

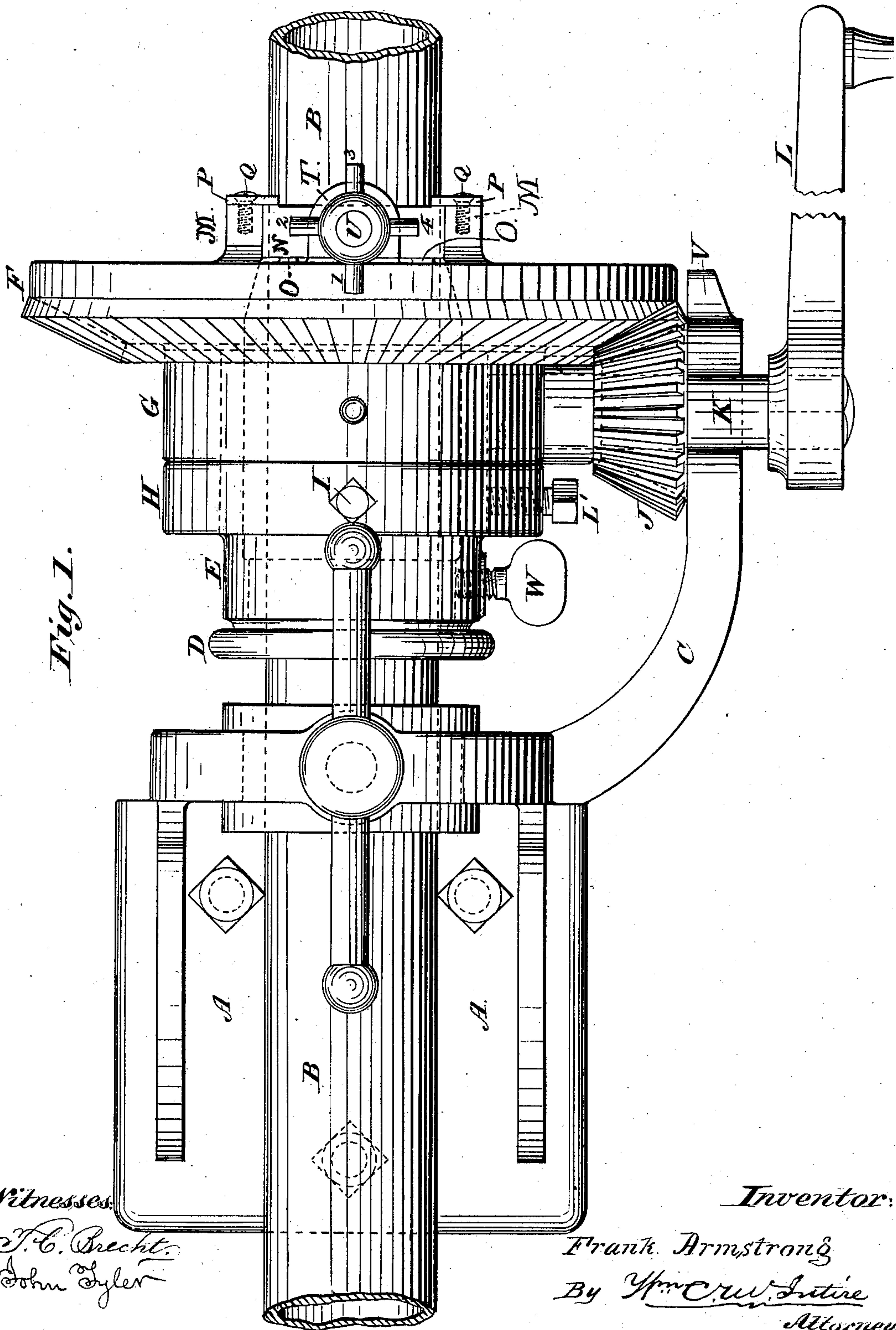
(No Model.)

3 Sheets—Sheet 1.

F. ARMSTRONG.
PIPE CUTTING MACHINE.

No. 258,973.

Patented June 6, 1882.



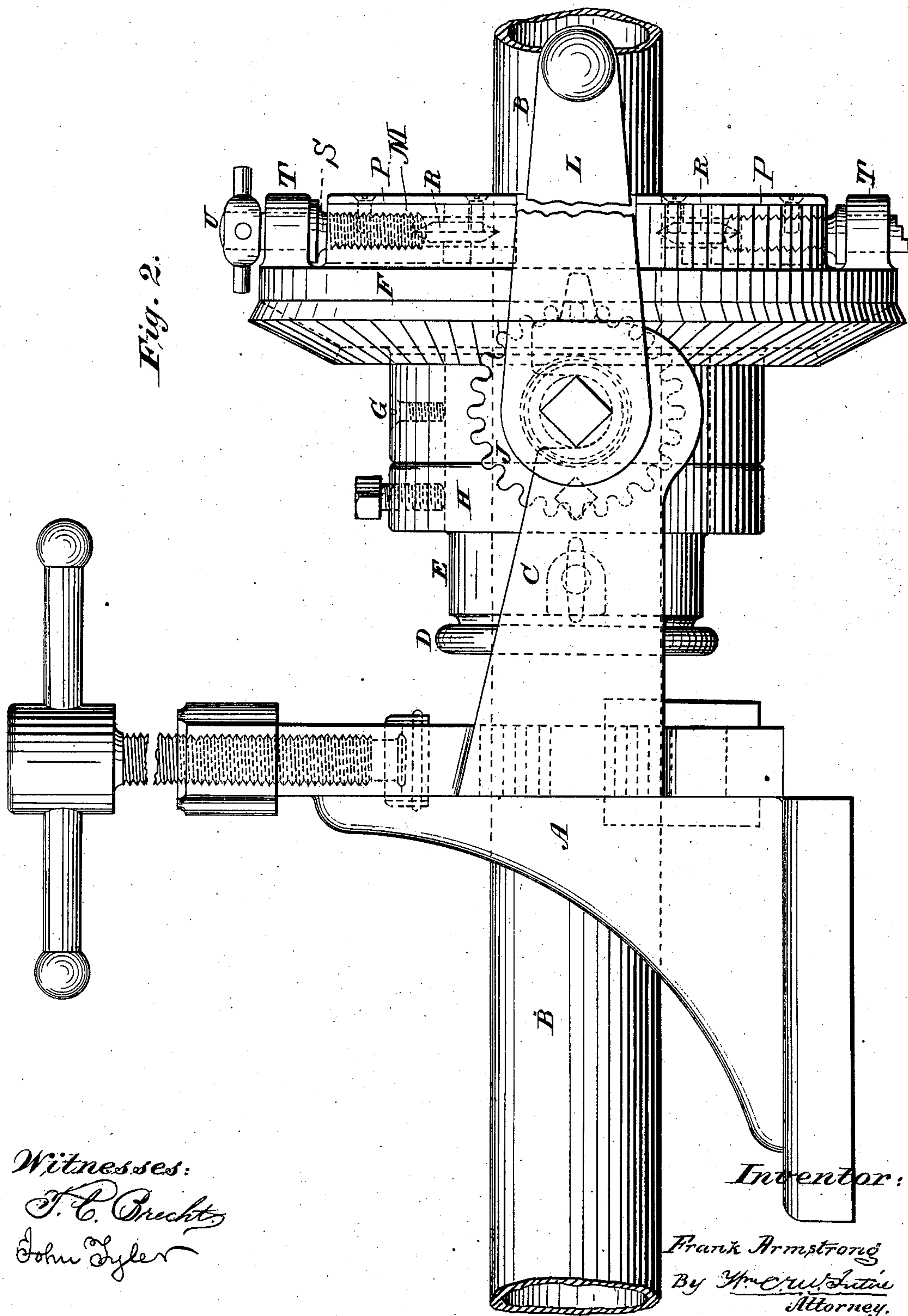
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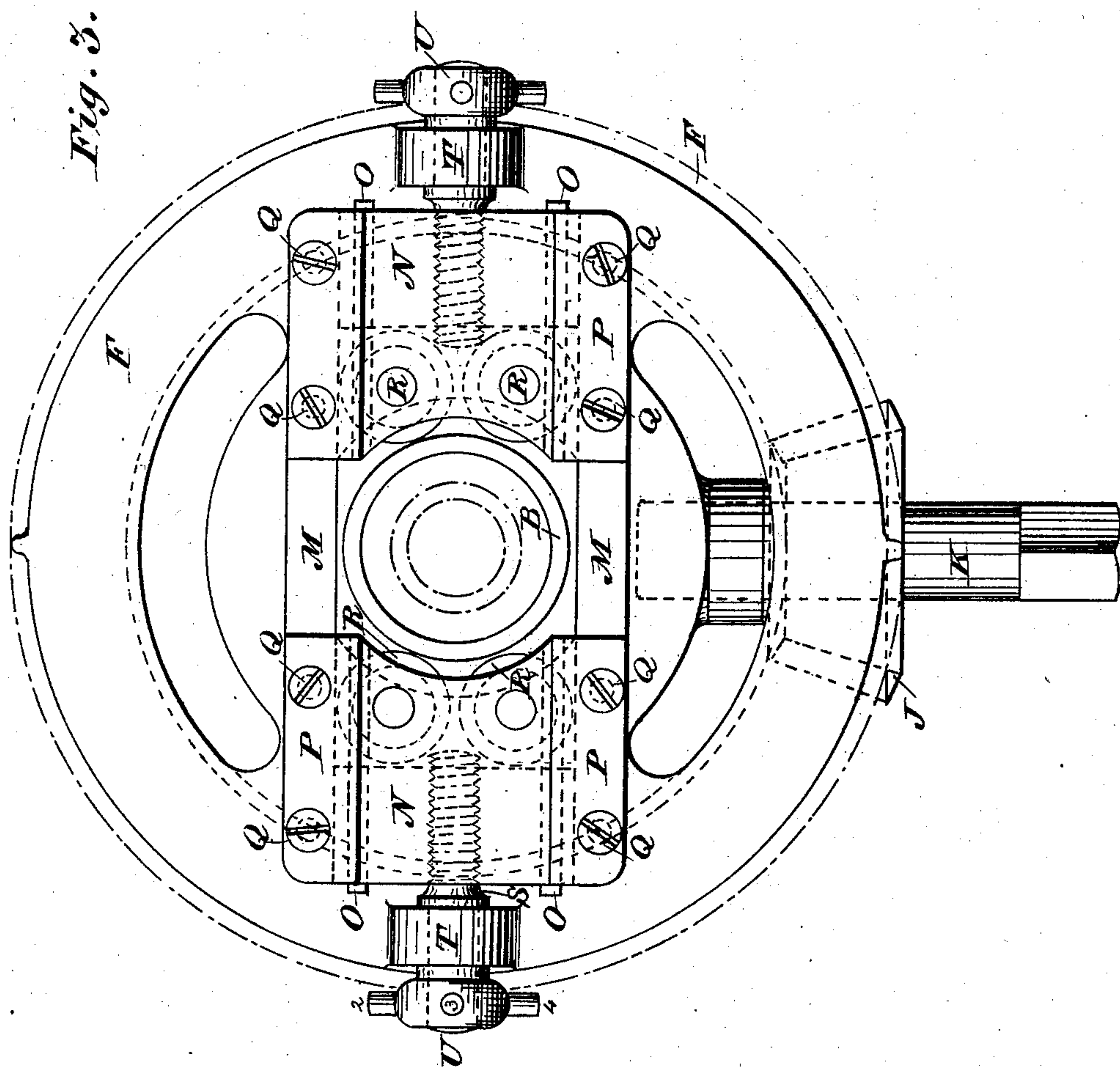
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PIPE CUTTING MACHINE.

No. 258,973.

Patented June 6, 1882.



Witnesses:

T. C. Brecht.
John Tyler

Inventor:

Frank Armstrong

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Attorney

UNITED STATES PATENT OFFICE.

FRANK ARMSTRONG, OF BRIDGEPORT, CONNECTICUT.

PIPE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 258,973, dated June 6, 1882.

Application filed September 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, FRANK ARMSTRONG, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented new and useful Improvements in Pipe or Rod Cutting Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in machines for cutting off pipes or rods; and it has for its object to provide a hand-machine of great power, which may be used in connection with an ordinary pipe-vise, and which shall automatically feed the cutting-tools at the proper time and to the proper extent to properly accomplish the result aimed at without loss of power and without unnecessary damage to the cutting-tools; and with these ends in view my invention consists in the peculiar construction and arrangement of the several parts of the machine, as hereinafter fully explained, and specifically set forth in the claims.

In order that those skilled in the art to which my invention pertains may know how to make and use the same, I will proceed to describe its construction and operation, referring by letters to the accompanying drawings, in which—

Figure 1 is a top or plan view, showing an ordinary vise with a piece of pipe secured therein and my improved cutting-machine arranged in position for operation upon said pipe. Fig. 2 is a side elevation of the same, and Fig. 3 is an end view.

Similar letters indicate like parts in the several figures.

A is an ordinary vise, within which is held the pipe or rod B to be cut. To this vise is secured in any suitable manner a single bracket-support, C, adapted to form a bearing on its outer end for the crank-shaft of my improved cutter, which consists of a centering-bushing, D, adapted to enter the back end of the hub E of the pipe-cutter, which hub is hollow centrally and formed integral with the main gear-wheel F, as clearly indicated by dotted lines, Figs. 1 and 2.

G is a loose ring or collar adapted to slide over the hub E, and provided at one point in its circumference with a recess adapted to receive one end of the crank-shaft.

H is another collar, similarly adapted to slide

over the hub, and provided with one or more screws, I, by means of which it may be rigidly secured to the hub E. The crown-wheel F is furnished with beveled-gear teeth adapted to mesh with a beveled pinion, J, arranged on the crank-shaft K, the gear-wheel or head and pinion referred to being kept in mesh or proper relation to each other by the position of the collar G on the hub E, which is determined and maintained by the collar H. The inner end of the crank-shaft K has its seat or bearing with in the collar G, and its outer end in the bracket C, before referred to.

L is a crank secured to the shaft K, and by means of which, through the pinion J, motion is imparted to the crown-wheel F, the hub of the same rotating freely within the loose collar G. The face of the crown-wheel F is cast with two parallel walls or projections, M M, each side of the central tube or rod passage, between which walls are arranged two sliding cutter-carrying blocks, N, the bottom faces of which rest and move upon narrow ribs O, cast with the wheel F. These blocks N are retained in position between the walls M and on the ribs O by flange-plates P, secured to the walls M by screws or bolts Q. The inner ends of the sliding blocks N have mounted therein rotary or other suitable cutters, R, which cutters and blocks N are adjusted or moved toward and from the pipe by a screw, S, the threaded portion of which moves in female threads in said block, the outer end of said screws having a cylindrical bearing in boxes T, cast on wheel F, and armed beyond said bearings with sprocket-heads U.

The bracket-bearing C, extended from the vise, and which supports the crank-shaft K, has its outer end formed or provided with a projection or tappet, V, against which the sprockets 1, 2, &c., strike during the rotation of the crown-wheel F, thereby causing the blocks N and cutters R to be properly fed toward the pipe or rod to be cut. Of course a reverse movement of the crank-shaft K would cause the feed-screws U to rotate in an opposite direction and draw the cutters away from their work.

The bushing D may be removed at any time and one of different capacity substituted by simply loosening the thumb-screw W in the hub E.

The operation of my improved machine is as

follows: The pipe B having been properly secured in the vise A, and a bushing, D, of suitable capacity, having been secured within the hub E, the wheel F and its attachments are 5 passed over the pipe and the crank-shaft K seated and, if necessary, locked in its bearing in the bracket C of the vise. Power is applied to the crank L, the pinion J is rotated, and with it the crown-wheel F. During the rotation 10 of the latter the sprockets 1, 2, &c., of the feed-screws are successively brought in contact with the tappet V, which has the effect of automatically feeding the blocks N and cutters R toward the center to a proper degree.

15 Having described the construction and operation of my improved pipe-cutter, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pipe-cutting machine, the crown-gear

F, cast with hub E, and having arranged there- 20 on the fast and loose collars H G, the latter provided with a crank-shaft bearing, in combination with the cutters R, vise A, support C, crank-shaft K, and pinion J, substantially as 25 and for the purpose set forth.

2. The crown-gear F, provided with suitable guides and ways or ribs, M O, and bearings T, in combination with the cutter-blocks N, feed- 30 screws S, provided with sprocket-head U, and the cutters R, substantially as and for the purpose set forth.

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

FRANK ARMSTRONG.

Witnesses:

T. R. CRUTTENDEN,

F. T. STAPLES.