

A. R. KLINGLOFF.
 DEVICE FOR GRINDING ELEVATOR PLUNGERS.
 APPLICATION FILED FEB. 11, 1910.

961,969.

Patented June 21, 1910.

Fig. 1.

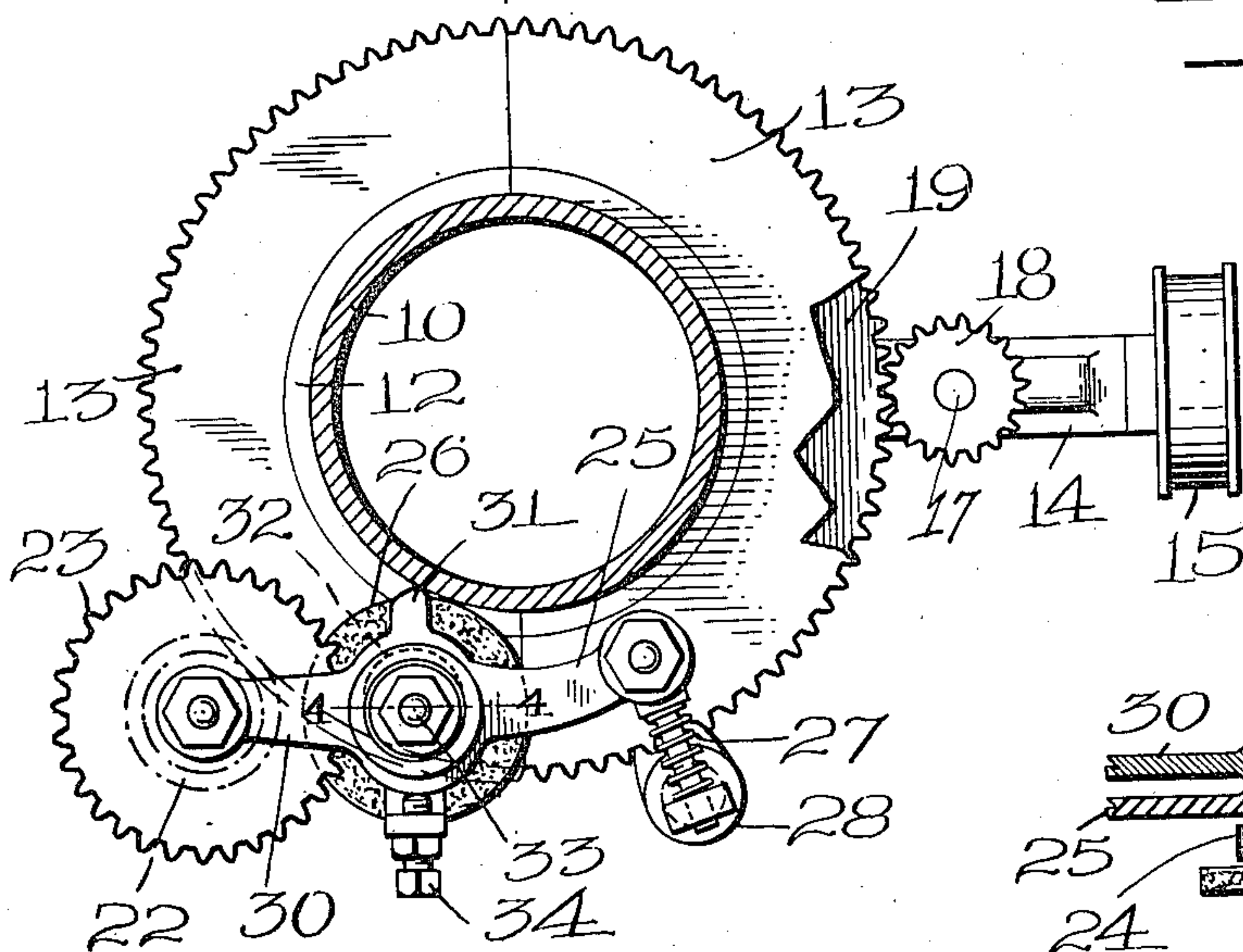
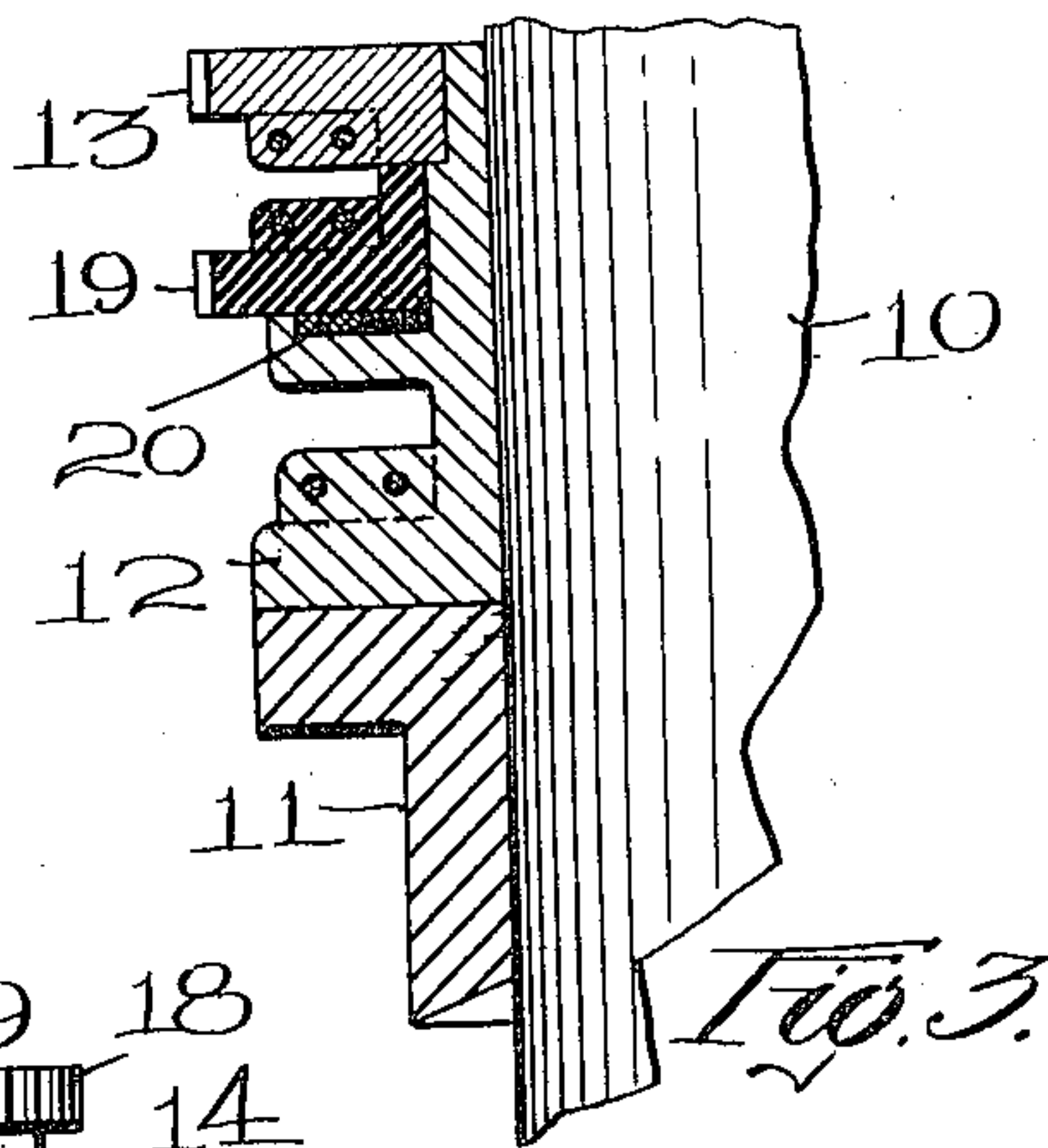
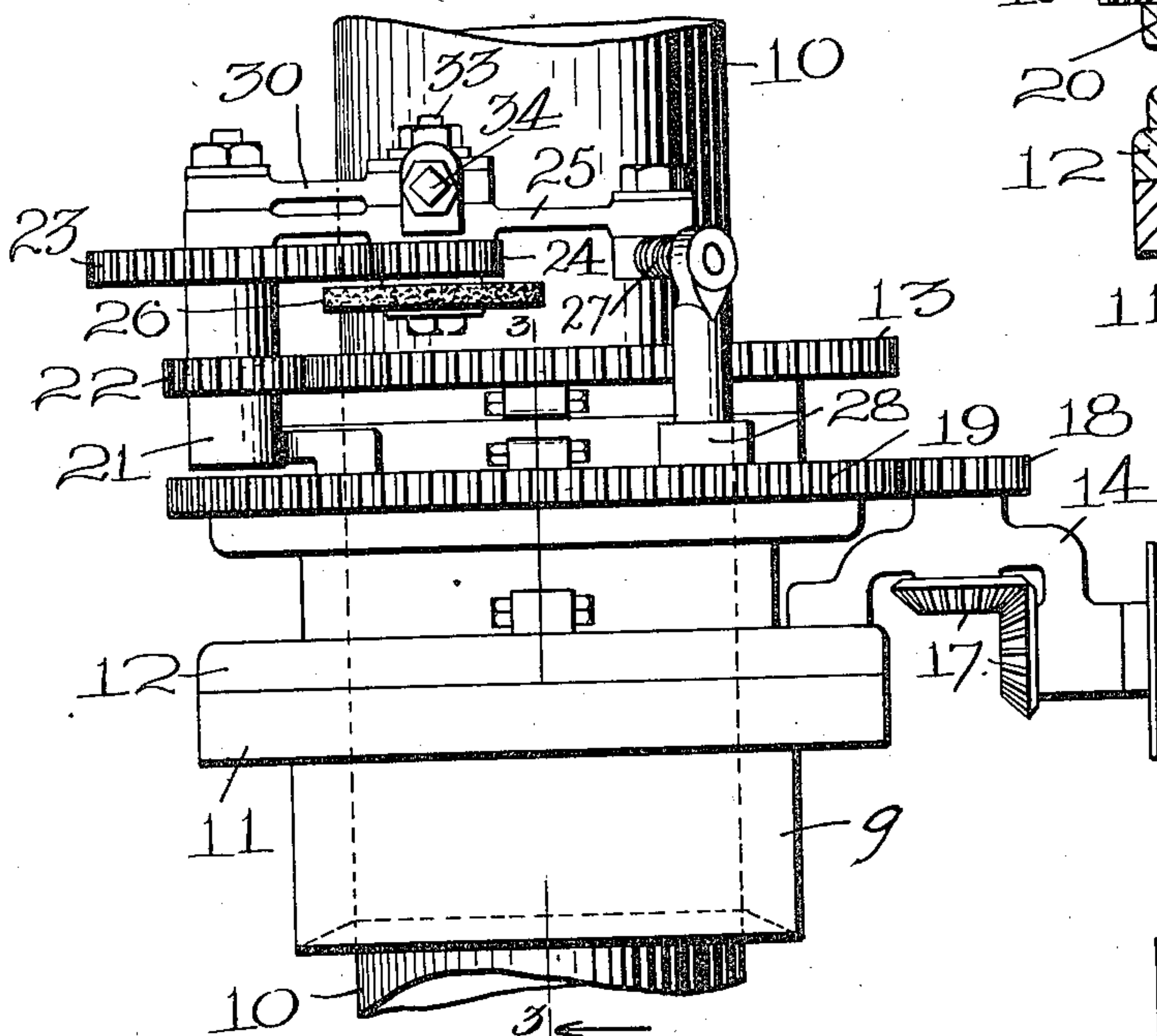


Fig. 2.

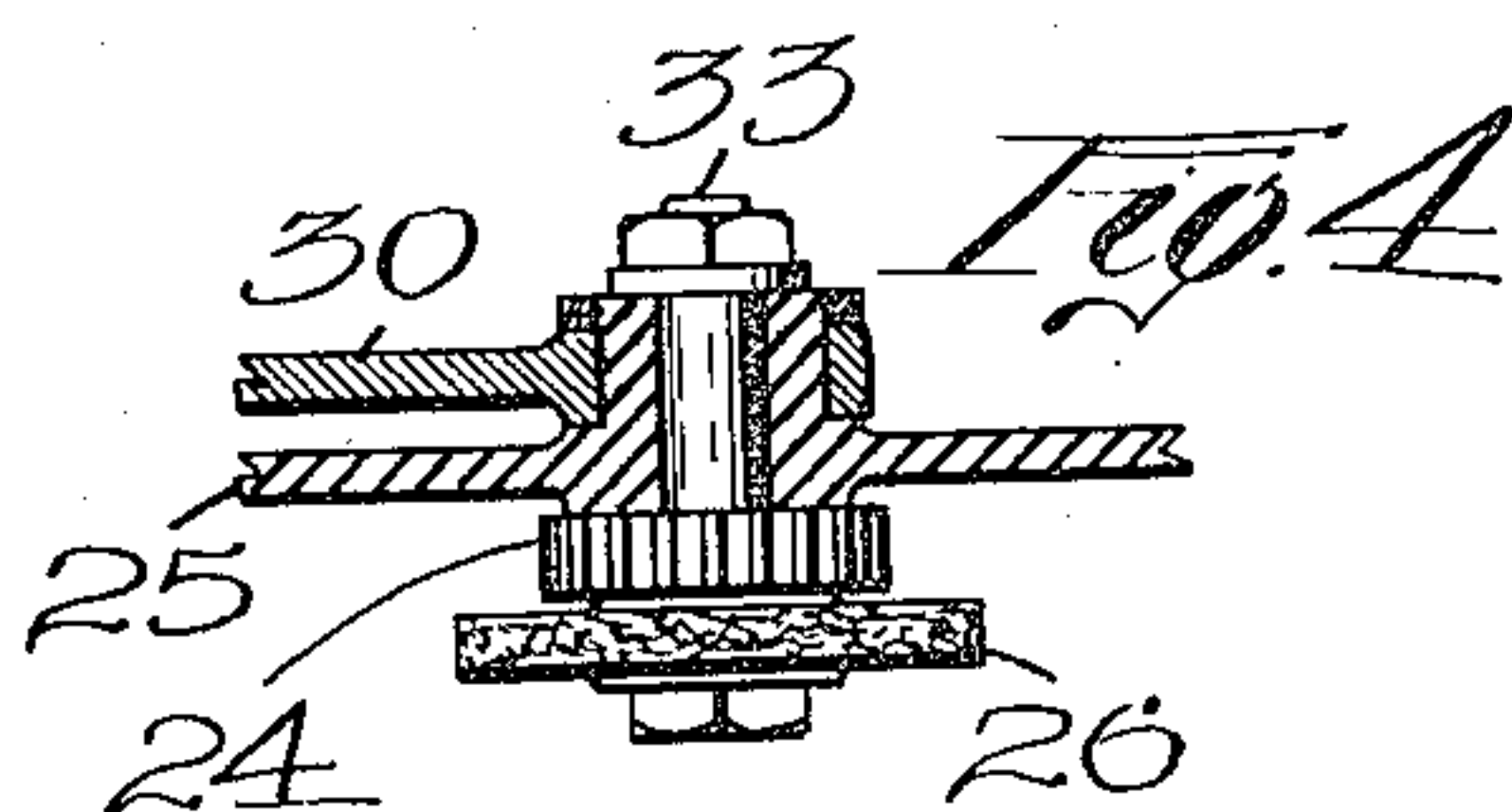


Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

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DEVICE FOR GRINDING ELEVATOR-PLUNGERS.

961,969.

Specification of Letters Patent. Patented June 21, 1910.

Application filed February 11, 1910. Serial No. 543,377.

To all whom it may concern:

Be it known that I, ANDREW R. KLINGLOFF, a citizen of the United States, residing at Roslindale, in the county of Suffolk and State of Massachusetts, have invented a new and useful Device for Grinding Elevator-Plungers, of which the following is a specification.

This invention relates to a device for grinding elevator plungers.

The principal objects of the invention are to provide a simple, convenient, detachable device for grinding elevator plungers as the latter reciprocate so as to keep them smooth and avoid the wear on the packing which roughened plungers cause.

The invention also involves numerous details and constructions and combinations of parts as will appear hereinafter.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a side elevation of a portion of an elevator cylinder and its plunger with a preferred form of this invention applied thereto. Fig. 2 is a plan of the same showing the plunger in section. Fig. 3 is a sectional view on the line 3—3 of Fig. 2, and Fig. 4 is a sectional view on the line 4—4 of Fig. 2.

The invention is shown as applied to an elevator plunger 10 adapted to reciprocate vertically in a cylinder. On this cylinder is shown a stuffing box member 11 of any ordinary character. On this part of the stuffing box is mounted a two part cylindrical support 12 adapted to be bolted in position on the stuffing box. This support is provided at its top with a stationary gear wheel 13 concentric with the cylinder and plunger. On this support also is fixed a bracket 14 in which is journaled a shaft provided with a pulley 15 receiving power from a motor 16 or any other desired source of power. This shaft is connected by beveled gears 17 with another shaft journaled in the bracket on which is fixed a pinion 18. This pinion constantly meshes with a rotatable gear 19 shown as of the same size as the gear 13 and concentric therewith. This gear is mounted on the split support 12, and has a babbitt bearing 20. Movable with this gear and fixed to it is a bracket 21 carrying a vertical shaft on which is fixed a pinion 22 meshing with the stationary gear 13. On this shaft also is fixed a gear 23 which

meshes with a gear or pinion 24 on a vertical shaft journaled in a bracket 25. This bracket is pivoted on the shaft on which the gear 23 is located and carries a grinding wheel 26 obviously rotated by the gear 23.

At the end of the bracket 25 is a spring 27 mounted on a bracket 28 fixed to the gear 19. This spring tends to force the bracket inwardly toward the plunger and to bring the grinding wheel into contact with it. This is regulated by an arm 30 pivoted on the shaft on which the gear 23 is located and extending along the bracket 25 and having a gage or guide 31 thereon projecting toward the plunger. This arm is provided with a slot 32 and is secured therethrough to the bracket 25 by a bolt 33. When this bolt is loosened the guard can be adjusted by a screw 34 mounted on the bracket 25.

The operation of the device is as follows: The parts having been mounted on the stuffing box of the cylinder and the pulley 15 connected with the motor or other source of power, the rotation of this pulley obviously will cause the gear 19 to rotate, carrying with it the brackets 21 and 28. This carries the pinion 22, always in mesh with the gear 13, around the same and causes this pinion to turn on its own axis as it travels around the large gear. This obviously rotates the grinding wheel as it travels around the cylinder guided by the guard. It will be noted that this device is intended to operate while the plunger is traveling slowly up or down. It will also be noted that the grinding wheel will follow the slight inaccuracies of the plunger to a certain extent, the object being to grind it smooth rather than to grind it to a true cylindrical surface. A plunger ground in this way will operate efficiently and not cut the packing in the stuffing box.

While I have illustrated and described a preferred embodiment of the invention, I am aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction shown and described, but

What I do claim is:—

1. In a device for smoothing elevator plungers, the combination of a rotary element mounted on a plunger cylinder, means

supported by the plunger cylinder for rotating said element, and means for grinding the surface of the plunger.

2. In a device of the character described, the combination of a grinding wheel, means rotatably mounted for supporting the grinding wheel, and means for simultaneously rotating said means and rotating the wheel on its axis.
3. In a device of the character described, the combination of a bracket adapted to be carried by an elevator cylinder, a shaft journaled in said bracket, a pinion on the shaft, means for rotating the pinion, a gear wheel rotatably mounted on the cylinder in mesh with said pinion, and means carried by said gear wheel for grinding the surface of the plunger.
4. In a device of the character described, the combination of a bracket adapted to be carried by an elevator cylinder, a shaft journaled in said bracket, a pinion on the shaft, means for rotating the pinion, a gear wheel rotatably mounted on the cylinder in mesh with said pinion, a bracket carried by the gear wheel, a grinding wheel journaled on the bracket in position to engage the surface of the plunger, and means for rotating the grinding wheel as the gear wheel rotates.
5. In a device of the character described, the combination of a bracket adapted to be carried by an elevator cylinder, a shaft journaled in said bracket, a pinion on the shaft, means for rotating the pinion, a gear wheel rotatably mounted on the cylinder in mesh with said pinion, a gear wheel fixed with respect to the cylinder and concentric with the first named gear wheel, a bracket carried by the first named gear wheel, a shaft on the bracket, a pinion on the shaft engaging the second gear wheel, a grinding wheel supported by the bracket, and means whereby as said shaft rotates, the grinding wheel will rotate on its axis.
6. In a device of the class described, the combination of two gear wheels, one fixed and the other rotary, a pinion journaled on the rotatable gear wheel and movable bodily therewith and constantly in mesh with the fixed gear wheel, a grinding wheel movable bodily with the rotatable gear wheel and adapted to be rotated on its axis by said pinion.
7. In a device of the class described, the

combination of two gear wheels, one fixed and the other rotary, a pinion journaled on the rotatable gear wheel and movable bodily therewith and in mesh with the fixed gear wheel, a grinding wheel movable bodily with the rotatable gear wheel, a grinding wheel movable bodily with the rotatable gear wheel and adapted to be rotated on its axis by said pinion, and yielding means for forcing the grinding wheel toward the axis of said gear wheels.

8. In a device of the class described, the combination of two gear wheels, one fixed and the other rotary, a pinion journaled on the rotatable gear wheel and movable bodily therewith and in mesh with the fixed gear wheel, a grinding wheel movable bodily with the rotatable gear wheel, means connected with said pinion for rotating the grinding wheel on its axis, a bracket pivoted on the axis of said pinion, a shaft journaled on said bracket on which the grinding wheel is fixed, and yielding means for forcing the bracket to swing on its axis toward the axis of said gear wheels.

9. In a device of the class described, the combination of two gear wheels, one fixed and the other rotary, a pinion journaled on the rotatable gear wheel and movable bodily therewith in mesh with the fixed gear wheel, a grinding wheel movable bodily with the rotatable gear and adapted to be rotated on its axis by said pinion, a bracket on which said grinding wheel is journaled, a guard mounted on said bracket and projecting toward the plunger, and yielding means for forcing the bracket toward the plunger, whereby the guard will engage it and guide the grinding wheel.

10. In a device of the class described, the combination of a bracket rotatable around an elevator plunger, a grinding wheel mounted on said bracket, a guard adjustably mounted on the bracket and adapted to engage the plunger, and means for yieldingly forcing the guard against the plunger.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

ANDREW R. KLINGLOFF.

Witnesses:

D. J. O'LEARY,
T. M. SHEEHY.