No. 610,291. Patented Sept. 6, 1898.

H. THORENS.

MECHANICAL MUSICAL TOY.

(Application filed Apr. 30, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

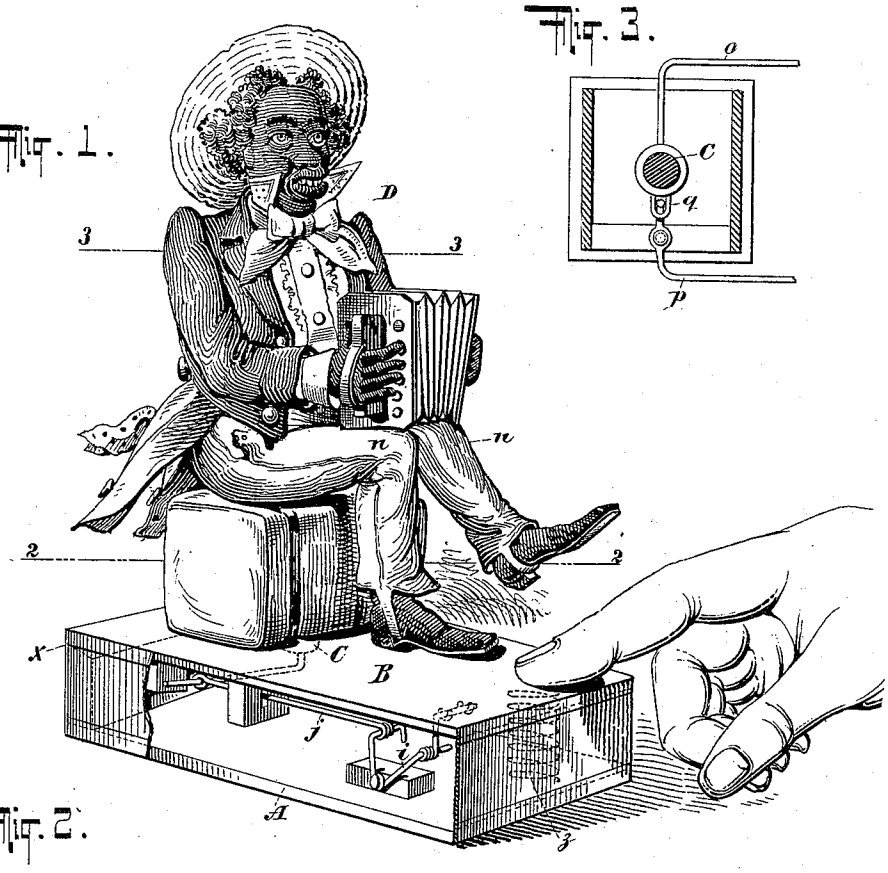
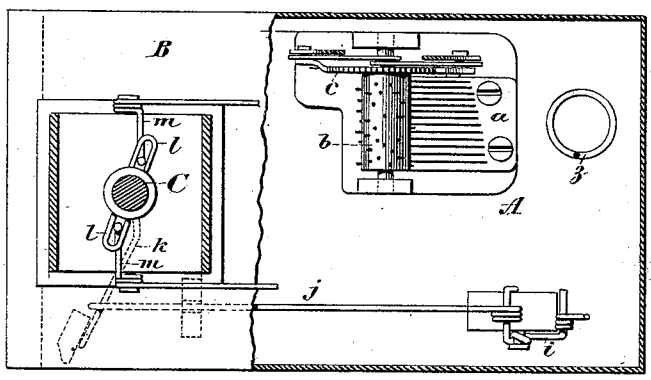


Fig. 3.

Fig. 2.



WITNESSES

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Fig. 4.

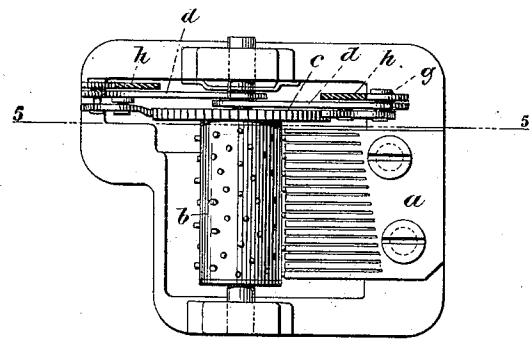


Fig. 5.

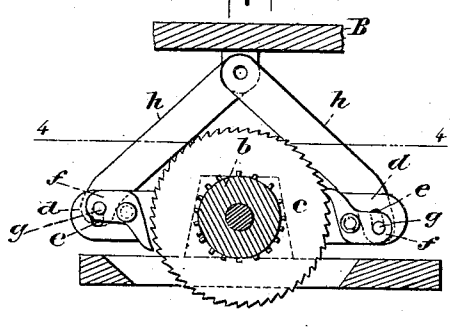
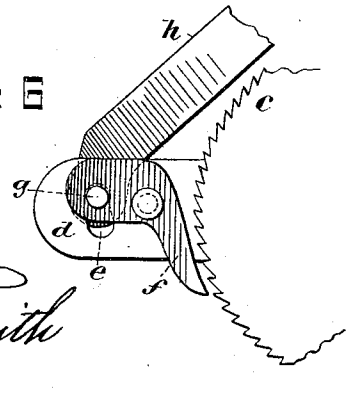


Fig. 6



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UNITED STATES PATENT OFFICE.

HERMANN THORENS, OF ST. CROIX, SWITZERLAND.

MECHANICAL MUSICAL TOY.

SPECIFICATION forming part of Letters Patent No. 610,291, dated September 6, 1898.

Application filed April 30, 1897. Serial No. 634,630. (No model.) Patented in Germany July 29, 1890, No. 56,996, and in Switzerland August 1, 1890, No. 2,460.

To all whom it may concern:

Be it known that I, HERMANN THORENS, a resident of St. Croix, Switzerland, have invented certain new and useful Improvements in Mechanical Musical Toys, (for which I have obtained Letters Patent in Switzerland, dated August 1, 1890, No. 2,460, and in Germany, dated July 29, 1890, No. 56,996,) of which the following is a specification.

My invention relates to mechanical musical toys; and said invention has for its object to produce a simple, cheap, and efficient mechanical musical toy wherein there is little liability of the parts being broken or disarranged.

To this end my invention consists in the novel arrangement and combination of parts and to certain details hereinafter described and claimed.

In the accompanying drawings, which form part hereof, and wherein like letters indicate corresponding parts in the various views—

Figure 1 is a perspective view, with parts broken away, of a mechanical musical toy embodying my invention. Fig. 2 is a horizontal section of the same on the line 2 2 of Fig. 1, with parts broken away for purposes of clearer illustration. Fig. 3 is a detail sectional view on the line 3 3 of Fig. 1. Fig. 4 is an enlarged detail plan view of the sound-producing device and its operating mechanism, taken on the line 4 4 of Fig. 5. Fig. 5 is a longitudinal sectional view of the same on the line 5 5 of Fig. 4. Fig. 6 is an enlarged detail fragmentary view of portions of the device to be hereinafter described.

Reference being had to the accompanying drawings, A indicates the bed-plate or base of the device, upon which is or may be mounted a sound-producing device *a*, which in the present instance consists of a comb of vibrating music-tongues which are sounded by a note-barrel *b*, as is usual in Swiss music-boxes. To the note-barrel *b* is connected a ratchet-wheel *c*. In line with the axis of the note-barrel are pivoted pawl-carrying levers *d d*, which are provided with elongated slots *e* near the free or outer ends thereof. These pawl-carrying levers are provided with pivoted pawls *f*, each of which connects with a pin *g*, entering a slot in a pawl-carrying lever. To each of these pins *g* is connected a lever *h*, which is itself connected with a vibratory platform or piece B, which is hinged, as at *x*, and is maintained normally in the elevated position by a spring *z*. It will be observed that by this arrangement the vibration of the hinged or vibratory piece or platform B will cause the pawls to alternately engage and disengage the ratchet-wheel *c*—that is to say, a movement of the vibratory piece in one direction will cause a pawl to engage a ratchet-wheel, while a movement of the vibratory piece in an opposite direction will cause the same pawl to be disengaged, so that a noiseless pawl-and-ratchet driving mechanism is provided. To the vibratory piece B is connected one arm of the bell-crank lever *i*, which is pivoted to the base or bed-plate A, the other arm of said bell-crank lever *i* being connected with a link *j*, which connects an arm *k*, carried by a central spindle C, which passes up into the body of a figure D, preferably mounted upon the vibratory piece or platform B. Slotted arms *l* are carried by this spindle and are each engaged by one arm of a bell-crank lever *m*, the other or free end of each of said bell-crank levers passing to a movable part of the figure—in the present instance to one of the legs *n* thereof. This spindle may be further connected with movable parts of the figure, as by a projecting arm or connection *o*, which connects with one of the arms of the figure, or by a bell-crank lever *p*, one arm of which is engaged in a slotted arm *q*, carried by the spindle C, the other or free end of the bell-crank lever *p* connecting with an arm of the figure. It may be likewise desirable to make the head of the figure independent of the body and connect said head to the spindle.

By these means it will be observed that a vibration given to the platform or piece by hand or otherwise will cause the music-box to be operated and will cause a simultaneous movement of various portions of the figure.

In the device illustrated in the accompanying drawings the arms of the figure will be moved so as to appear to play the musical instrument held in the hands of the figure. The legs of the figure will likewise be moved so that the feet will alternately strike upon the platform and apparently keep time with the music played by the musical instrument

or sounding device on the interior of the device. The head of the figure will at the same time be constantly in motion during the vibration of the platform.

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

1. In a mechanical musical toy, the combination of a sound-producing device, a note-barrel for operating said sound-producing device, a ratchet-wheel connected with said note-barrel, a lever carrying a pawl which is adapted to engage the ratchet-wheel, and a vibrating platform having a figure supported thereon, said platform being connected with the pawl-carrying lever to operate the note-barrel, substantially as described.

2. In a mechanical musical toy, the combination of a sound-producing device, a note-barrel for operating said sound-producing device, a ratchet-wheel connected with said note-barrel, a plurality of levers extending to opposite sides of said ratchet-wheel and each carrying a pivoted pawl, an operating-lever independent of the pawl-supporting lever directly connected to each of said pawls and with a vibratory piece, whereby a movement of each of said operating-levers in one direction will cause a pawl to be engaged with the ratchet-wheel while a movement thereof in the opposite direction will cause a pawl to be disengaged from and thrown out of contact with said ratchet-wheel, substantially as described.

3. In a mechanical musical toy, the combination of a sound-producing device, a note-barrel for operating the said sound-producing device, a ratchet-wheel connected with said note-barrel, a plurality of levers pivoted in line with the axis of the note-barrel and extending to opposite sides thereof, a slot in and a pivoted pawl carried by each of said levers, operating-levers, each of which is connected with a pin which connects with a pawl and projects into a slot in a pawl-carrying lever, a vibratory piece which is connected with said operating-lever to operate the sound-producing device, a figure and connections between portions of said figure and the vibratory piece, whereby a movement of the vibratory piece will cause a simultaneous operation of the sound-producing device, and a movement of parts of the figure, substantially as described.

HERMANN THORENS.

Witnesses:
W. BRIERÉ,
W. CUÈNOD.