CHAIN TYPE PIPE CUTTER

INVENTOR.

RUEBEN P. PICKING

BY

Victor J. Evans, Attorney
The present invention relates to pipe cutters of the type having rotary cutting wheels.

An object of the present invention is to provide a pipe cutter of the type in which the cutting is done by rotary mounted cutting wheels some of which are carried by a chain and others which are carried by the base of a hydraulic jack, the jack being employed to tighten the chain around the pipe to be cut.

Another object of the present invention is to provide a pipe cutter in which the pressure on the cutting wheels can be adjusted while the cutter is in operation.

A further object of the present invention is to provide a pipe cutter which is strong and durable in construction, one economical to manufacture, one which may be operated in a confined space such as a trench or ditch, one which is foolproof in operation, and one which is adjustable for any size of pipe.

Other objects and advantages of the present invention will be fully apparent from the following description when taken in connection with the annexed drawings, in which:

FIGURE 1 is a view in elevation with a portion of the base shown in section of the pipe cutter according to the present invention, the dotted lines showing indicating the adjustment of the chain to a smaller size pipe.

FIGURE 2 is a side elevational view of the assembly shown in FIGURE 1.

FIGURE 3 is a bottom plan view of the base with a portion shown in section, and

FIGURE 4 is a view taken on the line 4-4 of FIGURE 2.

Referring in detail to the drawings in which like numerals indicate like parts throughout the several views, the pipe cutter according to the present invention comprises a base 10 having a hydraulic jack 12 mounted thereon. The base 10 is provided with openings 14 and 16 through which travel end portions of a chain 18, the chain 18 having a plurality of spaced cutting wheels 20 arranged therealong.

The space between the openings 14 and 16 is provided with a recess 22 arcurate in shape and having mounted therein a pair of spaced apart cutting wheels 24 and 26.

A third cutting wheel 28 is mounted in the space between the cutting wheels 24 and 26 and is operatively connected to the base 10 for movement toward and away from the cutting wheels 24 and 26.

Midway between the openings 14 and 16 the base is provided with a rectangular hole 30 in which is slidably a plunger 32 conformably shaped to fit the hole 30. On the lower end of the plunger 32 is mounted the cutting wheel 28 and a set screw 34 extending through a threaded bore 36. Provided in the base 10 is a means for adjustable securing the cutting wheel 28 in any position of its upward or downward movement relative to the wheels 24 and 26.

An inverted U-shaped member 38 has its bight 40 secured to the free end of the actuator 42 of the hydraulic jack 12. Feet 44 and 46 are provided on the free ends of the legs 48 and 50 of the member 38, respectively, and the feet 44 has provisions for securing thereto of one end portion of the chain 18. The other foot 46 is slotted so as to adjustably receive the end portion of the chain 18.

In use, the chain 18 is disconnected from the foot 46 and is wrapped around a pipe 52 and then re-connected to the foot 46. Actuation of the jack 12 will tighten the chain cutting wheels 20 into the pipe against the resistance of the cutting wheels 24 and 26 and the cutting wheel 28.

When it is desired to cut a smaller diameter pipe as at 52 in dotted lines in FIGURE 1, it is only necessary to release the set screw 34 and to adjust the plunger 32 upwardly in the hole 30 so that the cutting wheel 28 may be moved to the dotted line position to accommodate a pipe of smaller diameter.

For all sizes of pipe, it will be found that the cutting wheels 20, 24, 26, and 28 will remain in alignment with each other and will cut into the pipe with substantial equal pressure during the operation of the jack 12.

While only a preferred form of the invention is shown and described other forms of the invention are contemplated and numerous changes and modifications may be made in the invention without departing from the spirit thereof as set forth in the appended claims.

What is claimed is:

1. A pipe cutter including a chain having cutting wheels arranged in spaced relation therealong, a base, spaced means operatively connected to said base for securing thereto of end portions of said chain, said means including a yoke having outturned ends engaged with said chain, and a pair of cutting wheels arranged in aligned relation with respect to each other and in alignment with respect to the cutting wheels of said chain, said pair of cutting wheels being rotatably mounted on said base, a third cutting wheel disposed on said base in the space between the wheels of said pair of wheels, said third cutting wheel being operatively connected to said base for movement toward and away from said pair of cutting wheels, and means adjustably securing said third cutting wheel in any position of its movement, said base including a pair of openings defining guide means for the chain.

2. A pipe cutter comprising a chain having cutting wheels arranged in spaced relation therealong, a base adapted to receive a hydraulic jack including an actuator, means on the chain adapted to be operatively connected to the actuator of said jack, a pair of cutting wheels arranged in aligned relation with respect to each other and in alignment with respect to the cutting wheels of said chain, said pair of cutting wheels being rotatably mounted on said base, a third cutting wheel disposed on said base in the space between the wheels of said pair of wheels, said base including apertures for receiving said chain, said third cutting wheel being operatively connected to said base for movement toward and away from said pair of cutting wheels.

3. A pipe cutter comprising a chain having cutting wheels arranged in spaced relation therealong, a base adapted to receive a hydraulic jack including an actuator, means on the chain adapted to be operatively connected to the actuator of said jack, a pair of cutting wheels being rotatably mounted on said base, a third cutting wheel disposed on said base in the space between the wheels of said pair of wheels, said third cutting wheel being operatively connected to said base for movement toward and away from said pair of cutting wheels, and means adjustably securing said third cutting wheel in any position of its movement, said means on said chain including an inverted U-shaped yoke having a bight portion generally parallel with said base for overlying the jack actuation.

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