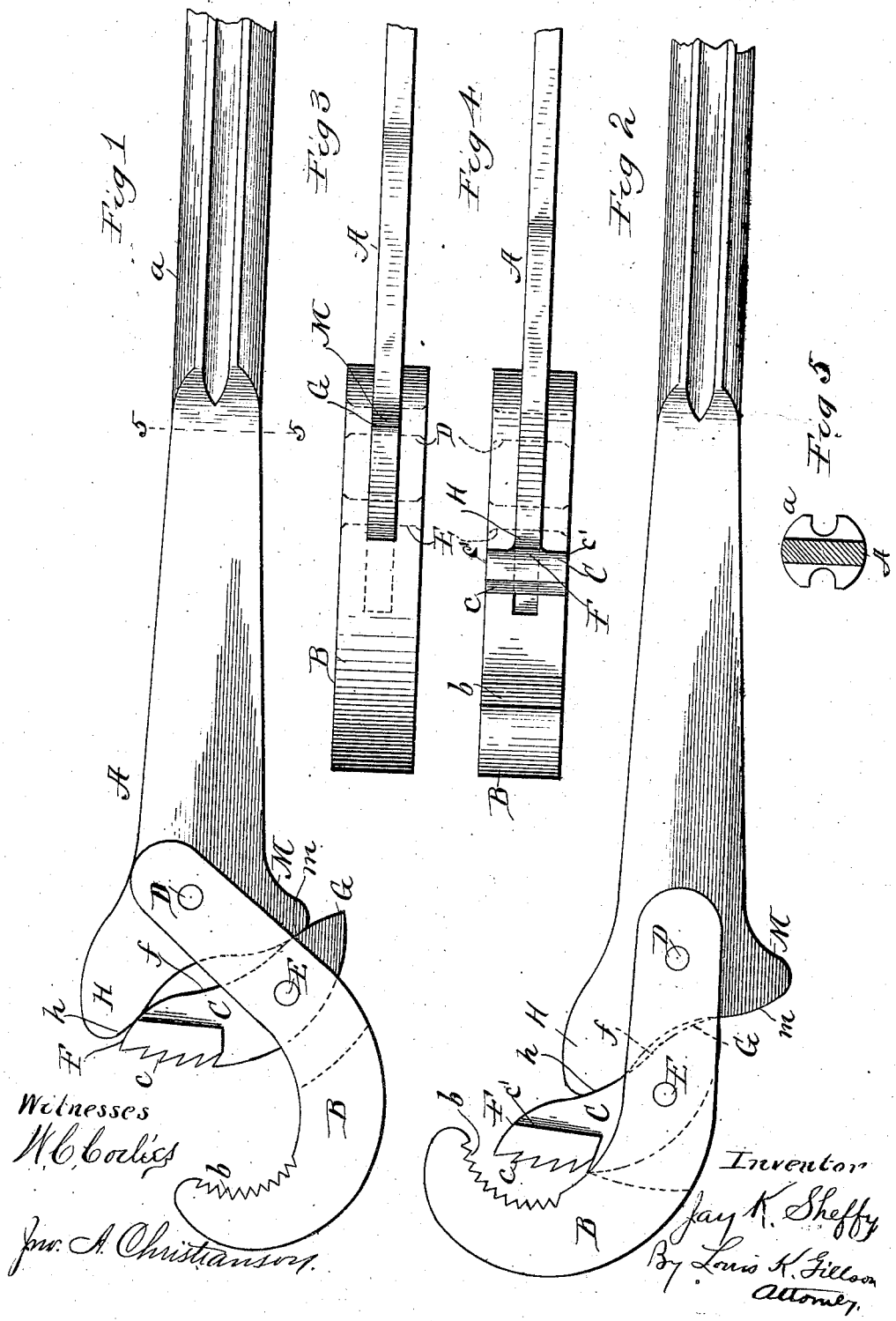
(No Model.)

J. K. SHEFFY.

PIPE WRENCH.

No. 553,362. Patented Jan. 21, 1896.



UNITED STATES PATENT OFFICE.

JAY K. SHEFFY, OF CHICAGO, ILLINOIS.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 553,362, dated January 21, 1896.

Application filed August 17, 1895. Serial No. 559,624. (No model.)

To all whom it may concern:

Be it known that I, JAY K. SHEFFY, a citizen of the United States, and a resident of 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.

The invention relates to that type of pipe-wrenches in which a pair of movable jaws is employed and forced together by a cam action of a lever pivoted to one of the jaws and serving as a handle for the tool. Its object is to provide an improved form of jaw, an improved connection between the hand-lever and the jaws and positive means for opening the jaws.

The invention consists in forming the larger jaw as a J-shaped hook, and pivoting the smaller jaw or dog to the stem of the larger one in such a manner that it will close the mouth of the latter, and in the peculiar form of the hand-lever so that it has a positive cam action upon the smaller jaw both to force it into action and release it therefrom.

In the accompanying drawings, Figure 1 is a side elevation of the wrench, the jaws being opened. Fig. 2 is a similar view, the jaws being closed. Fig. 3 is a bottom plan view of the wrench in its position as shown in Fig. 1. Fig. 4 is a plan view, the wrench being in the same position. Fig. 5 is a transverse section on the line 5 5 of Fig. 1.

The handle A is a lever of the first class, its fulcrum being the pivot-pin D, by which it is secured to the larger jaw B. This jaw is in the form of the letter J, the pivot-pin D being near the end of its stem, which is bifurcated to receive the handle A, and also the smaller jaw or dog C, which is pivotally secured, as shown at E.

The inner surface of the larger jaw B is toothed through its curved portion, as indicated at *b*, and the face of the jaw C, which opposes the toothed portion of the larger jaw, is toothed, as indicated at *c*. The jaw C projects backwardly a short distance from its pivotal point, and its back or rearward face is in the form of a compound curve, being convex at each end, as shown at F G, and concave at its middle portion, as indicated at *f*.

The handle A has a forwardly-projecting toe-piece H, which presents a convex face *h* to the convex face F of the dog C, and a backwardly-projecting heel-piece M which presents a convex face *m* to the convex face G of the jaw C.

The jaw B being caught over the pipe to be operated upon a bite upon the pipe is secured by longitudinal draft upon the handle which tends to bring the larger jaw into the position relatively as to the handle indicated in Fig. 2, and consequently causes the depression of the jaw C by the toe-piece H. Pressure upon the handle in the direction of the mouth of the jaw B closes the jaws more firmly upon the pipe and secures so firm a grip that the wrench cannot possibly slip. Pressure upon the handle in the opposite direction instantly releases the grip upon the pipe and allows the wrench to be moved back for a new bite. The wrench is disengaged from the pipe by backward pressure upon the handle, throwing the heel M against the rearward end G of the jaw C so that its end F is raised.

The curved form of the jaw B insures contact with the surface of the pipe through a considerable portion of its circumference, so that there is no tendency to flatten the pipe, however, much pressure may be applied, and in order to crush it the circumference of the pipe must needs be reduced. By actual tests I have found that under the action of this wrench a pipe will be twisted off before any distortion occurs by reason of the pressure upon it of the jaws. The curved form of the larger jaw also admits of the use of the wrench in very contracted positions, and furthermore insures great strength, and consequently admits of the tool being made comparatively light.

The end of the lever A is concave between the toe H and the heel M, to receive the convex end G of the jaw C as the parts approach the position shown in Fig. 2. The toothed face *c* of the jaw C is made wide, as more plainly

indicated in Fig. 4, so as to secure an extended area of contact with the pipe. This wide face is secured by forming the jaw with lateral extensions c' c'.

The outer end a of the handle is so shaped as to be conveniently grasped.

While I have described the wrench for use in turning tubes or rods, it is equally serviceable as a nut-wrench, and is much more efficient for such purpose than a wrench with fixed jaws, though such jaws may be adjustable, for the reason that it need not be lifted from the nut in taking a new hold, but will freely slide back over the angles of the nut.

I claim as my invention—

1. In a pipe wrench the combination with a hook-shaped jaw, of a jaw C pivoted to the stem of the hook so as to close across its mouth and having a backwardly extending heel, and a hand lever pivoted to the stem of the hooked jaw and having a toe adapted to bear upon the back of the forward end of the jaw C, and a heel adapted to bear upon the back of the rearward end of the said jaw whereby the angular movement in either direction of the handle with reference to the hooked jaw positively actuates the jaw C, substantially as described and for the purpose specified.

2. In a pipe wrench the combination with a hooked jaw B, of a jaw C pivoted to the stem of the jaw B and adapted to extend across its mouth and having a backwardly extending heel, the jaw C, having its back convex at each end and intermediately concave, and a hand lever pivoted to the stem of the jaw B, and having a toe piece for contact with the forward end of the jaw C and a heel piece for contact with the rearward end of such jaw, such hand lever having a recess between its toe and heel to receive the rearward end of the jaw C when its forward end is depressed, substantially as described and for the purpose specified.

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

JAY K. SHEFFY.

Witnesses:

LOUIS K. GILLSON,

MILO B. GILLSON.