E. P. LEHMANN.

TOY.

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1,018,574. Patented Feb. 27, 1912.

Fig. 1.

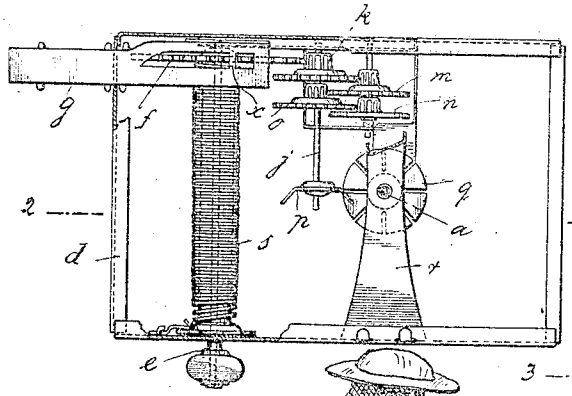


Fig. 3.

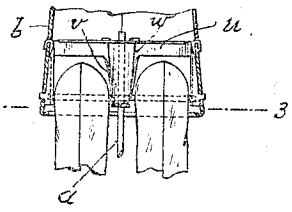


Fig. 2.

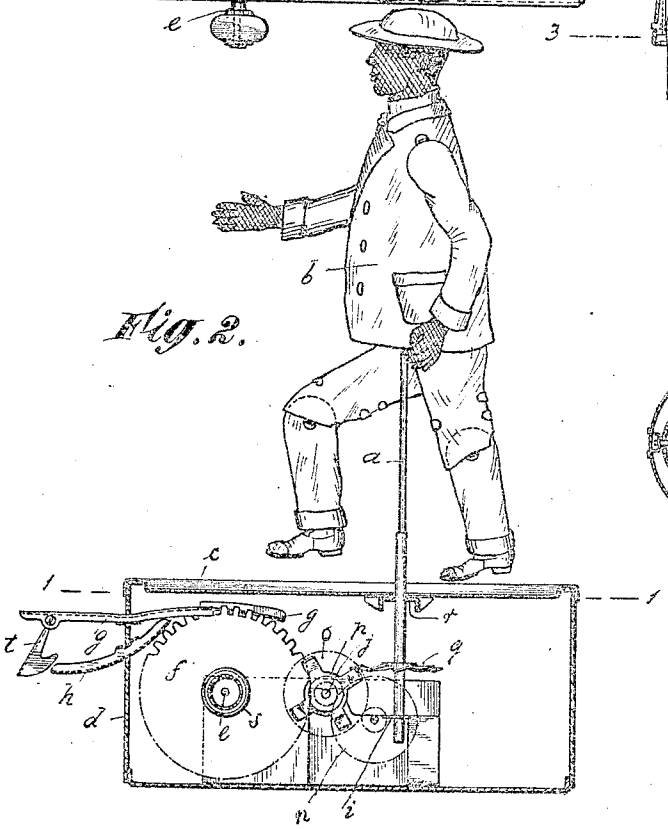
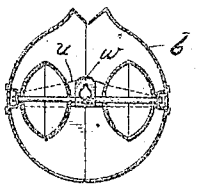


Fig. 4.



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TOY.

1,018,574. Specification of Letters Patent. Patented Feb. 27, 1912.

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To all whom it may concern:

Be it known that I, ERNST PAUL LEHMANN, subject of the King of Prussia, residing at No. 6 Plauerstrasse, Brandenburg-on-the-Havel, Prussia, Germany, have invented new and useful Improvements in Toys, of which the following is a specification.

My invention relates to improvements in toys, and particularly in that class of toys, in which a human or animal figure carried by an upright pin or rod is alternately lifted and lowered by mechanism contained in a box, through the cover of which the said supporting rod projects upward and which serves as a platform for the feet of the figure, the lifting and lowering movements of said figure causing the feet to strike upon the cover of the box and the legs to turn in their joints, whereby the said figure is made to perform a kind of dance. Toys of this class are known and have been used before.

The improvements of my invention have the main purpose to vary at the will of the operator the dancing movements of the figure imparted to the same by mechanical means, *i. e.* to temporarily retard or stop said movements, whereby a certain rhythm of the dance may be obtained, and the said rhythm may be varied by the operator as desired. In mechanical toys of this class the movements of the toy-figure have a general uniform character owing to the continuous rotating motion of the driving mechanism, which, generally, consists of a spring-driven set of gear-wheels, and for this reason children soon become tired of the toy, particularly because they cannot interfere in the performance of the dance. In the toy hereinafter described such manual interference is obtained by a brake to be operated by hand in any suitable and desired degree, enabling the operator to retard the speed of motion from the slightest degree up to a full stop at any desired moment of the performance, and to accelerate the speed again at will and at any moment, up to the full original speed of motion. The operator, knowing the rhythm of the dance by heart, applies and releases the brake according to said rhythm and, thereby, causes the figure to perform any dance according to its special rhythm of motion. The toy, thereby, is not merely a mechanical one, but requires some skill or knowledge of musical rhythm for its true performance, still, the toy may equally be used to work without any manual interference or rhythm, and in this case, the performance of the dance will be uniform according to the continuous rotary motion of the driving shaft.

To make my invention properly understood, I have illustrated the same in the accompanying drawings, in which:

Figure 1 is a horizontal section drawn on line 1—1 of Fig. 2, disclosing the driving mechanism and showing the brake-mechanism in plan; Fig. 2 is a vertical section drawn on line 2—2 of Fig. 1, disclosing the driving gear in side-elevation, with the toy-figure supported by the vertical rod in place. Fig. 3 is a detail of the toy-figure, disclosing the mode of supporting the same by the vertical rod, and Fig. 4 is a horizontal section drawn on line 3—3 of Fig. 3.

Within a box *d*, of any suitable shape a driving mechanism is secured, which may consist, as shown, of a coiled wire-spring *s* wound up upon a shaft *e*, provided with a handle outside of the box and carrying a gear-wheel *f* meshing into a pinion *k* secured to a shaft *j* which carries a wheel *p* with any suitable number of lifting arms or cams projecting from the periphery of said wheel *p*. An intermediate train of wheels, such as *m*, *n*, *o*, loosely mounted on their shafts, serve to retard the motion transmitted from the gear-wheel *f* to the shaft *j* and wheel *p* carried by the same. When rotating, the arms of said wheel *p* successively strike from below against a wheel *q* secured to the vertical rod *a* which carries the toy-figure *b*, said rod being guided within holes of a cross-bar *i* and another cross-bar *r* provided, respectively, in the lower and upper part of the box *d*, and a third registering hole in the cover *c* of the box *d*. By the impulsions of the arms of wheel *p* striking against the lower face of the wheel or disk *q*, the said rod *a* is alternately thrown up and falls back again by its own gravity,

whereby the toy-figure *b* is caused to jump, striking with its jointed feet upon the cover *c*, whereby the legs, pivotally connected to the toy figure *b* bend in the joint of the knee and the arms shake by the concussions transmitted to the body of the figure.

To stop the motion of the train of wheels, a lever *g* is provided, projecting through the front wall of the box to the outside, the fulcrum of said lever may be provided within the said front wall, but the fulcrum might as well be located inside or outside of the box. The inside arm of said lever *g* has a recess to engage a portion of the periphery of the gear-wheel *f*, and a stay *x* may preferably be arranged within said recess, to engage between the teeth of said gear wheel *f* and stop its motion. The inner or recessed arm of said lever *g* exceeds in weight the outer arm and by this means the normal position of the lever will be that shown in Fig. 2, in which motion is stopped or locked by the said lever *g*. On pressing down the outside arm of said lever *g*, the inside arm will be raised and lifted out of engagement with the gear-wheel *f*, thus allowing free play to the driving mechanism. A second lever *h*, is arranged below the locking lever *g*, and the said second or brake lever *h*, may be equally fulcrumed within a slot or recess of the front wall of the box. This brake-lever *h*, is normally out of engagement with the gear-wheel *f*, or only slightly touching the same without retarding the motion; but on raising the outward arm of said brake-lever *h*, its inside arm will be caused to bear against said gear-wheel retarding its motion in due proportion to the upward pressure applied to the outer arm of said lever *h*.

In performing the play the operator, having wound up the driving spring by the handle of shaft *e*, starts the motion of the train of wheels and thereby causes the toy-figure to perform a jumping or dancing motion, as soon as the lever *g* is raised out of engagement with the gear-wheel *f*. While exerting a slight downward pressure upon the outer arm of the lever *g* with one finger, another finger may be employed to simultaneously exert a slight upward pressure upon the underside of the brake-lever *h*, whereby its inner arm will be made to brake or retard the gear-wheel *f* in due proportion to the pressure applied, which may be so strong as to stop the motion for a while. By varying the pressure applied to the brake-lever *h*, at suitable intervals, the rhythm of the dance may be obtained at will. A hook *t* may be pivoted to the locking lever *g* and the outer end of the brake-lever *h* may be made to engage said hook, whereby the locking lever *g* will be kept in the position to leave free motion to the gear-wheel *f*, while, at the same time, the brake-lever *h* is retained in a position apart from or only slightly touching the gear-wheel *f*, without braking the same. The performance, in this case, will go on continuously and without any rhythm through manual interference.

The frame *u*, supporting the legs of the toy-figure is suspended within the body *b* of the toy-figure, as shown in Fig. 3, and the suspending stay or strap *v* has a socket *w* formed to it, which fits to the upper end of the supporting rod *a*. If it be desired to prevent the toy-figure *b*, from turning on its rod while dancing, the hole of the socket *w* may be formed with a slit or slits, or the said hole may be of angular shape, and the top-end of the rod *a*, may be shaped to correspond to the shape of the socket-hole. A collar adjustable on the rod *a*, near its upper end, serves to adjust the toy-figure *b* on the rod *a* at a distance more or less apart from the platform or cover *c* of the box *d*, and by this means the feet of the figure *b* may be caused to strike the platform with more or less vigor in the fall of the rod *a*, succeeding each throwing up of the same.

I claim as my invention:

1. In a toy, the combination with driving mechanism and a rod supporting a toy-figure to which a reciprocating motion in the vertical direction is imparted by said driving mechanism, of a braking device operated by hand, adapted to temporarily stop, retard and restore the normal speed of the driving mechanism, substantially as and for the purpose set forth.

2. In a toy, the combination with driving mechanism and a rod supporting a toy-figure to which a reciprocating motion in the vertical direction is imparted by said driving mechanism, of a braking device operated by hand, adapted to temporarily stop, retard or restore the normal speed of the driving mechanism, and a locking device adapted to be operated by hand simultaneously with the braking device, substantially as and for the purpose set forth.

3. In a toy, the combination, with driving mechanism and a rod supporting a toy-figure to which a reciprocating motion in the vertical direction is imparted by said driving mechanism, of a braking lever adapted to be operated by hand, a locking lever adapted to be operated by hand, and means to simultaneously make inoperative the brake-lever and the locking-lever, substantially as and for the purpose set forth.

4. In a toy, the combination with a box, of driving mechanism located therein, a rod adjustably supporting a toy-figure to which a reciprocating motion in the vertical direction is imparted by said mechanism, a hand lever for braking the speed of the driving

mechanism, a hand lever for locking the driving mechanism, and means for engaging the locking lever with the brake-lever for the purpose of making both simultaneously inoperative, substantially as and for the purpose set forth.

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

ERNST PAUL LEHMANN.

Witnesses:
HENRY HASPER,
WOLDEMAR HAUPT.