

(No Model.)

W. C. DAVIS.
BOILER TUBE CUTTER.

No. 566,668.

Patented Aug. 25, 1896.

Fig 1.

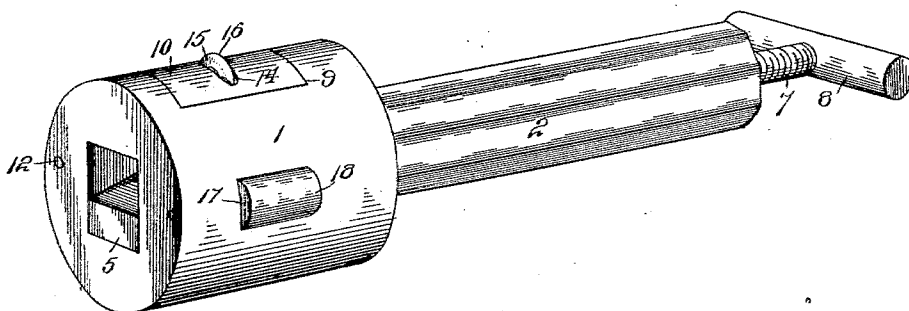


Fig 2.

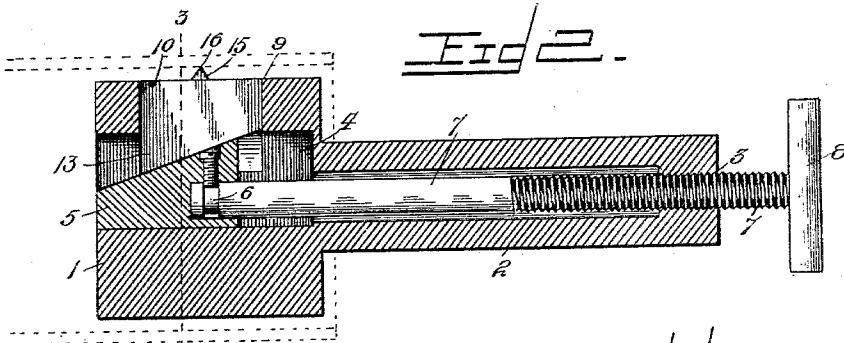


Fig 3.

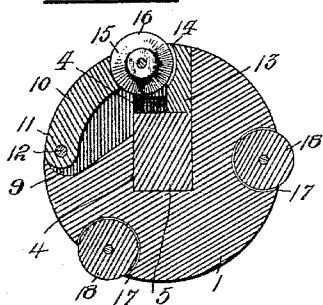
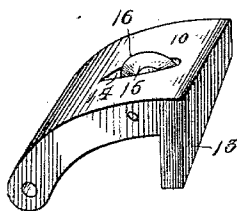


Fig 4.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM C. DAVIS, OF MACOMB, ILLINOIS.

BOILER-TUBE CUTTER.

SPECIFICATION forming part of Letters Patent No. 566,668, dated August 25, 1896.

Application filed May 6, 1896. Serial No. 590,459. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. DAVIS, a citizen of the United States, residing at Macomb, in the county of McDonough and State of Illinois, have invented a new and useful Boiler-Tube Cutter, of which the following is a specification.

This invention relates to tube-cutters; and it has for its object to provide a new and useful tool of this character having simple and efficient means for evenly and quickly cutting off the ends of boiler tubes or flues when the tubes are first placed in position or when the same are being removed for the purpose of being replaced by new tubes.

To this end the main and primary object of the invention contemplates means to provide a tool which will leave the ends of new tubes in the best possible condition for beading, and the ends of old tubes which are cut off inside of the tube-sheet in the best possible condition for driving out.

With these objects in view the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of a boiler-tube cutter constructed in accordance with this invention. Fig. 2 is a central longitudinal sectional view thereof. Fig. 3 is a cross-sectional view on the line 3 3 of Fig. 2. Fig. 4 is a detail in perspective of the hinged cutter-holder.

Referring to the accompanying drawings, the numeral 1 designates a cylindrical cutter-head, preferably formed of cast steel or iron and of a diameter slightly less than the inner diameter of the tube to be cut, so that the tool can be readily introduced into the end of the tube to the point where the cut is to be made. In the present invention the cylindrical cutter-head 1 has extended from one side thereof an elongated tubular wrench-stem 2, which is polygonal in cross-section, so as to afford a firm grip to the wrench which is applied thereto for the purpose of turning the tool after the proper adjustment thereof for cutting. The elongated tubular wrench-stem 2 is provided at its outer end with an interiorly-threaded nut portion 3, and the inner end of the bore of the stem 2 communicates with the central squared slide-opening

or bore 4 of the cylindrical cutter-head 1. The central squared slide opening or bore 4 of the cutter-head accommodates therein for a sliding movement the adjusting wedge-block 5, the inner end of which wedge-block has a swiveled connection 6 with the inner end of the screw-rod 7, which extends longitudinally through the bore of the tubular stem 2, and has the threads thereof engage the threaded nut portion 3 at the outer end of the said stem. The outer end of the screw-rod 7, beyond the outer end of the stem 2, has fitted thereto a suitable cross-handle 8, which is grasped by one hand of the operator for the purpose of sliding the adjusting wedge-block within the slide-opening of the cutter-head 1.

The cylindrical cutter-head 1 of the tool is provided in one side thereof with an elongated recess 9, which communicates with the slide opening or bore 4 for the wedge-block 5, and which receives therein the adjustable cutter-holder 10. The adjustable cutter-holder 10 is segmental in shape to conform to the curvature of the cutter-head 1, and is hinged at one end, as at 11, on the pintle-pin 12, fitted within the recess 9, at one end thereof. At its free unhinged end the holder 10 is provided with an inwardly-disposed wedge-flange 13, which is beveled reversely to the wedge-block 5, and is adapted to bear on the inclined or cam face of said wedge-block, so that the adjustment of the latter will provide for a swinging adjustment of the cutter-holder 10 in an outward direction, as will be readily understood. The said adjustable hinged cutter-holder 10 is further provided near the free swinging end thereof with a cutter-opening 14, in which is journaled a rotary cutter-disk 15, having a sharp double-beveled cutting edge 16, which projects beyond the outer side of the holder 10 and the periphery of the head 1, so as to roll against the inner side of the tube when the entire tool is turned with the wrench.

The cylindrical cutter-head 1 is further provided in its periphery with suitably-spaced roller-slots 17, in which are loosely journaled bearing-rollers 18, the outer sides of which rollers project beyond the periphery of the head 1, so as to roll in contact with the inner sides of the tube to be cut and afford a bearing for the tool to permit the ready turning

thereof and also serving to steady the tool while in operation.

In using the tool the same is inserted in the end of the tube the proper distance and the screw-rod is then adjusted so as to slide the wedge-block 5 against the wedge-flange 13, and thereby move the hinged holder 10 outward, which adjustment forces the rolling cutter-disk 16 tightly against the inner side of the tube. A wrench is then applied to the polygonal stem 2 and worked around with one hand, while with the other hand the screw-rod is properly adjusted to feed the cutter 16 to its work during the operation of cutting off the tube end.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

In a tube-cutter, a cylindrical cutter-head provided with a central squared slide-opening,

and in one side with spaced roller-slots and an elongated recess communicating with the squared opening, said head being further provided at one side with a polygonal wrench-engaging stem having a threaded nut portion at its outer end, bearing-rollers loosely journaled in said slots, a segmental cutter-holder hinged at one end within said recess and provided at its other end with an inwardly-disposed wedge-flange, a rotary cutter-disk loosely mounted in said cutter-holder at one side of said flange, a sliding wedge-block loosely mounted in said squared slide-opening in radial alinement with the wedge-flange and beveled reversely thereto, and a screw-rod working in the stem and the nut portion thereof and swiveled at its inner end to said wedge-block, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in the presence of two witnesses.

WILLIAM C. DAVIS.

Witnesses:

PETER DOUGHERTY,
ARTHUR DOUGHERTY.