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RATCHET HANDLE PIPE CUTTER

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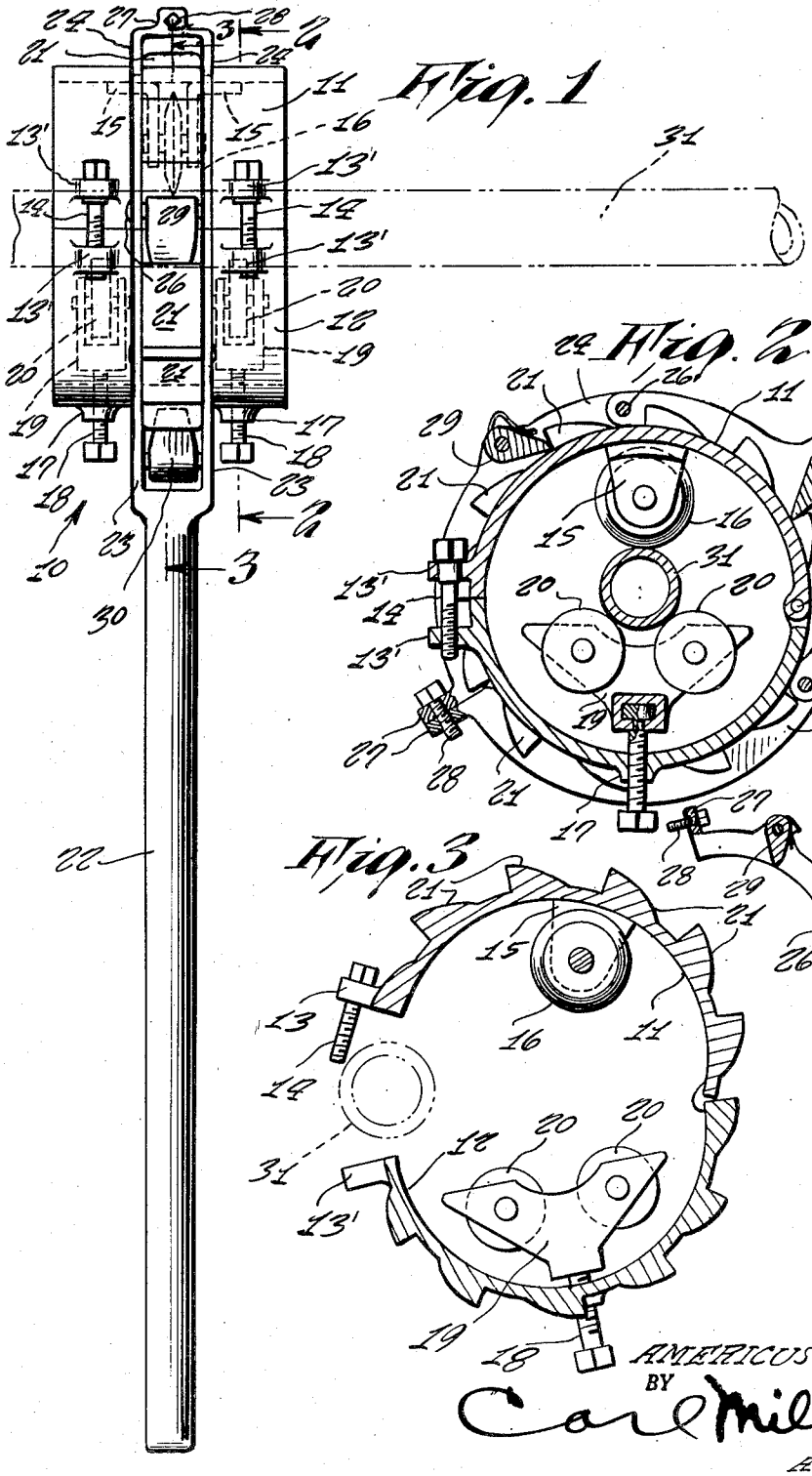

Fig. 1

Fig. 2

Fig. 3

Fig. 4

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RATCHET HANDLE PIPE CUTTER

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2 Claims. (Cl. 30—102)

This invention relates to ratchet handle pipe cutters.

It is an object of the present invention to provide a ratchet handle pipe cutter which includes a hinged, closable ring containing adjustable pipe cutting elements, the central periphery of said ring on the outer side thereof being formed with rachet teeth which cooperate with a plurality of spring urged ratchets carried by a separable, hinged handle ring closable on said first ring and fixedly connected to an elongated handle.

It is another object of the present invention to provide a ratchet handle pipe cutter of the above type including a pipe cutting element and cooperating, pipe-supporting rollers which are adjustable relative to each other to accommodate pipes of varying diameters.

It is still another object of the present invention to provide a ratchet handle pipe cutter of the above type into which a pipe to be cut may be conveniently inserted.

Other objects of the present invention are to provide a ratchet handle pipe cutter of the above type and bearing the above objects in mind which is of simple construction, inexpensive to manufacture, has a minimum number of parts, is compact, durable, is easy to use and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is an end elevational view of a ratchet handle pipe cutter embodying the features of the present invention;

Fig. 2 is a vertical sectional view taken along line 2—2 of Fig. 1 and showing the outer, handle ring broken away to show the interior construction thereof;

Fig. 3 is a vertical sectional view taken along line 3—3 of Fig. 1 but with the outer, handle ring removed and showing the inner ring in an open position and

Fig. 4 is a view similar to Fig. 3 but with the inner ring removed.

Referring more in detail to the drawing, in which similar reference characters identifying corresponding parts throughout the several views, there is shown a ratchet handle pipe cutter, referred to collectively as **10**, and including an inner cylindrical member consisting of segments **11** and **12** hingedly connected by a pin **13**, substantially as illustrated.

The free ends of segments **11** and **12** are integrally formed with ears **13'** near each end thereof which receive lock screws **14** whereby to secure the segments together, as shown in Figs. 1 and 2.

The inner face of segment **11** fixedly carries a pair of laterally aligned, substantially L-shaped brackets **15** which rotatably mount a cutting disc **16**. The segment **12** diametrically opposite from the disc **16** is provided with a pair of internally threaded hubs **17** which receive adjustment screws **18**, the inner ends of which fixedly carry triangular brackets **19**. As shown in Fig. 1, the brackets **19** are of channel cross section and rotatably mount rollers **20** near each end of segment **12**.

The central, outer periphery of segments **11** and **12** are integrally formed with ratchet teeth **21**, substantially as illustrated.

An elongated handle **22** is integrally formed at one end with a pair of arcuate segments **23** adapted to enclose a portion of cylinder **11, 12** and to receive therebetween the outwardly extending ratchet teeth **21**, as shown in Fig. 1. The outer ends of segments **23** are pivotally connected to arcuate segments **24** and **25** by means of

pins **26**. The segments **23, 24, 25** are adapted to completely enclose the cylinder **11, 12**, as shown in Fig. 2, the free ends of segments **24** and **25** being integrally formed with ears **27** which receive lock screws **28** whereby to secure the segments **23, 24, 25** about the cylinder **11, 12**, with ratchet teeth **21** therebetween.

There is provided a ratchet connection between the segments **23, 24, 25** and cylinder **11, 12** which may be of any suitable form. This ratchet connection has been shown in the drawing to consist of the ratchet teeth **21** and a pair of suitable, spring-urged ratchets **29** and **30**, the ratchet **29** being mounted intermediate the spaced, parallel segments **24** while the ratchet **30** is mounted intermediate the spaced, parallel segments **23** directly above handle **22**.

In operation, the cylinder **11, 12** is opened, as shown in Fig. 3, to receive the pipe **31** therewithin between supporting rollers **20** and cutting disc **16**, the cylinder **11, 12** then being closed by means of ears **13'** and lock screws **14**, as shown in Fig. 2. The screw **18** will be adjusted to raise or lower the rollers **20** until the pipe is properly positioned against the cutting disc **16**. It will be noted that this adjustment permits the device to be used on pipes of varying diameters.

With the pipe thus positioned, the segments **23, 24, 25** are assembled about the cylinder **11, 12**, as shown in Fig. 2, with the teeth **21** therebetween and the ratchets **29** and **30** in mesh with the latter. The segments **23, 24, 25** are then secured in the aforementioned position by means of lock screws **28** as will be obvious, the pipe then being ready for cutting by angular movement of handle **22**.

When it is desired to insert a new pipe, the above operations are reversed to bring the new pipe into the cutting position.

It should now be apparent that there has been provided a ratchet handle pipe cutter which includes a hinged, closed ring containing adjustable pipe cutting elements, the central periphery of said ring on the outer side thereof being formed with ratchet teeth which cooperate with a plurality of spring-urged ratchets carried by a separable, hinged handle ring closable on said first ring and fixedly connected to an elongated handle. It should also be apparent that there has been provided a ratchet handle pipe cutter of the above type including a pipe cutting element and cooperating, pipe-supporting elements or rollers which are adjustable relative to each other to accommodate pipes of varying diameters, and between which a pipe to be cut may be readily and easily inserted.

While various changes may be made in the detailed construction, it shall be understood that such changes shall be within the spirit and scope of the invention as defined by the appended claims.

Having thus set forth and disclosed the nature of my invention, what is claimed is:

1. A ratchet handle pipe cutter comprising a pair of substantially semi-cylindrical segments hingedly connected together along one of their longitudinal edges, ears integrally formed on the outside of each of said segments near the other of their longitudinal edges, corresponding ears on each of said segments being aligned with each other, said aligned ears being internally threaded, lock screws connecting said aligned ears within said internally threaded portions, a pipe cutting disc rotatably mounted on the inside of one of said semi-cylindrical segments near the central portion thereof, a pair of adjustable set-screws threaded through the other of said segments diametrically opposite from and on either side of said cutting disc, substantially triangular brackets fixedly carried at one corner thereof by the inner ends of said set-screws, said brackets being of channel-shaped cross section, a pair of rollers rotatably mounted in each of said brackets within the channel-shaped portions thereof adjacent the other corners thereof, a plurality of complimentary, arcuate pairs of spaced, substantially parallel segments hingedly connected to each other and adapted to encircle said semi-cylindrical segments when the latter are in a closed position, an elongated handle fixedly connected at one end to one spaced pair of said arcuate segments, ears integrally formed in and connecting the free ends of the endmost pairs of spaced, arcuate segments, said ears be-

ing adapted to align with each other when said spaced segments encircle said semi-cylindrical segments, said aligned openings being internally threaded, a lock screw within said aligned, internally threaded openings, ratchet teeth integrally formed in said semi-cylindrical segments at the central, outer peripheries thereof adapted to be received intermediate said spaced pairs of arcuate segments, and a plurality of spring-urged ratchets mounted intermediate said spaced, arcuate segments and in operative engagement with said teeth.

2. A ratchet handle pipe cutter according to claim 1, said plurality of spring urged ratchets mounted intermediate said spaced, arcuate segments and in operative

engagement with said teeth including a first ratchet aligned with the end of said handle, and a second ratchet rotated substantially ninety degrees from said first ratchet.

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