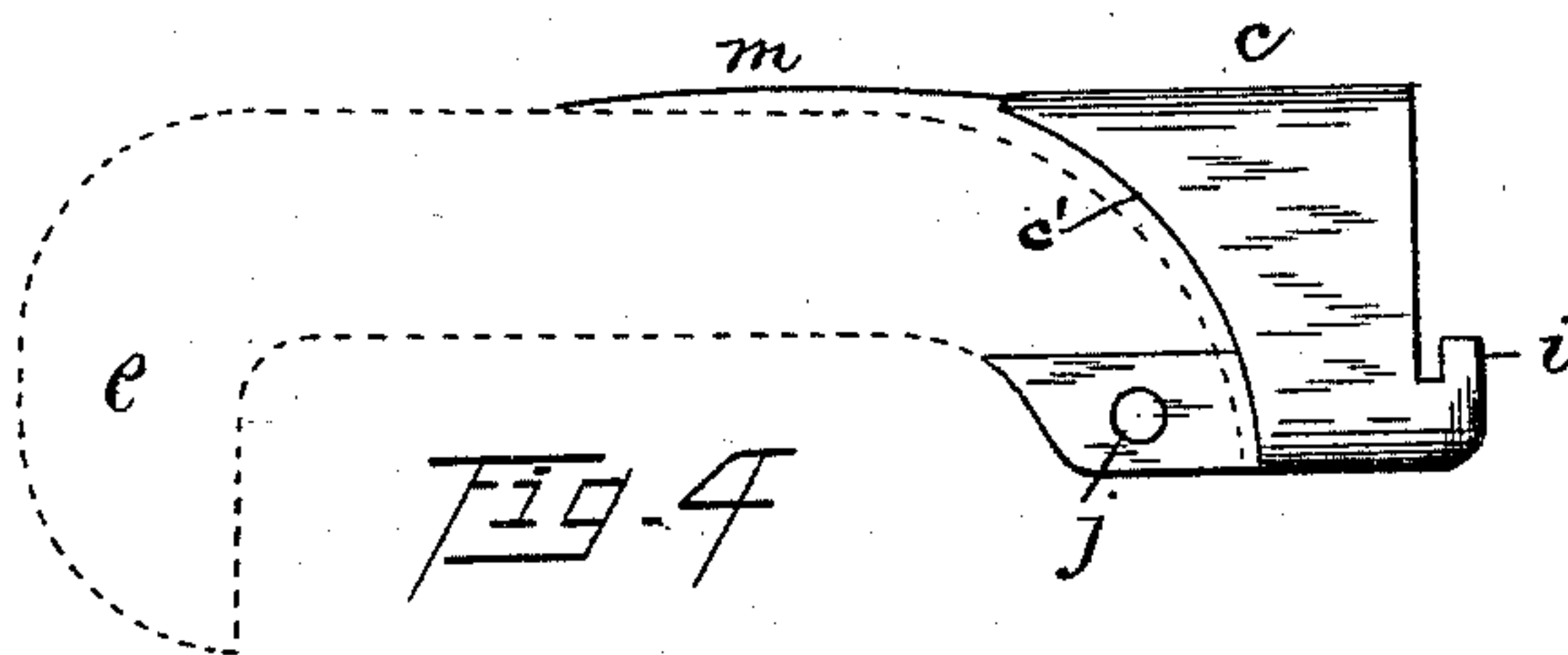
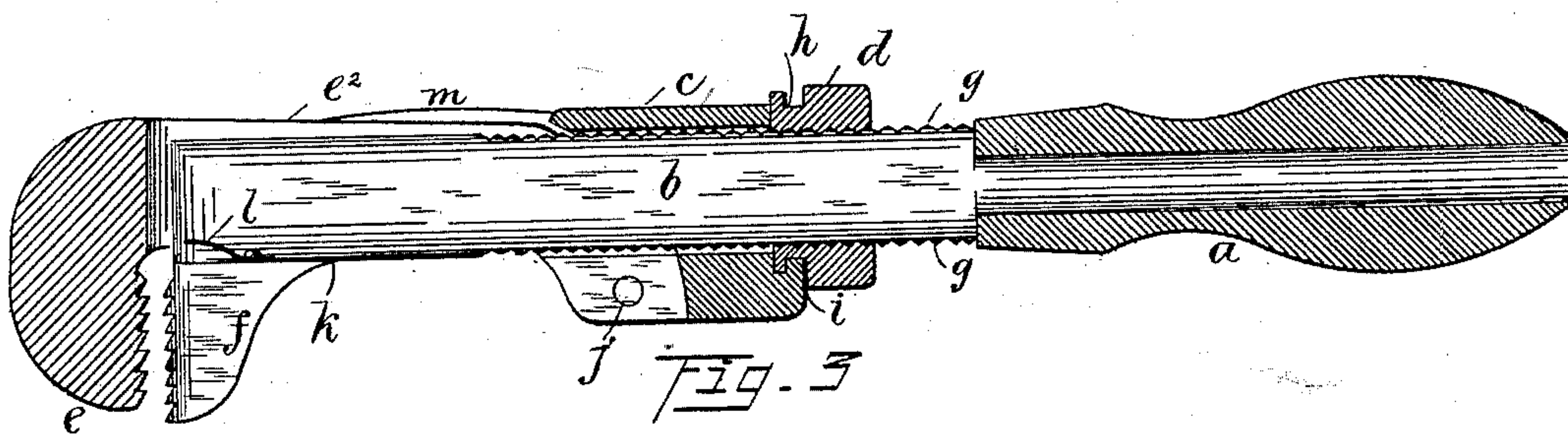
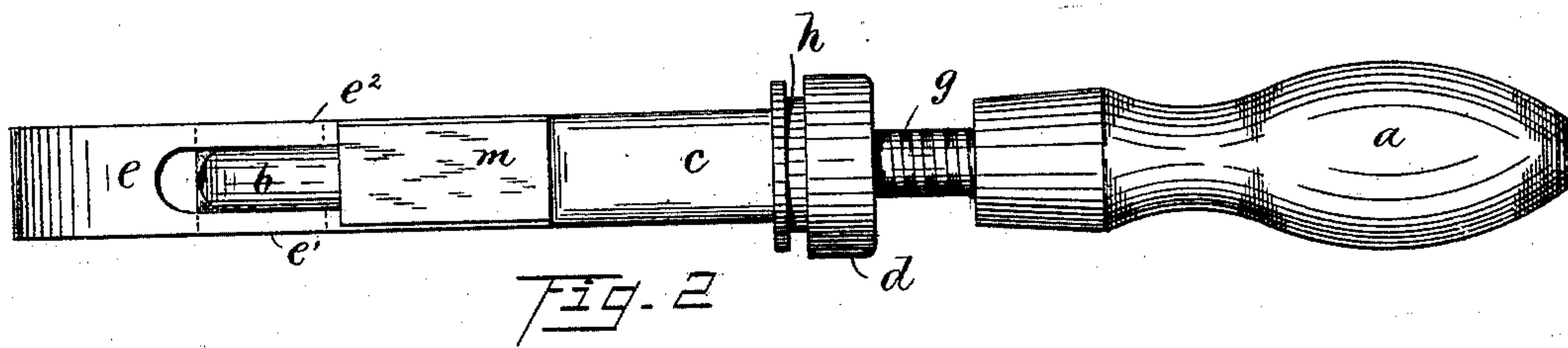
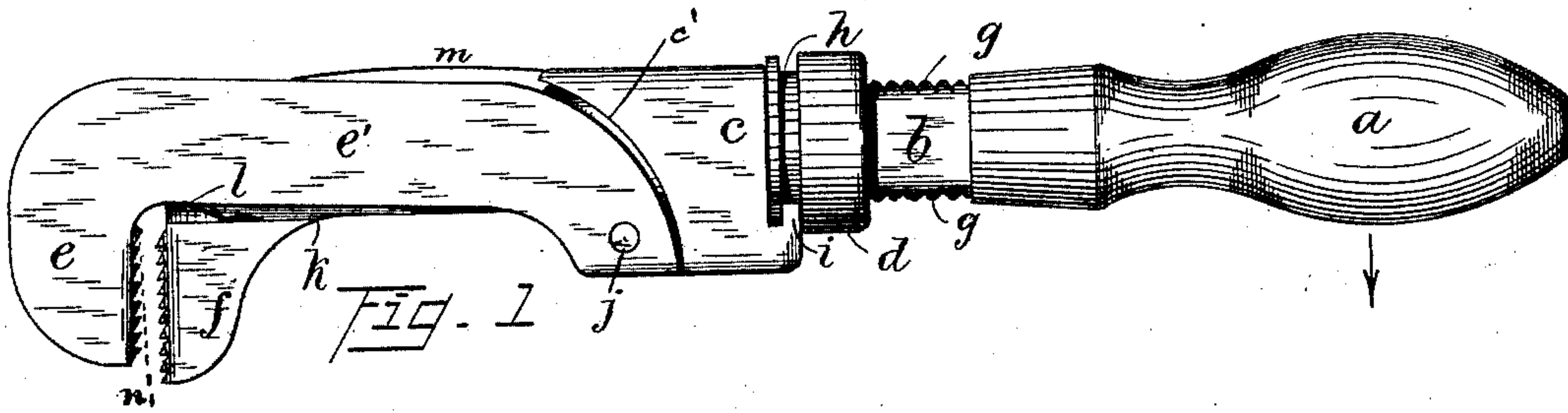


(No Model.)

M. J. WILSON.
PIPE WRENCH.

No. 473,542.

Patented Apr. 26, 1892.



Witnesses.
W. A. Biddle
Henry Ford

Inventor.
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UNITED STATES PATENT OFFICE.

MILFORD J. WILSON, OF PAINESVILLE, OHIO.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 473,542, dated April 26, 1892.

Application filed November 16, 1891. Serial No. 412,102. (No model.)

To all whom it may concern:

Be it known that I, MILFORD J. WILSON, a citizen of the United States, residing at Painesville, in the county of Lake and State of Ohio, have invented a certain new and Improved Pipe-Wrench, of which the following is a full and complete description.

The nature of my invention relates to a pipe-wrench with a jaw attached to the shank and movable jaw pivoted to a sleeve adjustable on said shank, said sleeve being operated by a grooved nut threaded on the shank, whereby a certain amount of "take-up" is allowed between the jaws, facilitating the moving from and adjusting the wrench to the pipe or bolt, as will be seen from the following specification and annexed drawings, forming part thereof.

Figure 1 is a side view of my improved wrench; Fig. 2, a top view of the same; Fig. 3, a side view showing the movable jaw, nut, sleeve, and handle in longitudinal section. Fig. 4 is a view of the sleeve detached, showing the movable jaw in dotted lines.

Like letters of reference denote like parts in the drawings and specification.

In the drawings, *a* represents the handle; *b*, the shank; *c*, the sleeve; *d*, a grooved and threaded nut, and *e* the movable jaw, all of which are described in the following specification in connection with the drawings.

In Figs. 1 and 3 is shown the stationary jaw *f*, which is in connection with and forms an integral part of the shank *b*, which shank is threaded, as shown at *g*, Figs. 1, 2, and 3. Said shank passes through the sleeve *c*, as seen in the drawings, and has the nut *d* threaded thereon. The nut *d* has an annular groove *h* in the exterior thereof, which engages the lug *i*—an extended portion of the sleeve *c*. The working of the nut *d* on the threaded shank *b*, with lug *i* or lip of the sleeve in the groove *h* of the nut, as seen in Figs. 1 and 3, constitute the mechanism for opening, closing, and adjusting the jaws of the wrench for the purposes required, as explained in the following description. The movable jaw *e* is of the form as in the drawings shown or its equivalent, having a solid head and sides *e'* *e''* extending on each side of the shank *b*, (seen in Fig. 2,) which sides are

pivoted to the sleeve *c* at *j* on both sides, adjacent to the shoulders *c'*, and under the shank, as shown.

In order to have the stationary jaw of equal thickness with the movable jaw and to prevent any more take-up than is necessary for the required grip and prevent the jaws from taking any more grip than wanted, thereby preventing them from crushing the pipe, it is necessary to have an offset on both sides of the shank at the jaw terminals thereof, as shown at *k*. This offset also admits of a spring *l*, Figs. 1 and 3, being made fast to the stationary jaw on each side thereof in the position shown. The free terminals of said springs bear on the movable jaw *e*, as indicated in Fig. 1. By this construction it will readily be seen that the wrench can take hold of a pipe, nut, or bolt loosely, and by pressure being applied to the handle *a* in direction of the arrow in Fig. 1 the movable or pivoted jaw will tighten or take up on the pipe or bolt, as shown by dotted line *n* in Fig. 1, thereby causing a firm grip on a pipe or nut. When the pressure is relieved from the handle *a*, the resiliency of the springs *l*, as above cited, one of which is only shown in Figs. 1 and 2, causes the jaws to open sufficiently to render the removal of the wrench easy without resorting to the delay of moving the nut *d*, thus saving of labor, time, and trouble in gripping and letting go of a pipe, bolt, or nut, as the case may be. By means of the springs *l* on each side the wrench-jaws are retained open in sufficient capacity to take in the pipe to secure the required grip for turning it and releasing for taking another grip without turning the nut *d* to open the jaws or closing them for such purpose. The spring *m* is desirable to retain the movable jaw *e* in the position required, and also to secure a more positive grip when the grip on the pipe or nut is so tight that the jaws are not relieved by the ordinary relax of pressure on the handle *a*, and it is necessary to apply extra pressure on the handle reversely (to the arrow seen in Fig. 1) to move the jaw *e* back to its full capacity. The strain will be on the upper portion of the sleeve and the pivot *j*. Then it is that the spring *m* comes into action in moving the movable jaw back

to its proper position after the pressure of the grip is relieved and the jaws removed from the pipe. The spring *m* is attached to the upper portion of the sleeve *c* and bears
5 upon the two side parts *e'* and *e²* of the pivoted jaw.

What I claim is—

1. A pipe-wrench comprising a shank having a fixed jaw integral therewith and extending laterally therefrom, a sleeve movable
10 on said shank, and a movable jaw having extended sides straddling the shank and pivoted to the sleeve at one side of the shank in a line perpendicular to the meeting faces of
15 the jaws, substantially as described.

2. In a pipe-wrench, the movable jaw *e*, pivoted to the sleeve in combination with the springs *l* and *m*, arranged as described and operating conjointly with the means for open-
20 ing and closing the jaws, whereby a sufficient amount of take-up is provided for easily and readily gripping and releasing the jaws, as and for the purpose substantially as described.

3. In a pipe-wrench, the combination, with
25 the shank terminating in the jaw *f*, of a sleeve

sliding on said shank and having shoulders *c'*, an adjustable jaw *e*, having sides *e'* *e²* extending on both sides of the shank and pivoted to the sleeve adjacent to the shoulders *c'*, and springs *l*, fastened to the fixed jaw and
30 bearing against the movable sides *e'* *e²*, substantially as described.

4. A pipe-wrench comprising the shank *b*, having a fixed jaw *f*, the sleeve *c*, movable thereon and having a perforated lug of sub-
35 stantially the same thickness as the shank and parallel therewith, and a movable jaw *e*, having extended sides *e'* *e²*, lying on each side of the shank and pivoted to the lug on the sleeve at *j*, whereby the sides *e'* *e²* do not pro-
40 ject laterally, thereby making the wrench more compact and handy, substantially as described.

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

MILFORD J. WILSON.

Witnesses:

A. A. LEE,

A. L. WILLIAMS.