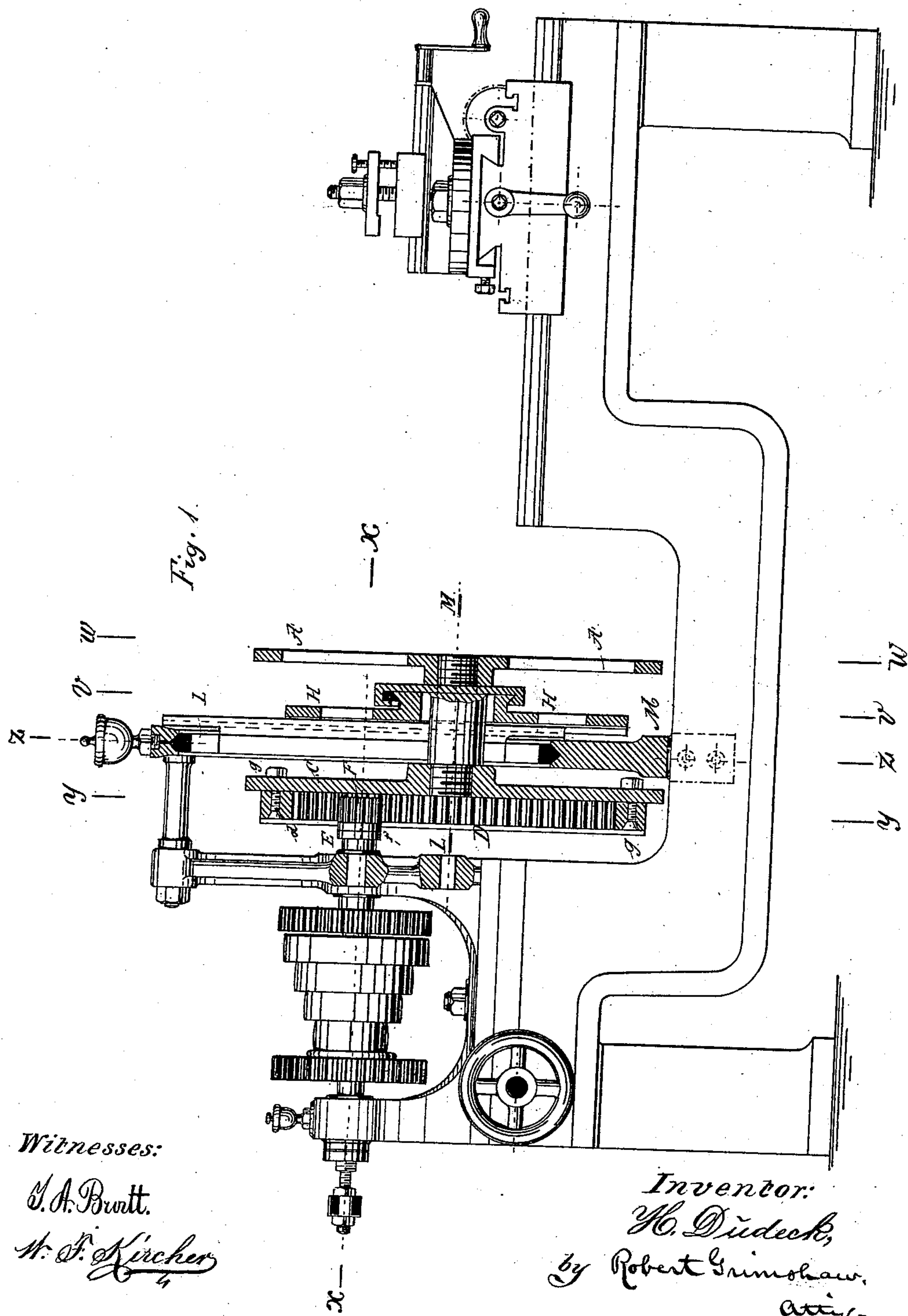


H. DÜDECK.  
Engine Lathe.

**No. 230,253.**

**Patented July 20, 1880.**



*Witnesses:*

J. A. Brutt.  
W. F. Kircher

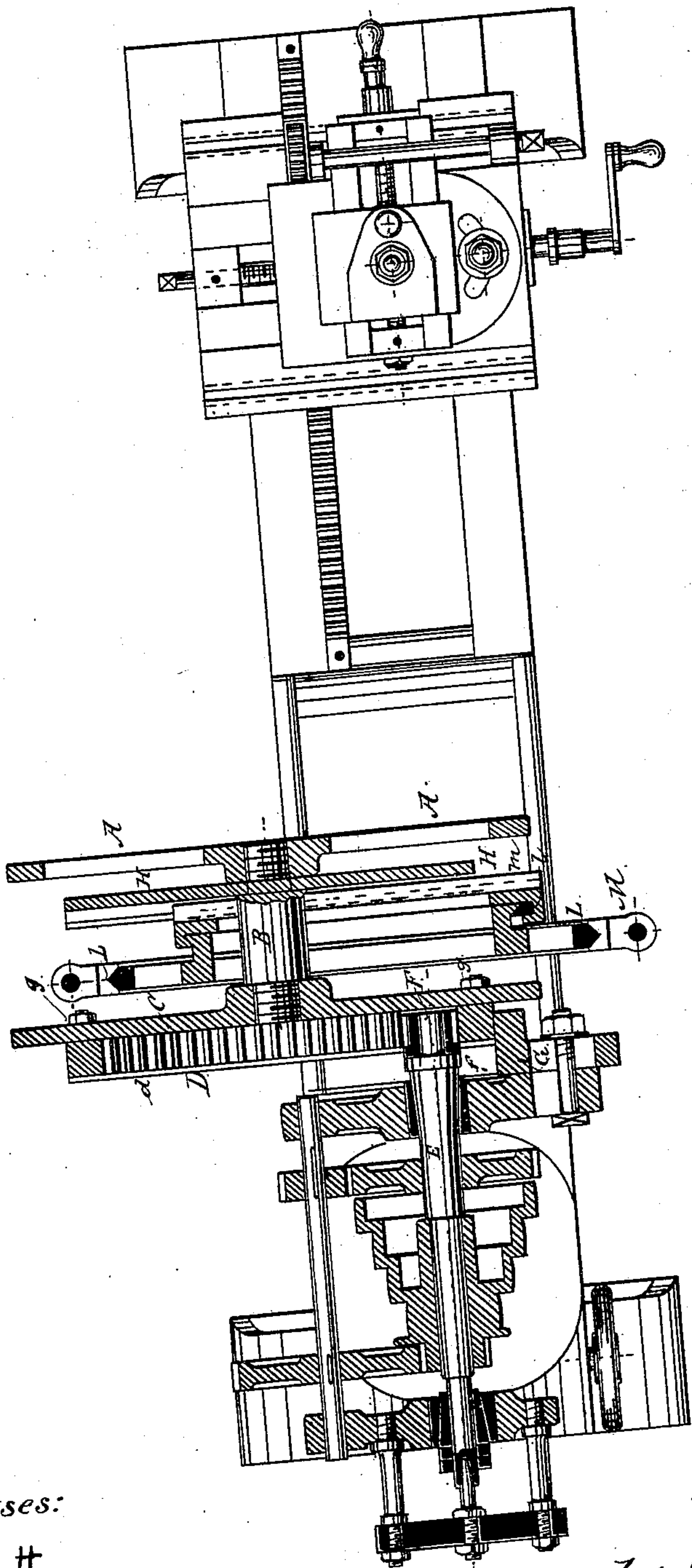
Inventor:  
H. Düdeck,  
by Robert Grimshaw,  
att'y.

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Fig. 2.



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Inventor:

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by Robert Simshaw

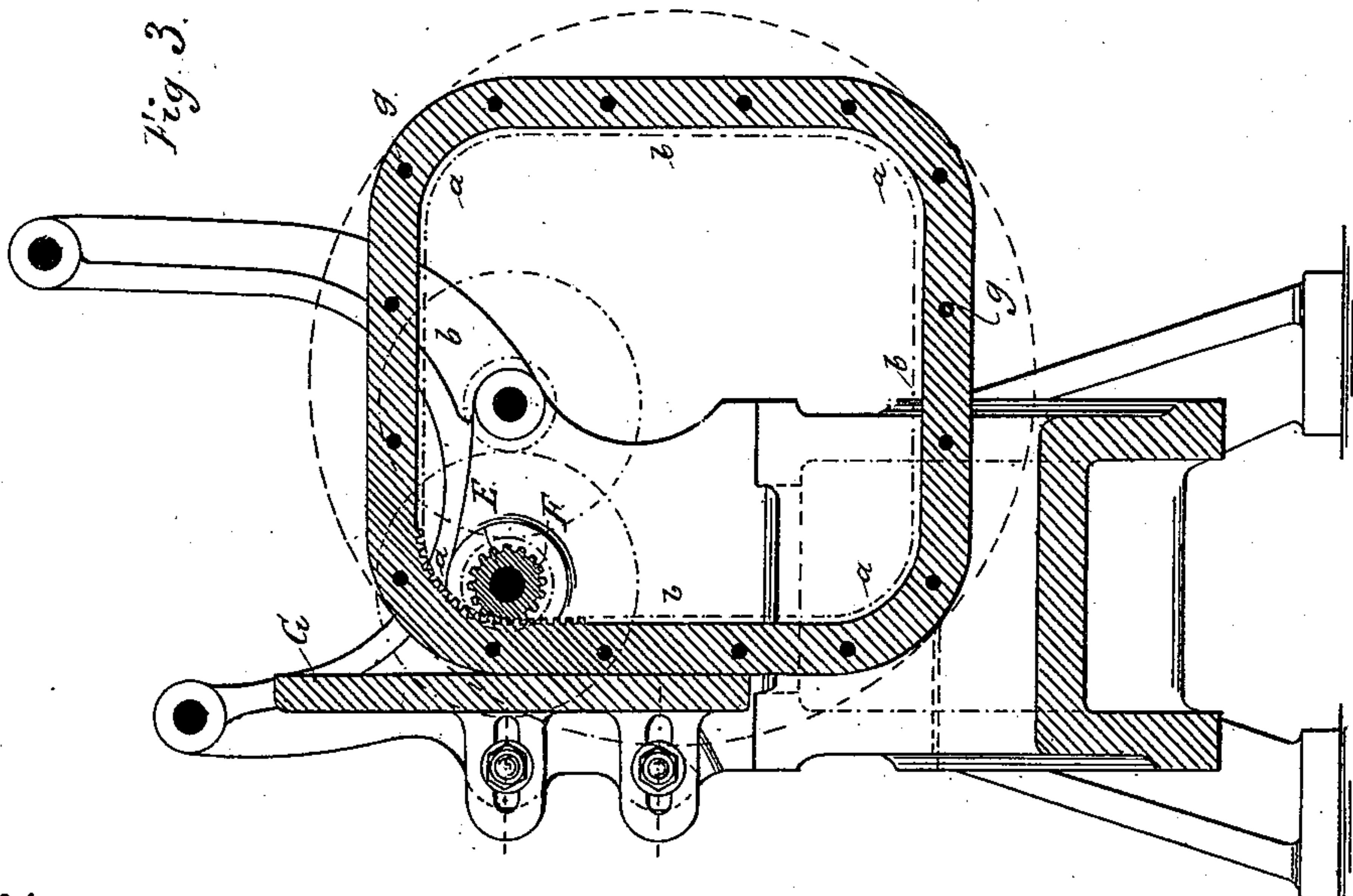
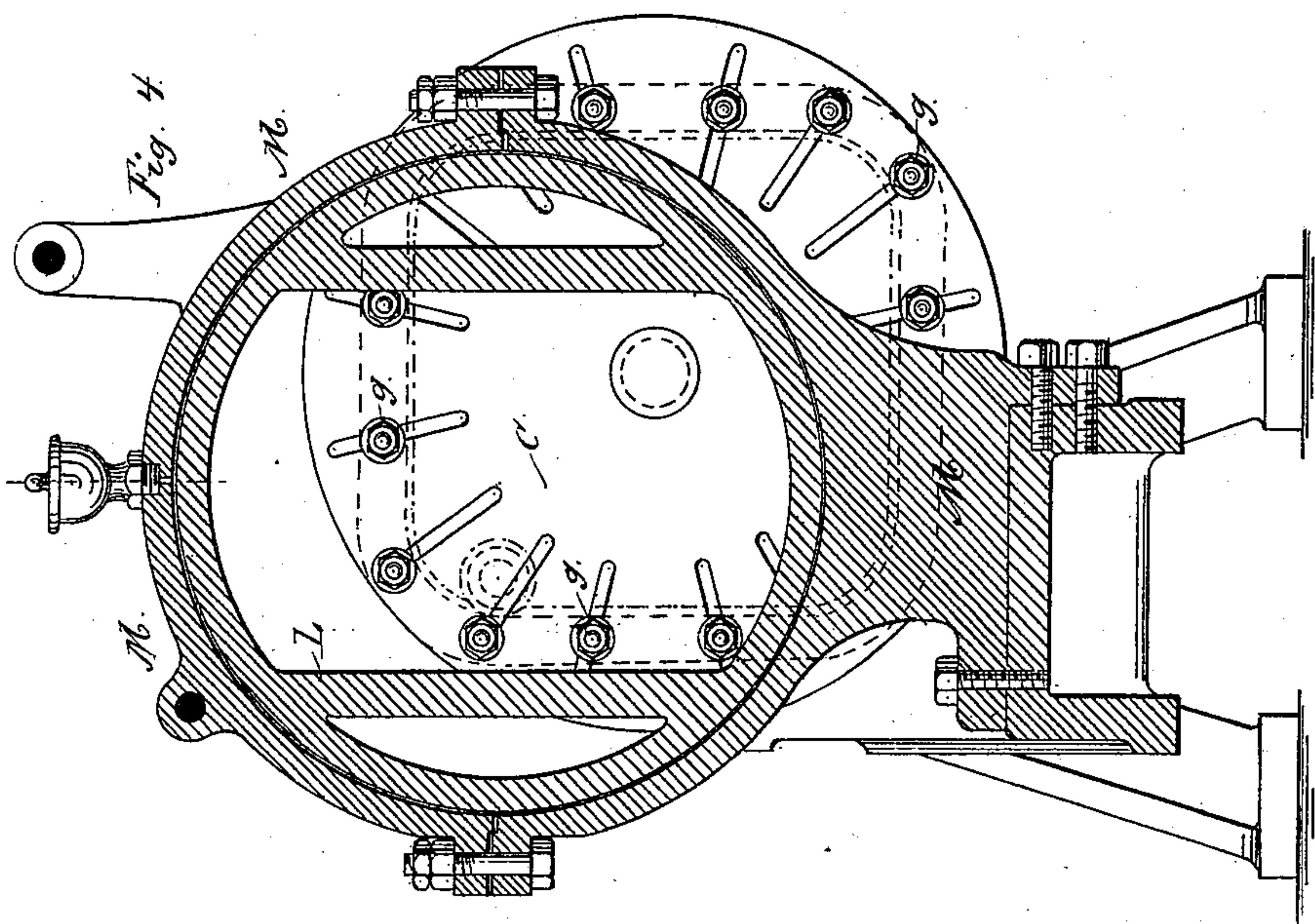
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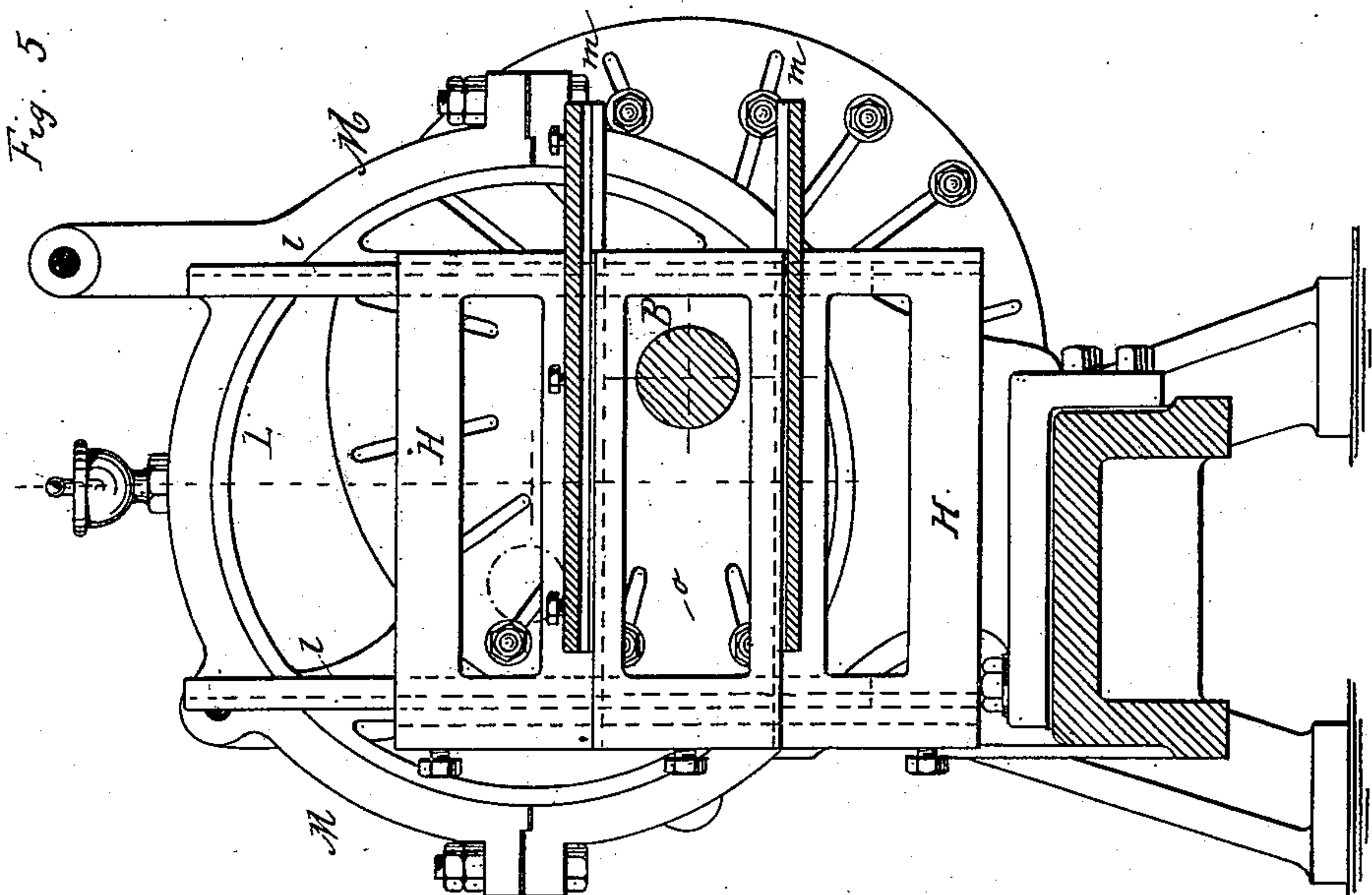
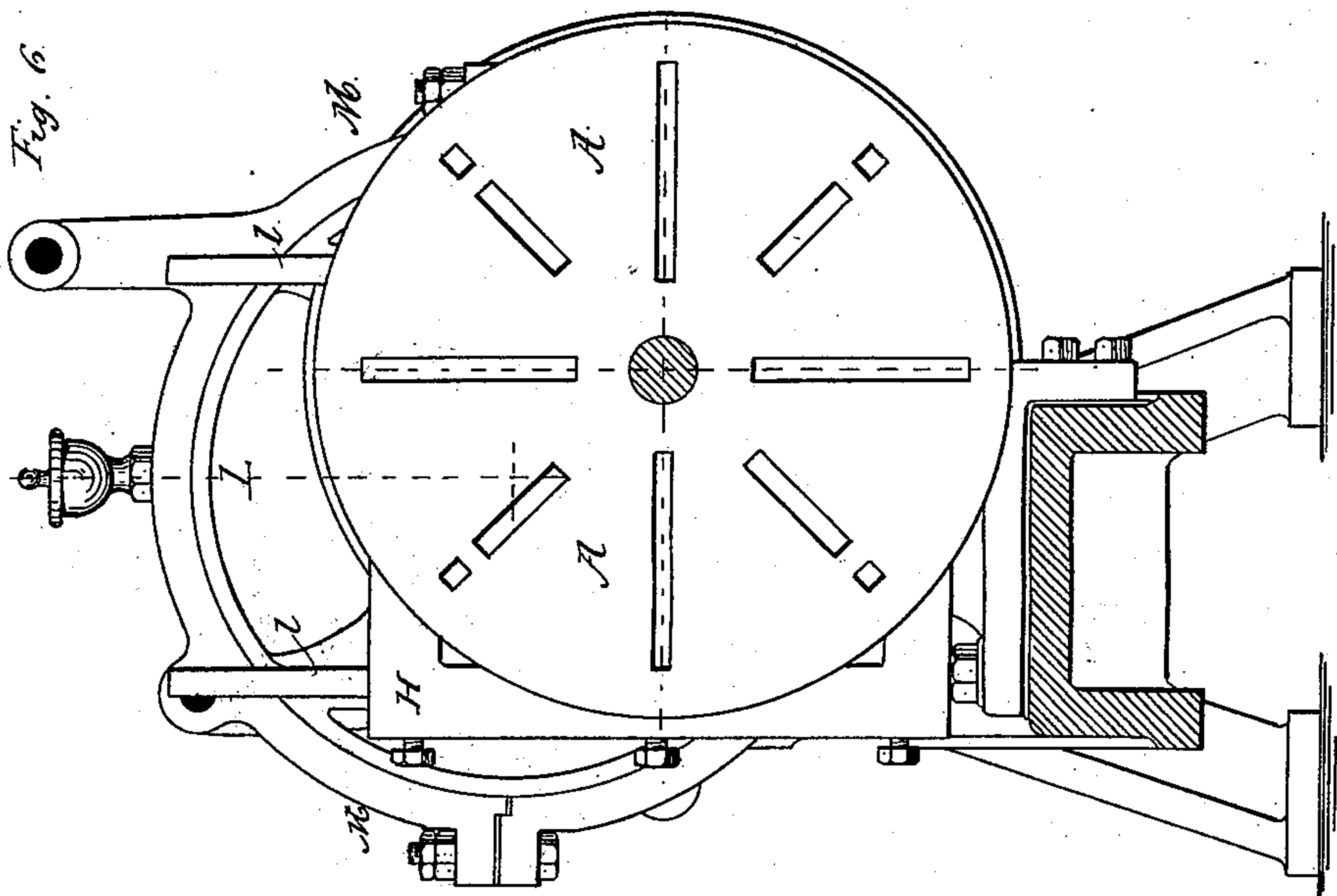
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# UNITED STATES PATENT OFFICE.

HUGO DÜDECK, OF BERLIN, PRUSSIA, GERMANY, ASSIGNOR TO ED.  
METHLOW & CO., OF SAME PLACE.

## ENGINE-LATHE.

SPECIFICATION forming part of Letters Patent No. 230,253, dated July 20, 1880.

Application filed August 1, 1879.

*To all whom it may concern:*

Be it known that I, HUGO DÜDECK, of Berlin, in the Empire of Germany, have invented certain new and useful Improvements in Engine-Lathes, of which the following is a specification.

This invention relates to an improved attachment for engine-lathes by which bodies of round, elliptical, oblong, and other irregular shapes may be turned in a smooth and regular manner.

The invention consists of an attachment to engine-lathes by which the face-plate that carries the object to be turned is kept by suitable mechanism in gear with a driving-pinion, while two guides, which slide at right angles to one another and are again guided in a stationary ring-frame, support the face-plate and cause it to follow steadily the motion of the driving-gear.

In the accompanying drawings, Figure 1 represents a sectional side elevation of an engine-lathe with my improved attachment; Fig. 2, a horizontal section of the same on line *x x*, Fig. 1. Figs. 3, 4, 5, and 6 are vertical transverse sections, respectively, on lines *y y*, *z z*, *v v*, and *w w*, Fig. 1.

Similar letters of reference indicate corresponding parts.

In the drawings A represents the face-plate of my improved engine-lathe, which face-plate is connected, by means of a threaded rod or bar, B, with a second or rear face-plate, C, back of the same. The rear face-plate, C, is provided with a number of radial slots, to which a toothed frame, D, of any desired shape, is attached by means of screw-bolts. The toothed frame D may be of any desired shape, according to the form to be given to the object to be turned on the lathe, the frame shown in the drawings being a rectangular figure with straight side pieces, *b*, and quadrantal corners *a*. The toothed frame D and the face-plates C and A are set in motion by a pinion, F, at the end of a spindle, E. The constant intermeshing of the toothed frame D and pinion F is secured by a vertical guide, G, sidewise of the pinion, between which and the pinion the toothed frame is guided when in motion. The

frame D is supported, with the face-plate C, on the pinion F, and prevented, by a collar, *f*, in connection with a raised guide, *d*, of frame D, against being shifted in longitudinal direction, the face-plate C performing the same office on the other side. By the joint action of the face-plate C, vertical guide G, and encircling-guide *d* the pinion F cannot free itself from the frame D, as shown in Fig. 3, and keeps, consequently, the face-plates C and A continually in motion.

For turning objects of different shapes the toothed frame has to be changed to the required form, the slots and bolts serving for properly attaching the same. Every point of the face-plates A and C will then move in a curve which conforms to the shape of the toothed frame D.

To enable the face-plate A to follow the motion imparted thereto by the driving-gear it is supported in guides, which provide for the horizontal, vertical, and rotary motion of the face-plate, as required by the shape of the toothed frame. The rotary motion is obtained by means of a disk, L, which is guided in a ring-shaped frame, M, that is permanently secured to the supporting-frame of the lathe. The disk L is broken out and provided with vertical guides *l*, on which a rectangular frame, H, is guided. Frame H is placed intermediately between the ring-frame and face-plate, and carries on transverse guides *m* the face-plate A, the latter being provided with corresponding ways. The intermediate guide-frame H is also slotted or broken out like the disk L, to admit the unobstructed motion of the rod or spindle B in following the gearing. The joint working of the ring-frame and disk and of the vertical and transverse guides causes the face-plate A to follow smoothly the motion of its gearing mechanism.

It may be remarked in this connection that the friction of the guide mechanism may be reduced by means of properly-disposed anti-friction rollers between the vertical guide G and the toothed frame D, between the ring-frame M and disk L, &c., so that the regular motion of the face-plate without jars or stops is obtained.

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

1. In an engine-lathe, the combination of  
5 the pinion F, a toothed frame, D, front and rear face-plates, A C, plate C being removably secured to the frame D, vertical guide G, and the guides *l l* and *m m*, whereby said face-plates are permitted to follow the movement  
10 of the frame D, substantially as set forth.

2. In an engine-lathe, the combination, with the spindle E and a pinion, F, provided with a collar, *f*, of a toothed frame, D, formed with a raised guide, *d*, and a vertical guide, G, sub-  
15 stantially as set forth.

3. In an engine-lathe, the combination of a face-plate, A, and a driving mechanism for moving it in irregular curves or lines, with

supporting-guides *l l m m*, by which the face-plate is adapted to move in rotary, vertical, 20 and horizontal motion, substantially as set forth.

4. In an engine-lathe, the combination of a face-plate, A, and mechanism for moving it in irregular curves or lines, with a ring-frame, 25 M, and disk L, intermediate frame, H, and guides *l* and *m*, placed at right angles to each other, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two sub- 30 scribing witnesses.

HUGO DÜDECK.

Witnesses:

GERARD VON NAWROCKI,  
BERTHOLD ROE.