(No Model.)

L. KNIGHT.

PIPE CUTTER.

No. 302,145. Patented July 15, 1884.

Fig. 1

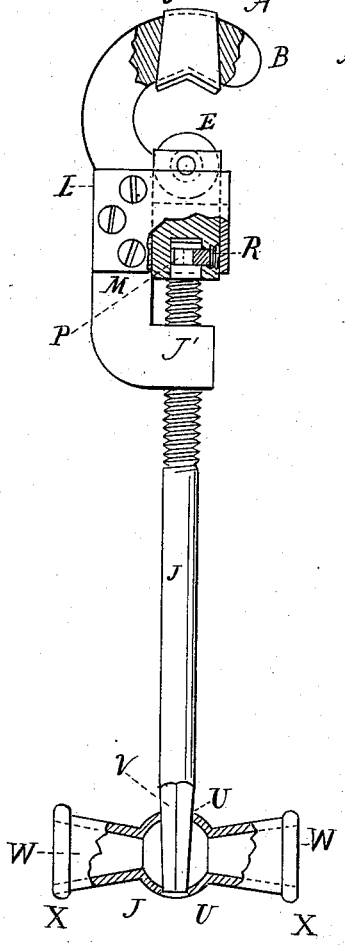


Fig. 2

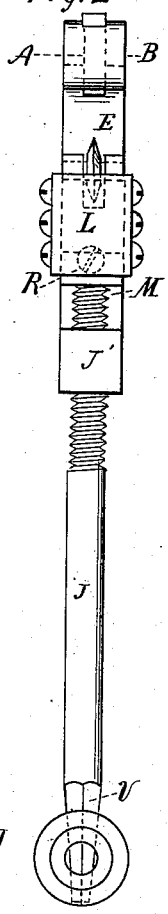


Fig. 4

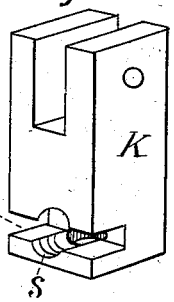


Fig. 5

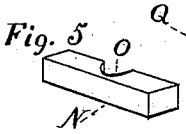


Fig. 6

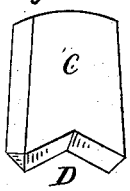


Fig. 7

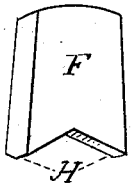


Fig. 8

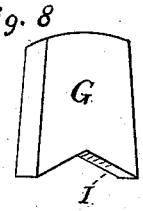
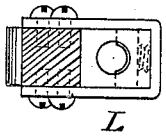


Fig. 3



WITNESSES:

Edward H. Rogers

Charles L. Brown Jr.

INVENTOR

Luther Knight

BY

Geo. W. Seymour

ATTORNEY

UNITED STATES PATENT OFFICE.

LUTHER KNIGHT, OF NEW HAVEN, CONNECTICUT.

PIPE-CUTTER.

SPECIFICATION forming part of Letters Patent No. 302,145, dated July 15, 1884.

Application filed February 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, LUTHER KNIGHT, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Pipe-Cutters; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in outside pipe-cutters, the object being to produce a convertible cutter of this class for use in situations where it cannot be rotated around the pipe, as well as in situations where it can be so rotated, and to provide such a cutter with improved means for reducing the burr raised upon the pipe during the operation of cutting it; for beveling the ends of the pipe to facilitate the application of the threading-die; for protecting the jaw of the cutter from wear, and for attaching the operating-screw of the cutter to the plunger thereof. A further object of the invention is to provide an improved handle for the operating-screw.

My invention consists in interchangeable blocks, respectively having cutting-edges and bearing-faces, and arranged to co-operate with the cutting device of a pipe-cutter.

My invention further consists in a removable block having a bearing-face from which it tapers to its outer end, and fitting in a slot formed in the jaw of a pipe-cutter, and tapering from the inner to the outer face thereof.

My invention further consists in a removable block having a smooth beveled bearing-face, and arranged to co-operate with the cutting device of a pipe-cutter.

My invention further consists in a key consisting of a plate of metal having its inner edge cut away to fit into a groove formed in the upper end of the operating-screw, and located in a slot formed in the plunger of the cutter.

My invention further consists in a hollow handle cast in one piece, and attached to the lower end of the operating-screw, and consisting, essentially, of a bulb provided with two apertures to receive the screw, and of two beaded truncated cones projecting from opposite faces of the bulb, with their bases outward.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view, partly in elevation and partly in section, of a pipe-cutter embodying my invention. Fig. 2 is a view thereof in front elevation. Fig. 3 is a sectional view looking toward the end of the plunger, from which the operating-screw has been removed so as to show the position of the key therein. Fig. 4 is a detached view in perspective of the plunger. Fig. 5 is a similar view of the key; and Figs. 6, 7, and 8 are respectively views of the interchangeable blocks.

The conversion of the cutter for use, on the one hand, in situations where it cannot be rotated around the pipe to be divided, and, on the other hand, in situations where it can be so rotated, is effected by means of interchangeable blocks, respectively having cutting-edges and bearing-faces, and fitting in a tapering slot, A, extending through the jaw B of the cutter. Three of the forms which the blocks may assume are shown in the drawings. The block C is made of steel, and provided with a cutting-edge, D, forming a re-entering angle. When the block is in the cutter, the same may be used for dividing pipes located in situations where it cannot be rotated entirely around them, inasmuch as with two cutting devices in contact with the pipe the cutter need only be rotated sufficiently to connect or lap, as it were, the incisions made by the respective cutting devices. A vibrating motion of the cutter thus suffices for cutting the pipe. As the block is rigid in its adjustment in the tapering slot aforesaid, its cutting-edge invariably coincides with the incision made by the cutting-disk E, and insures a neat job, and whenever the edge of the block becomes worn the same may either be removed, ground, and replaced or substituted by another similar block with the same results. When the situation of the pipe will permit, the cutter is preferably rotated around it, as it enables a quicker job to be had. Preferably, also, in rotating a pipe-cutter around a pipe, but one cutter is employed. To meet this demand the blocks F and G are employed to replace the block C, above described. The block F is

made of white iron or its equivalent, and provided with a beveled bearing-face, H, which fulfills the twofold function of reducing the burr raised upon the pipe by flattening or upsetting it, and of beveling the ends of the pipe, and thus facilitating the application of the threading-die. The block G is made of the same material as the block F, and provided with a flat bearing-face, I, which reduces the burr raised upon the pipe, in the same manner as above described, without beveling the ends thereof. When in the slot, the bearing-faces of both of the said blocks F and G stand out a little from the jaw and support the pipe above and protect the jaw from wear. The blocks are introduced into the slot from the inner face of the jaw, and removed by a blow upon their outer ends, which project beyond its outer face, as shown. It is to be noted, in this connection, that the greater the pressure brought to bear upon the blocks the more firmly will they be held in place.

The attachment of the operating-screw J to the plunger K, which is supported and guided by a strap, L, passing around it, and rigidly secured to the shank M of the cutter, is effected by means of a key, N, consisting of a plate of metal having its inner edge cut away, as at O, to fit into a groove, P, formed in the upper end of the screw, and located in a slot, Q, extending transversely across the lower end of the plunger. As herein shown, the key is secured in the slot by means of a short screw, R, threaded into the opposite walls of the slot, which are cut away, as shown at I, for the purpose. It is apparent, however, that other means than the screw may be employed for holding the key in place.

The improved hollow handle for the operating-screw, which plays in a bearing, J', formed integral with the shank M of the cutter, consists of a bulb, T, provided with apertures U, to receive the lower extremity of the screw, which is squared, as shown at V, and of two truncated cones, W, cast integral with and projecting from opposite faces of the bulb, with their bases outward, and provided with beads X, which assist the hand in retaining its grasp upon the handle. A handle made as described does not fill up the hands as do the more bulbous handles ordinarily employed, and is very easy to grasp and manipulate.

I would have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A convertible pipe-cutter provided with interchangeable blocks, respectively having cutting-edges and bearing-faces, and arranged to co-operate with the cutting device of the cutter, substantially as set forth.

2. A convertible pipe-cutter provided with interchangeable blocks, respectively having cutting-edges and bearing-faces, fitting in a slot formed in the jaw of the cutter and co-operating with the cutting device of the cutter, substantially as set forth.

3. A convertible pipe-cutter provided with interchangeable blocks, respectively having cutting-edges and bearing-faces, and fitting in and projecting out of a tapering slot formed in the jaw of the cutter, substantially as set forth.

4. A pipe-cutter provided with a removable block having a bearing-face from which it tapers to its outer end, and fitting in a slot formed in the jaw of the cutter, and tapering from the inner to the outer face thereof, substantially as set forth.

5. A pipe-cutter provided with a removable block having a smooth beveled bearing-face, which reduces the burr raised upon the pipe by the cutting device of the cutter, and bevels or points the ends of the pipe, substantially as set forth.

6. In a pipe-cutter, a key consisting of a plate of metal having its inner edge cut away to fit into a groove formed in the upper end of the operating-screw, and located in a slot formed in the plunger, substantially as set forth.

7. In a pipe-cutter, a hollow handle cast in one piece, and consisting of a bulb having two apertures to receive the lower end of the operating-screw, and of two beaded truncated cones projecting from opposite faces of the bulb, with their bases outward, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LUTHER KNIGHT.

Witnesses:
DAVID Z. HAWKINS,
EDWARD H. ROGERS.