No. 825,215. PATENTED JULY 3, 1906.

D. L. HOLLAND.

TOOL FOR CUTTING PIPE.

APPLICATION FILED OCT. 30, 1905.

Fig. 2.

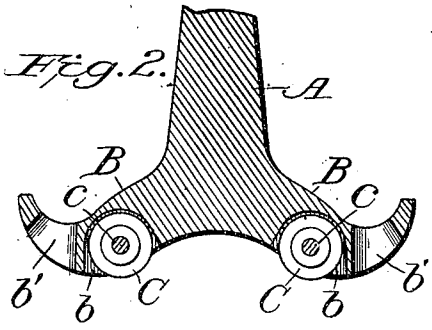


Fig. 3.

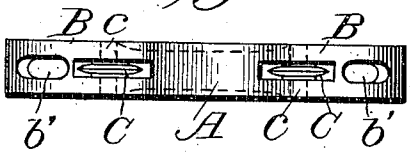
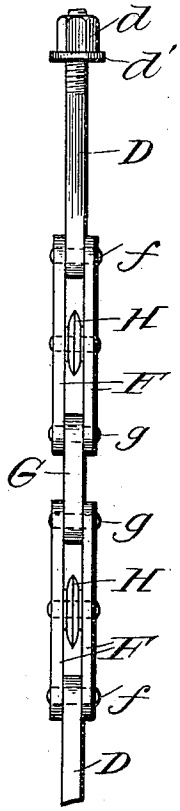


Fig. 1.

Fig. 4.



Witnesses

C. M. Walker.

James B. Mansfield.

Inventor

David L. Holland.

By Alexander F. Powell

Attorneys

UNITED STATES PATENT OFFICE.

DAVID L. HOLLAND, OF FRANKFORT, KENTUCKY, ASSIGNOR OF ONE-HALF TO DENNIS LONG MILLER, OF LOUISVILLE, KENTUCKY.

TOOL FOR CUTTING PIPE.

No. 825,215. Specification of Letters Patent. Patented July 3, 1906.

Application filed October 30, 1905. Serial No. 285,006.

To all whom it may concern:

Be it known that I, DAVID L. HOLLAND, of Frankfort, in the county of Franklin and State of Kentucky, have invented certain new and useful Improvements in Tools for Cutting Pipes; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in tools for cutting pipe to be operated by hand. Its object is to provide a very powerful and effective cutter which can be readily applied to different sizes of pipe, will be self-adjusting thereto, will accommodate itself to any inequalities in the contour or surface of the pipe during the cutting operation, and will cut quickly and cleanly with comparatively short movements of the handle.

The invention consists in the novel construction of the cutter-head and in the combination of such a head with the cutter-chain and will be understood from the following description and the accompanying drawings.

In said drawings, Figure 1 is a side elevation of the cutter arranged to operate on a pipe of small diameter and indicating in dotted lines the same cutter adapted to operate on a pipe of large diameter. Fig. 2 is an enlarged sectional view of the cutter-head. Fig. 3 is a view of the working face of the cutter-head, and Fig. 4 is a detail edge view of part of the cutter-chain.

The cutter-head or principal part of the tool is approximately of inverted-T shape, having a shank or handle portion A, from the lower end of which extend in opposite directions alined arms B, which are provided on their lower sides with recesses *b*, in which are wheel-cutters C, mounted on transverse pins or shafts *c*. These arms are also provided exterior to the cutters C with vertical slots *b'*, which are longer at bottom than at top and through which pass shackle-bolts D, having nuts *d* on their upper threaded ends by which the shackle-bolts can be adjusted. Between these bolts *d* and the arms B are interposed rocking bearing-plates E, convex on their lower sides and fitted in concavities b^2 in the upper edges of arms B at top of slots *b'*, so that the shackle-bolts D can swing or rock in the plane of the head. Washers *d'* may be interposed between nuts *d* and the bearing-plates, if desired.

To the free ends of shackle-bolts D are removably connected the extremities of the cutter-chain, which may be of any suitable construction, but is preferably composed of double links F, in which are mounted wheel-cutters H, similar to cutters C and connecting-links G, which are pivotally connected to links F by bolts or pins *g*, which may be detachable, so that the cutter-links and the connecting-links may be disconnected at will. The cutter-links F, moreover, are similarly disconnectibly attached to shackle-bolts D by means of removable fastening bolts or pins *f*.

The object of having the cutter-chain composed of detachable links and of having it detachably connected to one or both shackle-bolts is to enable the cutter to be applied to pipes of various sizes, and, as indicated in full lines in Fig. 1, only two cutting-links F F have to be connected to the head in order to surround the pipe P of small diameter, while for the pipe of larger diameter five cutting-links are employed, as indicated in dotted lines in Fig. 1. The number of cutting-links employed will therefore depend upon the diameter of the pipe to be cut. If it be small, cutting-links can be removed from the chain, and if large cutting-links are added to the chain. I therefore do not restrict myself to any particular number of links nor to the construction of sectional cutting-chain illustrated in the drawings nor to the particular disconnectible connections between the chain-links and between the chain and shackle-bolts shown, as these can be varied to suit the pleasure of the user or manufacturer.

Operation: When the machine is used to cut a pipe, one end of the chain is disconnected from one shackle-bolt. Then the head A is set on or against the pipe perpendicular thereto, with cutters C bearing thereagainst. The free end of the chain is then carried around the pipe and connected to the opposite shackle-bolt, (the proper number of cutting-links being removed or added as required to make a comparatively close fit.) Then the nuts *d* are turned so that all the cutters are set hard against the pipe. Then the head is reciprocated so that the cutters track one to another and produce a clean cut

all around the pipe, and the chain is tautened as required during the operation by turning nuts *d* to take up slack and keep the cutters to their work. On large cutters an extension-handle may be attached to shank A, so as to increase the power of the machine. Thus in Fig. 1 I have shown an auxiliary handle J, having a socket adapted to telescope onto the shank A and provided with a cross-head piece *j*, by which, if desired, a number of men can operate the tool.

By reason of the peculiar construction of the head and the mode of attaching the chain thereto the machine has the necessary rigidity in action and yet is flexible enough to cause each and every cutter to work properly and with approximately equal force, even if the pipe is not exactly true in contour, and this flexibility greatly lessens the danger of cracking the pipe. The facility with which the machine can be applied to and removed from the pipe and its adaptability to all sizes of pipe will be obvious from the foregoing.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pipe-cutter, the combination of the head having a shank and oppositely-extending arms and cutters; with a cutter-chain having cutters, and adjustable shackle-bolt connections between said chain and the said arms.

2. In a pipe-cutting machine, the combination of a head having a shank and oppositely-projecting arms, and wheel-cutters mounted in said arms adapted to engage the pipe; with a cutter-chain; shackle-bolts detachably attached to said chain and passed through the arms, and nuts on the upper ends of said shackle-bolts, substantially as described.

3. In a pipe-cutting machine, the combination of a head having a shank and oppositely-projecting arms provided with vertical slots, and wheel-cutters mounted in said head, adapted to engage the pipe; with a cutter-chain, shackle-bolts detachably attached to said chain and passed through the slots in the arms, and nuts on the upper ends of said shackle-bolts, substantially as described.

4. The combination of the head having oppositely-extending arms provided with vertical slots, wheel-cutters journaled in said arms, shackle-bolts extending through the slots in said arms, rocking bearing-plates above the arms transfixed by said bolts, and nuts on said bolts above the bearing-plates; with a chain-cutter attached to the shackle-bolts, substantially as described.

5. The combination of the head having oppositely-extending arms provided with slots, wheel-cutters journaled in recesses in said arms, shackle-bolts extending through the slots in said arms, rocking bearing-plates above the arms transfixed by said bolts, and nuts on said bolts above the bearing-plates; with a sectional chain-cutter having links provided with wheel-cutters, and means for disconnectibly attaching said chain to the shackle-bolts, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

DAVID L. HOLLAND.

In presence of—
J. W. LINDSEY,
JOHN B. LINDSEY