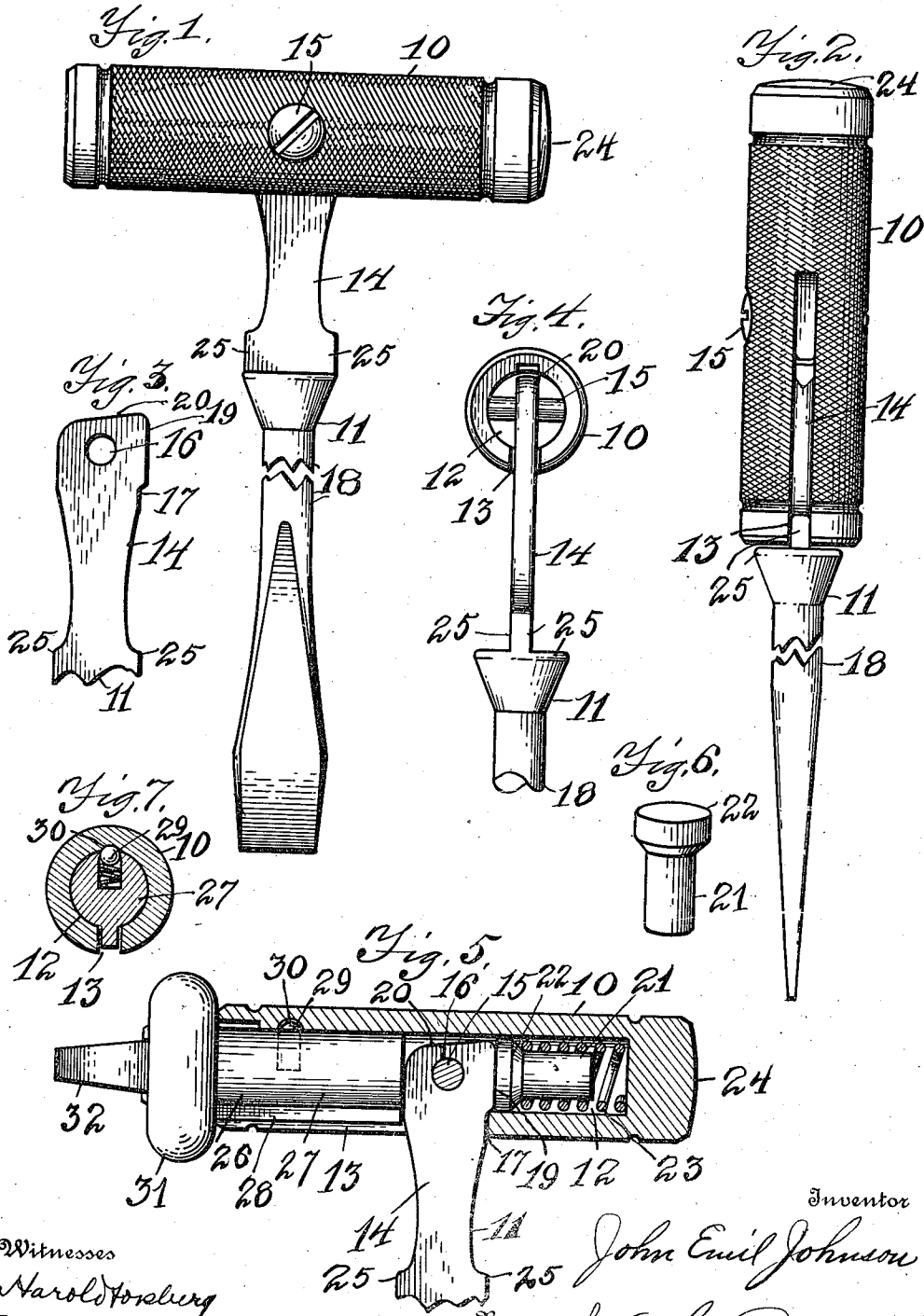


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 COMBINATION TOOL.  
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1,215,308.

Patented Feb. 6, 1917.



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# UNITED STATES PATENT OFFICE.

JOHN EMIL JOHNSON, OF JAMESTOWN, NEW YORK, ASSIGNOR TO CRESCENT TOOL COMPANY, OF JAMESTOWN, NEW YORK, A CORPORATION.

## COMBINATION-TOOL.

1,215,308.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, JOHN EMIL JOHNSON, a citizen of the United States, residing at the city of Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Combination-Tools, of which the following, taken in connection with the accompanying drawings, is a specification.

The invention relates to a combination tool and the object of the improvement is to provide a manually operated screw-driver of great strength and power in which the handle may be turned in a crosswise position to give greater leverage upon the screw-driver bit, or the handle may be used in line with said bit like the common form of screw-drivers, and automatically locked in either of these two said positions; and second, to provide a socket in one end when the screw-driver bit is turned at right angles to the handle for the reception of the shanks of socket tools such as wrenches, screw-driver bits, ratchets, etc., for use in confined spaces in which the full length screw-driver could not be used, and also to provide a holder for the different tools; and the invention consists in the novel features and combinations hereinafter set forth and claimed.

In the drawings, Figure 1 is an elevation of the tool with the handle turned crosswise of the end of the tool; and Fig. 2 is an elevation of the tool with the handle in line with the same. Fig. 3 is a detail of the upper end of the screw-driver bit removed from the handle showing the conformation of the same. Fig. 4 is an elevation of the tool with the handle turned in the crosswise position and showing the open end of the socket with the slot in one side and the locking notch in the other, which assist in holding the screw-driver bit when the handle is turned in line with the same. Fig. 5 is a lengthwise sectional view of the handle with the end of the screw-driver bit attached therein and turned at right angles thereto showing the construction and arrangement of the parts when assembled and a socket tool therein. Fig. 6 is a perspective view of the pin against which the upper end of the screw-driver bit operates when held in position by the coil spring. Fig. 7 is a sectional view of the stem of one of the socket tools showing the key on one side and the spring catch on the other side of the same.

Like numerals of reference refer to corresponding parts in the several views.

The numeral 10 designates the handle, and the numeral 11 the screw-driver bit or blade which is attached to the handle 10 in the following manner:

The handle 10 is preferably made of steel and knurled on its outer surface in order to give a strong grip on the same. A tubular socket or bore 12 is provided in one end which extends nearly the length of the handle 10. An open ended slot 13 is provided in one side of the handle 10 extending into the socket 12 and a little over half the length of the handle 10 to receive therein the flat upper end 14 of the screw-driver bit 11, being attached to the handle 10 by means of a screw or pintle 15 extending through said handle and a hole 16 in the upper end 14 of the bit 11 about midway of the length of the handle 10 to provide an equal leverage on each side of the end 14 of the bit 11.

Said upper end of the flat portion 14 is formed with its side 19 and end 20 in angular relation to one another to provide a folding pocket or jack-knife joint for the bit or blade 11 in its relation to the handle 10 so that said bit 11 will fold back and forth in the open ended slot 13. A notch 17 is provided in the side of the upper end 14 adjacent the portion 19. The notch 17 lockingly fits against the wall of the inner end of the slot 13 when the bit or blade 11 is turned at right angles to the handle 10, thereby aiding in the firm holding of said bit.

A plunger 21 having a head 22 which slidably fits within the socket 12 is provided in the inner end of said socket to bear against the sides 19 and 20 of the upper end 14 of the bit 11, being given a resilient pressure thereagainst by a coil spring 23 which bears against the head 22 of the plunger 21 at one end and against the inner end of the socket 12 at the other. The head 22 of the plunger 21 is preferably hardened in order to endure the wearing pressure of the blade 11 as it is turned back and forth against the same. If the plunger 21 were cup-shaped and the spring 23 were received within the cup it would not depart from my invention.

The closed end 24 of the handle 10 is shaped to form a driving face for a hammer so that when the bit 11 is turned at right angles to the handle 10 said bit will form the handle of the hammer and the handle 10

will form the hammer head. This is exceedingly convenient in starting screws and bolts as well as for other purposes in which such a combination tool is desired. The rigid holding of the bit 11 in the angular position by means of the plunger 21 and stiff spring 23 makes a very serviceable hammer of the head 24.

The flat portion 14 may be formed with the shoulders 25 for strength as well as beauty of design or said flat portion may have straight sides where greater stiffness is desired for the bit 11. The shank of the bit 11 is preferably made round for convenience in manipulation of the tool while turning the same.

The socket or bore 12 of the handle 10 forms a convenient opening when the bit 11 is turned at right angles to the handle for the reception of a socket tool 26. The socket tool 26 is provided with a shank 27 having a projecting lengthwise feather key 28 on one side and the spring catch 29 on the other to enter a socket 30 on the inner wall of the socket 12 opposite the slot 13. The key 28 fits within the lengthwise slot 13 and the shank or stem 27 is proportioned as to length to fit within the socket 12 so that when the inner end strikes against the side of the bit 11 the spring catch 29 will enter the socket 30, thereby preventing the tool from falling out of the socket and holding it firmly. The tool may consist of a ratchet 31 to receive therein the shanks of other tools such as a short screw-driver 32, as shown, or a wrench or boring tool, and when so inserted the handle 10 may be turned by means of the bit 11 thereby operating the ratchet 31 and turning the screw-driver 32 in a comparatively small space.

The socket or bore 12 also forms a convenient opening for inserting a bar or the handle of another tool for obtaining greater leverage upon the handle 10 and screw-driver bit 11 in starting rusted or heavy machine screws.

I claim as new:

1. A tool comprising a handle formed with a socket extending through one end thereof and provided with a slot extending partially the length of the socket from the opened end thereof whereby the inner end portion of the slot forms a rigid abutment immovably secured to the socket, a tool shank pivoted in the socket of the handle adjacent the inner end of the slot to extend either through the latter or through the socket and when extending through the slot to seat against said abutment, and means automatically operating abutting the shank at all times to automatically release and hold the shank and when the latter extends through the slot holding said shank against

the rigid abutment provided by the inner end wall of the slot.

2. A tool comprising a tubular handle closed at one end and opened at the opposite end and formed with a relatively narrow slot opening through the opened end thereof, a thin flat tool shank pivoted in the handle to lie disposed either through the slot or through the opened end of the handle, a spring-pressed plunger arranged in the handle between the closed end thereof and the tool shank to exert pressure against the latter and automatically shifted by the shifting of the tool shank, means insertible in the opened end of the handle, when the tool shank extends through the handle slot, for constituting an auxiliary handle and abutting the tool shank and cooperating with the plunger in holding the shank so disposed, and means to positively lock said means against movement.

3. A tool comprising a tubular handle closed at one end and opened at the opposite end whereby a device may be inserted in the latter end and formed with a relatively narrow slot opening through the opened end thereof, a thin flat tool shank pivoted in the handle to lie disposed either through the slot or through the opened end of the handle, means yieldably disposed in the closed end portion of the handle and engaging the tool shank on one side when the latter extends through the handle slot and on the inner end when said shank extends through the opened end of the handle, and a device removably disposed in the opened end of the handle and closing the slot of the latter, said device constituting an auxiliary handle and abutting the opposite side of the tool shank for positively holding the same and having a spring latch interlocking with the handle.

4. A tool comprising a tubular handle closed at one end and opened at the opposite end whereby a device may be inserted in the latter end and formed with a relatively narrow slot opening through the opened end thereof, a thin flat tool shank pivoted in the handle to lie disposed either through the slot or through the opened end of the handle, and a tool device entirely plugging and removably fixed in the opened end of the handle, when the tool shank extends through the handle slot, for abutting the tool shank to hold the latter immovable and for constituting an auxiliary handle.

In testimony whereof I have affixed my signature in the presence of two witnesses.

JOHN EMIL JOHNSON.

Witnesses:

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ARTHUR O. MORSE.