

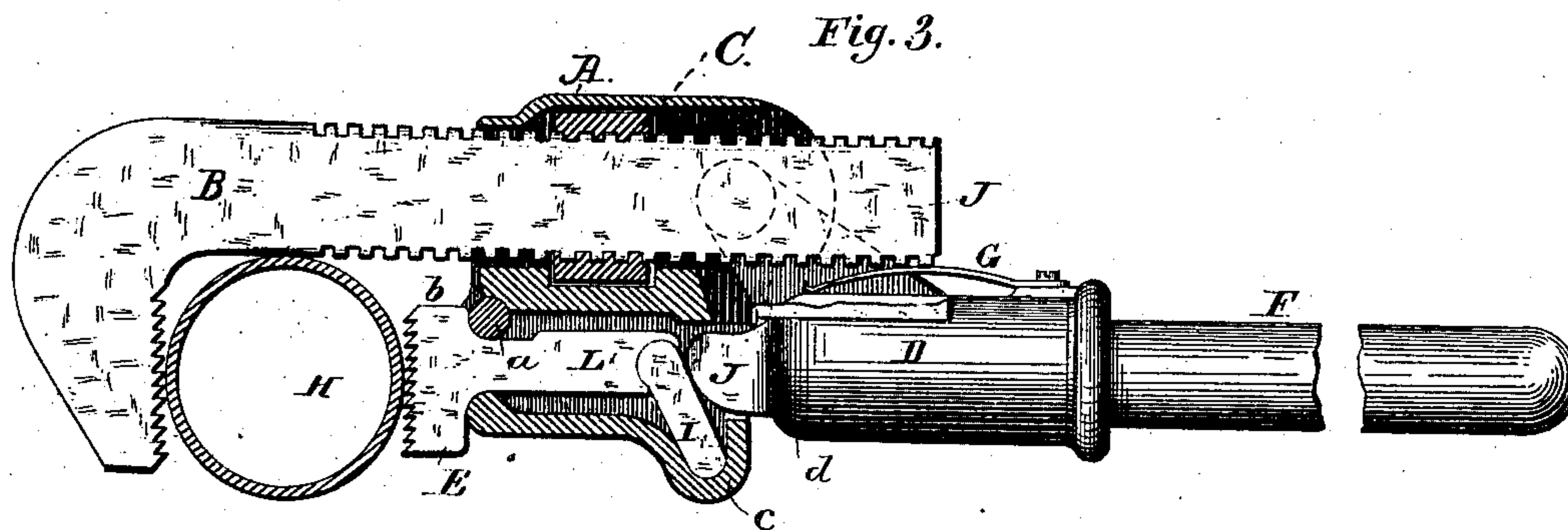
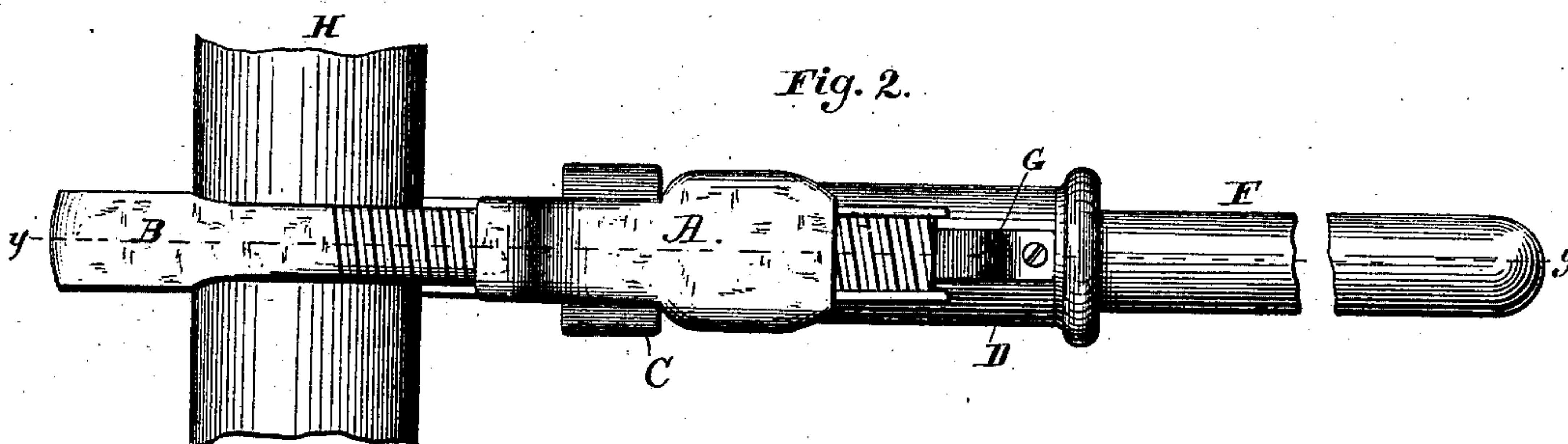
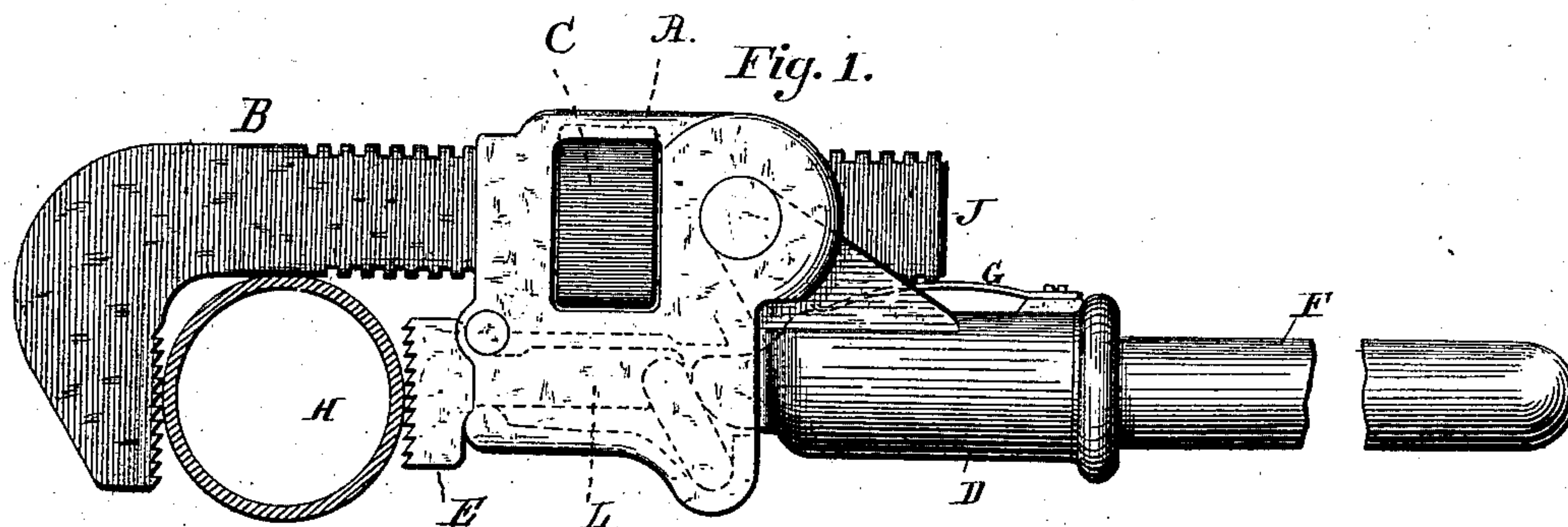
(No Model.)

F. ARMSTRONG & N. W. VANDEGRIFT.

PIPE WRENCH.

No. 291,267.

Patented Jan. 1, 1884.



Witnesses:

J. Henry Kaiser
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Inventor:

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UNITED STATES PATENT OFFICE.

FRANK ARMSTRONG AND NATHANIEL W. VANDEGRIFT, OF BRIDGEPORT,
CONNECTICUT; SAID VANDEGRIFT ASSIGNOR TO SAID ARMSTRONG.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 291,267, dated January 1, 1884.

Application filed June 21, 1883. (No model.)

To all whom it may concern:

Be it known that we, FRANK ARMSTRONG and NATHANIEL W. VANDEGRIFT, citizens of the United States, residing at Bridgeport, Fairfield county, Connecticut, have invented new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

Our invention relates to certain new and useful improvements in pipe-wrenches, and particularly to that type in which one of the jaws is made loosely connected with the other, or made movable for a slight distance when power is applied to the handle of the wrench to turn the pipe in such manner that the lower jaw is forced more tightly upon the pipe to take a firmer hold, according to the necessary power to be applied to turn the pipe, as fully described in another application prepared and executed by us and filed of even date herewith.

The object of our present invention is to apply the power necessary to operate the lower movable jaw through the medium of a toggle-lever; and with this object in view our invention consists in the details of construction hereinafter described and claimed.

In order that those skilled may know how to make and use our invention, we will describe the construction and operation of the same, referring by letters to the accompanying drawings, in which—

Figure 1 is a side elevation of a wrench embodying our invention. Fig. 2 is a plan view, and Fig. 3 a longitudinal section taken at the line *y y* of Fig. 2.

Similar letters indicate like parts in the several figures.

The general features of construction are substantially like the same parts shown and described in the other application hereinbefore referred to, and we will in this application simply designate them by letters of reference, but describing with particularity the construction and operations of the parts which differ from the application referred to.

A represents the frame for securing the jaws in operative positions.

B represents the upper jaw, with a shank, J.

E represents the lower jaw, with a shank, L.

C is the nut which operates the upper jaw in its adjustments.

D is the handle-casting, into the end of which is secured the handle F. The casting D has secured to it a flat spring, G, and H represents a pipe being operated upon.

The lower jaw, B, unlike that described in the other application hereinbefore referred to, is not pivoted at its front end, but is recessed, as seen at *a*, and a pin, *b*, passing through the case A, serves to hold the jaw against accidental withdrawal, while it allows a free reciprocation of the same in proportion to the length of the recess.

The back end of the shank L has a transverse curved recess of more than a half-circle, adapted to receive one end of a solid link or toggle-arm, I, the other rounded end of which seats itself in a suitable depression, *c*, in the lower back end of the case A, the length of the toggle-arm bearing such relation to its position it shall have an incline, as shown at Fig. 3, against which the nose J at the front end of the casting D will impinge, so that a downward pressure of the handle will cause a pressure of said nose upon the toggle-arm I, and thus force the jaw E longitudinally toward the pipe H, the downwardly-projecting curved portion *d* of the handle-casting D serving as a check or stop to prevent too great a movement of the handle, and, in addition to this means of stopping the crushing effect of too great a movement of the handle, the nose J is rounded and otherwise shaped as best seen at Fig. 3, so that the upper surface of said nose will come in contact with the partition in the case A between the recesses provided for the shanks of the upper and lower jaws.

It will be seen that the lower jaw, E, may be readily removed by simply withdrawing the securing-pin *b* for the purpose of substituting a new one or one of different proportions, if necessary, and that the jaw E or a substitute may be placed in position by passing the same into the recess in the case A in the direction indicated by the arrow at Fig. 3. The link or toggle-arm I, being seated within the end of

the shank by passing it in transversely, is held against displacement by reason of the seat being more than a half-circle.

We do not wish, of course, to confine ourselves in the formation of the handle-socket D to casting the same, as it may of course be made in any other suitable manner; or the portion D and handle proper may be made in one piece. We have shown it as made in two simply as a convenience for transportation or packing.

All matter shown and described in this application which forms the subject-matter of claims in the other application hereinbefore referred to is hereby disclaimed in this one.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a pipe wrench of the type herein shown, the lower jaw, E, provided with a shank, L, in combination with a toggle-arm, I, case A, provided with a seat, c, and a handle-socket, D, provided with a nose or projec-

tion, J, whereby the jaw is caused to move outwardly in a longitudinal direction by the action of the nose J upon the inclined toggle-arm I, as hereinbefore set forth. 25

2. The lower jaw, E, provided with a recess, a, in combination with the case A, pin b, and means for moving said jaw longitudinally, as hereinbefore set forth. 30

3. The case A, adapted to receive in operative relation the moving parts of the wrench, and provided with a seat, c, for the reception of one end of the toggle-arm I, substantially as shown and described. 35

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

FRANK ARMSTRONG.
NATHANIEL W. VANDEGRIFT.

Witnesses:

F. B. KEPPY,
H. E. BOWSER.