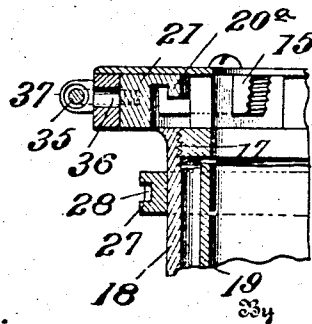
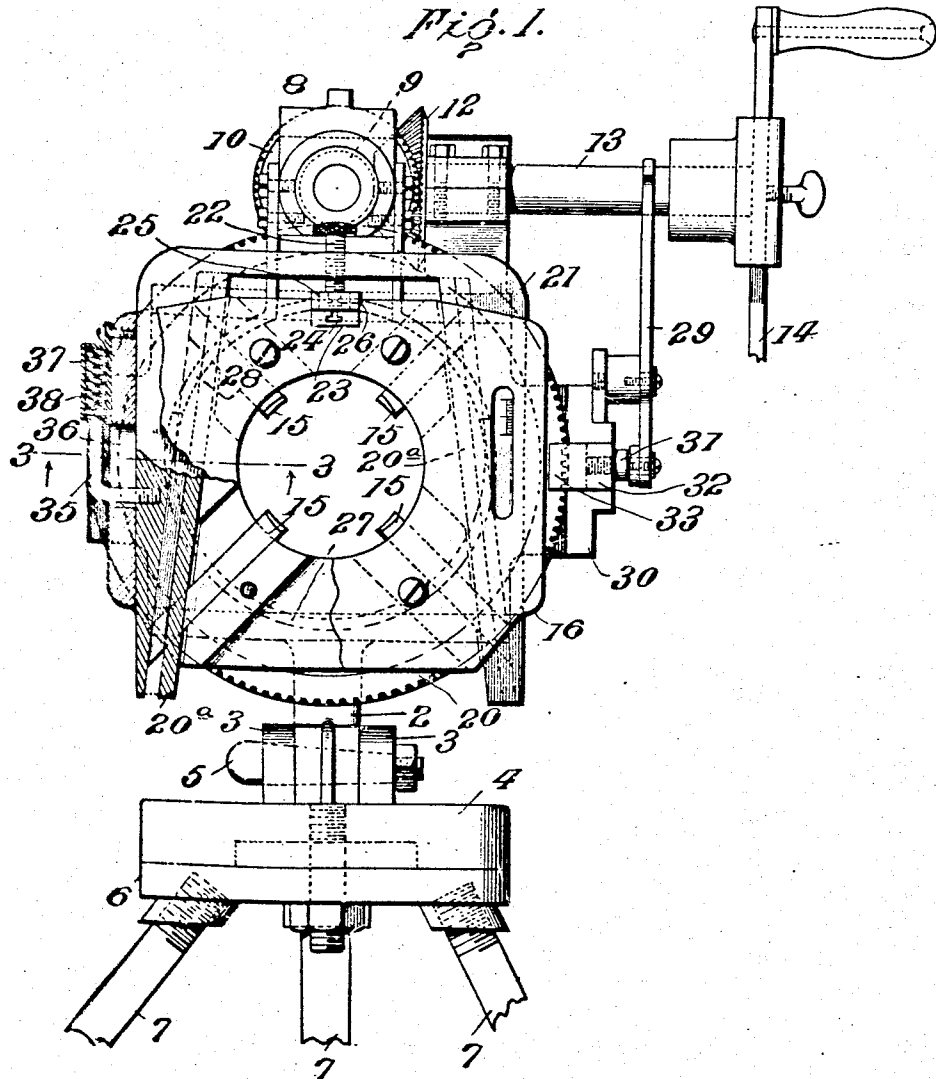


No. 828,808.

PATENTED AUG. 14, 1906.

B. BORDEN.
PIPE THREADING MACHINE.
APPLICATION FILED APR. 14, 1905.

2 SHEETS—SHEET 1.



Witnesses
John L. Lurie
Francis C. McGuire

Bradford Borden.

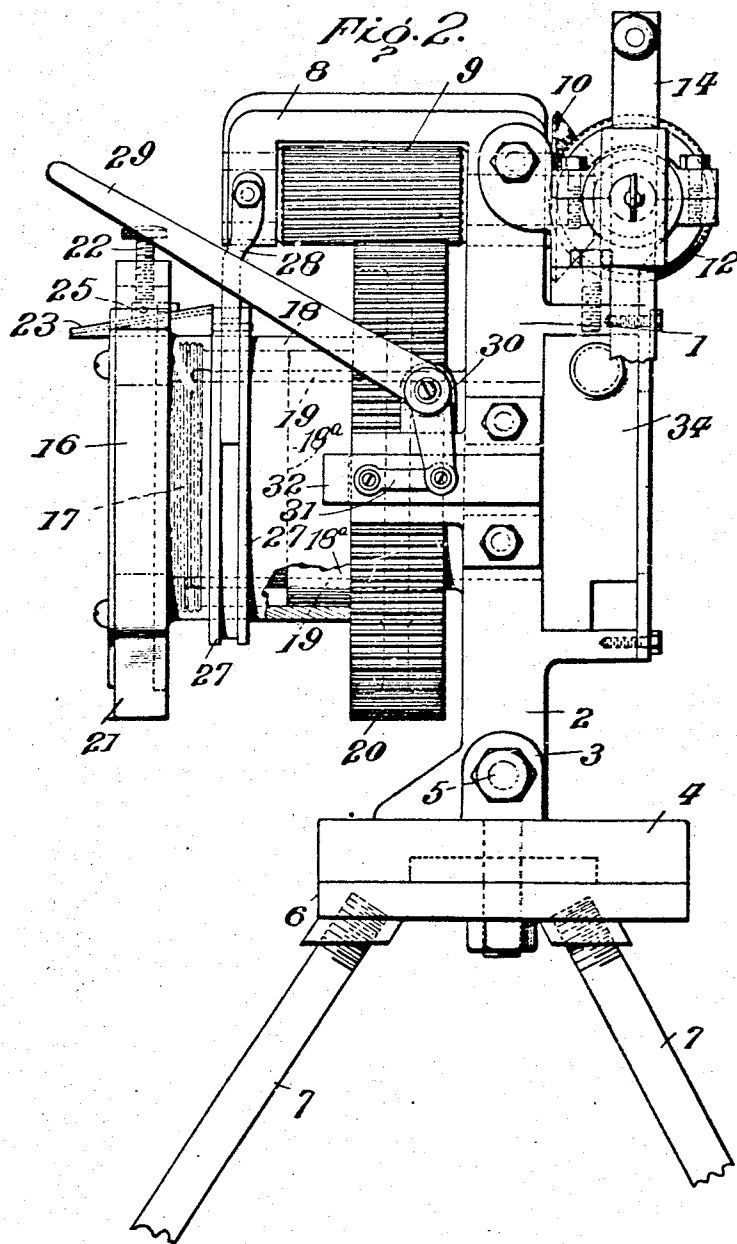
John L. Lurie
Attorney

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

BRADFORD BORDEN, OF WARREN, OHIO, ASSIGNOR TO THE BORDEN COMPANY, OF WARREN, OHIO, A CORPORATION OF OHIO.

PIPE-THREADING MACHINE.

No. 828,808.

Specification of Letters Patent.

Patented Aug. 14, 1908.

Application filed April 14, 1905. Serial No. 255,579.

To all whom it may concern:

Be it known that I, BRADFORD BORDEN, of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Pipe-Threading Machines; 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.

The primary object of this invention is to provide a pipe-threading machine capable not only of cutting a taper thread, but also for cutting both right and left hand threads, it being necessary to only change the chasers; and further objects are to insure the automatic return of the chasers to their starting positions at the completion of the threading operation, when the chaser-head is drawn to its starting-point, to enable the chaser-head to be readily removed from its carrier, and to avoid having any of the operating parts overhang the front of the machine.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation, parts being indicated in dotted lines. Fig. 2 is a side view. Fig. 3 is a sectional view on line 3 3, Fig. 1.

Referring to the drawings, 1 designates a ring-like frame, which is preferably equipped with a tongue 2, fitted between jaws or posts 3 of a base-plate 4, said tongue being pivotally held by a tapered nutted bolt 5, so as to permit the machine as a whole to automatically accommodate itself to the pipe to be threaded, and thereby insure perfect alignment and avoid undue strain on the chasers, all as contemplated by the invention patented to me by Letters Patent of the United States No. 740,799, dated October 6, 1903. The base-plate 4 is itself axially movable on a bed-plate 6, supported by legs 7. It may, however, be secured directly to a work-bench. In an overhanging arm 8 of frame 1 is journaled a gear-pinion 9, the shaft of which at one end has a beveled gear 10 fast thereon and meshing with a bevel-gear 12 on an operating-shaft 13 at right angles to pinion 9. Thus the operating-handle 14 is located at the side of the machine, and I am enabled to avoid having any parts overhanging at the front.

15 designates a series of chasers mounted in a stock or housing 16, which latter has a threaded extension 17, screwed into a sleeve 18, revolubly mounted on a tubular extension 19, projecting from frame 1. The sleeve 18 carries a gear-wheel 20, which meshes with pinion 9, the latter being of greater length than the width of the gear-wheel. This sleeve 18 carries a bushing 18^a of Babbitt metal to form a bearing on tubular extension 19. The several chasers 15 are equipped with grooves to receive tongues 20^a of the side members of an adjuster 21, so that by moving the latter longitudinally all of the chasers will be moved simultaneously, after the manner contemplated by my pending application for patent, Serial No. 244,933, filed February 9, 1905. Also, as pointed out in said application, the adjuster carries a set-screw 22, which is engaged by a wedge 23, so that as the work progresses the adjuster will be gradually moved outward, carrying with it the chasers, and thus form a taper thread. In the present instance I have shown the wedge 23 as formed with a longitudinal T-groove to accommodate a T-lug 24, depending from a block 25, to which the reduced end of screw 22 is secured by a pin 26, fitting in a groove of such end. The wedge 23 is fixedly secured to a ring 27, encircling sleeve 18, said sleeve having a groove therein to accommodate holding-arms 28, depending from the overhanging arm 8. These arms 28 allow ring 27 to revolve with the chaser-housing, but prevent it from moving longitudinally of or with sleeve 18. In consequence as the chaser-housing travels inwardly during the cutting operation the wedge 23, although it revolves with such housing, effects the gradual outward movement of adjuster 21 as the block 25 travels upwardly on the tapered surface of the wedge. In consequence the chasers are gradually moved outward, so as to cut a taper thread.

29 designates a lever fulcrumed on a block 30, secured to frame 1 and connected by a link 31 to a sliding plate 32, fitted in a groove of said block, said plate having at one end an overhanging portion 33, which engages the side face of gear-wheel 20. In starting, the chaser-housing, sleeve 18, and gear-wheel 20 are slid outwardly until arrested by the en-

gagement of the gear-wheel with the end of the overhanging arm 8. The pipe to be threaded being centered in a vise (not shown) located in a central extension 34 of frame 1, the operator presses downwardly on lever 29, so that by bearing against the gear-wheel 20 the chasers will be brought into contact with the end of the pipe. The operator then turning shaft 13 by grasping handle 14 effects the rotation of gear-wheel 20 through the revolution of pinion 9. The further inward movement of the chaser-housing and gear-wheel is effected by the engagement of the chasers with the pipe, no feeder-screw being necessary. The shaft 13 is turned to the right or to the left, according as a right or left hand thread is being cut on the pipe, the chasers being readily removed when necessary.

35 designates an L-shaped rod screwed into one side member of adjuster 21 and extended out through a slot 26 of the chaser-housing, the outer portion of such rod being extended into a tubular casing 37, secured to the side of the chaser-housing and wherein is inclosed a coil-spring 38. It is manifest that as soon as the chaser-housing is drawn back to its starting-point, with the block 25 of set-screw 22 at the outer end of wedge 23, the spring 38, through rod 35, will force the adjuster and the several chasers to their normal positions. Of course various degrees of adjustment for cutting threads of different depths and to accommodate pipes of different sizes may be effected by the turning of screw 22, as pointed out in Letters Patent of the United States No. 744,465, issued to me November 17, 1903.

In practice the driving-pinion 9 is made sufficiently long to permit the chaser head or housing to travel even a greater distance than is required in the cutting of a standard thread. This pinion is readily operated by the turning of shaft 13, which being located at right angles thereto occupies much less room than would be required if the handle were located on an extension of the shaft of said pinion. By reason of securing the chaser-housing to the tubular sleeve 18 in the manner stated such housing may be readily removed and replaced in case of accident, and thus also free access may be had to the front of the gear-wheel 20, and thus allow the sleeve 18 to be readily machined when necessary to secure a perfect fit for ring 27.

I claim as my invention—

1. The combination with the frame having a tubular body, a gear-pinion mounted in said frame, and means for operating such pinion, of the chasers, the housing therefor having a sleeve telescoping said tubular body, a sliding adjuster for moving the chasers outwardly as the work progresses, means rotatable with said housing for acting on the adjuster to effect such outward movement of

the chasers, and a gear-wheel on said sleeve in mesh with said pinion.

2. The combination with the frame having a tubular extension, a gear-pinion mounted in said frame, and means for operating such pinion, of the chasers, the housing therefor having a sleeve telescoping said extension, an adjuster for moving the chasers outwardly as the work progresses, a wedge for so moving the adjuster, a ring mounted on said sleeve and to which said wedge is secured, means secured to said frame for preventing said ring from moving longitudinally with said sleeve, and a gear-wheel on the latter in mesh with said pinion.

3. The combination with the frame having a tubular extension and an overhanging arm, of a pinion mounted in said overhanging arm, means mounted on said frame for operating said pinion in either direction, the chasers, the housing therefor having a sleeve telescoping said extension, an adjuster for moving the chasers outwardly as the work progresses, a ring loose on said sleeve, a wedge secured to said ring for so moving the adjuster, arms secured to said overhanging arm and engaging said ring to prevent the same from moving longitudinally with the sleeve, and a gear-wheel on the latter in mesh with said pinion.

4. The combination with the rotatable sleeve, the ring thereon, and means for preventing such ring from moving longitudinally with the sleeve, of the chasers, the housing therefor movable with said sleeve, the adjuster for moving the chasers outwardly as the work progresses, the wedge-block secured to said ring having a groove in its outer face, a set-screw mounted in said adjuster, and a block having a tongue fitted in said groove, said block being swiveled to said set-screw.

5. The combination with the housing, the series of chasers therein, the adjuster for moving all the chasers simultaneously, and the wedge rotatable with said housing for moving the adjuster outwardly, said housing and wedge having a relative movement at right angles to the plane of rotation, of a spring-pressed device mounted on the housing and connected to the adjuster, said device being placed under tension as the adjuster is moved outwardly, and means carried by the adjuster forming a sliding connection between the latter and the wedge, such means being held toward the latter by the said spring-pressed device.

6. The combination with the housing having a slot therein, the series of chasers, and the adjuster for moving all of the chasers simultaneously, of a rod secured to such adjuster extended outwardly through said slot, a casing into which said rod projects, and a spring in said casing for acting on said rod.

7. The combination with the chasers, the housing therefor, the adjuster for moving all

the chasers simultaneously, and means for so moving the adjuster, of the sleeve removably secured to said housing, the gear-wheel on said sleeve, the pinion meshing with said
5 gear-wheel, the frame supporting said pinion, means for operating the latter, and the tubular extension projecting from said frame and telescoped by said sleeve which latter is free to slide longitudinally thereon, said means
10 for moving the adjuster being mounted on

said sleeve but not movable longitudinally therewith.

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

BRADFORD BORDEN.

Witnesses:

FRANK S. CHRYST,
JOHN R. LACHMAN.