No. 667,143. Patented Jan. 29, 1901.

E. E. TRYON.

COMBINED WRENCH AND CUTTER.

(Application filed June 12, 1900.)

(No Model.)

Fig. 1.

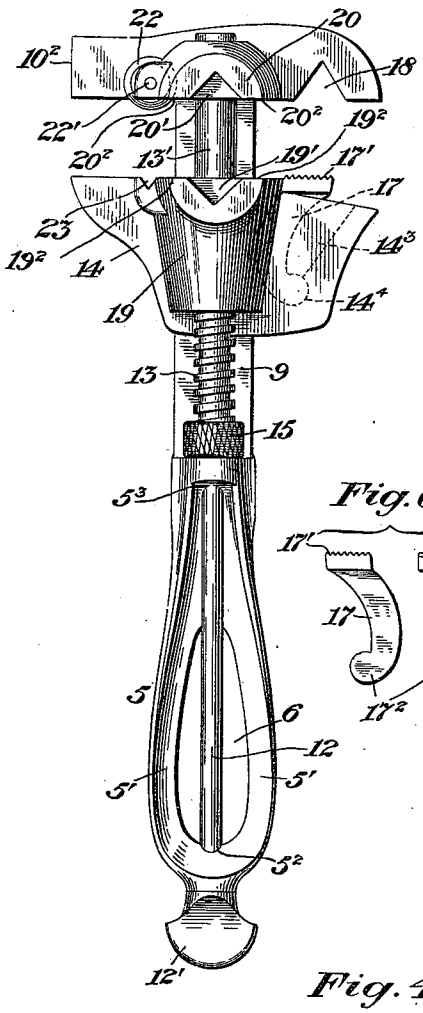


Fig. 2.

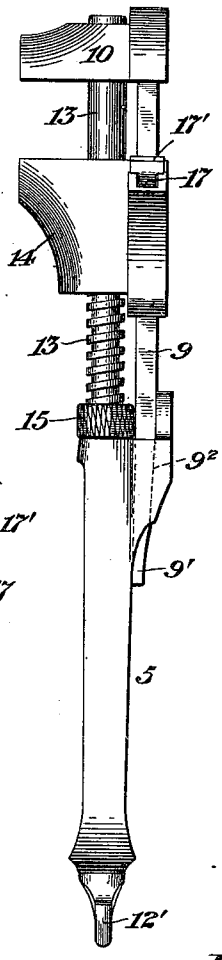


Fig. 3.

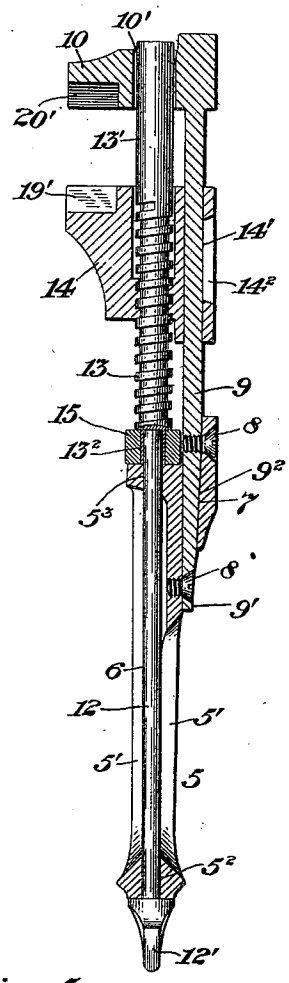


Fig. 6.

Fig. 4.

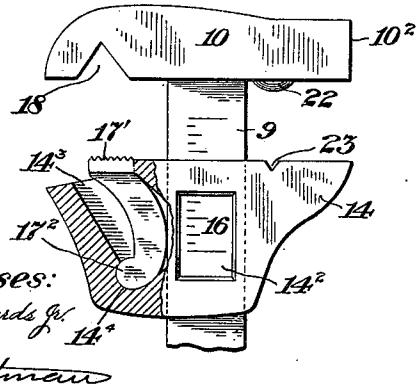
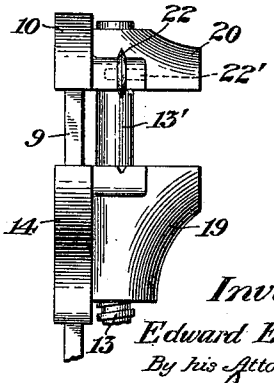


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD E. TRYON, OF HARTFORD, CONNECTICUT.

COMBINED WRENCH AND CUTTER.

SPECIFICATION forming part of Letters Patent No. 667,143, dated January 29, 1901.

Application filed June 12, 1900. Serial No. 20,013. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. TRYON, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in a Combined Wrench and Cutter, of which the following is a specification.

My invention relates to tools capable of accomplishing a variety of results and known in the art as "combination-tools."

Primarily, the object of my invention is the provision of a tool of the character specified in the nature of a wrench having portions adapted to serve the purposes of an ordinary wrench, other portions adapted to serve as a tap or drill-driving wrench, and still other portions adapted to serve as a pipe-wrench.

A further object of the invention is to provide, in connection with the wrench-jaws specified, means for severing a wire or rod which it may be desired to cut by the action of the implement.

A further object of the invention is the provision of simple means whereby the two jaws may be readily assembled in compact form and in this connection the provision of improved means whereby one jaw may be moved with relation to the other jaw in order to cause a gripping action of the jaws upon the article it is desired to clamp and turn.

A further object of the invention is the provision of improved means for coupling together the movable and stationary jaws of the tool in a simple, compact, and rigid way, so that the necessary strength may be obtained.

Further objects of the invention are the provision of improved means for actuating the movable jaw and improved means for holding the pivoted jaw (to be employed when the device is used as a pipe-wrench) in place within a chamber of said movable jaw.

Referring to the drawings, Figure 1 is a side elevation of my improved tool. Fig. 2 is a front elevation of the same. Fig. 3 is a longitudinal vertical section. Fig. 4 is a side elevation with the movable jaw partly in section to illustrate the manner in which the jaw for clamping and turning a pipe or rod is secured therein. Fig. 5 is a front elevation of the tool with a portion broken away, showing the means for separating a wire or rod.

Like numerals designate similar parts throughout the several views.

Referring to the drawings, the numeral 5 designates the handle of the tool, which is concaved at 5′ and has a central opening 6 to afford lightness, said handle being provided at its upper end with a channel or socket 7, in which is inserted and secured, preferably by screws 8 or otherwise, the shank 9 of a stationary jaw 10. This shank 9 is reduced or tapered at 9′ to afford a neat joint with the outer wall of the socket or channel 7, as shown in Fig. 3, and it is also slightly tapered in its lower part at 9^2, so that it will fit snugly within the socket 7.

Passing through openings 5^2 5^3 of the handle 5 is a rod 12, having a thumb and finger piece 12′ at one end, the surface of which abuts against the end of the handle, and at its other end said rod 12 projects beyond the top of the handle proper and enters a socket in a screw 13, threaded into a nut in the movable jaw 14 of the tool, the upper end of said screw having a plane and smooth surface 13′ and passing through a guideway or opening 10′ in the fixed jaw 10, as shown in Fig. 3. The socket 13^2 in screw 13 is of such diameter that when the rod 12 is forced therein it will expand the walls of said socket and cause a tight fit of the parts. Any other convenient means may, however, be employed to unite the rod and screw, or the screw may be driven in other ways. Surrounding the exterior of the socket portion 13^2 of screw 13 is a washer 15, acting as a jam-nut or resistance-surface to prevent longitudinal movement of the screw during the advancing and retarding movements of the movable jaw 14, according to the direction in which the thumb and finger piece 12′ is turned. The movable jaw 14 is provided with a guideway 14′ for the reception of the shank 9 of the stationary jaw, as shown in Fig. 3, and said movable jaw is cut away at 14^2 to afford a sight-opening through which graduations 16 on said shank 9 may be observed, whereby the correct spacing-distance of the jaws from each other may readily be determined for different classes of work. The movable jaw 14 is also chambered at 14^3, said chamber having a rounded seat 14^4 to receive the rounded end of a pipe or rod clamp 17, having a serrated working surface 17′, (see Fig. 4,) the construction being such, as shown by said figure, that pipe or rod clamp 17 is secured in said chamber by an edge of the shank 9 of

the stationary jaw when it has passed through the guideway 14′ in the movable jaw, as represented in Figs. 3 and 4. This rod or pipe jaw 17 is capable of swinging movement on its rounded end 17^2 in the chamber 14^3, and consequently the necessary leverage may be obtained to cause a bite of the serrated portion 17′ upon the work to be gripped between said jaw and the stationary jaw, and said jaw is provided with a rounded edge against which the edge of the shank 9 bears, as seen in Fig. 4. At a point opposite the serrated surface 17′ of the jaw 17 the stationary jaw is cut away or formed with a V-shaped notch 18, against the walls of which the article is firmly forced by the jaw 17 as the movable jaw 14 is advanced by the screw 13 and the device for actuating said screw, as above described, and the walls of this V-shaped notch 18 may, if desired, be serrated to afford a greater gripping power.

Projecting laterally from the movable jaw 14 is an enlarged or thickened portion 19, constituting a reinforce, having a V-shaped notch 19′, and projecting in a similar direction from the stationary jaw 10 is a reinforced or thickened portion 20, having a V-shaped notch 20′, the walls of said notches being adapted to grip the shank of a tap, drill, or other tool when the same is inserted between them, thereby adapting the implement for use as a tap or drill wrench. The surfaces 19^2 20^2 of these portions 19 and 20 are flat and are adapted to grasp a key-blank or other object it may be desired to hold.

Connected with the stationary jaw 10 is a cutter 22, shown as of disk-like form, and as mounted for rotation on a pin or shaft 22′, inserted in the reinforced portion 20 of said jaw, and coöperating with the cutter is a V-shaped notch 23 in the movable jaw, in which a wire, rod, or other article it is desired to sever may be placed. The surfaces of the movable and stationary jaws adjacent to said cutter 22 and notch 23 may be used for all wrench purposes, and the end 10^2 of the stationary jaw is flattened to serve the purposes of a hammer.

In assembling the parts of my device the shank 9 is inserted into the guideway 14′ of the movable jaw, the opening 10′ of said stationary jaw fitting over the smooth end portion 13′ of the screw located within the nut of the movable jaw. Said shank 9 and the parts carried thereby are then placed in position within the handle by inserting the tapered end 9^2 of the shank within the recess or socket 7 and securing said shank in place by the screws 8 or any other well-known manner. Rod 12 is then forced with considerable pressure into the socket 13^2 of the screw 13, whereby a tight fit is made, and the screw may readily be turned by said rod. Washer 15, which may be a jam-nut mounted on a screw, will fit upon the top of the handle 5 and constitute a resistance-block to prevent the movement of the connected rod and screw longitudinally as the same is turned to advance the movable jaw 14.

My invention is not limited to the exact details illustrated and described, for various modifications could be made therein without departure from the spirit of the invention.

Having described my invention, I claim—

1. A tool comprising a handle having a socket; a stationary jaw having a tapering shank secured in said socket; a movable jaw fitted on the shank of the stationary jaw; a screw threaded into said movable jaw; and a rod passing through the handle and secured in a socket of the screw.

2. A tool comprising a handle having a socket; a stationary jaw having a tapered shank secured in said socket; a movable jaw having a guideway to receive said shank; and means for actuating the movable jaw.

3. A tool comprising a stationary jaw having a shank with a tapered end; a handle in which said shank is secured; a movable jaw having a guideway to receive said shank; a screw threaded into the movable jaw and having a smooth surface projecting through an opening in the stationary jaw; and a rod secured in a socket of said screw.

4. A tool comprising a stationary jaw having a shank and provided with an opening; a movable jaw mounted on the shank; a screw for actuating the movable jaw, said screw having an unthreaded part passing through the opening in the stationary jaw; a handle having a perforation near each end; and a rod having a thumb and finger grasp, said rod passing longitudinally through the handle and being engaged with the screw.

5. A tool comprising a perforated stationary jaw having a shank; a handle having a socket in which said shank is secured; a movable jaw guided on the shank of the stationary jaw; a screw carried by the movable jaw and having a smooth portion at one end entering the perforation in the fixed jaw, and a socket at the other end; and a rod passing through the handle and fitted in the socket of the screw.

6. A combination-tool comprising a notched stationary jaw having a tapering shank and provided with a reinforce; a cutter mounted on said reinforce; a handle having a socket in which the tapering shank is secured; a movable jaw guided on the shank of the stationary jaw and having a notch and a reinforce provided with a recess; a screw having a socket at its lower end and serving to actuate the movable jaw, said screw having a smooth portion at one end which passes through a perforation in the fixed jaw; and means for actuating said screw.

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