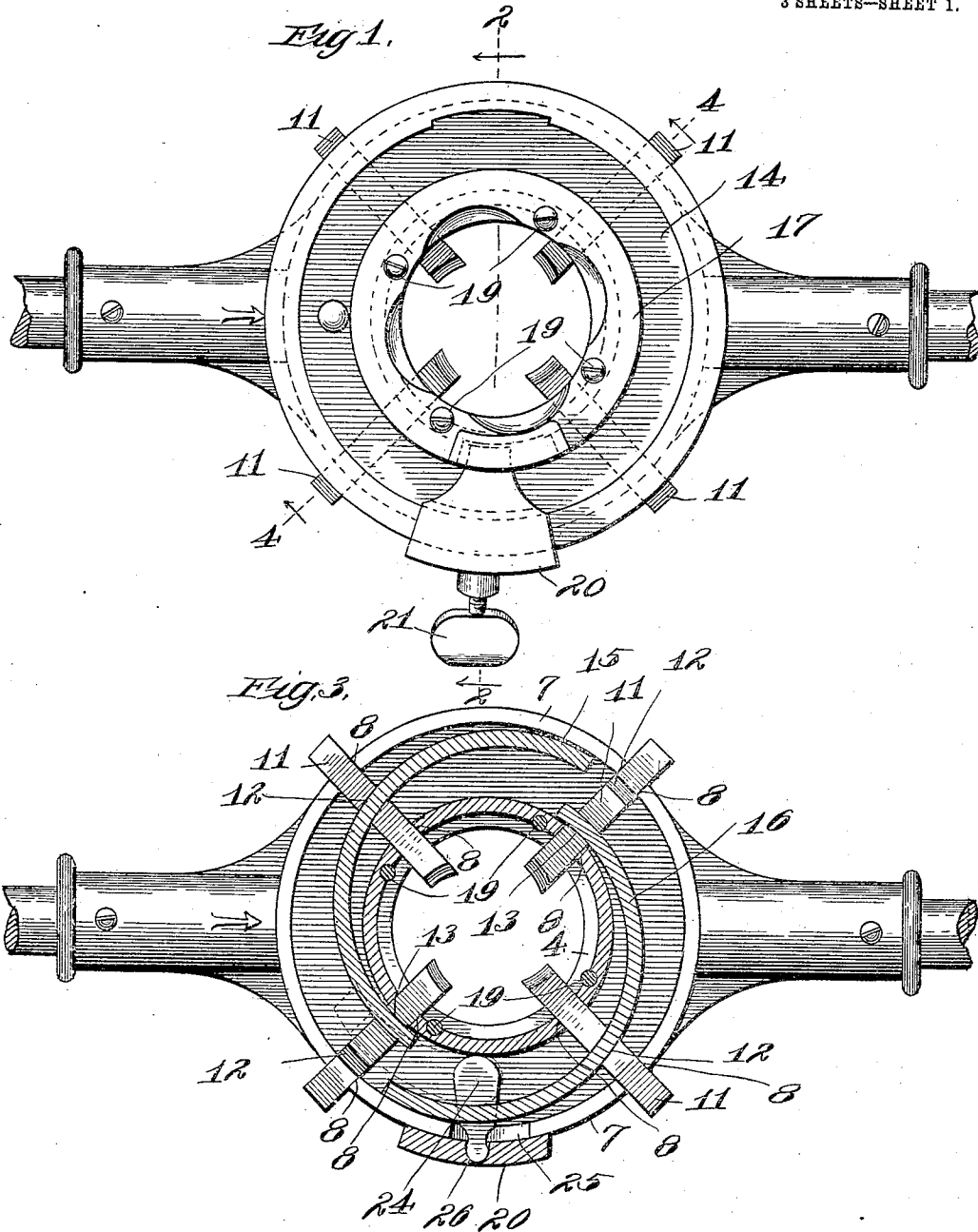


E. A. HOEFER.
MACHINE FOR THREADING PIPES.
APPLICATION FILED AUG. 22, 1907.

948,394.

Patented Feb. 8, 1910.

3 SHEETS—SHEET 1.



Witnesses:

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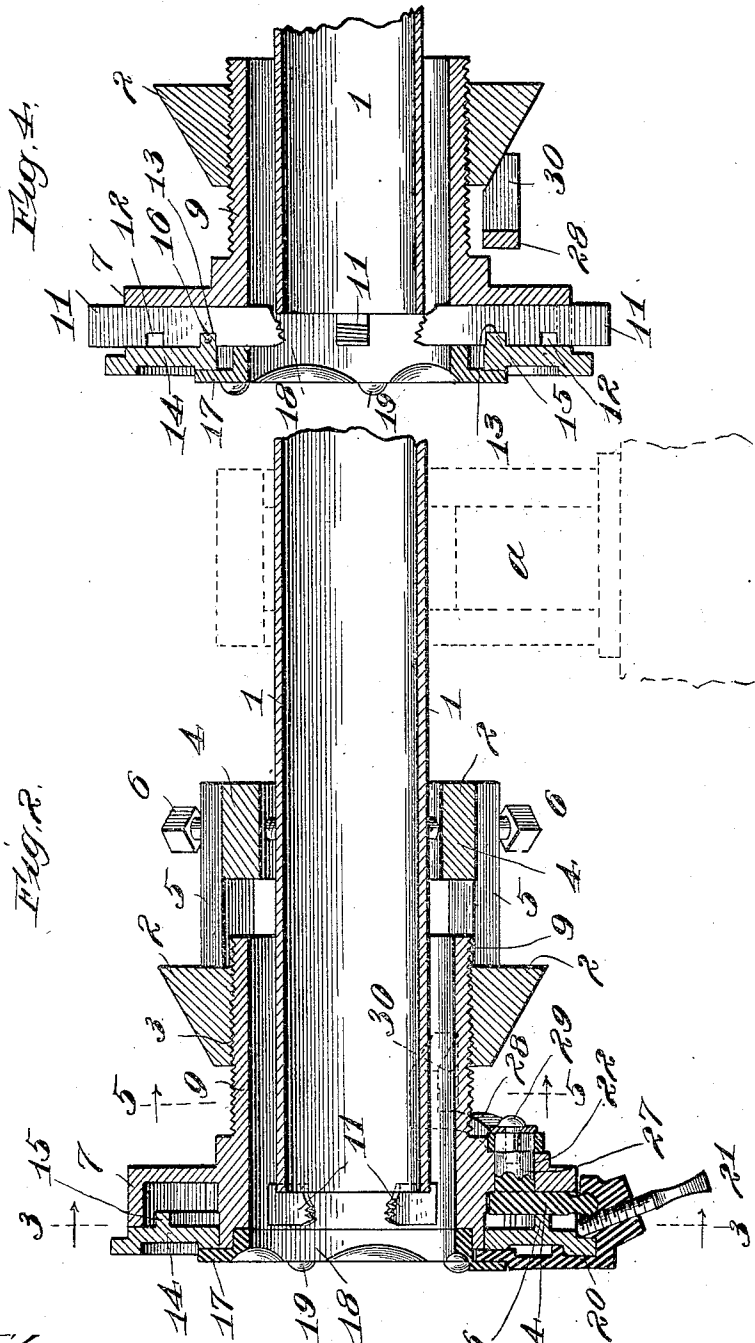
By L. L. Monahan, Atty.

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 5.

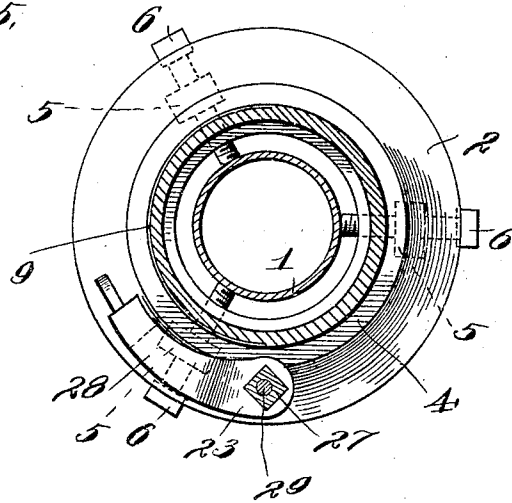
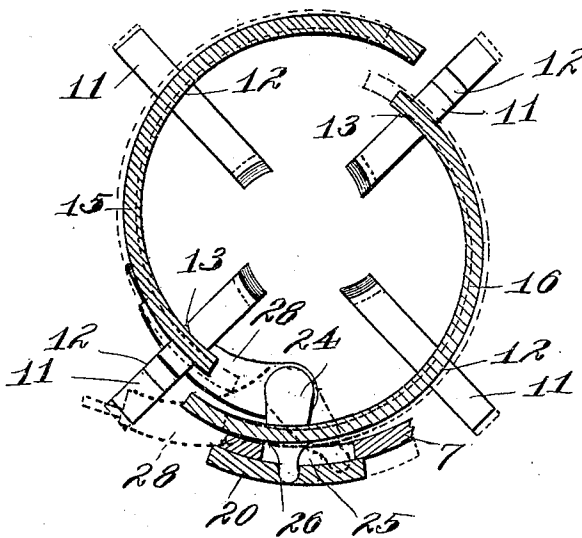


Fig. 6



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UNITED STATES PATENT OFFICE.

EMIL A. HOEFER, OF FREEPORT, ILLINOIS, ASSIGNOR TO THE BORDEN COMPANY, OF WARREN, OHIO, A CORPORATION OF OHIO.

MACHINE FOR THREADING PIPES.

948,394.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed August 22, 1907. Serial No. 389,749.

To all whom it may concern:

Be it known that I, EMIL A. HOEFER, a citizen of the United States of America, residing at Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Machines for Threading Pipes, of which the following is a specification.

The primary object of this invention is to provide improved means for cutting tapered threads on pipes and the like. In this class of tools it is customary to effect the gradual recession of the chasers by the movement of a single element common to all the chasers, such element being acted upon to gradually draw the chasers outwardly by a second element rotatably mounted on the work holder and designed to rotate with the stock. A threading tool of the character just stated is shown in patent to Bradford Borden No. 834,454, of October 30th, 1906.

According to my present invention it is intended to effect the gradual withdrawal of the chasers by an element which is actuated by a second element fixed on the work holder. To this end the chasers are engaged by the rotatable plate after the manner contemplated by patent to Bradford Borden and W. A. Neracher No. 862,876, of August 13, 1907, and such plate is caused to gradually rotate independently of the housing by a bell-crank lever carried by the housing and engaging at one end the element affixed to or forming part of the work holder, such bell-crank lever being detachably connected to the chaser-engaging plate.

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. Fig. 2 is a vertical sectional view on line 2—2, Fig. 1. Fig. 3 is a transverse sectional view on line 3—3, Fig. 2. Fig. 4 is a transverse sectional view on line 4—4, Fig. 1. Fig. 5 is a transverse sectional view on line 5—5, Fig. 2. Fig. 6 is a fragmentary diagrammatic view.

Referring to the drawings, 1 designates a pipe which may be held by any suitable means, such as a clamp indicated at *a* in dotted lines, Fig. 2. The work holder comprises an exteriorly tapered or cone-like body 2 having a central threaded opening 3, and a collar 4 between the rear ends of

arms 5 extending from body 2. Through these arms and the collar are passed centering screws 6 for engaging the pipe to be threaded. The housing 7 is formed with radial guideways 8 and a rearwardly extended exteriorly threaded sleeve or tubular portion 9 which works in the threaded opening of the work holder. In the radial guideways of the housing are chasers 11 which I have shown as having transverse slots 12 and 13 to take in the eccentrically-arranged ribs 15 and 16 of a plate 14 rotatably held on the housing by the flange 17 of a retaining plate 18 secured by screws 19.

20 is a second plate which is designed to be locked to the chaser-adjusting plate 14 by a set screw 21. This plate is shown as extending over a portion of the front face of plate 14 with its end fitting beneath the flange 17 of plate 18 and also extending over the periphery of plate 14 and hugging the edge of the housing. It is the purpose of my invention to apply power through this second plate to effect the gradual rotation of the chaser-adjusting plate as contemplated by the second of the before noted patents, but the means used by me for this purpose differs from that shown in that patent. I employ a bell-crank lever having an arm 24 within the housing and projecting laterally through a slot 25 in the periphery of the latter and having its free end seated in a recess 26 in that portion of clamping plate 20 extending over such periphery. At its inner end arm 24 has a stud or tubular portion 27 at right angles thereto seated in an opening 22 in the rear wall of the housing, and to the rear end of stud 27 an arm 28 is secured by a screw 29. This arm is of angular formation and its free end is beveled at 30, as shown in Fig. 4, to conform to the taper of body 2 of the work holder. As the cutting operation progresses, and the exteriorly threaded sleeve 9 travels inwardly in the threaded opening of the work holder, the beveled end 30 of the lever travels over the tapered or cone-like surface of the body of the work holder, and thereby through the turning of arm 24 effects the gradual rotation of the chaser-engaging plate, the plate 20 being locked to the latter by clamping screw 21. In this way the several chasers are caused to gradually recede and effect the cutting of a taper thread.

In practice, to adjust the chasers to pipes

of different sizes, the clamping plate 20 is released by loosening screw 21, and plate 14 is turned axially. Thereafter screw 21 is retightened, and the implement being mounted on the pipe the cutting operation is effected by axially turning the housing by the usual handle bars secured thereto. As the sleeve of the housing travels in the work holder the arm 28 of the bell-crank lever is gradually forced outwardly by the tapered surface of the cone-like body 2, and arm 24 acting through the clamping plate 20 effects the automatic rotation of the chaser-adjusting plate 14. The eccentric ribs of the latter being in engagement with the chasers causes all of them to gradually recede at a uniform rate. In this way I am enabled to cut a taper thread.

I claim as my invention:—

1. The combination with a work holder, of a rotatable housing movable toward and away from the work holder, chasers mounted in the housing, a single element for moving all the chasers simultaneously, a fixed element on the work holder, and means carried by the housing engaging with said fixed element for so moving said chaser-engaging element as the housing travels toward the work holder as to gradually draw all the chasers outwardly.

2. The combination with a work holder, of a rotatable housing movable toward and away from the work holder, chasers mounted in the housing, a single element for moving all the chasers simultaneously, a fixed element on the work holder, and a lever carried by the housing engaging with said fixed element for so moving said chaser-engaging element as the housing travels toward the work holder as to gradually draw all the chasers outwardly.

3. The combination with a work holder, of a rotatable housing movable toward and

away from the work holder, chasers mounted in the housing, a single element for moving all the chasers simultaneously, a tapered element on the work holder, and a lever carried by the housing engaging with said tapered element for so moving said chaser-engaging element as the housing travels toward the work holder as to gradually draw all the chasers outwardly.

4. A pipe threading tool comprising a work holder having a conical portion, a housing movable toward and away from said work holder, a series of radially-arranged chasers mounted in said housing, a rotatable plate engaging with said chasers, a bell-crank lever pivotally mounted in said housing, one arm of said lever being adapted to engage said conical portion, a coupler engaged by the other arm of said lever, and means for adjustably securing said coupler to said rotatable plate.

5. A pipe threading tool comprising a work-holder having a conical portion and a central threaded opening, a housing movable toward and away from the work holder and having an exteriorly threaded sleeve working in said opening, a series of radially-arranged chasers mounted in said housing, a rotatable plate engaging said chasers, an arm pivotally mounted in said housing, means for connecting the free end of said arm to said plate, and a second arm connected at one end to the pivot of the first mentioned arm, and at its other end designed to engage said conical portion as the housing travels toward the work holder, the actuation of said arm by such engagement causing the gradual rotation of the chaser-engaging plate.

EMIL A. HOEFER.

Witnesses:

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