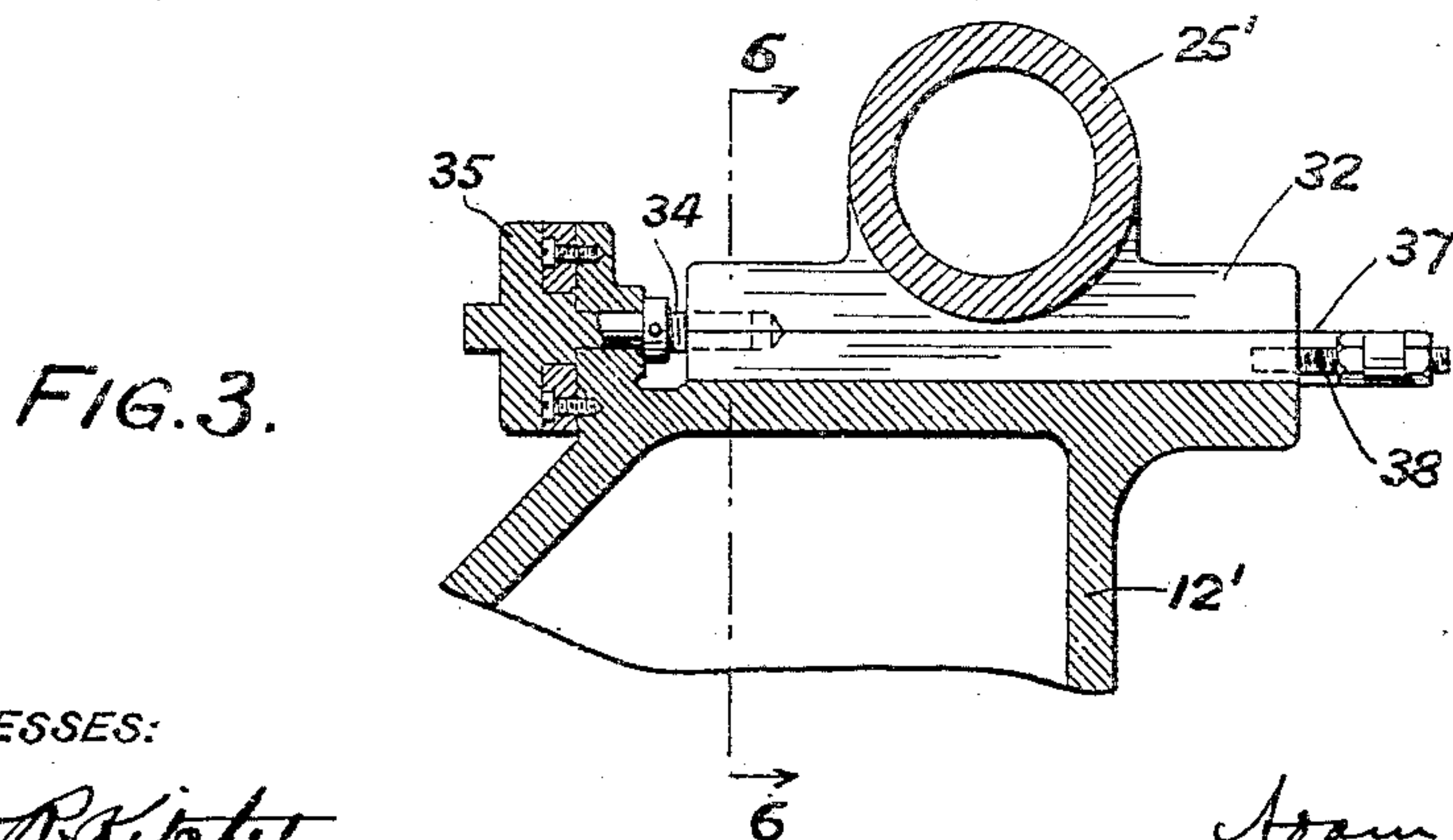
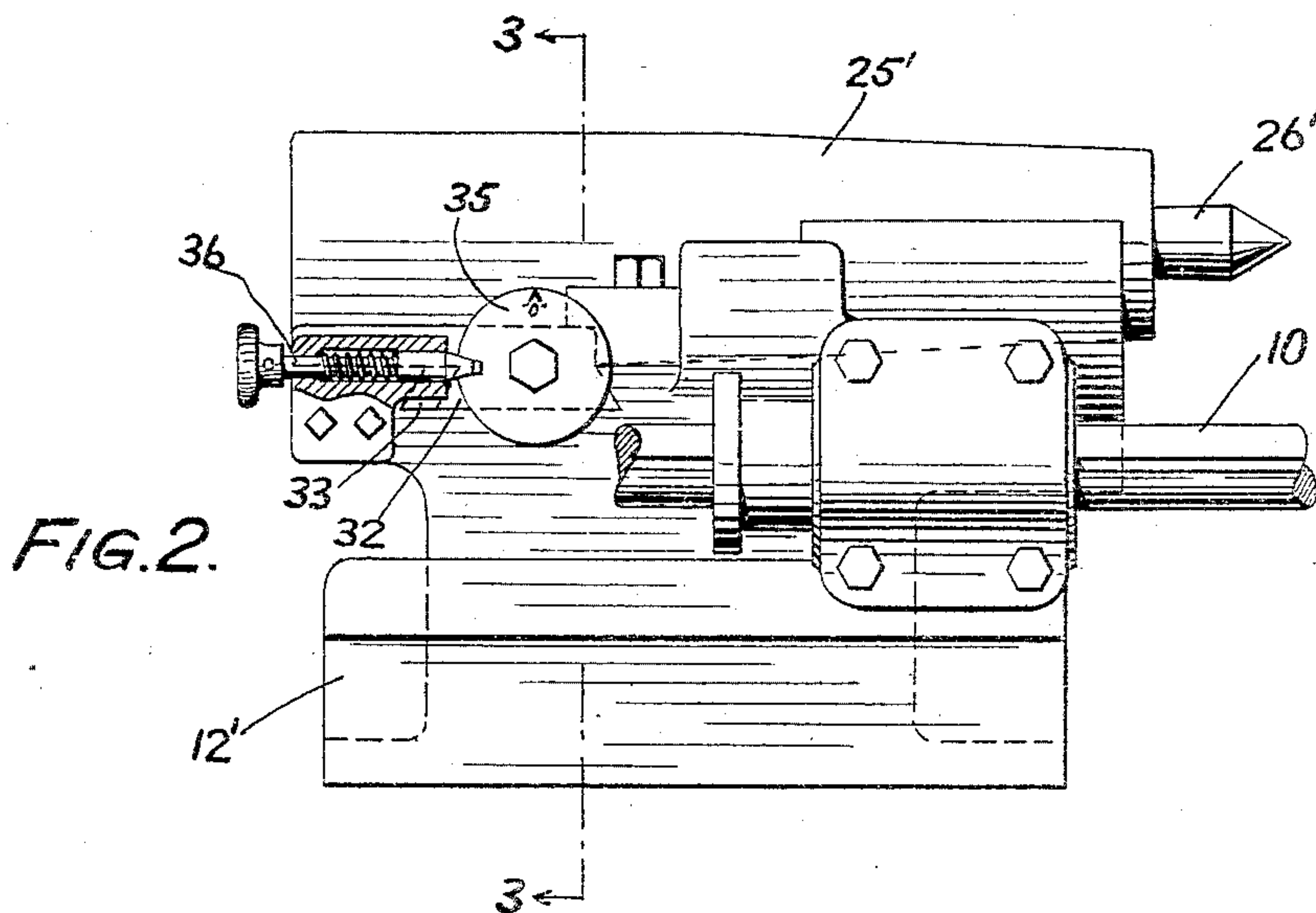
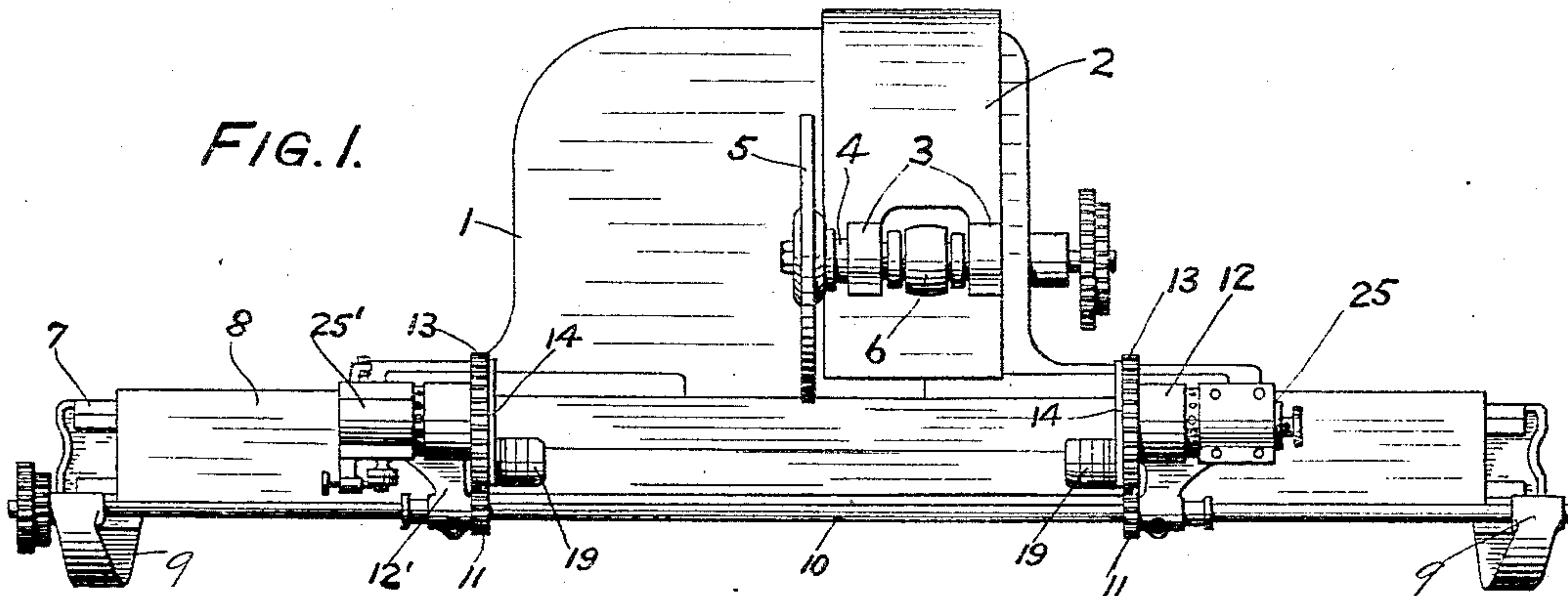


A. TINDEL.
LATHE.
APPLICATION FILED NOV. 25, 1907.

934,636.

Patented Sept. 21, 1909.

2 SHEETS—SHEET 1.



WITNESSES:

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2 SHEETS—SHEET 2.

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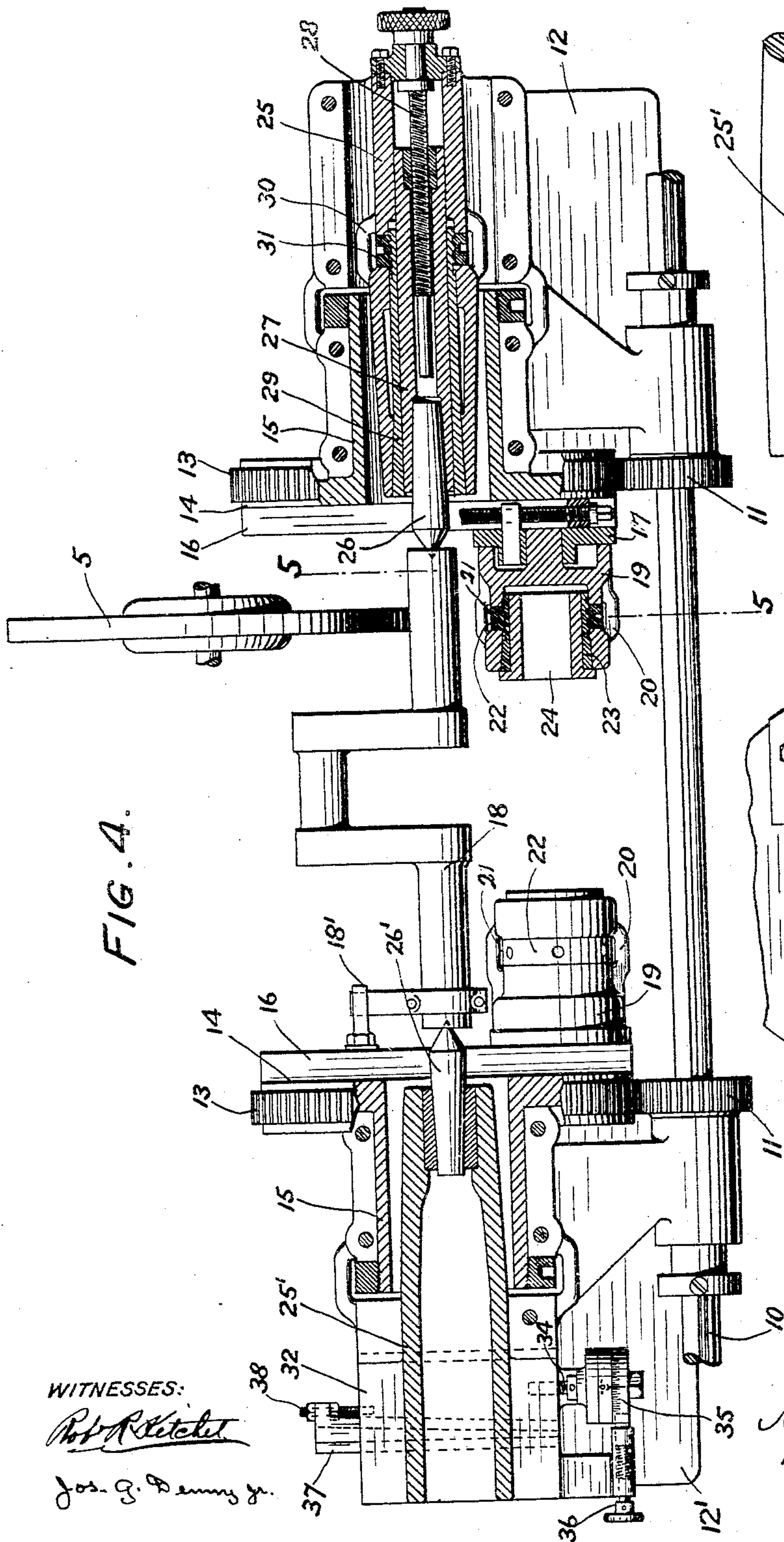


FIG. 4.

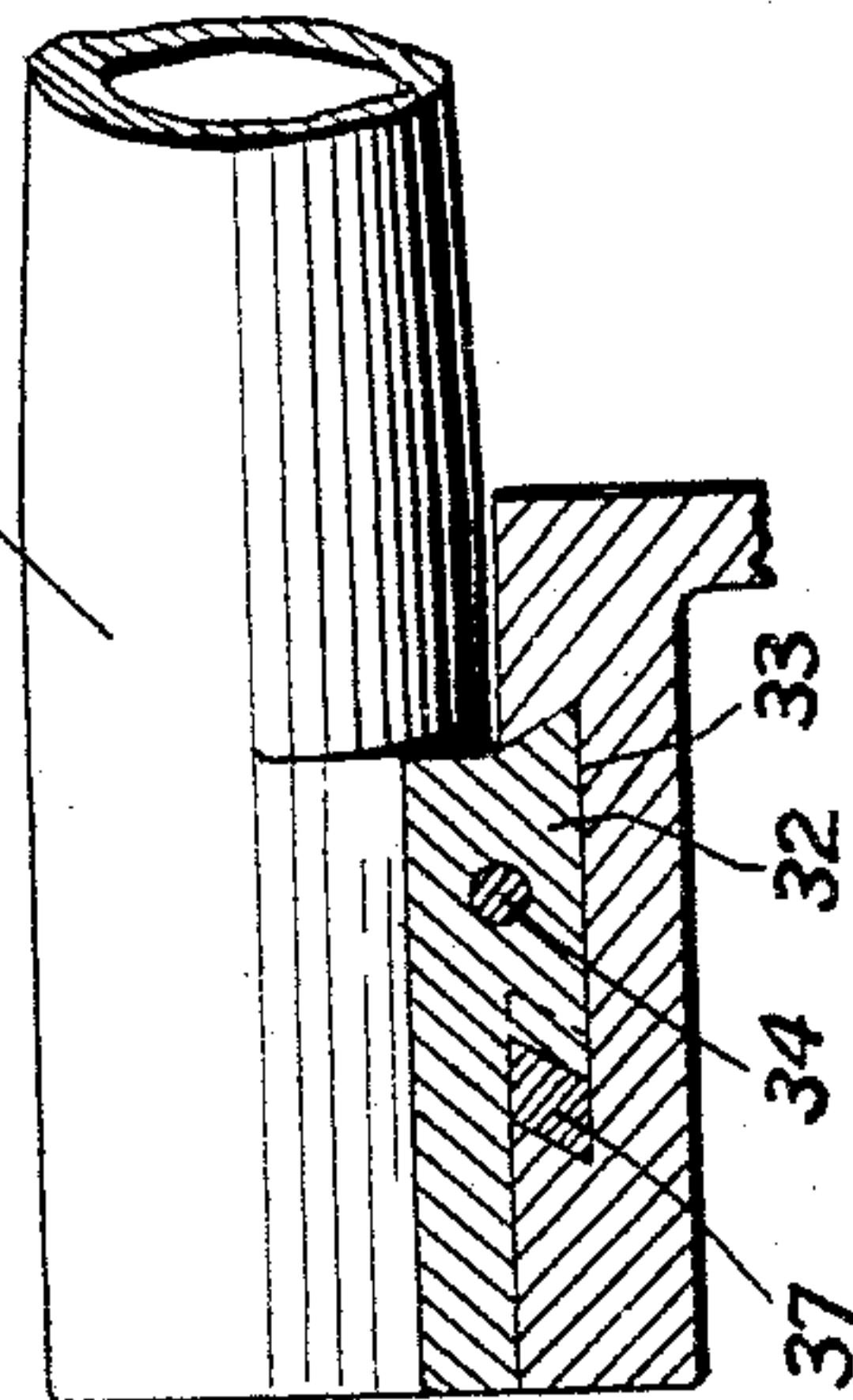


FIG. 5.

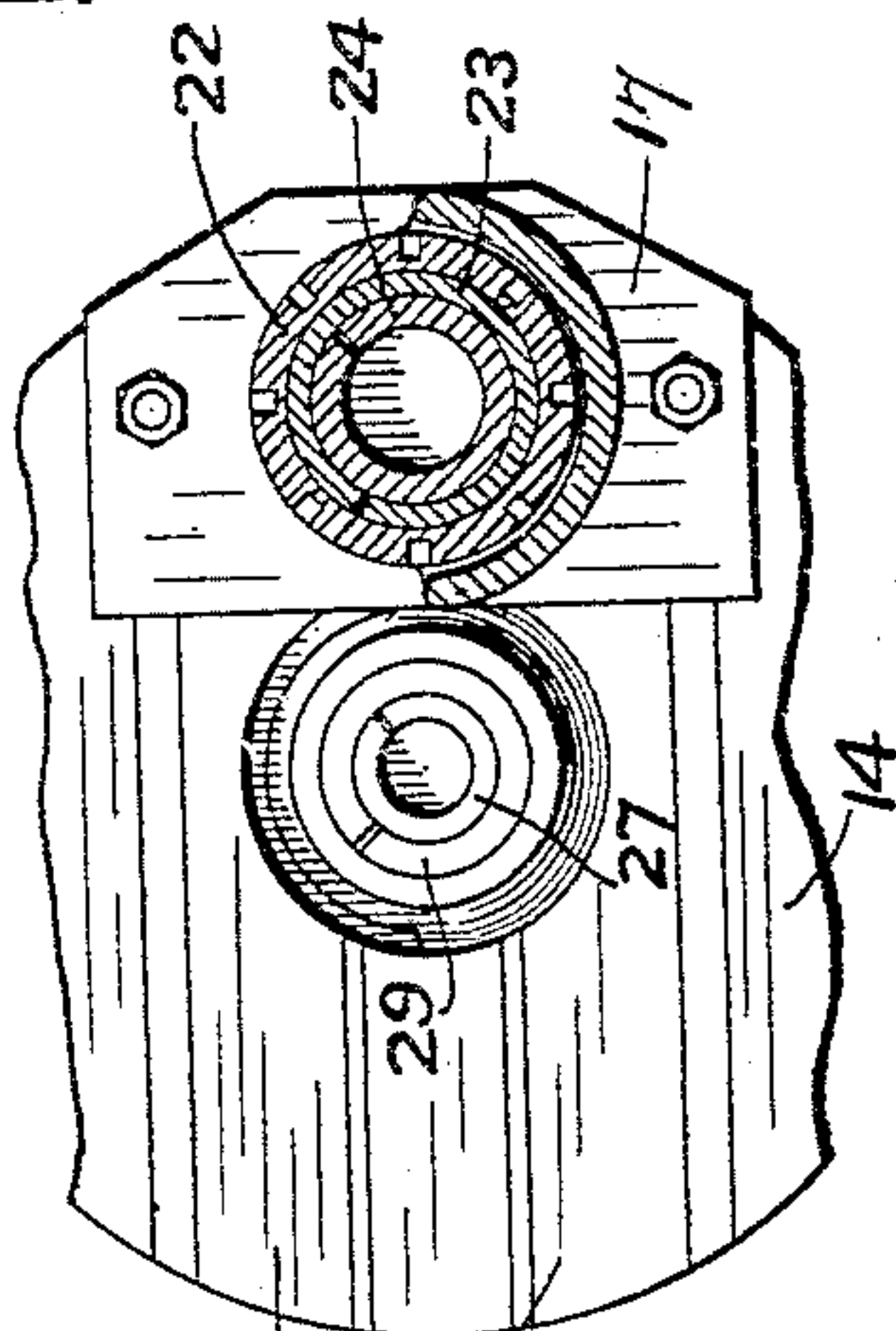


FIG. 6.

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LATHE.

934,636.

Specification of Letters Patent.

Patented Sept. 21, 1909.

Application filed November 25, 1907. Serial No. 403,588.

To all whom it may concern:

Be it known that I, ADAM TINDEL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Lathes, of which the following is a specification.

This invention is a lathe having improved means for holding the work and presenting it to the reducing tool, as in holding truly in an axis of revolution the several parts of a crank shaft and moving it through the angles required for keeping it in contact with a grinding wheel subject to gradual reduction in diameter from wear by contact with the shaft; the machine comprising a grinding wheel, in combination with turning mechanism having dead centers provided with means for longitudinal and angular adjustment and about which face plates are revolved, by which a crank shaft can be secured so that any part can be held, without distortion, and revolved in contact with the wheel, with its center in a variable axis of revolution.

In the accompanying drawings, Figure 1 is a general plan view of a lathe containing the invention; Fig. 2 is an enlarged elevation, partially in section, of a stock therefor; Fig. 3 is a sectional view on the line 3—3 of Fig. 2; Fig. 4 is a sectional plan view; Fig. 5 is a sectional view on the line 5—5 of Fig. 4, and Fig. 6 is a sectional view on the line 6—6 of Fig. 3.

The machine comprises the bed 1 carrying the slide 2 provided with the bearings 3 for the arbor 4 to which is fixed the grinding wheel 5, the arbor being revolved in any usual manner as by the pulley 6. Ways 7 on the bed guide the carriage 8 which is fed along the ways in any usual manner. The bearings 9, supported by the base, have journaled therein the rod 10 on which are splined pinions 11 journaled in the stocks 12, 12', supported by the carriage. The pinions drive the gears 13 on the face plates 14 which have the hollow journals 15 revolvable in the stocks 12, 12'. Ways 16 on the face plates guide and hold the bases 17 of chucks for holding and centering parts to be turned, as of crank shafts 18. These chucks comprise a barrel 19 having an expanded section 20 containing a recess 21, an internally threaded ring or nut 22 journaled in a bearing provided by the recess, a split sleeve

23 having the inner end of its exterior surface threaded to engage the nut and the outer end of its exterior surface flared to form a wedging engagement with the like conical interior surface at the mouth of the barrel, and a split cylindrical inner sleeve 24 having a flange for engaging the barrel, the sleeve 24 being thus prevented from being drawn inward so as to pull on tightening it up on the shaft by drawing inward the sleeve 23 through the revolution of the ring 22.

The stocks 12, 12', carry the respective horns 25, 25', which extend substantially through the hollow journals 15 and have fixed therein the centers 26, 26' for holding the shaft 18, which is fixed to a face plate by a clamp 18'.

The center 26 is fixed adjustably in the outer end of a split sleeve 27 which is movable longitudinally by a screw 28 having a threaded engagement with its base and a journaled engagement with the base of the horn 25. A split sleeve 29 surrounds the sleeve 27 and lies within the forward part of the horn. The horn has the expanded section 30, providing a recess and bearing for the nut 31 which engages a thread on the rear end of the sleeve 29, and a flared mouth to form a wedging engagement with the conical surface of the forward end of the sleeve, so that when the latter is drawn in by the nut it will tighten the sleeve 27 on the center 26.

The horn 25' is fixed on a dovetail slide 32 which is movable in a corresponding way transverse to the line of the centers. A screw 34, journaled in the stock 12' so that it will not move longitudinally, engages the slide and moves it. The screw has thereon a disk 35 with peripheral graduations movable past a stationary pointer, to indicate the revolution of the screw and the movement of the slide thereby. A spring pressed bolt 36 automatically engages the notched periphery of the disk, to hold the screw, and is withdrawn against the action of the spring when it is desired to revolve the screw. A wedge or key 37 is movable in the way 33 to tighten the slide 32, being moved and held by a screw 38 swiveled therein and engaging the slide.

It will be understood that the micrometer adjustment, thus provided for this slide and the horn thereon, provides means for adjusting the center 26' laterally and giving

the shaft 18 a graduated angular movement compensating for the reduction of diameter of the wheel 5 due to grinding the shaft.

It will also be understood that while as shown the horn 25' provides a fixed connection between the center 26' and the slide 32, an adjustable connection may be provided by substituting for this simplified construction the construction of the horn 26 with its connected parts.

Having described my invention, I claim:—

1. A machine having a stock, a face plate journaled to said stock, a slide movable on said stock transversely to the machine axis, and a center fixed to and movable transversely by said slide.

2. A machine having a stock, a face plate having a hollow journal engaged by said stock, a slide movable on said stock transversely to the machine axis, a screw connected with said stock and engaging said slide to move it, a center, and means for fixing said center to said slide.

3. A machine having a stock, a face plate journaled to said stock, a slide movable on said stock transversely to the machine axis, a micrometer screw connecting said stock and slide, a horn fixed to said slide, and a center fixed to said horn.

4. A machine having a stock, a face plate journaled in said stock, a stationary work holder about which said plate revolves, and means for adjusting said work holder.

5. A machine having a stock, a face plate

journaled in said stock, a slide adjustable transversely on said stock, a horn fixed to said slide, and a work holder fixed to said horn.

6. In a machine, a horn having a tapered surface, a split sleeve having a tapered surface engaging the like surface of said horn, a nut engaging said sleeve to move it longitudinally within said horn, and a split sleeve within the first named sleeve.

7. In a machine, a tubular body, a sleeve within said body, a center held by said sleeve, a screw connecting said parts to move said sleeve longitudinally, and means for fixing said sleeve.

8. In a machine, a stock, a revoluble face plate having a hollow journal engaged to said stock, and a dead center fixed to said stock and about which said face plate revolves, said face plate being supported independently of said center.

9. In a machine, a stock, a horn carried by said stock, a center carried by said horn, and a revoluble face plate having a hollow journal engaged to said stock independently of said horn.

In testimony whereof I have hereunto set my name this 22nd day of November, 1907, in the presence of the subscribing witnesses.

ADAM TINDEL.

Witnesses:

ROBERT JAMES EARLEY,
JOS. G. DENNY, Jr.