

(No Model.)

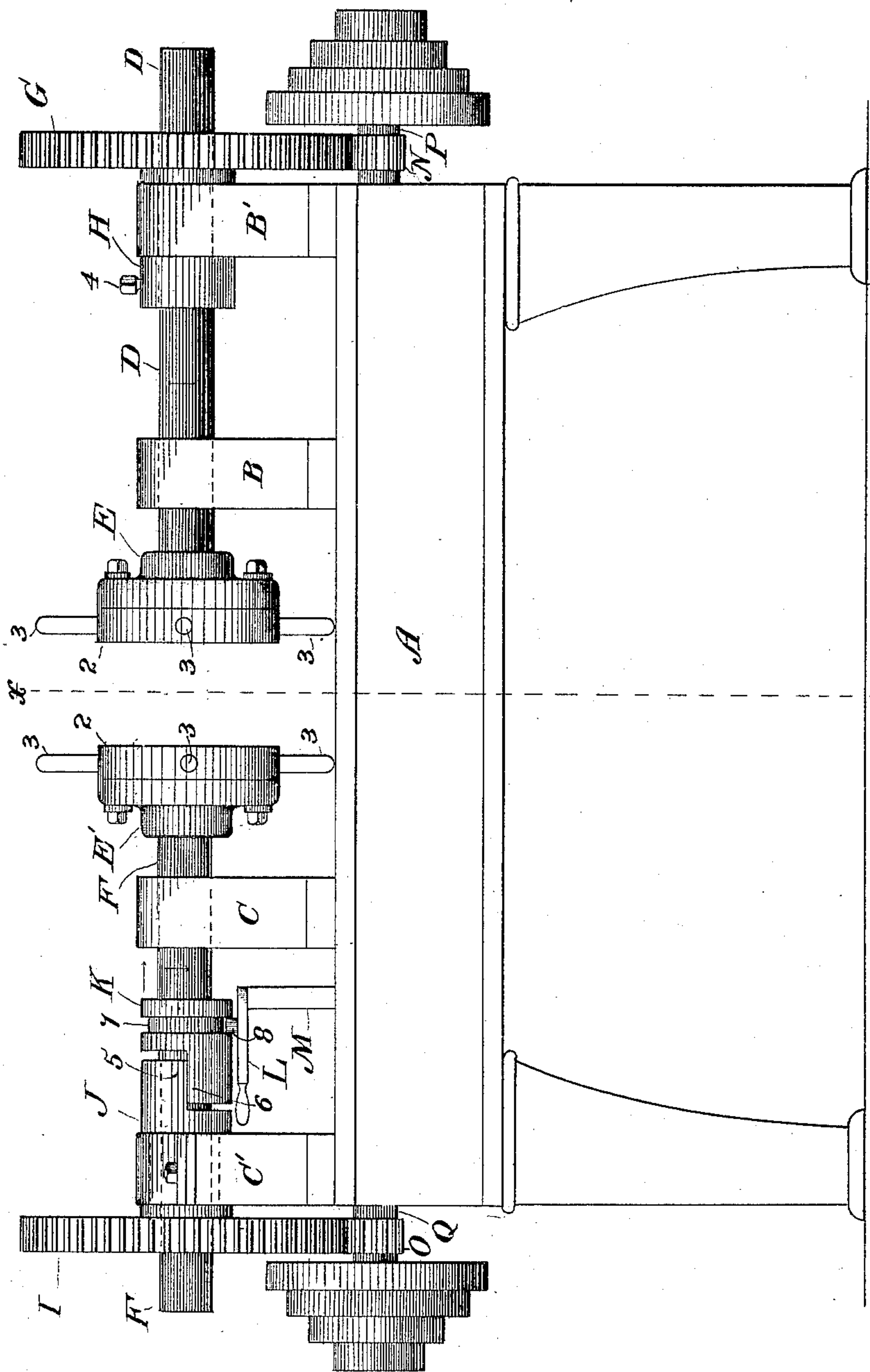
2 Sheets—Sheet 1.

H. C. WALTER
MACHINE FOR THREADING PIPE NIPPLES.

No. 415,592.

Patented Nov. 19, 1889.

Fig 1



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(No Model.)

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Fig 2

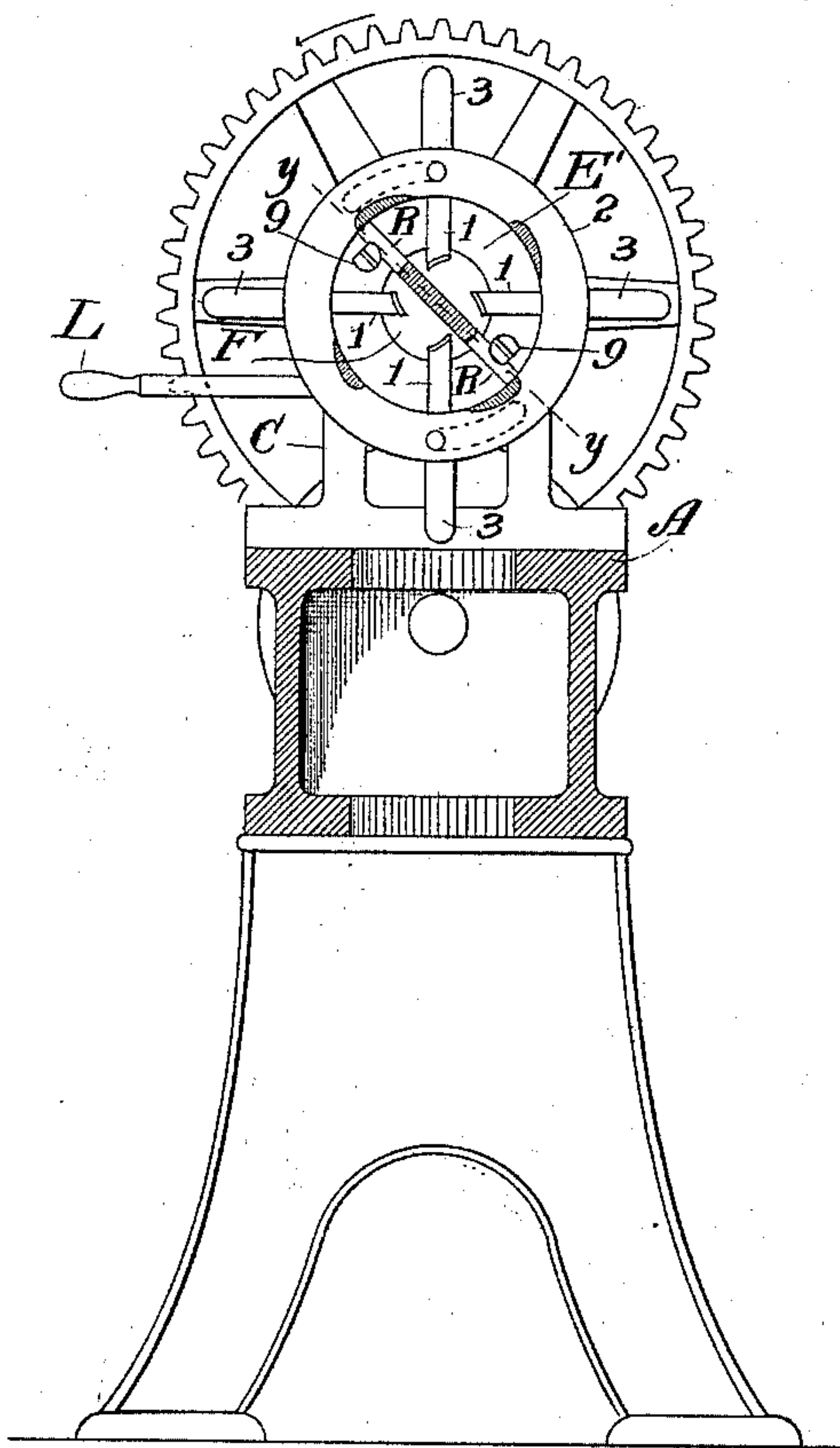


Fig 3

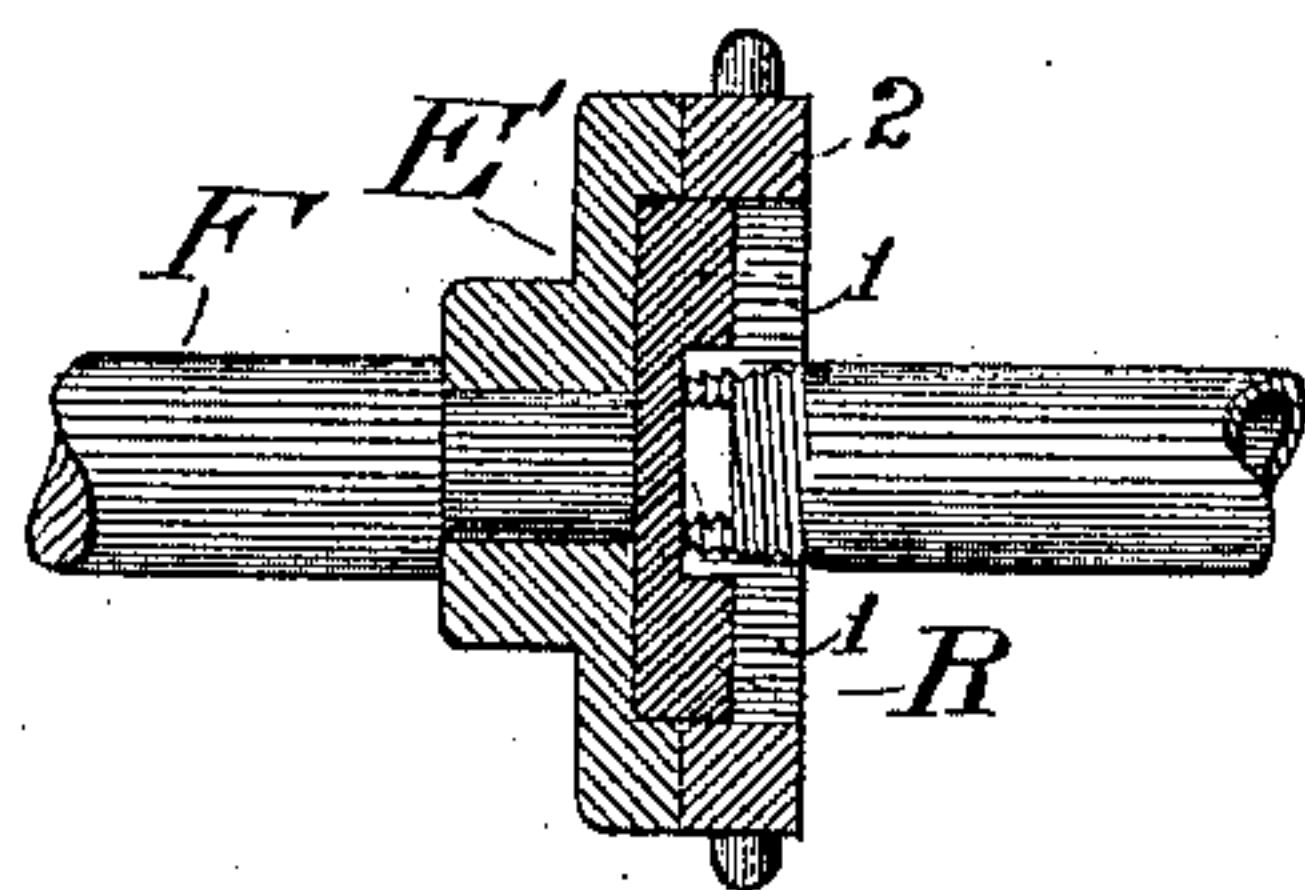
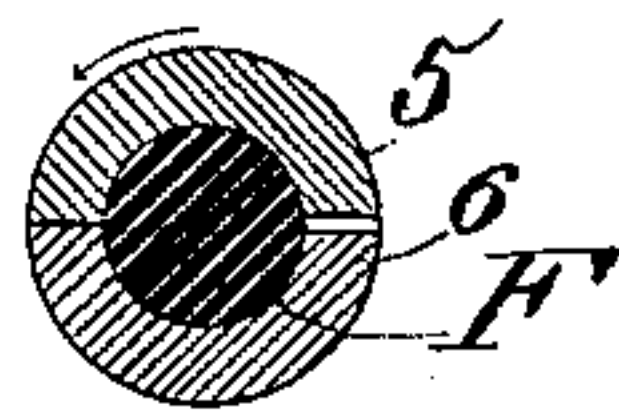


Fig 4



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UNITED STATES PATENT OFFICE.

HENRY C. WALTER, OF BRIDGEPORT, CONNECTICUT.

MACHINE FOR THREADING PIPE-NIPPLES.

SPECIFICATION forming part of Letters Patent No. 415,592, dated November 19, 1889.

Application filed January 2, 1889. Serial No. 295,113. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. WALTER, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Threading Pipe-Nipples; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in machines for cutting threads on nipples, and has for its object to render the operation of cutting said threads automatic, and, furthermore, to accomplish the threading of the two ends of a nipple in the same time that has heretofore been consumed in threading one end.

With these ends in view my invention consists in certain details of construction and novel organization of mechanisms and in the combinations of devices, which will hereinafter first be described, and then specifically be designated by the claims.

The accompanying drawings represent with sufficient fullness those portions or features which it is deemed necessary to show of a suitable organization of mechanism for carrying out my invention, such as will enable those skilled in the art to which my invention appertains to have a full, clear, and exact understanding of the same.

There are some changes which may be made without departing from the spirit of my invention and which will be mentioned hereinafter, while others more obvious would be suggested to a skillful workman, or one skilled in the art to which my invention appertains, simply by reading this specification and examining the drawings, in which—

Figure 1 is a front elevation of a machine embodying my invention; Fig. 2, a section at the line $x x$ of Fig. 1; Fig. 3, a detail section at the line $y y$ of Fig. 2, a section of pipe being shown within the thread-cutters; and Fig. 4, a detail cross-section of the clutch mechanism.

Similar letters denote like parts in the several figures.

A is the bed of the machine, and B B' C C' are journal-boxes.

D is a spindle journaled and supported within the box B, and secured on the inner end of said spindle is a chuck E. 55

F is also a spindle journaled and supported within the box C, and E' is a chuck secured on the inner end of this spindle F. Both of these chucks are of ordinary construction as far as the arrangement and operation of their cutters 1 are concerned, and I therefore will not enter into any description of said chucks, as they form no part of my present invention. The only features of this old and well-known chuck which are to be borne in mind are that the thread-cutters 1 are operated by turning the ring 2, and this is effected by manipulating the usual handles 3. 65

G is a gear-wheel having a hub H, through which extends the spindle D. This hub is journaled within the box B', and is rigidly secured to the spindle D by a set-screw 4. 70

I is also a gear-wheel, having a hub J, through which the spindle F extends. The spindle F and hub J have no connection whatever with each other, and are perfectly free to revolve independently, and, moreover, said spindle has a free lengthwise movement within the hub J, which latter is journaled within the box C'. The inner end of the hub J is formed with a shoulder 5, which is adapted to engage with a shoulder 6, extending from a collar K, rigidly mounted on the spindle F. This collar has a circumferential groove 7, and a stud 8 projects from an ordinary hand-lever L within said groove. The lever L is pivoted to an upright M, and is operated to throw the collar within and out of engagement with the hub J, and also to project or withdraw the chuck E', for the purpose presently explained. 85

The wheels G I are geared, respectively, with wheels N O, which latter are mounted on shafts P Q, revolving in opposite directions, so that it will be readily understood that when the clutch 5 6 is engaged the chucks E E' will revolve in opposite directions. Now, when a pipe-section is placed with its ends within the respective chucks and the lever L manipulated to clamp said section firmly between the chucks, the cutters within the latter will immediately commence to thread the two ends of the pipe. Now, as the tendency of this threading is to draw the chucks to- 95 100

gether, and as the spindle F has a lengthwise movement, it follows that the chuck E' will be drawn toward the chuck E.

In order that the desired depth of thread may be uniformly cut, I provide a stop R, which is secured at the bottom of the chucks by screws 9, the end aimed at in this connection being that when the pipe shall have been threaded to the required depth the extremities of said pipe will abut against said stops simultaneously with the disengagement of the clutch-shoulders 5 6. Of course, if it were possible for the initial cut of the two threads to be synchronous, and if both chucks revolved at exactly the same rate of speed, so that the cutting of both threads was begun and ended at precisely the same moment of time, then the stops would be superfluous; but, as a matter of fact, the initial cutting of the two threads is generally sequential, and one end of the pipe usually abuts against its stop before the threading of the other end is completed, so as to cause a similar abutment. This is easily accounted for, because only by the merest accident can the resistance offered by the two chucks to the preliminary clamping of the pipe be exactly equal, and very rarely will the ends of said pipe center at precisely the same moment of time within the operative field of the cutters, and for the further reason that it is well-nigh impossible that there could be an exact equality between the size of the driving-pulleys, the lost motion of the gearings, the wear on the bearings, and the friction of the belts.

It will be clearly seen that the length of the line of engagement between the shoulders 5 6 must be equal to the combined depths of the threads which are to be cut. The provision of the stop R enables threads of different depths to be cut at the respective ends of the pipe, it only being necessary in this connection to use stops which are farther in the rear of the cutters, or vice versa, as the case may demand.

When both ends of the nipple are threaded and the shoulders 5 6 disengaged, the chuck E' will be reversed as to its revolution, owing to the rigid connection thus established between the two chucks through the medium of the threaded pipe, and the operator then shuts off the power from the machine, spreads the cutters, backs the spindle F, and removes the threaded nipple.

From the foregoing description it will be obvious that the relative speeds of the two chucks have nothing whatever to do with the successful carrying out of my invention, since, as I have above fully explained, the provision of the stops renders it immaterial whether or not the ends of the nipple are threaded one in advance of the other,

and for this reason the chuck E may be stationary on a fixed spindle; but I prefer the construction shown and described, since it contemplates the rapid threading of the nipple; and, moreover, if one stationary chuck were used, the speed of the other chuck would have to be doubled, in order to accomplish the result effected by the two revolving chucks.

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

1. The combination of the chucks mounted one upon a spindle stationary as to lengthwise movement, and the other upon a loose spindle having a lengthwise movement, the shouldered collar rigid with the loose spindle, the shouldered hub rigid with the power-transmitting wheel and having a predetermined line of engagement with said collar during the lengthwise movement of the loose spindle, and the stops secured within the chucks and operating to check said lengthwise movement at the moment of the disengagement of said hub and collar, substantially as set forth.

2. The combination of the spindle D, rigidly secured to the hub H, the hub J, having a shoulder 5, the spindle F, extending loosely through said shouldered hub, the collar K, rigid on the spindle F and having a shoulder 6, adapted to engage with the shoulder 5, the circumferential groove 7 within said collar, the pivoted hand-lever L, having a stud 8 extended within said groove, the chucks mounted on the inner ends of said spindles, and the stops R, secured within said chucks, substantially as and for the purposes hereinbefore set forth.

3. In a machine for automatically threading the two ends of nipples, two thread-cutting chucks revolving in opposite directions and provided each with detachable stops which limit the depth of threads, in combination with means for predetermining the effective action of said chucks, substantially as set forth.

4. In a machine for automatically threading the two ends of nipples, two thread-cutting chucks mounted on opposite revoluble spindles, one of which latter has a lengthwise movement and an engagement with the motive power predetermined by the combined depths of threads cut on said ends, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY C. WALTER.

Witnesses:

S. S. WILLIAMSON,
J. J. DEVITT.