

(No Model.)

E. PAILLARD.

MUSICAL BOX.

No. 268,272.

Patented Nov. 28, 1882.

Fig. 1

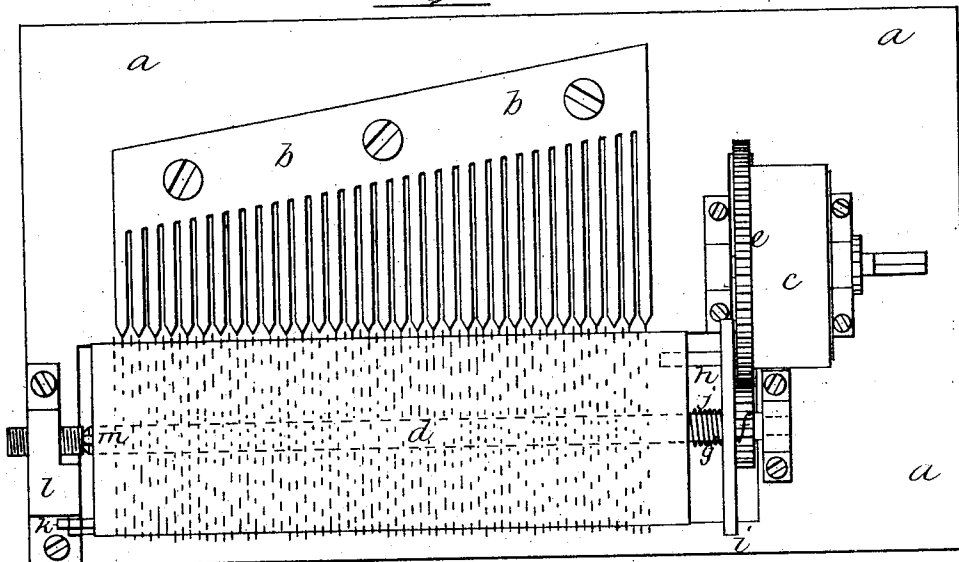


Fig. 2

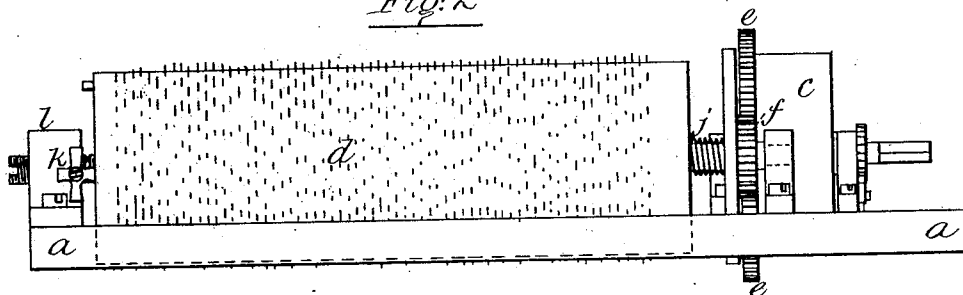


Fig. 4

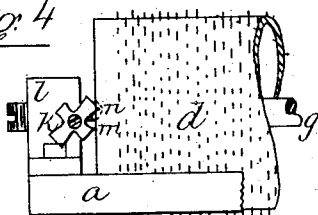


Fig. 3

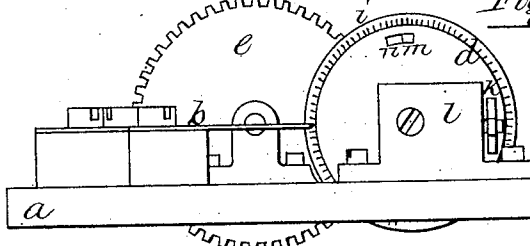
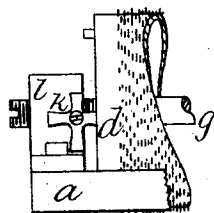


Fig. 5



Witnesses

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per Alfred Theobald
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UNITED STATES PATENT OFFICE.

ERNEST PAILLARD, OF SAINTE-CROIX, SWITZERLAND, ASSIGNOR TO M. J. PAILLARD & CO., OF NEW YORK, N. Y.

MUSICAL BOX.

SPECIFICATION forming part of Letters Patent No. 268,272, dated November 28, 1882.

Application filed August 24, 1882. (No model.) Patented in Germany July 11, 1881, No. 27,520.

To all whom it may concern:

Be it known that I, ERNEST PAILLARD, of Sainte-Croix, Canton de Vaud, Switzerland, have invented certain new and useful Improvements in Musical Boxes, (for which I obtained Letters Patent in Germany, No. 27,520, and bearing date the 11th day of July, 1881,) of which the following is a specification.

This invention relates to musical boxes, and has for its object to improve and simplify the device for causing the pin-studded barrel to assume different longitudinal positions, and known as the "air or tune changer."

The invention consists of a cog-plate pivoted at right angles to the axis of the pin-barrel, on the side of the bearing which supports the outer end of it, said cog-plate being so arranged that the end of the pin-barrel is caused to bear against the edge of one of the cogs by means of a spring or other yielding device. A pin secured in the outer end of the barrel comes in contact with the tooth or cog of the cog-plate against which the end of the barrel presses, and so causes the cog-plate to turn one tooth each time the barrel makes a revolution, and during the interval when the blank space between the actuating-pins on the barrel is opposite the comb of keys. The teeth of the cog-plate vary in length, so that the barrel is held in different longitudinal positions when retained in position by the different teeth or cogs, thereby bringing the various sets of pins on the barrel adapted to play different tunes consecutively opposite the ends of the keys.

But to describe my invention more particularly, I will now refer to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a musical instrument embodying my improvements. Fig. 2 is a side elevation of the same, showing a front view of the cog-plate. Fig. 3 is an end elevation. Fig. 4 is a part side elevation, showing the tune-changer in operation; and Fig. 5 shows a modification in the form of the cog-plate.

The main frame *a*, comb of keys *b*, and spring-motor *c*, as well as the general construction of the pin-barrel *d*, are as ordinarily made—that is to say, the gear-wheel *e* on the spring-drum meshes into the pinion *f*, secured to the

pin-barrel shaft or spindle *g*, the pin-barrel *d* being fitted loosely on the said shaft, but caused to rotate therewith by means of the stud or pin *h*, secured to the flange *i*, and entering a hole in the end of the barrel *d*. Between the end of the barrel *d* and flange *i*, on the shaft *g*, is placed a spring *j*, which keeps the other end of the barrel against my improved tune-changer, which consists simply of the cog-plate *k*, fitted to rotate on a screw or stud on the side of the bearing-block *l* for the outer end of the barrel-shaft *g*. This cog-plate *k* is at right angles to the axis of the barrel, so that the end of the barrel is caused by the spring *j* to press against one of its teeth or cogs, said teeth or cogs having flat edges of sufficient width to cause the cog-plate to retain its position by the pressure of the end of the barrel on the cog adjacent thereto, thereby retaining the barrel in a fixed longitudinal position until the cog-plate is partly rotated to present another cog to the end of the barrel. This rotation of the cog-plate *k* is accomplished by means of the pin or stud *m*, secured in the end of the barrel *d*, coming in contact with the cog, as shown in Fig. 4, and so turning the cog-plate *k* to bring the succeeding cog against the end of the barrel *d*.

The cog-plate *k* is rotated by the pin *m* when the blank space on the pin-barrel *d* is opposite the end of the keys *b*. To insure the proper action of the cog-plate when being partly rotated by the pin *m*, a slight depression, *n*, (shown in Fig. 3, and in dotted lines in Fig. 4,) is made in the end of the barrel, just behind the pin *m*, and into which depression the front corner of the cog being brought into action enters as the cog-plate is rotating.

The longitudinal position of the barrel *d* in relation to the keys *b* is determined and governed by the height of the teeth or cogs of the cog-plate *k*, which is provided with as many teeth or cogs as there are sets of pins on the barrel *d*, or equal to the number of tunes the instrument is designed to render, or a multiple of the same. In the figures of the drawings 1 to 4 the cog-plate *k* is shown as designed to move and hold the barrel *d* in two longitudinal positions only, the diametrically-opposite teeth or cogs being of the same length.

In Fig. 5 a four-toothed cog-plate *k* is shown,

each varying in length, the same being adapted for a four-tune instrument. These teeth gradually increase in height in consecutive order. They may be arranged in any order desired, and it is obvious that a tune-changer may be constructed on this principle with any number of teeth, according to the requirements of the instrument to which it is applied, and said improvements may be applied to both large and small musical boxes.

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

1. In an air-changer for musical boxes, the combination of a variable-toothed cog-plate, fitted on a fixed block, to rotate at right angles to the axis of the pin-barrel, with the pin-bar-

rel, and a stud or pin on its end adapted to turn the cog-plate one tooth at each revolution of the barrel, substantially as and for the purpose set forth.

2. The spring-actuated pin-barrel *d*, provided with the stud or pin *m*, and a depression, *n*, in combination with the cog-plate *k*, pivoted on the bearing-block *l*, at right angles to the axis of the pin-barrel, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand, at Sainte-Croix, Canton de Vaud, Switzerland, this 21st day of July, A. D. 1882.

ERNEST PAILLARD.

In presence of—

AUGTE MERMOOL.

EUGÈNE THORENS.