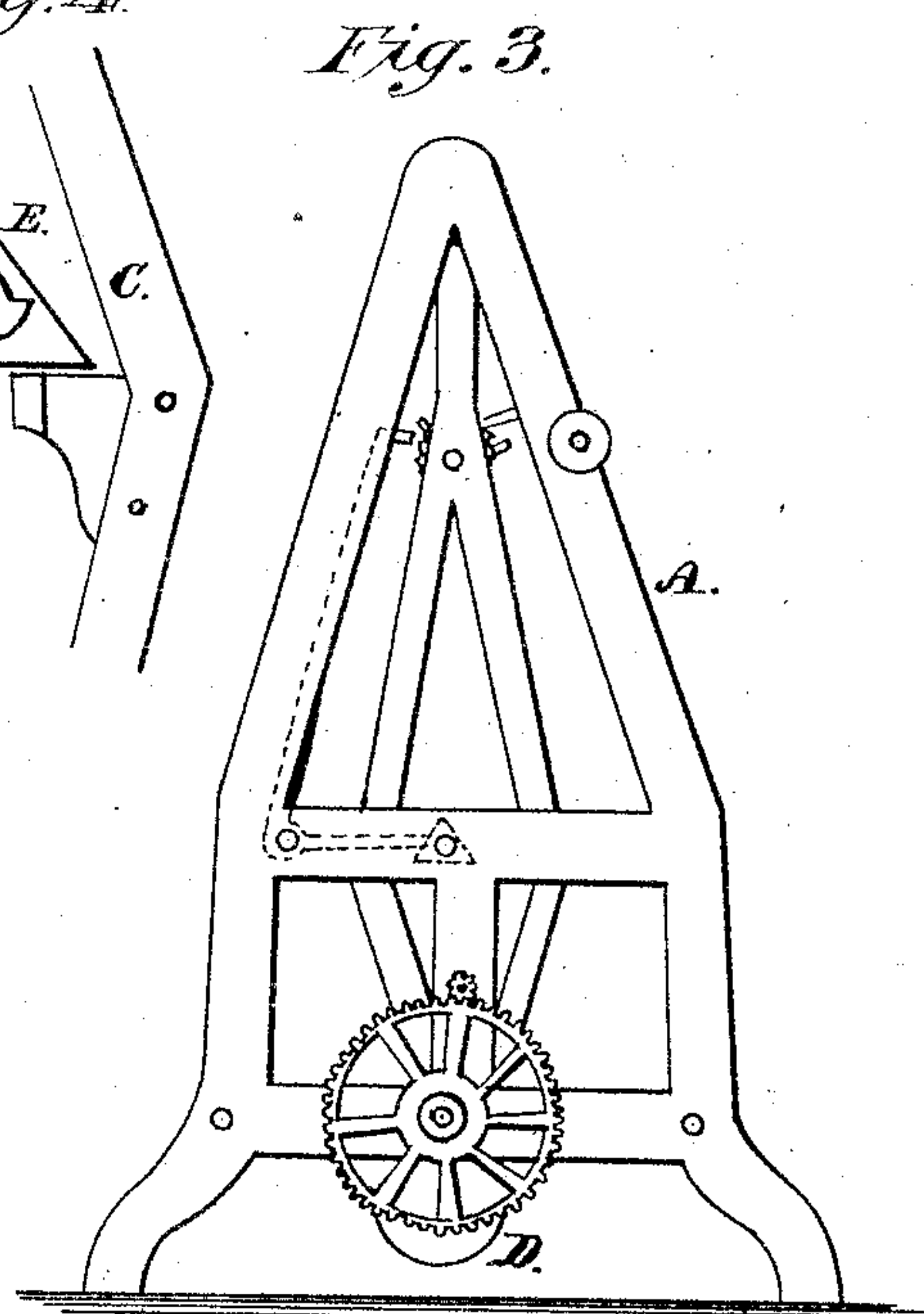
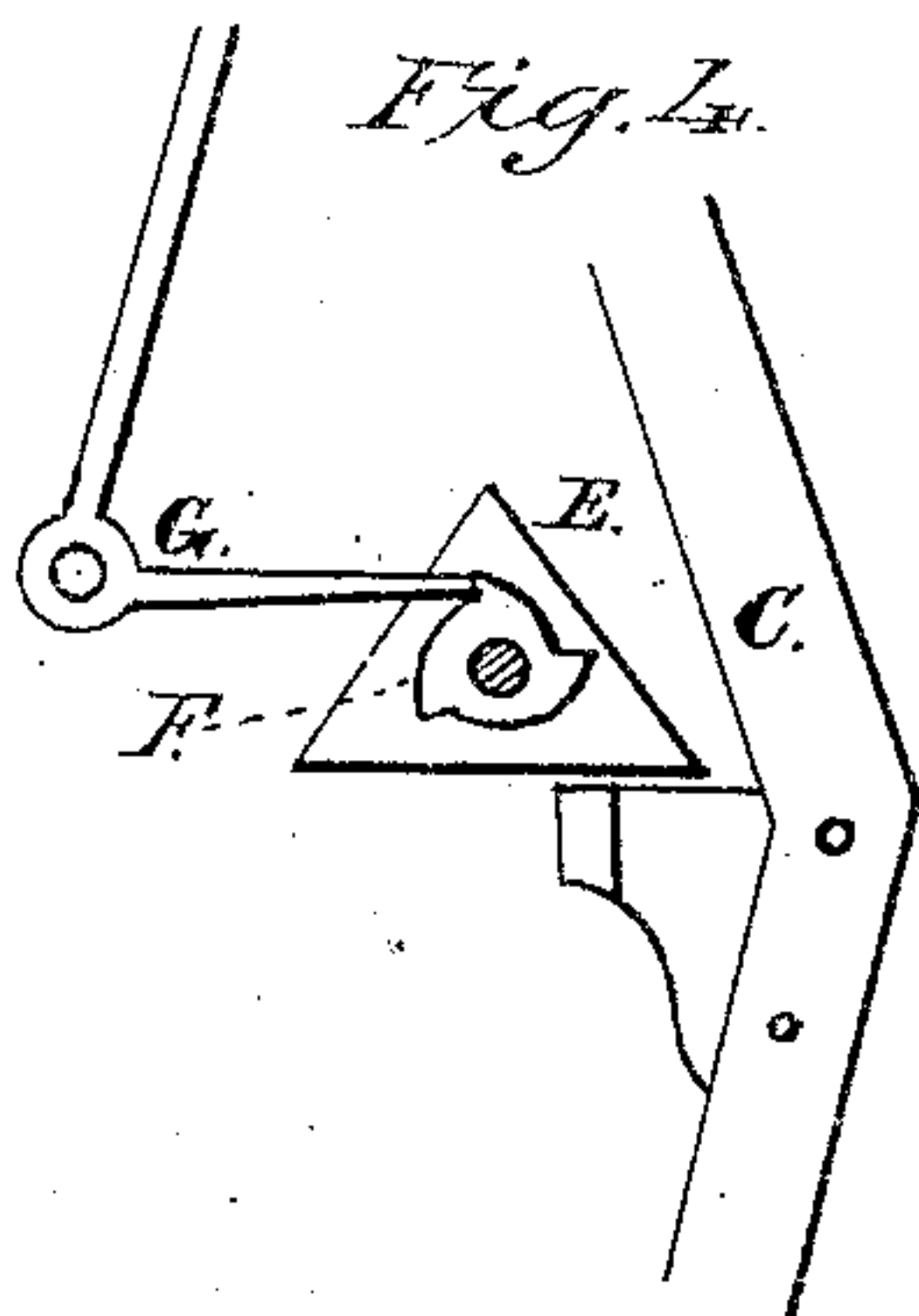
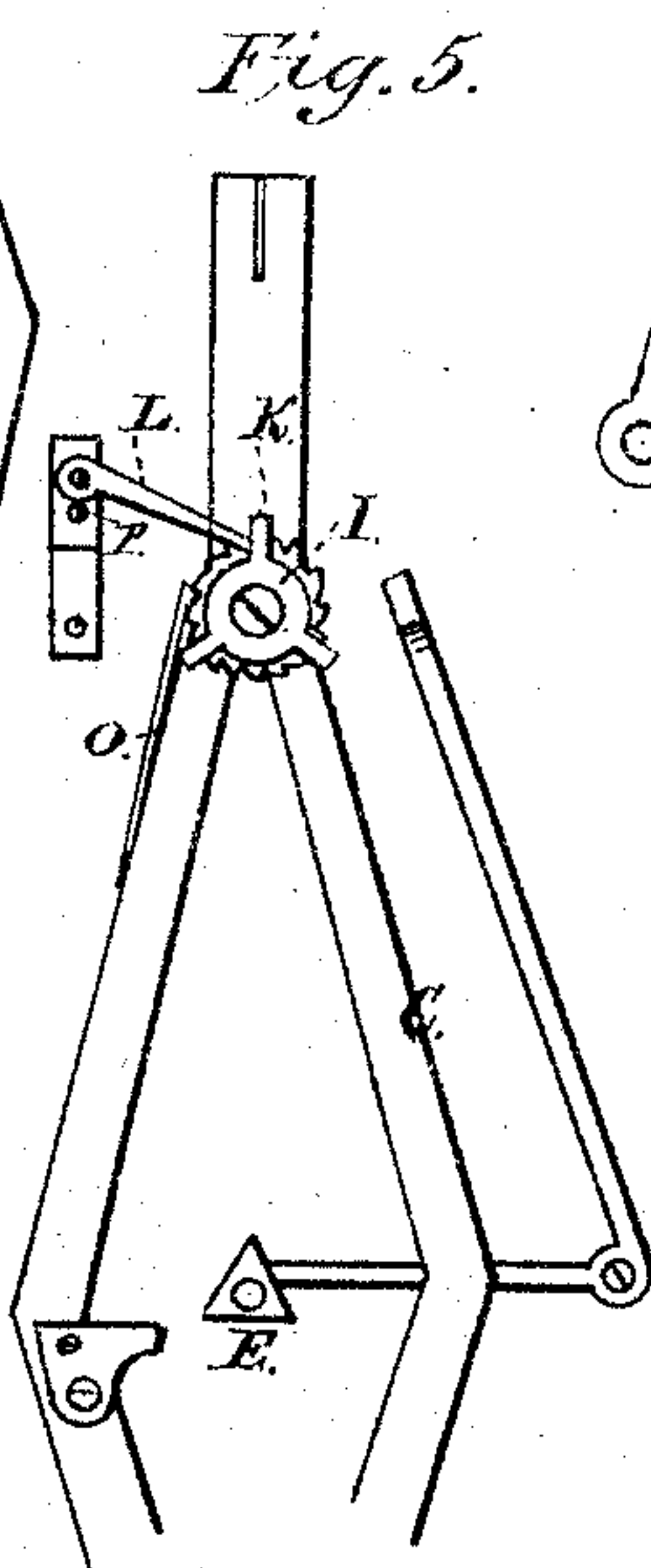
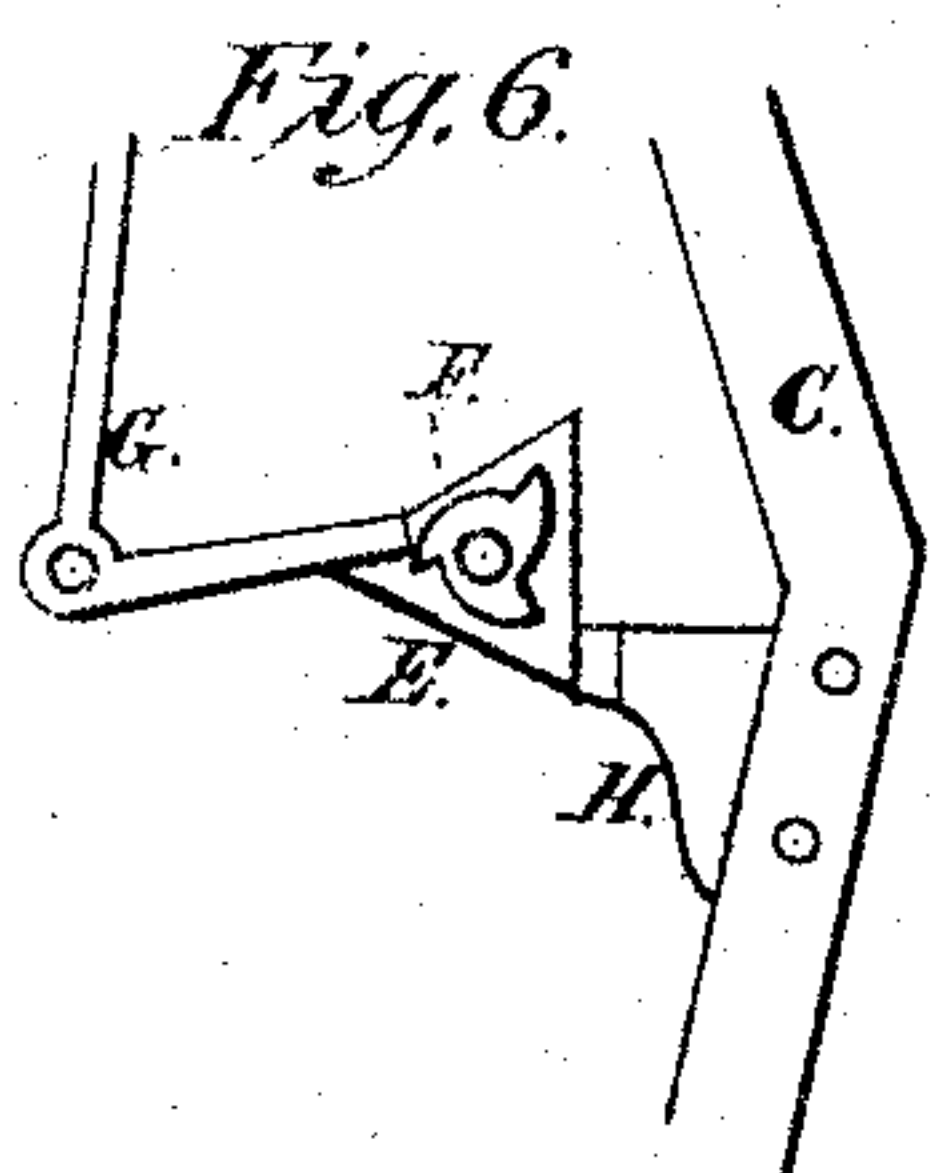
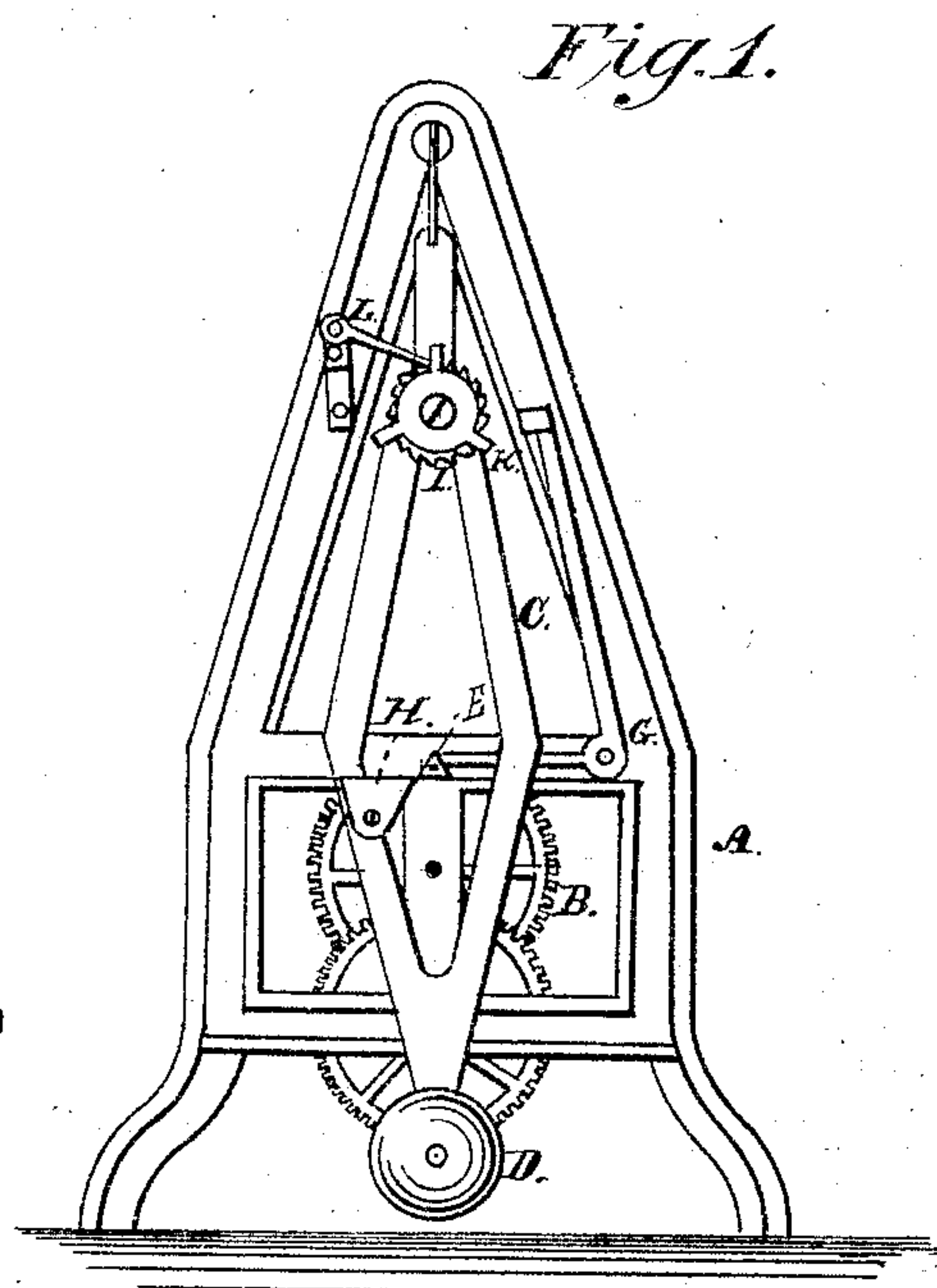
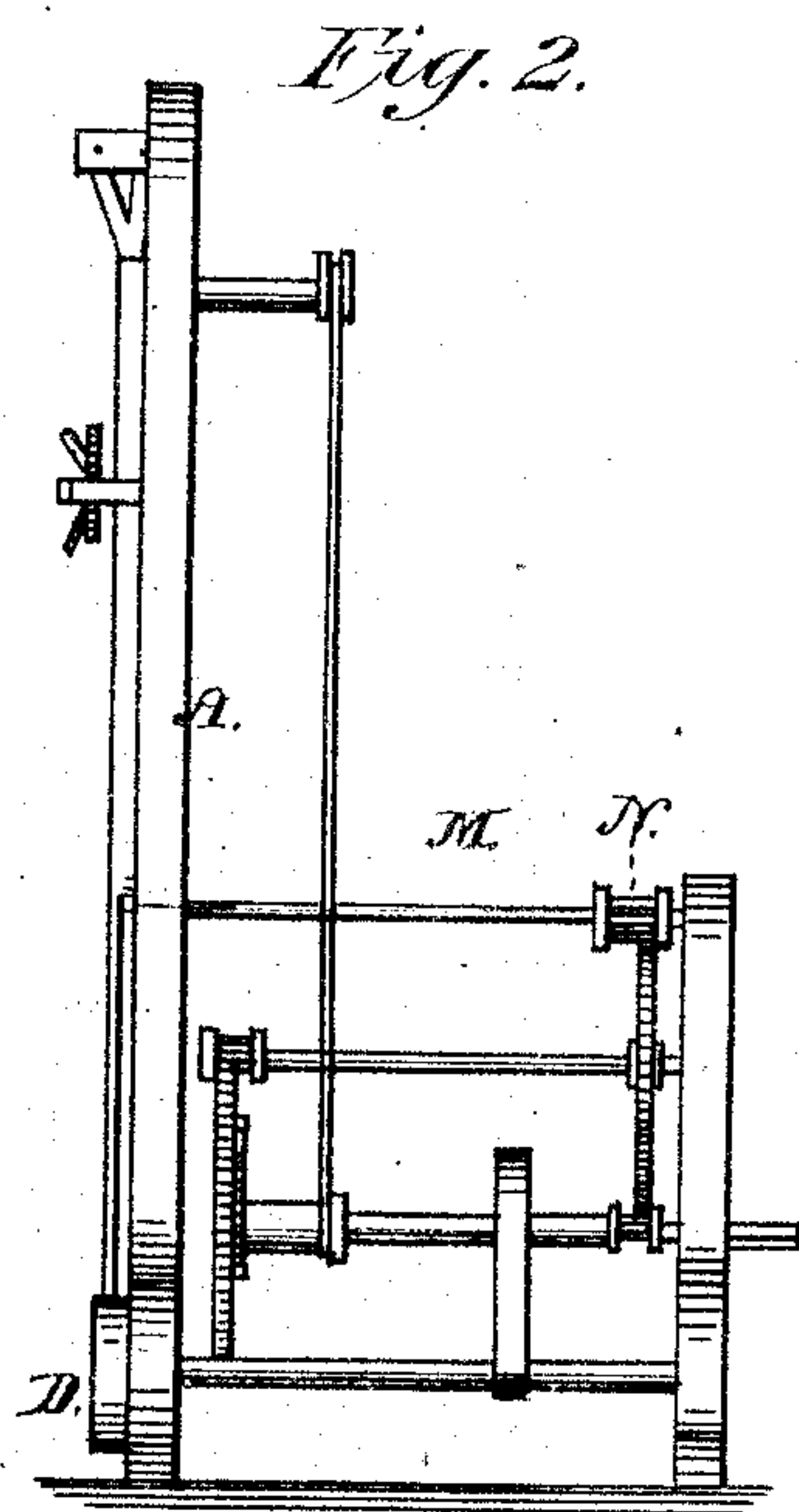


M. SCHWALBACH.
Clock-Escapements.

No. 156,677.

Patented Nov. 10, 1874.



Attest:

A. Schottenberg
J. B. Smith

Inventor:

Maximilian Schwalbach

UNITED STATES PATENT OFFICE.

MATHIAS SCHWALBACH, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN CLOCK-ESCAPEMENTS.

Specification forming part of Letters Patent No. **156,677**, dated November 10, 1874; application filed January 14, 1874.

To all whom it may concern:

Be it known that I, MATHIAS SCHWALBACH, of Milwaukee, in the county of Milwaukee, in the State of Wisconsin, have invented certain Improvements in Clock-Movement, of which the following is a specification:

The nature of my invention consists in the construction of a double-bodied pendulum, suspended by a spring in the usual manner, provided with a projecting piece or stop to receive motion from a triangular disk which is rotated on an arbor receiving power from the clock's first mover, said disk being rotated by the release of a three-toothed wheel on the same arbor by the lifting of a bell-crank pawl pivoted on the main frame, which pawl is so lifted by the revolution of three arms that are secured to and rotate with a ratchet-wheel secured near the upper end of the pendulum, and said wheel being rotated by a pawl secured on the main frame catching in a tooth of said wheel as it moves with the pendulum from the pawl, and then forcing such tooth its length from the pawl as the said wheel with the pendulum swings back toward the pawl, all of which will more fully appear below.

My invention is designed to secure greater accuracy in the movement of the pendulum of the common clock by imparting a steady motion to the pendulum.

In the drawings, Figure 1 is a front view of my invention, with clock-frame and mechanism to which my invention is attached. Fig. 2 is a side elevation of the same. Fig. 3 is a rear view of Fig. 1. Fig. 4 is a detail view from the rear, showing the relation of bell-crank pawl, three-toothed wheel, triangular disk, and the pendulum, the disk at rest; Fig. 5, detail view of the chief elements of my invention on enlarged scale; and Fig. 6 is a detail view, illustrating the relation of the stop of the pendulum to the triangular disk when in the act of imparting accelerating motion to the pendulum.

Like parts in the several figures are indicated by like letters.

A is the frame of the clock; B, the clock-gearing. The first movers are two, (coiled spring and cord and weight,) but either is sufficient. N is the pinion through which motion from the first mover is imparted to arbor M, on whose outer end is fixed triangular disk E, through which the accelerating motion I design to impart to the movement of the pendulum C is transmitted, and so increase the accuracy of the time-measurer. Attached to and in rear of disk E, and on the same arbor, is three-toothed wheel F, that is caused, by arbor M, to revolve when the horizontal arm of the bell-crank pawl G is lifted out of engagement with said wheel F. H is the projecting piece or stop on the pendulum that receives the blow from the disk E. I is the ratchet-wheel secured on a pin on the pendulum, and is rotated by the pawl L, secured to the main frame. At every third of a revolution of wheel I one of the three arms, K, secured on the face, and revolving with this wheel, will press against and lift the upper end of the bell-crank pawl G, and so cause the horizontal arm of this pawl to release one of the three teeth in wheel F, and so permit the desired accelerating motion to be passed to the pendulum. Ratchet-wheel I is held steady, when not engaged with pawl L, by a small spring-pawl, O, on the pendulum. The pawl L is prevented from falling too low by pin P, Fig. 5, or other suitable means.

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

The combination of the pawl L, ratchet-wheel I, having the three attached points, crank-lever G, three-toothed wheel F, triangular piece E, stop H, and pendulum C, arranged substantially as described, and operating as set forth.

MATHIAS SCHWALBACH.

Witnesses:

J. B. SMITH,
FRANZ BINERT.