

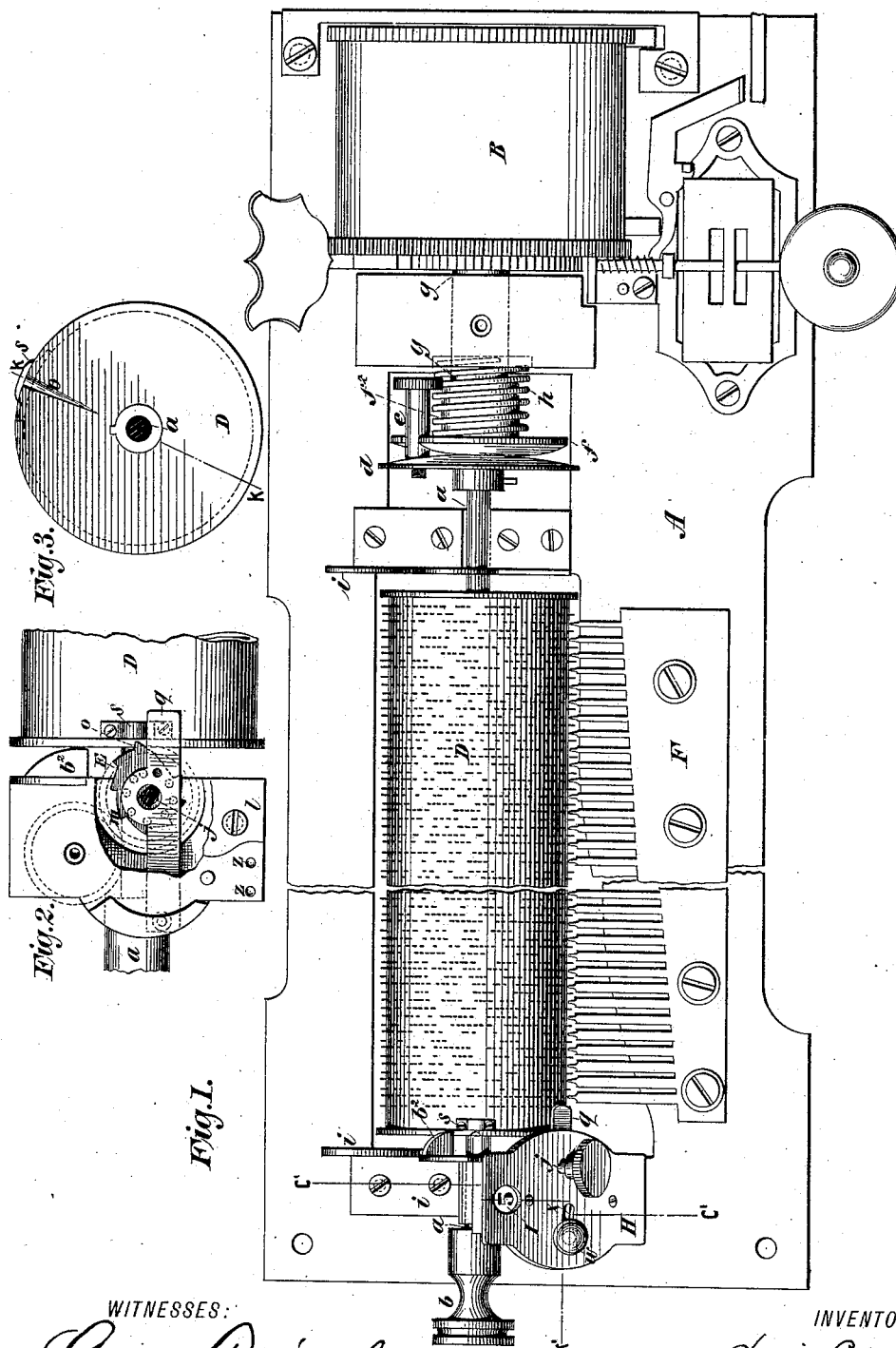
(No Model.)

2 Sheets—Sheet 1.

L. CAMPICHE.  
MUSIC BOX.

No. 382,292.

Patented May 8, 1888.



WITNESSES:

Gustave Petersch  
F. F. Bourn.

*INVENTOR.*

Louis Campiche,  
BY *Brien Steele*  
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

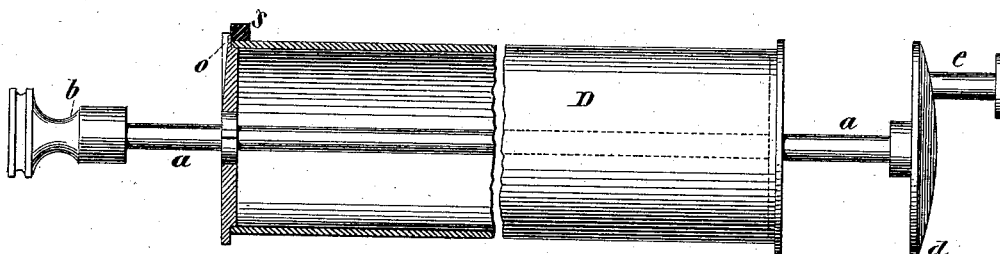


Fig. 5.

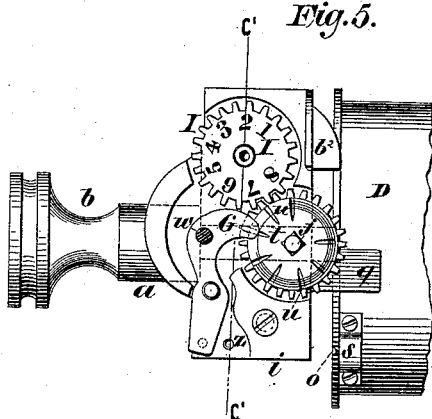


Fig. 8.

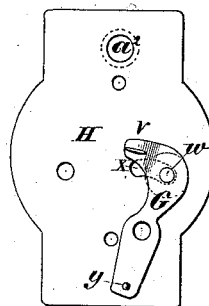


Fig. 6.

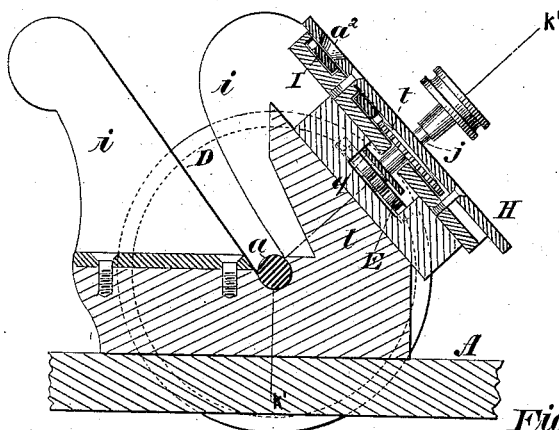


Fig. 7.

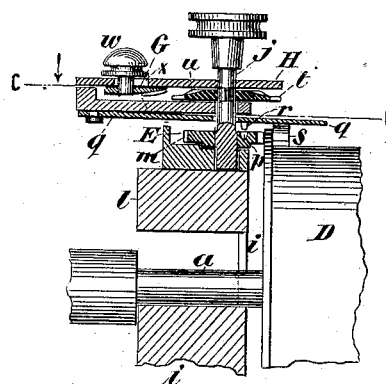
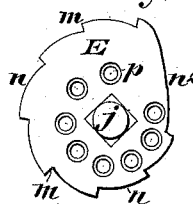


Fig. 9.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

LOUIS CAMPICHE, OF ST. CROIX, SWITZERLAND, ASSIGNOR TO MERMOD FRÈRES, OF SAME PLACE.

## MUSIC-BOX.

SPECIFICATION forming part of Letters Patent No. 382,292, dated May 3, 1888.

Application filed November 29, 1887. Serial No. 256,392. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS CAMPICHE, a resident of St. Croix, Switzerland, have invented certain new and useful Improvements in Music-Boxes, of which the following is a specification.

My invention relates to sundry improvements in music-boxes, more particularly to that class of music-boxes wherein the pin barrel or cylinder is shifted to change the tune by means of a cam-plate which bears against the end of said cylinder.

The invention consists in the novel arrangements and combinations of parts, that will be more fully hereinafter set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which Figure 1 is a plan view, partly broken, of a music-box embodying my invention. Fig. 2 is a detail sectional plan view showing one end of the pin-barrel and the actuating-cam, the section being taken on the line *c c*, Fig. 7. Fig. 3 is an end view of the pin-barrel. Fig. 4 is a side view of the pin-barrel, partly in section, the section being taken on the line *k k*, Fig. 3. Fig. 5 is a detail plan view of the tune-recorder, its top plate being removed. Fig. 6 is a vertical cross-section on the line *c' c'*, Fig. 1. Fig. 7 is a longitudinal section on the line *k k*, Fig. 6. Fig. 8 is a face view of the under side of the plate which covers the tune-recorder, and Fig. 9 is a face view of the cam-plate for shifting the pin-barrel.

A in the drawings represents the bed plate or frame of a music-box.

B is the casing which incloses the main driving-spring, of suitable construction.

D is the pin barrel or cylinder, rigidly mounted upon a shaft, *a*, which passes centrally through said cylinder and extends beyond its ends. (See Fig. 4.) At one end the shaft *a* carries a handle or stop, *b*. At its other end said shaft carries a disk, *d*, preferably of convex form on its outer face, as shown. The disk *d* carries an arm or pin, *e*, adapted to enter a recess on the edge of a corresponding disk, *f*, on the driving-shaft *g*. The disk *f* is carried by a sleeve, *f'*, adapted to slide on and to be rotated by the driving-shaft *g*. This shaft *g* is suitably journaled in the base-plate A, and is rotated in suitable manner by the main

spring. A spring, *h*, surrounding the shaft *g*, serves to press the disk *f* toward and against the disk *d*, thereby crowding the pin-barrel endwise against a suitable stop. The speed-regulating gear may be of approved form.

In the drawings the pin-barrel D is shown removable, and is supported in slotted bearings *i*, the shaft *a* resting in the slots of said bearings, as in Fig. 6. When the pin-barrel is placed in position the arm *e* on the disk *d* passes in the slot in the disk *f*, whereby the pin-barrel is locked to the driving-shaft *g*. A guide, *b'*, carried by one of the bearing-pieces *i*, serves to crowd the pin-barrel toward the disk *f* as it is being placed in the box to prevent its striking the shifting-cam. The convex meeting faces of the disks *d* and *f* permit of the ready insertion of the pin-barrel. When the pin-barrel is in position, the spring *h*, by means of the disks *d* and *f*, presses the shaft *a*, and thereby the pin-barrel, against its stop. This stop in the drawings is represented as a cam-plate, E, (see Figs. 2 and 9,) by means of which the barrel is shifted to change the air. This cam-plate or air-changer is described in an application for Letters Patent filed by me May 5, 1887, Serial No. 237,184. In the drawings it is shown mounted on a short shaft, *j*, journaled on a block, *l*, that is carried by the base-plate A.

The cam-plate E has a number of points, *m*, each at different distances from the pivot of the cam, thereby making a number of cam-faces, *n*. The points *m* are adapted to enter a recess, *o*, on the end of the pin-barrel D. Each time the pin-barrel makes a revolution a point, *m*, enters the recess *o*. The continued revolution of the barrel D turns the plate E slightly, bringing the next cam-face, *n*, against the end of the barrel. As each cam-face *n* is presented to the pin-barrel, said barrel will be shifted longitudinally a slight distance, thereby presenting different teeth to the comb F. It is often desirable to play a tune out of consecutive order, or to pass, say, from the first to any other tune without playing the intermediate ones. This may be accomplished with the above construction by simply turning the shaft *j* by hand, which in turn rotates the cam-plate E, its cam-faces *n* thereby shifting the pin-barrel the desired distance. When the last tune in order has

been played, the next turn of the pin-barrel will present the inner cam-face,  $n^2$ , to the pin-barrel, when the spring  $h$  will press the barrel so as to commence the first tune again.

5 If the cam-plate E were permitted freedom of rotation at all times, the same tune could only be played once before passing to the next. With the following construction I am enabled to repeat a tune as often as desired, and also  
10 to prevent the cam-plate E rotating with the pin-barrel until the proper time, when it will be released and then locked again.

The cam-plate E is provided on one face (preferably its upper) with a series of holes or  
15 recesses,  $p$ , one for each cam-face  $n$ . A spring,  $q$ , secured near one end to the block  $l$ , carries a pin,  $r$ , adapted to enter one of the recesses  $p$  at a time. The normal pressure of the spring  $q$  holds the pin  $r$  in a recess,  $p$ , thereby locking  
20 the cam-plate E, which prevents its rotation. The shaft  $j$  may pass through the spring  $q$ , as shown. The free end of the spring  $q$  projects over the end of the pin-barrel D, and is adapted to be engaged by a prong or projection,  
25  $s$ , carried by the pin-barrel. This prong  $s$  is arranged adjacent to the recess  $o$  in the end of the pin-barrel. As the prong  $s$  passes under the spring  $q$ , it lifts the same, thereby raising the pin  $r$  out of the recess  $p$ , thus releasing the cam E. At this moment the recess  
30  $o$  in the pin-barrel has encountered a point,  $m$ , on the cam, thereby turning said cam and shifting the barrel. As the barrel D continues to rotate, the prong  $s$  passes away  
35 from under the spring  $q$ , which immediately drops, the pin  $r$  entering another recess  $p$ , thus holding the cam E, as before stated. The cam E is locked to permit a repetition of the tune, as follows: The shaft  $j$  carries a spur-wheel,  $t$ ,  
40 rigidly secured thereto. On one face of this spur-wheel are a series of recesses or notches,  $u$ , corresponding in number to the recesses  $p$ . These notches  $u$  are adapted to receive a projection,  $v$ , on the end of a lever or bolt, G, pivoted  
45 near its center to the under side of a plate, H, that is carried by the block  $l$ ; but said lever G could be otherwise carried, if desired. The plate H is adapted to cover the wheel  $t$ , lever  $q$ , and cam E. The lever or  
50 bolt G is operated by means of a headed pin,  $w$ , which passes through a slot,  $x$ , in the plate H and into the said lever. By moving the pin  $w$ , and thereby the lever G, toward the pin or shaft  $j$  the projection  $v$  will enter a  
55 recess,  $u$ , and lock the wheel  $t$ , and thereby also the shaft  $j$  and cam E. The pin-barrel may now revolve as many times as desired without changing the tune, it having no effect on the cam E. When another tune is desired,  
60 it is only necessary to disengage the lever or bolt G from the wheel  $t$  by disengaging the projection  $v$  from the wheel  $t$ . The lever G is by preference springy and carries at its outer end a pin,  $y$ , adapted to enter recesses  $z$  in the  
65 block  $l$  to prevent accidental displacement of the said lever.

My tune-indicator consists of a spur-wheel,

I, hung in the support  $l$  and in gear with the spur-wheel  $t$ . The wheel I carries a number  
70 of numerals or other symbols to indicate which tune is being played. An opening,  $a^2$ , in the plate H registers with one of the symbols. Each time the cam E is turned to shift the pin-barrel D the wheel I, by means of the shaft  $j$   
75 and spur-wheel  $t$ , will also be turned, thereby bringing the symbol representing the desired tune under the opening  $a^2$ .

Instead of the spur-wheel  $t$  having recesses  $u$ , the projection  $v$  on the lever G could enter  
80 between the teeth on the wheel to lock it. It is evident that the lever G could operate directly upon the cam E instead of upon the wheel  $t$ . If preferred, the index could be produced directly upon the cam E or wheel  $t$ .

Having now described my invention, what I  
85 claim as new, and desire to secure by Letters Patent, is—

1. In a music-box, the combination, with the shaft  $a$ , pin-barrel D, rigid thereon, and disk  
90  $d$  on the shaft  $a$ , of the driving-shaft  $g$ , movable disk  $f$ , and spring  $h$ , all arranged for operation substantially as specified.

2. In a music-box, the pin-barrel D and means for driving said barrel, in combination  
95 with the cam E, for shifting the pin-barrel, and means, substantially as described, for locking and releasing said cam E as the pin-barrel rotates, as specified.

3. The combination of the pin-barrel D and means for driving it, with the barrel-shifting  
100 cam E, spring  $q$ , adapted to lock said cam, and prong  $s$  on the pin-barrel for raising the spring  $q$  and unlocking said cam, substantially as described.

4. In a music-box, the combination, with the  
105 cam E, for shifting a pin-barrel, of a lever or bolt, G, for locking the cam, substantially as set forth.

5. In a music-box, the combination, with the cam E, for shifting a pin-barrel, and spur-wheel  
110  $t$ , driven by said cam, of a lever, G, adapted to engage the wheel  $t$ , to lock the cam, substantially as described.

6. The combination of the cam E, shaft  $j$ , wheel  $t$ , having recesses  $u$ , and lever G, hav-  
115 ing a projection,  $v$ , adapted to enter a recess,  $u$ , to lock the wheel  $t$ , substantially as described.

7. In a music-box, the combination, with a pin-barrel and a cam, E, for shifting same, of  
120 an index actuated by said cam, substantially as described.

8. In a music-box, the cam E, for shifting a pin-barrel, and wheel,  $t$ , driven by said cam, combined with the index-wheel I, driven by  
125 the wheel  $t$ , substantially as described.

9. In a music-box, the combination of the barrel-shifting cam E, shaft  $j$ , spur-wheel  $t$ , and spur-wheel I, having an index thereon,  
130 all arranged so that as the cam E turns, the index-wheel I will also be turned to denote the tune being played, substantially as described.

10. The combination, with the pin-barrel D, having notch  $o$ , of the cam E, adapted to en-

gage said notch to shift the barrel, and with the shaft *j*, secured to and extending beyond said cam and journaled in a block, *l*, whereby the cam *E* can be turned by hand to shift the  
5 barrel to the desired tune, substantially as described.

. 11. The longitudinally-adjustable pin-barrel mounted upon the shaft *a*, in combination

with spring-pressure block *l*, slotted supports *i i*, and guide *b*<sup>2</sup> on one of said supports *i*, substantially as herein shown and described.

LOUIS CAMPICHE.

Witnesses:

LYELL T. ADAMS,  
JAMES VAUCHER.