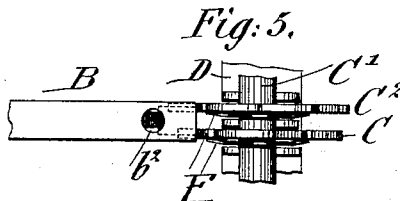
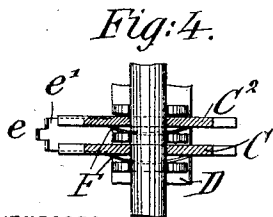
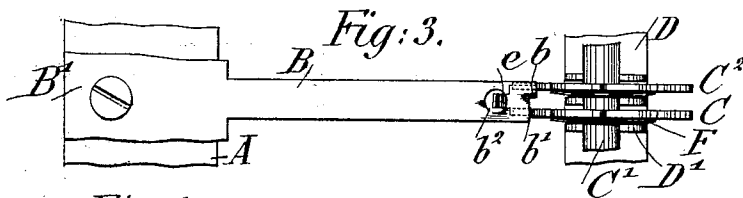
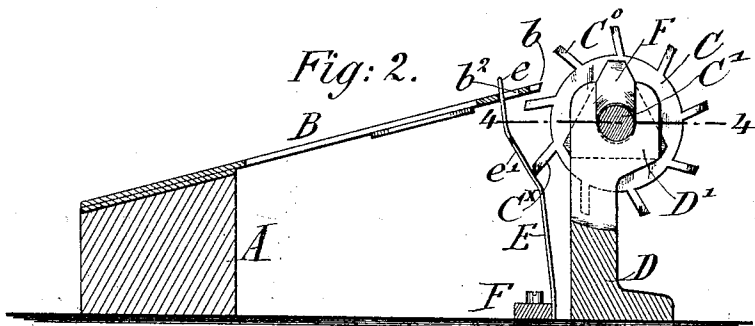
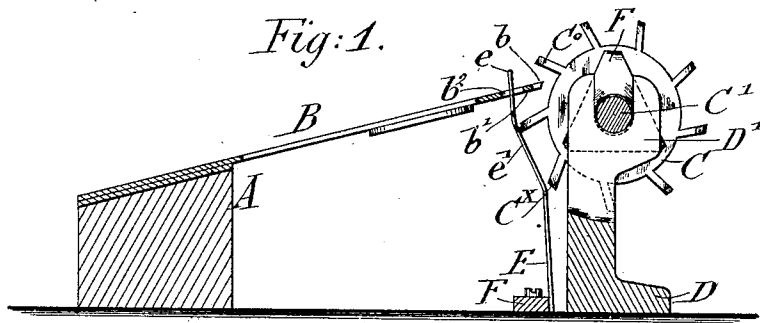


(No Model.)

P. T. A. RODECK.  
MUSIC BOX.

No. 560,936.

Patented May 26, 1896.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

PAUL TH. A. RODECK, OF WEST HOBOKEN, NEW JERSEY.

## MUSIC-BOX.

SPECIFICATION forming part of Letters Patent No. 560,936, dated May 26, 1896.

Application filed February 18, 1896. Serial No. 579,784. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL TH. A. RODECK, a citizen of the United States, residing in West Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Music-Boxes, of which the following is a specification.

This invention relates to certain new and useful improvements in music-boxes, and particularly to the damper mechanism and to the toothed wheels whereby the tongues or reeds are vibrated; and the object of the same is to enable a greater expression and modulation to be obtained than is possible with present constructions, whereby the music produced will resemble more clearly that produced by hand than mechanically.

My invention consists of a supporting-rail for the spindle, on which latter the toothed wheels are loosely mounted, so as to turn, and a reed-plate provided with reeds, which are arranged so that two of the toothed wheels are adapted to vibrate a single reed, one portion of each reed lapping or extending over one of the wheels of each paired set more than the other; and my invention further consists of a reed provided with a damper-opening near its free end and a damper adapted to be actuated by a pair or set of the toothed wheels, said damper extending into said damper-opening, all as will be described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of my improved music-box construction, showing the parts in the position they assume just after a reed has been vibrated and sounded. Fig. 2 is a sectional elevation of similar parts, showing the damper applied to the reed and just before the latter is to be sounded. Fig. 3 is a top view of the parts shown in Fig. 1. Fig. 4 is a horizontal cross-section on the line 4 4, Fig. 2; and Fig. 5 is a broken plan view of a modification.

Similar letters of reference indicate corresponding parts.

Only those parts of a music-box which are necessary for the illustration of the present invention are shown.

A indicates a bed plate or support, which is fixed on the sounding-board in the usual manner, and from the upper part of which,

in inclined position, the reeds B of the reed-plate B', fixed to the bed-plate in any suitable manner, project. Arranged adjacent to the free ends of the vibrating reeds B are the usual toothed wheels C, which strike the reeds, said toothed wheels being operated in the ordinary manner by means of the usual note-sheet and being journaled upon a spindle or shaft C', mounted stationary in open brackets D' of a rail D, which is fixed to a suitable part of the music-box parallel with the bed-plate A of the reed-plate. The brackets D' consist of forked or perforated lugs extending upwardly from the supporting-rail D and are suitably spaced, so as to receive between two adjacent bracket-lugs a single toothed wheel C.

Arranged upon the spindle C' and in frictional contact with one side of each toothed wheel C is a concavo-convex friction-plate F' of suitable shape, having an opening through which the spindle passes, said friction-plate causing friction upon the toothed wheel, so that it will not turn too freely upon the spindle. The arrangement of the toothed wheels upon the fixed spindle C' is such that they are paired—that is to say, two of the toothed wheels, respectively C C<sup>2</sup>, register with the reed B, their plane of rotation being in line of said reed, so that neither one of the same can rotate without striking and vibrating the corresponding reed or tongue. One of the most important features of the present invention is this arrangement of the toothed wheels and reeds, the object of which is to afford means for greater expression of the piece which is being played, and this is obtained, as shown in Figs. 1, 2, and 3, by extending one side of the free end of the reed B in advance of the other side, so that a forward side extension b is provided that laps or extends over the rotary toothed wheel C<sup>2</sup> to a greater distance than the adjacent side portion b' of the reed b, which laps over the mate C of the toothed wheel C<sup>2</sup>. It will be seen that whenever the projections or perforations on the note-sheet rotate the proper toothed wheel, whether it be C or C<sup>2</sup>, the same is caused to strike the reed or tongue and vibrate the same, and if the toothed wheel which is rotated be C<sup>2</sup>, for instance, it is clear that the reed B will be more forcibly vibrated than

if it were vibrated by the toothed wheel C, for the reason that that portion of the reed or tongue B which is engaged by the rotary toothed wheel C<sup>2</sup> laps or extends over onto the latter farther than does the portion which is over the toothed wheel C. By this construction whenever the reed or tongue B is struck by the wheel C<sup>2</sup> a louder sound is made than is made by the toothed wheel C striking on the same reed, so that a greater degree of expression is enabled to be produced from a music-box than heretofore, as some of the tones will be loud and others soft. The same effect is accomplished by the modification shown in Fig. 5, in which the toothed wheels C C<sup>2</sup> are made of different diameters, the former being of less diameter than the latter, so that, as before, one portion of the vibrating end of the reed laps over the wheel C farther than the other portion, in reality the wheel C<sup>2</sup> extending under the vibrating end of the reed farther than the toothed wheel C does.

Another important feature of the invention relates to the damper. The damper E, which is of spring metal, is fixed at its lower end in any suitable manner, as by solder, to a bar F, which extends parallel with the rail D, that supports the spindle C'. The damper E is formed at its upper end with a narrow active portion *e*, and intermediately of the same it is formed with an inclined portion or abutment *e'*, said abutment *e'* being wide enough to be engaged by the pair of toothed wheels C C<sup>2</sup>, according as one or the other of the latter is rotated. The narrow operative end *e* of the damper projects upwardly through a damper-hole *b*<sup>2</sup>, which is formed in the reed B adjacent to its outer end. Referring to Figs. 1 and 2, it will be seen that whenever one of the toothed wheels is rotated by the note-sheet the damper is actuated. In Fig. 1 the tooth *c*<sup>0</sup> of the toothed wheel is shown as just having struck the reed B and sounded the same, the damper being at that moment free from contact with the wall of the damper-hole *b*<sup>2</sup>, while the tooth C<sup>x</sup>, which is the next one to actuate the damper, is out of contact with the same. In Fig. 2 said tooth C<sup>x</sup> is shown as in contact with the abutment portion *e*<sup>2</sup> of the damper, so that the free end of

the damper is forced in contact with the reed or tongue just before the same is to be struck by the tooth intermediate of the teeth C<sup>x</sup> and C<sup>0</sup>. By this arrangement of the damper and the manner of operating the same an effective action is always produced and a damper mechanism which is well adapted for use in connection with my means for causing greater expression obtained.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a vibratory reed, of a pair of suitably-supported rotary toothed wheels in common with said reed, one portion of the free end of said reed lapping or extending over one of said toothed wheels farther than the other portion over the other toothed wheel, substantially as set forth.

2. The combination, with a vibratory reed provided at one side of its free end with a forward extension, of a pair of suitably-supported rotary toothed wheels, one of which is adapted to engage the extended portion of the reed, while the other engages the non-extended portion, substantially as set forth.

3. The combination with a vibratory reed, of a damper and a pair of suitably-supported rotary toothed wheels in common with said reed and damper, one portion of the free end of said reed lapping or extending over one of said toothed wheels farther than the other portion over the other toothed wheel, and said damper being of a width approximately equal to the pair of toothed wheels, substantially as set forth.

4. The combination, with a vibratory reed, provided with a damper-hole in its outer end, of a damper fixed at its lower end and projecting at its upper end into said damper-hole, said damper being wider below its upper end, and a pair of rotary toothed wheels adapted to strike said reed and actuate said damper, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

PAUL TH. A. RODECK.

Witnesses:

PAUL GOEPEL,  
GEO. L. WHELOCK.