

(No Model.)

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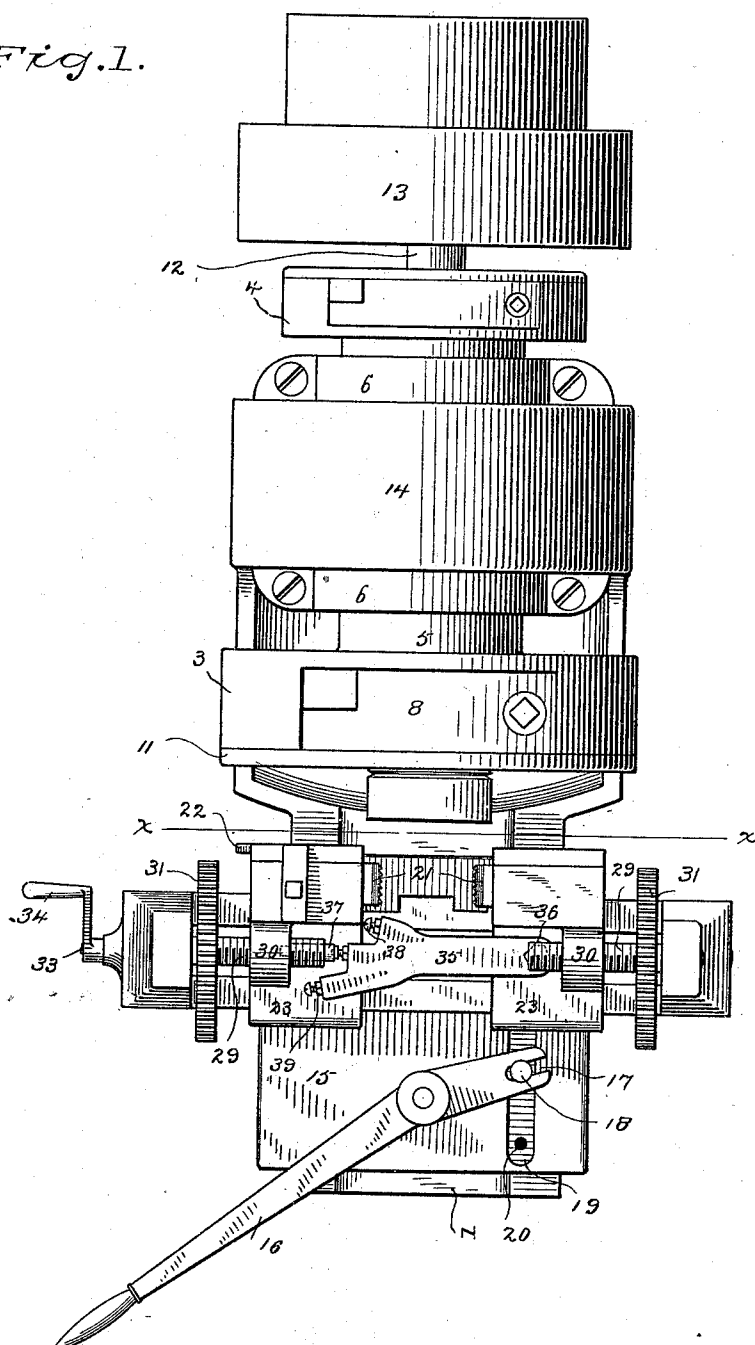
A. W. CASH.

PIPE THREADING AND CUTTING OFF MACHINE.

No. 519,175.

Patented May 1, 1894.

Fig. 1.



WITNESSES

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Pearl Reynolds

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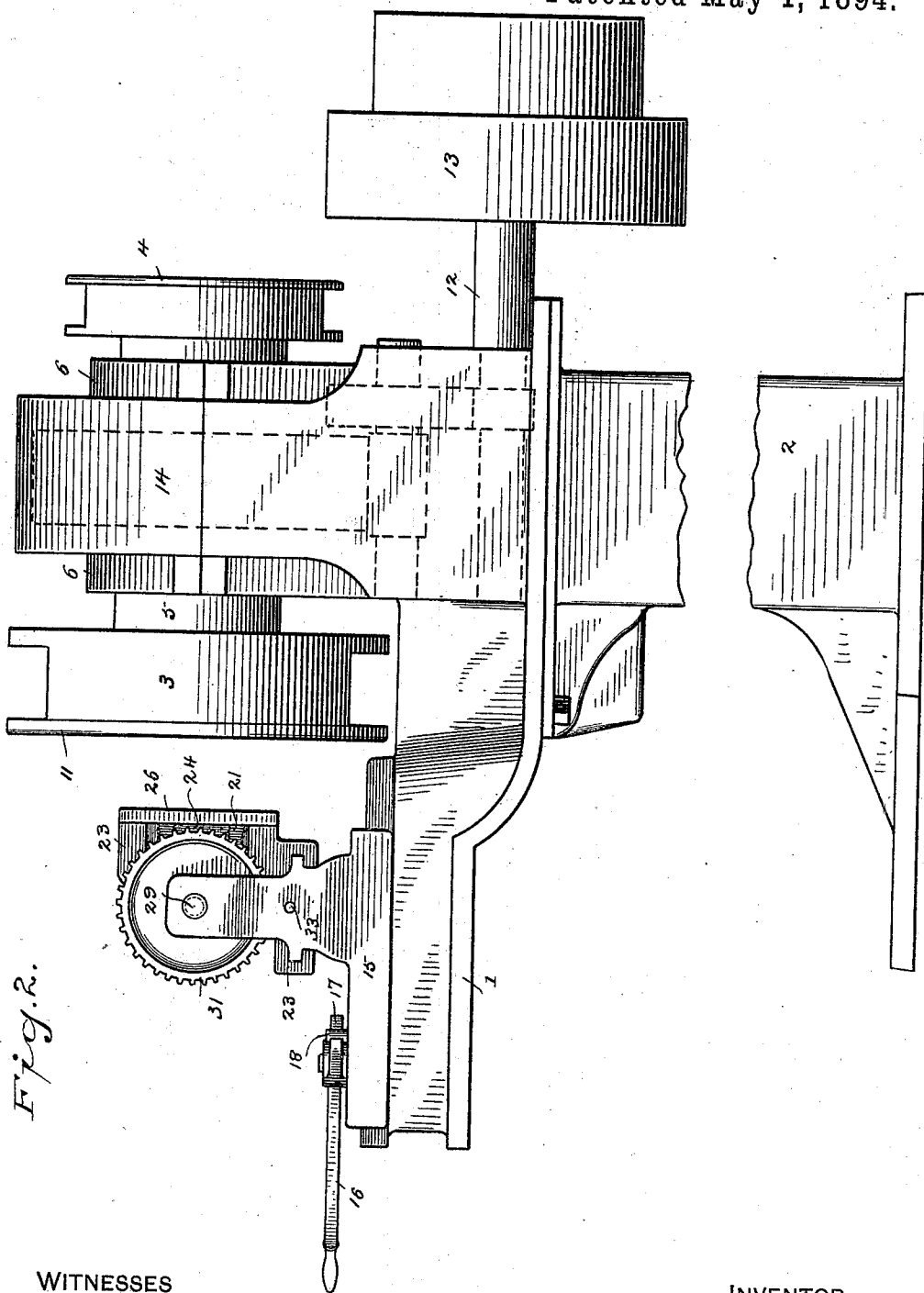


Fig. 2.

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Fig. 3.

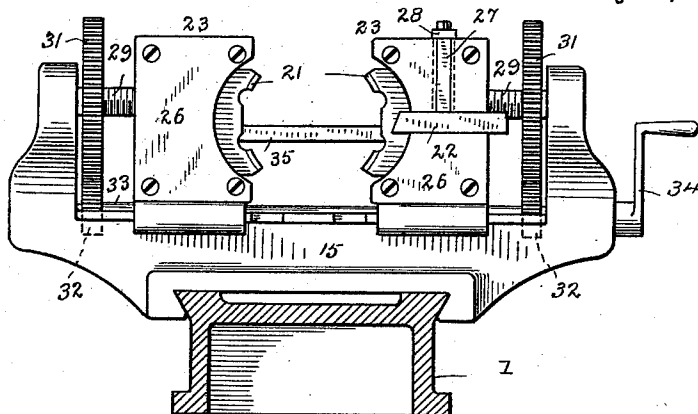


Fig. 4.

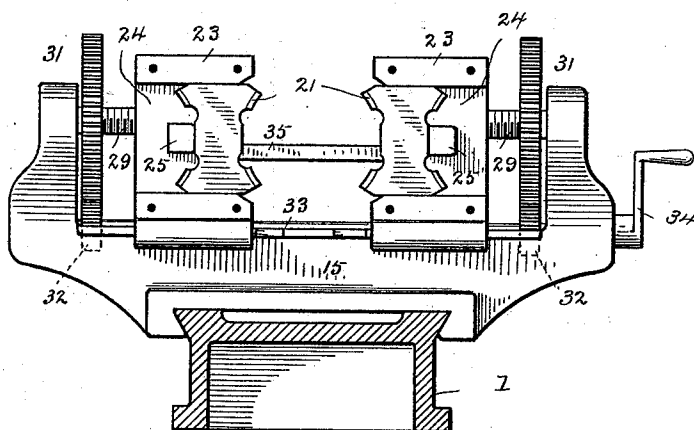
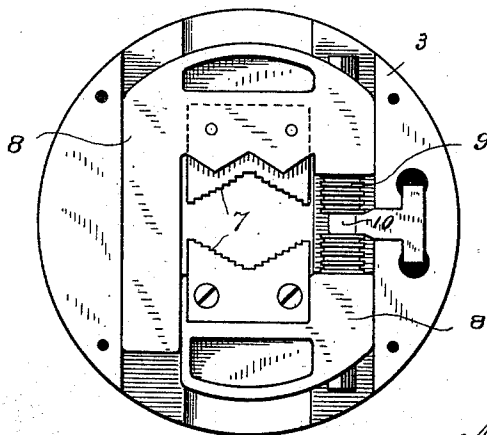


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

ARTHUR W. CASH, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
ARMSTRONG MANUFACTURING COMPANY, OF SAME PLACE.

PIPE THREADING AND CUTTING-OFF MACHINE.

SPECIFICATION forming part of Letters Patent No. 519,175, dated May 1, 1894.

Application filed August 14, 1893. Serial No. 483,088. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. CASH, 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 Pipe Threading and Cutting-Off 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.

My invention has for its object to simplify, cheapen and at the same time to generally improve the construction and operation of this class of machines. With these ends in view I have devised a novel pipe threading and cutting off machine in which the pipe to be held is gripped and carried by jaws in a rotating head, the head and pipe having however no longitudinal movement, and the dies and cutter are placed upon a sliding carriage but have no rotary movement. This construction enables me to simplify the construction of the machine in many respects, gives ready access to the dies so that dies may be removed and replaced without appreciable loss of time and without the requirement for a skilled mechanic, and furthermore enables me to provide a simple and easily operated gage for standard sizes of pipe, said gage moreover being capable of ready adjustment so as to cut a thread either slightly over or slightly under the standard size. These results I accomplish by the novel construction which I will now describe referring by numbers to the accompanying drawings forming part of this specification, in which—

Figure 1 is a plan view of my novel machine complete; Fig. 2 a side elevation; Fig. 3 a section on the line $x x$ in Fig. 1; Fig. 4 a similar section with the face plate removed, and Fig. 5 is an end elevation of the rotating head showing the gripping jaws.

1 denotes the bed which is supported by a suitable base 2. The pipe to be threaded, not shown in the drawings, is carried by heads 3 and 4 upon a hollow mandrel 5 itself journaled in boxes 6. The pipe is locked firmly against turning while being threaded by serrated jaws 7 carried by slides 8 in head 3. These slides carrying the jaws with them are

moved in or out to grip the pipe by means of a right and left threaded screw 9 held by a yoke 10, see Fig. 5, in which the face plate 11, of head 3 is removed. The pipe to be operated upon passes through the mandrel and is also gripped by jaws, not shown, in head 4.

12 is the main shaft to which power is applied by belts, not shown, running over either of the belt pulleys 13. Motion is communicated from shaft 12 to the hollow mandrel by means of gearing within a housing 14, said gearing being indicated by dotted lines only in Fig. 2.

15 denotes a die carriage which is adapted to slide longitudinally on the bed, the movement of said carriage being controlled by a hand lever 16 pivoted to the carriage and having a slot 17 at its end which receives a pin 18 extending upward from the bed and passing through a slot 19 in the carriage. This pin which may be changed from one hole to another in the bed, see 20, Fig. 1, serves as the fulcrum for the hand lever.

21 denotes the threading dies and 22 the cutting off tool, both of which are carried by transverse slides 23 upon the die carriage. The shape of the threading dies is clearly shown in Fig. 4. They are made reversible that is provided with cutters on each edge. These dies lie in recesses 24 in the slides and rest against stumps 25 which support them and take up the thrust. They are held in the socket by face plates 26, see Fig. 1, and may be readily adjusted and replaced in a moment's time without taking the machine apart. The cutting off tool is recessed into one of the face plates and is held in position by a slide 27 itself held by a plate 28 bolted to the top of the slide. The slides carrying the dies are moved in and out by means of right and left threaded screws 29 which engage bosses 30 on the slides. The outer ends of these screws are supported in the die carriage and each screw is provided with a gear wheel 31 which is engaged by a pinion 32, see dotted lines Figs. 3 and 4 on a shaft 33 which is provided with a crank 34 for convenience in operation.

In order to provide an instant and accurate adjustment for the dies in setting them to place for threading or cutting off pipe I pro-

vide a swinging gage 35 which is pivoted to one of the slides as at 36 and is provided with a plurality of engaging surfaces, in the present instance three, which are adapted to engage a hub 37 upon the other slide for the purpose of stopping the movement of the slides at the exact position required to thread or cut off the special size of pipe which it may be desired to operate upon. The outer end of hub 37 is provided with a depression or socket, see dotted lines Fig. 1, the purpose of which will presently be explained.

As it is frequently required to make a thread slightly over or slightly under standard size upon pipes of standard size I make the engaging surface which I designate by 38, adjustable. In the present instance I have shown these engaging surfaces as consisting of bolts having rounded heads which are adapted to engage the depression in the outer end of hub 37. These engaging surfaces are adjusted to the exact position required to cut standard threads and are then locked there by set nuts 39 on the bolts. I have shown a gage provided with three engaging surfaces and consequently adapted to set the dies in position to cut three standard sizes of thread or to cut off three standard sizes of pipe. Any number of engaging surfaces may of course be provided. The use of this gage will be apparent from Fig. 1. It is simply necessary to place the special engaging surface corresponding to the thread to be cut in position to engage hub 37 and then turn crank 34 until the engaging surface and head are in engagement, as clearly shown in Fig. 1. Suppose now that it is desired to cut a thread slightly over or slightly

under standard size. The set nut upon the bolt constituting the engaging surface corresponding to the normal thread would be loosened and the bolt would be turned in or out slightly as might be required to cause the dies to approach each other a trifle more closely, or to stop them, before they had quite reached the position to cut a normal thread, after which the bolt would be locked in position by tightening up the set nut.

Having thus described my invention, I claim—

1. In combination with the slides carrying dies, a lever pivotally connected to one slide and having a plurality of bearing surfaces for engaging the other die, substantially as described.

2. In combination with the slides carrying dies and means for moving them toward and from each other, a lever pivotally connected to one slide and having a freely swinging stepped end and adjustable bearing pieces carried by said stepped end, substantially as described.

3. The combination with slides 23, dies carried thereby, and right and left threaded screws by which said slides are moved in or out, one of said slides having a hub 37, of a swinging gage pivoted to the slide opposite to hub 37 said gage having a plurality of engaging surfaces, either of which is adapted to engage hub 37 to set the dies in position.

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

ARTHUR W. CASH.

Witnesses:

A. M. WOOSTER,
PEARL REYNOLDS.