June 12, 1951 H. G. NYE, JR. 2,556,974

PIPE CUTTER

Filed April 29, 1949

Fig. 1.

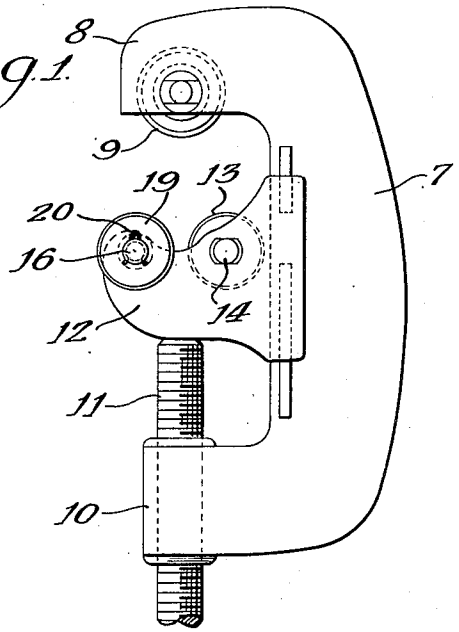


Fig. 2.

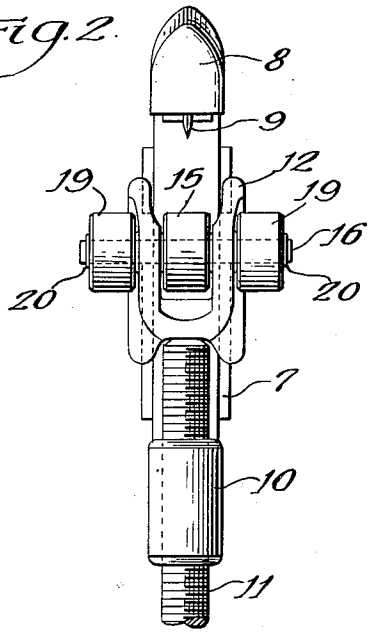


Fig. 3.

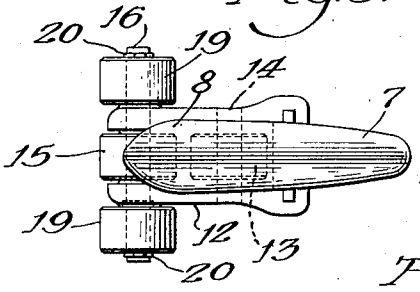


Fig. 6.

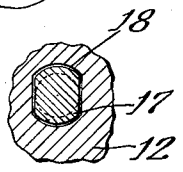


Fig. 4.

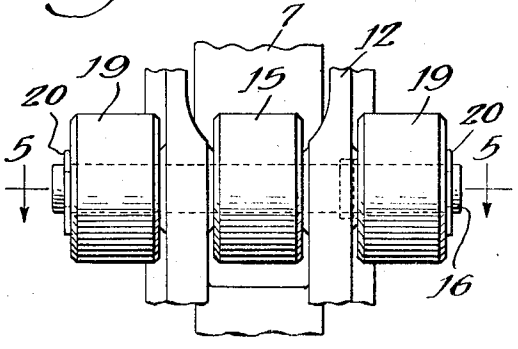
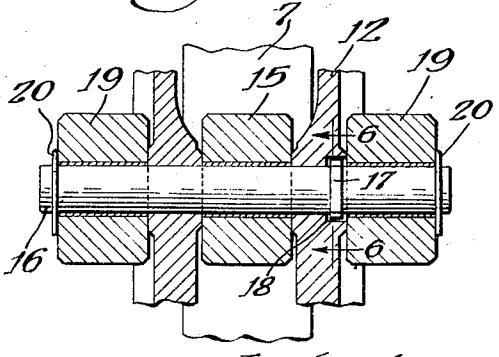


Fig. 5.



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UNITED STATES PATENT OFFICE

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PIPE CUTTER

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Application April 29, 1949, Serial No. 90,472

1 Claim. (Cl. 30—101)

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This invention relates to tools for cutting pipe or rods, and more particularly to special guide-rollers for keeping the cutter in perpendicular relation to the stock being worked upon. This application is a continuation-in-part of my co-pending application Serial No. 81,135, filed March 12, 1949, and now abandoned.

Conventional pipe cutters usually have a C frame which has a fixed jaw at one end and a hand operated screw is provided at the other end. The screw bears against a movable jaw which is either slidably mounted on or pivoted to the frame. The cutter is mounted in one of the jaws, and a pair of rollers in the other, which forms a gripping space for the pipe. The cutter usually is in the form of a sharpened wheel, but in some cases a fixed blade is used.

It is important that the cutter be kept at right angles to the work, as otherwise there is danger of cutting helical grooves when the tool is turned about the work, or the work is rotated in the tool.

The primary object of the present invention is to provide one or two guide-rollers outside of the jaw, so that, when the hand screw is tightened up, the tool automatically takes the proper perpendicular position. If two outrigged guide-rollers are used on opposite sides of the jaw they may both be coaxial with either of the conventional rollers, or each may be coaxial with one of the conventional rollers. Alternatively, one of the conventional rollers may be eliminated from the tool, in which case the outrigged guide-rollers will normally be coaxial with one another but not with the one conventional roller. This feature greatly speeds the operation of setting up for a cut, particularly where the pipe is power driven. The screw may be turned in as tightly as the operator wishes, and the turning torque will not cause it to jump out of the cut. The pipe does not have to be perfectly cylindrical, and a coarser thread may be used on the adjusting screw than has heretofore been the practice.

Another object of the invention is to provide a tool which may be used for either right or left handed cuts. This is accomplished by having outrigged rollers on both sides of the jaw.

The invention is illustrated in a preferred and an alternative embodiment in the accompanying drawings, in which:

Figure 1 is a fragmentary side elevational view of a pipe cutter embodying the invention; Fig. 2, a front elevational view of the same; Fig. 3, a top plan view; Fig. 4, an enlarged fragmentary front elevational view, similar to Fig. 2; Fig. 5, a sectional view, taken as indicated at line 5—5 of Fig. 4; and Fig. 6, a fragmentary sectional view, taken as indicated at line 6—6 of Fig. 5.

In the preferred embodiment illustrated in Figs. 1 to 6, the pipe cutting tool has a conventional C frame 7 having a jaw 8 at its upper end, in which a cutter wheel 9 is journalled. The frame makes

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a threaded connection at its lower end 10 with a handle member 11 which bears against a movable jaw 12 which is slidably mounted on the frame 7. A rear roller 13 is journalled on a shaft 14 in the movable jaw, and has a head with side flats which fit into a socket in the movable jaw, so that the shaft will not turn. By this arrangement there is no wear beween the shaft and movable jaw, and the shaft and roller may be replaced when worn out.

A front roller 15 is journalled in the jaw 12 on a special shaft 16 which has an integrally formed collar 17 fitting into a socket 18 in the jaw 12 to prevent rotation. The shaft 16 extends outwardly beyond the movable jaw 12 a sufficient distance to receive at each end special outrigged guide-rollers 19 which are held on the shaft by conventional means such as the snap rings 20 which fit into grooves provided near the ends of the shaft. Preferably, the rollers 9, 15 and 19 are made of hardened steel. The rollers 15 and 19 are of the same diameter so that when the tool is applied to piece of pipe, it immediately disposes the cutter wheel 19 perpendicular to the axis of the pipe.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for some modifications will be obvious to those skilled in the art.

I claim:

A pipe cutting tool, comprising: a body provided with a fixed jaw; a movable jaw mounted on said body for movement toward and away from said fixed jaw; an adjusting member making threaded engagement with said body for moving said movable jaw; a cutter wheel mounted in one of said jaws; a first roller shaft mounted in the other jaw having a single roller thereon within the jaw; a second roller shaft parallel to said first roller shaft and extending outwardly beyond the jaw; and three guide rollers of equal diameter on said second shaft at least two of which are outside the jaw and one of which is within the jaw and lies in the plane of the cutter wheel, said last mentioned roller being adapted to contact the pipe along the line of the cut made by the cutter.

HARRY G. NYE, JR.

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The following references are of record in the file of this patent:

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