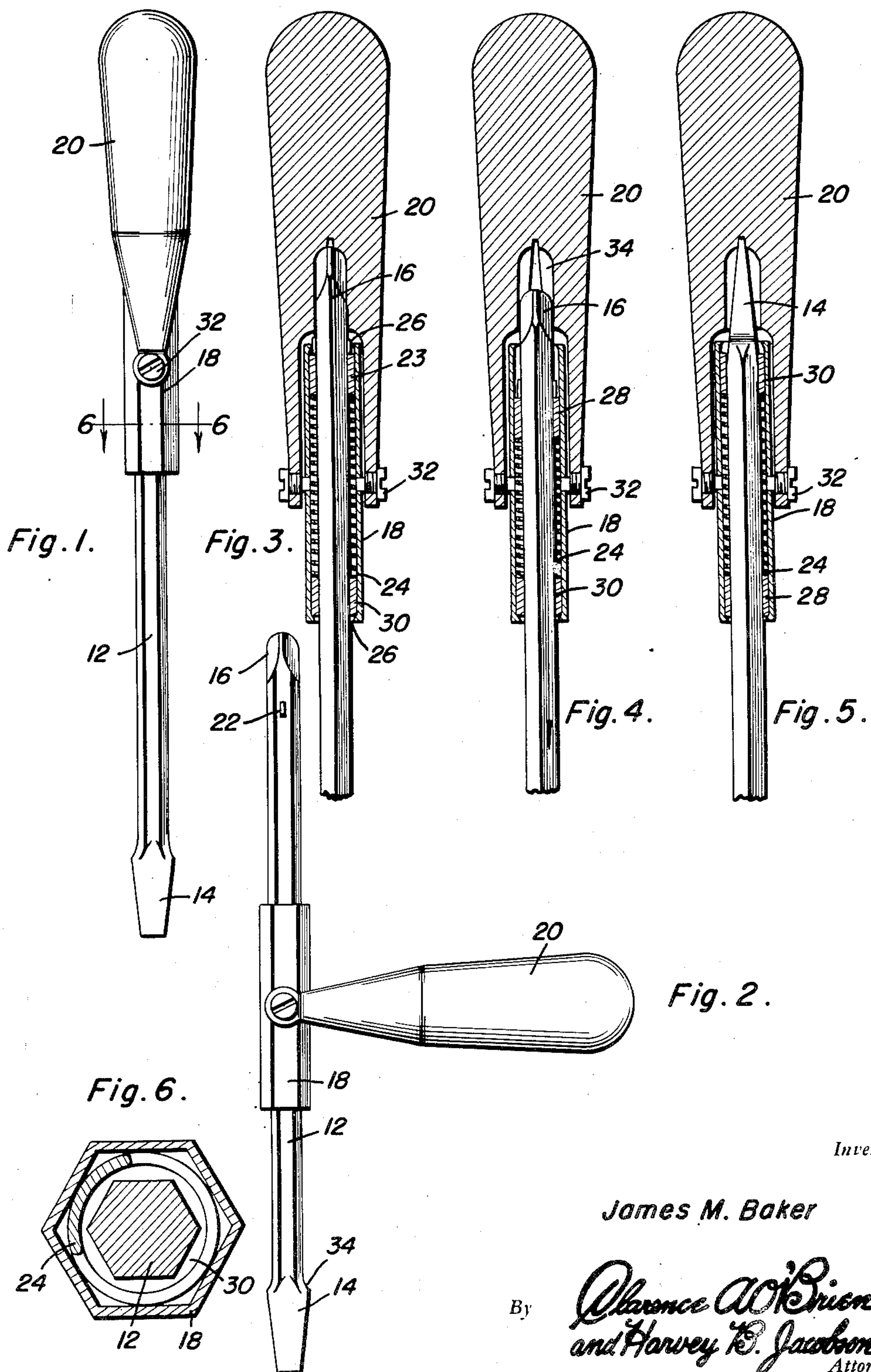
Feb. 24, 1953

J. M. BAKER  
PIVOTED HANDLE TOOL

2,629,415

Filed Nov. 21, 1949

2 SHEETS—SHEET 1



Inventor

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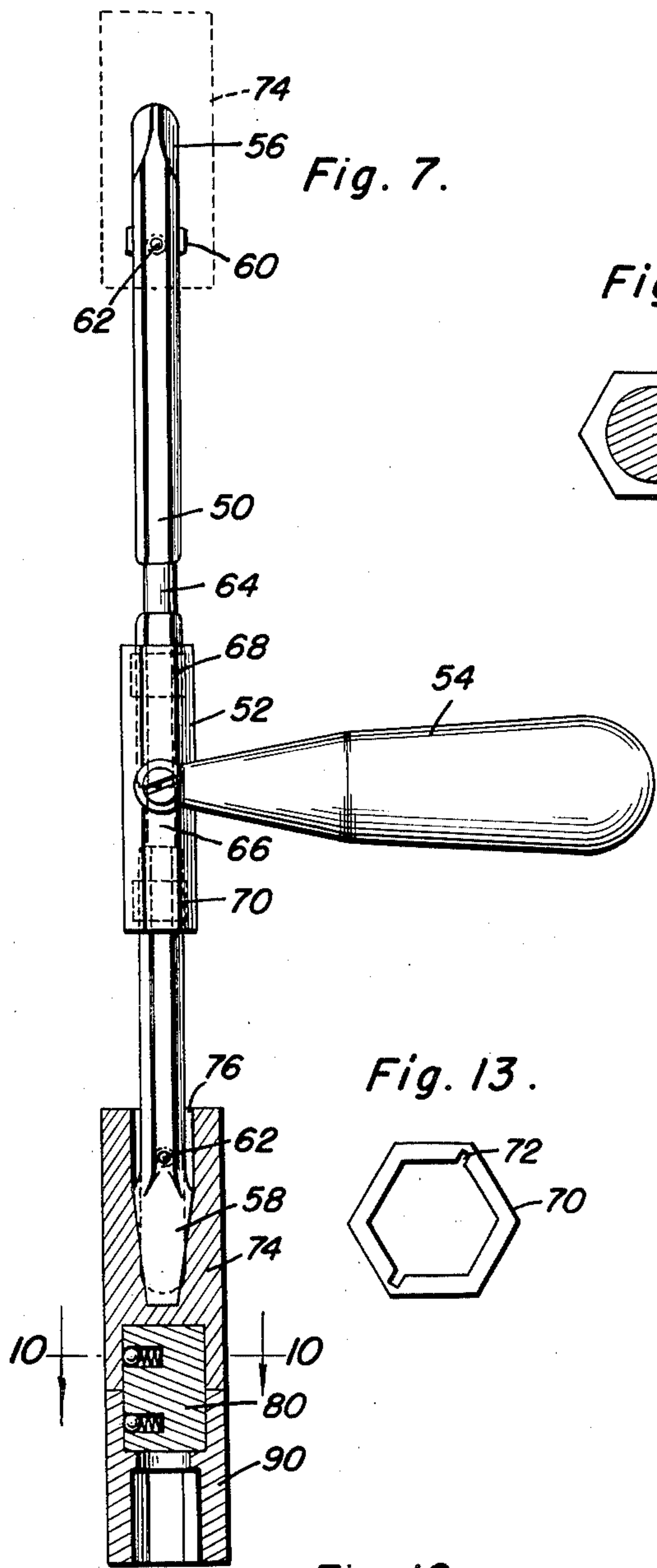
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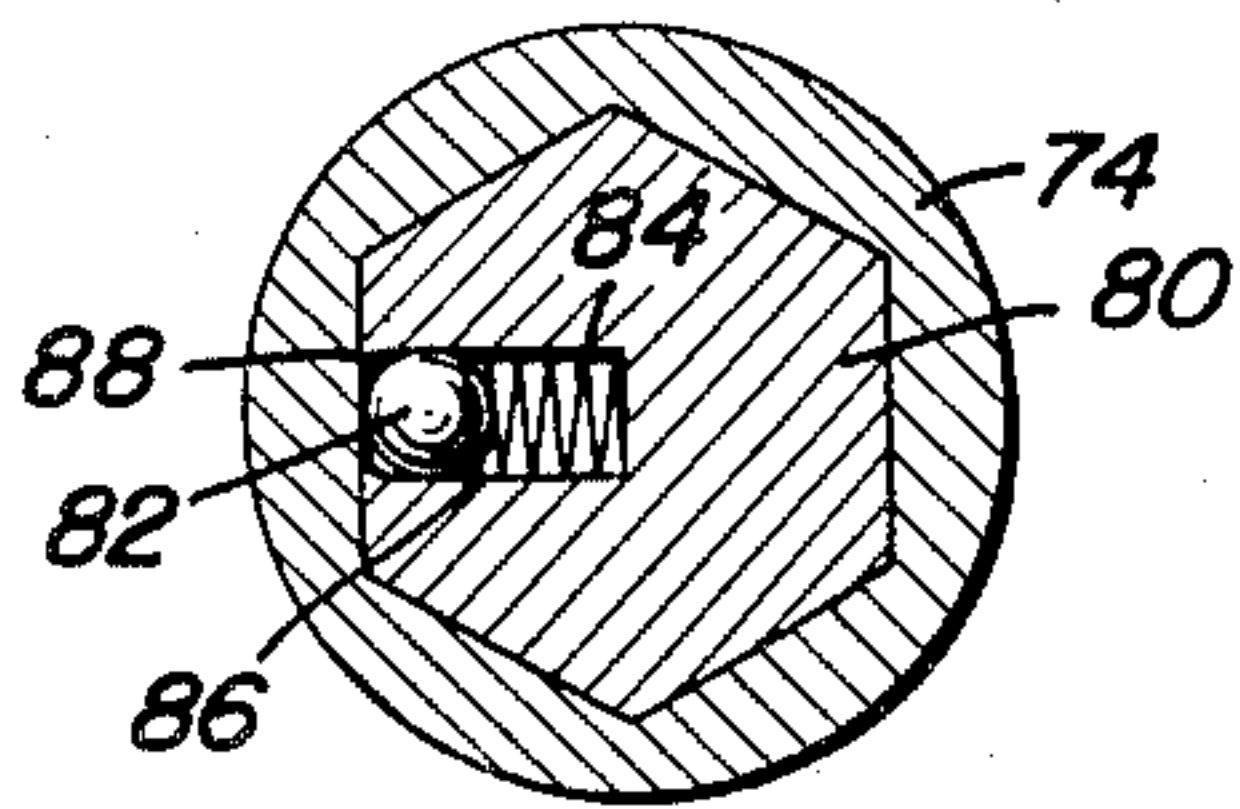
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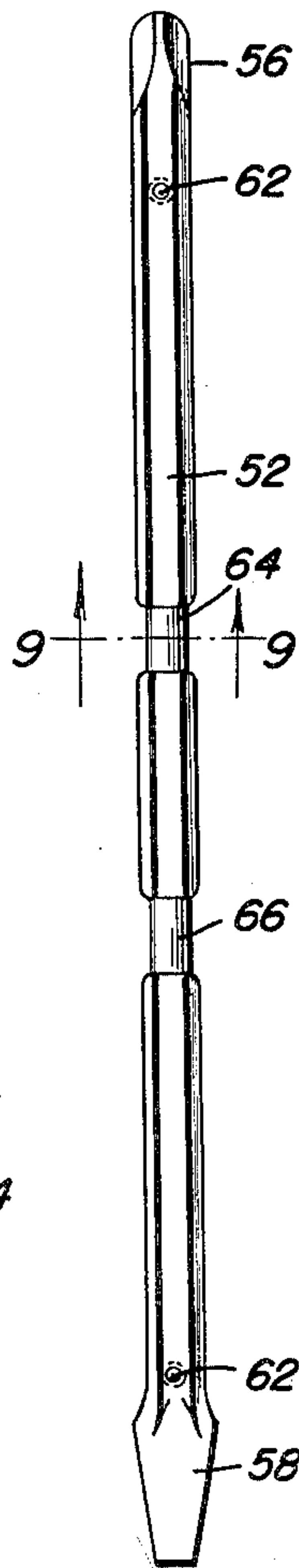
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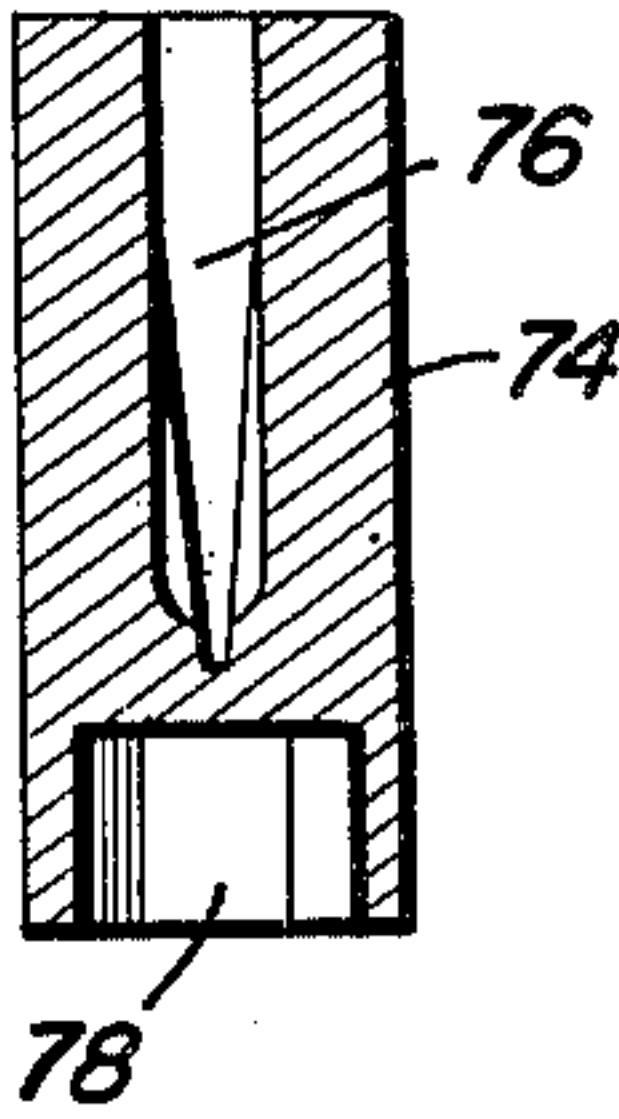
*Fig. 10.*



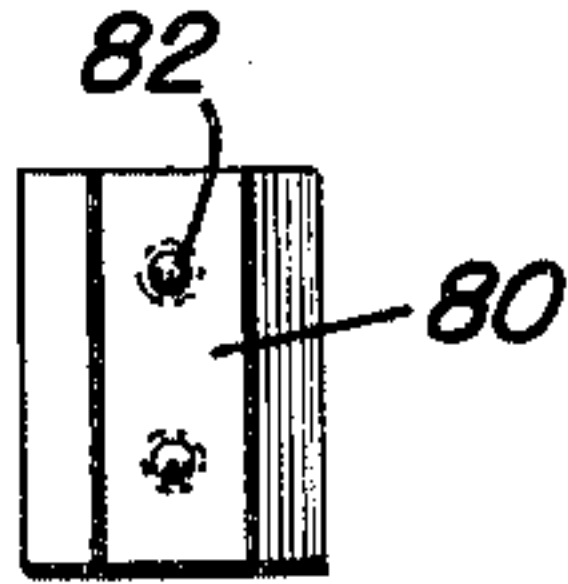
*Fig. 8.*



*Fig. 12.*



*Fig. 11.*



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## UNITED STATES PATENT OFFICE

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## PIVOTED HANDLE TOOL

James M. Baker, Parkersburg, W. Va.

Application November 21, 1949, Serial No. 128,658

4 Claims. (Cl. 145—71)

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This invention relates to the class of tools, and more particularly to a combination double edged screw driver with a reversible handle.

An object of this invention is to provide a novel tool which will permit the incorporation thereinto of screw driver means of varying shaped working edges for selective use thereof.

A further object of the invention is to provide a novel screw driver which has opposed working edges at the ends of the shank thereof, and which includes means for urging one of the working edges into intimate engagement with the interior of a handle portion of the tool.

Another object of the invention is to provide novel means for selectively retaining one end of a shank of a screw driver in intimate engagement with a handle so that the working edge in engagement with a screw or the like may be more easily worked on by the application of additional leverage.

Yet another object of the invention is to provide means intimately associated with the shank of a combination double ended screw driver which will permit the tool to be used in a ratchet fashion.

Still further objects of the invention reside in the provision of a tool that is strong, durable, highly efficient in operation, simple in construction and design, easy to use, relatively inexpensive, and quite pleasing to the eye.

These together with the various additional objects of the invention which will become apparent as the following description proceeds, are attained by this tool, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a front elevational view of the first embodiment of the present invention;

Figure 2 is another elevational view of the invention showing it in a different position from that shown in Figure 1;

Figures 3, 4 and 5 are vertical sectional views showing the various positions of the shank and working edges thereon relative to the handle portion of the invention;

Figure 6 is a horizontal sectional view as taken along line 6—6 of Figure 1 and being enlarged to show the various elements in greater detail;

Figure 7 is a side elevational view of another form of the invention, parts being broken away to show other parts in greater detail;

Figure 8 is a front elevational view of the shank comprising one element of the invention;

Figure 9 is a horizontal sectional view as taken along line 9—9 in Figure 8;

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Figure 10 is another horizontal sectional view taken along line 10—10 in Figure 7;

Figure 11 is a perspective view of one element of the invention;

Figure 12 is a vertical sectional view of a portion of the invention shown in Figure 7; and

Figure 13 is a top plan view of the stop means comprising another element of the invention.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, attention is now specifically directed to Figures 1 through 6 wherein there is shown a basic and preferred form of the present invention. In particular this tool generally comprises three main elements, a shank 12 having working edges or bits 14 and 16 at the respective ends thereof, a casing or sleeve 18 slidably mounted on the shank 12, and an elongated, bifurcated handle 20 rotatably secured to the casing.

The shank 12 is preferably hexagonal in cross section and is provided with lugs 22 adjacent its end 16. The working edges at the ends 14 and 16 are shaped so as to be capable of use with regular headed or fillet headed, or may be optionally formed for satisfactory engagement with Allen screws or may be formed in any suitable shape. As shown in Figure 2, at the end 14 is a blade such as adapted to be used with regular headed screws. At the end 16 the working edge shown is adapted to be used with fillet headed screws.

About the shank 12 is emplaced a coil spring 24. The casing 18 is slidably mounted on the shank 12 in an encompassing and coaxial relationship with the shank and the spring 24. The ends of the casing 18 are crimped as at 26 or optionally formed with lugs, dents, or the like to retain bearing members 28 and 30 and the spring 24 within the casing. The handle 20 is pivotally attached to the casing by means of threaded screws 32 which engage within suitable apertures in the casing. The handle 20 is provided with a suitable recess 34 which is shaped in such a manner as to positively receive any desired combination of working edges. In the embodiment shown in Figures 1 through 6, the recess 34 is of such shape as to be equally adapted to receive a regular headed or a blade for a slotted headed tool.

When it is desired to selectively use one of the edges 14 or 16, the shank is pulled down as shown in Figure 4 releasing the edge from the recess 34 and compressing the spring 24. Then the handle may be rotated to the position shown in Fig-



ure 2. Upon selection of the desired edge the shank 12 may be thus pulled through the casing until the lugs 22 or the projections 34' butt against the bearing members 28 or 30 respectively to compress the spring. Then the shank together with the casing may be rotated until the axis of the shank and the casing are in the same line as the axis of the handle 20. Then the shank is released and the spring 24 will urge the non-desired end upwardly into the recess 34 into secure engagement with the handle 20.

Referring now to Figures 7 through 13 wherein is shown a further embodiment of the invention, it will be seen that this form of the tool includes a shank 50, a casing 52, a handle 54 and working edges 56 and 58 at the ends of the shank 50. Additionally, the shank 50 is provided with lugs 60, and with spring pressed ball bearing engaging elements 62 for a purpose to be henceforth explained. Furthermore, the shank 50 is provided with portions 64 and 66 of reduced area. The bearing elements 68 and 70 are each provided, as best shown in Figure 13, with recesses 72 of such size as to enable the bearing elements 68 and 70 to be slid over the lugs 60.

The screw driver of this second embodiment, as thus far described, works in a substantially similar manner to that embodiment shown in Figures 1 through 6 with the exception that the edges or bits 56 and 58 are manually inserted in the socket provided therefor in the handle 54. When the casing 52 is positioned so as to have the bearing elements 68 and 70 in alignment about portions 64 and 66, the handle and the casing may be rotated as desired. This will allow two functions to be performed. The handle and the casing may be removed since the lugs 60 will pass through the recesses 72 in the bearing elements 68 and 70. Furthermore, the handle 54 and the casing 52 will form the equivalent of a ratchet connection for the screw driver since when the casing is in a certain position it may be rotated freely due to the action of the bearing elements in the recesses, yet while in a different position it will securely engage the shank 50.

An accessory for this invention includes an adapter 74 which has a recess 76 therein in which the ends 56 or 58 are adapted to be securely emplaced. The ball bearing contacts 62 will hold the selected working edge 56 or 58 of the shank 50 in place in the recess 76. The adapter 74 is further provided with a recess 78 in which a coupling member 80 is adapted to be seated. The coupling member 80 is provided with a pair of detents, each comprising a ball bearing member 82 similar to the ball bearing members 62 which is likewise urged by a spring 84 outward of the recess 86 in which it is seated. However crimps 88 in the coupling member 80 retain the ball bearing 82 partially within the recess 86. The

coupling 80 is used to secure a selected socket wrench 90 of a predetermined size to the adapter 74. Thus, upon rotation of the shank 50 the socket wrench 90 will be rotated in such a manner as to readily remove a nut from a bolt.

Since from the foregoing, the construction and advantages of this tool are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiments shown and described, but all suitable modifications of these tools may be resorted to which fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A tool comprising an elongated handle, a sleeve pivotally mounted on one end of the handle, said handle having a socket therein, a shank slidably mounted in the sleeve, means in the sleeve for urging either end of the shank in the socket, and means for preventing relative rotation between said shank and said sleeve.

2. A tool comprising an elongated, bifurcated handle having a longitudinal socket in its bifurcated end portion, a sleeve pivotally mounted between the furcations of the handle, and a shank slidably mounted in the sleeve, the end portions of said shank being selectively engageable in the socket for securing the shank in longitudinal alignment with the handle.

3. A tool comprising an elongated handle having a longitudinal socket in one end portion, a sleeve pivotally mounted on said one end portion of the handle, a shank slidably mounted in said sleeve, coacting means in the sleeve and on the shank for urging either end of said shank in the socket, and means for preventing relative rotation between said shank and said sleeve.

4. A tool comprising a handle having a socket therein, a sleeve pivotally mounted on said handle, polygonal bearings mounted in said sleeve, and a polygonal shank slidable in said bearings, the ends of said shank being selectively engageable in the socket, said shank including reduced intermediate portions rotatable in the bearings.

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