

No. 821,816.

PATENTED MAY 29, 1906.

T. W. MYRICK.  
PIPE OR TUBE CUTTER.  
APPLICATION FILED NOV. 14, 1905.

Fig. 1.

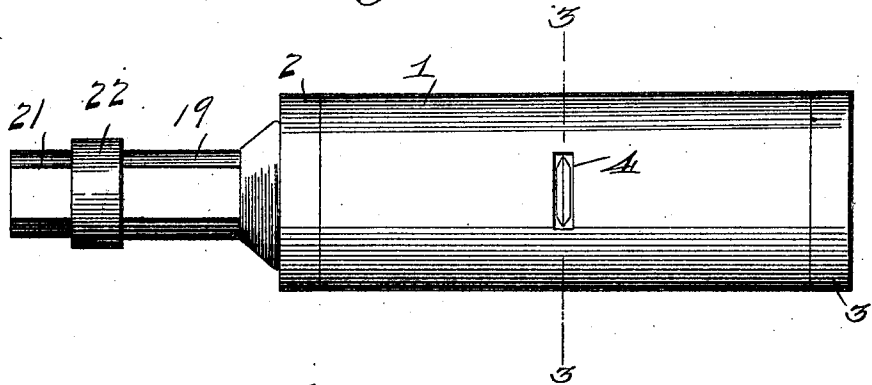


Fig. 2.

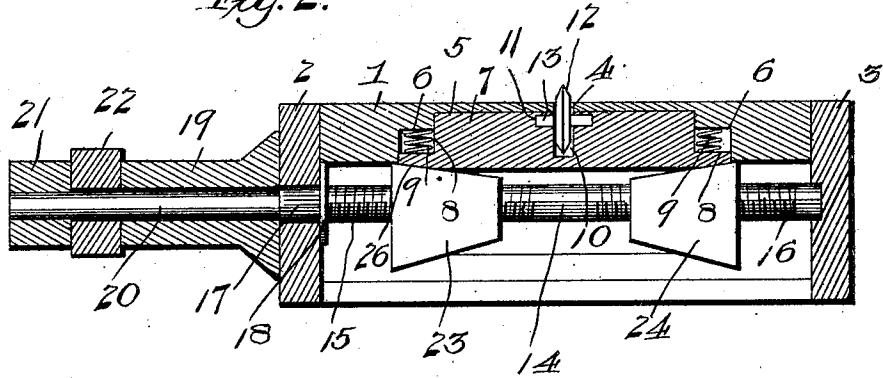


Fig. 3.

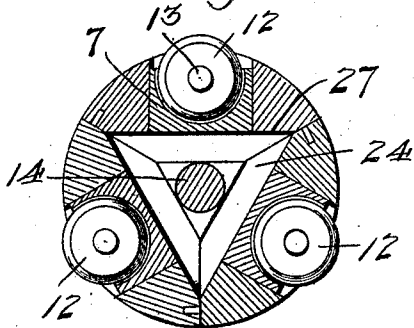
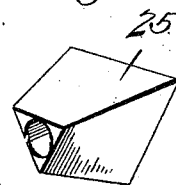


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## PIPE OR TUBE CUTTER.

No. 821,816.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed November 14, 1905. Serial No. 287,272.

*To all whom it may concern:*

Be it known that I, THOMAS WILLIAM MYRICK, a citizen of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Pipe or Tube Cutters, of which the following is a specification.

This invention relates to devices for cutting flues, pipes, and the like, and particularly to what is known as "inside" cutters, and has for its primary object the production of an improved cutter adapted to operate interiorly with respect to a pipe or flue at any desired point to sever the same and is of such construction as to resist breakage or fracture and accomplish a severing operation in the minimum of time and without the exercise of special mechanical skill.

With these and other objects and advantages in view the invention consists in the construction and arrangement of parts, which will be more fully hereinafter set forth.

In the drawings, Figure 1 is an elevation of a cutter embodying the features of the invention. Fig. 2 is a central longitudinal vertical section of the same. Fig. 3 is a transverse vertical section on the line 3 3, Fig. 1. Fig. 4 is a detail perspective view of one of the expanding heads or nuts.

Similar numerals of reference are used to indicate corresponding parts in the several views.

The numeral 1 designates a tubular stock having opposite heads 2 and 3 and formed with central circumferentially-alined slots 4 in planes at right angles to the length of the stock. Adjacent to the slots 4 the stock is formed with inner seats or recesses 5, having terminal shoulders or offsets 6, and in these seats or recesses carriers 7 are movably mounted and have shouldered or offset ends 8, between which and the shoulders or offsets 6 of the recesses 5 springs 9 are interposed. Each seat or recess 5 is occupied by a single carrier, and the tendency of the latter is to move inwardly, owing to the springs 9. Each carrier is formed with a central transverse slot 10, with which counterbores 11 communicate, the slots 10 being in alinement with the slots 4 and receive circular cutters 12. The counterbores 11 are occupied by trunnions 13, fixed to the cutters. The cutters are free to rotate and are projected outwardly from the outer surface of the stock 1, the degree of the projection of the cutters depend-

ing upon the expansion of the carriers by means which will be now described.

Extending centrally through the stock 1 is a spindle or stem 14, having right and left screw-threads 15 and 16 on opposite extremities thereof. The one end of the stem or spindle 14 has bearing in the center of the head 3, and a smooth portion 17 adjacent to the threads 15 is free to rotate in the center of the head 2, a collar fixed to the spindle or stem adjacent to the smooth portion 17, as at 18, being held against the inner side of the head 2 to prevent longitudinal movement of the said spindle or stem. Continuous with or secured to the head 2 is a tubular neck 19, and therethrough projects a reduced extension 20 of the spindle or stem and has fixed on the outer end thereof a turning head 21, which is polygonal in cross-section and is adapted to receive a suitable implement for rotating the spindle or stem. Between the head 21 and the end of the neck 2 a collar or holding-sleeve 22 is interposed and secured to the said neck. On the screw-threaded portions 15 and 16 of the spindle or stem reversely-arranged expanding heads or nuts 23 and 24 are mounted and have a triangular pyramidal contour, as clearly shown by Fig. 4. The reduced extremities of these expanding heads or nuts 22 are disposed inwardly toward each other or toward the intermediate unscrew-threaded portion of the spindle or stem 14, and the several flat faces 25 of said heads or nuts continually bear or contact with the opposite extremities of the inner sides of the carrier 7, the latter at their points of contact with the heads or nuts being upwardly and outwardly inclined, as at 26, so as to permit an unobstructed operation or movement of the heads or nuts.

In the operation of this device the spindle or stem 14 is rotated, but has no longitudinal movement, the heads or nuts 23 and 24 being shifted in opposite directions, owing to the difference in angle of the threads 15 and 16. The heads or nuts 23 and 24 are held against rotation by the shape of the inner bore 27 of the stock 1, which is triangular, as clearly shown by Fig. 3, and of dimensions sufficiently greater than the heads or nuts to permit the latter to move or slide therein. Hence all the carriers 7 are expanded equally and when released by the outward movement of the heads 23 and 24 are similarly retracted through the medium of the springs 9.

The improved device is adapted to beset

within pipes or flues having varying dimensions, and the carriers 7, with the cutters 12, may be moved outwardly or inwardly through the operation of the heads 23 and 24 in reverse directions to cause the cutters to engage the inner surfaces of the pipes or flues or to clear the latter to facilitate removal of the device from the interior of the pipe or flue.

10 It will be understood that when the device is applied in a pipe or flue the carriers 7 and the cutters 12 will be retracted within the stock as may be found necessary and afterward expanded to bring the edges of the cutters in contact with the inner surface of the pipe or flue. During the cutting operation the stock is rotated by any suitable means, and at intervals the heads or nuts 23 and 24 will be adjusted to gradually expand the carriers 7 and cutters 12.

The improved device will be found exceptionally advantageous not only from a standpoint of convenience in operation, but also in view of its strength and durability as well as positiveness of operation.

What I claim is—

In a cutter of the class set forth, the combination of a stock having a longitudinal triangular bore extending therethrough and openings therein at intermediate points in

circumferential alinement, a rotatable spindle extending centrally through the triangular bore and having reverse screw-threads thereon, the said spindle being longitudinally immovable, carriers radially movable in the stock and having springs engaging the opposite extremities thereof to normally force the same inwardly, the inner sides of the carriers at the end being beveled outwardly, rotatable cutters loosely held in the central portions of the carriers and projecting through the circumferentially-alined openings of the stock, and truncated triangular nuts having their sides closely fitting within the triangular bore of the stock and engaging the reverse screw-threads on the spindle, the reduced extremities of the nuts being projected inwardly toward each other and the outwardly-inclined ends of the inner sides of the carriers being engaged by the faces of the nuts to force the said carriers outwardly against the resistance of the springs operating to move the said carriers inwardly.

In testimony whereof I affix my signature in presence of two witnesses.

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Witnesses:

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