No. 837,614. PATENTED DEC. 4, 1906.

A. J. DIERZEN.

TUBE CUTTER.

APPLICATION FILED MAR. 24, 1906.

FIG. 1.

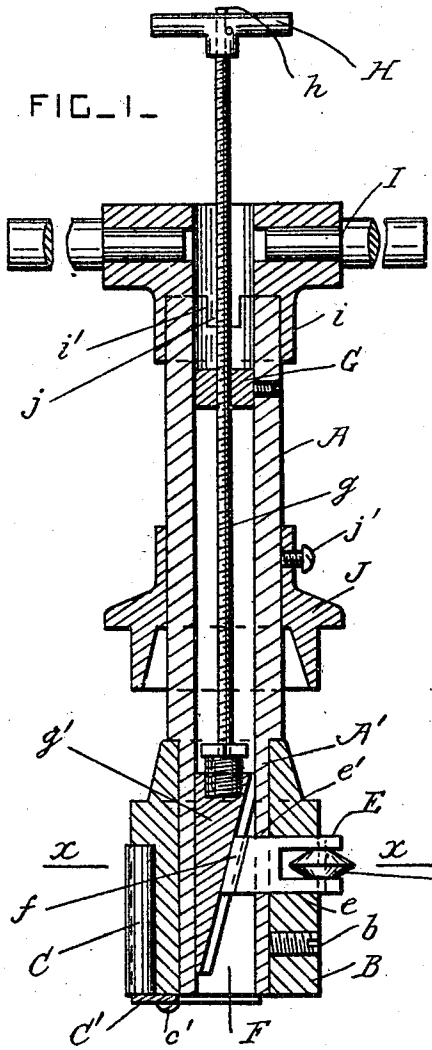


FIG. 2.

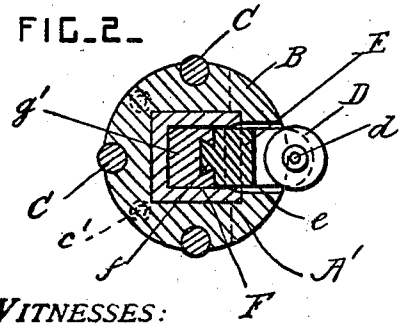


FIG. 3.

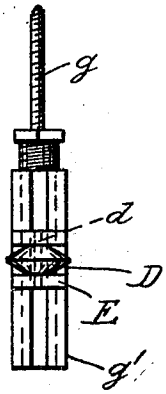
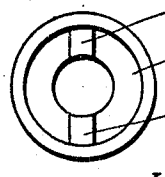


FIG. 4.

FIG. 5.



WITNESSES:

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TUBE-CUTTER.

No. 837,614. Specification of Letters Patent. Patented Dec. 4, 1906.

Application filed March 24, 1906. Serial No. 307,819.

To all whom it may concern:

Be it known that I, ALBERT J. DIERZEN, a citizen of the United States, residing at Newark, in the county of Kendall and State of Illinois, have invented certain new and useful Improvements in Tube-Cutters; 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 appertains to make and use the same.

This invention relates to machines for cutting tubes and pipes; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a longitudinal section through the tube-cutter. Fig. 2 is a cross-section taken on the line x x in Fig. 1. Fig. 3 is a detail view of the cutter and feed-block. Fig. 4 is a longitudinal section showing the extension devices. Fig. 5 is an end view of the extension clutch-socket.

A is the body of the tube-cutter, which is preferably cylindrical and which has a rectangular end portion A′.

B is a cylinder which is slid upon the rectangular end portion A′ and secured by a screw b or other approved fastening device. In carrying out this invention cylinders of various size are provided to correspond with the size of the tubes to be cut.

The cylinder B is provided with longitudinal recesses or pockets at its periphery, in which guide-rollers C are journaled. Any desired number of guide-rollers may be used according to the size of the tubes. The rollers project slightly from the pockets, and they are held in position endwise by a keep-plate C′ and screws c'.

D is a circular cutter which is journaled on a pin d in a cutter-block E. The cutter-block E is slidable radially in a guide-hole e in one side of the cylinder B between two of the rollers which are spaced wider apart than the others. The inner end portion of the cutter-block is beveled, and it is provided with a dovetailed projection f. The interior of the rectangular portion A′ is also rectangular, and it forms a guide F. The part A′ is provided with a guide-hole e', corresponding with the guide-hole e, and the cutter-block is slidable radially in both of the said guide-holes.

G is a nut which is secured in the upper end portion of the body A. A feed-screw g engages with the nut G and is operatively connected at its lower end with a wedge-shaped feed-block g', having a dovetailed recess which engages with the dovetailed projection f of the cutter-block. The feed-block g' does not revolve, but slides longitudinally in the rectangular guide F. The upper end of the feed-screw is provided with a rectangular piece h, and H is a handle for revolving the feed-screw secured on the said piece h.

I is a handle for revolving the tube-cutter. This handle is provided with a clutch-socket i, which fits over the upper end portion of the body A. Notches i' are formed in the upper end of the body A, and j represents projections on the inside of the clutch-socket i, which fit into the said notches.

J is a gage which is slidable upon the body A, and j' is a screw for securing the gage after its position has been adjusted, so that the cutter may operate at the required distance from the end of the tube. The cylinder is thrust into the tube until the gage bears against its end. The body A is revolved by means of the handle I, and the handle H is turned from time to time so as to revolve the feed-screw, and thereby force the cutter radially against the inside periphery of the tube.

K is an extension-body provided with a clutch-socket k, having projections k'. This extension-body is fitted to the upper end portion of the main body in place of the handle I, so that the projections k' engage with the notches i'. Notches m are formed in the upper end of the extension-body, and the clutch-socket of the handle I is attached to its upper end portion, so as to revolve it instead of being attached to the upper end portion of the main body A.

N is an extension-rod provided with a rectangular socket n at its lower end for engaging with the piece h in place of the handle H. The extension-rod projects through the extension-body, and it is provided with a rectangular piece n' at its upper end for the handle H to engage with.

The gage is placed on the extension-body instead of on the main body, and the tube-cutter can then be used to cut a tube at a considerable distance from its end.

What I claim is—

1. In a tube-cutter, the combination, with a body portion provided with a rectangular end portion, of a removable cylinder engaging with the said end portion and provided with longitudinal recesses, said cylinder and

end portion being also provided with radial guide-holes, a cutter-block slidable in the said guide-holes and provided with a cutter, means for revolving the said body and cylinder secured to the said body, and feed mechanism provided with an operating-screw for moving the said cutter-block radially in its guide-holes.

2. In a tube-cutter, the combination, with a revoluble body portion provided with a longitudinal guide at one end and a radial guide-hole in one side, of a wedge-shaped feed-block slidable in the said longitudinal guide and provided with a dovetailed recess, a cutter-block provided with a cutter and having a dovetailed projection which engages with the said recess, and a revoluble feed-screw operatively connected with the said feed-block and engaging with a nut secured to the said body portion and sliding the said cutter-block back and forth in the said radial guide-hole.

3. In a tube-cutter, the combination, with a main body portion, of a cutter-block provided with a cutter and carried by the said main body portion, a feed-block for moving the said cutter-block radially, a nut secured to the said main body portion, a feed-screw engaging with the said nut and operatively connected with the said feed-block, a removable extension body portion provided with a clutch-socket for engaging with one end portion of the said main body portion, a handle provided with a clutch-socket which engages interchangeably with the end portions of the said main and extension body portions, a removable extension-rod provided with a socket for engaging with the said feed-screw, and a feed-screw handle provided with a socket for engaging interchangeably with the said feed-screw and its extension-rod.

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

ALBERT J. DIERZEN.

Witnesses:
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