No. 614,333. C. H. McCREADY. Patented Nov. 15, 1898.

MACHINE FOR SCREWING UP OR UNSCREWING PIPES, &c.

(Application filed June 25, 1898.)

(No Model.) 2 Sheets—Sheet 1.

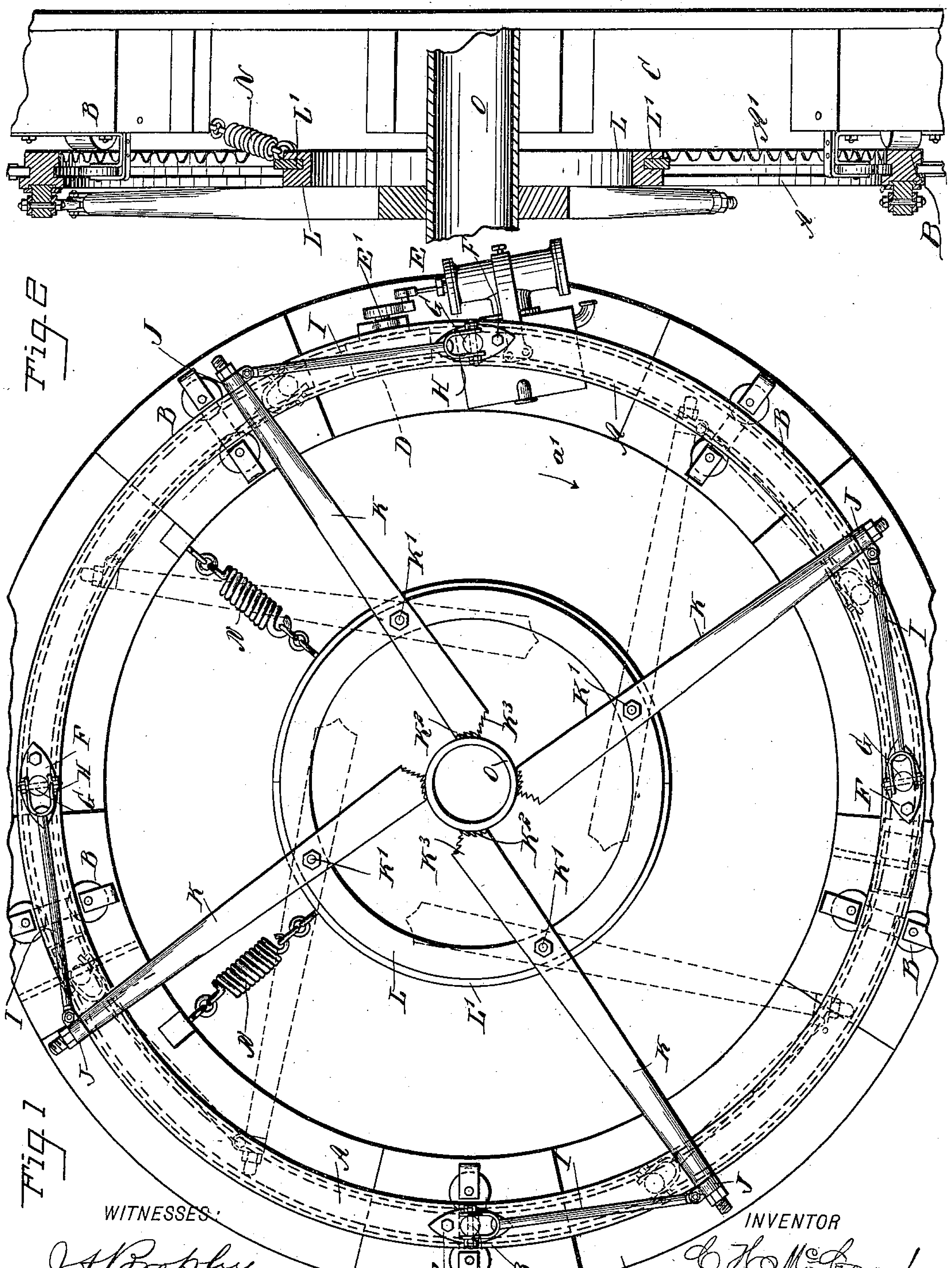

Fig. 2

Fig. 1

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Fig. 6

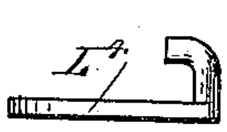


Fig. 7

Fig. 4

Fig. 3

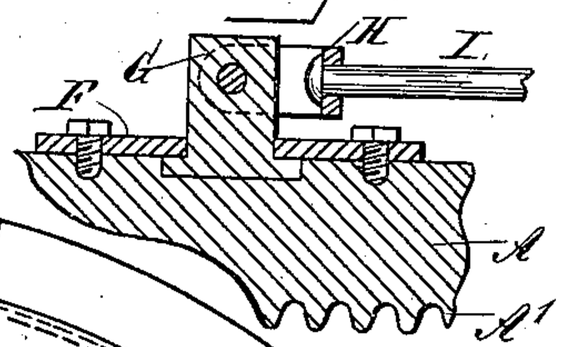


Fig. 5

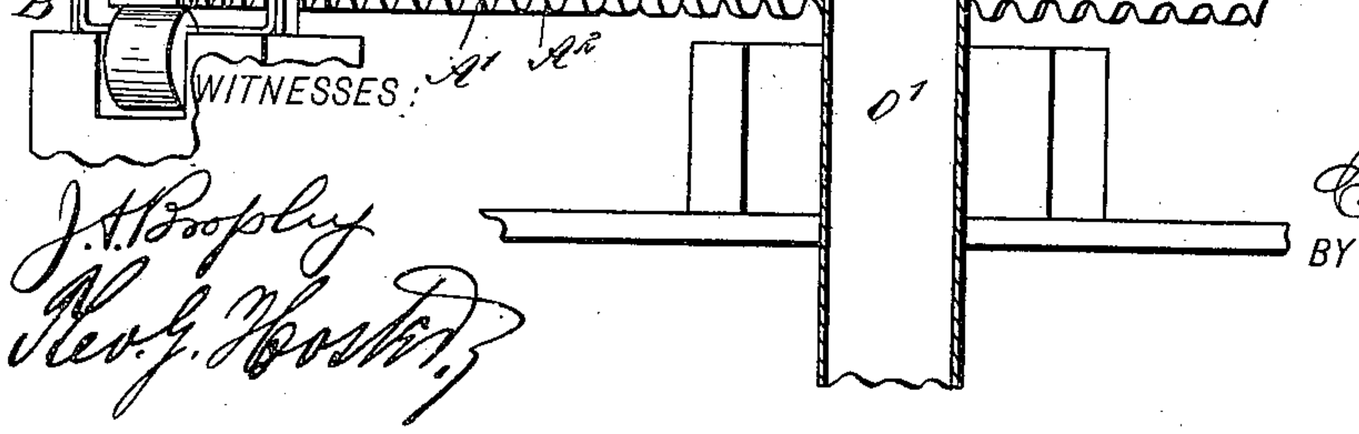
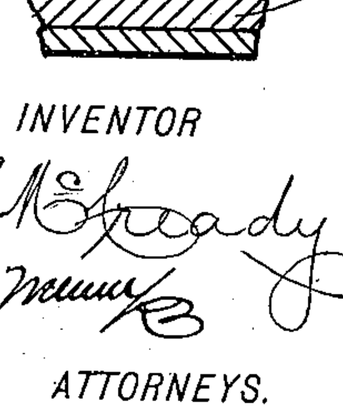


Fig. 8



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CHARLES HENRY McCREADY, OF NEODESHA, KANSAS.

MACHINE FOR SCREWING UP OR UNSCREWING PIPES, &c.

SPECIFICATION forming part of Letters Patent No. 614,333, dated November 15, 1898.

Application filed June 25, 1898. Serial No. 684,467. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HENRY McCREADY, of Neodesha, in the county of Wilson and State of Kansas, have invented a new and Improved Machine for Screwing Up or Unscrewing Pipes or the Like, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved machine for screwing up or unscrewing pipes, tubes, or the like, which is simple and durable in construction, very effective in operation, and arranged for conveniently and rapidly turning the pipes, tubes, shafts, or the like when in a vertical or horizontal position and for the purpose mentioned.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a face view of the improvement as applied on a horizontally-disposed pipe. Fig. 2 is a transverse section of the same. Fig. 3 is an enlarged sectional elevation of the swivel connection. Fig. 4 is a plan view of a modified form of the improvement as arranged for vertical pipes. Fig. 5 is a side elevation of the same with part in section. Fig. 6 is a plan view of one of the connecting-links. Fig. 7 is a side elevation of the same, and Fig. 8 is a cross-section of part of one of the roller-guideways.

The improved machine illustrated in Figs. 1, 2, and 3 is provided with a ring A, mounted to turn in suitable roller bearings or guideways B, held on a ring-shaped platform or frame C for supporting the machine. On one side of the ring A is formed or secured a gear-wheel A′, in mesh with a pinion D, secured on a shaft E′ of an engine E, preferably secured to the platform or frame C, so that when the engine is set in motion a rotary motion is given by the shaft E′ and pinion D to the gear-wheel A′ and ring A. On the outer side of the ring A are held a series of bearings F, preferably four in number and placed an equal distance apart, each bearing being engaged by a pin G, mounted to turn in the bearing and carrying a clevis H, connected by a link I with a clip J, secured to the outer end of a jaw K in the form of a lever fulcrumed at K′ on a ring L, mounted loosely on a ring L′, supported by springs N from the platform or frame C. The inner end of each jaw K is formed with two jaw-faces K^2 K^3, preferably serrated, to securely grip the outer surface of the pipe O to screw up or unscrew the pipe, as the case may be. It is understood that when screwing up the pipe the face K^2 is used, and when unscrewing the pipe the face K^2 engages the external surface of the pipe, the ring being then in a reverse position relative to the pipe.

It is evident that when the several parts are in the position illustrated in the drawings and a rotary motion is given to the ring A in the direction of the arrow a' then the links I pull on the outer ends of the jaws K, so that the inner faces thereof securely grip the peripheral surface of the pipe and turn the latter so as to screw up the pipe. When the ring A is turned in the opposite direction, the jaws swing open to release the pipe, as indicated in dotted lines in Fig. 1. When it is desired to unscrew the pipe, the position of the jaws and links I is reversed by loosening the pivots K′ and swinging the jaws and links over to the other side of the pin G to bring the face K^3 next to the pipe periphery. The operation is the same as above described, with the exception that the ring is turned in the inverse direction of the arrow a' to cause the jaws to grip and turn the pipe.

It is understood that by the arrangement described the ring L is carried around with the ring A by the action of the jaws K, fulcrumed on said ring L; but in case the pipe is not in the center of the ring L the jaws will pull equally and give and take in every direction to screw the pipe straight.

The modified form of machine shown in Fig. 4 is more especially designed for use on vertically-disposed pipes C′—such, for instance, as are used in wells—and in this case the jaws K^4 are fulcrumed on a sectional ring L^2, having loops L^3, in which the jaws are fulcrumed, the loops being connected with each other by links L^4. (Indicated in detail in Figs. 6 and 7.) Two oppositely-arranged

pivots L^5 between the corresponding loops and links are engaged by the inner ends of arms P, fitted to slide at their outer ends in bearings secured to the ring A^2, similar to the ring A', above described in reference to Figs. 1 and 2, and likewise driven from an engine E^2 or other motor. The arms P in this case take the place of the springs N for adjustably connecting the ring L^2 with the ring A^2. The outer ends of the jaws K^4 are provided with clips J', connected by links I' with the clevises H', pivoted on the pins G', mounted to turn in the ring A^2. By the arrangement described the ring L^2 can be readily opened by removing one of the connecting-links L^4 to permit of placing the device conveniently upon the pipe O'.

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

1. A machine for turning pipes, screw-rods and like articles, comprising jaws adapted to grip the article, a ring on which the jaws are fulcrumed, and a driven revoluble ring connected with said jaws, to close the latter on the article and to carry around the jaws, together with the ring on which the jaws are fulcrumed, substantially as shown and described.

2. A machine for turning pipes, screw-rods and like articles, comprising jaws adapted to grip the article, a ring on which the jaws are fulcrumed, a driven revoluble ring connected with said jaws, to close the latter on the article and to carry around the jaws, together with the ring on which the jaws are fulcrumed, the connection between the driven ring and the jaws consisting of a pin mounted to turn on the ring, a clevis fulcrumed on the pin, and a link connecting the clevis with a clip on the jaw, substantially as shown and described.

3. A machine for turning pipes, screw-rods and like articles, comprising jaws adapted to grip the article, a ring on which the jaws are fulcrumed, a driven revoluble ring connected with said jaws, to close the latter on the article and to carry around the jaws, together with the ring on which the jaws are fulcrumed, and a yieldingly-mounted bearing for the said first-named ring, substantially as shown and described.

4. A machine for turning pipes and other like articles, comprising a driven revoluble ring, a second concentric ring connected with the driven ring and made in sections, jaws fulcrumed on the concentric ring, and connections between the jaws and driven ring, substantially as shown and described.

5. The combination of a revoluble ring, jaws connected with the ring at their outer ends, the jaws running inwardly toward the center of the ring, and a second ring moving with the first and having the jaws pivoted thereon.

6. The combination of a revoluble member, jaws connected at their outer ends with said member and extending inward toward the center thereof, means for driving the said revoluble member, and a second revoluble member having connection with the first and located inward thereof, the jaws being pivoted to said second revoluble member.

7. The combination of a revoluble member, means for driving the same, jaws having their outer portions connected with said member and extending inward toward the center thereof, a second revoluble member on which the jaws are pivoted, and means for connecting the said two revoluble members, so that they will turn together and so that the second-named member may have in addition limited movement on the first.

CHARLES HENRY McCREADY.

Witnesses:
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