

(No Model.)

E. CUENDET.

SAFETY CHECK FOR MUSIC BOXES.

No. 363,451.

Patented May 24, 1887.

Fig. 1.

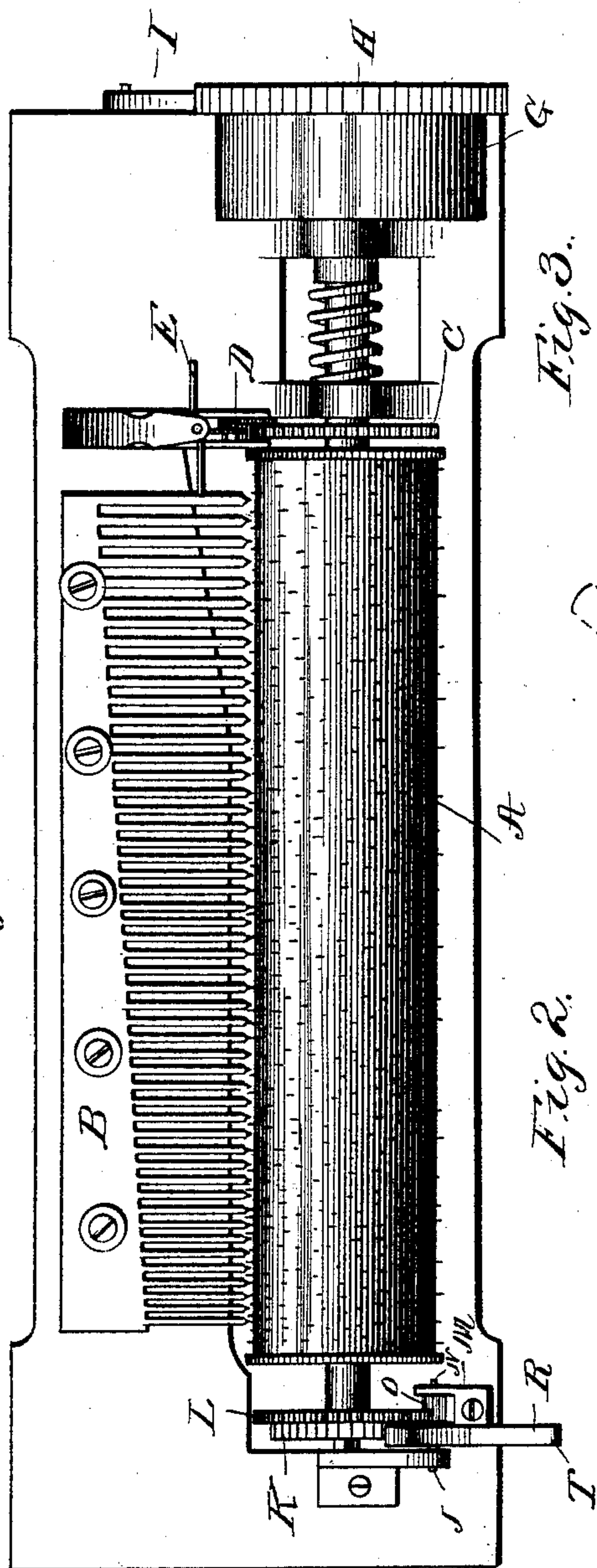


Fig. 2.

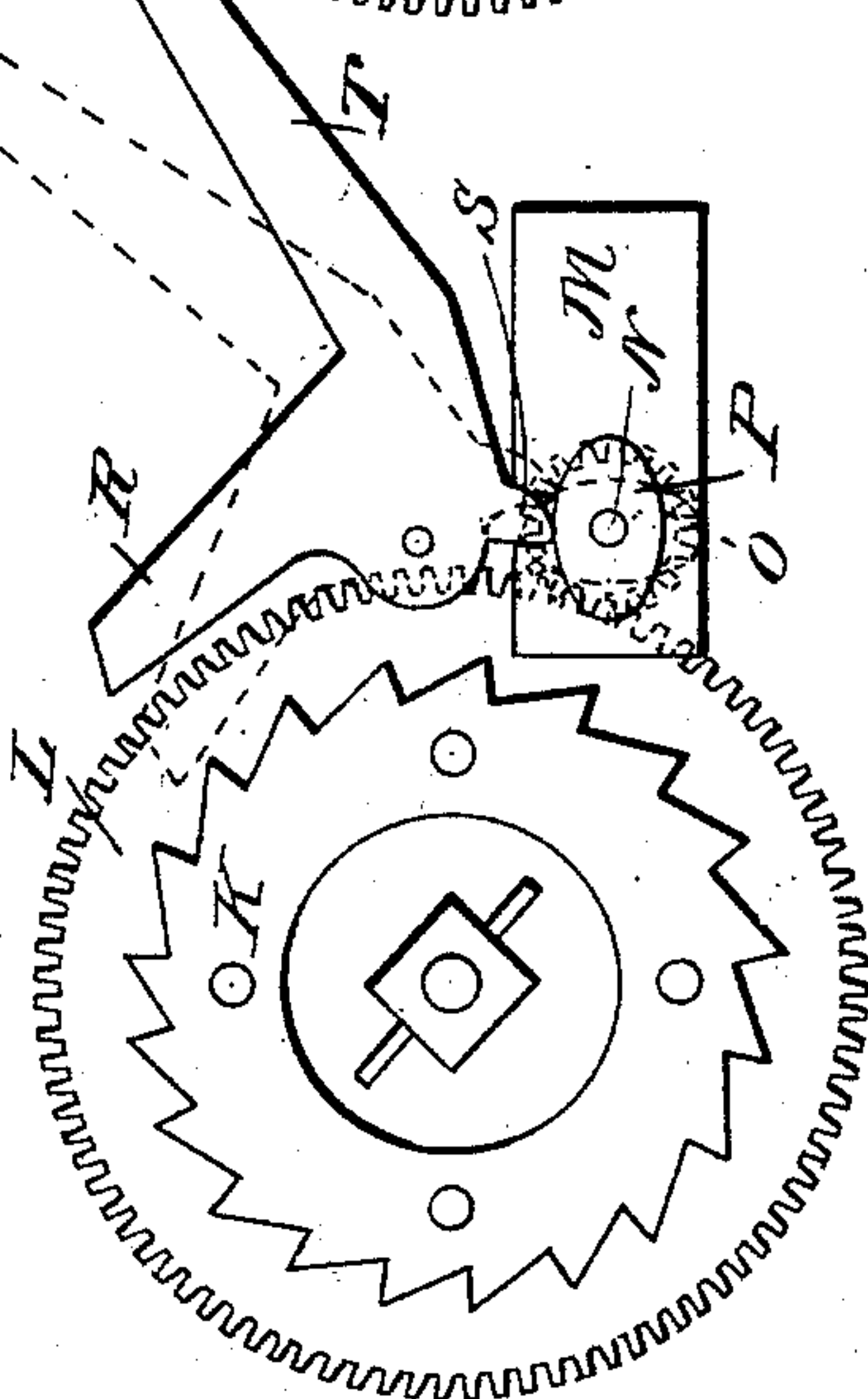
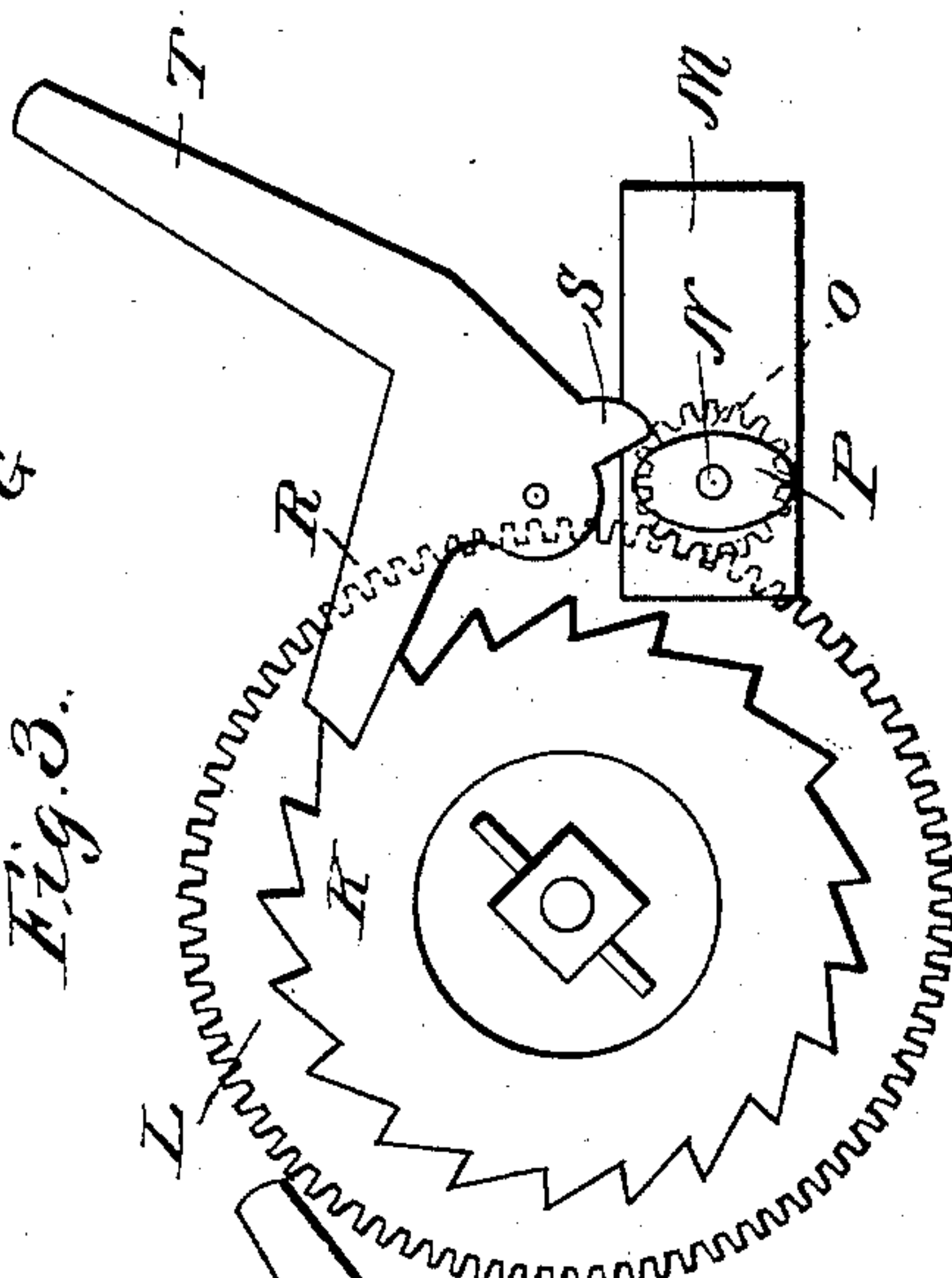


Fig. 3.



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SAFETY-CHECK FOR MUSIC-BOXES.

SPECIFICATION forming part of Letters Patent No. 363,451, dated May 24, 1887.

Application filed April 5, 1887. Serial No. 233,759. (No model.)

To all whom it may concern:

Be it known that I, EMILE CUENDET, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Safety - Checks for Music-Boxes, of which the following is a specification.

My invention relates to an improvement in safety-checks for music-boxes; and the object of my invention is to provide a device adapted to prevent the cylinder of the music-box from rotating so rapidly as to break or bend the pins on the cylinder and the teeth of the comb in the event that the fly-wheel or any of the wheels connected with the pinion should get loose or become broken when the spring is wound. This object I attain by the construction hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of the operative mechanism of a music-box provided with my improved safety-check. Fig. 2 is an end elevation of the cylinder provided with my improved safety-check. Fig. 3 is a similar view of the same, showing the safety-check applied when in the act of preventing too rapid rotation of the cylinder.

A represents the rotating barrel or cylinder provided with projecting teeth adapted to engage the teeth of the comb B as the cylinder rotates and thereby play a tune.

C represents a gear-wheel rigidly attached to the cylinder-shaft and meshing with the train of gear-wheels D, that terminates in an escapement-fan, E, the function of which is to regulate the speed of the cylinder when the device is in operation. The cylinder-shaft is provided with the usual coiled spring inclosed in the drum G, having the ratchet-wheel H; and I represents a pawl or detent which engages the ratchet-wheel, and thereby permits the spring to be wound. All of this mechanism is of the usual well-known construction, and therefore needs no more particular description in this specification.

It is well known to persons skilled in the art of making and repairing music-boxes that if any of the train of wheels communicating with the cylinder-shaft should become broken or misplaced when the spring is wound, the latter in uncoiling will rotate the cylinder at such a velocity as will cause the delicate pins which

project from its surface and the teeth of the comb to become broken or bent, and thereby completely ruin the instrument. My invention is designed to prevent this destructive "run."

K represents a ratchet-wheel, which is secured to one end of the cylinder, and the teeth of the said ratchet-wheel extend in the direction in which the cylinder rotates when the instrument is in operation.

L represents a spur-wheel, which is attached to the same end of the cylinder, and is secured alongside the ratchet-wheel, the diameter of the said spur-wheel being somewhat in excess of the diameter of the ratchet-wheel. To the base-plate of the music-box is secured a bearing-bracket, M, that extends toward the wheel L, and in the said bearing-bracket is journaled a shaft, N.

O represents a pinion, which is rigidly attached to the shaft N and meshes with the spur-wheel L; and P represents an elliptical-shaped cam, which is rigidly secured to one end of the shaft N and rotates with the pinion O. The pinion O and the spur-wheel L have their teeth so arranged that the shaft N will be turned through one-half a revolution while the ratchet-wheel is moving through the space of one of its ratchet-teeth.

R represents a pawl, which is pivoted to a suitable bracket or other fixed point, and is adapted to engage the ratchet-wheel. This pawl is provided on its under side, at a suitable distance from its fulcrum, with a curved offset or shoulder, S, against which the periphery of the cam T bears. From the outer side of the lower portion of the pawl projects a weight arm or lever, T, the function of which is to cause the curved shoulder or offset of the pawl to at all times engage the periphery of the cam.

The operation of my invention is as follows: While the cylinder is rotating at its usual slow rate of speed, the cam, being geared to the said cylinder, is also rotated, and causes the pawl to be alternately moved toward and from the teeth of the ratchet-wheel, the weight-arm T serving to draw the pawl from between the teeth as soon as the projected end portion of the cam passes the curved shoulder of the pawl, thus preventing the latter from stopping the cylinder. In the event that any of the train of gear-wheels connected to the cylinder should

become broken and the cylinder should start to rotate at a dangerous rate of speed, the cam P will be rotated at a much higher rate of speed, and the said cam will strike the weighted pawl 5 with considerable force. This causes the weight-arm T to acquire such momentum as to force the free end of the pawl into engagement with one of the teeth of the ratchet-wheel, and, owing to the energy of the spring exerted on 10 the cylinder, the latter will keep the tooth of the ratchet-wheel engaged by the pawl so firmly pressed against the latter that its weight-arm T will not disengage it from the tooth, and thereby the motion of the cylinder will be 15 stopped before any damage is done.

Having thus described my invention, I claim—

1. The combination of the rotating cylinder having the spur-wheel L and the ratchet-wheel 20 K, the shaft having the pinion engaging the spur-wheel, and the rotating cam P, attached to the said shaft, and the pawl R, bearing normally on the periphery of the cam, all combined and arranged to operate substantially in 25 the manner and for the purpose set forth.

2. The combination of the spur-wheel L and the ratchet-wheel K, adapted to rotate together and in the same direction, the shaft N, having the pinion engaging the spur-wheel, and the eccentric-cam P, and the pawl R, having the 30 curved shoulder or offset normally bearing on the periphery of the cam, the said pawl being further provided with the projecting weight-arm T, for the purpose set forth, substantially as described.

3. The combination of the rotating cylinder 35 having the ratchet-wheel K, the pawl, the shaft geared to the cylinder and rotated thereby, and means, substantially as described, connecting the said shaft to the said pawl, and adapted 40 to move the latter into engagement with the ratchet-wheel when the speed of the cylinder increases.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in pres- 45 ence of two witnesses.

EMILE CUENDET.

Witnesses:

L. G. JACCARD,

J. P. KIRLIN.