

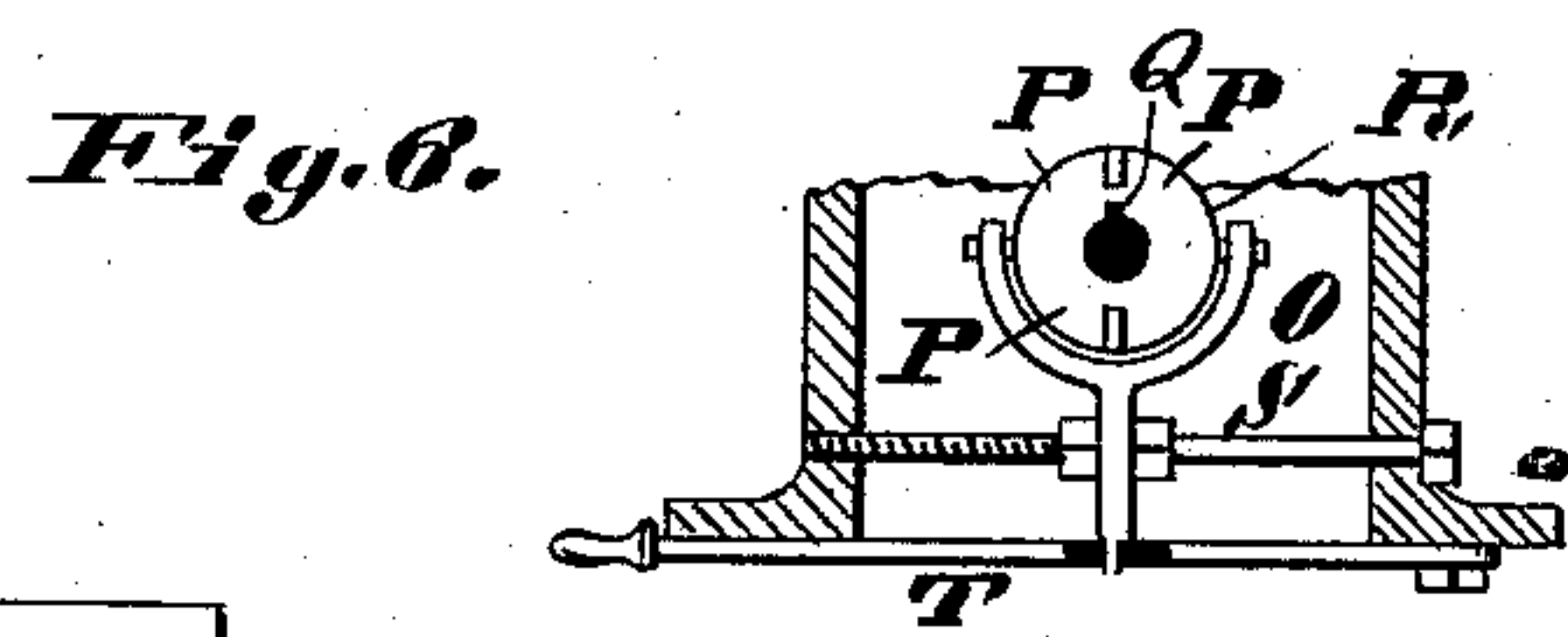
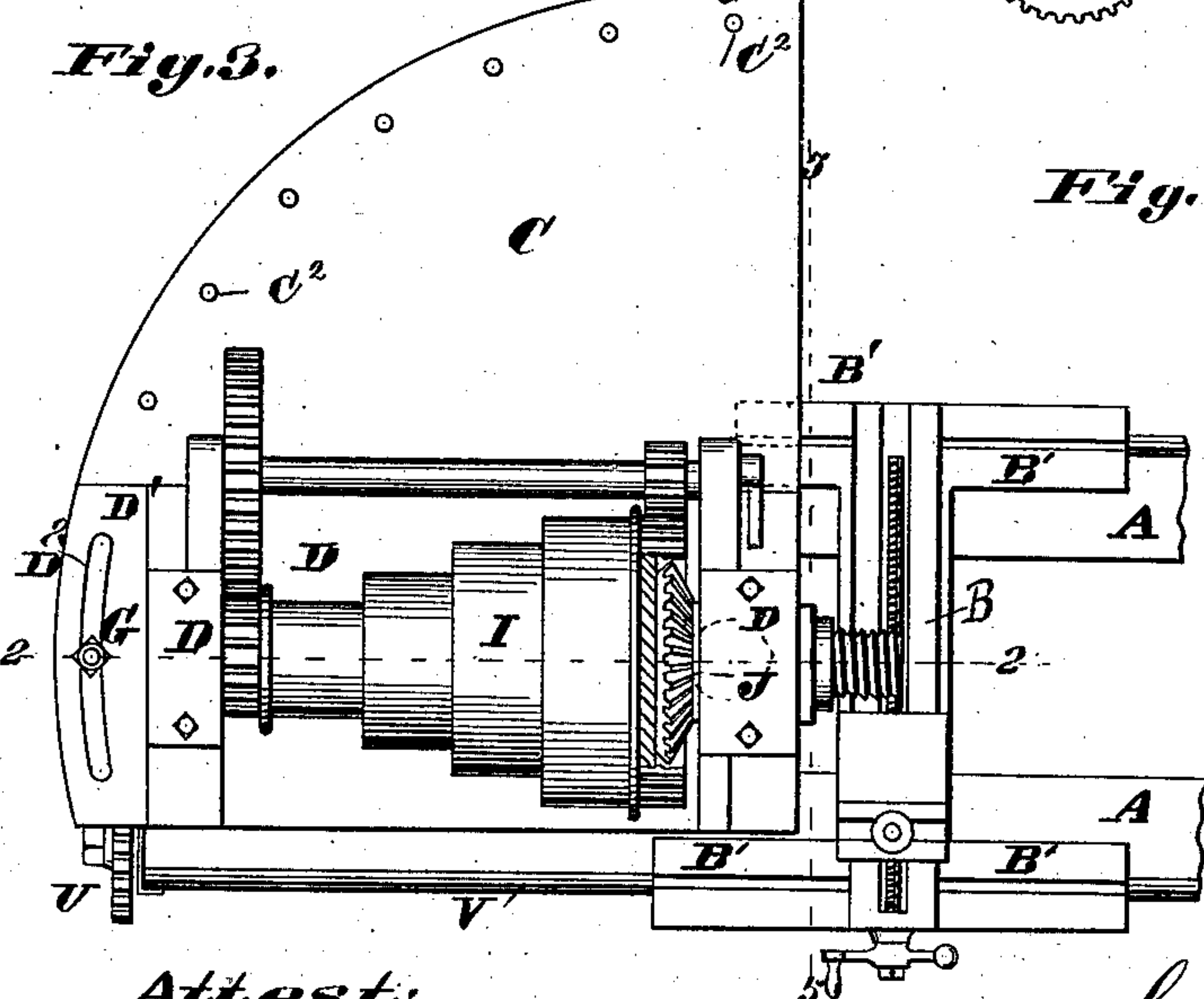
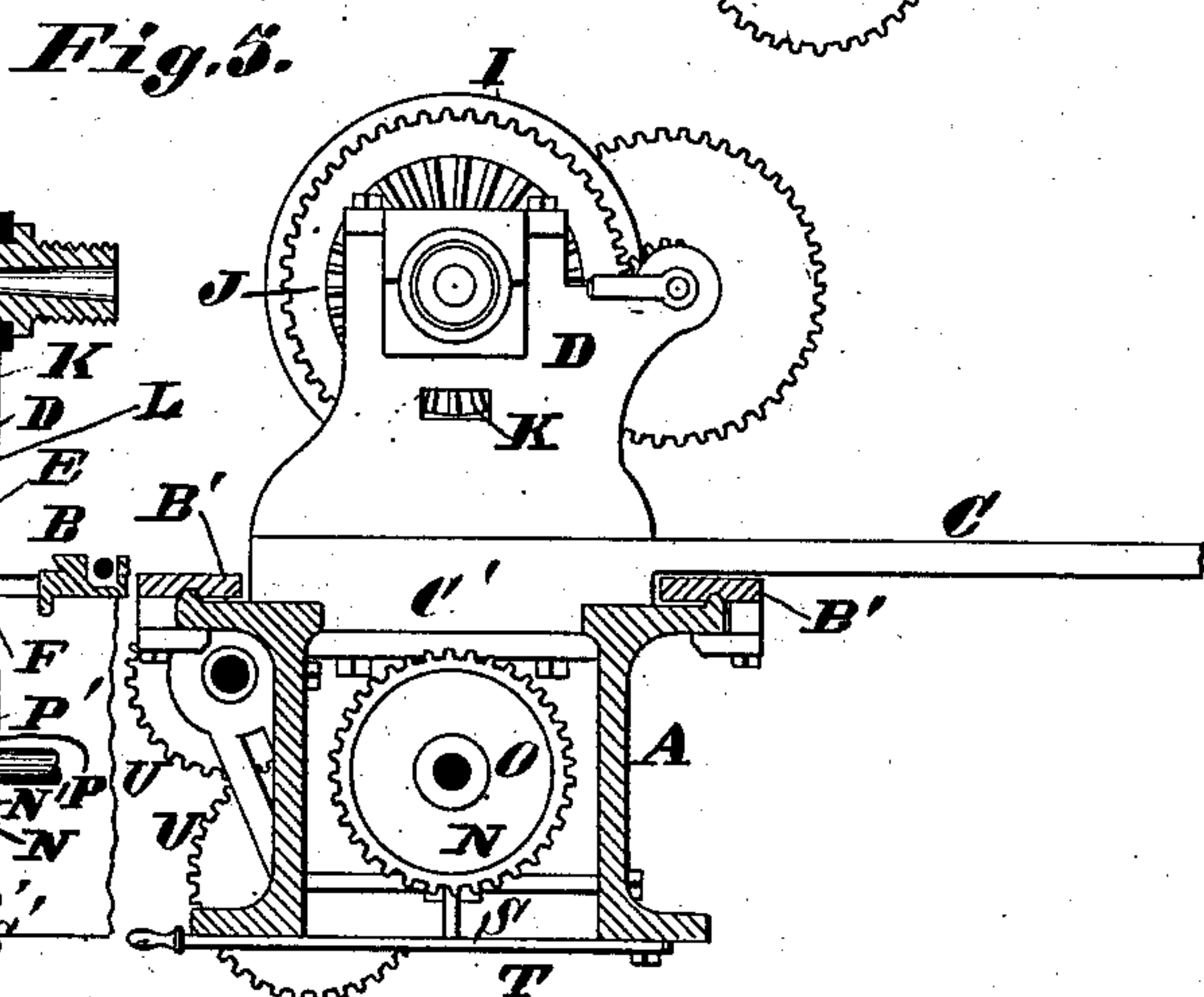
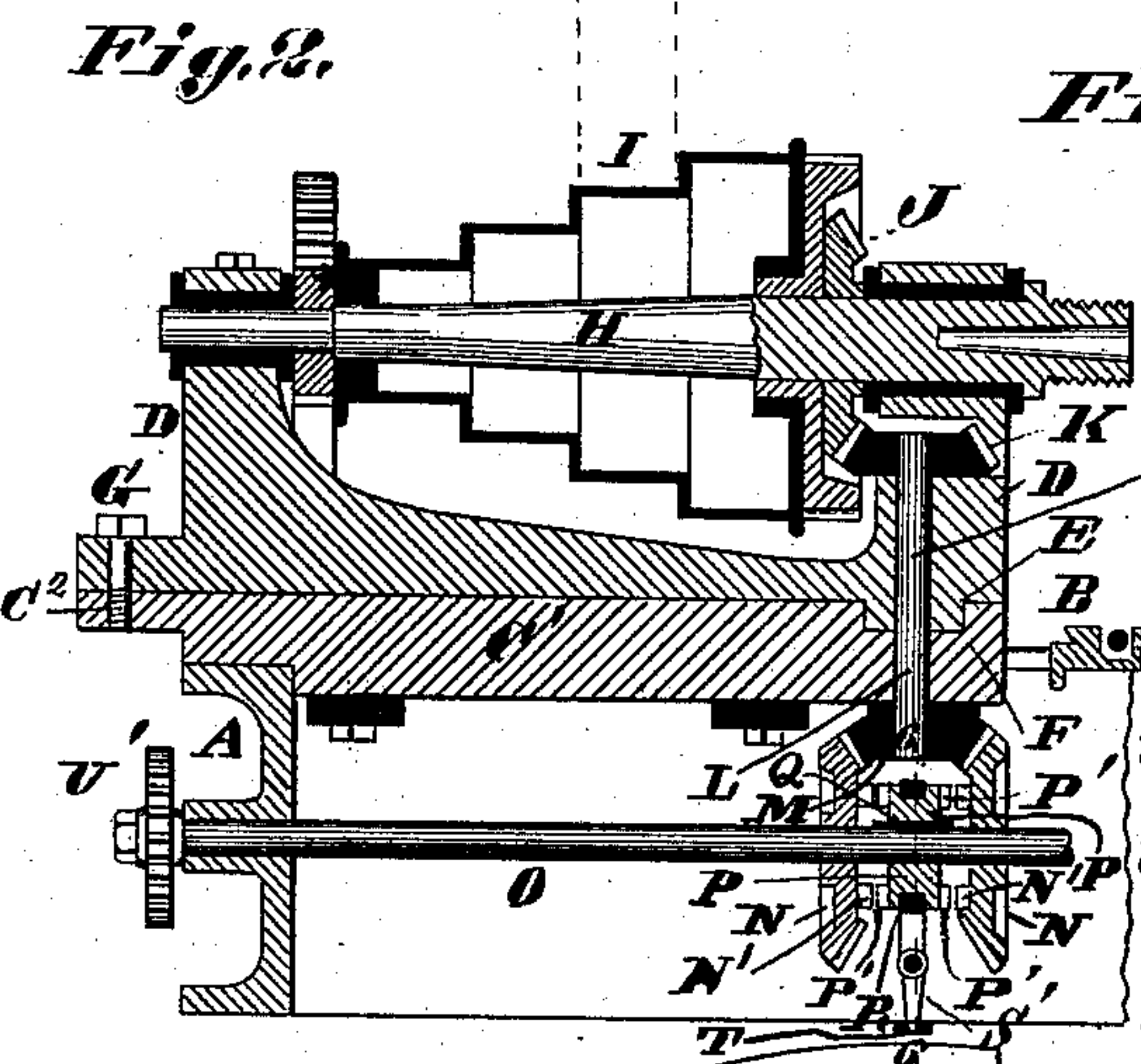
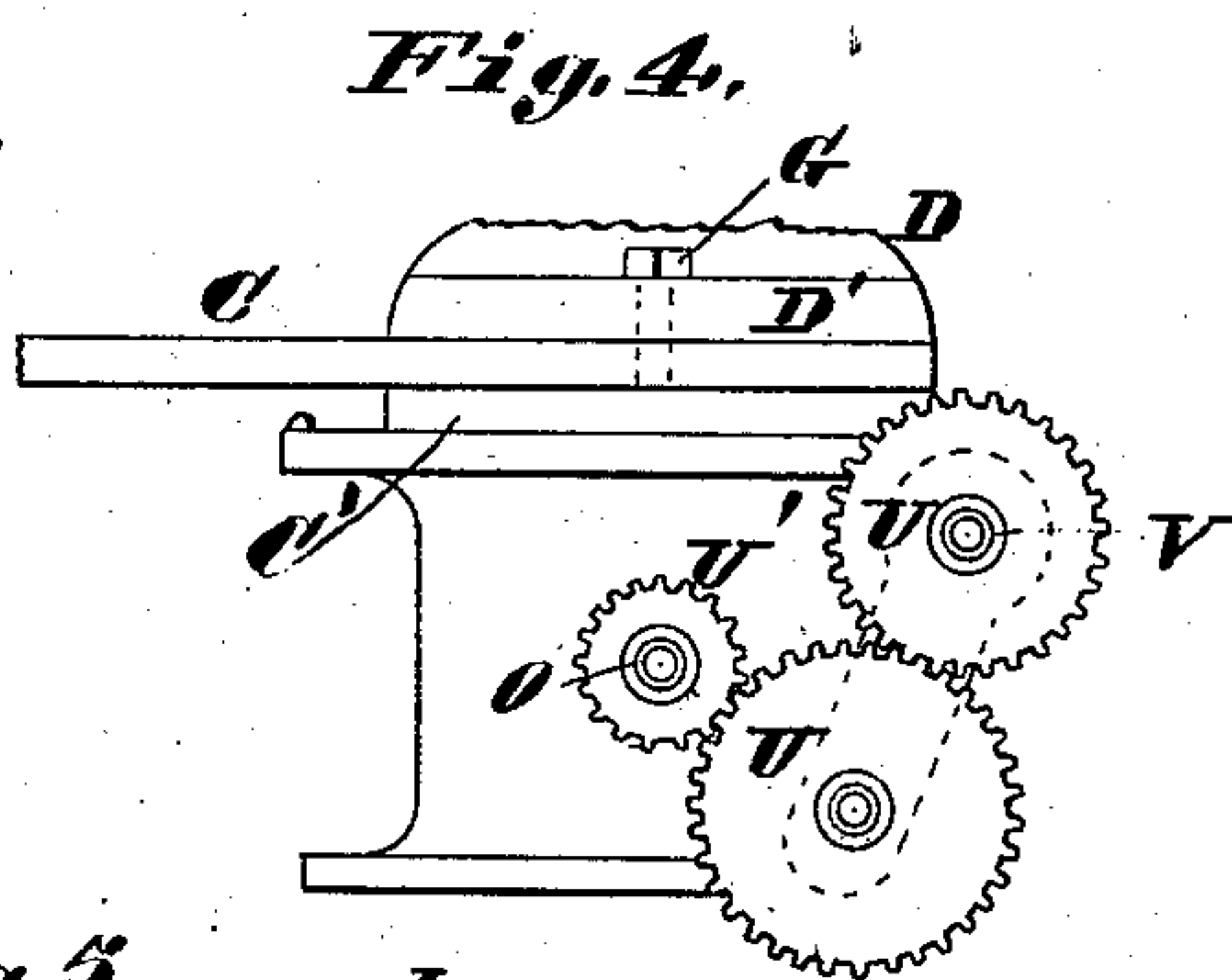
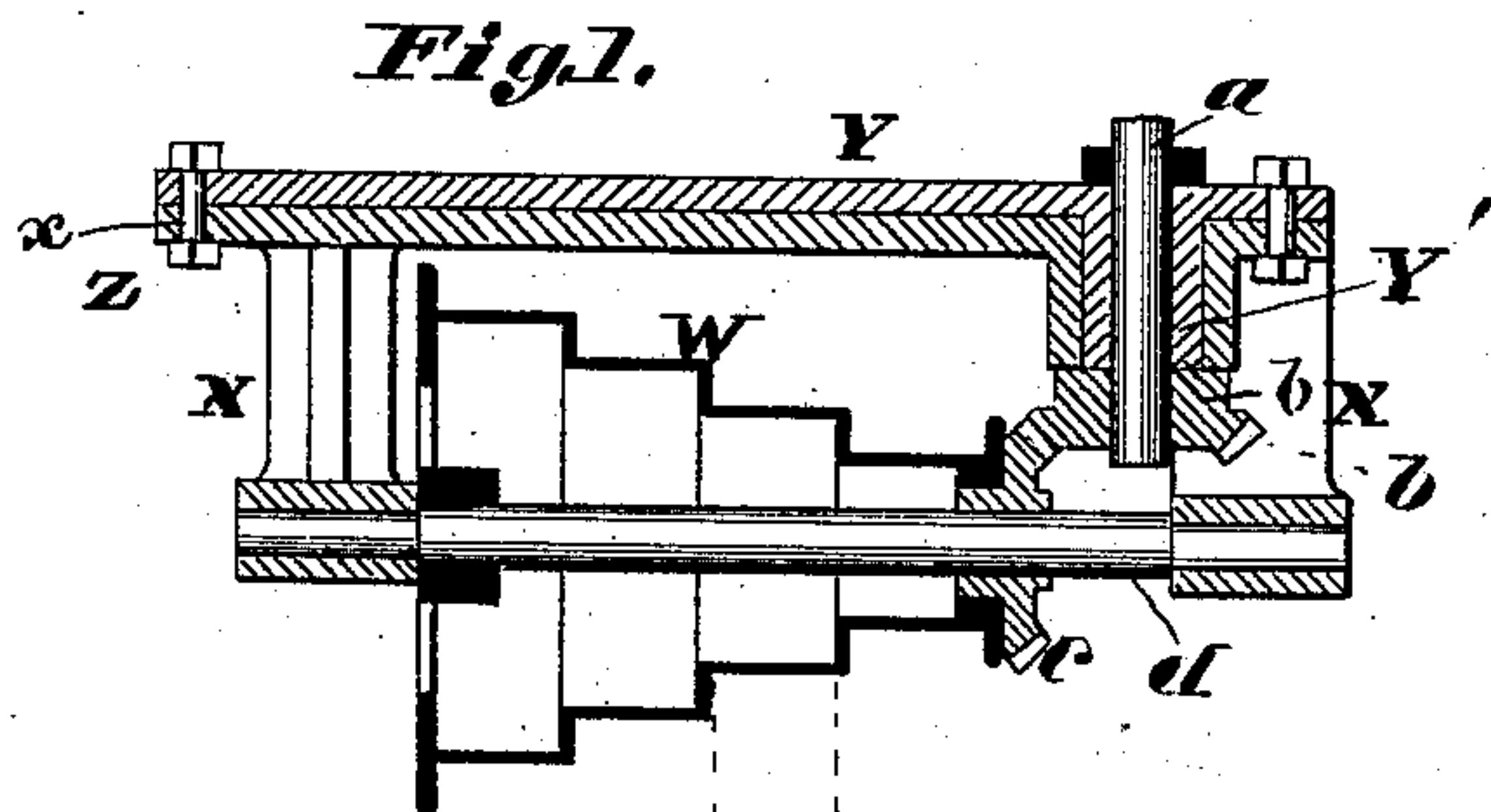
(No Model.)

G. D. HAYDEN.

TURNING LATHE.

No. 287,673.

Patented Oct. 30, 1883.



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UNITED STATES PATENT OFFICE.

GEORGE D. HAYDEN, OF ALTON, ILLINOIS.

TURNING-LATHE.

SPECIFICATION forming part of Letters Patent No. 287,673, dated October 30, 1883.

Application filed March 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. HAYDEN, of Alton, in the county of Madison and State of Illinois, have invented a certain new and useful Improvement in Turning-Lathes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of turning-lathes in which the head can be turned upon the shears to adjust the face-plate obliquely thereto. My invention is set forth in the description and claims.

In the drawings, Figure 1 is a longitudinal or axial section of the upper cone-pulley. Fig. 2 is a longitudinal section of the lathe-head at 2 2, Fig. 3. Fig. 3 is a top view of head and quadrant, with slide-rest and part of shears. Fig. 4 is a detail end view of part of head and shears. Fig. 5 is a transverse section at 5 5, Fig. 3. Fig. 6 is a detail section at 6 6, Fig. 2.

A represents the shears of the lathe, supporting a tool-rest or slide-rest, B.

C is a quadrant or casting, upon which the head or head-stock D is supported in such a manner that it can be swung around obliquely to the shears. The quadrant C has a narrow base, C', standing directly upon the shears. The transverse width of the base C' is less than the distance between the arms B' of the slide-rest, so that the arms may pass before and behind the base and the rear arm beneath the rear portion of the quadrant, and thus allow the central part of the rest to be brought up close to the head D. (See Figs. 3 and 5.) The head is turnably adjustable on the quadrant, turning on a pivot, E, that has bearings in a socket, F, in the top of the quadrant. The head is held in its adjustment by a screw, G, that extends through a curved slot, D², in the heel D' of the head and screws into one of a series of holes, C², of the quadrant.

Upon the spindle H of the head is the usual cone-pulley, I, and also a bevel cog-wheel, J, that engages a bevel-wheel, K, upon a vertical shaft, L, passing axially through the pivot

E, so that it always bears the same position in the head.

M is a bevel-wheel at the lower end of the shaft L, engaging two bevel-wheels, N, upon the shaft O, extending longitudinally in the shears. The wheels N turn freely upon the shaft O, turning, of course, in opposite directions.

Upon the inner faces of the wheels N are lugs N', forming one member of a clutch, the other member, P', of which is upon a hub, P, upon the shaft O, between the wheels N. The hub has free longitudinal movement on the shaft, but is caused to rotate therewith by a feather or spline connection, Q, in a usual way. The hub P has a circumferential groove, in which is a yoke, R, operated by a forked lever, S, and a hand-lever, T, to shift the clutch and engage the shaft O with either of the wheels N, and thus cause the shaft to rotate in either direction. The shaft O may be the leading-screw, by which the slide-rest has its feed. The shaft O also carries the first wheel, U', of a train of cog-wheels, U, by which the leading-screw V is driven when using the lathe for turning screws.

W is the upper cone-pulley, having bearing in hangers X, supported on a bracket, Y. The hanger is adjustable on a pivot, Y', vertically over the pivot E, so that the upper cone-pulley may be adjusted in the same way as the lower one, I, the bracket-plate Y having the same quadrantal form as the plate C.

Z are screw-bolts extending through suitable slots, *z*, and holes in the hanger and bracket, to secure the hanger in position.

a is a vertical shaft concentric with and passing through the pivot Y', and carrying a bevel cog-wheel, *b*, engaging a similar wheel, *c*, upon the shaft *d* of the cone-pulley W. The shaft *a* may be turned by any suitable means.

I claim as my invention—

1. The combination of lathe head-stock, made horizontally adjustable on a pivot-bearing, and a vertical shaft concentric with the pivot and having cog-wheel connection with the leading screw or shaft O, extending longitudinally to the shears.

2. The combination of turnable head-stock D, shaft L, bevel-wheels J, K, M, and N, spindle H, shaft or screw O, and a clutch upon said shaft, for the purpose set forth.
- 5 3. The combination of adjustable head-stock D, shaft L, concentric with the pivot E of the head-stock and cog-connection of shaft L, with the spindle H, the lower cone-pulley, I, on spindle H, and an adjustable cone-pulley overhead actuated by a shaft, *a*, in line with the shaft L.

GEORGE D. HAYDEN.

Witnesses:

SAML. KNIGHT,
GEO. H. KNIGHT.