F. W. ERICKSON.

PIPE CUTTER.

APPLICATION FILED AUG. 3, 1916.

1,216,426. Patented Feb. 20, 1917.

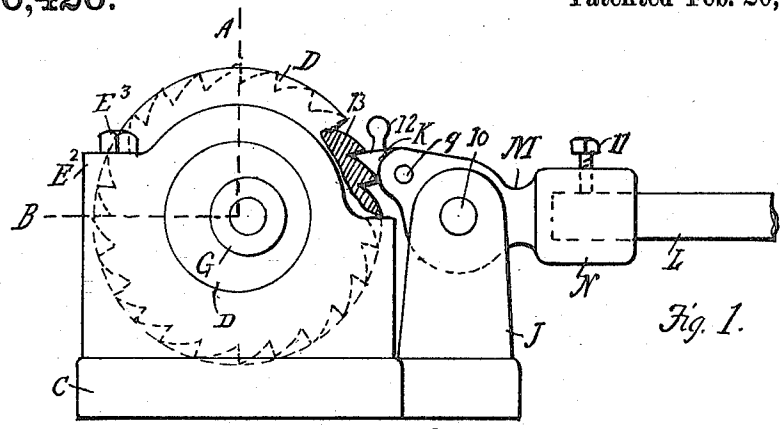


Fig. 1.

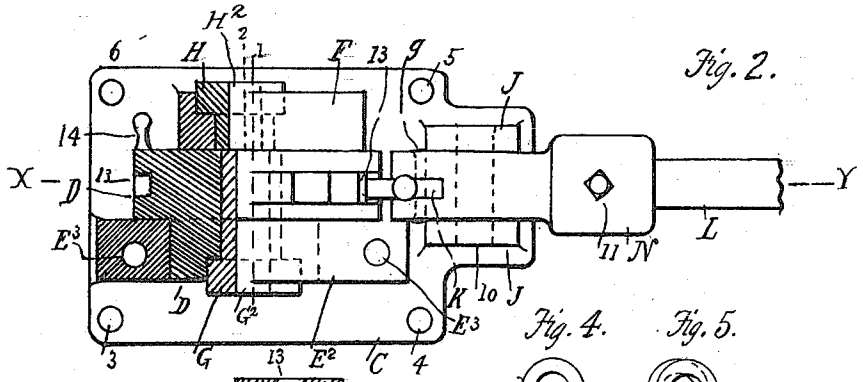


Fig. 2.

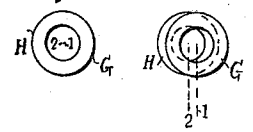


Fig. 4.

Fig. 5.

Fig. 3.

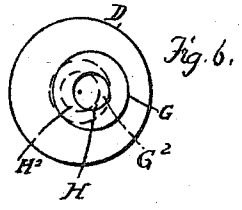


Fig. 6.

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UNITED STATES PATENT OFFICE.

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PIPE-CUTTER.

1,216,426. Specification of Letters Patent. Patented Feb. 20, 1917.

Application filed August 3, 1916. Serial No. 113,015.

To all whom it may concern:

Be it known that I, FREDERIC WM. ERICKSON, residing at New York, in the county of New York and State of New York, have invented certain Improvements in Pipe-Cutters, of which the following is a specification.

The present invention relates to a device for cutting off measured lengths of metal tubing and has especial reference to conduit pipes for inclosing electric wires which are furnished to the trade in uniform lengths.

At present each pipe is measured with a rule and is cut off with a hack saw, and steam and gas pipes are cut with a wheel cutter. These methods do not make a good cut for electric conduits, as the pipe is crushed and a bur left inside which must be removed by a reamer, which occasions additional time and expense.

By my invention the pipe is cut asunder squarely, quickly and without creating a bur, and at even lengths.

The device is fitted with two hollow cutting dies approximately of the same bore as the outside diameter of the pipe to be cut; one of the dies is stationary and is set into an upward extension of the base member, while the second die is adapted to be rotated and is held eccentrically in a tubular member located in a second such extension, and the axis of the second die is normally in alinement with that of the stationary die but is adapted to become eccentric thereto when rotated. When the bores of the two dies are in alinement a pipe can be inserted through them in series, and if a partial revolution is made by the said second or rotating die a shearing action is brought about which causes the pipe to be cut in two.

Means are provided consisting of a ratchet and pawl operated by a lever to produce the partial revolution of the rotating die; and also means are provided for preventing the pipe from being crushed and for preventing the creation of a bur on the inside of the pipe ends while being cut.

Measuring means are also arranged so that the pipe may be cut in exact and uniform lengths.

I will now proceed to describe in detail the invention, reference being had to the attached drawing, in which—

Figure 1 is an end view of a device embodying the invention;

Fig. 2 is a top view of Fig. 1, a portion being in section on line A B of the same;

Fig. 3 is a section generally on line x, y of Fig. 2 showing a piece of pipe inserted in the die and means for measuring the cut off lengths and for preventing injury to the pipe; and

Figs. 4, 5 and 6 are illustrative diagrams.

In the drawings, C is a base portion from which extend supporting uprights E and F, the former provided with a bearing cap E^2 secured in place by bolts E^3 to hold in place the rotary die G and its holder D; and the latter F holds in place the stationary die H. Both dies are shrunk into their holders in a manner well understood. Each die has a central perforation G^2, H^2 or orifice to receive a pipe.

Upon the central part of the periphery of the die holder D is a sunken ratchet 13 into which plays the pawl K pivoted at 9 to the member M of the hand lever, said member being pivotally mounted at 10 in the bifurcated bearing J rising from base C. Said member M has a socket N in which one end of the rod or handle L is removably secured by a set screw 11. Rising from pawl K is a small projection 12 having a rounded face opposite the ratchet teeth 13. The rotary die holder D has a handle 14 by which it may be returned to starting point when the pawl K is released from the ratchet teeth 13.

In Figs. 1, 2, 5 and 6 the dies G and H are represented out of alinement with each other as they would be after the die G had been rotated to cut a pipe in two, and Figs. 3 and 4 show the dies in alinement when a pipe P can be inserted or threaded thereto into the orifices G^2 and H^2.

In order to protect the pipe from injury while being cut I insert the mandrels p into the pipe from each end; these mandrels slip easily into the pipe and fill the area thereof and their ends touch each other and are inserted and steadied by the rods d connected thereto. Each rod has a limiting button 19 near its end which is screw threaded and provided with a thumb nut 21 which when the end is dropped into the forked end of bracket 15 is screwed onto the same tightly. The distance between the inner faces of holder D and die H and the bracket 15 being known, the length of the rod is determined so that the inner end of each mandrel

will meet at said faces inside the pipe to be cut which constitute the cutting or shearing edges, and when so arranged the pawl is worked by the lever L to partially rotate the die G and shear the pipe in two, after which the pipe sections are removed, both ends cleanly cut and without internal burs.

To facilitate accurate measurement of the length of pipe to be cut I provide the scales *a*, *a* at each end of the device suitably marked in inches or feet and when the pipe is passed through the dies its end is stopped at the required figure on the scale, as for instance 10 feet.

These scales are pivoted at the base C by rivet 24 at one end and at the other end are made to abut against the bracket 15 and riveted at 22, the bracket being screwed to the same support 17 as is the base plate C.

As shown by comparing Figs. 2 and 3, the rotary die holder D is held against any movement in the direction of its axis by its bearing against the inner faces of the two rigid uprights E, F. Therefore the co-acting ends of the dies G and H which are firmly secured in the holder D and upright F respectively, can not shift out of their predetermined relationship. Furthermore, the ratchet teeth 13 and pawl K can not shift from proper or operative relationship, because the same base which carries the said rigid uprights E, F, also carries the rigid upright J for the operating lever L, M.

I claim as my invention—

In a pipe cutter, two dies secured firmly in supports, each die having a pipe receiving bore, one of the dies being held eccentrically in a rotatable tubular member and adapted to rotate therewith, the other die being immovable, a ratchet and pawl, the cutting ends or faces of the dies being in proximity to each other, and two mandrels adapted to be spaced within a pipe to be cut with their inner or meeting ends in line with the cutting faces of the dies.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this first day of August 1916.

FREDERIC WM. ERICKSON.

Witnesses:
L. H. SUAREZ,
CHAS. TOMASCHEK.

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