

(No Model.)

3 Sheets—Sheet 1.

S. CUENDET.
MUSICAL BOX.

No. 474,520.

Patented May 10, 1892.

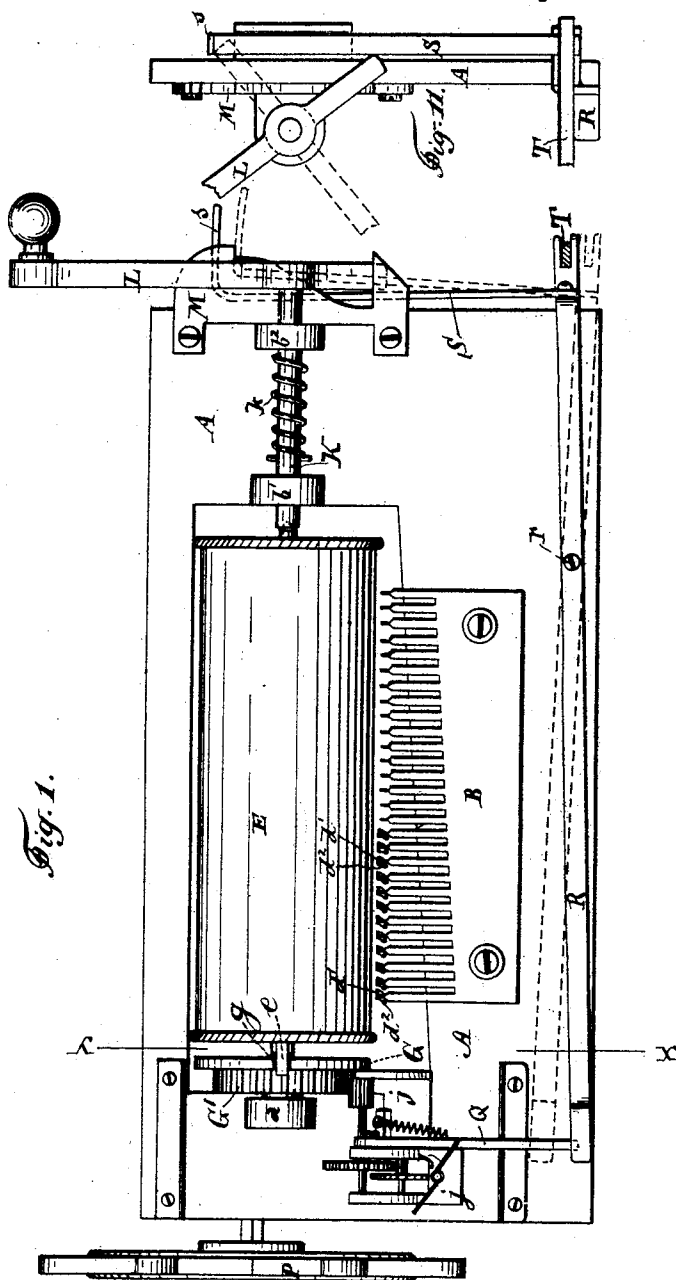
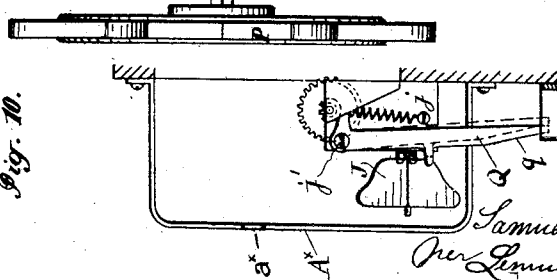


Fig. 1.

Fig. 10.



Witness
Chas. H. Smith
J. Stail

Inventor
Samuel Cuendet
Per Samuel W. Snell

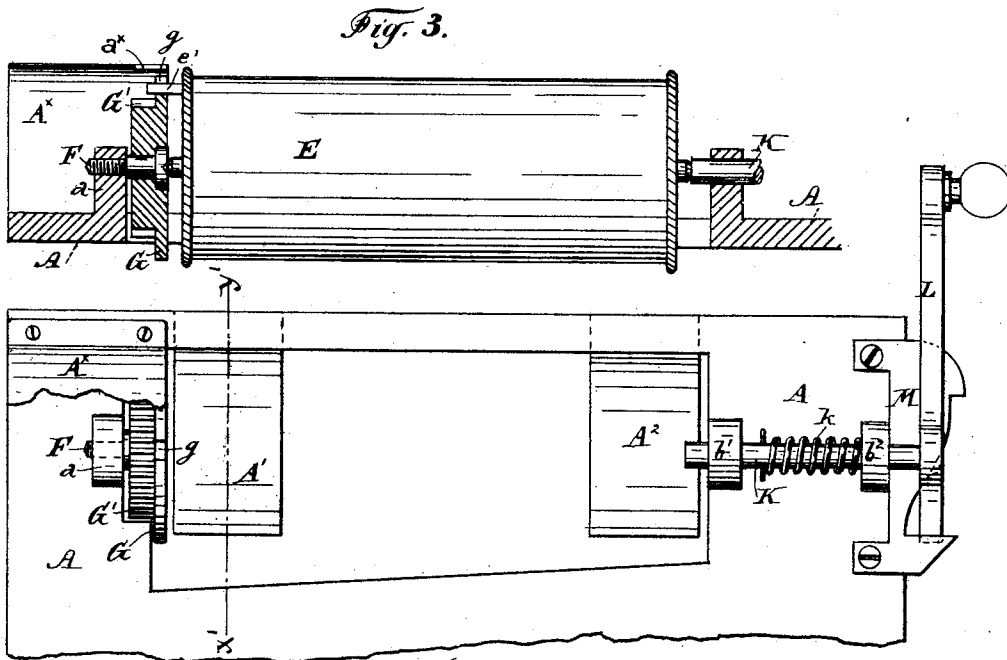
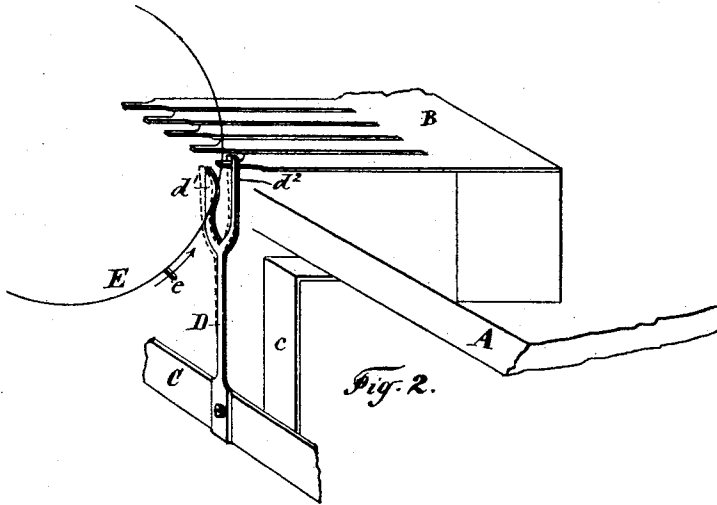
No Model.)

3 Sheets—Sheet 2.

S. CUENDET.
MUSICAL BOX.

No. 474,520.

Patented May 10, 1892.



Witnesses
Char. A. Smith
J. Strait

Fig. 4.

Inventor
Samuel Cuendet
Per Samuel W. Perrell
Att'y

(No Model.)

3 Sheets—Sheet 3.

S. CUENDET.
MUSICAL BOX.

No. 474,520.

Patented May 10, 1892.

Fig. 7.

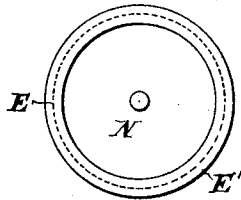


Fig. 8.

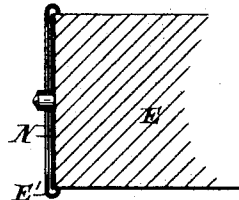


Fig. 5.

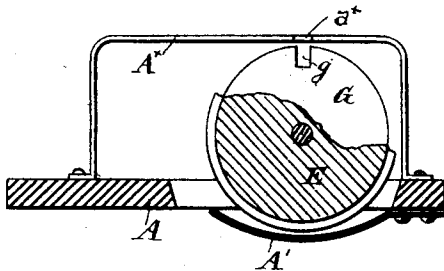


Fig. 6.

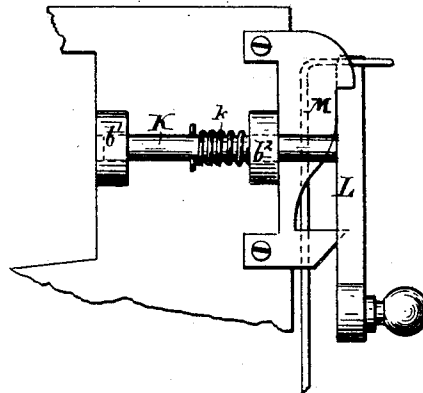
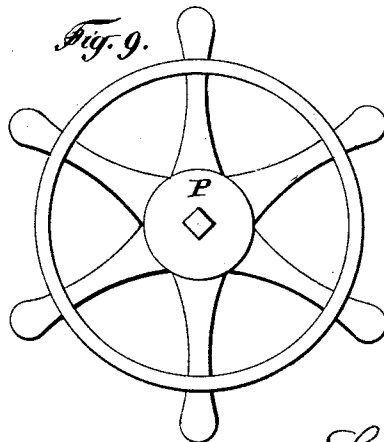


Fig. 9.



Witnesses

Chas. H. Smith
J. Staib

Inventor

Samuel Cundet
per Lemuel W. Perrell
Atty.

UNITED STATES PATENT OFFICE.

SAMUEL CUENDET, OF STE. CROIX, SWITZERLAND, ASSIGNOR TO CUENDET-DEVELAY FILS & CO., OF SAME PLACE.

MUSICAL BOX.

SPECIFICATION forming part of Letters Patent No. 474,520, dated May 10, 1892.

Application filed December 12, 1891. Serial No. 414,807. (No model.) Patented in Switzerland February 18, 1891, No. 3,246.

To all whom it may concern:

Be it known that I, SAMUEL CUENDET, manufacturer, of Ste. Croix, Switzerland, have invented certain new and useful Improvements in Musical Boxes, (for which Letters Patent were granted to me in Switzerland, dated February 18, 1891, No. 3,246,) of which the following is a specification.

This invention relates to musical boxes.

My improved musical box is provided with interchangeable cylinders, and may, if desired, be provided with one or more mainspring-barrels.

My said invention comprises a system of independent dampers which may be combined with all or with only a part of the sounding blades or teeth of the comb.

My invention also comprises means for transmitting the rotation of the spring-barrel to the interchangeable cylinders, and means for fixing and removing the said interchangeable cylinders, combined with means for stopping and playing.

My said invention, moreover, comprises an improved form of flange for the pin-cylinder and an improved form of winding-up lever.

In the accompanying drawings, Figure 1 is a plan view of the whole of a musical box provided with the above-mentioned improvements, the pin-cylinder being in its place ready to work. Fig. 2 is a perspective view, on an enlarged scale, of my new system of damper, shown in plan view in Fig. 1. Fig. 3 shows in front elevation, with vertical section, the means for transmitting the rotation of the mainspring-barrel to the interchangeable cylinder. Figs. 4, 5, and 6 show the means for fixing and withdrawing the interchangeable cylinders, Fig. 5 being a section at the line $x'x'$, Fig. 4, with part of the cylinder in place. Figs. 7 and 8 show the new construction of the flanges of the cylinder. Fig. 9 is an elevation of the winding-up lever or wheel shown in plan view in Fig. 1. Fig. 10 is a section through xy in Fig. 1, showing the speed-regulating device, the stopping device, and the cap A^x . Fig. 11 is an end view showing the lever that is actuated when the cylinder is to be changed.

In all the figures the same letters refer to the same pieces.

The improved musical box constructed according to my said invention comprises a bed-plate A, upon which is fixed the comb B. To the said bed-plate or to the comb is fixed, by means of brackets c , a plate C, to which are secured dampers D. In Fig. 2 only one such damper is shown; but it is to be understood that in practice there is preferably fixed to the plate C one damper D for each blade of the comb B, or nearly for each of them. The said dampers D are formed of a flexible rod provided with a fork-shaped end, one prong d' of which is provided with an enlargement, as shown in Fig. 2, and which is situated, when at rest, in front, but below the corresponding blade of the comb, Fig. 1. The other prong d^2 of the fork is straight and extends vertically between the blade of the comb which it is intended to act upon and the next one. When the damper is at rest, both prongs of the fork are out of engagement with the corresponding blade of the comb. The pin e of the pin-cylinder E in acting upon the blade of the comb to vibrate the same passes first between the prongs of the damper, and in so doing bears against the enlargement of the outer prong d' and causes the same to be displaced laterally. This causes a lateral displacement of the second prong d^2 , which is pressed against the blade of the comb at the same moment that the pin e on the cylinder E comes in contact with said blade. The enlarged prong d' of the damper escapes from the said pin and the other prong d^2 leaves the blade free to be vibrated. These dampers may also be used, in combination with other means, for vibrating the blades of the comb—for instance, with perforated card-board disks or ribbons acting upon the said blades. In such cases the enlargement of the prong of the damper will be replaced by a suitable hook engaging at the proper time in a hole in the said perforated card-board disks or ribbons.

The bed-plate A is further provided with a bracket a , to which is firmly screwed a stud F, in the head of which is formed a conical recess or center, into which the conical point

of one of the pivots of the pin-cylinder E engages. (See Fig. 3.) The stud F acts as a pivot for a disk G, to which is fixed a toothed wheel G', which is acted upon in any suitable manner by the mainspring, (not shown in the drawings,) the same being supposed to be placed beneath the plate A in Fig. 1. The disk G is provided with a recess *g*, with which engages a projection *e'* on the interchangeable cylinder E, the latter being thus always rotated, together with the disk G, when the latter is rotated by the mainspring-barrel. The speed-regulating device J, which may be of any suitable construction, is connected by gearing with the toothed wheel G' on the aforesaid disk G. A metallic cap A^x, fixed to the bed-plate A, Fig. 5, covers the gearings and the disk G. Said cap A^x is provided with an entrance or outlet *a*^x, through which the projecting pin *e'* must pass before entering the recess *g* of the disk G. Thus the said projecting pin *e'* cannot be removed out of said recess *g*—that is to say, the cylinder E cannot be removed out of its bearing before the disk G has made a full revolution, so as to present its recess *g* in front of the outlet *a*^x of the cap A^x. The bed-plate A also carries two bearings *b*¹ and *b*², in which is arranged a sliding rod K, the inner end of which is provided with a conical recess or center, into which engages the conical point of the second pivot of the interchangeable cylinder E. The rod K is maintained in position, in which it presses the cylinder toward the bearing *a* at the other end thereof by means of a spring *k*, Figs. 1, 4, and 6. When it is desired to withdraw the interchangeable cylinder, a lever L, fixed to the outer end of the rod K, is turned from the position shown in full lines in Fig. 11 into the position shown in dotted lines in said figure. The lower arm of the said lever bears against an inclined plate M, fixed to the bed-plate A, so that when the said lever L is turned it will slide along the said inclined plate M, and thereby cause the rod K to be disengaged from the pivot of the pin-cylinder E, the cylinder being then free to be withdrawn.

For the purpose of preventing the cylinder falling down when released, two projections or supports A' and A², Figs. 4 and 5, are provided, which are fixed to the bed-plate A and upon which the flanges E' of the interchangeable cylinder E rest when the latter is released. When the cylinder has been removed and a new one put in place, the lever L is turned back into its original position, so as to support the said cylinder on its pivots.

Q is the stopping-lever, having its fulcrum in the point *j'* of the bearing *j* of the speed-regulating device J, Figs. 1 and 10. Said lever Q is provided with an inclined edge *q*, bearing against the lower face of the one end of an oscillating rod R, which is fixed to the bed-plate A by means of a pivot-screw *r*. The other end of said rod R has fixed to it at approximately a right angle a rigid arm S, the

end of which is bent at a right angle, as shown in Fig. 1. The right end of the rod R is acted upon by means of a hand bolt or lever T, fixed in any way whatever to the case of the musical box and connected to the said rod R so as to displace the same from the position shown in full lines in Fig. 1 into that shown in dotted lines, or the reverse when acted upon by hand for stopping or starting the music. It will be seen from Figs. 1 and 11 that, should the lever L be in the position of Fig. 6 (dotted lines in Fig. 11) when the lever R and its arm S are in the position shown with full lines in Fig. 1, said lever L would be automatically reversed to its position shown in Fig. 1 (full lines in Fig. 11) by the action of the hook *s* of the arm S acting upon the lower end of the lever L as soon as the rod R is acted upon by the hand-lever T, so as to cause the playing of the musical box, and, on the other hand, as long as the rod R and its arm S are in the position in which they allow the music to play—that is to say, in the position shown in dotted lines in Fig. 1—the lever L cannot be turned into the position of Fig. 6, its lower end bearing upon the arm S of the rod R. From this it appears that the musical box cannot be put into action without first reversing the lever L into that position in which the cylinder E is held in place, and that the said lever L cannot be reversed so as to leave the cylinder E to itself as long as the rod R has not been placed into the stopping position.

The flanges E' of the cylinder E are formed of a metallic cap forced upon the end of the cylinder, Figs. 7 and 8, and having its central portion cut away to show a ticket N inclosed between the said cap and the end of the cylinder E, which ticket is intended to indicate the airs to be played by each interchangeable cylinder.

Instead of the usual winding-up lever for the musical box, which is generally moved to and fro, use is made of a wheel P, Fig. 9, formed with projections on its periphery, which allows of the winding up of the mainspring by means of a continuous rotation thereof.

Having thus described my invention, I claim—

1. In a music-box, the combination, with the vibrating comb-blades and means for moving the same, of an independent damper forked at the upper end, one prong of which comes in contact with the vibrating comb-blade and the other is formed as a projection acted upon by the pin of the cylinder, substantially as set forth.

2. The combination, with the changeable cylinder and its pin in a music-box, of the fixed stud F, the gear-wheel and notched disk, and the cap A^x, having an outlet for the passage of the pin, substantially as specified.

3. The combination, with the changeable cylinder in a music-box, of the fixed stud F, the shifting rod K and its spring *k*, the lever

L, and the cam-plate M for drawing back the rod K, the stopping-lever R, and its arm S, substantially as specified.

5 4. The combination, with the changeable cylinder, of the end caps E', forming flanges to such cylinder, and the name-ticket held in place by one of the caps, substantially as specified.

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

SAMUEL CUENDET. [L. s.]

Witnesses:

E. IMER-SCHNEIDER,
G. PRENTICE NAYLOR.