No. 734,427. PATENTED JULY 21, 1903.

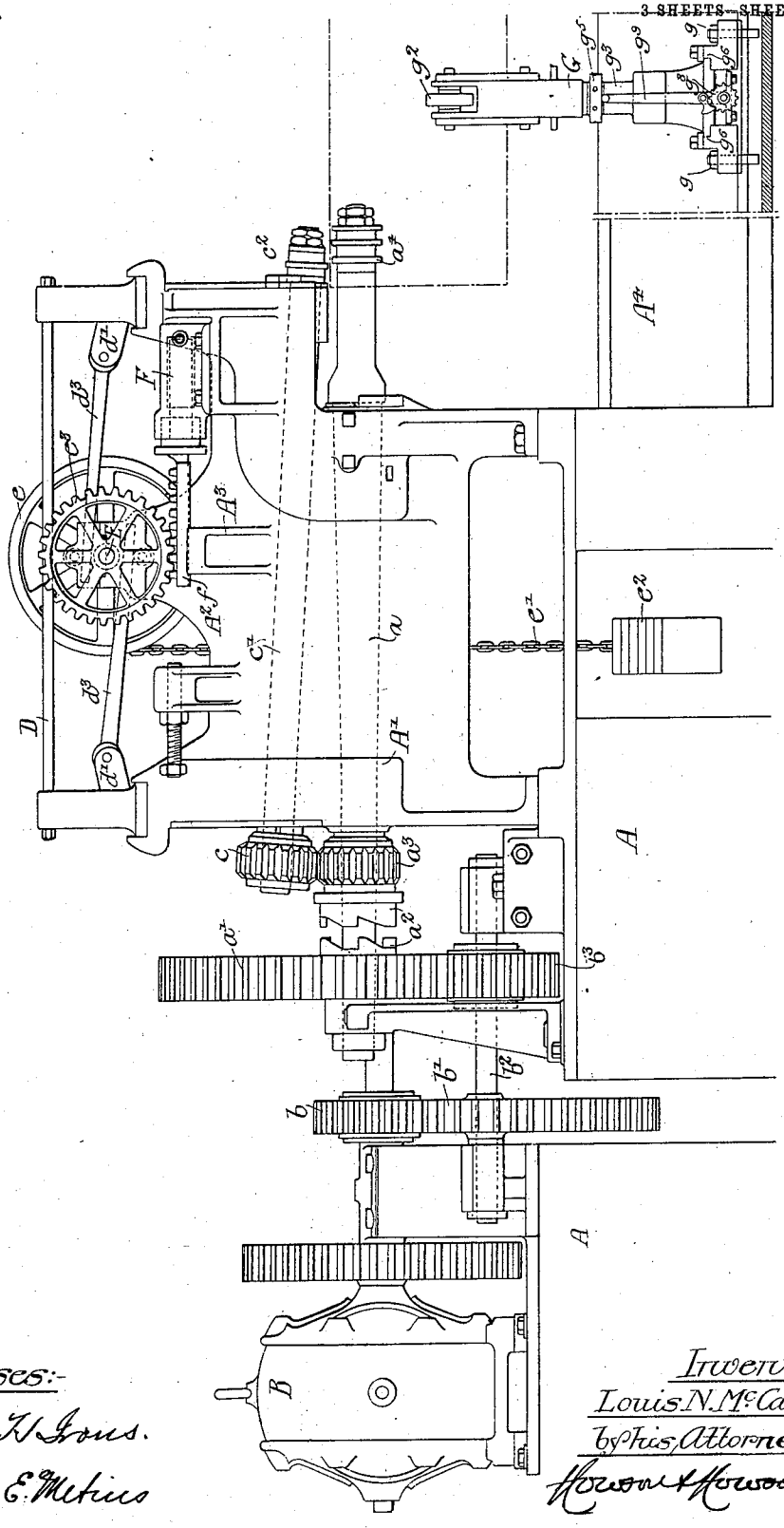
L. N. McCARTER.

PIPE CUTTING MACHINE.

APPLICATION FILED DEC. 5, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:-

Titus W. Sons.

Herman E. Metius

Inventor:

Louis N. McCarter.

by his Attorneys:

Howson & Howson

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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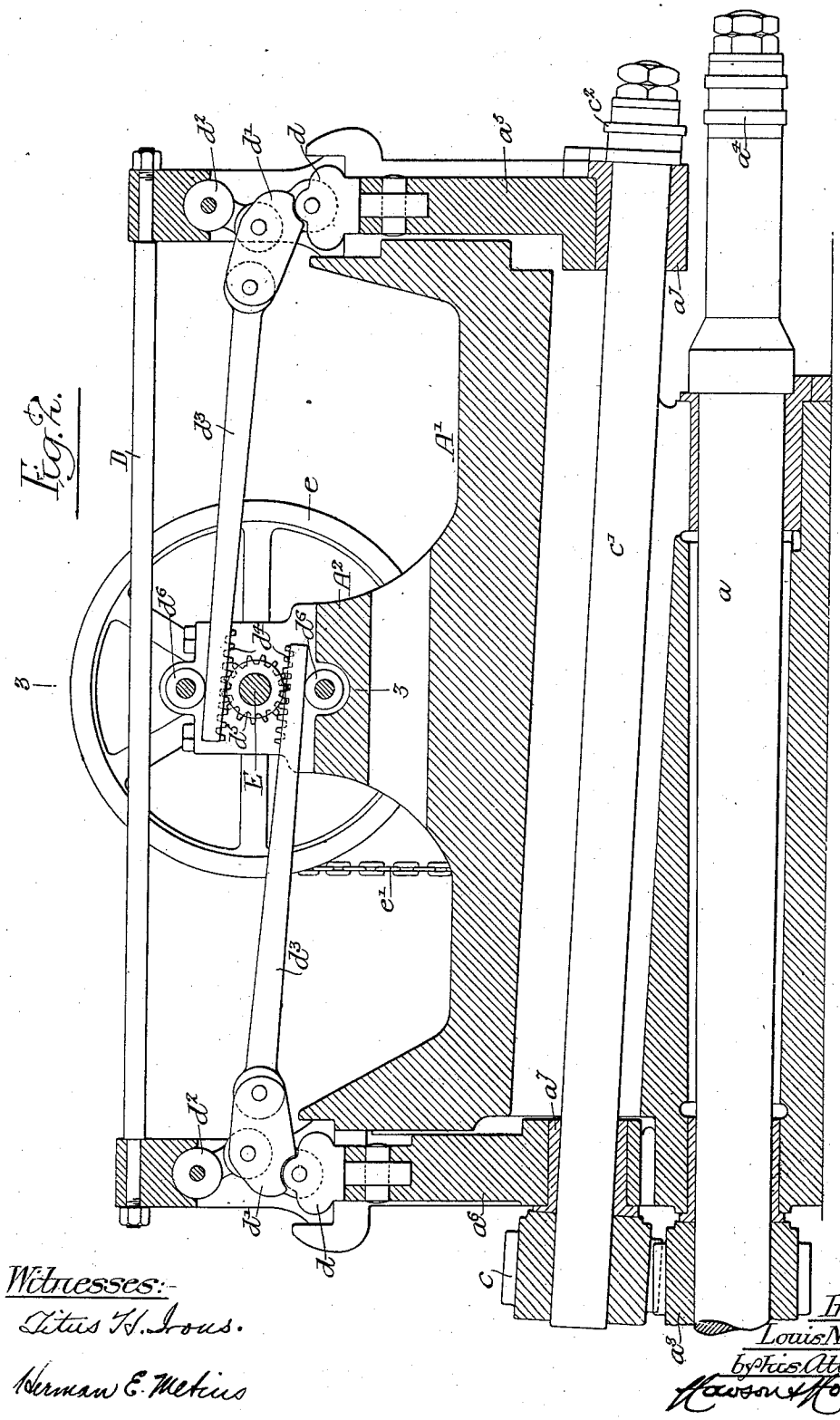
L. N. McCARTER.

PIPE CUTTING MACHINE.

APPLICATION FILED DEC. 5, 1902.

NO MODEL. 3 SHEETS—SHEET 2.

Fig. 4.



Witnesses:-

Titus H. Sous.

Herman E. Metius

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L. N. McCARTER.

PIPE CUTTING MACHINE.

APPLICATION FILED DEC. 5, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

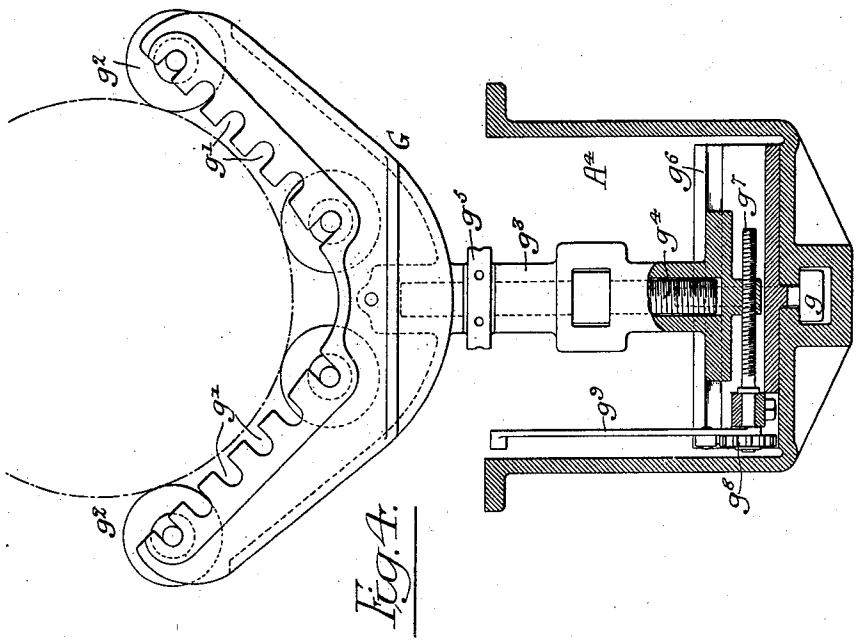


Fig. 4.

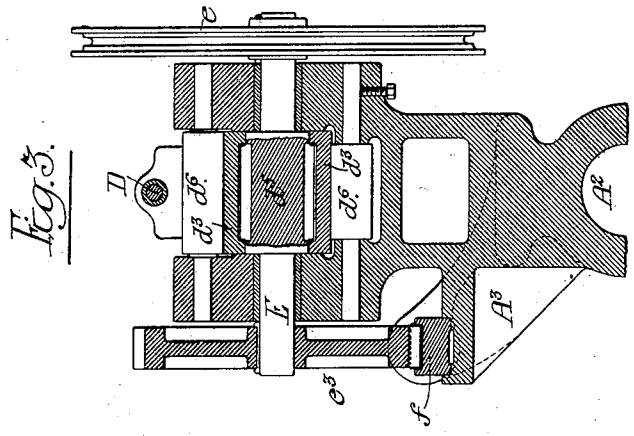


Fig. 5.

Witnesses:-
Hamilton D. Turner
Herman E. Metius

Inventor:-
Louis N. McCarter,
by his Attorneys;
Howson & Howson

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 734,427. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

LOUIS N. McCARTER, OF NORRISTOWN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO R. S. NEWBOLD & SON CO., OF NORRISTOWN, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

PIPE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 734,427, dated July 21, 1903.

Application filed December 5, 1902. Serial No. 134,025. (No model.)

To all whom it may concern:

Be it known that I, LOUIS N. McCARTER, a citizen of the United States, residing at Norristown, Pennsylvania, have invented certain Improvements in Pipe-Cutting Machines, of which the following is a specification.

My invention consists of certain improvements in mechanism for cutting or trimming the ends of pipe, having for its object the provision of a device of the character hereinafter set forth, which shall be simple in construction and efficient and reliable in operation, at the same time being of comparatively inexpensive construction. This object I attain as hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved pipe-cutting machine. Fig. 2 is a sectional elevation of the machine, taken in the plane of the cutter-shafts. Fig. 3 is a sectional elevation on the line 3 3, Fig. 2; and Fig. 4 is an end elevation, partly in section, of the portion of the machine for supporting and holding the pipe to be operated upon.

In the above drawings, A represents any desired form of foundation, to which is suitably bolted the main framework A′ of my improved machine. Also carried upon the foundation A is a motor B, having upon its armature-shaft a pinion b, gearing with a toothed wheel b', carried upon a shaft b^2, also supported in bearings on the foundation A. A pinion b^3 on the shaft b^2 meshes with the gear-wheel a' upon the main shaft a in the machine proper, it being understood that this wheel is not keyed to said shaft, but may be made to turn it through the agency of a clutch whose members are shown at a^2. The main shaft a is for the most part carried by the framework A′ in the machine proper, there being keyed to it, adjacent to the clutch a^2, a pinion a^3, designed to mesh with a similar pinion c, carried by an inclined and vertically-adjustable shaft c'. The opposite ends of both of the shafts a and c' preferably project beyond the frame of the machine and have suitably fixed to them cutters a^4 and c^2, respectively.

As shown in Fig. 2, the shaft c' is carried in two sliding bearings a^5 and a^6, which are free to move in a vertical plane in suitably-formed portions of the frame A′, there being in each bearing a bushing a^7. A toggle composed of the three members d, d', and d^2 connects each of the sliding bearings a^5 and a^6 with the top portion of the frame A′, these top portions being tied or held together by means of the cross bar or bars D. Each of the toggles has connected to its middle members d' one end of a compression piece or link d^3, whose other end is formed into a rack, as shown at d^4, placed to mesh with the teeth of a pinion d^5, carried by a shaft E, which is supported in suitable bearings formed in the upwardly-projecting portion A^2 of the frame A′. There is a roller d^6, also carried by the portion A^2 of the frame, serving to retain the ends d^4 of the pieces d^3 in engagement with the pinion d^5, these ends being preferably formed, as shown in Fig. 3, so that they are of a greater width of face than the pinion d^5. The shaft E has upon one end a grooved wheel e, to which is fixed one end of a chain e', whose other end carries a weight e^2, this weight always tending to turn said wheel e. The opposite end of the shaft E has keyed to it a gear-wheel e^3, and there is a bracket A^3, preferably formed integral with the frame A^2, which acts as a guide or support for a rack f, placed to engage the toothed wheel e^3 and provided at one end with a plunger constructed to act within the cylinder F, also by the frame A′.

As shown in Figs. 1 and 4, the frame A′ of the machine is extended forwardly beyond the ends of the main shafts a and c' into a trough-like receptacle A^4 for the accommodation of a device for carrying the pipe operated upon by the cutter. From Fig. 4 it will be seen that there is a T-slot in the bottom of the portion A^4 for the heads of bolts g, which serve to retain in position the frame or casting G. This is preferably made in Y form, with two diverging branches, each of which is provided with a number of recesses or bearings g' for the accommodation of shafts of rollers g^2.

I preferably provide means for adjusting the height of the upper portion of the framework G by forming the upright standard g^3 thereof hollow and placing therein a screw g^4, with an adjusting-nut g^5, whereby the level of said upper portion of the device may be varied

at will. I also make the bottom of the standard g^3 in such form that it will slide laterally upon guides or ways g^6, also providing a screw g^7 in engagement with said standard and a pawl and ratchet g^8 with a suitable lever g^9 for operating the same.

In operation the rollers g^2 are placed in certain of the bearings g', so that the pipe to be operated upon will be supported at four points, and the end of the pipe is then placed between the cutters c^2 and a^4, as indicated in dotted lines in Fig. 1. The motor B being in operation and the clutch a^2 thrown in, fluid is admitted to the cylinder F, thereby turning the shaft E and moving outwardly the struts d^3, with consequent operation of the toggles attached thereto. Such action forces downwardly the slides a^5 and a^6, bringing the upper cutter in contact with the pipe and causing the teeth of the pinions c and a^3 to mesh with each other. Since both of the shafts a and c' are revolving, the pipe will also revolve under the action of the cutters and after one or more revolutions will, under the continued downward pressure of the upper cutter, be sheared cleanly off. The release of the pressure within the cylinder F will permit the plunger thereof and the rack f to be returned to their normal positions under the influence of the weight e^2, acting through the shaft E and the wheel e, as indicated in Fig. 1.

I claim as my invention—

1. The combination in a pipe-cutting machine, of a frame, two shafts, means for operating the same, movable bearings on the frame for one of the shafts, a toggle for each bearing for moving the shaft carried thereby toward and from the other shaft and means for simultaneously actuating said toggles, substantially as described.

2. In a pipe-cutting machine, the combination of a frame having a shaft, a sliding bearing on the frame, a second shaft having one end supported by said bearing, a toggle connected to the bearing, means for operating the toggle to vary the position of the shaft carried thereby, a cutter carried by each shaft, and means for operating the shaft, substantially as described.

3. In a pipe-cutting machine, a frame, two shafts supported thereby and each provided with a cutter, one of said shafts having a bearing free to slide on the frame, a toggle attached to said bearing, a link for operating the toggle, a cylinder having a plunger, and mechanism connecting said plunger with the link whereby the toggle may be operated, substantially as described.

4. In a pipe-cutting machine, the combination of a frame, two shafts supported thereby each of which is provided with a cutter, one of said shafts having a movable bearing, a toggle for moving said bearing, a link connected to the toggle having teeth at one end, a shaft carried by the frame having a pinion in engagement with the teeth on the link, a cylinder and a plunger therein having means whereby it is operatively connected to the shaft, substantially as described.

5. In a pipe-cutting machine, a frame, two shafts supported thereby and each provided with a cutter, a movable bearing on the frame for one of the shafts, a toggle attached to said bearing, a cylinder, a plunger therein having mechanism connecting it to the toggle whereby said toggle may be operated in one direction and a device for automatically moving the toggle in the other direction, substantially as described.

6. In a pipe-cutting machine, a frame supporting two shafts, each provided with a cutter, one of said shafts having a bearing free to slide on the frame, a toggle attached to said bearing and provided with a connecting link, a shaft having means for engaging said link, means for operating the shaft, and means for retaining the link in operative relation to the shaft, substantially as described.

7. In a pipe-cutting machine, a frame supporting two shafts each provided with a cutter, one of said shafts having a bearing free to slide on the frame, a toggle attached to said bearing, a shaft having a pinion, a link connected to said toggle and in engagement with said pinion, with means for turning the shaft and a roller for retaining the link in engagement with the pinion, substantially as described.

8. In a pipe-cutting machine, the combination of a frame, two shafts rotatably supported thereby and operatively connected to each other, one of said shafts having a sliding bearing a cutter on each of the shafts, a toggle having a link provided with a rack, a shaft carrying two pinions, one of the same being in engagement with said rack, a second rack in engagement with the other pinion, a plunger attached to said second rack, a cylinder for the plunger, a wheel attached to the shaft, and a weight attached to the wheel tending to rotate said shaft, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS N. McCARTER.

Witnesses:
JNO. WAGNER,
W. B. BEYER.