

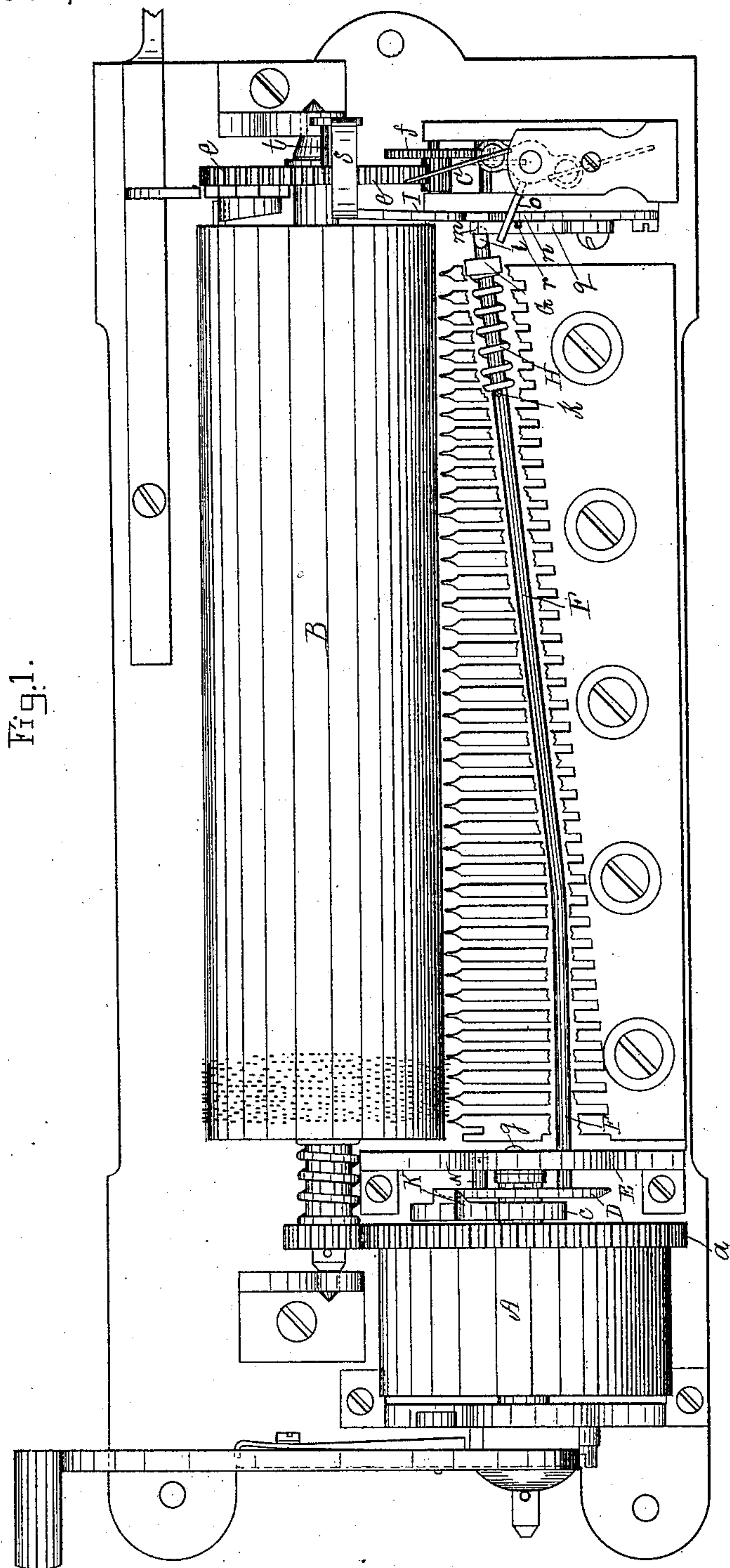
(No Model.)

2 Sheets—Sheet 1.

T. ROBIN & J. A. MAILLOUX.
MUSIC BOX.

No. 364,959.

Patented June 14, 1887.



Witnesses.

S. N. Piper.

R. B. Torrey

Inventor.

Theodule Robin.

James A. Mailloux.

R. H. Esay

(No Model.)

2 Sheets—Sheet 2.

T. ROBIN & J. A. MAILLOUX.
MUSIC BOX.

No. 364,959.

Patented June 14, 1887.

Fig. 2.

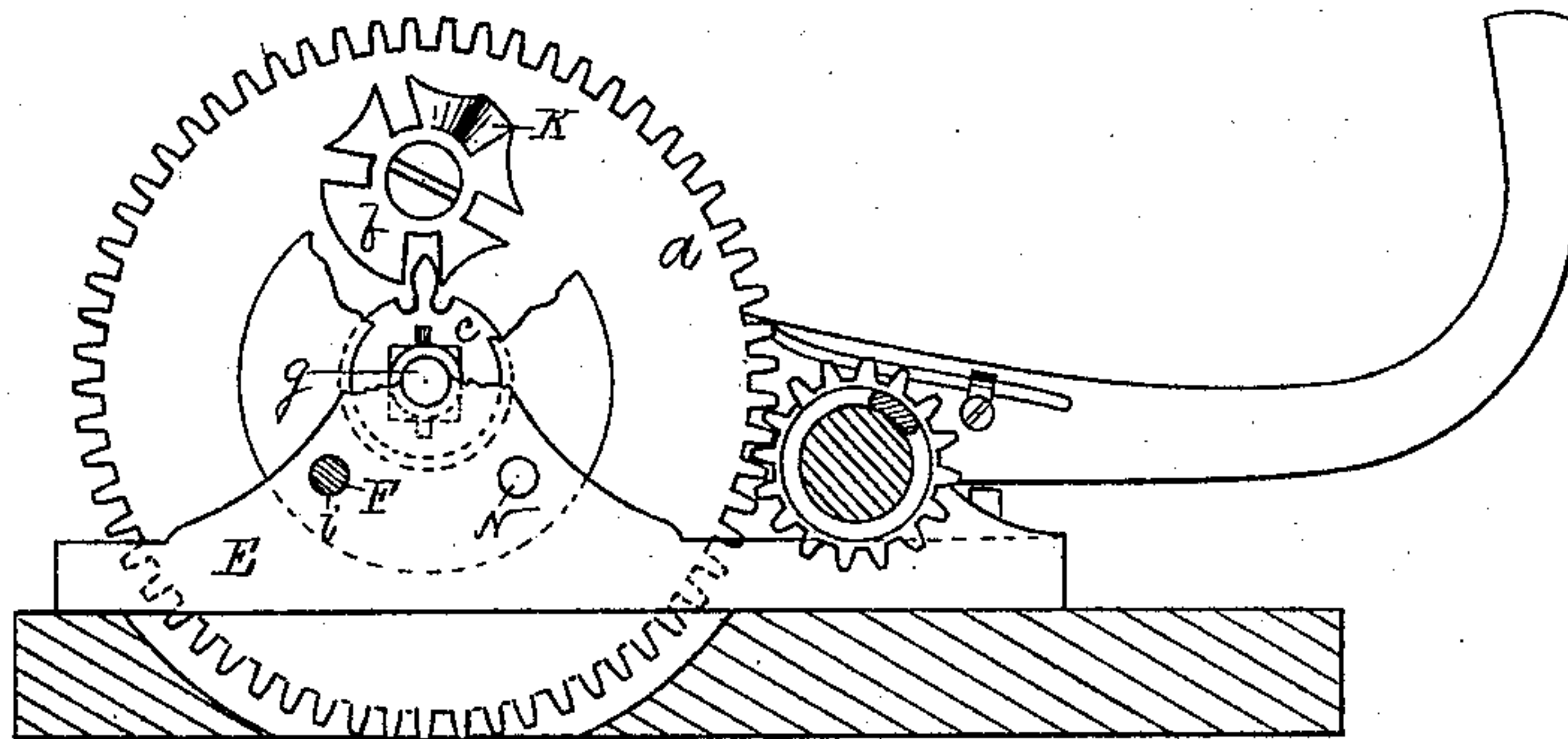


Fig. 3.

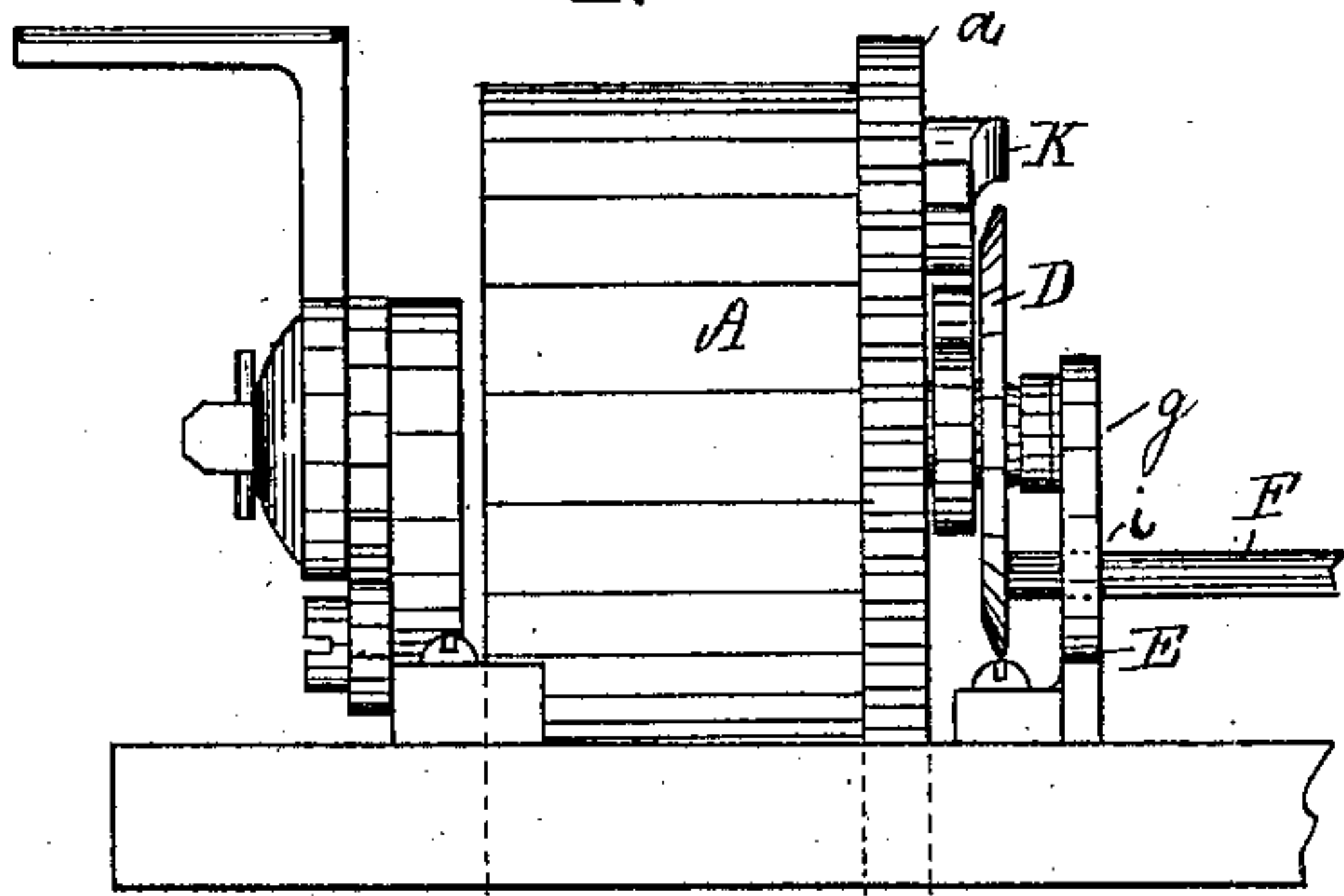


Fig. 4.

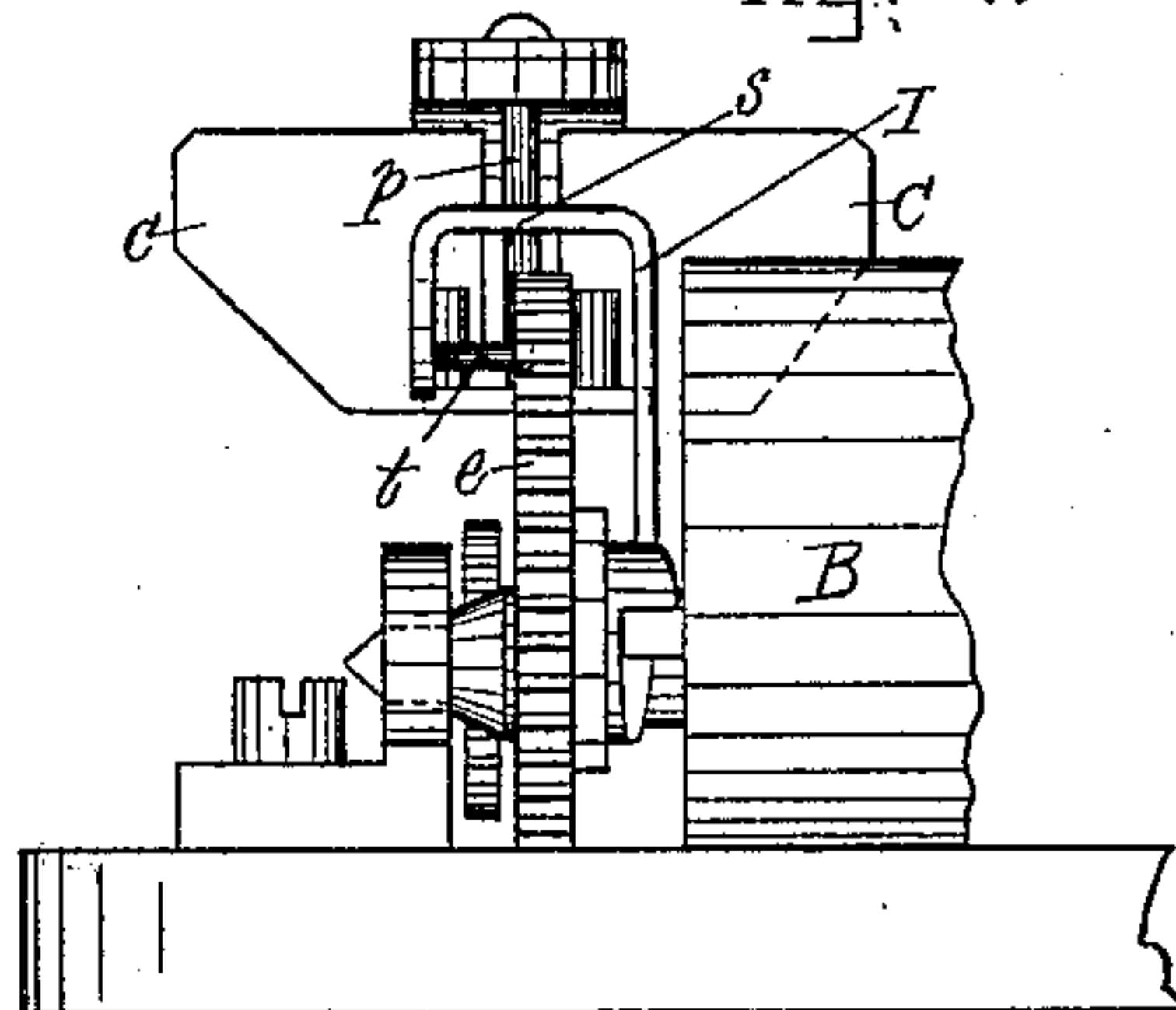


Fig. 6.

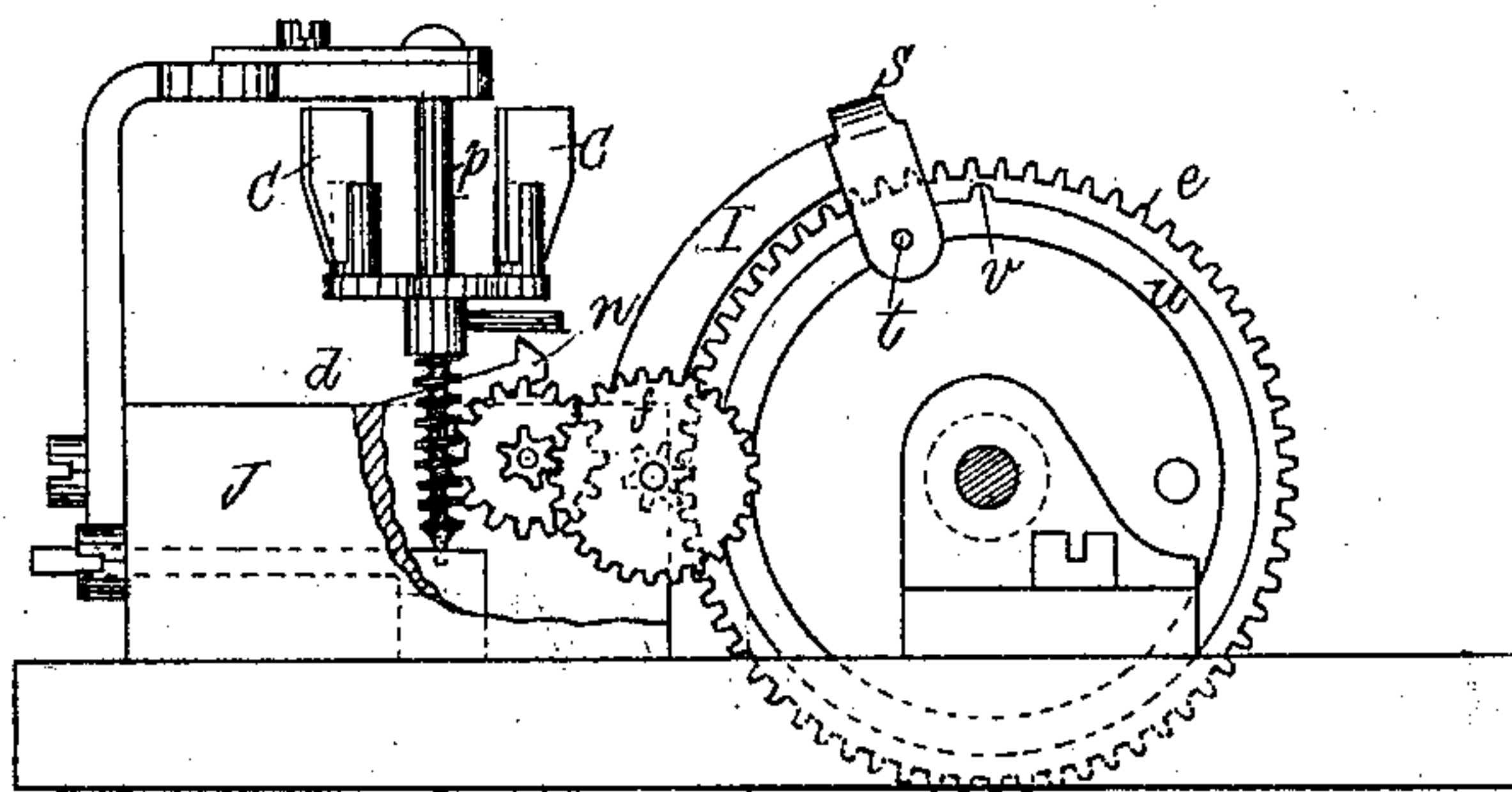
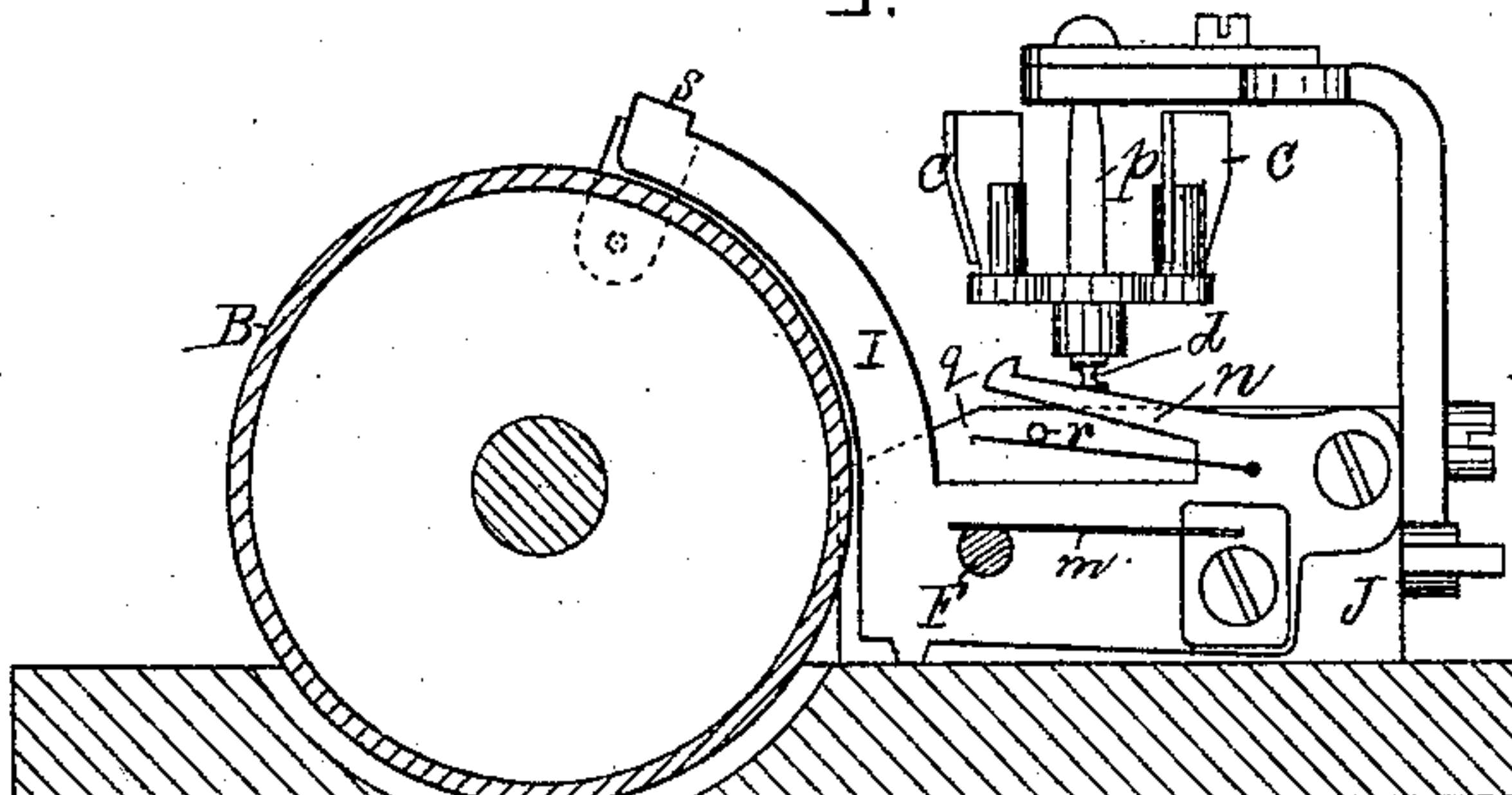


Fig. 5.



Witnesses

S. N. Piper
R. B. Torrey.

Inventor.

Theodule Robin
James A. Mailloux
R. M. Eddy

UNITED STATES PATENT OFFICE.

THEODULE ROBIN AND JAMES ADOLPHUS MAILLOUX, OF BOSTON,
MASSACHUSETTS.

MUSIC-BOX.

SPECIFICATION forming part of Letters Patent No. 364,959, dated June 14, 1887.

Application filed March 3, 1887. Serial No. 229,512. (No model.)

To all whom it may concern:

Be it known that we, THEODULE ROBIN and JAMES ADOLPHUS MAILLOUX, residing in Boston, in the county of Suffolk, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Musical Boxes; and we do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view of the mechanism of a musical box, parts of the teeth of the comb being shown as removed, in order to exhibit the rod F and its spring H. Fig. 2 is an inner end view, and Fig. 3 a side elevation, of the mainspring gear and case and parts connected therewith. Fig. 4 is an elevation of that end of the mechanism at which the fly is situated. Fig. 5 is a transverse section taken at that end of the toothed cylinder B which is next to the fly. Fig. 6 is a side view of the fan-train main gear of the toothed cylinder B, with its groove and stopping-lever.

In many music-boxes the mechanism that is usually employed to effect the stoppage of the toothed cylinder when the neutral line of it is brought around directly in front of the teeth of the comb has to be actuated by hand—that is, its lever has to be moved by a person in the right direction in order for the stoppage of the cylinder to take place at the proper time, before the mainspring has run down or has power to complete an entire revolution; otherwise the arrest of motion of the toothed cylinder is liable to occur with more or less of the teeth of the comb riding upon teeth or pins of the cylinder, which is very objectionable. We would further remark that in musical boxes it is not new to have an automatically-stopping device consisting of a lever one arm of which has a pin to take into a notch on the cylinder-gear at the termination of a revolution thereof, the other end of such lever being then brought into the path of revolution of the fan-vanes in order to stop the fan. As instances of such device, see Fig. 3 of British Patent 3,600 for 1867; also the French Patent 108,875, for 1875.

With our invention the toothed cylinder is

arrested in its revolutions by mechanism which acts automatically, or requires no manual movement of any part of it, preparatory to its action at the proper period, to bring the neutral line of the cylinder directly in front of the comb. By "neutral line" is meant that part or straight portion of the cylinder from one end of it to the other which is without pins or teeth, it being the portion at which the tune commences or ends.

The nature of our invention is defined in the claims hereinafter presented.

In the drawings, A denotes the mainspring barrel or case of a music-box as provided not only with a gear, *a*, to engage, as usual, with a pinion on the shaft of the toothed cylinder B, but with the common or mainspring stop-motion gears *b* and *c*.

C is the fly or rotary fan, which is actuated by a worm, *d*, connected with a train, *f*, of gears operated by the large gear *e*, fixed on the outer end of the cylinder B.

In carrying out our invention as represented we arrange concentrically with the arbor *g* of the barrel A a flat annulus, D, provided with a guide pin or stud, N, extending from it through a hole in the standard E of the frame for supporting the said barrel A, such pin and hole being to guide the annulus D in its movements rectilinearly from and toward the said barrel. From the annulus D a rod, F, is extended loosely through a hole, *i*, in the standard E, and also through a stationary post, G, in rear of which and encompassing the rod is a spiral spring, H, for moving the rod rearwardly, such spring bearing at one end against the post and at the other against a pin, *k*, going through the rod. At its outer end the said rod is beveled or inclined, as shown at *l*, and extends directly under a spring, *m*, projecting from a lever, I, fulcrumed to the standard J of the frame, or part thereof that supports the fan C and its operative mechanism. This lever I has a catch or hook, *n*, extending from it, as shown, which, when the lever is raised, is carried into the path of revolution of the stopping-arm *o*, that projects from the spindle *p* of the fan C. Another spring, *q*, extends, as shown, from the lever I and bears

against a pin, *r*, projecting from the standard J, such spring being to depress the lever so as to move the hook *n* below the path of revolution of the arm *o*.

5 K is a cam extending from the gear *b* close to one of its terminal notches. The gear *a* in revolving carries the stop-motion gear *b* in a circular orbit about the single-toothed wheel *c*, which is fixed on the winding-arbor *g* of the
10 spring in the case A, such wheel *c* serving to partially revolve the gear *b* in each revolution of the gear *a* until the tooth of the wheel *c* may enter the last terminal notch of the wheel *b*, which taking place the barrel A will be
15 stopped from revolving just before the force of the spring is exhausted.

The purpose and operation of the gears *b* and *c* are well understood by music-box makers, and therefore need not be further herein de-
20 scribed. While the wheel *b* is being revolved the cam K is being made to intermittingly approach the axis of the arbor *g*. At a proper time such cam—by the revolution of the barrel A—will be forced against the rounded pe-
25 riphery of the annulus D, and in so doing will move such annulus toward the standard E, whereby the rod F will in like manner be moved against the spring *m*, so as to force such
30 spring upward, and, as a consequence, to produce a pressure upward on the lever I. The said lever I, as shown in Fig. 1, extends laterally over the gear *c* and downward in manner as shown at *s*, and is provided with a pin or
stud, *t*, that enters a circular groove, *u*, in the
35 side of the wheel *c*, (see Fig. 6,) such groove being concentric with the wheel. A notch or recess, *v*, opens out of the groove *u*, as shown in Fig. 3, such notch being arranged for the
stud *t* to enter it when the neutral line or space
40 of the toothed cylinder B shall be directly in front of the teeth of the comb.

From the above it will be seen that by the

action of the rod F on the spring *m* the lever I will be forced upward, so as to press the stud
45 *t* against the upper periphery of the groove *u*; also, that at the time for stoppage of the cylinder B the stud *t* will be forced upward into the notch or recess *v*, and thus cause the
arresting of the cylinder. The hook *n*, being
50 raised with the lever I into the path of movement of the arm *o* of the fan, will arrest the fan at or about at the time of the stoppage of the cylinder.

We claim in a musical box—

1. The combination, with the toothed cylinder 55
and the rotary fan having mechanisms for revolving them, as described, of an automatically-operative stop-motion, substantially as represented, consisting of the cam K, project-
60 ing from the notched gear *b*, the annulus D, its rod F, spring H, post G, lever I, hook *n*, arm *o*, springs *m* and *q*, stud *t*, groove *u*, and recess *v*, such groove and recess being in the
gear *c* and such arm *o* being projected from
65 the spindle of the fan-wheel, and all being arranged and applied essentially in manner and to operate as specified.

2. The automatically-operative stop-motion, 70
substantially as described, for a musical-box cylinder and fan, it consisting of the cam K, projecting from the notched gear *b*, the annu-
lus D, its rod F, spring H, post G, lever I, hook
75 *n*, arm *o*, springs *m* and *q*, stud *t*, groove *u*, and notch or recess *v*, such groove and recess being in the gear *c* and such arm *o* being projected from the spindle of the fan-wheel, and
all being arranged and applied essentially in
manner and to operate as specified.

THEODULE ROBIN.

JAMES ADOLPHUS MAILLOUX.

Witnesses:

R. H. EDDY,

S. N. PIPER.