

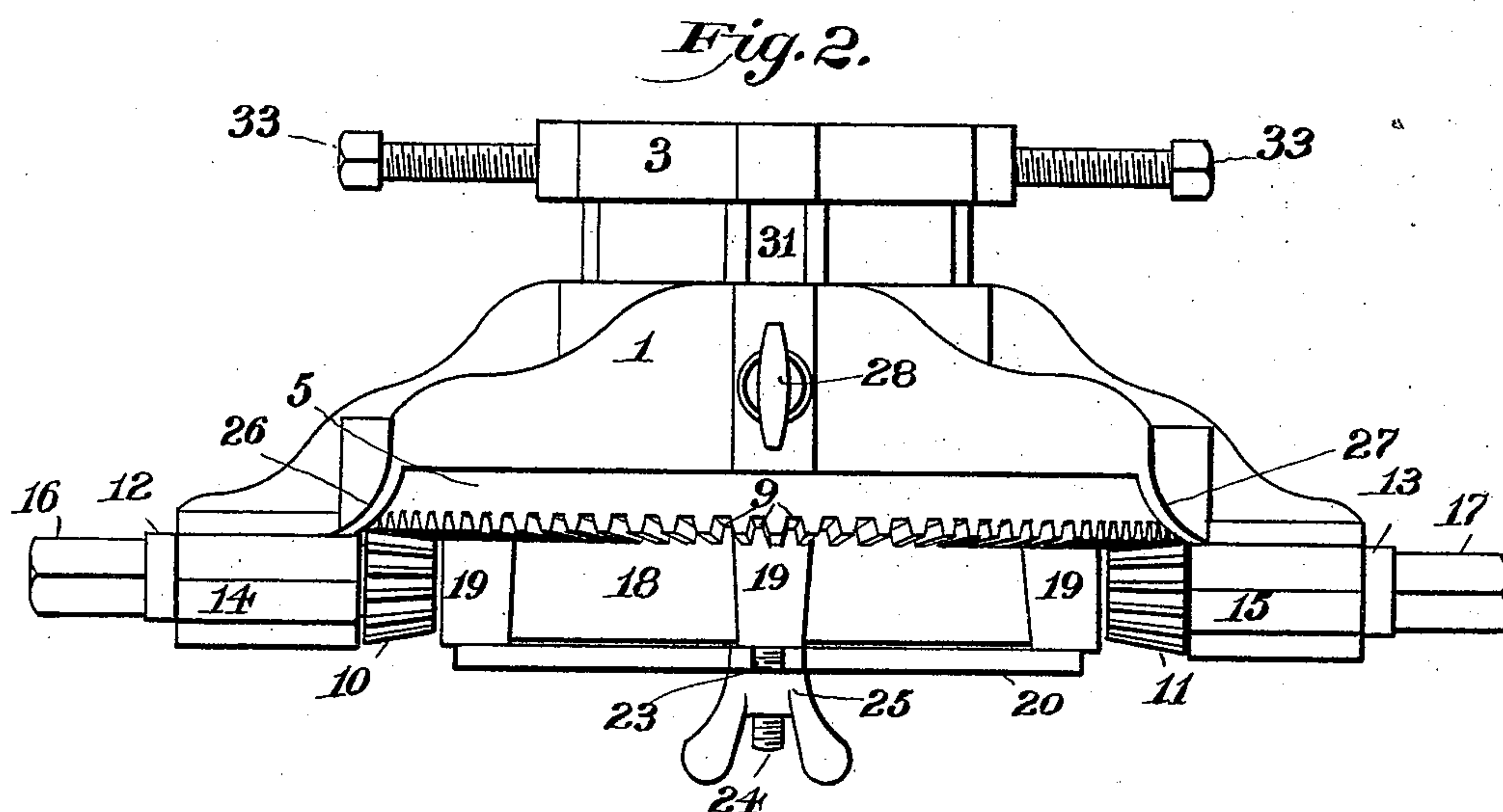
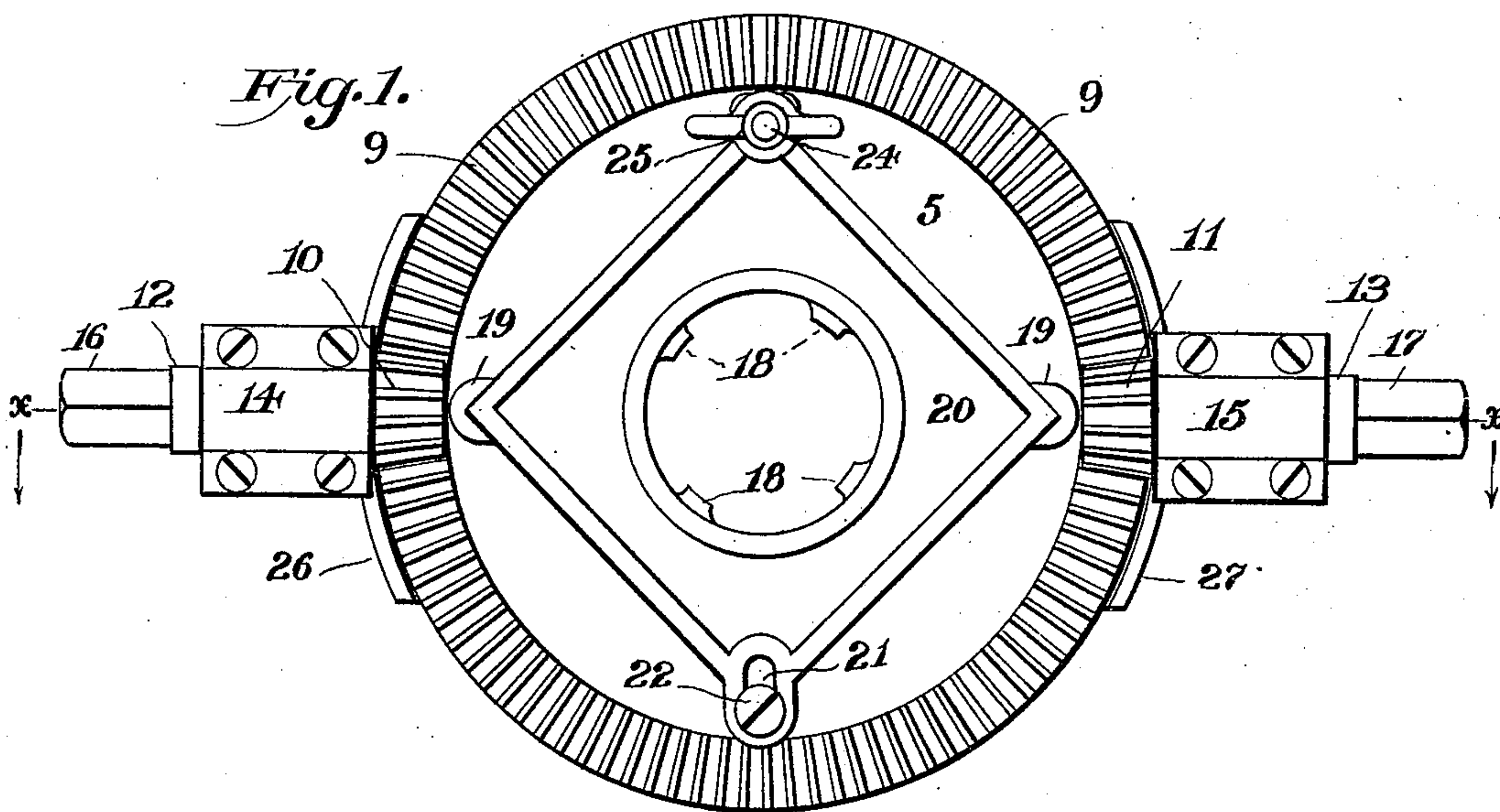
(No Model.)

2 Sheets—Sheet 1.

R. P. CURTIS.
PIPE THREADING MACHINE.

No. 538,367.

Patented Apr. 30, 1895.



WITNESSES:

J. Finch.
M. T. Longden.

Scale  = 1".

INVENTOR

BY *R. P. Curtis*
M. Smith Jr.
ATTORNEY

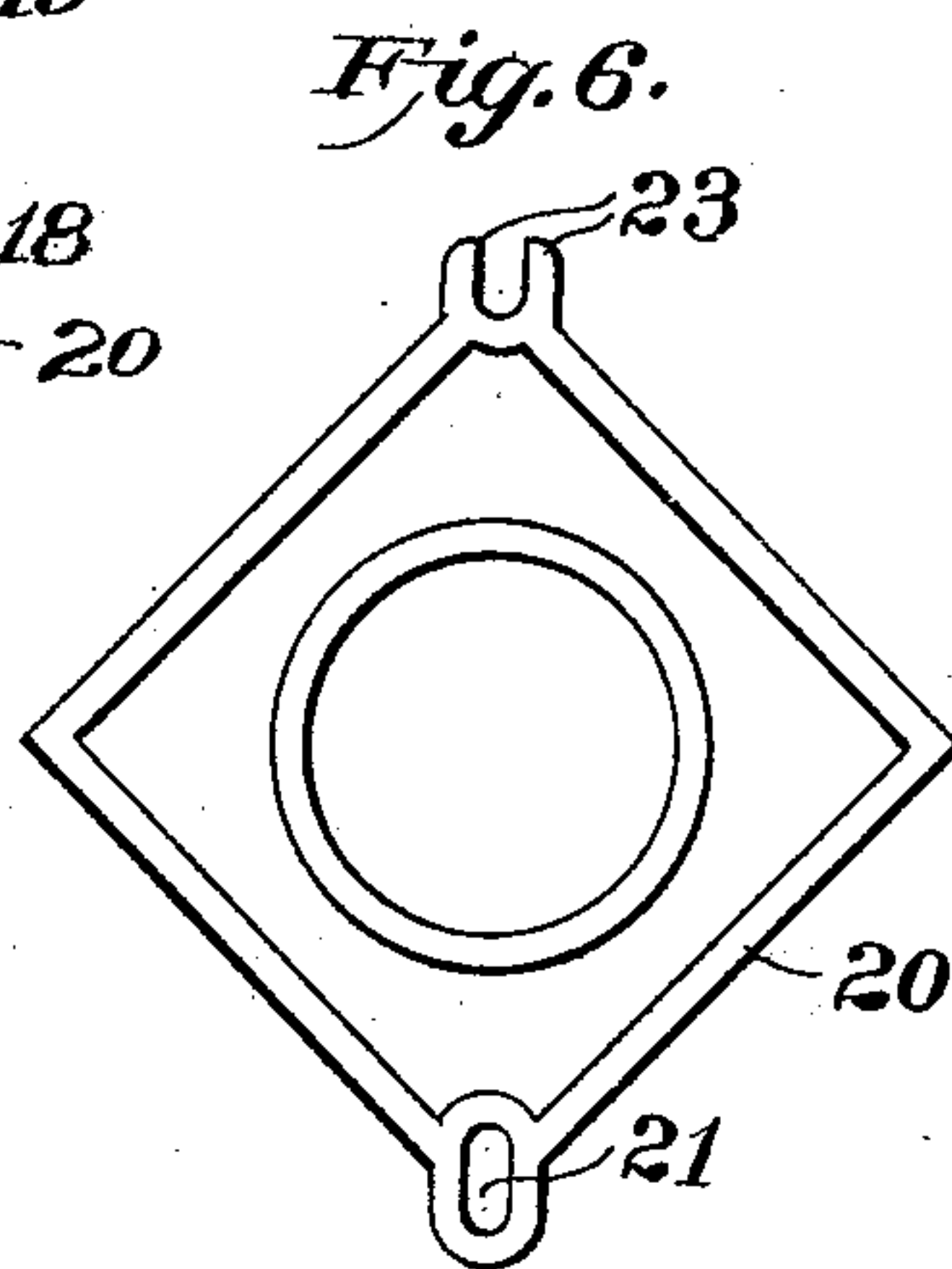
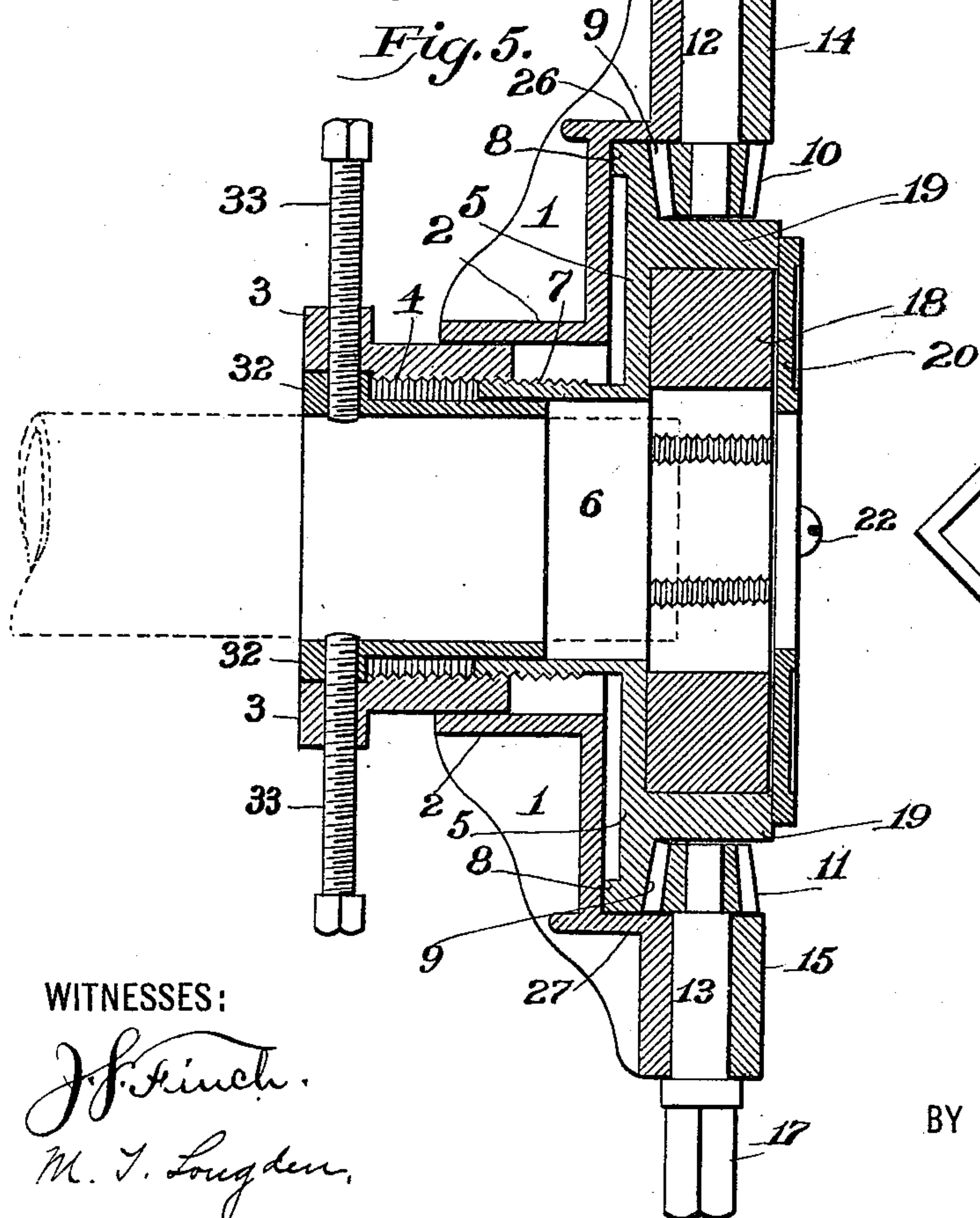
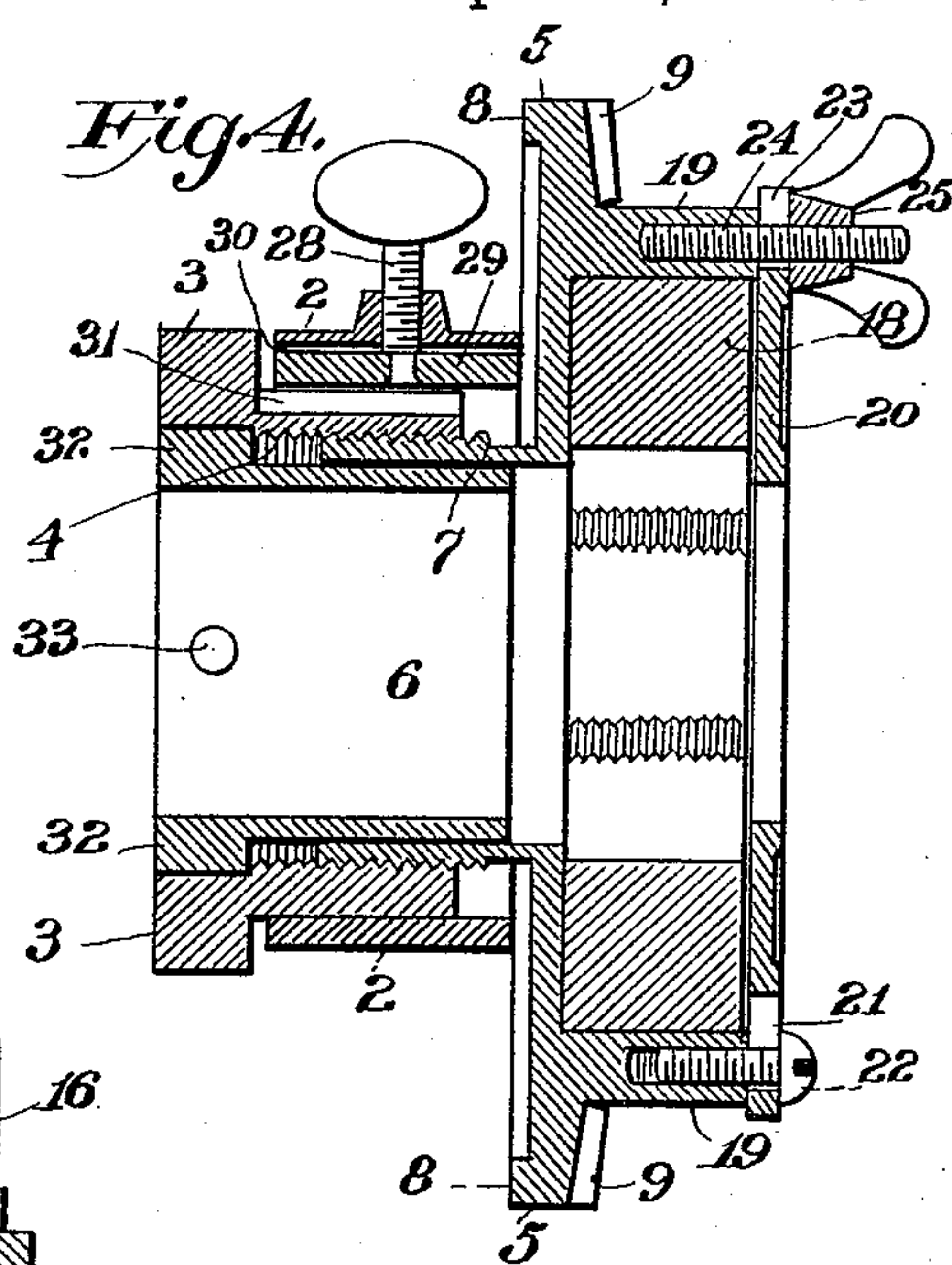
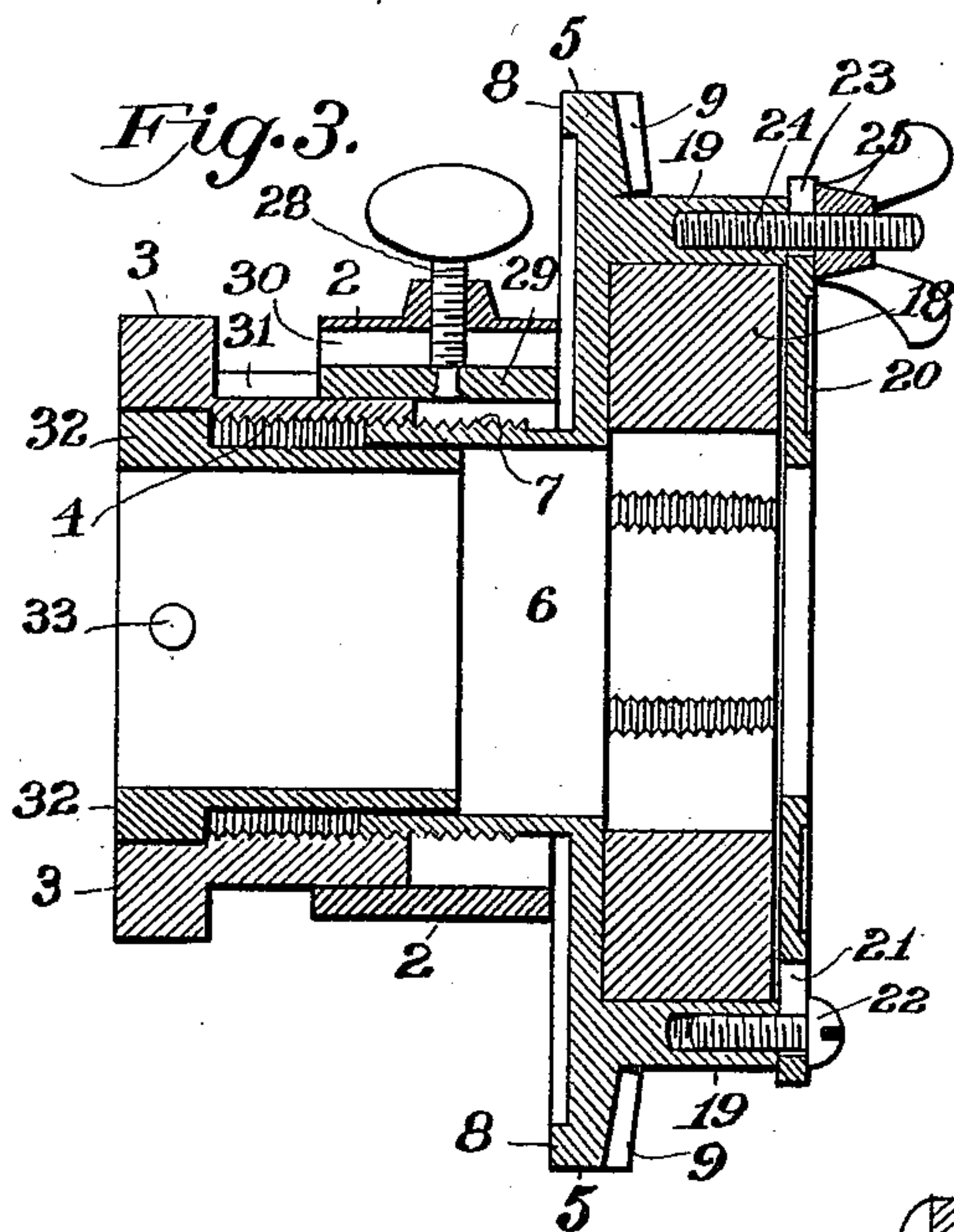
(No Model.)

2 Sheets—Sheet 2.

R. P. CURTIS.
PIPE THREADING MACHINE.

No. 538,367.

Patented Apr. 30, 1895.



WITNESSES:

J. F. Kinch.
M. T. Longden.

INVENTOR

R. P. Curtis

BY

M. Smith

ATTORNEY

UNITED STATES PATENT OFFICE.

RODERICK P. CURTIS, OF SOUTHPORT, ASSIGNOR TO CURTIS & CURTIS, OF
BRIDGEPORT, CONNECTICUT.

PIPE-THREADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 538,367, dated April 30, 1895.

Application filed June 20, 1894. Serial No. 515,158. (No model.)

To all whom it may concern:

Be it known that I, RODERICK P. CURTIS, a citizen of the United States, residing at Southport, in the county of Fairfield and State of Connecticut, 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 the same.

My invention relates to machines for cutting threads upon pipes, bolts and the like, but more especially refers to that class of such machines known as portable hand pipe threading machines such as are commonly used by plumbers and gas fitters.

The object of my invention is to provide a light, durable and economical machine of this description, which shall be capable of ready adaptation and use, the machines being in all instances secured to and supported by the pipe to be threaded and not bolted to any table or other support.

In the accompanying drawings, which form a part of this specification, Figure 1 is a front elevation of my improved machine; Fig. 2, a side elevation. Figs. 3 and 4 are sectional elevations showing, respectively, the position of the parts in the machine before and after the cutting of the threads; Fig. 5, a section at the line *x x* of Fig. 1, and Fig. 6 a detail of the keeper plate.

Similar numbers of reference denote like parts in the several figures of the drawings.

1 is the casing having projecting rearwardly therefrom a hollow circular hub 2, and 3 is a lead nut which fits externally snugly within said hub but is capable of a free movement therein, the interior of said nut being threaded as seen at 4.

5 is a die carrying ring having extending rearwardly therefrom a hollow lead screw 6 threaded externally as seen at 7 and thereby engaging with the internally threaded lead nut 3.

The die carrying ring 5 is provided with an annular rib 8 on its rear face at the periphery which rib abuts against the face of the casing as shown at Fig. 5, the object of this construction being to prevent unnecessary friction

between the ring and casing, such as would result if the ring had a more extended contact with such casing. The face of the ring near the periphery is provided with bevel gear teeth 9, with which teeth bevel pinions 10, 11, engage, said pinions being mounted on shafts 12, 13, which latter are journaled within suitable boxes 14, 15, provided at opposite points of the casing, wrench holds 16, 17, being provided on the ends of said shafts in order that any suitable cranks, wrenches, or analogous devices may be utilized for the purpose of operating the pinions to revolve the ring.

The threading die which is used is the ordinary solid die 18 which latter is seated against the face of the ring between suitable lugs 19 extending from said ring, and said die is secured in position by means of an ordinary keeper plate 20. This plate has at one side an elongated slot 21 and is pivoted to one of the lugs 19 by means of a screw 22 passed through said slot into said lug, the opposite side of the plate having a notch 23 within which a stationary screw 24 rising from the opposite lug 19 extends when the parts are in the position as shown at Figs. 3 and 4.

25 is a thumb nut driven on the screw 24 above the plate 20 whereby the latter may be securely clamped in position. To remove the plate 20 the screws 22 and 24 are loosened and the plate pushed backward so as to bring the notched portion clear of the screw 24, the plate being then swung to one side. Although I have described this keeper plate and the fastening devices in detail, I place no importance upon such devices because they are merely very ordinary mechanical appliances, and moreover there are various instrumentalities which might be used for the purpose of securing the die in position without departing from the spirit of my invention.

At opposite sides of the casing and in close proximity to the pinions 10 and 11, flanges 26, 27 are formed which are disposed in the arc of a circle and snugly embrace the ring at diametrically opposite points but not to such a degree as would interfere with the free revolution of said ring, the object of these flanges being to steady the ring and to hold the same

as against wobbling at the points where the power is applied thereto.

28 is a thumb screw passed through the hub 2 from the outside and having secured at its inner extremity a block 29 which latter when the screw is retracted lies snugly within a recess 30 on the inside of said hub.

31 is a way formed in the outside of the lead nut and extending longitudinally thereof, within which way the block 29 may be projected by the manipulation of the screw 28 to bind the hub 2 and said nut together as against independent rotary movements, while at the same time said parts are capable of a free sliding movement.

32 is a thimble within the lead nut 3 and extending inside of and beyond the thread 4 in order that the chips cut by the threading die may not clog said thread as will be presently more fully explained.

33 are screws passed through the lead nut and thimble, by means of which screws said nut may be firmly secured to the pipe or bolt to be threaded, as shown at Fig. 5, the pipe being denoted by dotted lines.

It very frequently happens that it is desired to cut a thread on the end of a permanently anchored pipe, as for instance a pipe projecting from an oil well or from any other source where one end of the pipe is permanently secured. In such a case, especially when the threading must be effected within cramped quarters, as an excavation within the ground or the side wall of a building, an ordinary stock and die could not be utilized and it would also be very difficult to use a machine any part of which must be bolted or otherwise secured to a stationary object.

My present invention is readily used where the above named devices would not be available, and the operation of my improvement is as follows:

A thimble 32 is used, within which the pipe to be threaded will closely fit, in order that said pipe may be concentric with the threading die, and for different sizes of pipe, thimbles of corresponding interior diameters are used. The pipe to be threaded is inserted within the thimble 32 into close proximity to the threading die, and by means of the screws 33 said thimble and the lead nut 3 are firmly secured to the pipe. The relative position of the lead nut 3 and lead screw 6, prior to the operation of the threading die, is as shown at Figs. 3 and 5, the lead screw being in retracted position. The pinions 10 and 11 are now operated by means of any suitable wrenches or cranks (not shown) whereby the die carrying ring is revolved and the threading die led on to the pipe to be threaded by reason of the engagement of the screw 6 and nut 3. After the thread has been cut it becomes necessary to release the threading die from the pipe along which such die is advanced. If the ordinary adjustable dies were used the latter could readily be withdrawn from the pipe, but in the present instance it is necessary to

retract the die throughout the thread which has been cut. This of course could be accomplished by revolving the die carrying ring in the reverse direction through the medium of the pinions, but this would be a very tedious operation, and I therefore prefer to loosen the screws 33 and to withdraw the die by simply backing the entire machine off from the pipe. In order to retract the lead screw from the lead nut for the purpose of putting these parts in position to cut a succeeding thread, I simply operate the screw 28 to withdraw the block 29 from the recess 30, and then back the lead nut after the manner of an ordinary screw.

From the foregoing it will be readily understood that I obtain not only all the advantages of the ordinary stock and die, but that the die carrying ring is steadied in its movements, and the whole machine operated with great facility. Furthermore, the provision of the thimble 32 obviates a serious defect hitherto existing in machines of this description, namely, the clogging of the lead screw and lead nut by the chips.

I have shown two pinions at opposite sides of the die carrying ring for the purpose of revolving the latter but it would be clear that a single pinion could be used for this purpose although two pinions act to keep the ring steady, and I therefore do not wish to be limited in this respect.

The thimble extends inwardly within the lead screw far enough to guard the entire threaded area of the nut, and as the thimble and nut move in harmony their relative positions never change.

A very important feature of my improved machine is its compactness, in that the hub, lead screw, lead nut and thimble are all concentric, while the nut and thimble telescope respectively within the hub and screw.

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

1. In a portable hand operated pipe threading machine, the combination of a casing having a hollow hub extending rearwardly therefrom, an interiorly threaded lead nut snugly fitted within said hub and capable of a free movement therein, a die carrying ring resting against the face of the casing and having a lead screw which engages with said lead nut and provided with bevel gear teeth on its face near its periphery, means for revolving said ring, means for locking said casing and nut together as to rotary movement while at the same time a free longitudinal sliding movement of such parts is permitted, and means for clamping the lead nut firmly to the pipe to be threaded, substantially as set forth.

2. In a portable hand operated pipe threading machine, the combination of the interiorly threaded lead nut adapted to be secured to the object to be threaded, a casing having a hollow hub which incloses said nut, means for locking said nut and hub together

as to rotary movement without interfering with the freesliding movements of said hub, the die carrying ring resting against the outer face of the casing and having extending therefrom
5 a lead screw which engages with said nut and is provided on its face near its periphery with bevel gear teeth, the flanges extending from said casing and acting as keepers to steady said ring, the bevel pinions journaled within
10 the casing and engaging with the teeth on such ring, and the thimble extending within said nut and screw, substantially as set forth.

3. In a pipe threading machine, the lead nut having a longitudinal way extending

lengthwise thereof and having a screw thread 15 as described, the casing having a set screw and projection which may enter said way and prevent rotation but permit longitudinal movement, and the die carrying ring having a screw thread which engages the thread of 20 the lead nut, all combined substantially as described.

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

RODERICK P. CURTIS.

Witnesses:

F. W. SMITH, Jr.,

M. T. LONGDEN.