

No. 732,858.

PATENTED JULY 7, 1903.

D. H. IRLAND.
WRENCH.

APPLICATION FILED DEC. 9, 1902.

NO MODEL.

Fig. 1.

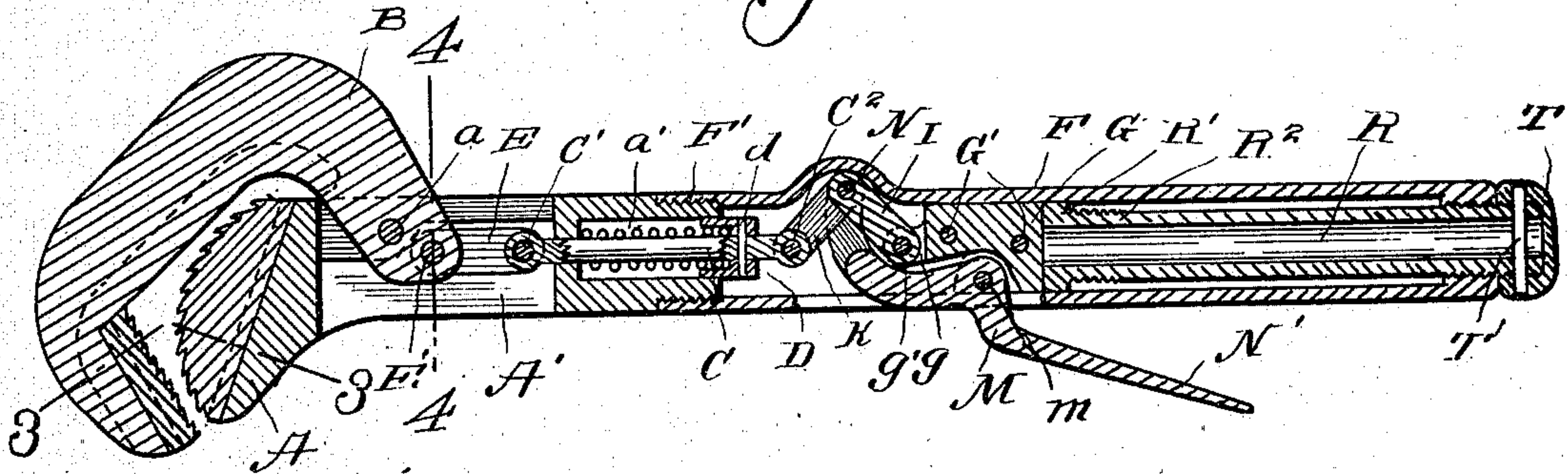


Fig. 2.

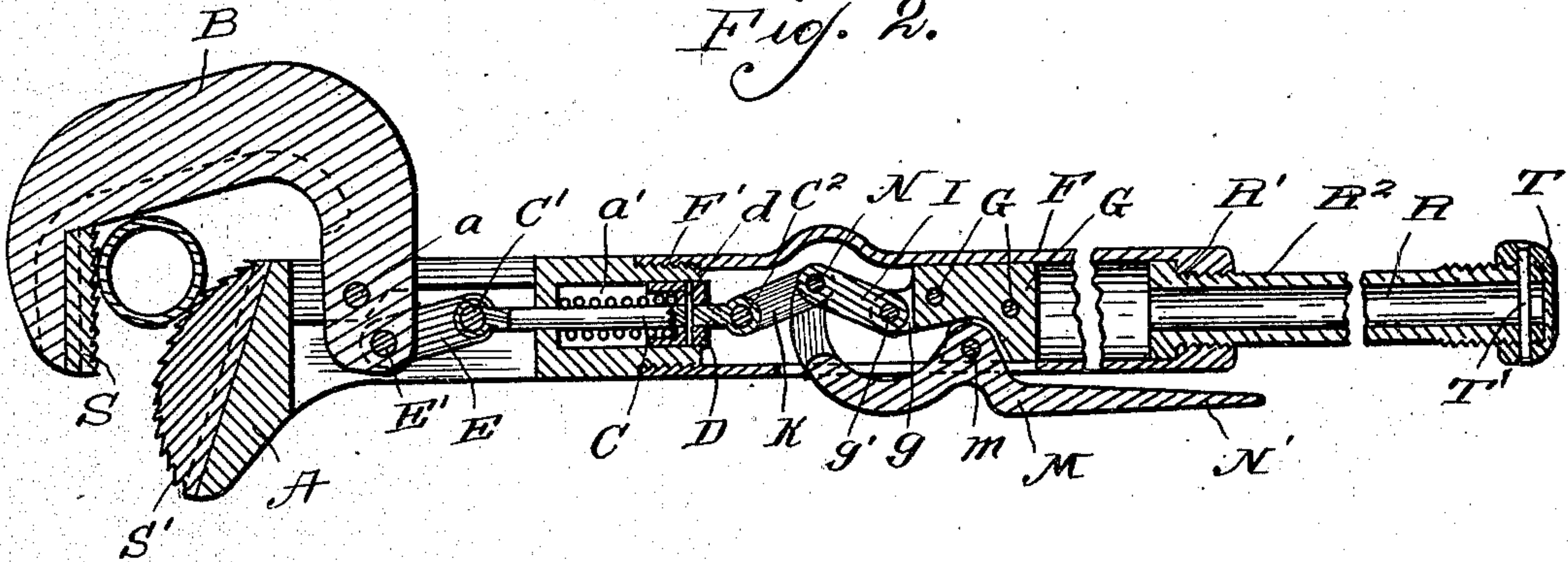
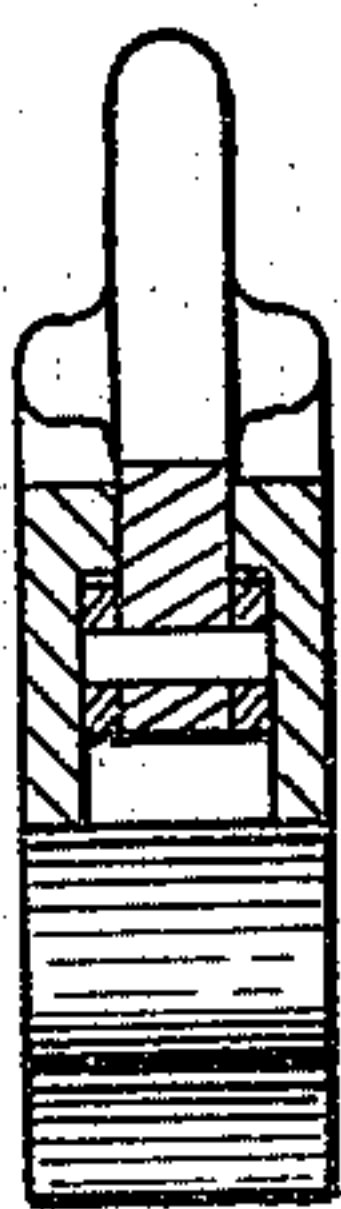


Fig. 3.



Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

DAVID H. IRLAND, OF CHICAGO, ILLINOIS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 732,858, dated July 7, 1903.

Application filed December 9, 1902. Serial No. 134,510. (No model.)

To all whom it may concern:

Be it known that I, DAVID H. IRLAND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pipe-Wrenches; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in wrenches, and particularly in the provision of a wrench having a stationary jaw and a pivoted movable jaw which is actuated by means of toggle link and lever connections, whereby the operator may easily throw the movable jaw into a clamping relation with a pipe or other object to securely hold the same while the wrench is in operation.

The invention consists, further, in various details of construction and in combinations of parts, which will be hereinafter fully described and then specifically defined in the appended claims.

My invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts in the views, in which—

Figure 1 is a central longitudinal section through a wrench embodying my invention with the movable jaw shown as in a closed relation. Fig. 2 is a similar view showing the jaw open and engaging a pipe. Fig. 3 shows a sectional view taken on line 3 3 of Fig. 1, and Fig. 4 is a cross-sectional view taken on line 4 4 of Fig. 1.

Reference now being had to the details of the drawings by letters, A designates the fixed jaw of the wrench, having a shank portion A', provided with a recessed portion, in the walls of which is carried a pin a, on which the movable jaw B is pivotally mounted. The shank portion of the fixed jaw is chambered out at one end, as at a', and a spring-actuated pin C is mounted to have a reciprocating

movement in an aperture at the end of the chambered portion, and the other end of said pin passes through a head D, which is made to telescope within the chambered portion a', and said pin is retained in place in the head by means of a key d. Each end of the pin C is provided with an eye C' and C², the former of which carries a pin having pivotal connection with a link E, which link is in turn pivotally mounted at E' to the inner pivoted end of the movable jaw B. A spring is interposed between the bottom wall of the chambered portion and said head and is adapted to normally hold the movable jaw in the position illustrated in Fig. 1 of the drawings.

F designates a hollow shell having interior threads F' at one end, which are adapted to engage over a threaded shoulder on the shank portion of the fixed jaw. Mounted within said shell is a block G, which is held to the shell by means of pins G'. Said block has an eye g, through which a pin g' passes, on which a toggle-link I is pivotally mounted, said toggle-link being in turn pivotally mounted to a second toggle-link K, having pivotal connection with the eye C², formed at the end of the pin C. An offset is formed in the shell F, as shown in the drawings, for the purpose of allowing for the movement of the toggle-links when thrown out at their farthest limit.

Pivotally mounted on a pin m, which passes through the block G, is a lever M, one end of which is pivotally connected to the pin N, which pivots the two toggle-links together and is preferably curved, as shown, with one end forked. The opposite end N' forms a handle, whereby an operator by rocking the lever upon its pivot may cause the toggle-links to be operated in the act of opening or closing the movable jaw of the wrench.

In the drawings it will be observed that in Fig. 1 I have shown an extensible handle R, which is hollow and contained within the shell, said extension-handle being adapted to be adjusted in either the position shown in Fig. 1, in which it is held at its inner limit, or, as disclosed in Fig. 2, in which it may be held in an extended position. Said handle R has a shouldered end R' and a threaded portion R² about its circumference adjacent to said flange or head, and its opposite end

has a knob T, held to the handle by means of a pin T', passing transversely through the head and handle after being screwed on the outer threaded end thereof. It will be noted
 5 that the aperture in the end of said shell is interiorly threaded to engage either of the threaded portions about the extension-handle adjacent to its end, whereby said handle may be held securely in either position illustrated.

10 The jaws of the wrench are provided with blocks S and S' with serrations thereon and have dovetailed connections with the jaws, whereby the same may be placed as desired.

From the foregoing it will be observed that
 15 by the provision of a wrench embodying the features illustrated convenient means is provided whereby the movable jaw may be thrown into engagement with a pipe or other article by the mere throwing of the lever N'
 20 toward the handle of the wrench, and by means of the spring the movable jaw of the wrench is normally thrown against the pipe and made to assume the position as shown in Fig. 1.

25 While I have shown a particular construction of invention to illustrate my wrench, it will be understood that I may make alterations of the details of construction of the wrench without departing from the spirit of
 30 the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A wrench having a fixed jaw, a pivotal
 35 jaw mounted thereon, toggle-joint and connections between the same and said pivotal jaw, and a lever having pivotal connection with the toggle-joint, and a spring for normally throwing the jaws of the wrench to-
 40 ward each other, as set forth.

2. A wrench comprising a fixed jaw, a pivotal jaw mounted thereon, a toggle-joint, a reciprocating pin having pivotal connection with one of the links of said joint, and a link
 45 connecting said pin with the movable jaw, a plunger fixed to said pin and adapted to tele-

scope within a chambered part of the shank portion of the fixed jaw, and a spring interposed between said plunger and the bottom of said chamber, and a lever pivoted to the
 50 toggle-joint and adapted to actuate the pivotal jaw, as set forth.

3. A wrench comprising a fixed jaw, a movable jaw mounted thereon, a shell having threaded connection with the shank portion
 55 of the fixed jaw, a block fixed within said shell, a pin having a reciprocating movement in a chambered portion of the shank of the fixed jaw, a link connecting said pin to the movable jaw, pivotal toggle-links connecting
 60 said block and pin, a lever pivoted to said block and having pivotal connection with the toggle-link, as set forth.

4. A wrench comprising a fixed jaw, a pivotal jaw mounted thereon, a shell having
 65 threaded connection with the shank portion of the fixed jaw, a block carried by said shell, toggle link and lever connections between the same and said movable jaw, an extensible handle mounted within said shell, and means
 70 for holding said handle at its limit in opposite directions, as set forth.

5. In combination with a wrench, having a fixed jaw, a movable jaw pivotally mounted
 75 thereon, a hollow shell having threaded connection with the shank portion of the fixed jaw, toggle link and lever connection for actuating the pivotal jaw, an extensible handle having a flange about its inner end and threaded adjacent to said flange, a threaded
 80 portion at the opposite end of the handle, said handle adapted to engage a threaded aperture in the end of the shell to hold the extensible handle at its inner or outer limit, as
 85 set forth.

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

DAVID H. IRLAND.

Witnesses:

JAMES ROTT,

ROBERT W. STEWART.