No. 882,432. PATENTED MAR. 17, 1908.

R. L. THOMAS.

PIPE CUTTER.

APPLICATION FILED OCT. 3, 1907.

2 SHEETS—SHEET 1.

Fig. 2.

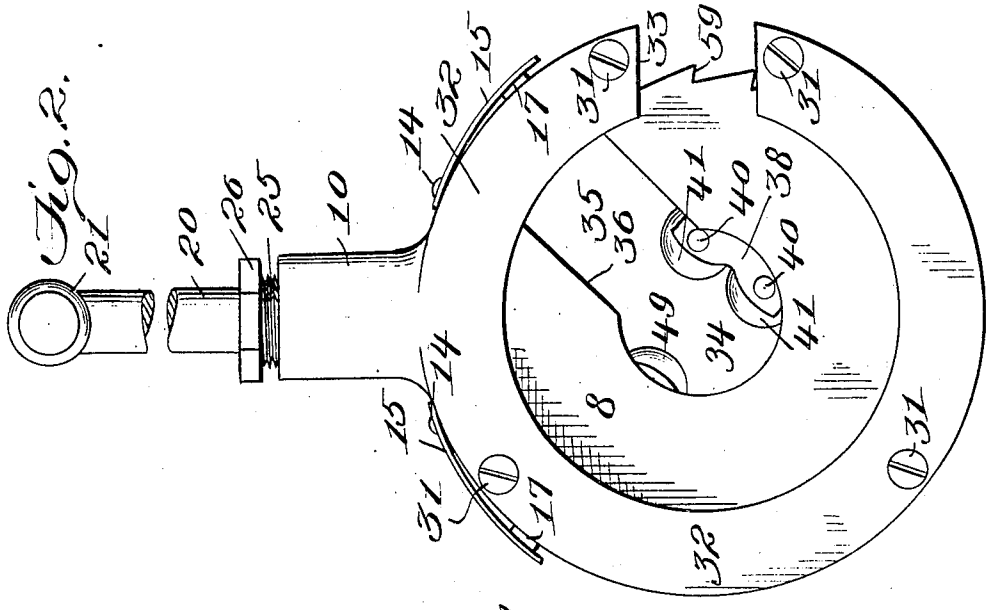
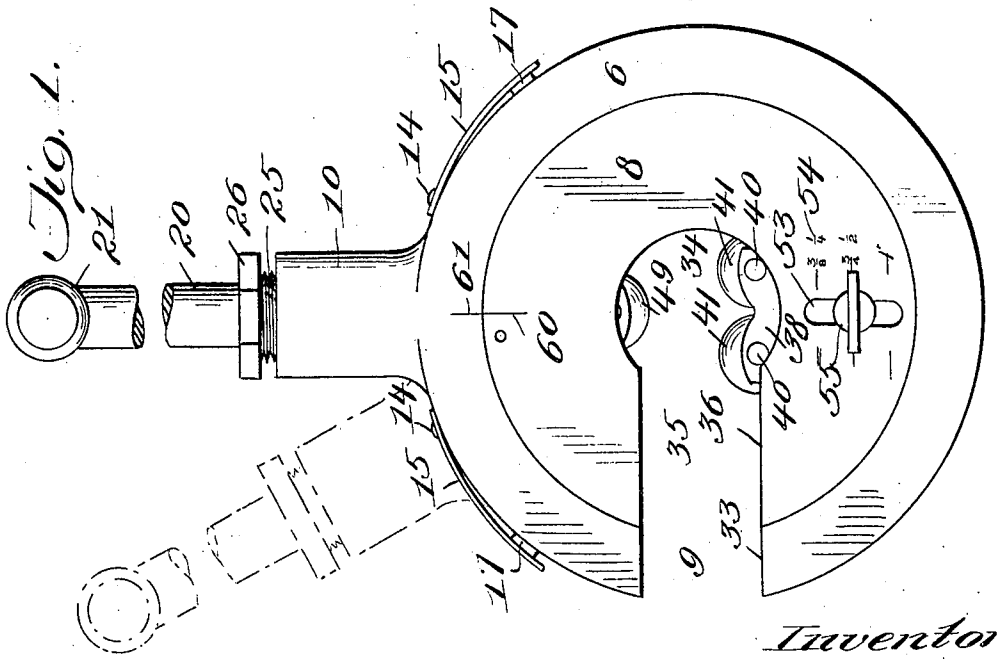


Fig. 1.



Witnesses:

Inventor

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By James L. Norris.

Atty

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2 SHEETS—SHEET 2.

Fig. 4.

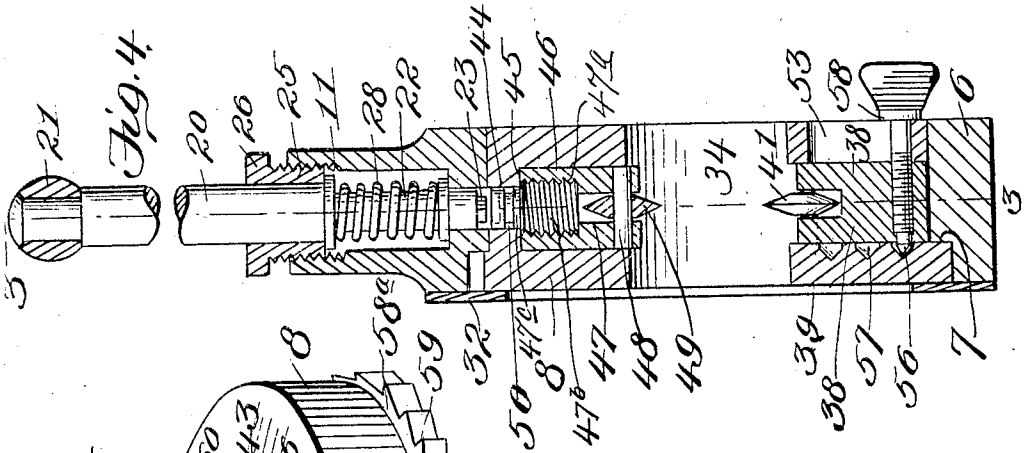


Fig. 5

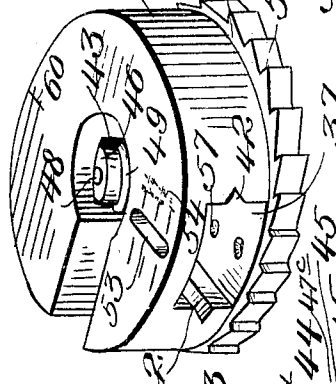
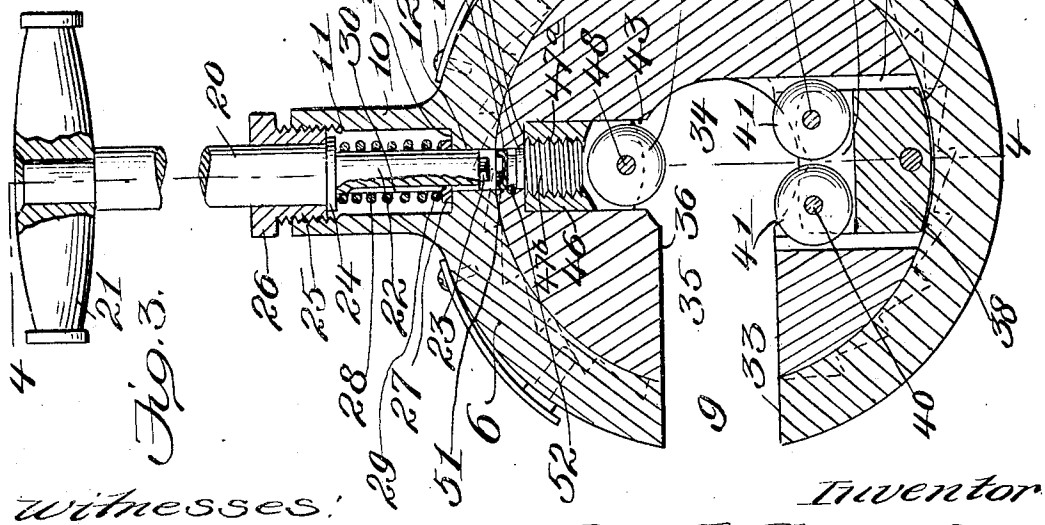


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROY L. THOMAS, OF SAN MARCOS, TEXAS.

PIPE-CUTTER.

No. 882,432. Specification of Letters Patent. Patented March 17, 1908.

Application filed October 3, 1907. Serial No. 395,801.

To all whom it may concern:

Be it known that I, ROY L. THOMAS, a citizen of the United States, residing at San Marcos, in the county of Hays and State of Texas, have invented new and useful Improvements in Pipe-Cutters, of which the following is a specification.

This invention relates to pipe cutters, and the object thereof is to provide a pipe cutter in the manner as hereinafter set forth which is adapted to operate on various sizes of pipe, whether the pipe lie in vertical, horizontal or any angular position.

A further object of the invention is to provide a pipe cutter in the manner as hereinafter set forth which can be used in narrow or otherwise cramped places, and without the necessity of disturbing the bearings for the pipe or disconnecting the pipe couplings.

A further object of the invention is to provide a pipe cutter in the manner as hereinafter set forth with means whereby the cutter can be mounted upon the pipe section intermediate its ends so as to overcome the inconvenience of mounting the cutter on the pipe from one end thereof.

A further object of the invention is to provide a pipe cutter in a manner as hereinafter set forth with means whereby the cutter can be rotated or oscillated when making the cut.

A further object of the invention is to provide a pipe cutter which shall be simple in its construction, strong, durable, efficient in its use, conveniently mounted upon the pipe section for cutting, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention, but it is understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings, wherein like reference characters denote corresponding parts throughout the several views and in which,

Figure 1 is an elevation looking towards one side of the pipe cutter. Fig. 2 is a like view looking towards the other side of the pipe cutter. Fig. 3 is a section on line 3—3, Fig. 4. Fig. 4 is a section on line 4—4, Fig. 3, and Fig. 5 is a perspective view of the cutter disk carrier.

Referring to the drawings in detail, 6 denotes a hollow cylindrical head having its inner face cut away to form an annular seat 7 upon which is mounted the cutter disk carrier 8 which will be hereinafter more specifically referred to. The head 6 is cut away as at 9 to form an opening for a purpose to be hereinafter referred to and the said head 6 is furthermore provided with a vertically extending neck 10 provided with interior threads as at 11 and communicating at its bottom with an opening 12 which extends through the head 6 and is of less diameter than the inner diameter of the neck 10, forming thereby a seat 13. Secured to the periphery of the head 6 at each side of the neck 10 through the medium of the hold-fast devices 14 is a leaf spring 15, the free end of each of said springs 15 bearing upon the head 17 of a pin 18 which extends through the head 6 and has the inner end thereof beveled as at 19. The pins 18 constitute dogs and coöperate with the cutter disk carrier for a purpose to be hereinafter referred to. Extending through the neck 10 and adapted to extend through the opening 12 is a shank 20 carrying at its outer end a handle as at 21 and having its inner end reduced as at 22. The reduced inner end 22 terminates in a squared protuberance 23, the function of which will be hereinafter referred to. The shank 20 is also provided with a boss 24 at the upper end of the reduced portion 22. Seated against the boss 24 is the lower end of an exteriorly screw-threaded sleeve 25 having an enlarged outer end 26. The sleeve 25 is adapted to engage with the threads 11 so as to retain the shank 20 in position within the neck 10. Surrounding the reduced portion 22 of the shank and interposed between the boss 24 and a washer 27 which is mounted upon the seat 13 is an expansible spring 28, the function of which is, when the sleeve 25 is screwed outwardly, to force the shank outwardly. The washer 27 is provided with a tooth 29 which engages in a groove 30 formed in the reduced portion 22 so that when the shank is rotated the washer will be carried therewith. The spring 28 is disconnected from the shank, but during the rotation of the shank it turns as a whole therewith. Secured to one side of the head 6 by the hold-fast devices 31 is a split ring 32 for retaining the carrier 8 within the head 6.

The split ends of the ring 32 are flush with the walls 33 of the opening 9 in the head 6.

The carrier 8 which is mounted in the head 6 and retained therein through the medium of the ring 32 in connection with the seat 7 is formed centrally thereof with a circular opening 34 which opens into a transversely extending opening 35, the latter communicating with the opening 9. The openings 9 35 and 34 permit, when the wall 36 of the opening 35 is flush with the wall 33 of the opening 9, of the mounting of the pipe cutter upon the pipe section, the pipe cutter being slid upon the pipe section until the section is positioned within the opening 34. The carrier 8 is furthermore provided with an opening 37 which communicates with the opening 34 and in which is adjustably mounted a block 38 having a bifurcated inner end 39 in which is rotatably supported by the pins 40 a pair of cutter disks 41. Formed in each side wall of the opening 37 is a V-shaped groove 42, which constitutes clearances for the cutter disk 41 when the block 38 is shifted within the opening 37 or removed from said opening. Diametrically opposite the opening 37 the carrier 8 is formed with a recess 43 which communicates with an opening 44, the latter terminating in the opening 12. The opening 44 is of less diameter than the recess 43, forming thereby a shoulder 45. Arranged within the recess 43 is a shiftable block 46 having a bifurcated end 47 in which is rotatably supported through the medium of a pin 48 a cutter disk 49. The block 46 is furthermore provided with a screw-threaded socket 47^a with which engages a screw-threaded shiftable member 47^b for the block 46. The member 47^b is formed with a reduced upper end 47^c of a diameter as to fit into the opening 44. The reduced end 47^c is peripherally grooved as at 50 and has a square recess 51 in its top, which recess is adapted to receive the protuberance 23. The member 47^b is rotatably secured in the carrier 8 through the medium of a pin 52 which extends through the carrier 8 and is seated within the groove 50. The outer wall of the opening 37 is formed with an elongated slot 53 and at one side of the slot 53 the carrier is provided with an adjustment scale 54. Extending through the slot 53 is a clamping screw 55 which also extends through an opening formed in the block 38 near its outer end and said screw 55 has its lower end 56 adapted to engage in one of the recesses 57 when the block 38 is adjusted. Mounted upon the screw 55 is a washer 58 which engages the carrier 8. From the manner of setting up the clamping screw 55, it is evident that the block 38 will not only be clamped by the head of the screw, but also by the inner end engaging in one of the recesses 57; consequently the block 38 is prevented from being shifted after being fixed in its adjusted position. The slot 53 provides a means whereby the screw 55 can be shifted.

The carrier 8 at one side is formed with an annular flange 58^a which is toothed as at 59 to form a ratchet, the teeth of which are adapted to be engaged by the pins 18, one of the pins 18 constituting means for intermittently shifting the carrier within the head when the head 6 is oscillated, and the other pin constituting a means to rotate the carrier 8 during the oscillation of the head when the other pin is passing the opening 35.

The carrier 8 is intermittently shifted within the head 6 when the shank 20 is withdrawn so that the protuberance 23 is moved clear of the recess 51. The moving of the shank 20 so that the protuberance 23 will be shifted clear of the recess 51 is had by unscrewing the sleeve 25, consequently releasing the tension upon the spring 28, the latter expanding, and such action will automatically force the shank 20 outwardly so that the protuberance 23 will not engage the recess 51 and the carrier will be free to allow of the shifting thereof. When the cutter is used as what may be termed a ratchet cutter and it is desired to shift the cutter disk 49 inwardly against the pipe, the operator forces the shank 20 inwardly until the protuberance 23 engages in the recess 51 and then by turning the shank 20, it will be evident that the member 47^b will be rotated and consequently the block 46 will be forced inwardly carrying the cutter disk 49 therewith.

When it is desired to lock the parts of the cutter together so that it will be used as what may be termed a rotary cutter, the sleeve 25 is screwed home, which forces the shank 20 inwardly so that the protuberance 23 will engage in the recess 51. If the head 6 be shifted, it is evident that the shank will cause the carrier to move in unison with the head. Now if it be desired to use the device as a ratchet cutter, the sleeve 25 is slightly withdrawn, such action allowing the spring 28 to come into play and force the reduced portion 22 of the shank and protuberance 23 clear of the carrier.

The block 38 carrying the cutter disks 41 can be adjusted without the necessity of removing said block from the carrier 8. Such adjustment is had by loosening the clamping screw 55 and sliding the block inwardly or outwardly to the position desired with respect to the scale 54. The block 38 is then clamped into position through the medium of the screw 55. Furthermore, it is not necessary when positioning the cutter upon the pipe section to remove the block 38 and cutter disks 41, owing to the fact that the cutter can be slid upon the pipe section through the medium of the openings 9 and 35.

Provision is made to readily determine as to whether the walls 33 and 36 are in alinement so as to enable the convenient position-

ing of the cutter upon the pipe section by providing the carrier 8 with an indication 60 which is adapted to register with an indication 61 provided upon the head 6. The indications 60–61 may be in the form of indentations or other suitable means.

It is evident from the foregoing description taken in connection with the accompanying drawings that a pipe cutter is set up which will enable the use thereof in narrow or otherwise cramped places when sufficient space is not provided for rotating the cutter as the cutter can be so adjusted that it can be operated in an oscillatory manner to perform its cutting function and that during the operation of the cutter one of the cutter disks can be conveniently adjusted without necessitating the discontinuing of the cutting operation and it is thought that the many advantages in such manner of setting up a pipe cutter may be readily understood.

What I claim is:—

1. A pipe cutter comprising a head, a carrier mounted therein and provided with a ratchet, an adjustable block mounted in the carrier, a cutter disk rotatably mounted in the block, a pair of cutter disks mounted in the carrier and arranged diametrically opposite said cutter disk, an adjustable supporting means for said pair of cutter disks, an adjustable handle for oscillating said head, means carried by and extending through the head and engaging the ratchet for intermittently rotating the carrier during the oscillating of the head, and means operated by the handle for adjusting said block whereby said cutter disk can be shifted towards the pair of cutter disks.

2. A pipe cutter comprising a head, a carrier mounted therein and provided with a ratchet, an adjustable block mounted in the carrier, a cutter disk rotatably mounted in the block, a pair of cutter disks mounted in the carrier and arranged diametrically opposite said cutter disk, an adjustable supporting means for said pair of cutter disks, an adjustable handle for oscillating said head, means carried by and extending through the head and engaging the ratchet for intermittently rotating the carrier during the oscillating of the head, means operated by the handle for adjusting the block whereby said cutter disk can be shifted towards the pair of cutter disks, and means whereby said pair of cutter disks can be adjusted towards said single cutter disk.

3. A pipe cutter comprising a head provided with an opening, a carrier mounted in the head and having a centrally arranged opening terminating in an opening adapted to communicate with the opening in the head whereby the carrier can be positioned upon a pipe section, an adjustable cutter disk mounted in the carrier, a pair of adjustable cutter disks mounted in the carrier diametrically opposite said single cutter disk, means whereby said single cutter disk and said pair of cutter disks can be adjusted towards each other, means for oscillating said head, means for intermittently rotating the carrier during the oscillation of the head, and means whereby the carrier can be locked to the head, causing thereby the moving in unison of the carrier and head.

4. A pipe cutter comprising an oscillatory head provided with an opening, a carrier mounted therein and having a centrally arranged opening communicating with an angularly disposed opening which communicates with the opening in the head, said openings providing means whereby the cutter can be slid upon the pipe section at a point intermediate the ends thereof, an adjustable cutter disk mounted in the carrier, a pair of adjustable cutter disks mounted in the carrier, means whereby said single cutter disk can be adjusted during the oscillation of the head, means for intermittently rotating said carrier during the oscillation of the head, and means whereby the carrier can be locked with the head, causing thereby the moving thereof in unison.

5. A pipe cutter embodying a shiftable carrier, a cutter disk mounted therein, said carrier provided with an opening, one wall of which is formed with a series of recesses and the other wall with a slot, an adjustable block mounted in said opening, a pair of cutter disks rotatably mounted in the block, and a clamping screw extending through the slot and block and engaging in one of said recesses for fixing said block in its adjusted position.

6. A pipe cutter embodying an intermittently rotatable carrier provided with openings, an oscillatory head supporting the carrier and having an opening communicating with the openings of the carrier, an adjustable handle for oscillating the head, an adjustable cutting means mounted in the carrier, means whereby said cutting means can be adjusted by the handle, and a pair of pins carried by and extending through the head and engaging with the carrier for intermittently rotating it during the oscillation of the head, one of said pins constituting means to rotate the carrier when the other pin is passing the opening in the carrier and an adjustable duplex cutting means mounted in the carrier.

7. A pipe cutter embodying an intermittently rotatable carrier provided with openings, an oscillatory head supporting the carrier and having an opening communicating with the openings of the carrier, an adjustable handle oscillating the head an adjustable cutting means mounted in the carrier, means whereby said cutting means can be adjusted by the handle, an adjustable duplex cutting means mounted in the carrier

and a pair of pins carried by and extending through the head and engaging with the carrier for intermittently rotating it during the oscillation of the head, one of said pins constituting means to rotate the carrier when the other pin is passing the opening in the carrier, and means whereby the carrier can be locked to the head causing the moving of said parts in unison.

8. A pipe cutter embodying an intermittently rotatable carrier provided with openings, an oscillatory head supporting the carrier and having an opening communicating with the openings of the carrier, an adjustable handle for oscillating the head, an adjustable cutting means mounted in the carrier, means whereby said cutting means can be adjusted by the handle, and a cutting means mounted in the carrier and opposing said adjustable cutting means.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROY L. THOMAS.

Witnesses:
N. L. BOGAN,
CHAS. S. HYER.