

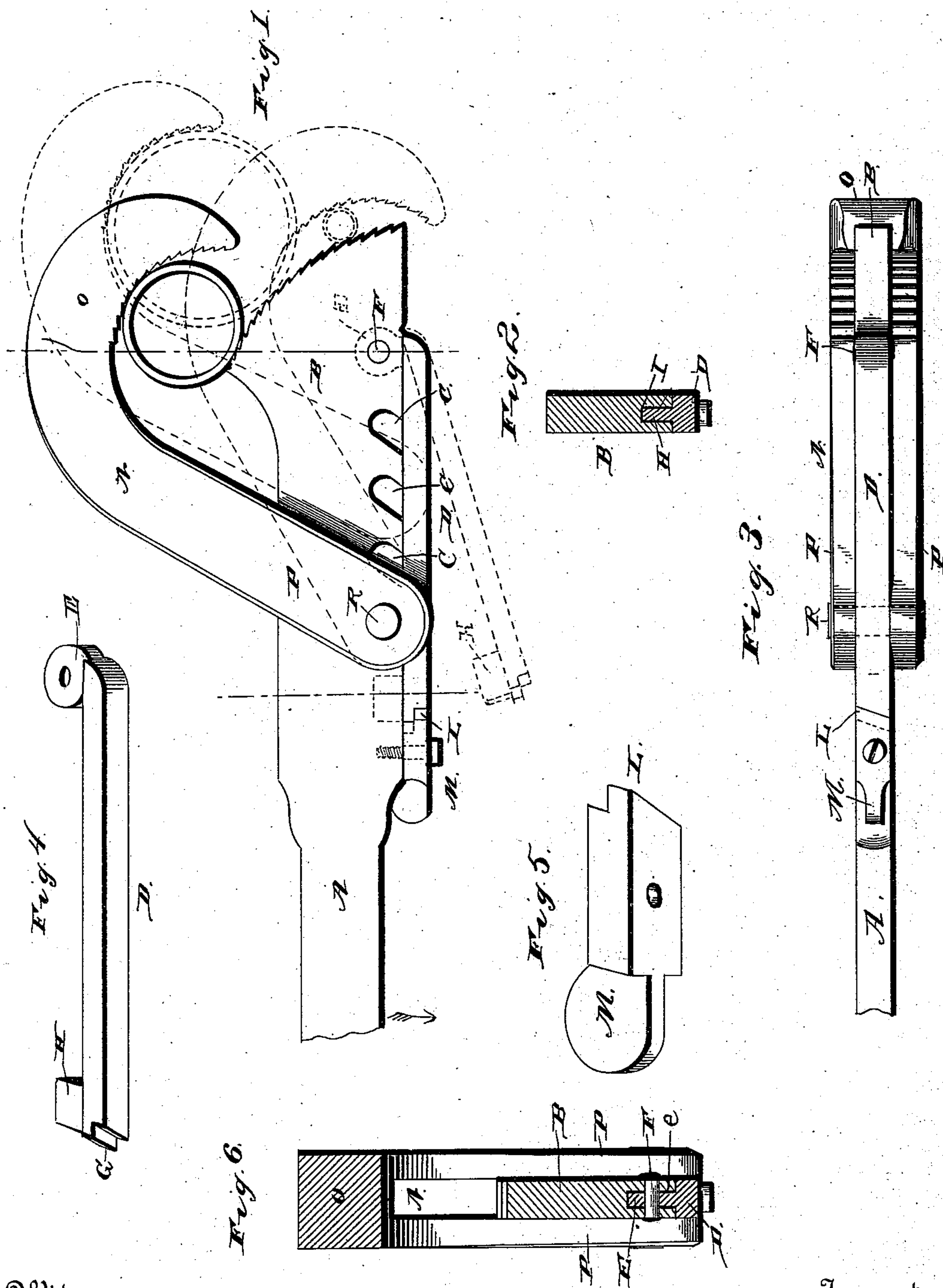
(No Model.)

R. COPLAND.

PIPE WRENCH.

No. 382,799.

Patented May 15, 1888.



Witnesses.

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# UNITED STATES PATENT OFFICE.

ROBERT COPLAND, OF EUREKA, CALIFORNIA.

## PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 382,799, dated May 15, 1888.

Application filed January 18, 1888. Serial No. 261,111. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT COPLAND, a citizen of the United States, residing at Eureka, in the county of Humboldt and State of California, have invented a new and useful Improvement in Pipe-Wrenches, of which the following is a specification.

My invention relates to improvements in pipe-wrenches; and it has for its object to provide a simple, strong, durable, and effective wrench, which may be adjusted in a simple and easy manner to fit all sizes of pipes. To accomplish this, I provide a main shank or handle having a rigid jaw on one end provided with a series of sockets and a swinging jaw having a pin at its rear end to engage one of the sockets. I further provide a latch to close over the outer ends or mouths of the said sockets to hold the pin in the desired socket. I further provide a pivoted catch to engage the latch and hold it in place.

My invention is more fully described hereinafter in connection with the accompanying drawings, wherein—

Figure 1 is a side view. Fig. 2 is a transverse section, line *x x*, Fig. 1. Fig. 3 is a bottom plan view. Fig. 4 is a detail perspective view of the latch. Fig. 5 is a similar view of the catch.

Referring by letter to the drawings, A designates the shank of the wrench, which is provided with a rigid (and, preferably, integral) jaw, B, having a rounded and serrated outer end. The lower side of the said jaw is provided with a series of transverse sockets, C C, which are inclined outward or toward the end of the jaw. A latch, D, is pivoted to the jaw B and bears against the under side thereof, thereby closing the mouths or lower ends of all the sockets. This latch is provided at its outer end with an ear, E, which fits in a recess, *e*, in the jaw and is mounted on a transverse pin, F, in the said recess. The inner end of the latch is beveled and provided with a shoulder, G, for a purpose to be explained, and a detent, H, on the upper side of the latch at its inner end fits in a recess, I, in the lower side of the jaw, and holds the inner end of the latch from lateral play.

A catch, K, is pivoted to the jaw B adjacent to the inner end of the latch, and it is also

provided with a beveled end having a shoulder, L, which engages the shoulder G. The inner end of the catch is provided with a thumb-hold, M, to enable the catch to be easily turned to disengage the said shoulders.

Fig. 1 shows the open position of the latch in dotted lines.

The swinging jaw N comprises the hook O, which closes around the end of the rigid jaw and is serrated on its inner surface, and the side arms, P P, which pass on opposite sides of the jaw B and are connected at their extremities by the transverse pin R, which fits in one of the sockets C C. The hook and the side arms are preferably formed integral. When the pin R is arranged in the preferred socket, the latch is raised to close the mouths of the sockets and lock the movable jaw in place.

The operation of this wrench will be evident from the above description, taken in connection with the drawings. Several positions of the movable or swinging jaw and the direction in which the shank is swung to operate the wrench are shown in Fig. 1.

With one adjustment of the movable jaw several sizes of pipe may be engaged, owing to the rounded shape of the end of the rigid jaw, and the largest pipes can be engaged when the movable jaw is raised or near its vertical position. When the pipe is too large to be grasped by the jaws in one position, the movable jaw is engaged in a socket nearer the outer end of the jaw.

It will be seen that any desired number of sockets may be employed.

It will be observed that the face of the rigid jaw is an arc of a circle having a long radius, whereas the swinging jaw is hook-shaped and its face is the arc of a circle having a very short radius. Therefore the pipe which is engaged by the said jaws is held in place on the rigid jaw by the hook shape of the swinging jaw, and, as the curve of the face of the rigid jaw is not concentric with either of the sockets, the distance between the jaws is reduced as the movable jaw swings down to a position parallel with the rigid jaw.

The object of the detent H on the free end of the latch is to hold the latter from being strained laterally, and the ear E on the other



end of the latch, being mounted in a socket in the jaw, also prevents the latch from being twisted out of position.

Having thus described my invention, I  
5 claim—

1. In a wrench, the combination of the shank A, having the jaw B provided with sockets C C and the recess I, the swinging jaw having a transverse pin, R, engaging any one of the  
10 sockets, and the latch pivoted at its front or outer end to the jaw B, and having a detent on its other end fitting in the said recess I in the jaw, the said latch being adapted to close the open ends or mouths of the said sockets,  
15 substantially as and for the purpose specified.

2. In a wrench, the combination, with the shank having a rigid jaw attached thereto and provided with sockets C C, of the movable jaw having a transverse pin, R, mounted in one of  
20 the sockets, the pivoted latch closing over the said sockets and having a shoulder on its free

end, and the catch having a shoulder to engage the shoulder on the latch, substantially as specified.

3. In a wrench, the combination, with the  
25 shank having a rigid jaw provided with sockets C, of the movable jaw having a transverse pin, R, mounted in one of the sockets, the pivoted latch having a beveled end provided with a shoulder, G, and the pivoted catch having  
30 a thumb-hold, N, and a beveled outer end provided with a shoulder to engage the shoulder G, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my  
35 own I have hereto affixed my signature in presence of two witnesses.

ROBERT COPLAND.

Witnesses:

L. B. KINGSBURY,  
J. A. SINCLAIR.