

C. BERGREN.

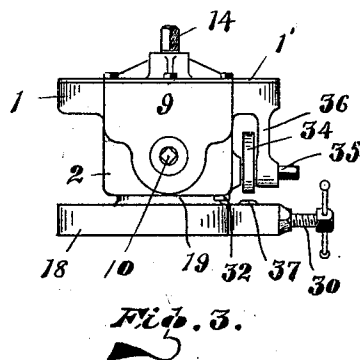
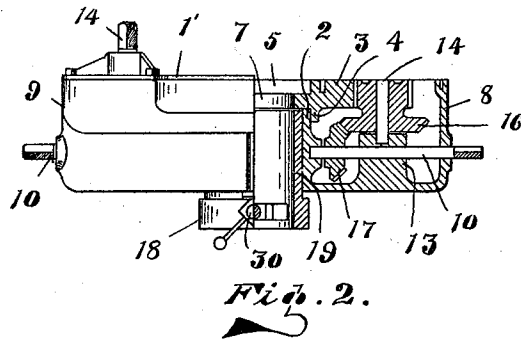
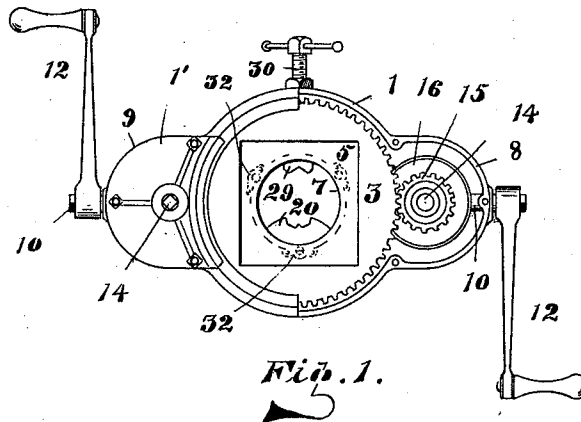
PIPE AND BOLT THREAD CUTTING MACHINE.

APPLICATION FILED NOV. 2, 1909. RENEWED AUG. 31, 1911.

1,008,885.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.



WITNESSES:

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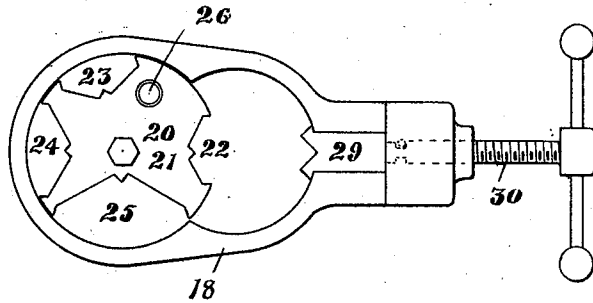


Fig. 4.

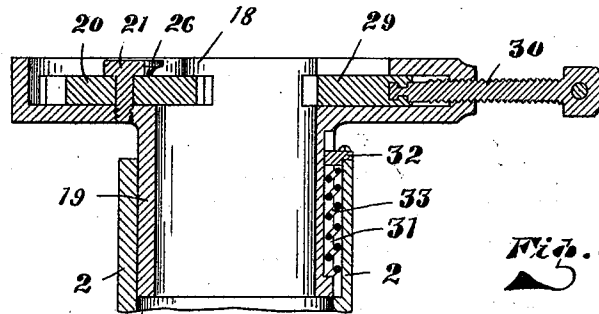


Fig. 5.

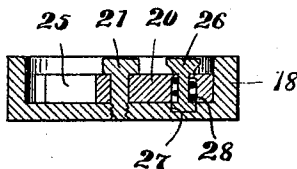


Fig. 6.

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PIPE AND BOLT THREAD CUTTING MACHINE.

1,008,885.

Specification of Letters Patent.

Patented Nov. 14, 1911.

Application filed November 2, 1909, Serial No. 525,920. Renewed August 31, 1911. Serial No. 647,064.

To all whom it may concern:

Be it known that I, CHARLES BERGREN, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Pipe and Bolt Thread Cutting Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in pipe and bolt thread cutting machines.

The object of my invention is to provide a thread-cutting machine which is operated by hand power and in which the pipe or rod being threaded is held against rotation by the machine.

Another object of my invention is to provide such a machine which is compact, simple and formed of few parts and at the same time having a wide range of adjustment.

Referring now to the drawings: Figure 1 is a plan view of one of my improved machines having one of the casing covers removed. Fig. 2 is a side view partly in section. Fig. 3 is an end elevation omitting the hand cranks. Fig. 4 is a top plan view of one of the pipe clamps. Fig. 5 is a vertical longitudinal sectional view of the clamp, and Fig. 6 is a vertical sectional view taken on the line $x-x$ Fig. 4.

Referring now to the drawings, 1 represents a gear casing or housing in which the operating mechanism is carried, and in the central portion of which is a cylindrical chamber formed by the upwardly extending wall 2, which is designated to carry the central gear 3, said gear having a depending rim 4 surrounding the upper end of the chamber wall 2. The inner upper portion of the gear 3 is cut away forming the square opening 5, for the reception of the common square thread cutting die or other square pipe cutting mechanism as desired. The center portion of the gear 3 within the square bore 5 is bored out forming a round opening 7, which is sufficiently large to admit the largest size of pipe or bolt to be operated upon.

The casing 1 at opposite sides is provided with the outwardly extending portions 8 and 9, in which are located the gears for driving the gear 3 and which I will now proceed to describe. In the drawings I have shown in section but one of the driving

mechanism, but it will be understood that they are constructed exactly alike. Within each extension is a shaft 10, which is horizontally arranged and properly journaled in the extension and are provided at their outer ends with cranks 12 by means of which the shafts are rotated. The said extensions are provided with upwardly extending studs 13 through which the shafts pass and carried thereby and mounted therein are the vertical shafts 14. Rigidly mounted upon said shafts are gear wheels 15 meshing with the gear 3, the said gear at its lower end having beveled gear teeth 16 meshing with beveled gears 17 rigidly secured upon the shafts 10. The rotation of said shafts causes the beveled gears 17 to rotate, which in turn rotate the gears 15, and said gears meshing with the gears 3 causes the same to rotate and the said gear 3 carrying the thread cutter it will be seen that the thread will be cut upon the pipe or rod extending through the opening 7. The shaft 14 of one of the gears 15 projects upwardly beyond the casing and is squared similar to the shafts 10 so that either of the cranks 12 may be used thereon and the mechanism operated from the face instead of the sides in some instances where there is not room to operate it from the end. The upper covering 1' of the gear casing 1 is made removable so that the working parts of the machine may be readily accessible.

The housing 18 which is termed the pipe clamp is formed of a hollow cylindrical downwardly projecting portion 19, which snugly fits within the chamber in the casing 1, formed by the wall 2, and whose inner diameter coincides with the opening 7, in the opening 5 in the gear 3. The housing 18 carries in one laterally extending portion the revolving grip disk 20, mounted upon a fixed pivot 21 and having four sized cut-away portions 22, 23, 24 and 25 of different sizes, each of said cutaway portions being presentable within the opening formed within the cylindrical portion 19, by means of the finger lock 26 mounted within the disk 20 and flexibly projecting within suitably located openings 27 in the housing 18. The finger lock 26 is made flexibly adjustable by means of a suitable spring 28, which normally holds it in a locked position. In the other lateral extremity is carried a slidable jaw 29, which is removably attached in any convenient manner to the threaded hand-

operated rod 30, by which it is moved back and forth to engage or disengage the pipe or rod operated upon. By this means the disk 20 may be set to any one of the four sizes desired, the pipe inserted and the jaw 29 adjusted to securely clamp the pipe in place to hold it against any tendency toward turning when the revolving of the gear 3 is causing the thread to be cut on the upper end of the pipe. The member 19 of the pipe clamp is flexibly held within the chamber formed by the wall 2 of the casing 1 by means of the cylindrical opening 31, formed jointly within the walls 2 and 19, that is diametrically half of the hole in each wall as clearly shown in Fig. 5, both ends of such openings terminating in the wall 19, whereas but one end terminates in the wall 2, the opposite end being covered by means of caps 32 attached to the wall 2. These caps extend within and fully cover the entire opening, and under said caps and extending to the opposite extremities of the openings 31 are installed compressible spiral springs 33, thus when the members 2 and 19 are telescoped, the springs inserted and the caps securely fastened, the members are permanently and flexibly united and normally remain in their contracted position.

To extend the member 19 from the chamber formed by the wall 2, I provide a suitable cam 34 fixed to a shaft 35 mounted within the outer edge of the wall 2 and the depending bracket 36, the outer end of the shaft 35 being square for receiving a hand crank by means of which the cam may be revolved and contact the inner wall 37 of the housing 18 and thereby force it outwardly to the limit of the opening of 31, this being done previously to clamping the pipe holder to the end of the pipe or rod to be operated upon after which the clamp is compressed, then the cam released, when the springs will feed the die to the end of the pipe as the operation of the thread cutting progresses. It will be seen that the caps 32 extending somewhat down in the spring openings fill the same and any possibility of either member turning without the other is avoided.

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

1. A thread cutter comprising a casing and having a central cylindrical wall, a horizontal gear resting upon the upper end of said cylindrical wall and having a downwardly extending annular flange engaging the outer periphery of said cylindrical wall, means for rotating said gear, said gear having an angular recess terminating in a vertically reduced opening, a clamp member

having a cylindrical portion extending into the cylindrical wall of the casing and having its inner periphery flush with the opening in the die gear, said cylindrical walls having vertical registering semi-circular recesses, a coil-spring in said recesses and having means therein locking the same together against rotation, a pipe clamp carried by the lower end of said cylindrical portion.

2. A thread cutter, comprising a casing of a saucer shape having a central opening provided with an upwardly extending wall surrounding the same, said casing having on opposite sides enlarged portions communicating therewith and having in the center thereof upwardly extending cylindrical studs, shafts extending longitudinally through the enlarged portion of the casing, through the studs and having their inner ends journaled in the upwardly extending wall, surrounding the openings, beveled gears carried by said shafts between the wall and the studs, beveled gears meshing therewith and journaled in the upper ends of the studs, gears carried by the upper ends of said beveled gear, a die supported by the upper end of the sleeve and having teeth meshing with the gears, and means whereby the horizontal shafts may be rotated.

3. A thread cutter, comprising a casing of a saucer shape having a central opening provided with an upwardly extending wall surrounding the same, said casing having on opposite sides enlarged portions communicating therewith and having in the center thereof upwardly extending cylindrical studs, shafts extending longitudinally through the enlarged portion of the casing, through the studs and having their inner ends journaled in the upwardly extending wall surrounding the openings, beveled gears carried by said shafts between the sleeves and the studs, beveled gears meshing therewith and journaled in the upper ends of the studs, gears carried by the upper ends of said beveled gear, a die supported by the upper end of the sleeve and having teeth meshing with the gears, means whereby the horizontal shafts may be rotated, a cover closing the upper end of the housing and the upper end of one of the small horizontal gears extending through the casing and having means whereby the gear may be rotated, substantially as described.

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

CHARLES BERGREN.

Witnesses:

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S. GEO. STEVENS.