

A. J. COOPER.
PIPE WRENCH.
APPLICATION FILED JUNE 7, 1911.

1,037,872.

Patented Sept. 10, 1912.

Fig. 1.

Fig. 2.

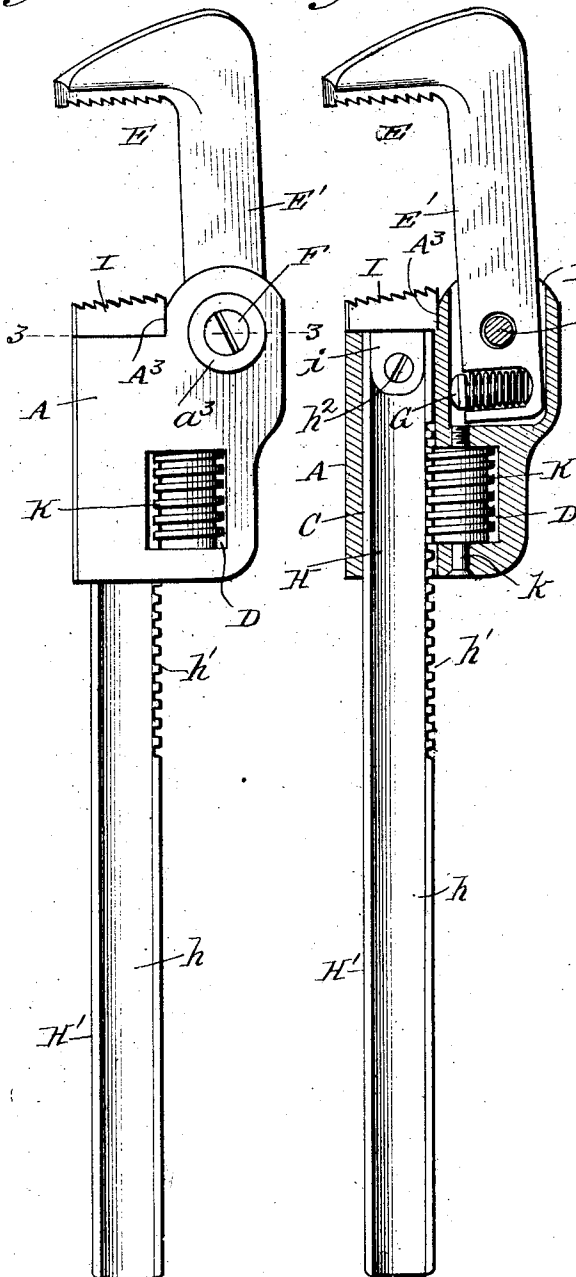


Fig. 3.

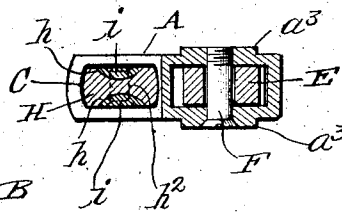
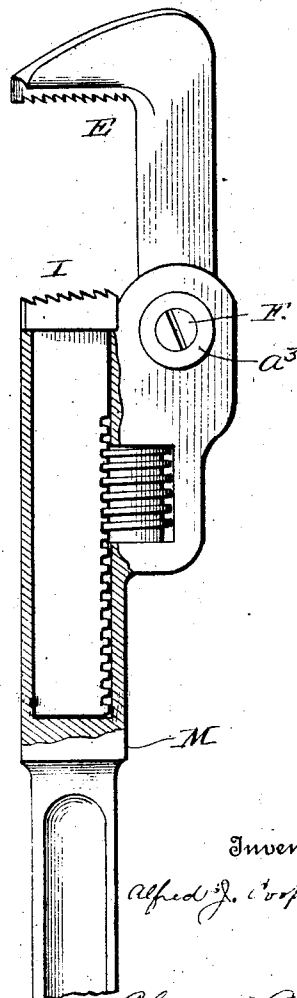


Fig. 4.



Witnesses
Elizabeth J. Cooper
H. B. Crumell

By

Inventor
Alfred J. Cooper

Chas. H. Chase
Attorney

UNITED STATES PATENT OFFICE.

ALFRED J. COOPER, OF DURYEA, PENNSYLVANIA.

PIPE-WRENCH.

1,037,872.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed June 7, 1911. Serial No. 631,769.

To all whom it may concern:

Be it known that I, ALFRED J. COOPER, a citizen of the United States, residing at Duryea, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Pipe-Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and to the figures and letters of reference marked thereon.

The objects of the present invention are to provide a pipe wrench which shall be simple, inexpensive to manufacture, and so formed and proportioned as to give an effective grip on the pipe without crushing the same and be easily applied to and removed from the pipe or object to be turned or held.

In the accompanying drawings,—Figure 1 is a side elevation of a wrench embodying the present invention, Fig. 2 is a similar view with portions broken away and in section; Fig. 3 is a section on the line 3—3, Fig. 1, or in a plane through the axis of the pivoted jaw; Fig. 4 is an elevation of a modified form of the wrench with portions broken away and in section.

Similar letters of reference in the several figures indicate the same parts.

The wrench of the present invention embodies a head indicated generally by the letter A, which is adapted to movably support the two jaws and the adjusting mechanism for the adjustable jaw. The said head is formed with two jaw sockets, one B, closed at the bottom and adapted for the reception of the shank of the pivoted jaw, and the other C adapted for the reception of the shank of the sliding or adjustable jaw. In the construction shown in Figs. 1 and 2 the socket C extends entirely through the head from top to bottom and opening into it at a point below the socket. B is a transverse opening D adapted for the reception of the adjusting worm. Aperture D is located substantially in line with the socket B and to one side of the socket C.

Pivoted jaw E is provided with a straight shank E', the end of which extends into the socket B and is pivotally connected with the head A by a transverse screw or pivot F, the axis of the jaw being in substantially the plane of the end face of the socket C. To permit of such location of the axis the

walls of the head forming the socket B are extended upwardly on each side as at A³ and are strengthened by bosses a³ around the pivot opening. Within the socket B and below the pivot F the shank is provided with a spring pressed pin G for normally holding the jaw advanced in operative position, but the walls of the socket form the stops for limiting the movement of the shank and jaw in both directions.

The shank H for the adjustable jaw I may extend entirely through the head to form the handle H' of the wrench, and it is preferably formed with longitudinal concavities h in each side face extending from the inner end to a point near the outer end so as to reduce the quantity of metal without decreasing the strength. The front and rear edges of the shank are rounded and the rear edge is provided with teeth h' for the engagement of an adjusting worm K journaled on a screw or pin k in the transverse opening D. The adjustable jaw I is preferably secured to the shank H by lugs i convex on their inner faces and fitting snugly in the ends of the concavities h where they are held by a transverse pin h². This construction gives an extended bearing surface which practically takes the strain when the wrench is being used and correspondingly relieves the pin so that there is little danger of the jaw working loose.

Instead of extending the shank H through the head to form the handle, the handle may be formed by an extension of the head as shown at M in Fig. 4, the extension being made partly hollow for the reception of the end of the shank. When this construction is employed, especially in small wrenches, the adjustable jaw and shank may be integral, as shown, although the construction first described is preferred because it permits the jaw to be made of high grade material and properly tempered before its application to the shank.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. A pipe wrench embodying a head portion having two separate sockets therein, one extending longitudinally through the head portion, the other extending to a point midway the length of the head portion, a worm aperture in line with one of said sockets having an opening at one side

into the other socket and extending trans-
versely through said head portion from side
to side, an outer jaw pivotally mounted in
one of said sockets on an axis lying in the
5 plane of the end face of the other socket, a
spring for holding the pivoted jaw ad-
vanced, located within the socket and seated
in the bottom of the pivoted jaw, an inner
jaw longitudinally movable in the other
10 socket and having teeth on one edge, a worm
journaled in the transverse aperture, where-
by it is accessible from both sides of the
head portion, and cooperating with said
teeth, and a handle extending in alinement
15 with the shank of the inner jaw.

2. A pipe wrench embodying a head hav-
ing two separate jaw sockets therein, one
extending through the head longitudinally
and the other being closed at the bottom
20 and a transverse adjusting worm aperture
through the head located in line with the
closed bottom socket and opening at one side
into the other socket, an outer jaw having a

straight shank at substantially right angles
to the jaw face, said shank being pivotally 25
mounted in the closed bottom socket on an
axis substantially in the plane of the end
face of the other socket, a spring for hold-
ing the pivoted jaw advanced, a longitudi-
nally movable jaw shank slidably mounted 30
in said other socket, said shank being
extended to form a handle and having longi-
tudinal concavities in its opposite side
faces and teeth on one of its edge faces, a
jaw mounted on the end of the shank and 35
having side lugs extending down into said
concavities, a transverse pin connecting the
lugs and shank, and an adjusting worm
journaled in the transverse opening in the
head and cooperating with said teeth to 40
adjust the longitudinally movable shank
and jaw.

ALFRED J. COOPER.

Witnesses:

WM. BOUN,

JOS. G. MARCY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."