O. G. GRIFFIN.

PIPE CUTTER.

APPLICATION FILED JAN. 13, 1915.

1,178,801. Patented Apr. 11, 1916.

Fig. 1.

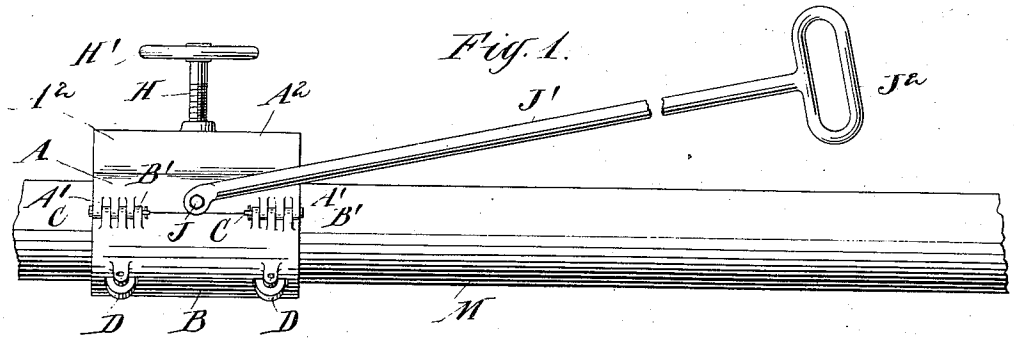


Fig. 2.

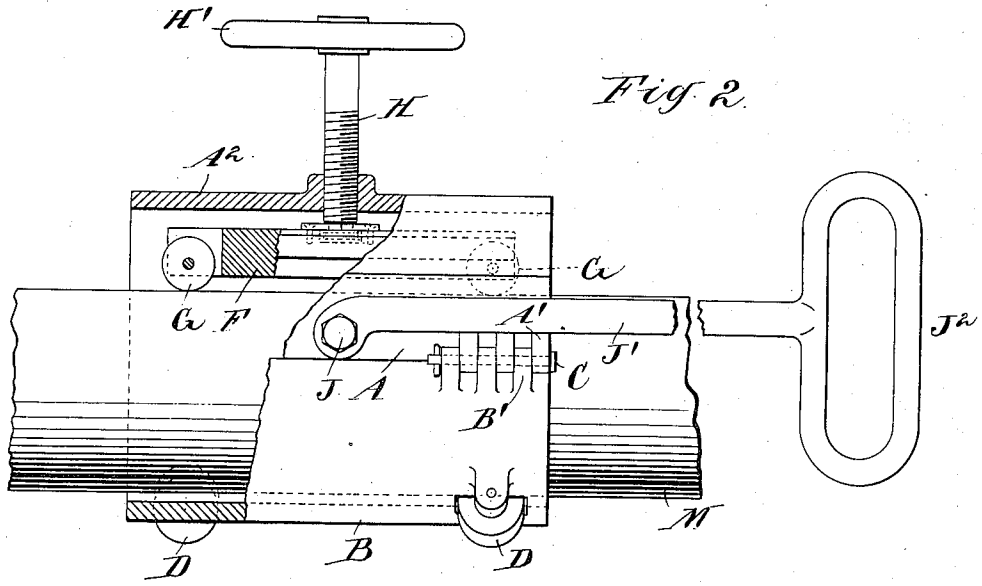
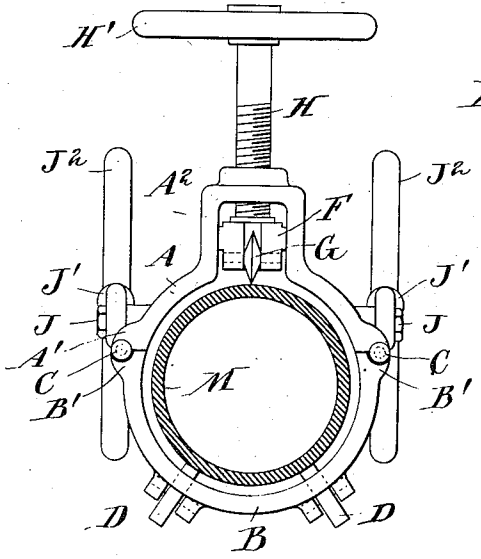


Fig. 3.



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PIPE-CUTTER.

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To all whom it may concern:

Be it known that I, ORANGE G. GRIFFIN, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the county and State of New York, have invented a certain new and useful Improvement in Pipe-Cutters, of which the following is a specification.

The invention relates to means for slitting a pipe longitudinally, and the object of the invention is to provide a simple, inexpensive, easily operated tool for this purpose.

In certain conduit installations, notably in underground electric work in which the cables are inclosed in metal pipes, it is frequently necessary to remove a considerable length from one of the pipes to permit access to the cables within for making the required outlet connections, and the operation as generally performed by chipping and breaking away the pipe in small fragments is very laborious, the difficulties being greatly increased by the close proximity of adjacent pipes or conduits and the limited area of trench in which the work is done. The improved tool is designed for operation in such narrow space to produce a longitudinal slit in the pipe with but little labor, and by subsequently making a transverse cut at each end of such slit by any suitable means, the section thus loosened may be easily pried open and spread or flattened sufficiently to permit its removal.

The invention consists in certain novel features and details of construction and arrangement by which the above objects are attained, to be hereinafter described and claimed.

The accompanying drawings form a part of this specification and show an approved form of the invention.

Figure 1 is a side elevation of the tool in position for service on a pipe. Fig. 2 is a similar view on a larger scale and partly in vertical section. Fig. 3 is a corresponding end view.

Similar letters of reference indicate the same parts in all the figures.

The pipe-cutter comprises essentially a movable clamp adapted to be applied on the pipe to be slitted, and arranged to be reciprocated thereon, carrying a cutter with means for engaging it with the surface of the pipe while the tool is thus reciprocated.

As illustrated in the drawings the clamp consists of a cylindrical sleeve in two semi-cylindrical portions A and B each having lugs A^1 B^1 along the line of separation adapted to match together and receive pins C thrust through the series to form in effect a hinge joint on both sides of the clamp.

The lower section B carries at each end a pair of rollers D D extending through slots to the interior and adapted to lie against the inclosed pipe M. The rollers of each pair are set angularly to each other as shown in Fig. 3.

The upper section has a longitudinal hollow rib or projection A^2 in which lies a vertically movable bar F carrying at each end a cutting wheel G similar to that employed in the ordinary forms of pipe-cutters. The cutters G G are in longitudinal alinement, one tracking the other in a single cut.

At the center the bar F is loosely engaged by any suitable means with a vertical screw H extending through a screwthreaded hole in the deck of the rib A^2, and carries at its upper end a handwheel H^1 by which the screw may be turned and the bar depressed to force its cutting wheels into strong contact with the upper face of the pipe. The engagement of the screw with the bar holds the latter against longitudinal movement relatively to the clamp and compels it to travel therewith.

At each side on the upper section is a laterally projecting stud or trunnion J receiving an eye on a rod J^1 terminating in a handle J^2 by which the tool may be reciprocated.

The operation is as follows:—If the pipe to be slitted is sufficiently separated from its fellow to permit, the pins C C on one side are withdrawn and the portions A and B opened on the hinges formed by the pins C C on the opposite side, and the lower section passed beneath the pipe; the clamp is then closed and locked by re-inserting the pins C C, or, if the space be limited, the two sections may be completely disassociated and the lower section applied below the pipe and the upper section then applied and attached. When thus in place the screw H is turned to force the cutting wheels G G into operative contact with the upper face of the pipe, correspondingly drawing the rollers D D into frictional contact with the under face. The handles J^2 J^2 are then grasped and the tool is reciprocated on the

pipe, the latter itself serving as a guide. The bar F and its cutting wheels are fed down by turning the screw H as the cut deepens until completely through. The tool is then removed by a reversal of the attaching operation. A less difficult transverse cut at each end of the slit, produced by any suitable means, loosens the section of pipe which may then be forced open and removed from the inclosed cables.

It will be noted that the bar F is guided vertically by the interior walls of the rib A^2, and that the axes of the cutting wheels are located directly above the axes of the anti-friction rollers D D so that the pipe is supported by the latter immediately below the points of contact of the former.

The line of separation between the sections A and B is preferably above the axial line of the clamp so as to locate the hinge-lugs A^1 B^1 above the center.

Although the clamp is shown as cylindrical and completely inclosing or surrounding the pipe, it will be understood that the form of the clamp, and the number and location of the rollers D D may be widely varied, as may the number, forms, and character of the cutters G G.

I claim:—

1. In a pipe-cutter, a clamp in two semi-cylindrical portions adapted to be secured together by separable hinge joints and to inclose a pipe and reciprocate thereon, a pair of anti-friction rollers at each end of the lower of said portions, a bar extending longitudinally of said clamp and mounted and guided in the upper of said portions, a pair of cutting-wheels mounted in said bar in alinement with each other and arranged to produce a slit longitudinally of such pipe by the reciprocations of said clamp, and a screw mounted in said upper portion and engaged with said bar to hold the latter and to adjust said cutting-wheels.

2. In a pipe-cutter, a clamp in two semi-cylindrical portions adapted to be secured together by separable hinge joints and to inclose a pipe and reciprocate thereon, a pair of anti-friction rollers at each end of the lower of said portions, a bar extending longitudinally of said clamp and mounted and guided in the upper of said portions, a pair of cutting-wheels mounted in said bar in alinement with each other and arranged to produce a slit longitudinally of such pipe by the reciprocations of said clamp, a screw mounted in said upper portion and engaged with said bar to hold the latter and to adjust said cutting-wheels, and rods pivotally connected to said upper portion for reciprocating said clamp.

In testimony that I claim the invention above set forth I affix my signature, in presence of two witnesses.

ORANGE G. GRIFFIN.

Witnesses:
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