

No. 782,700.

PATENTED FEB. 14, 1905.

J. R. RUSBY.
TUMBLING BARREL.
APPLICATION FILED JULY 14, 1904.

2 SHEETS—SHEET 1.

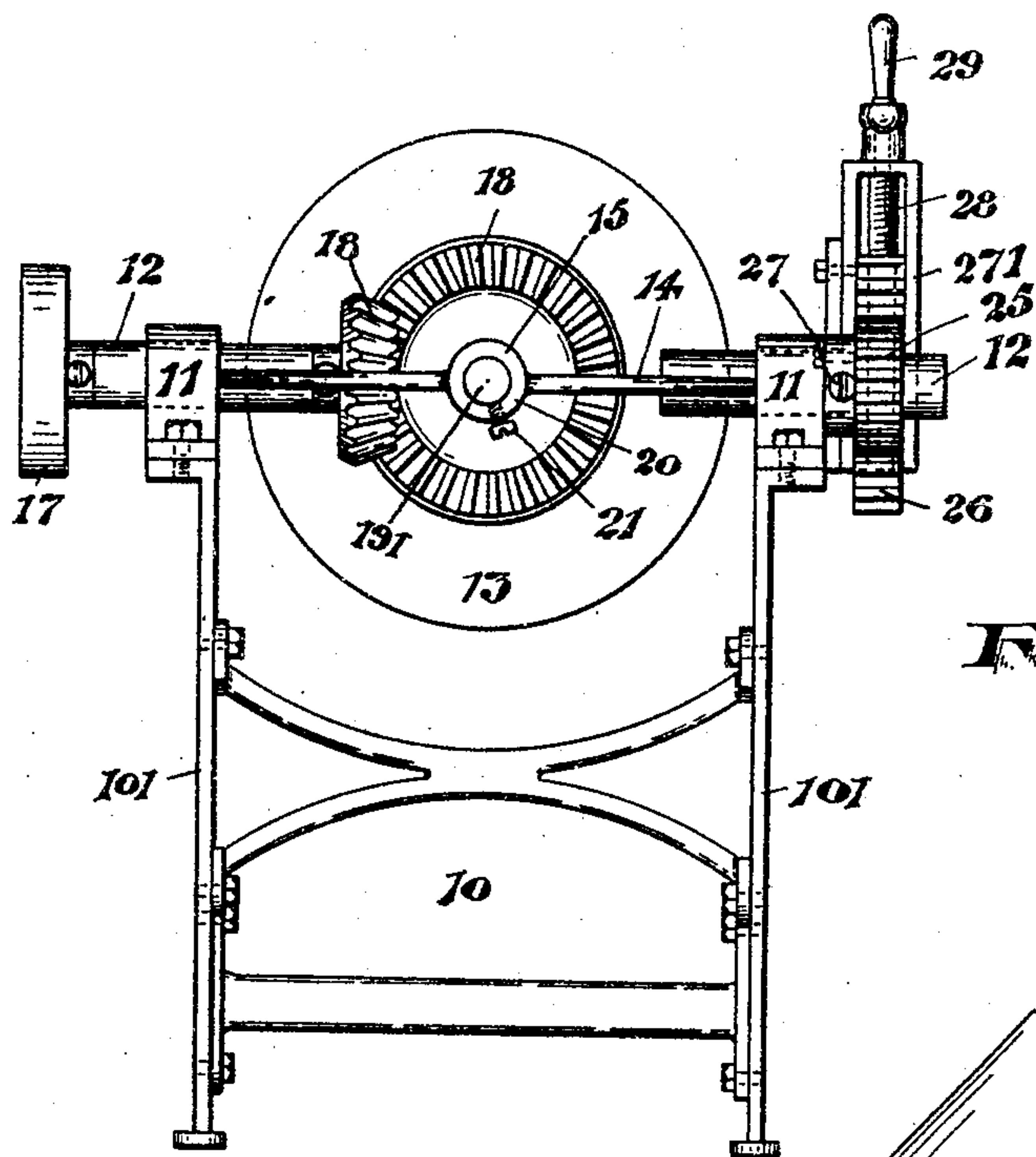


Fig. 1.

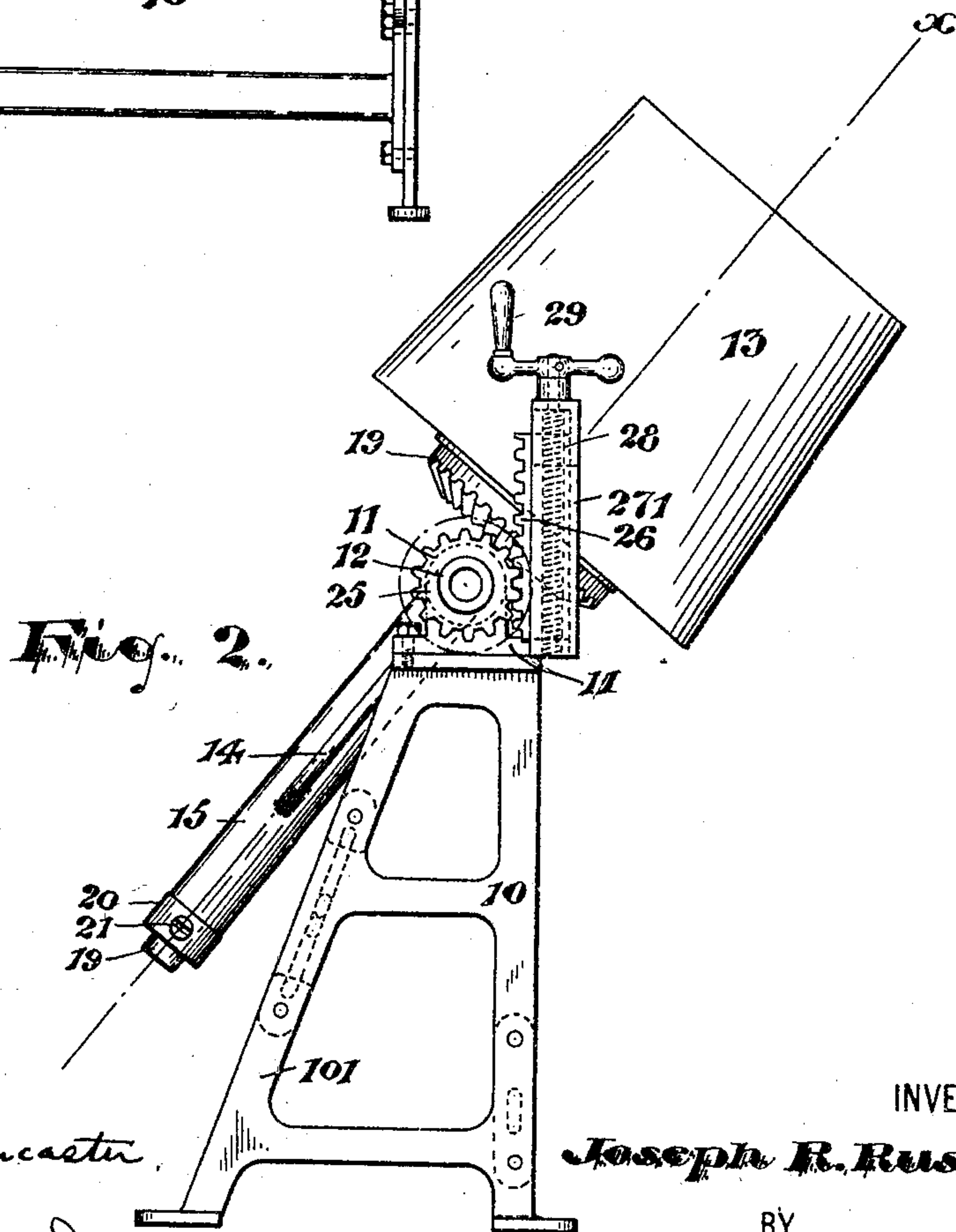


Fig. 2.

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2 SHEETS—SHEET 2.

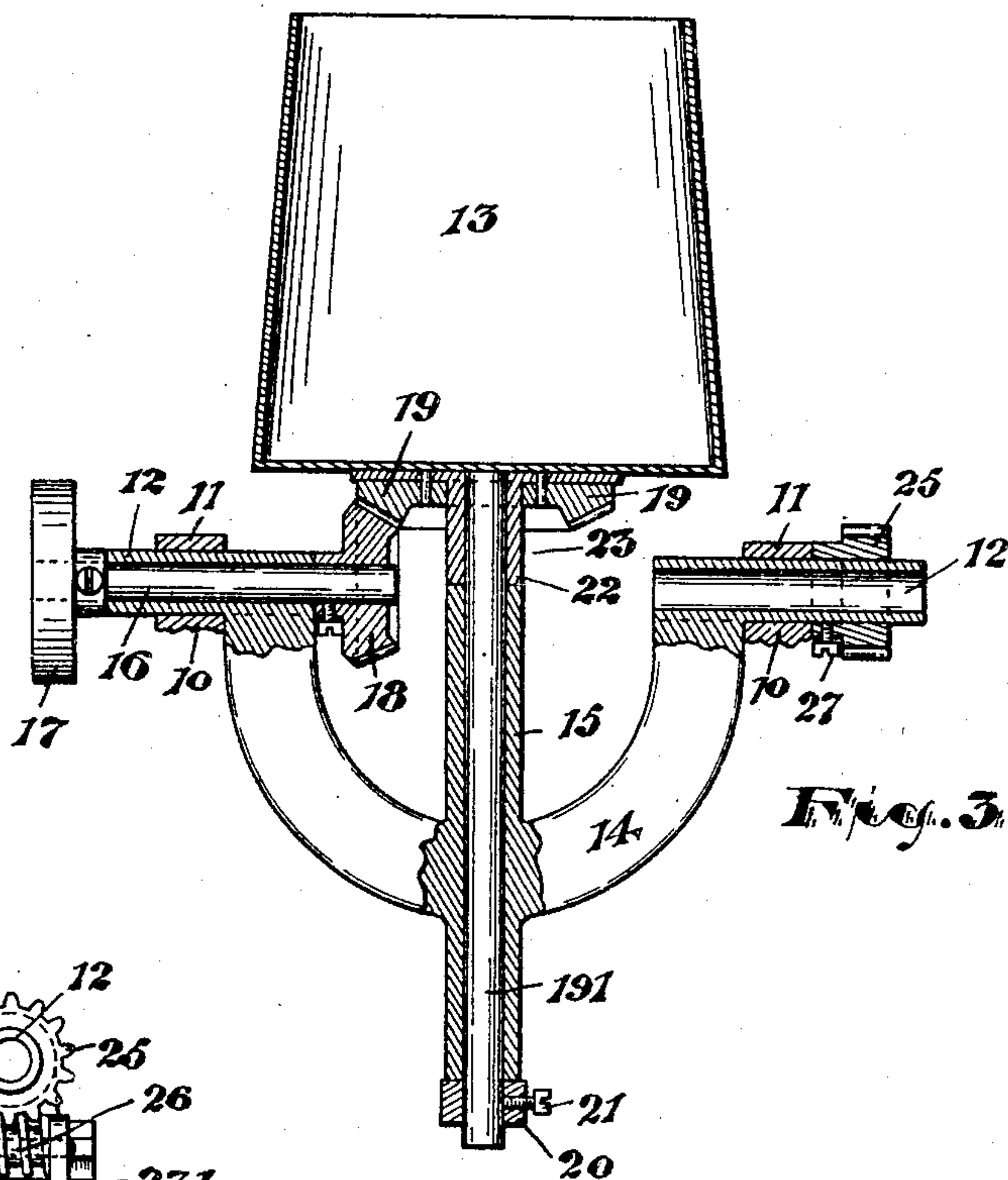


Fig. 3.

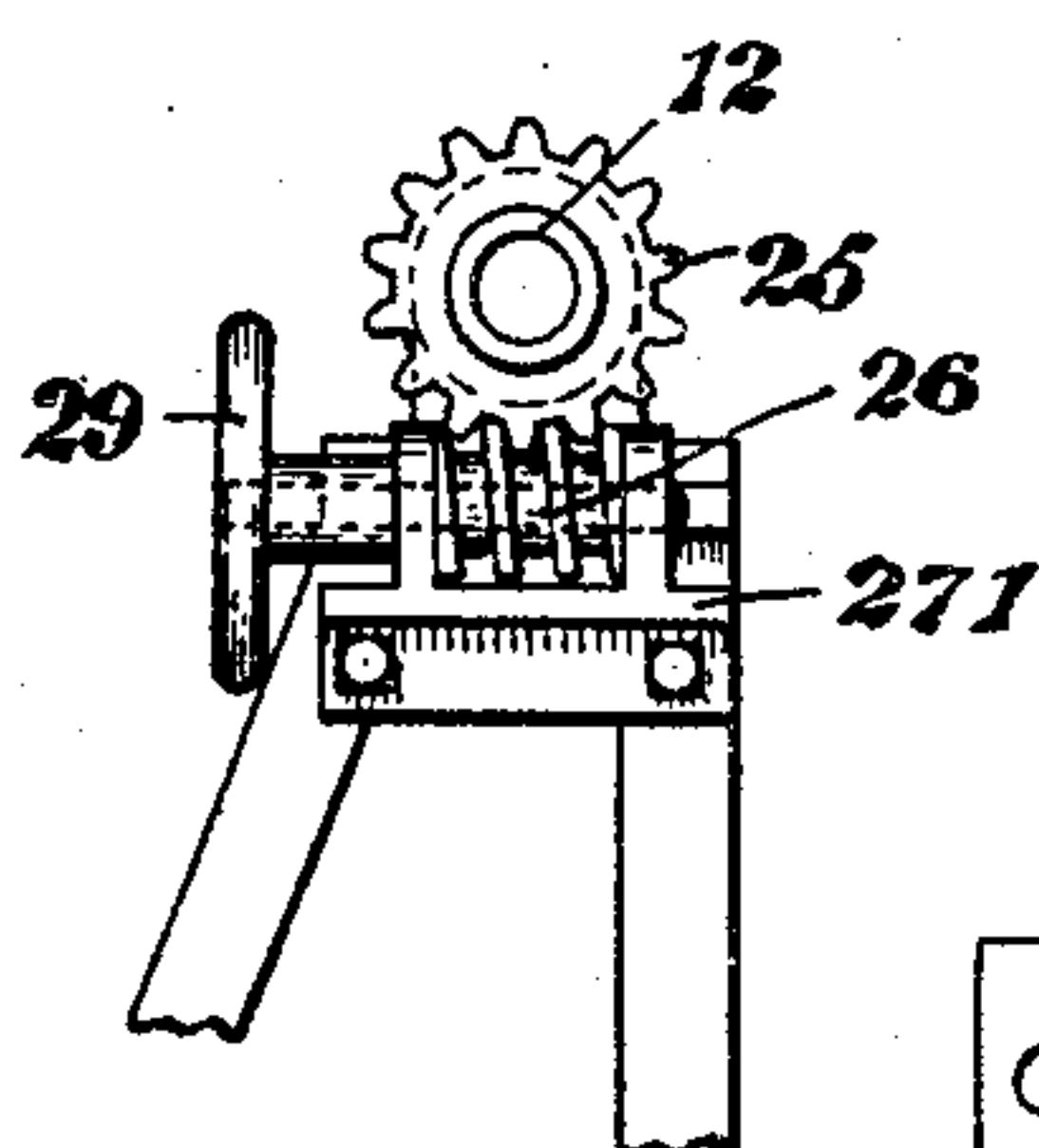


Fig. 4.

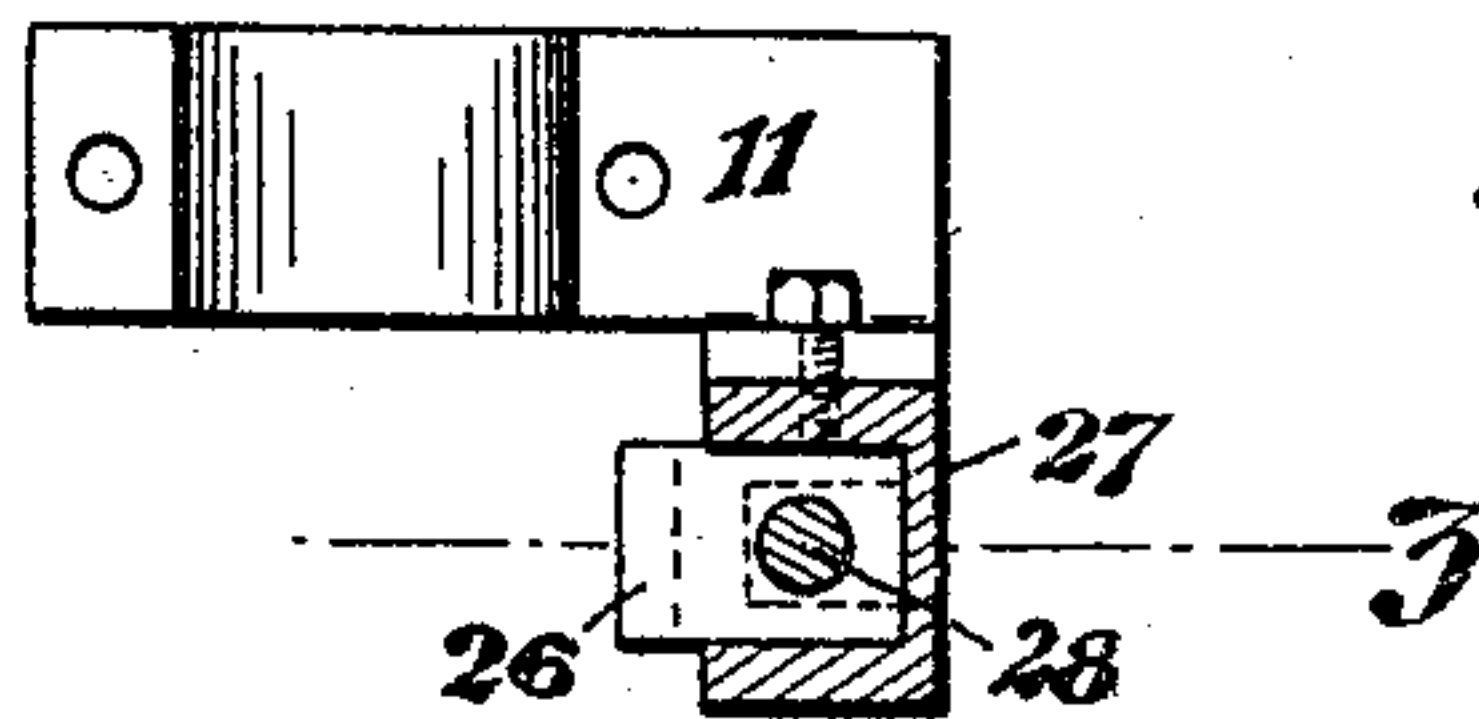


Fig. 5.

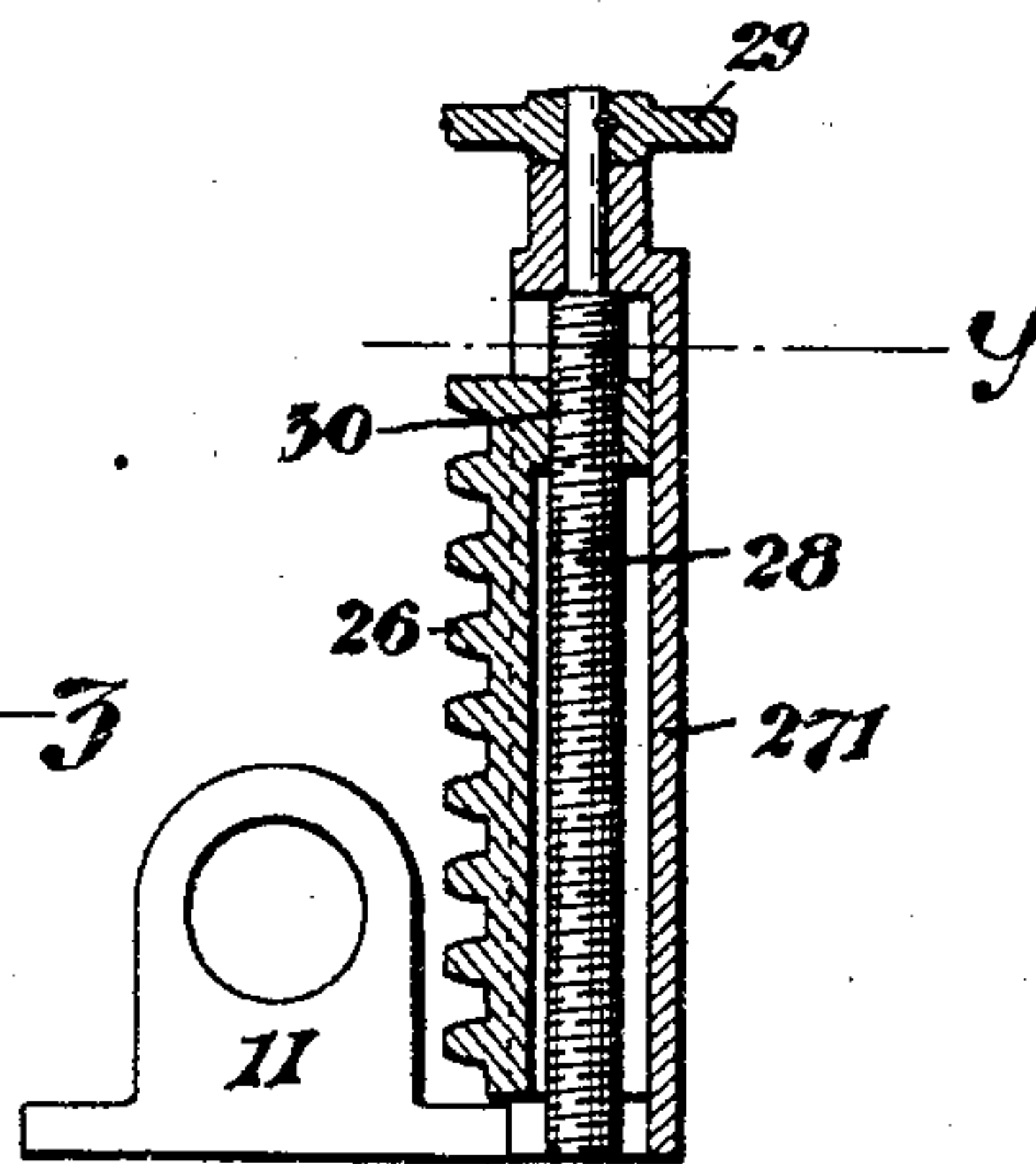


Fig. 6.

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JOSEPH R. RUSBY, OF BLOOMFIELD, NEW JERSEY.

TUMBLING-BARREL.

SPECIFICATION forming part of Letters Patent No. 782,700, dated February 14, 1905.

Application filed July 14, 1904. Serial No. 216,608.

To all whom it may concern:

Be it known that I, JOSEPH R. RUSBY, a citizen of the United States, residing at Bloomfield, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Tumbling-Barrels; 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, reference being had to the accompanying drawings, and to numerals of reference marked thereon, which form a part of this specification.

The objects of this invention are to facilitate the work of tumbling castings and to thereby smooth or polish their surfaces, to enable the tumbling operation to be varied with convenience and ease, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved tumbling-machine and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is a rear view of my improved tumbling-machine. Fig. 2 is a side view of the same; and Fig. 3 is a detail sectional view of the upper part, taken on line *x* of Fig. 2. Fig. 4 indicates a modification of construction; and Fig. 5 is a detail sectional view of a top bearing of the frame and a certain sliding rack in connection therewith, the section being taken on line *y* of Fig. 6; and Fig. 7 is a section taken on line *z* of Fig. 5.

In said drawings, 10 indicates the frame of the machine, having connected side plates 101, at the top of which are boxes or bearings 11 to receive shafts 12, with or upon which the tumbling-barrel 13 is adapted to be turned pivotally. Said shafts 12 are preferably integrally connected by a downwardly-turned bow or yoke 14, having at its center an integral hollow or tubular box or bearing 15, disposed at right angles to the axes of the shafts 12.

In one of the pivotal shafts 12, which is hollow or tubular, is arranged a driving-shaft 16, having at one end a power-pulley 17 and at its opposite or inner end a beveled gear-wheel 18, which latter directly engages a second beveled gear-wheel 19, secured at the bottom of the tumbling-barrel 13 and adapted to cause the said tumbling-barrel to rotate on its axial shaft 191 under the power transmitted from the pulley 17. By having the pulley 17 and the beveled gear-wheel 18 on the one shaft which lies at the center of movement of the pivotal shafts 12 the bow or yoke 14 and the tumbling-barrel 13 may be made to describe complete circles, thus conducing to convenience in operation and the saving of time. The said gear-wheel 19 is arranged on the shaft 191, which lies within the box 15 and is held therein by a collar 20 and a set-screw 21 at one end and at the other end by the hub 22 and a set-screw 23 of the beveled gear-wheel 19, although it is evident that other means may be employed for setting the parts in position.

The construction shown permits of an easy assemblage, adjustment, and disassociation of parts.

Upon the horizontal shaft 12 opposite the one having therein the power-shaft 16 is arranged a pinion 25, adapted to engage, preferably, a rack 26, the said pinion 25 being fixed upon the said shaft 12 by a set-screw 27 or other suitable means. Said rack is preferably a straight one arranged in a bracket 271, formed integral with or secured to the bearing or box 11, the said rack 26 being arranged in a slideway in said bracket 271 and being operated in said slideway by means of a screw-shaft 28 and handle 29. By turning the handle 29 and shaft 28 the rack, which is correspondingly threaded at 30 to engage the said screw-shaft, is caused to slide longitudinally in the said slideway, effecting a turning of the pinion 25, shaft 12, and tumbling-barrel 13. Thus the said tumbling-barrel may be turned by the said handle and connections, so as to dump its contents, or the axes of rotation of said tumbling-barrel 13 can be changed at will, and thereby I can modify the tumbling operations to increase or diminish

the force with which the individual castings or other contents are caused to engage one another.

In lieu of the straight rack shown in Figs. 1, 2, and 6 I may employ a worm-wheel (shown in Fig. 4) for the purpose of securing the proper adjustment, the worm-wheel serving both as a rack and as a screw-shaft in effecting the desired results.

I am aware that various other modifications in the details of construction may be made without departing from the spirit or scope of the invention, and consequently I do not wish to be limited by all the positive expressions above employed, excepting as the prior state of the art may require.

Power applied to the pulley 17 is transmitted to the barrel 13 to effect a tumbling operation, and by operating the handle 29 and parts connected therewith the inclination of axis of rotation of said tumbling-barrel is changed without interfering with the rotary movements.

The adjustable rack, both in its straight form of Figs. 2 and 6 or in its round screw-threaded form of Fig. 4, enables the oscillating tumbling-barrel and its carrying means to be firmly locked at any desired adjustment or position without employing special locking means for such purpose. The construction of the frame-like part carrying the barrel and its shaft, because of the yoke 14, enables the axis of rotation of the barrel to be changed to lie in almost any radii of a great circle.

Having thus described the invention, what I claim as new is—

1. The improved tumbling-machine herein described, comprising a bed-frame having bearings at the top for horizontal shafts 12, and having a rack, adapted to be adjusted by means of a handle, horizontal shafts arranged in said bearings, connected together and with a box or bearing disposed at right angles to said horizontal shafts, one of said horizontal shafts being hollow and having a power-shaft therein, said power-shaft having a pulley at

one end and a beveled gear-wheel at the opposite end and the other of the horizontal shafts having a pinion engaged by said rack, a tumbling-barrel shaft arranged in said box or bearing at right angles to said horizontal shafts, and a beveled gear-wheel on the said tumbling-barrel shaft, and a tumbling-barrel, all substantially as set forth.

2. The improved tumbling-machine herein described comprising a bed-frame having boxes or bearings for a carrying-frame and means for turning said carrying-frame on said bearings, the said carrying-shaft embodying two shafts connected by a yoke, one of said shafts being hollow and the said yoke at its center having a box or bearing for the tumbling-barrel shaft at the center of said yoke, a tumbling-barrel shaft having its axis in said center bearings and means for rotating said tumbling-barrel, consisting of a shaft in the said hollow shaft having a power-pulley at one end and at its opposite end a gear-wheel to turn the tumbling-barrel.

3. The improved tumbling-machine, comprising a bed-frame, having a slideway, a rack in said slideway, a screw and handle for adjusting said rack, two shafts integrally connected by a yoke one of which shafts is hollow at its axial center, the said yoke being provided with a central box or bearing for the tumbling-barrel shaft, a power-shaft in the hollow shaft, a pulley and a beveled gear-wheel turning therewith a barrel having a beveled gear-wheel at its bottom, and having its axis in said central box or bearing, and a pinion on one of the connected shafts, and engaging the said adjustable rack, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of July, 1904.

JOSEPH R. RUSBY.

Witnesses:

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