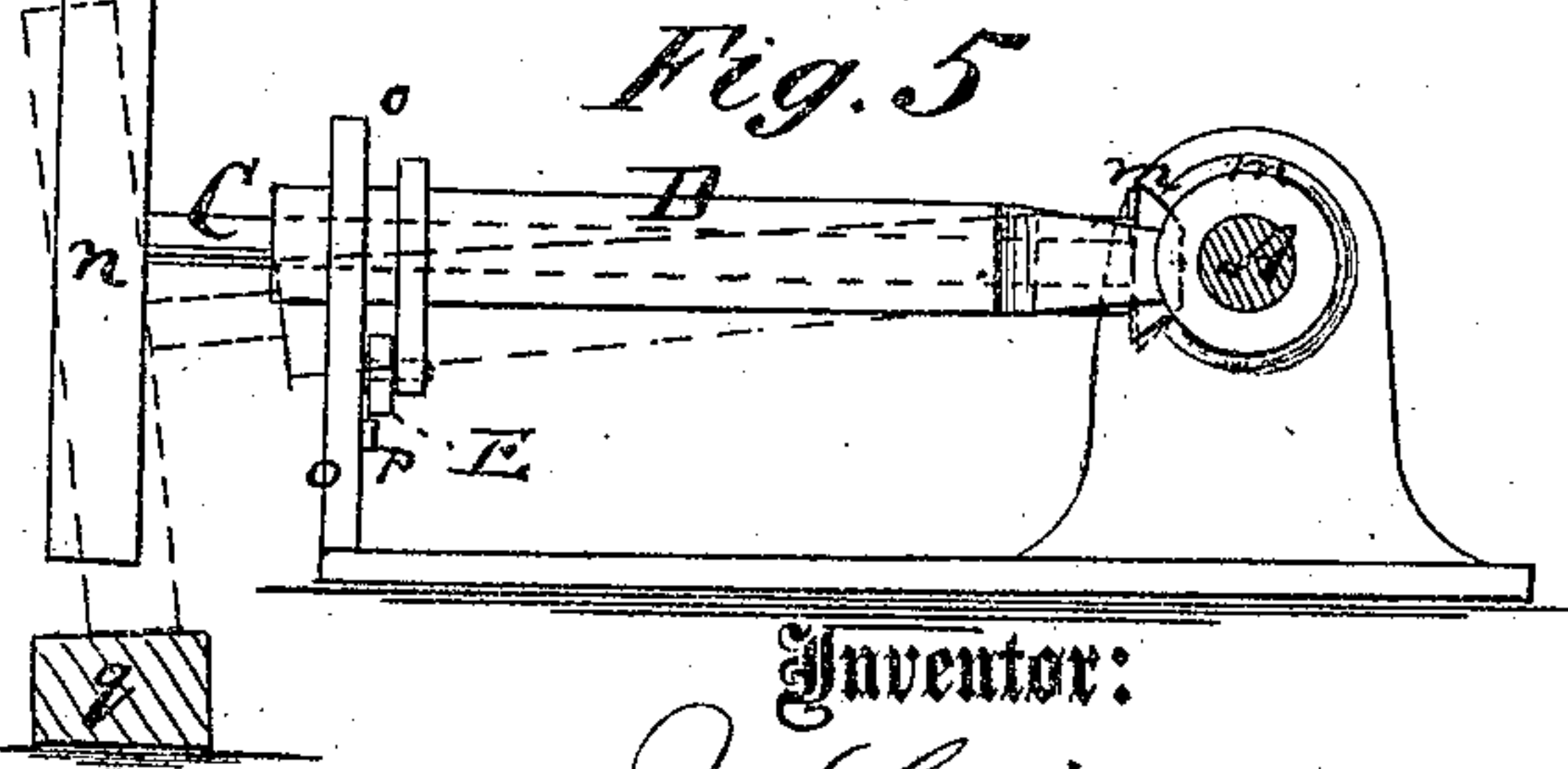
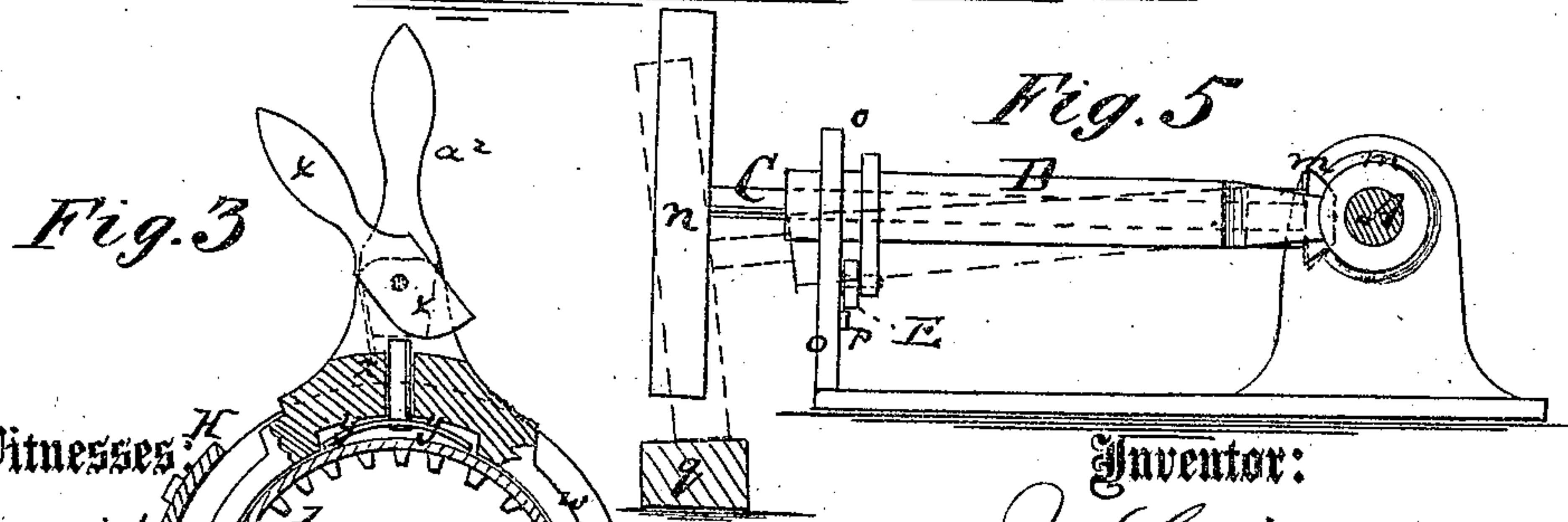
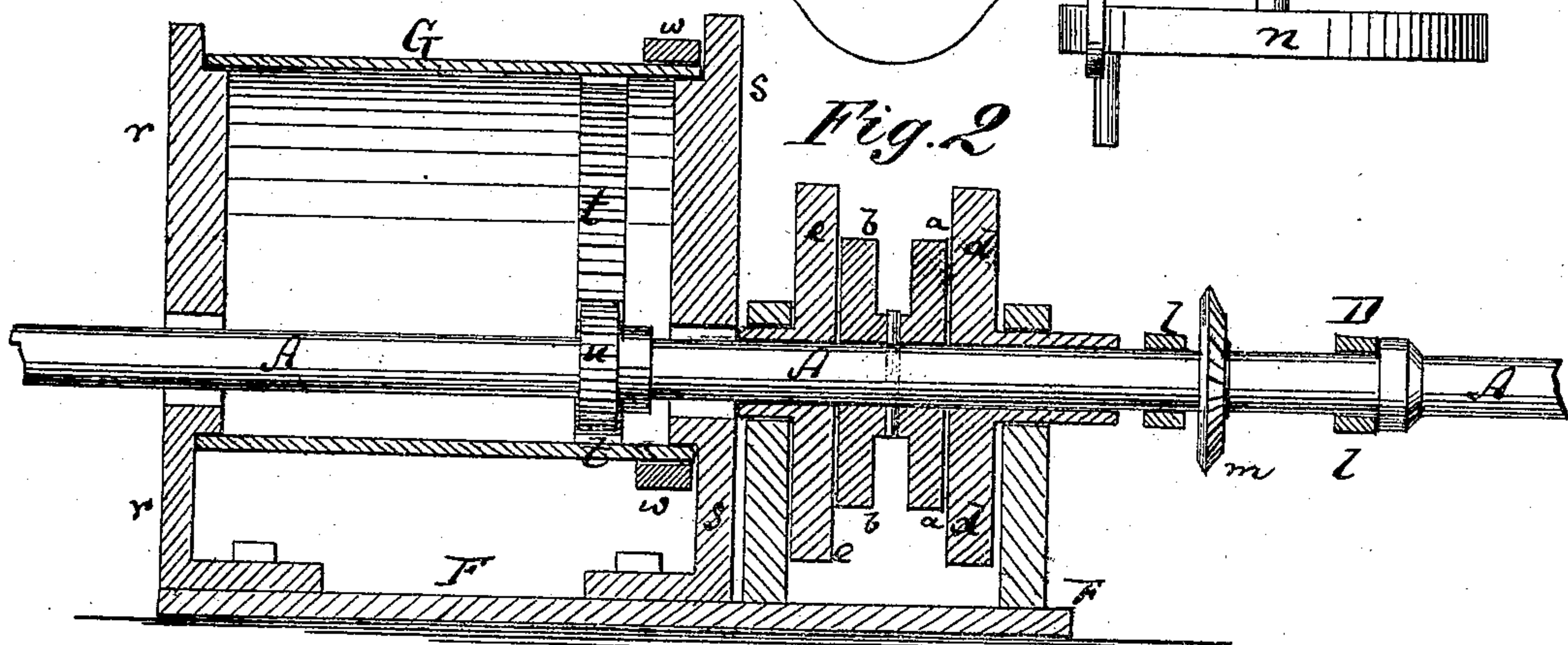
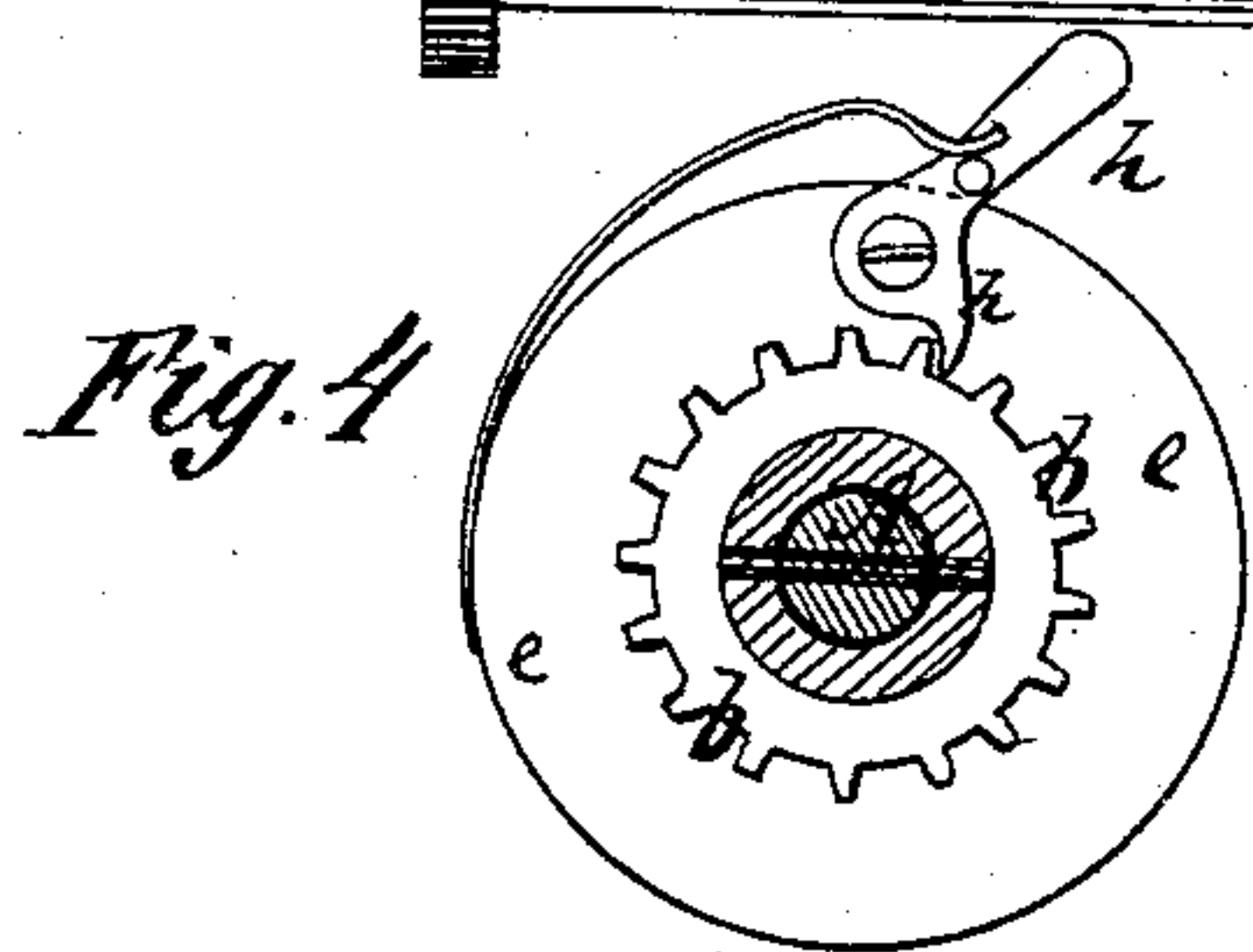
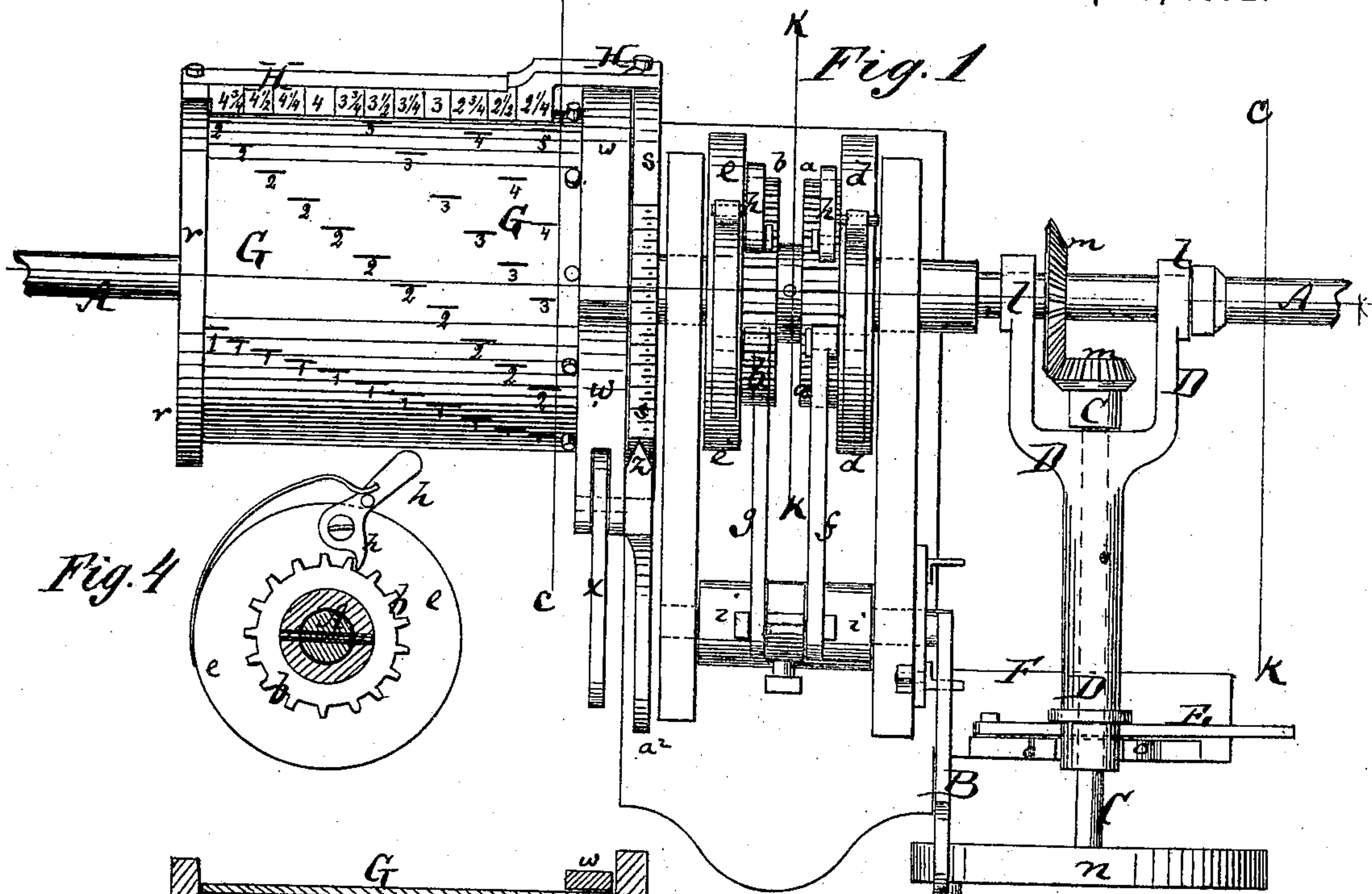


J. CAIN.  
 Improvement in Head-Blocks for Saw-Mills.  
 No. 131,051. Patented Sep. 3, 1872.



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# UNITED STATES PATENT OFFICE.

JOHN CAIN, OF GREENVILLE, PENNSYLVANIA, ASSIGNOR TO HIMSELF  
AND JOSEPH W. EBERMAN, OF SAME PLACE.

## IMPROVEMENT IN HEAD-BLOCKS FOR SAW-MILLS.

Specification forming part of Letters Patent No. 131,051, dated September 3, 1872.

Specification describing a new Improvement in Head-Blocks for Saw-Mills, invented by JOHN CAIN, of Greenville, in the county of Mercer and State of Pennsylvania.

In the accompanying drawing, Figure 1 is a top view of my improved apparatus. Fig. 2 is a vertical longitudinal section of the same. Figs. 3, 4, and 5 are vertical transverse sections of the same taken on the lines *c c*, *k k*, and *e k*, Fig. 1, respectively.

Similar letters of reference indicate corresponding parts.

This invention relates to a new arrangement of machinery for adjusting logs on a saw-mill by means of the transverse motion of the head and tail blocks. The invention consists in a new combination of an intermittingly-revolving shaft, which is worked by lever and ratchet-and-pawl connection to set the head and tail blocks. The invention also consists in combining with said shaft an eccentric rotary index, and arranging thereon a friction-ring and clamp, all as hereinafter more fully described.

In the accompanying drawing, the letter A denotes the shaft, which is hung in proper bearings at the back part of a saw-carriage, and reaches with its ends behind the head and tail blocks, connecting with the elbows thereon by gearing or otherwise, so that when the shaft A is revolved in one direction they will be moved forward, and backward when it is revolved in the opposite direction. Two ratchet-wheels, *a* and *b*, are mounted near to each other upon the shaft A, and near to them, respectively, are hung upon the shaft loosely two disks, *d* and *e*. These disks connect, one above, the other below the shaft, by rods *f g*, with the crank of a rock-shaft, *i*, that is operated by a lever, B. The two disks carry spring-pawls *h h*, that bear on the edges of the ratchet-wheels *a* and *b*, as indicated in Figs. 1 and 4. By vibrating the lever B on its rock-pivot the disks will be oscillated in opposite directions on the shaft A, and will swing their pawls along the ratchet-wheels, respectively. That pawl which is drawn toward the rock-shaft *i* slips loose on its ratchet-wheel; but the other, moving away from the rock-shaft, engages in its ratchet-wheel and turns the shaft. Thus, as the pawls are alternately moved in

opposite directions, the shaft A will receive intermittent rotary motion to feed the log, by means of the elbows on the head and tail blocks, steadily forward. When the head and tail blocks are to be drawn back to admit a new log, the pawls *h h* must both be thrown out of gear with their respective ratchet-wheels, so that the shaft A may be revolved in the opposite direction to effect such purpose. A shaft, C, hanging in a frame, D, that is, at *ll*, hung to the shaft A, is, by bevel-wheels *m m*, connected with the said shaft A, as shown in Fig. 1. The shaft C carries a friction-wheel, *n*, at its outer end. When the shaft A is used to feed a log in manner above specified, the frame D, carrying the shaft C, is held horizontal by a lever, E, which is pivoted to a vertical post, *o*, of the saw-carriage frame F, and rests on a stop, *p*, as shown in Fig. 5. But when the pawls are thrown out of gear the lever E is swung clear of the stop *p* and allows the frame D of the shaft C to drop into the inclined position which is shown in dotted lines in Fig. 5, until the friction-wheel *n* strikes a stationary rail, *q*, placed under it immovably. When the carriage is moved the wheel *n*, rolling on the rail *q*, will be revolved, and thereby also the shafts C and A, the latter in direction proper for withdrawing the head and tail blocks to admit a new log. The registering apparatus consists, principally, of a cylindrical drum, G, which is hung between two plates, *r* and *s*, that are rigidly affixed to the saw-carriage. The drum G is open-ended, and is held on circular shoulders of the plates *r s*, as is clearly shown in Fig. 2. It embraces the shaft A eccentrically, and has internal gearing *t*, into which a pinion, *u*, that is mounted upon the shaft A, engages. Thus, when the shaft A is revolved the drum is also turned, but slower. Around the circumference of the drum are marks with figures, 111, 222, 333, &c., all spaced, so that when the drum, for example, is moved to bring one mark 1 to the longitudinal position previously occupied by the mark 1 next to it, the shaft A will be turned so much as to feed the log one inch; the same, in equal manner, with the other marks, the spaces 2 corresponding with a feed of two inches of the log; the marks 3 with a feed of three inches, and so forth. To enable the nec-



essary observation, a bar, H, is fastened to the edges of the plates *r s*, parallel to the axis of the shaft A. Its straight edge constitutes the gage on which the position of the marks on the drum can be observed. Therefore, when it is desired to feed the log a certain distance at a time, the lever B is operated until the changed position of the graduated drum indicates that the log has been fed such certain distance. In order to admit of a still finer degree of subdivision of the feed, or of irregular feeding, a graduated scale is marked on the edge of one of the plates *r s*. A ring, *w*, embraces the drum near the plate so marked, and can, by a lever, *x*, and clamp-spring *y*, be drawn so tight on the drum as to be carried around with the same. A finger or point, *z*, is formed on the ring *w* close to the marked edge of the plate *r* or *s*. When the drum is turned by the means above described the degree of motion can be

observed with great nicety by the finger *z* moving along the graduated edge of *r* or *s*. The ring *w* is provided with a handle, *a*<sup>2</sup>, so that it may be turned into suitable position.

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

1. The log-setting apparatus, composed of the shaft A, ratchet-wheels *a b*, loose disks *d e*, rods *f g*, pawls *h h*, rock-shaft *i*, and lever B, all arranged to operate substantially as herein shown and described.

2. The shaft C, hanging in the vibrating frame D, and carrying the friction-wheel *n*, when arranged to gear into the shaft A, substantially as herein shown and described.

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Witnesses:

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