Dec. 11, 1928. 1,695,095

G. N. HALL

MECHANICAL TOY

Original Filed April 29, 1925

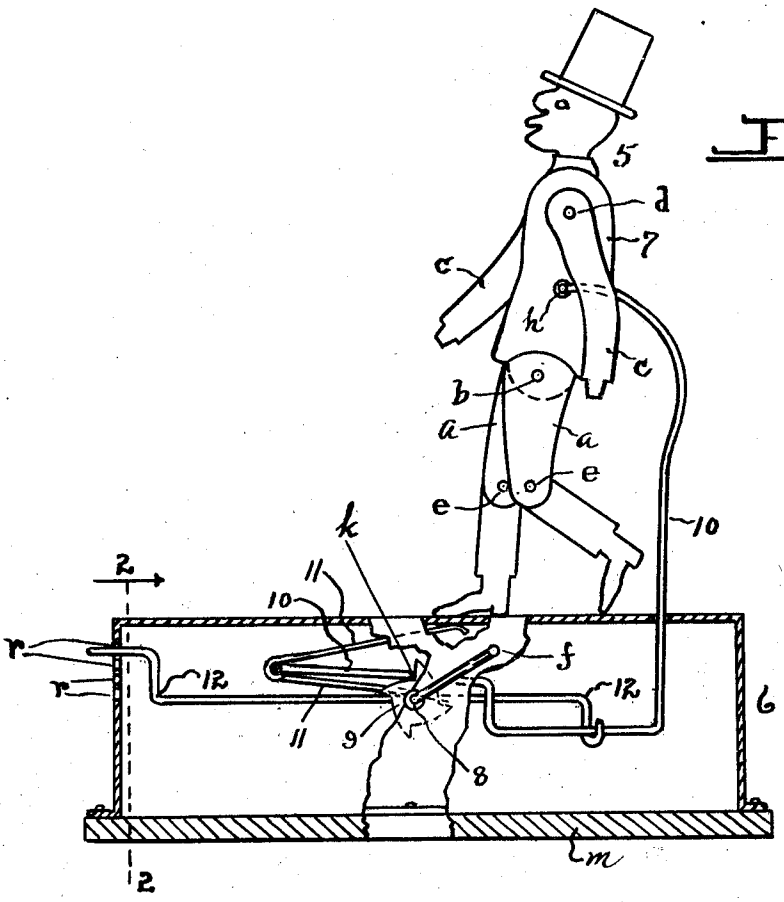


Fig. 1.

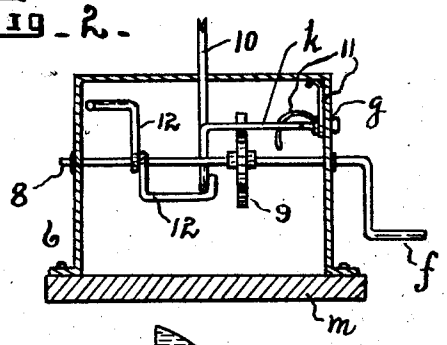


Fig. 2.

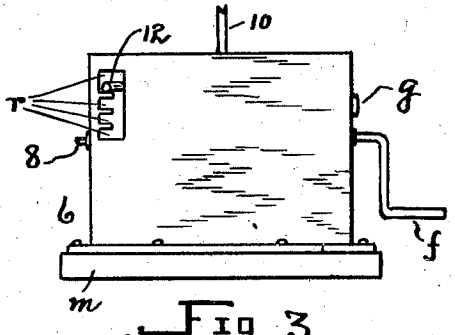


Fig. 3.

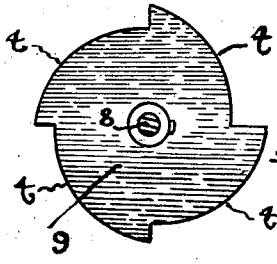


Fig. 4.

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UNITED STATES PATENT OFFICE.

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MECHANICAL TOY.

Application filed April 29, 1925, Serial No. 26,793. Renewed April 26, 1928.

This invention relates to a mechanical toy, and has for its object, broadly, to provide parts which may be operated manually to cause movements of an object for amusement purposes. One of the specific objects is to provide a toy consisting of few and simple parts so that it may be conveniently manufactured and at a minimum of cost. Another specific object is to provide, for a dancing object, certain parts, including a ratchet-wheel of such form that the steps of the dancer will be varied at each rotation of the wheel. Another object, also specific, is to provide adjustable features for supporting the body of the dancer at selected heights above a support or platform so that the feet may strike lightly or heavily upon the support, or may be maintained in non-contact with the support.

With the foregoing objects in view the invention presents a novel construction, combination and arrangement of parts as described herein and claimed, and as illustrated in the accompanying drawing, it being understood that changes in form, size, proportions and minor details may be made, said changes being determined by the scope of the invention as claimed.

In the drawing, Fig. 1 is a view in side elevation of the device, a box or casing being shown partly in section. Fig. 2 is a section through the casing on line 2—2 of Fig. 1. Fig. 3 is in an end view of the casing. Fig. 4 is a side view of a ratchet-wheel.

Referring now to the drawing, the invention is shown and described in connection with a dancing object 5 and a box or casing 6 which operates as a container for mechanism and as a platform which the feet of the dancer may engage, the thighs *a* of the dancer being pivoted, as indicated at *b*, to the body 7, and the arms *c* being pivoted, as indicated at *d* to the body. The legs of the dancer, as indicated at *e*, are pivoted at the knees, as usual, to permit a free movement of the feet upon the platform, during operation.

In order that the body of the dancer may be vertically reciprocated and that the movement of the body will not be uniform, certain mechanism is provided, consisting, in part, of a shaft 8 having bearings in the sides of the casing and adapted to be actuated by means of a crank *f* for rotating a ratchet-wheel 9.

Numeral 10 indicates an angular operating-bar preferably constructed of wire and having a pivotal mounting *g* in the side of the casing for its lower end, said bar or wire extending through the top of the box for a mounting *h* at its upper end upon the body of the dancer. Numeral 11 indicates a spring which is disposed in the casing, said spring being mounted upon the wire 10, and its function being to maintain a part *k* of said bar or wire 10 in engagement with the ratchet-wheel; and in operation when the shaft 8 is rotated, that part *k* of the wire 10 will engage the curved parts *t* of the teeth of the ratchet-wheel and will be reciprocated vertically to cause like movements of the body of the dancer, one end of the spring 11 engaging the top of the casing and its opposite end engaging said part *k* of the wire or operating-bar 10.

It will be noted by referring to Fig. 4 that the teeth of the ratchet-wheel are not uniform in structure. While the terminals of the teeth are approximately equi-distant from the axis of the wheel, they differ in length, and this feature is depended upon to cause a variation in the vertical reciprocation of the body of the dancer, said body, during each rotation of the shaft 8, being disposed at varying distances from the platform or support 6, and the feet of the dancer, on this account, having a variety of movements which are novel and pleasing.

Numeral 12 indicates a control-spring or wire, operating as a rock-lever. It is mounted midway between its ends upon the shaft 8, its inner end being disposed below and in engagement with the under side of the wire 10. It extends outwardly of the casing, and its outer end-portion is adapted to engage in one of the recesses *r* formed in the end of the casing, its function being to limit the movements, in one direction, of the body of the dancer. The recesses *r* are formed or disposed at vertical intervals, and it will be understood that, during operation, said wire or lever being disposed in the uppermost recess *r*, the part *k* of the operating-bar 10 will, by operation of the spring 11, be moved toward the axis of the wheel 9 and will engage all of the curved surfaces *t* during operation, the feet of the dancer striking the top of the casing with considerable force. An adjustment may be made by placing the outer end-portion of the lever or wire 12 in a recess *r* below and adjacent to the upper-

most recess, the result being that said member 12, during operation, will be elevated and will engage only a part of the curved surfaces *t* of the teeth, the feet of the dancer lightly engaging the casing; and if the member 12 is disposed in one of the recesses *r*, lower than mentioned, the feet of the dancer will strike the platform or support with still lesser force than mentioned; and an adjustment may be made, by the means described, whereby the feet of the dancer, during operation, will be maintained in non-contact with the casing.

The casing is preferably constructed of sheet-metal and is secured to a base *m* of wood or other suitable fibrous material so that the dancing may be clearly audible.

I claim as my invention,—

In a mechanical toy, a support, a revoluble shaft journalled on the support, a ratchet wheel rigidly mounted on the shaft, an angular operating-bar engaging the ratchet-wheel and extending upwardly through the support, resilient means for maintaining normal engagement of the operating-bar with the teeth of the ratchet-wheel, a display object movable with said bar, the teeth of the ratchet-wheel being of varying lengths for causing the operating-bar to move at varying distances at each rotation of the shaft, and a rock-lever engaging the operating-bar and adapted to be adjusted for disposing the operating-bar at selected distances radially of the ratchet-wheel.

In testimony whereof I have affixed my signature.

GEORGE N. HALL.