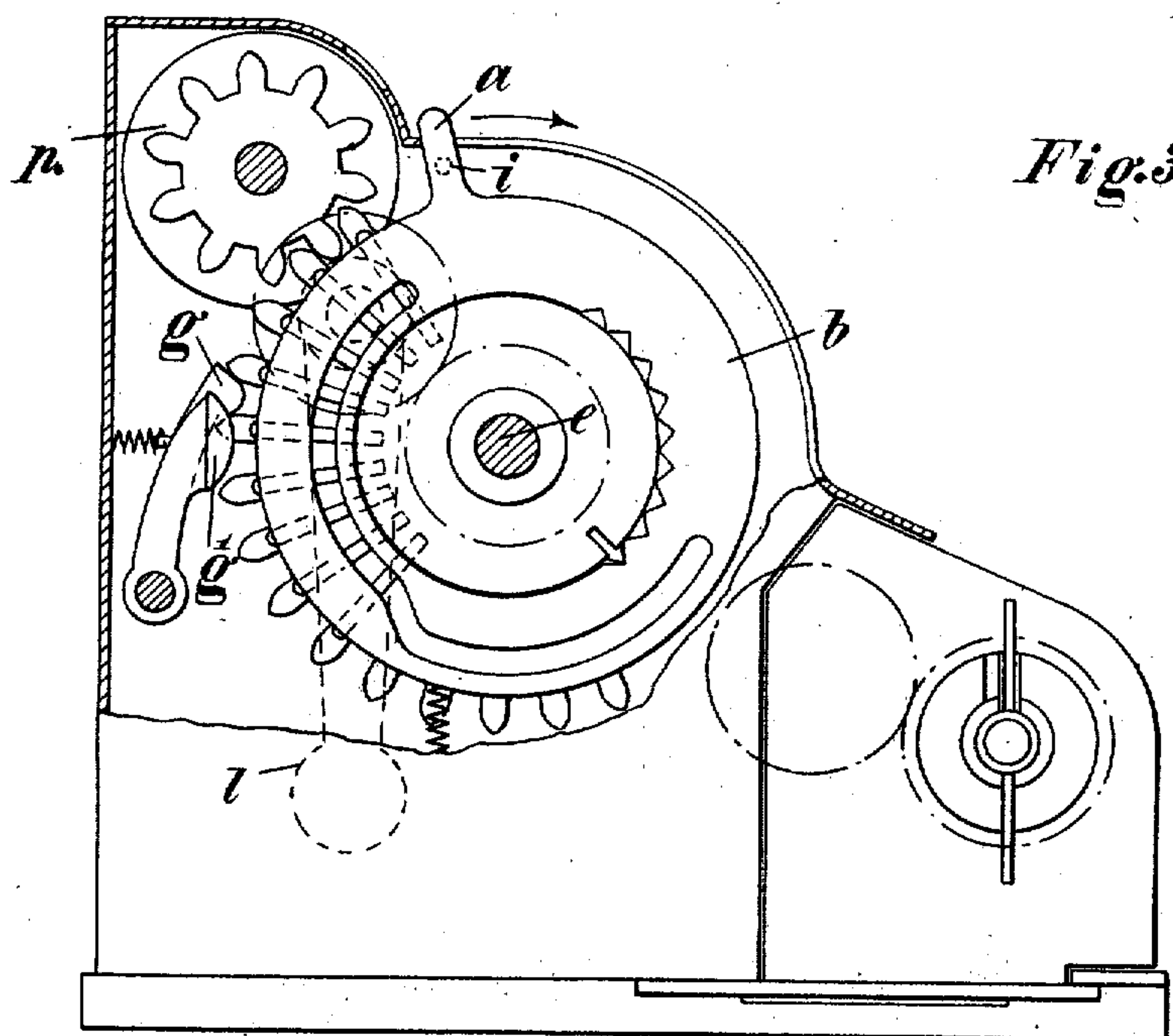
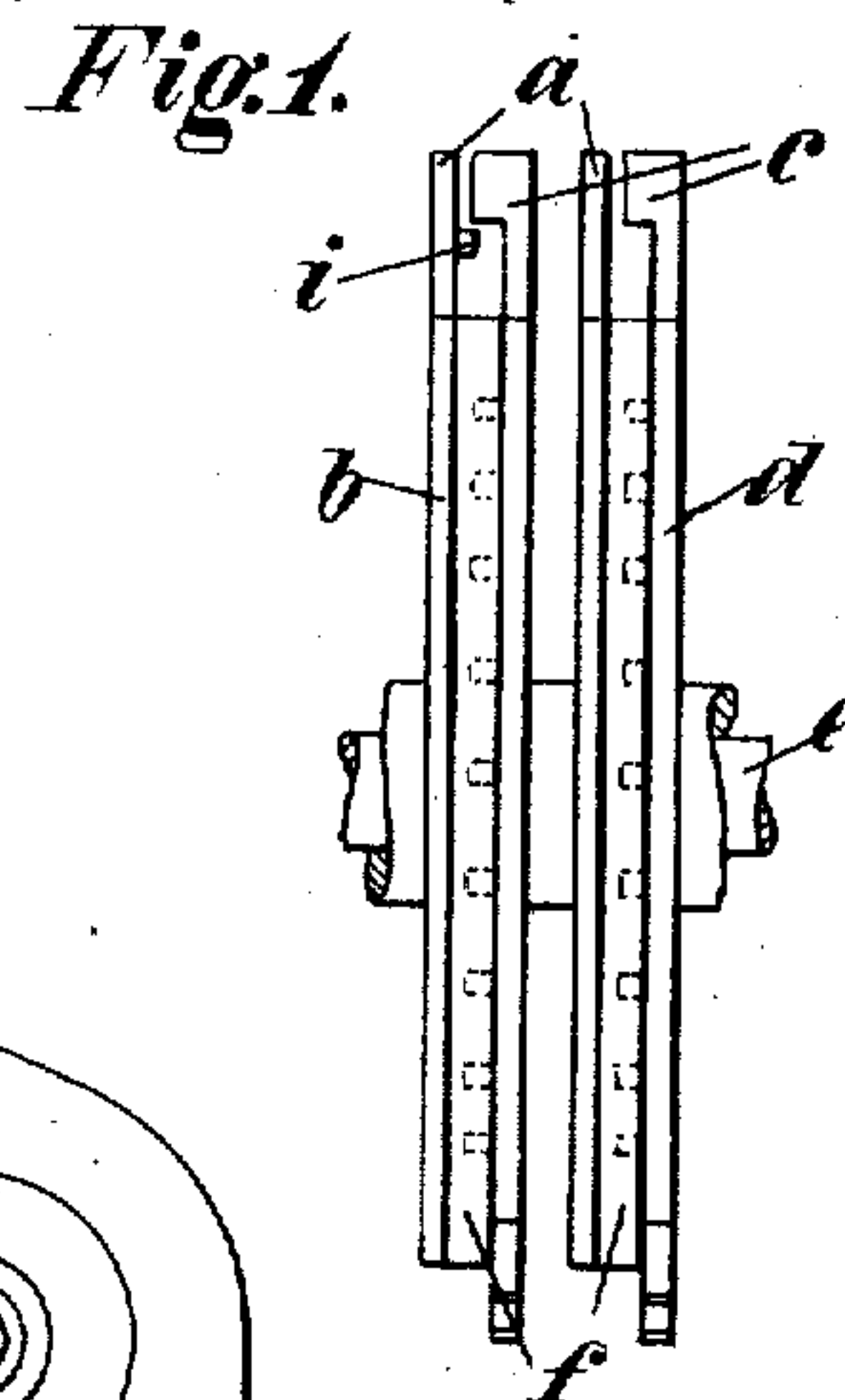
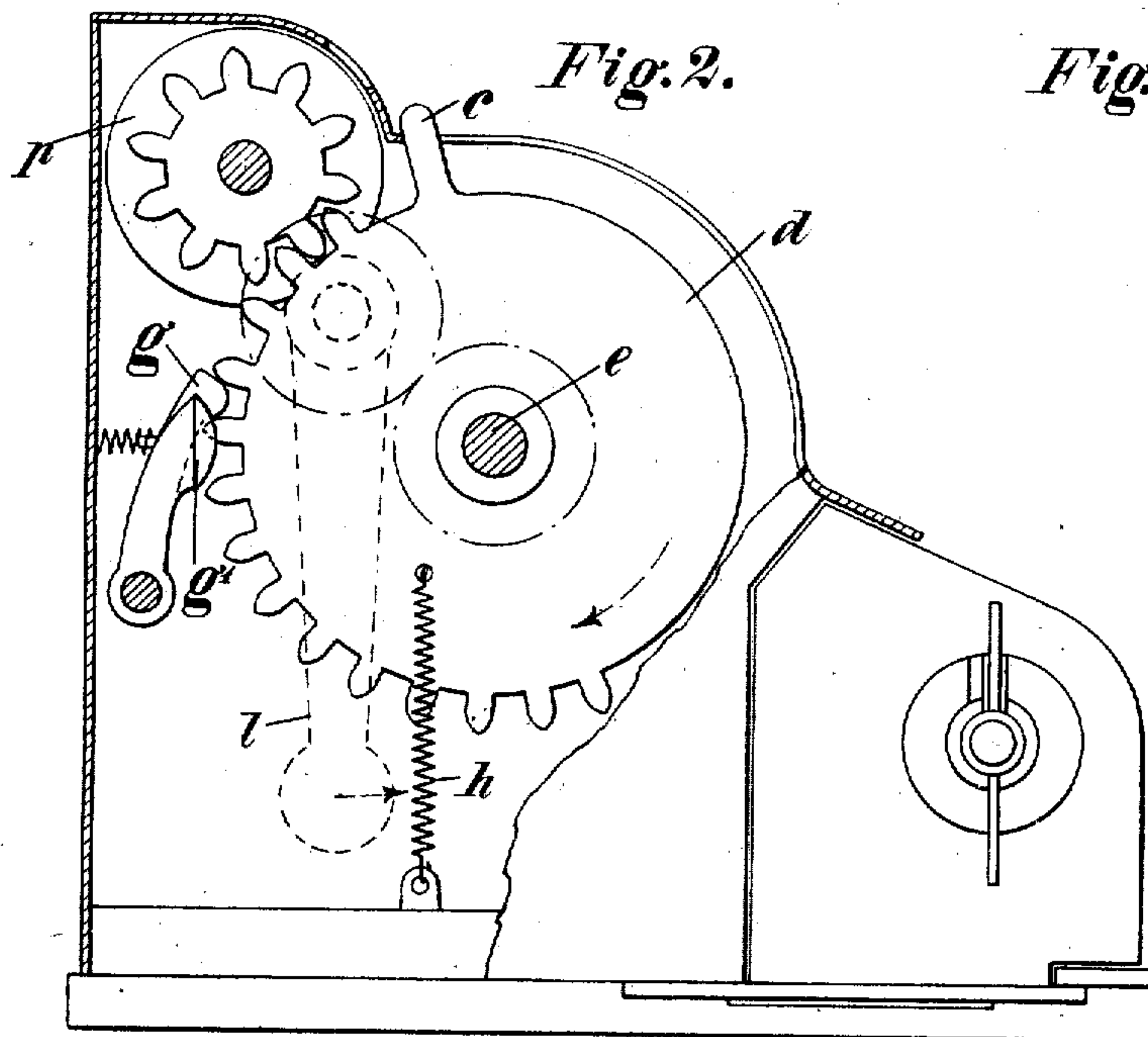


No. 843,506.

PATENTED FEB. 5, 1907.

F. TRINKS.
ADJUSTING LEVER ARRANGEMENT FOR CALCULATING MACHINES.
APPLICATION FILED MAR. 5, 1906.

2 SHEETS—SHEET 1.



Witnesses,
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C. D. Hester

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No. 843,506.

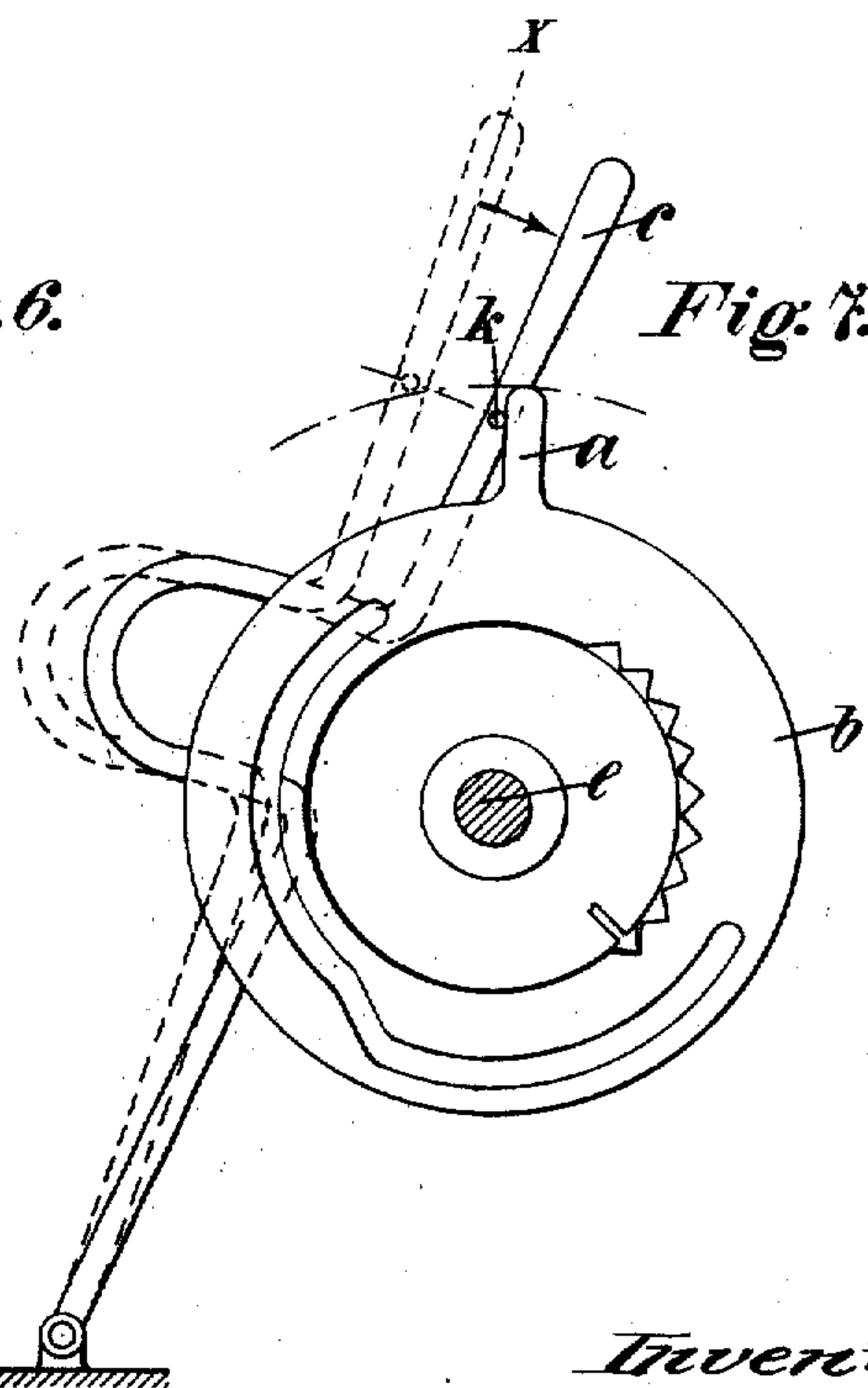
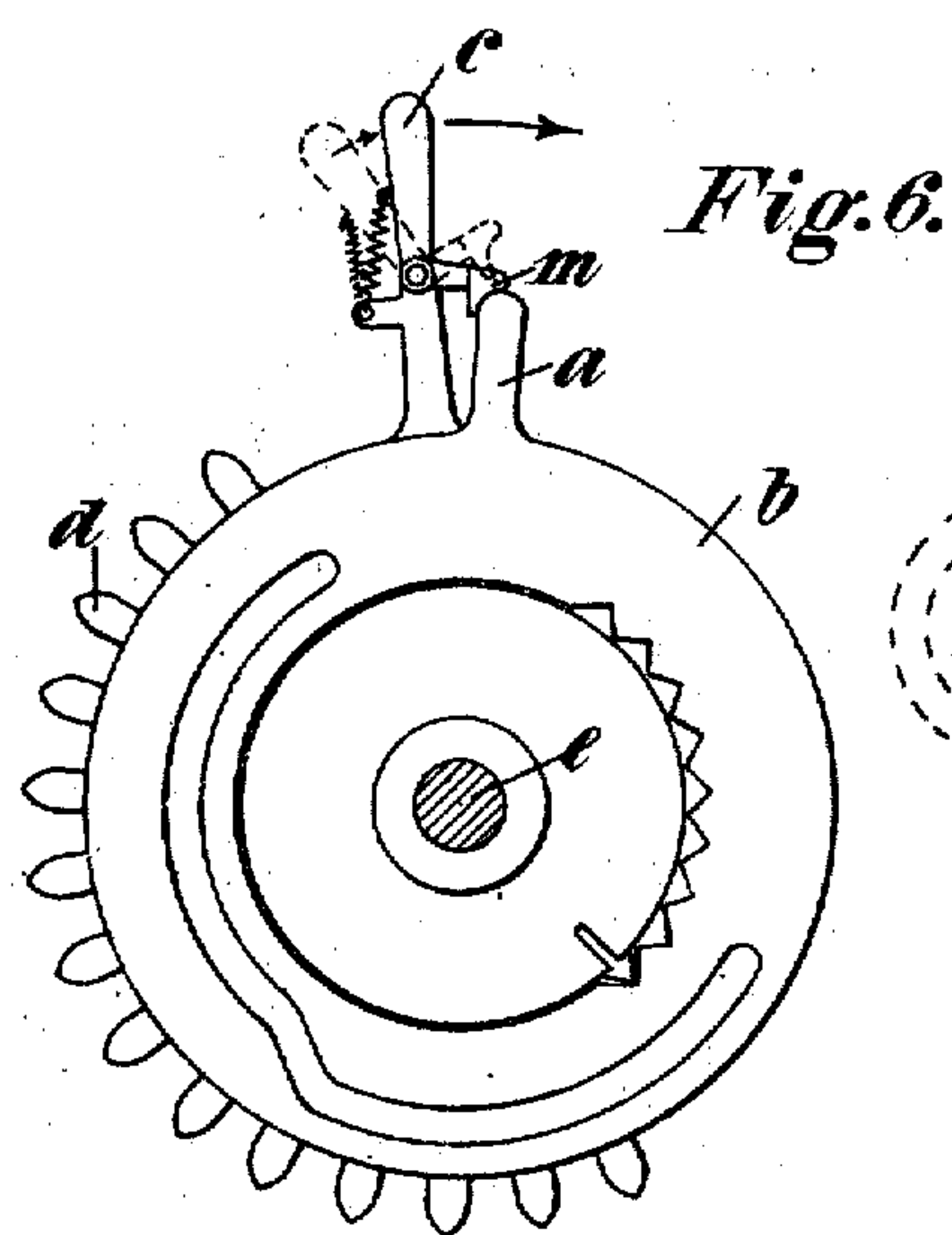
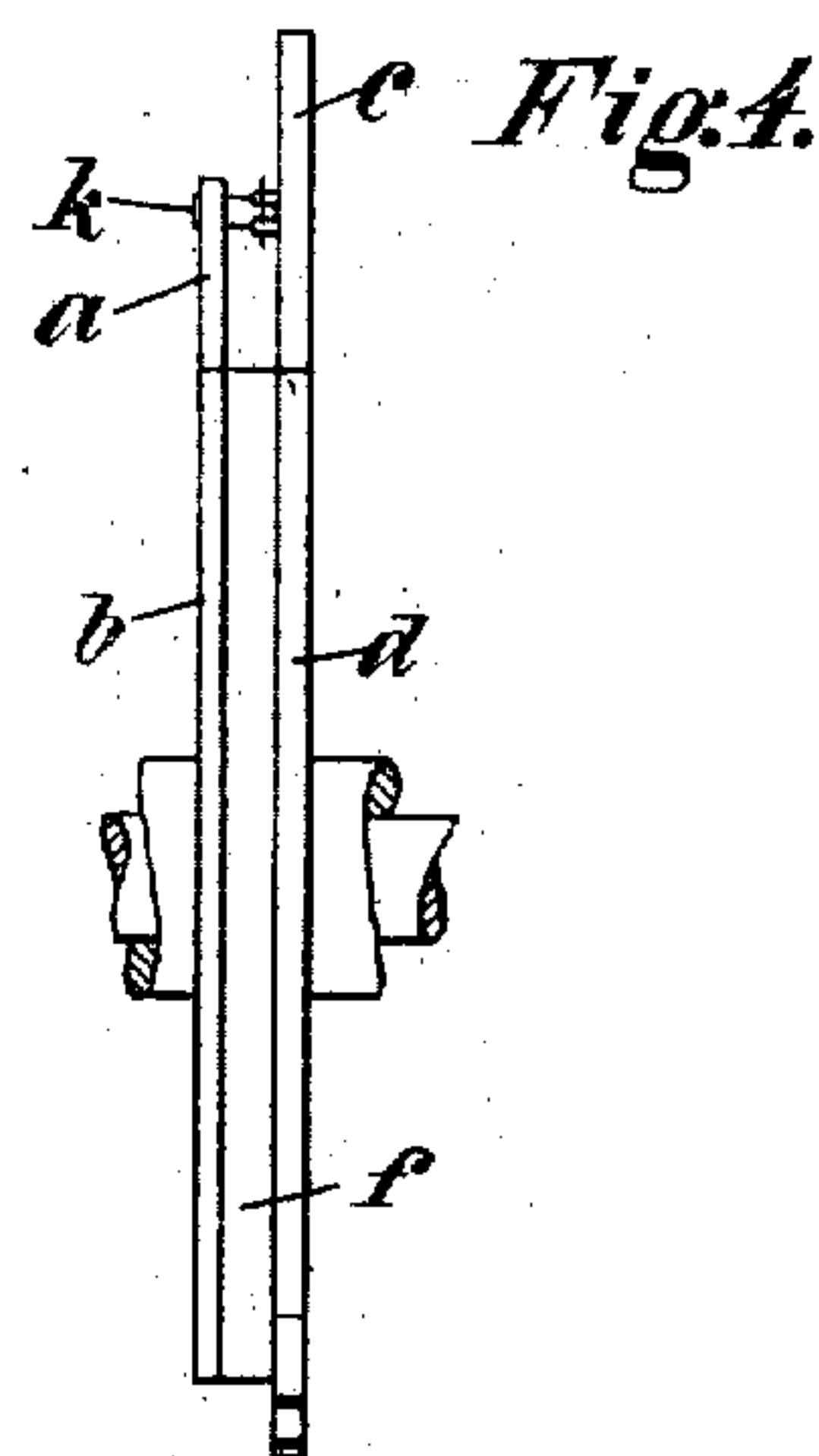
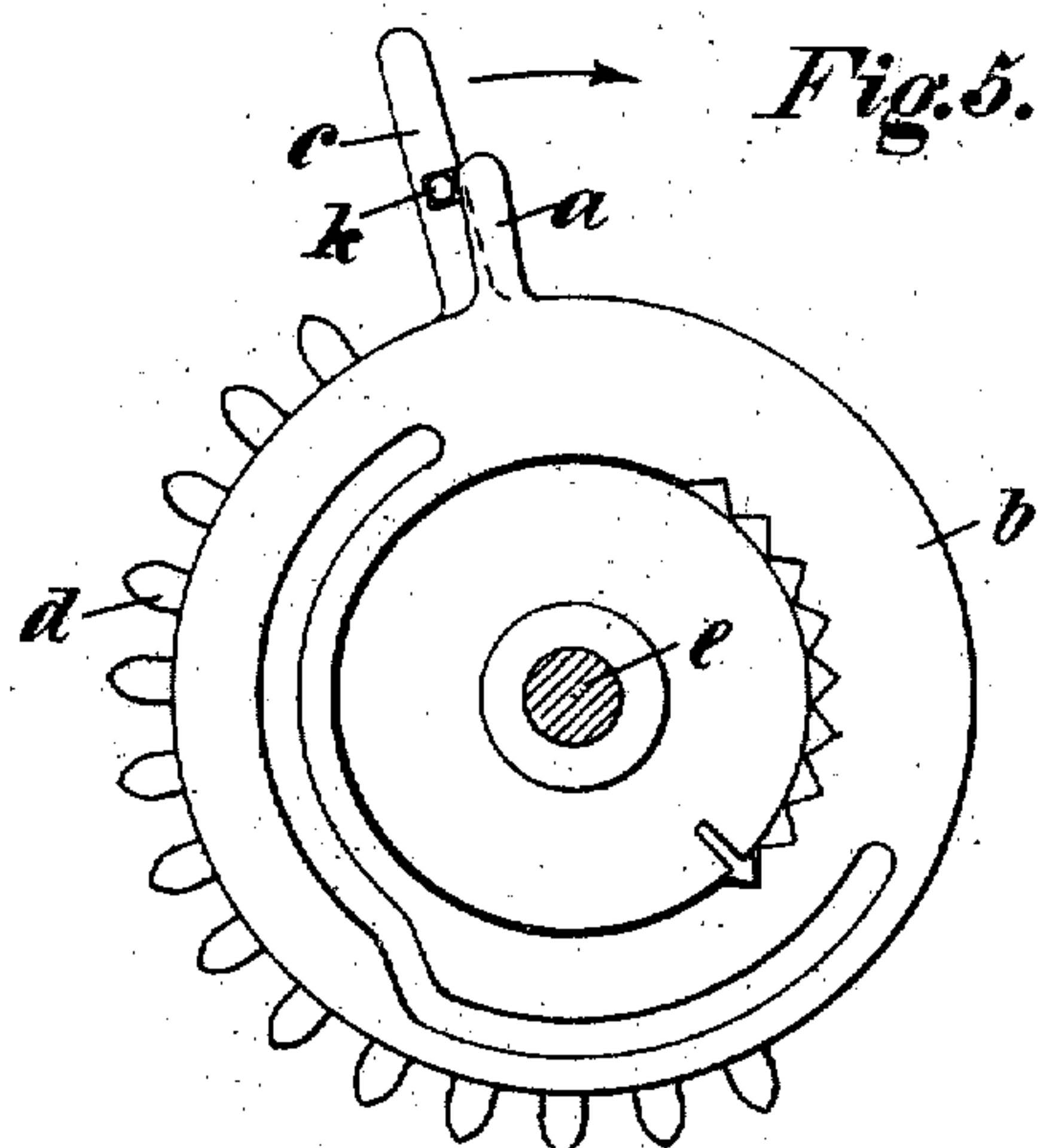
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FRANZ TRINKS, OF BRUNSWICK, GERMANY.

ADJUSTING-LEVER ARRANGEMENT FOR CALCULATING-MACHINES.

No. 843,506.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed March 5, 1906. Serial No. 304,340.

To all whom it may concern:

Be it known that I, FRANZ TRINKS, engineer, a subject of the Emperor of Germany, residing at Brunswick, Duchy of Brunswick, Empire of Germany, have invented certain new and useful Improvements in Adjusting-Lever Arrangements for Calculating-Machines, of which the following is a specification.

Calculating-machines are known in which the adjustment of the values takes place on a toothed wheel having a variable number of teeth by the turning to a certain extent of a cam-disk connected with each of these adjusting-wheels, bringing a given number of teeth into the working position. The cam-disks are turned by means of small handles which project from the periphery of the disks through slots in the machine-casing, as illustrated in Figure 1 of United States Patent No. 650,006, and Figs. 1 and 2 of United States Patent No. 823,375.

Now the object of the present invention comprises the arrangement of a separate group of adjusting-levers which are not firmly connected with the cam-disks, but in spite of that are either used for their adjustment or are moved simultaneously with them with the object of registering the movement of the cam-disk. The advantages resulting from this arrangement will now be hereinafter set forth.

In machines of the said kind an arrangement is frequently adopted by which an indicating mechanism is adjusted by the displacement of the cam-disks, which indicating mechanism allows of the value each time adjusted being read off. This is attained by means of teeth formed on the periphery of each cam-disk by which the toothed wheels which set the indicating apparatus in motion are operated. In the arrangement above described the said toothed wheels may be adapted to be thrown out of action, as otherwise on the rotation of the adjusting-wheels operated by means of the crank, in which rotation the cam-disks connected with the shaft share, the indicating mechanism is also moved. The necessary throwing out of action of the toothed wheels is effected by displacing their common shaft, as illustrated in English Patent No. 3,135 of 1904, Fig. 3.

By this invention the throwing out of action of the toothed wheels—that is to say, any displacement of their shaft—is dispensed with.

The invention is shown in the accompanying drawings, wherein like reference characters denote corresponding parts throughout the several views, and in which—

Fig. 1 is a front elevation of two adjusting-wheels embodying the invention. Figs. 2 and 3 are side views of the machine, partly in section. Figs. 4 to 8 are modified constructions of the invention.

In Fig. 1 a second handle *c* is provided close beside each adjusting-lever *a*, which is connected with a cam-disk *b*, Fig. 3, in the ordinary way, which second handle *c* belongs to a toothed wheel *d*, Fig. 2, which is loosely revolvably mounted on the shaft *e* of the adjusting-wheels *f* and the cam-disks *b* and gears with the toothed wheels of the indicating mechanism *p*. Such adjusting-levers having a movement in connection with the indicating mechanism are in themselves known; but the improvement here is their peculiar combination with the handles *a* of the cam-disks *b*. In the adjustment, in fact, the person operating the machine takes hold of both levers *a* and *c* simultaneously and brings them into position for the desired value. If then by the rotation of the main crank *l*, which is operated in the ordinary way, the adjusting-wheels *f*, together with the cam-disks *b*, are turned, the handles *c* and their toothed wheels *d* remain at rest, as they are loosely mounted on their shaft *e*, and the indicating mechanism remains in the position into which it has been adjusted until the user after completing the rotation of the crank pushes back again both handles *a* and *c* simultaneously into the position of repose. If no value be attached to retaining the total sum after the adjustment of the separate figures has been completed, an immediate automatic return of the handles *c* into their initial position may be effected by means of simple springs *h*, which are connected with each handle *c* or toothed wheel *d*, or catches *g* may be so arranged that the handles *c* cannot follow the pull of the springs *h* until these catches are released, which release, for instance, may take place automatically during the rotation of the crank by means of a stud *i*, rotating with one of the disks *b* and *f*, which stud by lifting the arm *g'* turns the common spindle of the catches *g*.

A somewhat different form of construction is shown in Figs. 4 and 5. The handles *c* here prolonged beyond the actual adjusting-handles *a*. The person using the machine

When adjusting only takes hold of these longer handles *c*, which carry with them, by means of a pin *k* or other coupling member, the handles *a*. The pins *k* are free to pivot only in the forward direction around a vertical shaft *y* and are held in their working position by means of suitable springs *x* or the like, so that the handles *a* can pass them. On the turning of the crank they overtake the handle *c* from the rear—that is so say, the pins *k* are adapted to carry with them the handles *a* on turning the longer handle *c*; but the reversed way on turning the main crank the handles *a*, which they rotate cannot carry with them the pins *k*.

Instead of the coupling hereinbefore described between two handles *a* and *c* a device such as shown in Fig. 6 may also be employed. If the handle *c* be moved in the direction indicated by the arrow, the pawl *m* drops behind the handle *a* or into a notch formed therein. After release of the handle *c* the pawl *m* rises until the handle *a* can move unimpededly beneath it.

The arrangements shown in Figs. 4–6 have also the advantage that the handle *c*, utilized for the adjustment, may be of any suitable length and any suitable width, because it does not share in the rotation of the adjusting-wheel shaft *e*, and therefore no regard need be paid to the existing extremely

small section of passage. By giving the handles larger dimensions the operation of the machine is rendered considerably more convenient. The axis of rotation of the handle *c* may also, as shown in Fig. 7, be located outside the shaft *e*, carrying the adjusting-disks. By this means the advantage is obtained that by the handle *c* being further moved back into the position *x* the coupling member *k* is removed from the track of the handle *a*, and thus separate precautions for doing this are unnecessary.

I declare that what I claim is—

In a calculating-machine, the combination with operating-wheels provided with radially-displaceable teeth and shiftable cam-disks for adjusting the teeth, of means arranged in close proximity to the cam-disks and adapted to move the operating-wheels simultaneously with the movement of the cam-disks, and an indicating mechanism operated during such movement of the operating-wheels simultaneously with the movement of the cam-disks.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANZ TRINKS.

Witnesses:

WILHELM LEHRKE,
JULIUS SECKEL.