(No Model.)

J. BILLON-HALLER.

SAFETY CHECK FOR MUSIC BOXES.

No. 457,574. Patented Aug. 11, 1891.

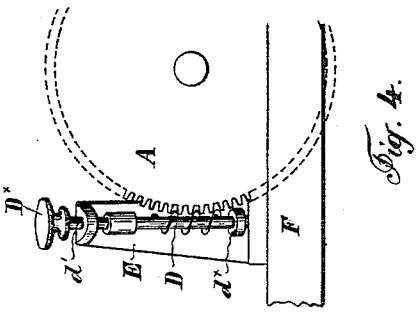

Fig. 4.

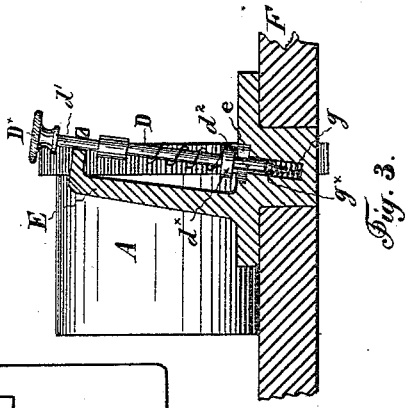

Fig. 3.

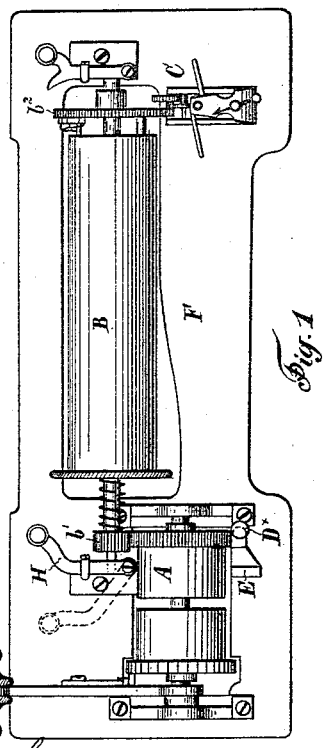

Fig. 1.

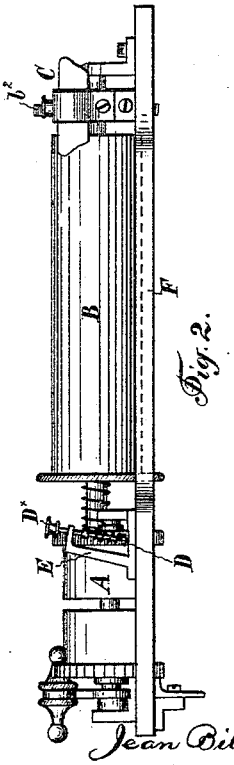

Fig. 2.

Witnesses
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JEAN BILLON-HALLER, OF GENEVA, SWITZERLAND.

SAFETY-CHECK FOR MUSIC-BOXES.

SPECIFICATION forming part of Letters Patent No. 457,574, dated August 11, 1891.

Application filed March 13, 1891. Serial No. 384,868. (No model.)

To all whom it may concern:

Be it known that I, JEAN BILLON-HALLER, manufacturer, of Geneva, Switzerland, have invented an Improved Safety-Check for Music-Boxes, of which the following is a specification.

Injury frequently arises in music-boxes from the rapid rotation of the parts and the unwinding of the spring in consequence of some portion of the mechanism breaking, or in consequence of the removable pin barrel or cylinder being taken out at the wrong time, when the mechanism of the motor has not been properly stopped.

The object of the present invention is to provide an automatic stopping device which prevents the movement of the gearing when there is a sudden increase in the speed of the parts from any cause, thereby entirely stopping the movement of the mechanism or controlling the speed of the same; and my invention relates to the combination of devices hereinafter set forth.

In the accompanying drawings, Figure 1 is a plan view, and Fig. 2 is a front elevation, of the music mechanism detached from the music-box. Fig. 3 is an elevation of the spring-barrel at one end and a section of the arm holding the safety-check. Fig. 4 is an elevation of the safety-check as applied at the end of a spring-barrel.

The barrel A is to contain the mainspring of the music-box, and B represents the cylinder, which is interchangeable, and upon the shaft of the cylinder is a pinion b' in gear with the wheel at the end of the spring-barrel A.

b^2 represents a gear-wheel that is ordinarily provided for giving motion to the regulating-fly C.

The safety-check is made of a worm surrounding the shaft or arbor D, supported in the bearing or bracket E, that is connected to the base-plate F, and this safety-check is applied to either of the gear-wheels in the music-box, preferably to the gear-wheel at the end of the spring-barrel A, and the arbor of the worm should be placed at an inclination, as represented in Figs. 2 and 3, so that the worm will be properly acted upon by the teeth of the gear-wheel. The upper and lower ends of the worm-arbor are sufficiently long to allow of an end movement being given to the worm and arbor. The upper portion d' of said arbor passes through the bearing in the standard E. The lower portion d^2 of the arbor rests upon a counter-pivot $g^\times$ at the end of an expansive spring g, and around the arbor of the worm is a collar or shoulder $d^\times$, which is adapted to fit into a recess e in the bearing E when an end movement has been given to the worm and its arbor sufficiently to compress the spring g, and when this occurs the friction of the collar or shoulder $d^\times$ upon the surface of the metal at the recess e is sufficient to stop the rotation of the worm and prevent further movement of the spring-barrel. Should the cover H of the bearing which retains the pivot of the interchangeable cylinder B be opened for the removal of the cylinder while the tune is being played, the cylinder may become displaced and the spring-barrel tends to run down rapidly; but the accelerated movement overcomes the resistance of the spring g and an end motion is given to the worm and arbor D, and the parts $b^\times$ and e coming together a friction is produced that holds the arbor D and worm from rotating or only allows them to rotate comparatively slowly. Hence injury to the music-box by careless handling is prevented. After the parts have been restored to their normal position they may be set in motion by turning the small hand-wheel or button $D^\times$ upon the end of the worm-arbor D and at the same time moving the same endwise to separate the frictional surfaces.

This safety mechanism may be used for stopping the rotation of a spring-barrel or other motor by the sudden acceleration of its speed in any other device beside a music-box.

I claim as my invention—

1. The combination, with a gear-wheel to which a rotative power is applied, of a worm, an arbor carrying such worm, a support for the arbor, a spring to move the arbor in one direction, and a friction device to stop or lessen the speed of rotation of the worm when the power of the spring is overcome by the gear-wheel acting on the worm, substantially as specified.

2. The combination, with the gear-wheel, to

which a rotative power is applied, of a worm, an arbor carrying such worm, a support for the arbor, a spring to move the arbor in one direction, a friction device to stop the rotation of the worm when such worm has received an end movement by the action of the gear-wheel, and a wheel or button on the arbor, by which it can be rotated for starting the box or other mechanism, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JEAN BILLON-HALLER. [L. S.]

Witnesses:
ELMER TELMEIDY,
THEODORE TONERS.