

No. 879,616.

PATENTED FEB. 18, 1908.

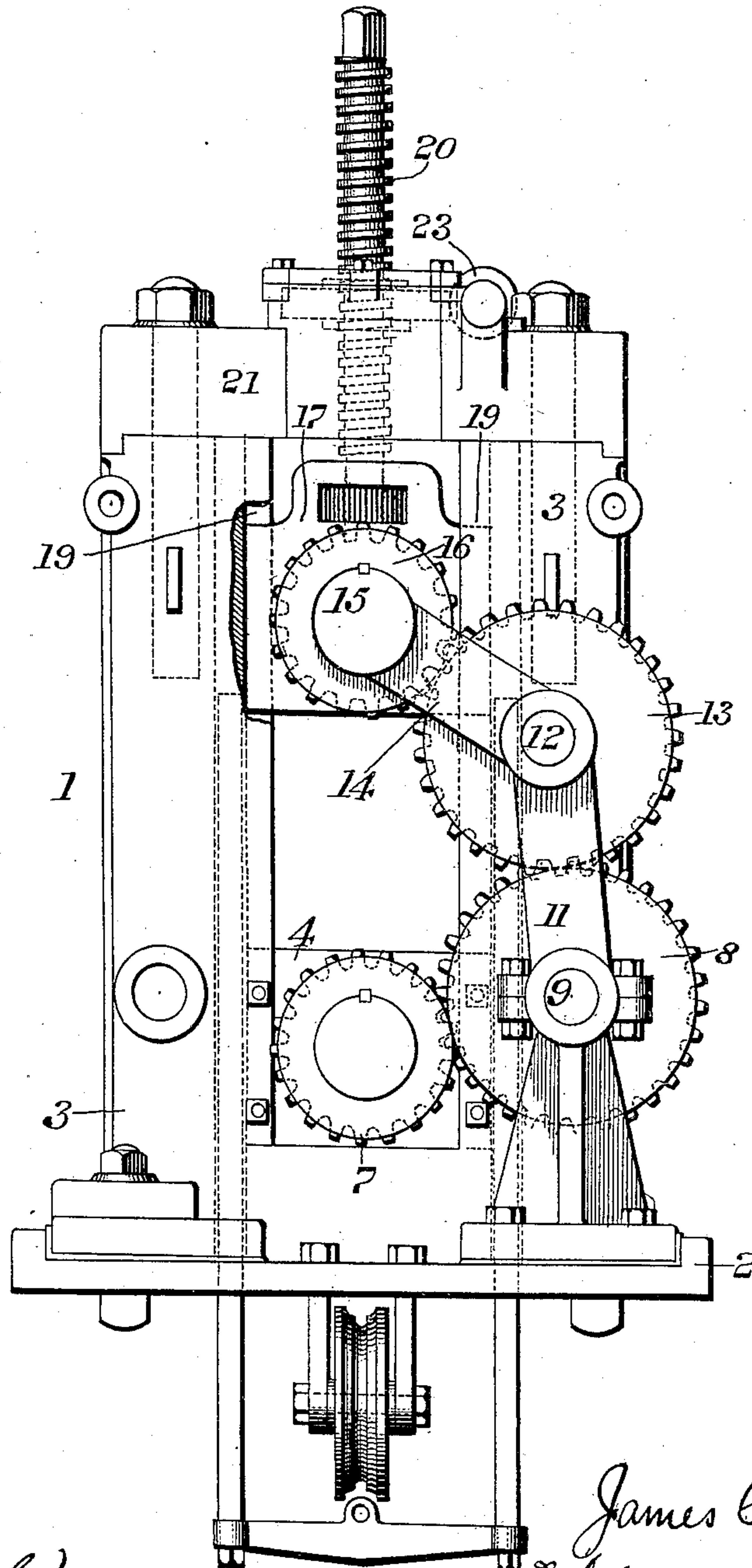
J. EYNON.

ROLLING MILL FOR CRUSHING PIPES, BLOOMINGS, &c.

APPLICATION FILED OCT. 10, 1903.

3 SHEETS—SHEET 1.

*Fig. 1.*



Witnesses

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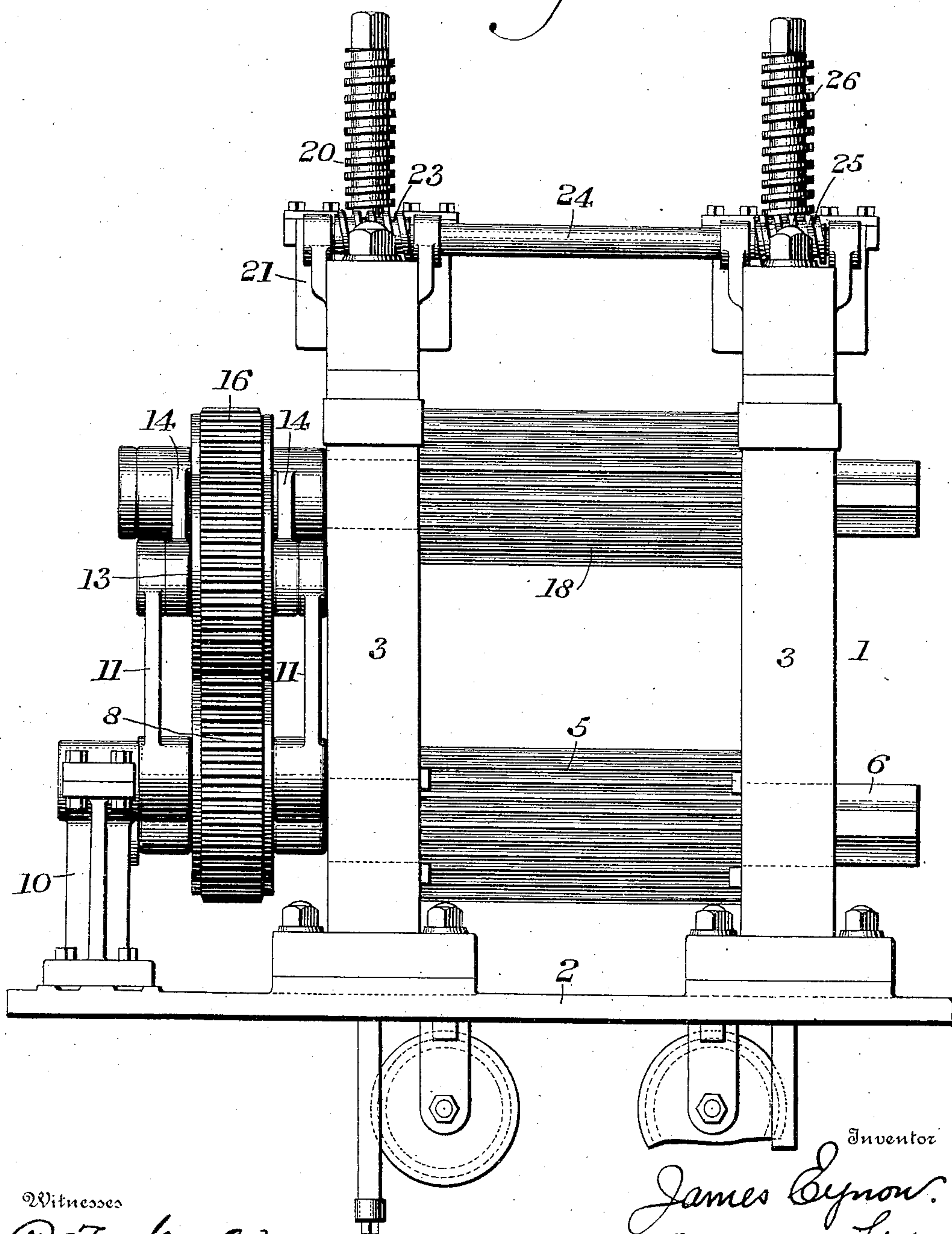
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3 SHEETS—SHEET 2.

*Fig. 2.*



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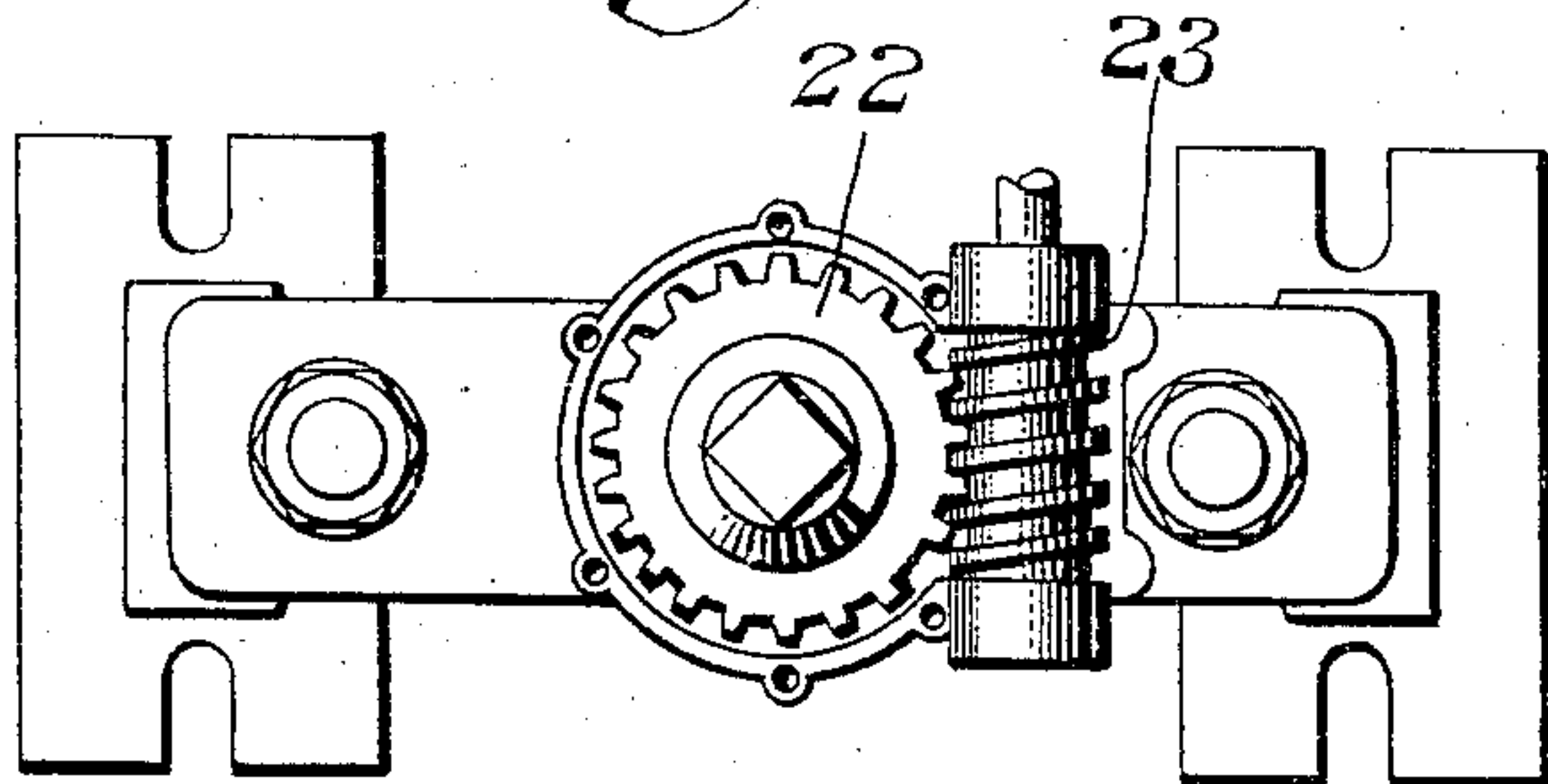
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3 SHEETS—SHEET 3.

*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

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ROLLING-MILL FOR CRUSHING PIPES, BLOOMINGS, &c.

No. 879,616.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed October 10, 1903. Serial No. 176,520.

*To all whom it may concern:*

Be it known that I, JAMES EYNON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Rolling-Mills for Crushing Pipes, Bloomings, &c., of which the following is a specification.

My invention consists of an improvement in rolling mills for crushing pipe, bloomings, etc., having means for adjusting the position of the rollers with respect to each other and means for imparting motion from one roller to the other, regardless of the distance apart the rollers may be.

It further consists of novel details of construction, all as will be hereinafter fully set forth.

Figure 1 represents a side elevation of a portion of a rolling mill embodying my invention. Fig. 2 represents a front elevation thereof. Fig. 3 represents a plan view of the upper portion in detached position.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates a rolling mill having a base 2 and the uprights or standards 3. Rigidly secured to said standards are plates 4 in which are journaled the ends of the shaft carrying the lower roller 5, on one end 6 of said shaft is designed to be secured a pulley or gear and on the opposite end is a gear 7 which is in mesh with a larger gear 8 mounted on a shaft 9 which is journaled in one of the standards 3 and in pillow block 10, it being noted that the positions of said gears 7 and 8 are stationary.

11 designates links which are carried at one end by the shaft 9 and the other ends of which support a shaft 12, which carries a gear 13 which is in mesh with the gear 8. The shaft 12 also carries links 14 which are connected at their opposite ends with a shaft 15 which carries a gear 16 in mesh with said gear 13, said shaft 15 carrying the plates 17 and having thereon the upper roller 18, said plates 17 being adapted to move in guides 19 formed in the upright 3.

Power is imparted to the roller 5 in any suitable manner through the pulley on the end 6 of the shaft of the roller 5, which imparts motion to the gear 7, rotates the gear 8 also the gear 13 and the gear 16 which thus rotates the roller 18, to impart suitable motion thereof with respect to the motion or direction of rotation of the roller 5, it being

seen that the stationary gear 7 imparts motion to the stationary gear 8, which in turn to the loose gear 13, whereby the facing surfaces of said rollers 18 and 5 will move in the same direction.

When it is desired to lower the upper roll after an article to be crushed has been acted upon, in order to still further crush the same, the plates 17 slide in the guide 19 so that the distance between the rollers is shortened; it likewise will shorten the distance between the shaft 15 and the shaft 9. By reason of the links 11 and 14, the gear 13 is permitted or caused to roll outwardly and yet will remain in mesh with both the gears 8 and 16 and will thus impart motion from the one to the other.

In order to lower the plates 17, and with them the upper roller 18 and gear 16, I have shown a feed screw 20 connected with said plates and passing through the upper head 21 of the machine, said feed screw 20 having a gear 22 meshing with the worm 23 carried by a shaft 24 which has at its opposite end, a worm 25 meshing with a second feed screw 26, carried in the same manner as the screw 20, whereby it will be seen that by turning either the feed screws 20 or 26 or the worm shaft the roller 18 will be evenly lowered, affording both rapid and slow adjustment. While I have shown the feed screw adapted to be turned by hand, it will be evident that the same may be automatically turned at the proper time after the passage through the roller of the article to be crushed, in order that the proper amount of feed may be given to the upper roller to accomplish the desired object.

The rolls are shown as corrugated for the purpose of better gripping pipe or other tubular articles, but it is to be understood that the present invention is in no wise restricted to the employment of corrugated rolls.

The gearing may be used on one side or end of the machine as shown at the left of Fig. 2, or if desired, the gearing can be duplicated on both sides of the machine, and other changes may be made that come within the scope of the invention.

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

In a device of the character described, a lower fixed roller, a gear thereon, an upper roller adjustable toward and from the fixed roller, housings at each end in which said up-

per roller is adjustable, a gear upon said upper roller, a floating shaft, a gear thereon meshing with the gear on the upper roller, a fixed shaft, inside and out-board bearing  
5 therefor, a gear upon said fixed shaft meshing with the gears upon the floating shaft and lower roller respectively and links connecting

the floating shaft with the fixed shaft and upper roller upon opposite sides of the gears thereon.

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