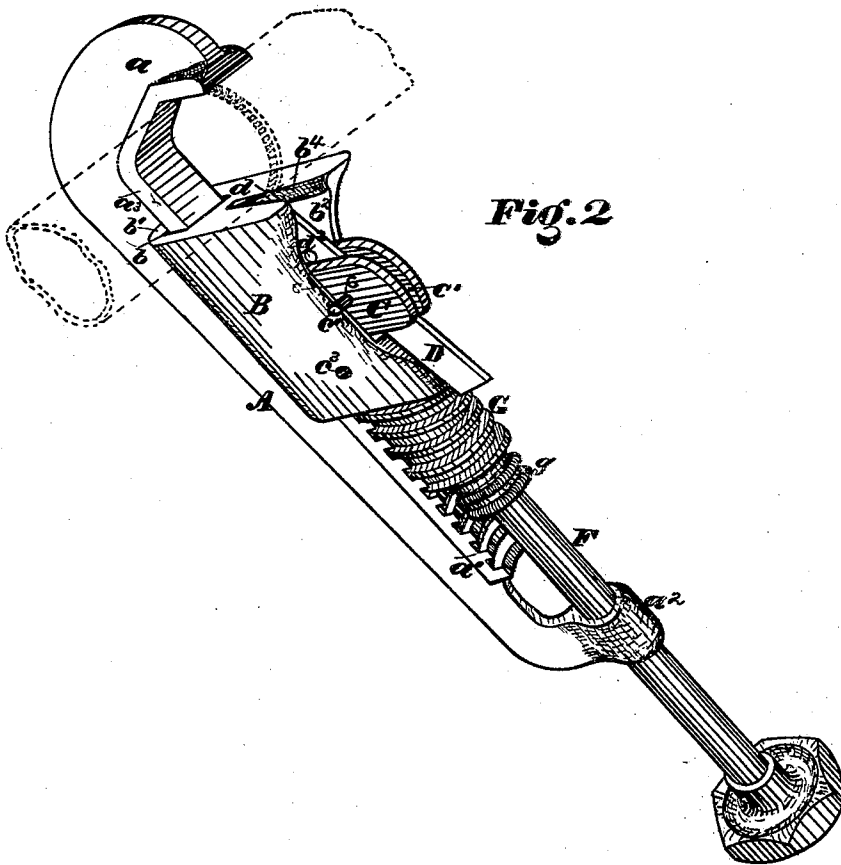
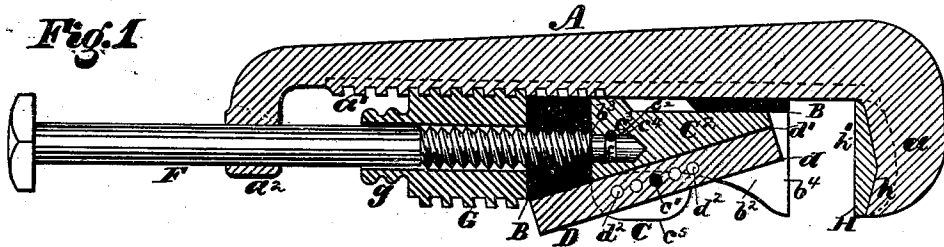


H. W. EVANS.

PIPE-CUTTER.

No. 179,546.

Patented July 4, 1876.



Witnesses

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UNITED STATES PATENT OFFICE.

HAMPTON W. EVANS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN PIPE-CUTTERS.

Specification forming part of Letters Patent No. 179,546, dated July 4, 1876; application filed March 31, 1876.

To all whom it may concern:

Be it known that I, HAMPTON W. EVANS, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Pipe Cutters and Wrenches; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a longitudinal vertical section, and Fig. 2 a perspective, of my invention.

The object of my invention is, primarily, to provide a pipe-cutter, the tool or bit of which shall have four cutting points or edges, each of which may be used separately and successively without necessitating resort to grinding. A further object of my invention is to provide means for adjusting the bit for feeding purposes, and also as it is worn away. A still further object of my invention is to provide means for advancing the bit toward the hook by which the pipe is embraced without changing the angle of relation between said bit and hook. A still further object of my invention is to provide means for converting a pipe-cutter with a hooked jaw into an ordinary monkey or nut wrench.

My improvements consist in the peculiar construction, combination, and arrangement of parts, having relation principally to the following features: First, to the provision of a tool or bit made in the shape of a rectangular oblong bar or plate, so as to produce four cutting edges or corners, each of which can be used in succession before said bit or tool requires grinding; second, to the provision of means for adjusting the bit as it becomes worn away, and for reversing it so as to use the various cutting edges or corners successively; third, to the provision of a tool-holder, by means of which the bit may be carried toward the hooked jaw without its angle of relation to the latter being changed; fourth, to the provision of a supplementary jaw, whereby the pipe-cutter may be readily used as a wrench for turning nuts; fifth, to the peculiar construction and general combination of parts, as hereinafter more fully described.

Referring to the accompanying drawing, A designates the stock of my improved device, formed with an angular hooked jaw, *a*, rack *a*¹, and open or tubular spindle-support, *a*². Said stock is also formed on each side with a rib or ridge, *a*³, serving as ways or guides for the movable sliding jaw B, said ribs being reduced or terminating at the rack *a*¹ so as to permit the application to and removal of said jaw from said stock. The jaw B is grooved on its under side at *b* to permit its being fastened on the stock A, flanges *b*¹ being left to pass beneath the ribs *a*³. Said jaw is also formed with a central socket or recess, *b*², for the reception of the tool-holder, with a threaded aperture, *b*³, at one end for the reception of the feeding-spindle, and with a vertical slot, *b*⁴, at the other end for the passage of the bit and projecting end of the tool holder or carrier. C represents said holder or carrier, which is a metal block with a vertical kerf or slot, C¹, for the bit D, and a forwardly-projecting point or stud, C², which supports said bit. *c* is an opening in the holder for the passage of a pin, *c*¹, which holds the bit in place, and *c*² is a similar opening for the passage of a short pin, *c*³, which rests in an annular groove, *f*, in the feed-spindle F, whereby said spindle, which enters a smooth socket or step, *c*⁴, in the end of the holder C, will be swiveled therein. The lower line *c*⁵, or base of the holder C, is horizontal, while the lower line of the kerf C¹ is inclined, or at an angle thereto, said inclined line coinciding with the upper surface of the stud C². The effect of this is, that when the bit D is placed in the holder its upper forward corner *d* will be in advance of or projecting beyond its lower corner *d*¹, giving a cutting point or edge, while at the same time the holder may be advanced in a horizontal line without disturbing the angle of the bit with relation to the jaw *a*.

A modification of this feature, within the spirit of my invention, will be effected by constructing the holder C in such manner that the bit D will rest parallel with the stock A, instead of at an angle to it, the upper edge of the bit then, as now, forming a radius to the pipe, or the front line of said bit forming a tangent to the pipe, the point of contact being the corner *d*.

The bit D is in the shape of a rectangular oblong bar or plate, having four cutting corners or edges. When the first-used corner becomes worn away the bit is inverted in the holder, and the next adjacent corner brought into requisition. After this is worn away the bit is reversed, the other end being brought forward, and each of its corners used successively. The wearing away of the corners produces a beveled end. The square or rectangular end is restored by grinding, the bit being again fit for use, but requiring a new adjustment in the holder C, which is accomplished, preferably, by means of the pin c^1 , and adjusting-holes d^2 , for which equivalent means may be substituted, producing like results.

F represents the feeding-spindle, swiveled in the holder C, and turning in the threaded opening b^3 , being also sustained in the tubular sleeve or support a^2 .

G is a nut, threaded externally to form a worm, and milled, also, if desired, at g . The object of this nut is to move the jaw B toward the fixed jaw a in the usual manner. H represents a supplemental jaw, which fits on the jaw a when it is desired to use the device as a wrench, said jaw H having an angular grooved side, h , corresponding to the hooked jaw a , and a straight face, h' , corresponding to the adjacent face of the sliding jaw B.

The operation is substantially as follows: The parts being arranged as shown in Fig. 1, (the jaw H being removed,) the device is hooked over a pipe, as shown in Fig. 2. The jaw B is then moved up, by means of the nut G, until it meets the pipe. The holder C is then advanced, by means of the feed-spindle F, until the tool or bit D impinges against the pipe. The device is then turned on the pipe in the usual manner, the bit being fed while the stock is turning, or at the completion of each whole or partial revolution of said stock, until the cut is completed. When the bit wears away it is inverted, then reversed, then ground and adjusted, as already described.

To use the device as a wrench, the bit D is withdrawn, by means of the feed-spindle F, back of the front face of the jaw B, and the supplemental jaw H applied to the hooked jaw a , as shown in Fig. 1.

What I claim as my invention is—

1. The stock A, having hooked jaw a , rack a^1 , and tubular support a^2 , substantially as shown and described.

2. The sliding jaw B, having groove b , flanges b^1 , recess b^2 , slot b^4 , and threaded opening b^3 , substantially as shown and described.

3. The tool-holder C, having kerf C^1 and projecting point or stud C^2 , serving as a support for the bit, substantially as shown and described.

4. A longitudinally-reversible and laterally-invertible pipe-cutter bit, composed of a rectangular oblong bar or plate, D, having sharp cutting-angles on its four corners, combined with a holder, C, substantially as described, so as to permit it to be inverted and reversed, in order to utilize successively its four cutting-corners without having resort to grinding, as set forth.

5. In combination with a holding-carrier, C, the rectangular oblong reversible and invertible bit D, and adjusting devices c^1 d^2 , to permit the adjustment of said bit in said holder after grinding, substantially as described.

6. The combination of stock A, sliding jaw B, tool-holder C, bit D, feeding-spindle F, and nut G, the several parts being constructed and combined for operation, substantially as shown and described.

7. In combination with the hooked jaw a , the removable supplemental jaw H, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of March, 1876.

HAMPTON W. EVANS.

Witnesses:

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CHAS. F. VAN HORN.