A. F. ANDERSON & E. W. OLSON.

PIPE CUTTER.

APPLICATION FILED MAY 28, 1915.

1,166,570. Patented Jan. 4, 1916.

Fig. 2.

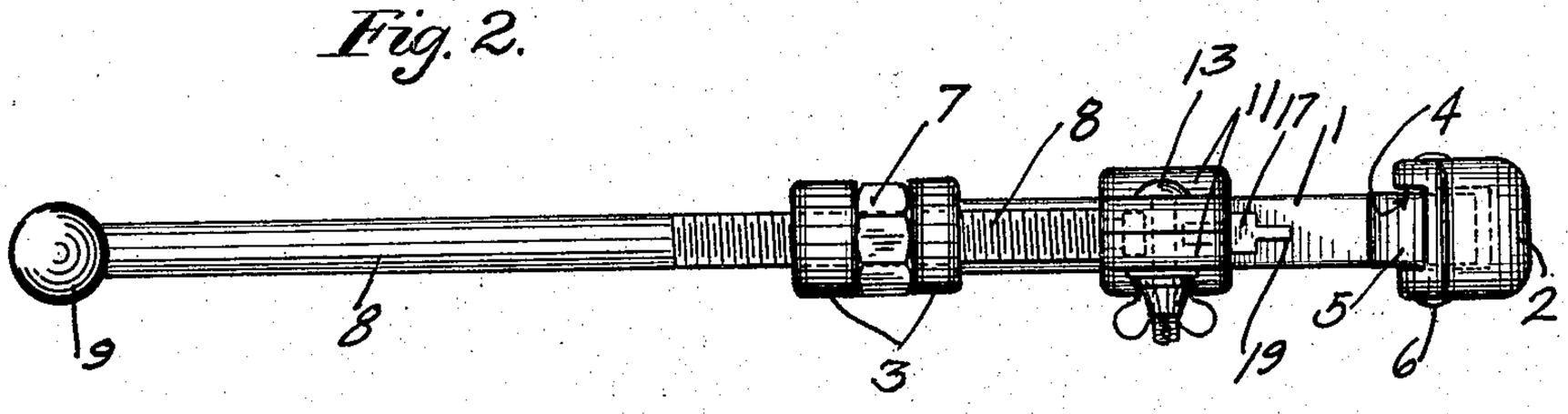


Fig. 1.

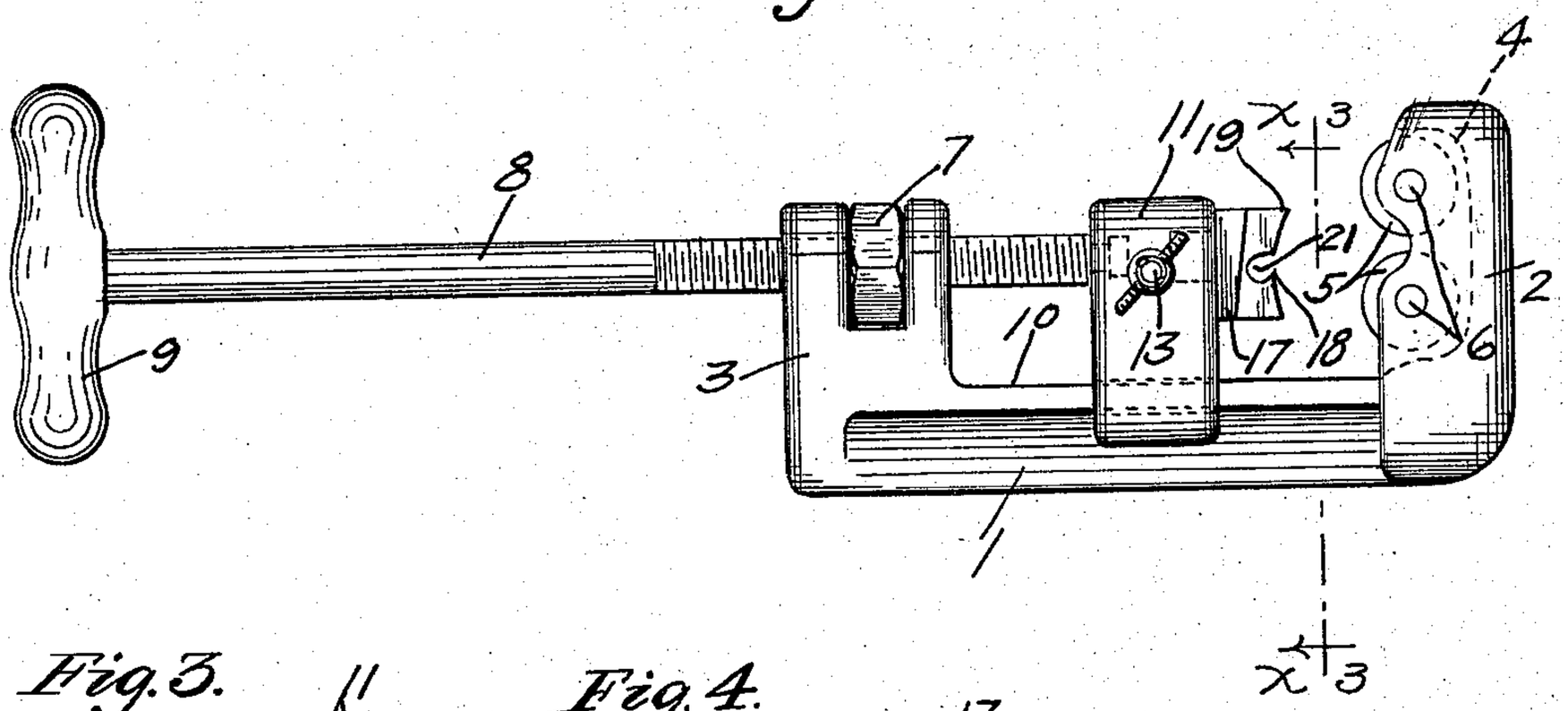


Fig. 3.

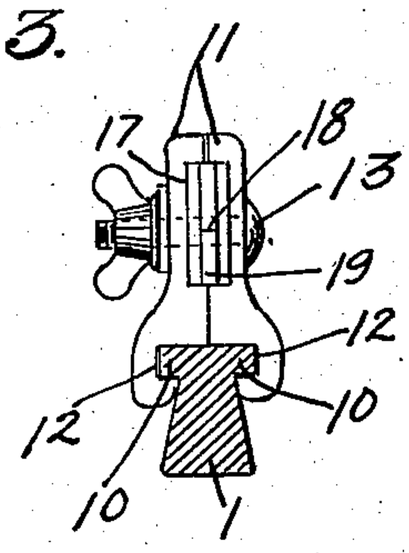


Fig. 4.

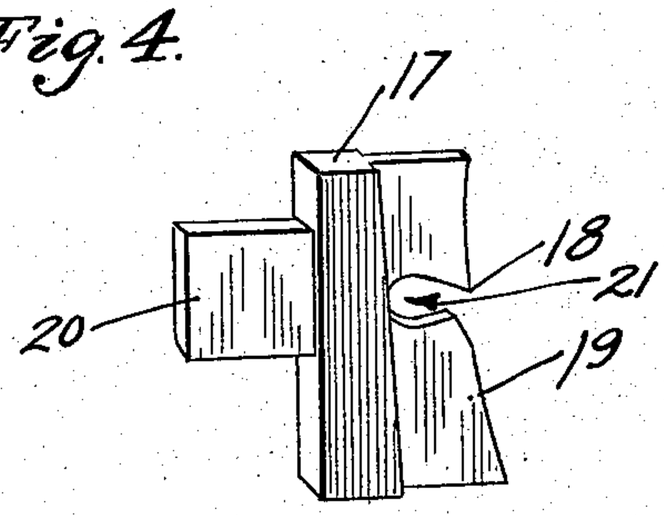


Fig. 6.

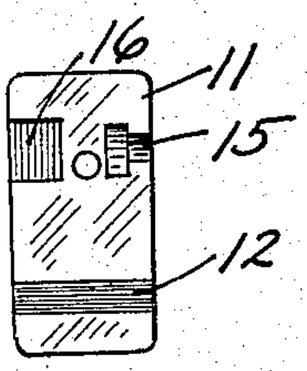
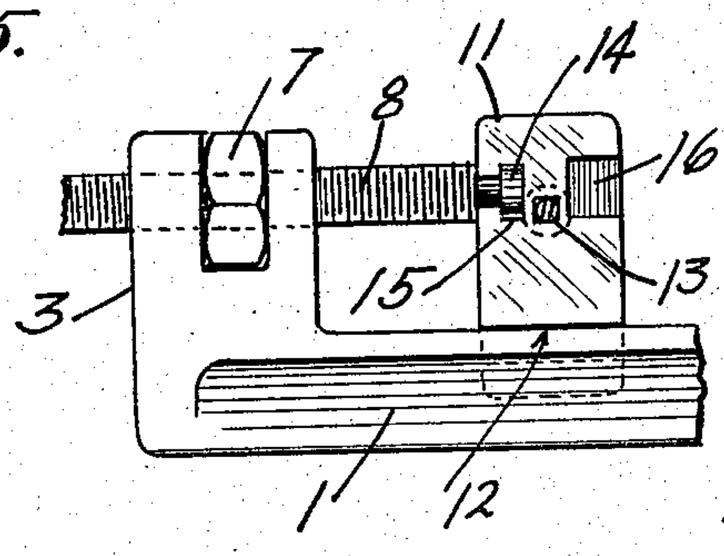


Fig. 5.



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UNITED STATES PATENT OFFICE.

ANDREW F. ANDERSON AND ED W. OLSON, OF MINNEAPOLIS, MINNESOTA.

PIPE-CUTTER.

1,166,570. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed May 28, 1915. Serial No. 30,902.

To all whom it may concern:

Be it known that we, ANDREW F. ANDERSON and ED W. OLSON, citizens of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Pipe-Cutters; and we 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.

Our invention relates to improvements in pipe cutters; and, to this end, it consists of the novel devices and combinations of devices, hereinafter described and defined in the claim.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a side elevation of the improved pipe cutter; Fig. 2 is a front edged elevation of the same; Fig. 3 is a transverse section taken on the line x^3 x^3 of Fig. 1; Fig. 4 is a perspective view of the cutting tool on an enlarged scale; Fig. 5 is a fragmentary view of certain parts shown in Fig. 1; and Fig. 6 is an inner face view of one of the members of a two-part tool holder.

The body of the improved pipe cutter is yoke-like in form and the numerals 1, 2 and 3 indicate, respectively, the transverse, the outer end, and the inner end portions thereof. The inner face of the body portion 2 is recessed at 4 to receive a pair of guide rollers 5, spaced transversely of the body member 1 and journaled on pins 6, mounted in the side walls of said recess. The body portion 3 is bifurcated in a direction transversely to the body portion 1 to receive a feed nut 7 and the prongs thereof have formed therein axially alined perforations. A long feed screw 8 has screw threaded engagement with the feed nut 7, and works loosely through the perforations in the prongs of the body member 3 for endwise movement toward and from a point between the guide rollers 5. On the outer end of the feed screw 8 is a hand piece 9 and the feed nut 7, which as shown, is hexagon in form, engages the transverse portion of the body member 3, between the prongs thereof, to prevent rotation of said feed nut.

The body portion 1, between its end portions 2 and 3, is T-shaped in cross-section to afford on its opposite sides a pair of oppositely projecting guide flanges 10. A two-part tool holder 11 is slidably mounted on the body portion 1, between the ends thereof, and its members are provided, on their inner faces, with opposing channels 12 into which the guide flanges 10 extend for guiding said tool holder during its sliding movement toward and from the guide rollers 5. A thumb-nut equipped bolt 13, passed through the alined perforations in the intermediate portions of the members of the tool holder 11, is provided for clamping the members thereof together and onto the guide flanges 10. The inner end of the feed screw 8 is swiveled to the tool holder 11, by forming thereon a T-head 14, which is seated in a T-socket 15, formed in the inner faces of the members of the tool holder 11. Also, formed in the inner faces of the members of the tool holder 11, is a tool holding socket 16, located on the opposite edge of the tool holder 11 from the socket 16.

Carried by the tool holder 11, is a pipe cutting tool, comprising a back 17, a cutting edge 18, a gage flange 19, and a shank 20. The cutting edge 18 is opposed to the rollers 5 and is located substantially in line with the axis of the feed screw 18, so that the pressure is in direct line therewith. The gage 19 extends forward of the cutting edge 18, has a depth from the back 17, slightly less than that of the cutting edge 18, to regulate the depth of the cut of the tool, as best shown in Fig. 4. This gage flange 19 is arranged to travel in the cut, made in the pipe by the tool, in advance thereof and to prevent the same from binding in the cut, the gage has a thickness slightly less than that of the cutting edge 18. The cutting tool is detachably secured to the tool holder 11 by inserting its shank 20 into the socket 16 and frictionally clamping the same therein by means of the bolt 13. As best shown in Fig. 4, the back 17 extends outward on all sides of the shank 4, and engages the tool holder 11 to thereby firmly hold the cutting tool in position.

In cutting a pipe, with the improved cutter, the same is placed between the rollers 5 and the cutting tool. By turning the feed screw 8, the rollers 5 and cutting edge 18 are drawn onto opposite sides of the pipe

to be cut. Then by rotating the pipe cutter around the pipe, by means of the feed screw 8, and at the same time rotating said feed screw 8, a thin shaving is cut from the pipe. Shavings thus cut from the pipe are discharged through an opening 21 formed between the cutting edge 18 and the adjacent end of the gage flange 19. By use of the improved pipe cutter, the pipe may be cut square and without upsetting the metal. It is, also, possible to cut the pipe close to one end thereof.

In ordinary pipe cutters, wherein rotating cutting wheels are used, no metal whatsoever is removed during the cutting action, it is simply displaced. This displacement of the metal upsets the cut end of the pipe, which increases the external diameter of the pipe and decreases the internal diameter thereof. The increasing of the external diameter of the pipe by upsetting is objectionable, for the reason that it makes it difficult in applying a die to the pipe for cutting a thread thereon. The flange formed on the interior of the pipe by the upsetting, not only decreases the diameter of the pipe, but causes foreign matter to collect at said flange, often resulting in the stopping up of the pipe.

The above described pipe cutter, while extremely simple and of comparatively small cost to manufacture, has, in actual usage, proven highly efficient for the purpose had in view.

What we claim is:—

A pipe cutter comprising a yoke-like body, having guide rollers journaled on one of its end portions and having its other end portion bifurcated, with perforations extending axially through the prongs thereof, a feed nut mounted between the prongs of the bifurcated end member, a feed screw, having screw threaded engagement with the feed nut and loosely working through the perforations in the prongs of the bifurcated end portion, a two-part tool carrier slidably mounted on the intermediate portion of the body for movement toward and from the guide rollers, said feed screw being swiveled to the tool carrier, a cutting tool removably mounted on the tool carrier, and a clamp for holding the members of the tool carrier assembled and interlocked to the body with the cutting tool clamped therebetween, said feed screw and cutting tool having shoulders which bear against opposite faces of the tool carrier.

In testimony whereof we affix our signatures in presence of two witnesses.

ANDREW F. ANDERSON.
ED W. OLSON.

Witnesses:
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HARRY D. KILGORE.