(No Model.) 2 Sheets—Sheet 1.

J. B. Z. DUMAIS.

PIPE THREADING MACHINE.

No. 477,406. Patented June 21, 1892.

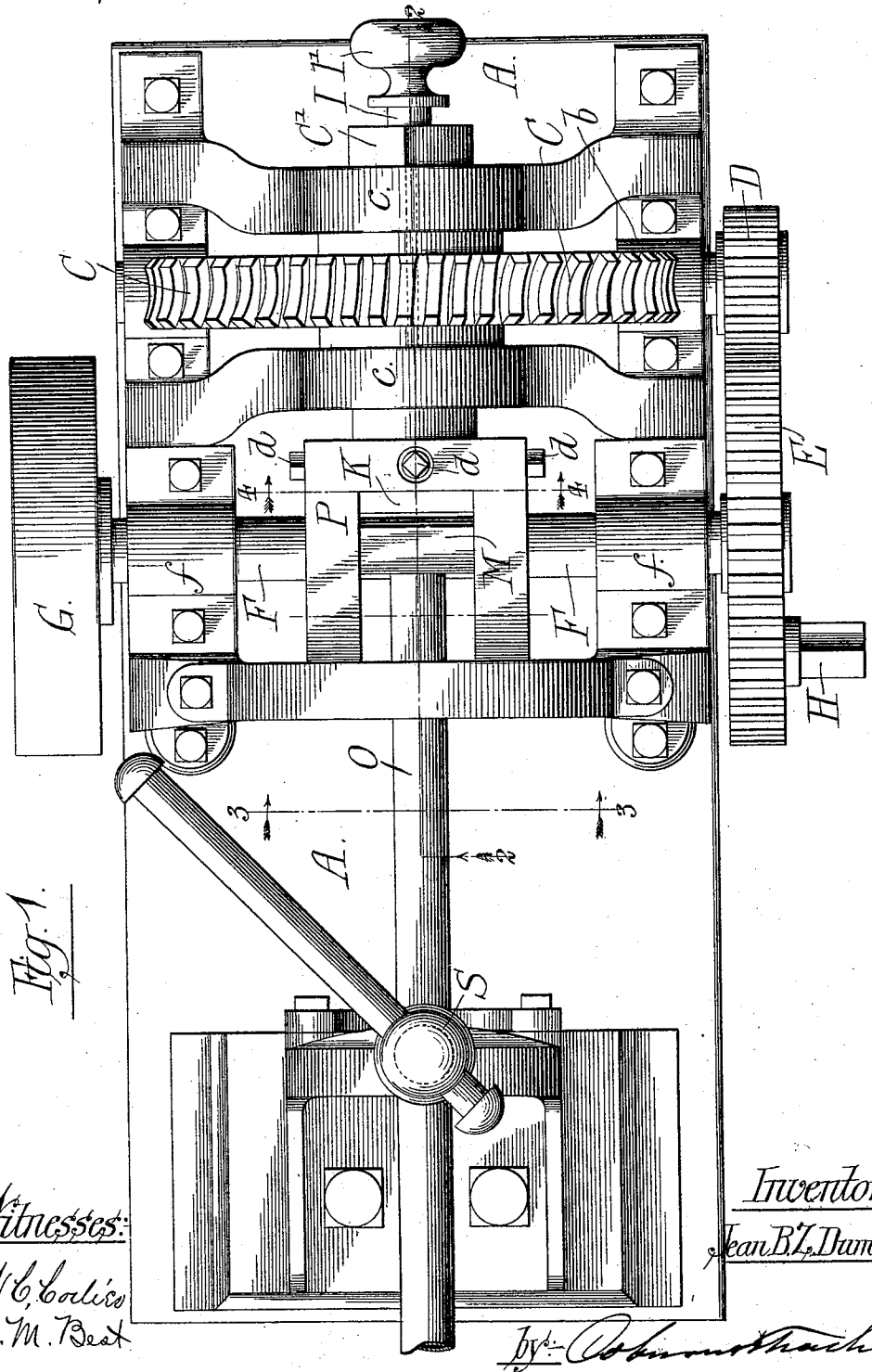

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

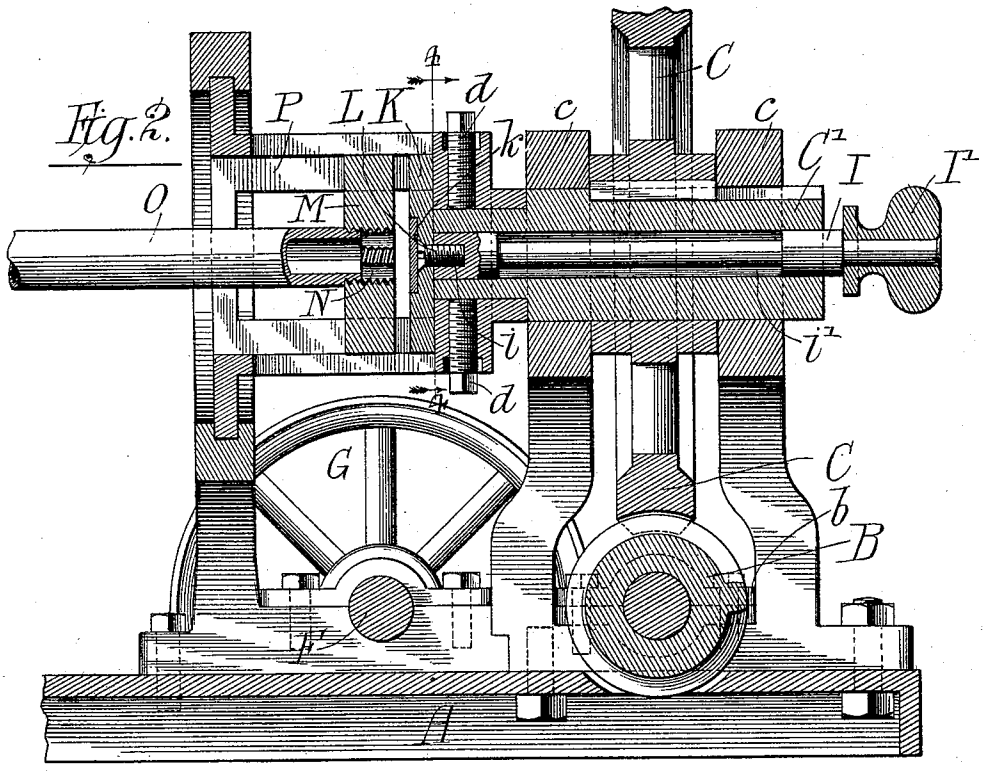


Fig. 3.

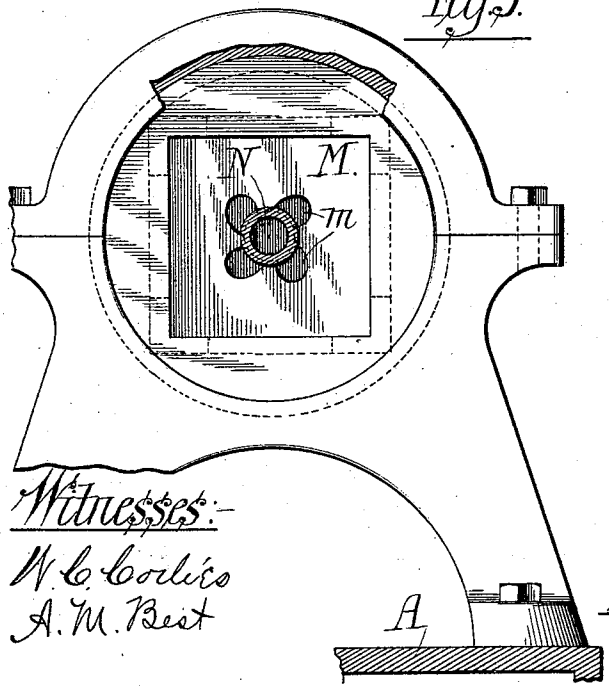
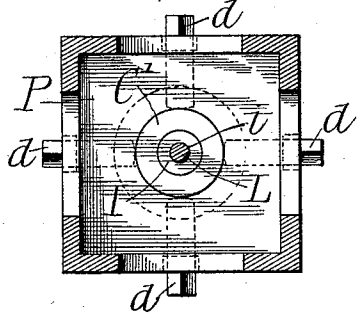


Fig. 4.



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UNITED STATES PATENT OFFICE.

JEAN B. Z. DUMAIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO EDGAR A. LORD, OF SAME PLACE.

PIPE-THREADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 477,406, dated June 21, 1892.

Application filed July 18, 1891. Serial No. 399,933. (No model.)

To all whom it may concern:

Be it known that I, JEAN B. Z. DUMAIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pipe-Threading Machines, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a pipe-threading machine embodying my invention. Fig. 2 is a vertical longitudinal section taken on the line 2 2 of Fig. 1. Fig. 3 is a detail cross-section showing the die and the frame holding the die, taken on the line 3 3 of Fig. 1; and Fig. 4 is a detail cross-section of the die-holder detached, with the die removed from the same, taken on the line 4 4 of Fig. 1.

My invention relates to pipe-threading machines, and has for its object the construction of a machine for that purpose whereby the pipe which it is desired to thread may be threaded by a continuous and rapid movement of a screw-threading die on the circumference of the pipe; and my improvement consists in the construction of a cage or frame adapted to hold the die and in suitable devices or methods whereby the cage or frame may be rotated with the die about a stationary pipe to be threaded; and my invention consists in various other devices and improvements, as hereinafter described.

Heretofore pipes have been threaded by a die fixed in the center of a two-armed lever operated by hand, and the work was accomplished in a slow and laborious manner.

By my improved machine the screw-threading die may be operated by any applied power and the work is rapidly and satisfactorily accomplished. All the parts are preferably iron or steel.

In the drawings, A represents the bed of the machine, which may be secured to any suitable support. B represents the worm which actuates the gear C, with which it meshes. The worm B is mounted in boxes *b b* in the bed of the machine. On one end of the shaft of the worm is mounted a small gear-wheel D, adapted to mesh with and be operated by the gear-wheel E, which is mounted on the shaft F, which has its bearings in boxes *f f* in the bed of the machine. The shaft F is actuated by a pulley G, which may be driven by any suitable power. Whenever it is desired to operate the machine by hand, a suitable crank and handle may be attached to the stud-pin H in the circumference of the gear-wheel E. The gear-wheel C is mounted on a journal C′, having its bearing in boxes *c c*, secured in the frame of the machine. Extending longitudinally through the center of the journal C′ is a circular hole *i*′, in which the spindle I fits loosely. This spindle projects outwardly a sufficient distance to have secured on it a knob I′, by which the spindle may be turned, as hereinafter described.

K is a metal plate having on its inner end at its center a recess *k*, through which passes a screw L, which is screwed into the opening *i*, formed in the inner end of the spindle I, as shown in Fig. 2, the opening *i* being screw-threaded, so as to allow the screw L to be screwed into it, by means of which the plate K and spindle I are removably secured to each other for the purposes hereinafter set forth.

M is a die rectangular or square in form, having in its center a screw-threaded opening N, which may be of any size, so as to fit pipes of different diameters. This screw-threaded opening N may be entirely screw-threaded or it may have four or more cutting-edges, with the remaining portions cut away, as shown at *m* in Fig. 3, for the purpose of allowing the iron filings to fall away from the die. These dies are adapted to be screwed onto the pipe to be threaded, as hereinafter described.

O represents a pipe to be threaded, which is rigidly secured at or near one end while the other end is being operated upon. This pipe may be secured by clamping-vise S, as shown in Fig. 1, or by any device for holding or clamping such pipes.

P is a cage rectangular or square, as shown in Fig. 4, constructed, preferably, with openings in its sides for the purpose of allowing the chips from the pipe to fall out of it. This cage P is open at one end, so that the plate K and the die M may be placed therein, both of these parts being shaped to conform to the interior of the cage. The plate K is pushed

into the farther or closed end of the cage, where it is secured to the inner end of the spindle I, as already stated and as seen in Fig. 2 of the drawings. The die M is placed in the cage after the plate K and is pushed in nearly or quite to the latter. The die M is loose within the cage, so that it is free to move back and forth. When the parts are thus arranged and the pipe O is fixed with one end extending into the cage for threading, as seen in Fig. 2, the die M will not always engage at first with the pipe without some assistance. The plate K is for this purpose, for, being fastened upon the end of the spindle I, which has some reciprocating motion, this plate may be pushed outward against the die M, and so cause it to engage with the end of the pipe, after which it will, of course, travel along the cage toward the open end thereof as the thread is formed. The inner or closed end of the cage is removably secured to the journal C′ of the gear-wheel C by set-screws *d*, as shown in Fig. 1.

The cage P, with the die M in it, revolves about the pipe to be threaded, the die M moving in the cage toward the open end thereof as the pipe O is being threaded by said die.

Whenever it is desired to thread a pipe, the pipe is placed in a vise or clamping-machine, which rigidly holds it in position. The die M is pressed by the plate K and spindle I onto the pipe O until the cutting-threads of N take hold of and begin to operate on the pipe O. After the die has commenced threading the pipe the pressure of the plate K on the die is unnecessary, as the die in revolving feeds itself and is drawn toward the open end of the cage. The worm B rotates the gear C and shaft C′, and the plate K and die M are revolved in and by the cage P, which is rigidly secured to the journal C′, with which the cage P revolves.

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

1. In a pipe-threading machine, a revoluble cage or die-holder much longer than the thickness of the die and open at one end, in combination with a threading-die set loosely in said holder and free to slide back and forth therein lengthwise of the holder, and a pipe-support in which the pipe to be threaded is rigidly secured, whereby the die is turned upon the end of the pipe by the revolution of the holder and at the same time is automatically fed by moving forward bodily in the cage as the thread is cut on the pipe, substantially as described.

2. In a pipe-threading machine, the cage P, in combination with the die M, plate K, and spindle I, substantially as described.

3. The spindle I, having a knob or handle I′, and the plate K, in combination with the die M, substantially as shown and described.

4. In a pipe-threading machine, the worm B, gear-wheel C, journal C′, and cage P, rigidly secured to said journal, in combination with the die M and plate K, substantially as shown as described.

5. In a pipe-threading machine, the pulley G, shaft F, gears E and D, worm B, gear-wheel C, and journal C′, in combination with the cage P, plate K, spindle I, and die M, substantially as described.

6. The stud-pin H, gears E and D, worm B, gear-wheel C, journal C′, and cage P, rigidly secured to said journal, in combination with the plate K, spindle I, knob I′, and die M, substantially as shown and described.

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