

(No Model.)

3 Sheets—Sheet 1.

J. M. BAILEY.
APPARATUS FOR FINISHING PIPE.

No. 569,014.

Patented Oct. 6, 1896.

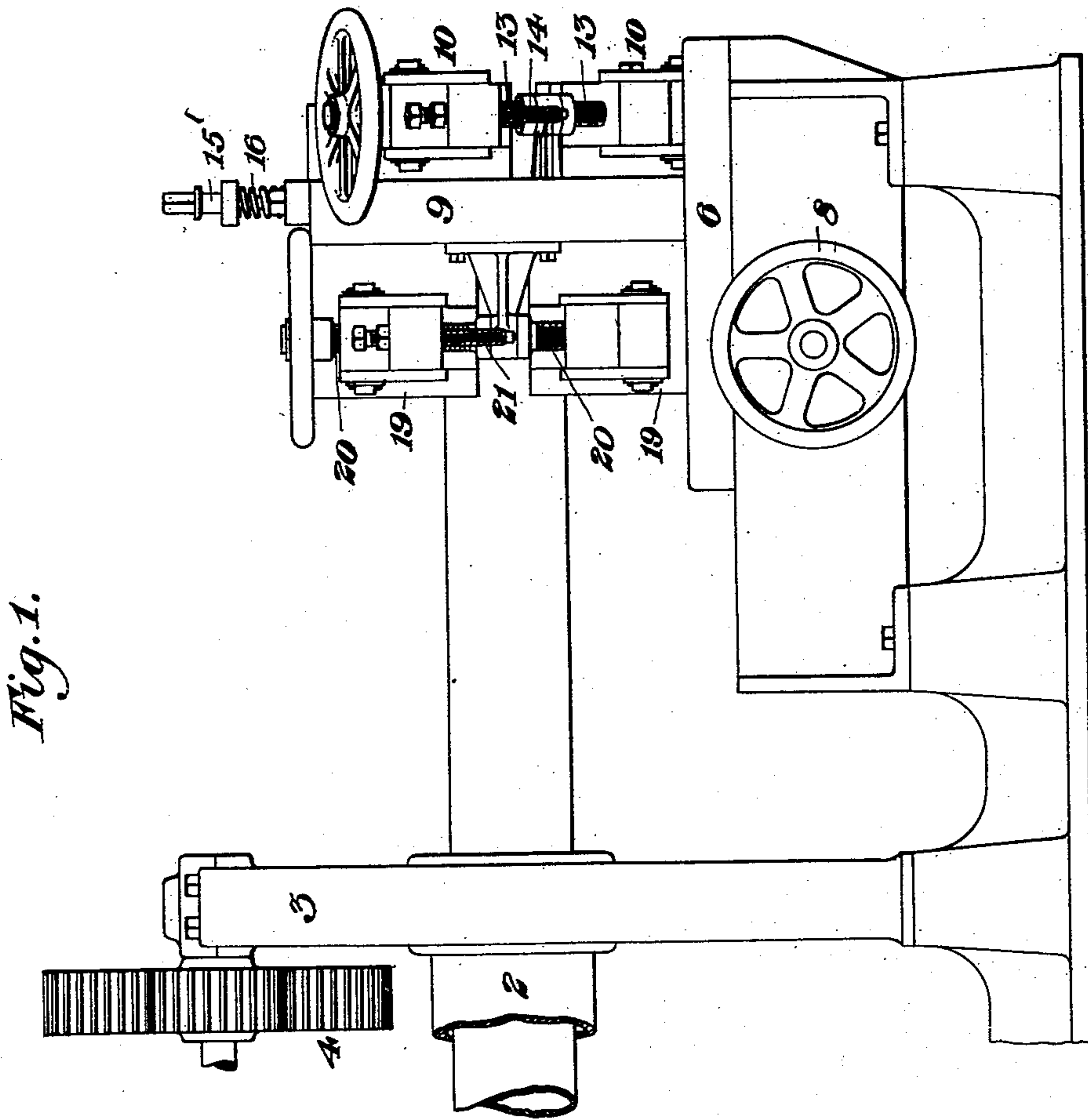


Fig. 1.

WITNESSES

L. H. Corning
J. M. Corning

INVENTOR

James M. Bailey
by Baker & Baker
his attys

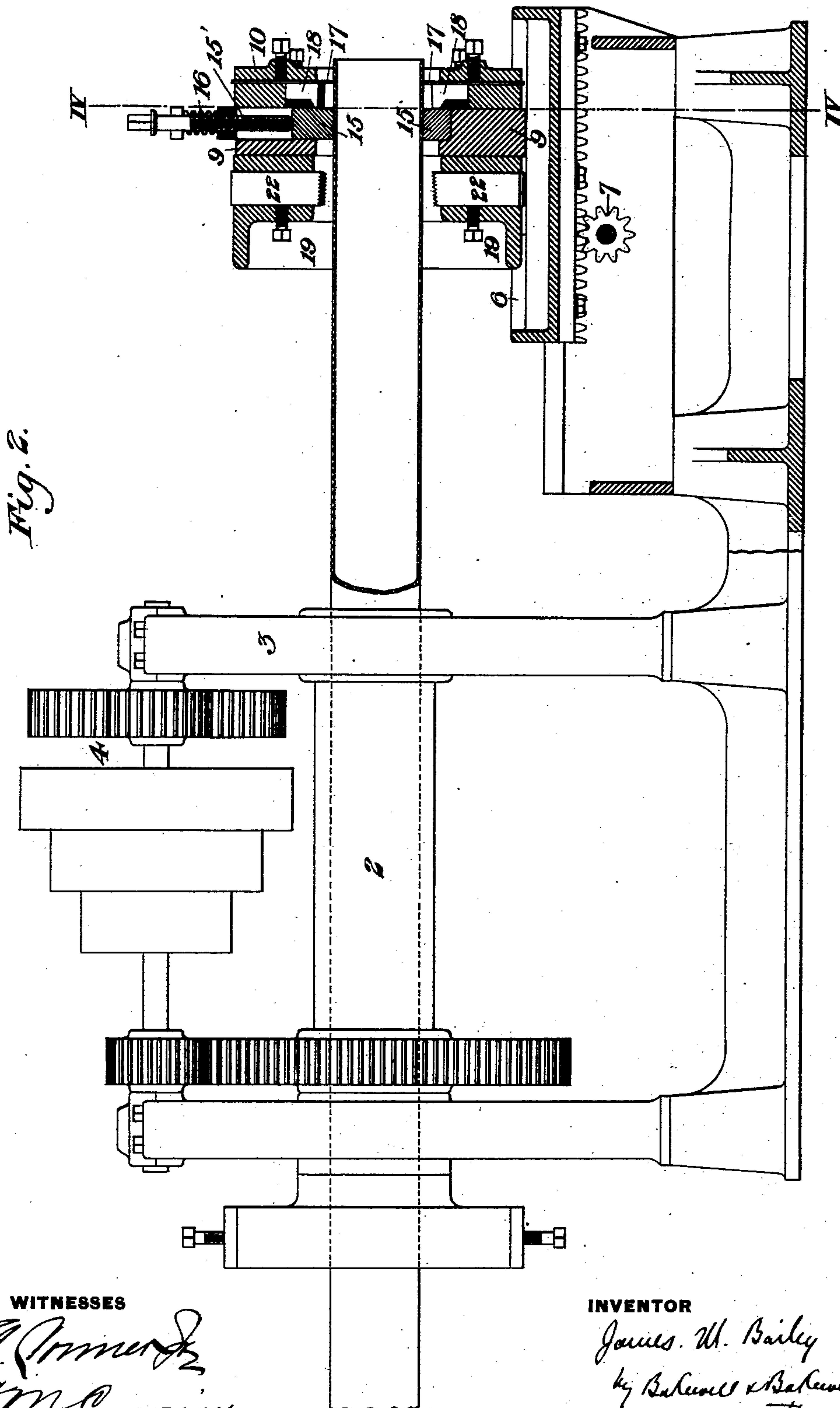
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3 Sheets—Sheet 2.

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WITNESSES

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(No Model.)

3 Sheets—Sheet 3.

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Fig. 4.

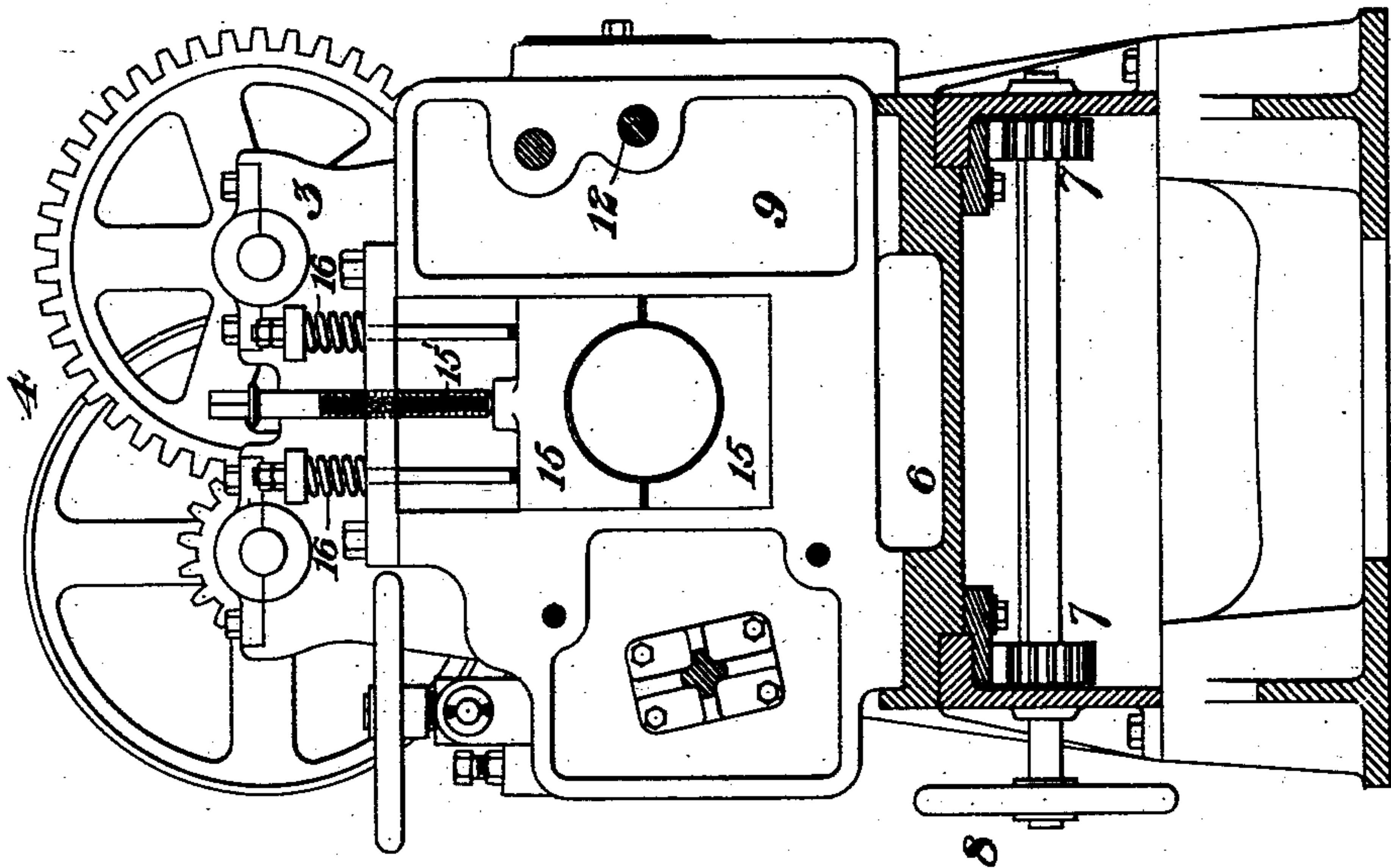
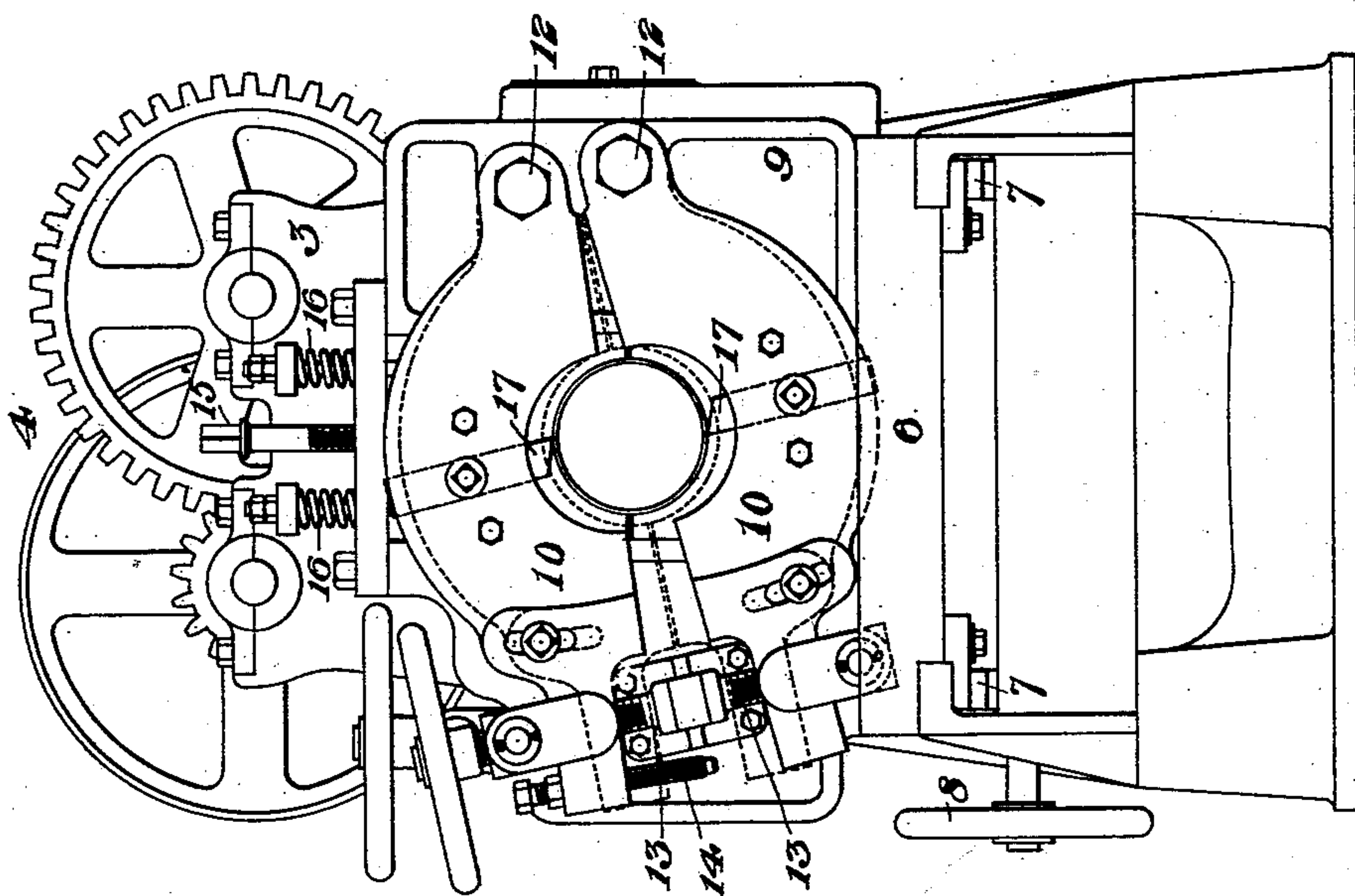


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES M. BAILEY, OF ALLEGHENY, PENNSYLVANIA.

APPARATUS FOR FINISHING PIPE.

SPECIFICATION forming part of Letters Patent No. 569,014, dated October 6, 1896.

Application filed January 16, 1896. Serial No. 575,761. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. BAILEY, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Finishing Pipe, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—
10 Figure 1 is a partial side elevation of my improved machine. Fig. 2 is a partial longitudinal section of the same, showing the pipe being cut off prior to being tapered. Fig. 3 is an end elevation of my improved machine, and Fig. 4 is a cross-section on the line IV IV of Fig. 2.

My invention relates to the threading of metal pipes, and is designed to overcome certain difficulties heretofore encountered in this operation.

The threaded ends of pipes are commonly tapered or beveled exteriorly at the threaded portion, and heretofore it has been the practice to form such taper solely by the action of the threading-dies, which have been used not only to cut the thread, but also to cut away the surplus surface metal and at the same time to feed or draw the dies over the pipe. Such method has been subject to many difficulties. The work and wear upon the threading-dies is severe, for the hard scale-covered surface of the pipe soon wears them, the surplus metal, which must be cut away to constitute the taper, clogs their action, and the defective and inaccurate threads produced frequently make it necessary to cut off the threaded end and to rethread the pipe. The operation has therefore been attended with great expense, waste of material, and loss of time. These difficulties are overcome by my machine, in which, after the end of the pipe has been cut off, I form on the pipe an annular taper or bevel at the place to be threaded, by so doing removing the hard surface-skin, and then by means of separate threading-dies I cut the thread upon the tapered or beveled portion. By this procedure I relieve the threading-dies from the work of tapering, and thus greatly reduce the wear to which they are subjected, so that they

can be used for a much longer time than heretofore, and as they are not apt to be clogged by the metal of the pipe they perform their work quickly and produce a good and accurate thread.

In the drawings, 2 is the usual hollow spindle or pipe-holder, journaled in bearings 3 and rotated by gearing 4, the pipe being clamped in and rotated by this spindle in the usual manner.

6 is a sliding carriage, which carries the cutting, tapering, and threading dies, and which is arranged to be moved longitudinally of the machine by a rack-and-pinion mechanism 7, operated by a hand-wheel 8. Upon this carriage is mounted an upright frame 9, which carries on one side the cutting and tapering dies and on the other the threading-dies.

The cutting and tapering dies are carried by swinging holders 10 10, which are pivoted at 12 to the frame 9 and are swung toward and from each other by the right and left hand screw shaft 13, their inward movement being limited by an adjustable bolt 14. The centering-clamps 15 15 are carried by the upright frame 9, the lower half being stationary, while the upper half is forced downwardly upon the pipe by a screw 15' against the action of springs 16 16, which immediately open the clamps 15 15 as soon as the screw is turned backward. The end of the pipe is thus centered, but is permitted to turn as the spindle 2 rotates, the clamps 15 15 holding the pipe frictionally.

The cutting-off dies 17, which are carried by the holders 10 10, are two or more in number and set opposite to each other and project inwardly farther than do the taper-cutting dies 18, also carried thereby, so that when the pipe is inserted between the holders and they are drawn together by the screw-shaft 13 the clamps 15 15, having first frictionally engaged the pipe, the cutters next begin to act, and when they have passed through the pipe and severed its end the tapering-dies engage its surface and cut thereon the desired bevel.

Upon the other side of the plate 9 are the threading-die holders 19 19, which are piv-

oted similarly to the holders 10, and are swung toward and from each other by a right and left hand screw 20, their approach being limited by a stop 21.

5 The cutters 22 are set in the holders and project into the interior cavity thereof. They are preferably somewhat inclined from the radial, so that when the pipe is rotated they exert a true cutting action and produce a
10 clearer and more accurate thread than can be formed with radial dies.

The operation of the machine is as follows: The die-holders on the plate 9 having been opened by operation of their adjusting-screws
15 the pipe is inserted axially through the spindle 2 and clamped frictionally by the centering-clamps 15 15, so as to bring opposite to the cutters 17 that part of the end of the pipe which is to be severed. The holders 10 10
20 are then closed, and this causes the cutters 17 to engage the pipe. As the pipe is turned by rotation of the spindle 2, its engagement with the cutters cause the latter to cut off the end, as shown in Fig. 2. When they have
25 passed through the pipe, the tapering-dies 18, the ends of which are properly tapered for that purpose, come into action as the holders 10 10 are brought still nearer together and produce upon the pipe end an annular bevel
30 or taper, and by so doing, in addition to giving the taper, they cut off from the part to be threaded the hard scale-covered surface and remove the surplus metal which heretofore has been removed by the threading-dies.
35 When the approach of the holders 10 10 has been stopped by the screw 14, the action of the tapering-dies is finished, and the holders 10 are then separated from the pipe by reversing the screw 13. The clamps 15 15 are
40 then disengaged from the pipe. To bring the threading-dies 22 into action, the carriage 6 is moved along the bed of the machine over the pipe until those dies come opposite to the portion of the pipe which has been tapered
45 by the dies 18, and by means of the screw 20 the parts of the holders 19 19 are drawn together, so as to cause the threading-dies to engage the pipe. Then as the pipe is rotated by the spindle, the threading-dies, whose
50 ends are tapered to conform to the taper on the pipe, cut a thread thereon, a very few rotations of the pipe sufficing to complete the threading. When the thread has been formed, the holders 19 are opened, the pipe is un-
55 clamped from the spindle, and can be withdrawn, leaving the machine ready for threading another pipe in the manner described above.

The advantages of my invention will be ap-
60 parent to those skilled in the art, since the apparatus is simple in construction and accomplishes the work of cutting off, tapering, and threading much more rapidly than has heretofore been possible and with much less
65 wear upon the tools.

Many changes may be made in the form and arrangement of the various parts without departing from my invention, since

What I claim is—

1. In a pipe-machine, the combination of 70 cutting-dies arranged to cut through a pipe, and taper-cutting dies arranged to act upon the outer surface of the end portion of the pipe and cut the same to conform to the taper of the threading-dies, substantially as de- 75 scribed.

2. In a pipe-machine, the combination of cutting-dies arranged to cut through a pipe, and taper-cutting dies arranged to engage the outer surface of the end portion of the pipe 80 and cut away the metal so as to conform to the taper of the threading-dies, and a movable holder by which the taper-cutting dies are carried; substantially as described.

3. In a pipe-machine, the combination of 85 taper-cutting dies arranged to engage the outer surface of the end portion of the pipe and cut the same to conform to the taper of the threading-dies, threading-dies arranged to act upon the said tapered portion, and 90 means for bringing the threading-dies into action after the operation of the taper-cutting dies; substantially as described.

4. In a pipe-machine, the combination of cutting-dies arranged to cut through a pipe, 95 taper-cutting dies arranged to cut away the outer surface of the end portion of the pipe so as to conform to the taper of the threading-dies, threading-dies arranged to act upon the said tapered portion, and means for bring- 100 ing said dies into operation successively in the order recited; substantially as described.

5. A pipe-threading machine, having cutting-dies for tapering the pipe to conform to the taper of the threading-dies, and thread- 105 ing-dies, said dies being arranged and adapted to act upon the pipe successively, and said dies being mounted upon a carriage which is movable along the pipe to bring the tapering and threading dies successively to the part 110 of the pipe to be threaded; substantially as described.

6. In a pipe-threading machine, the combination with a plate or frame, of cutting- 115 dies for tapering the pipe to conform to the taper of the threading-dies carried on one side of the plate, and threading-dies carried upon the opposite side thereof, said dies being adapted to be brought into operation upon the pipe successively; substantially as de- 120 scribed.

7. In a pipe-threading machine, the combination with a plate or frame, having clamps for the pipe, of cutting-dies for tapering the pipe to conform to the taper of the thread- 125 ing-dies carried on one side of the plate, and threading-dies carried upon the opposite side thereof, said dies being adapted to be brought into operation upon the pipe successively sub- 130 stantially as described.

8. The combination of cutting-dies adapted
to cut through a pipe, and cutting-dies for ta-
pering the pipe, said dies for tapering being
arranged back of the cutting-dies, adjusting
5 mechanism by which the die-holders are
caused to approach the pipe to bring the cut-
ting and tapering dies successively into en-
gagement therewith, and a stop to limit in-

ward movement of the dies; substantially as
described.

In testimony whereof I have hereunto set
my hand.

JAMES M. BAILEY.

Witnesses:

H. M. CORWIN,
G. I. HOLDSHIP.