

E. EASTMAN.
 MECHANICAL TOY.
 APPLICATION FILED OCT. 26, 1908.

937,780.

Patented Oct. 26, 1909.
 3 SHEETS—SHEET 1.

FIG. 1.

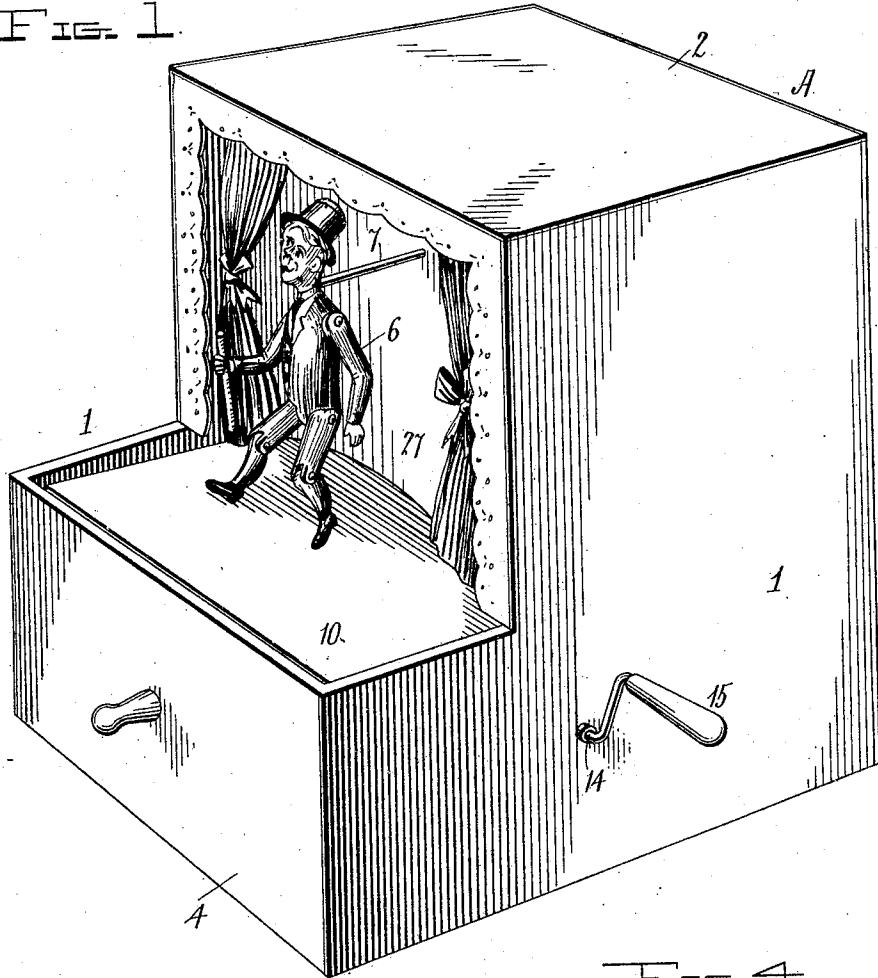
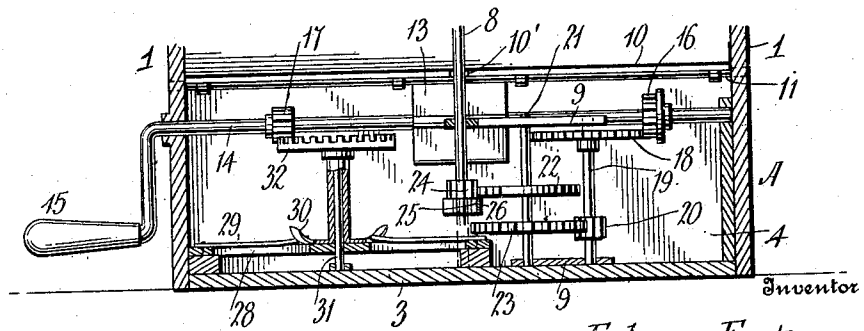


FIG. 4



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3 SHEETS—SHEET 2.

FIG. 2

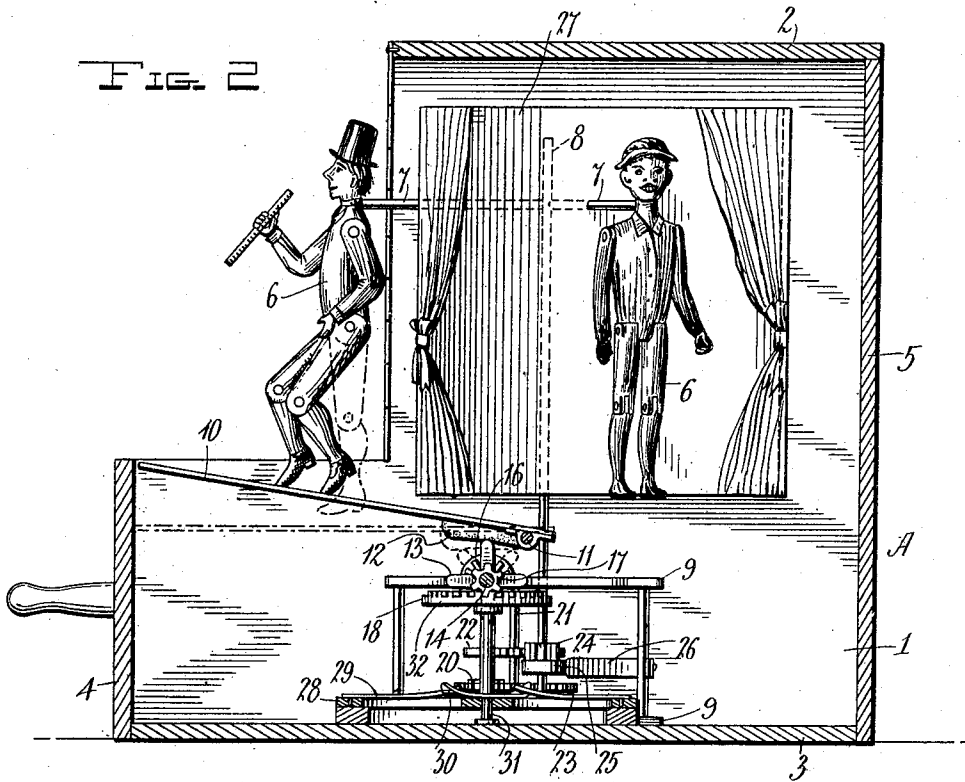
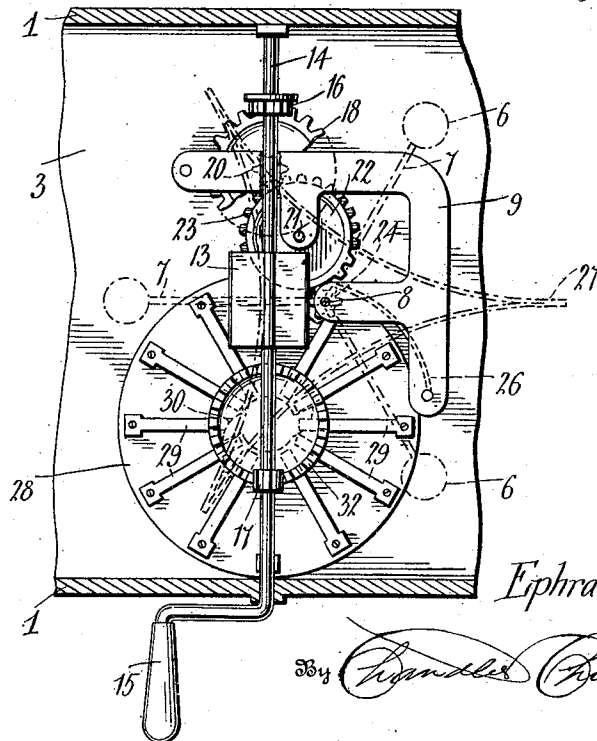


FIG. 3



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 3 SHEETS—SHEET 3.

FIG. 5

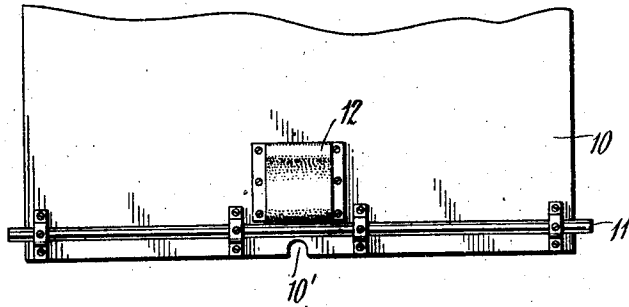


FIG. 6

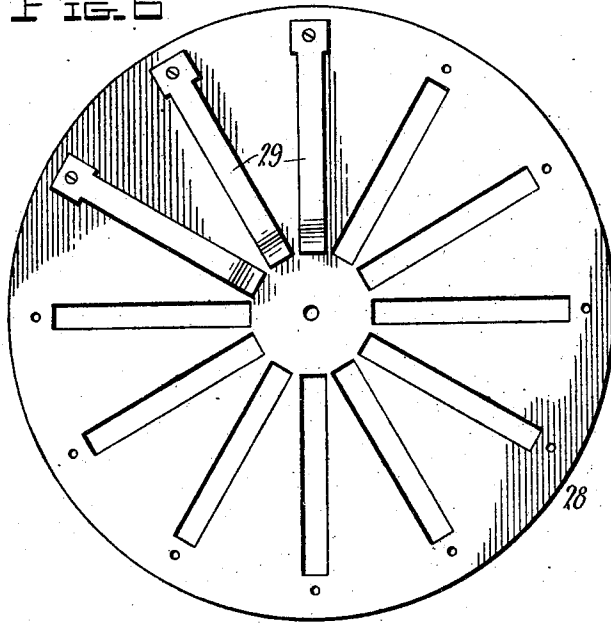


FIG. 7

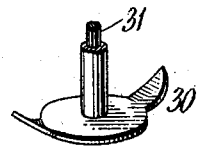


FIG. 9

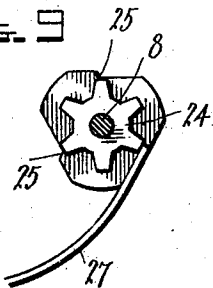
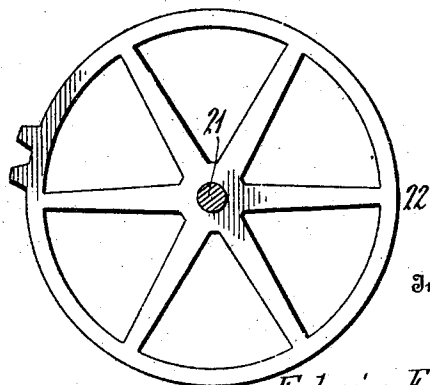


FIG. 8



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UNITED STATES PATENT OFFICE.

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MECHANICAL TOY.

937,780.

Specification of Letters Patent.

Patented Oct. 26, 1909.

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To all whom it may concern:

Be it known that I, EPHRAIM EASTMAN, a citizen of the United States, resident at Ogden City, in the county of Weber, State of Utah, have invented certain new and useful Improvements in Mechanical Toys; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in mechanical toys, and especially in that class of toys in which a procession of dolls is arranged to pass across a stage formed by a platform, the principal object of the invention being the production of an exceedingly simple and inexpensive toy whose operating mechanism shall include devices for imparting a vibratory movement to the platform and other devices for effecting an intermittent movement of the procession, so that each doll will advance in turn to the center of the platform, will be caused to dance, owing to the movement of the platform, and will finally retire, to be succeeded by the next doll. The particular devices employed for effecting these results, and the arrangement of the same with respect to each other and to the operating mechanism, present the chief features of the invention.

The accompanying drawings illustrate the preferred embodiment of the invention, corresponding parts being designated by the same reference numerals throughout the several views, whereof,

Figure 1 is a perspective view of the toy. Fig. 2 is a longitudinal sectional vertical view, the platform being shown in raised position in full lines, and in lowered position in dotted lines. Fig. 3 is a detail top plan view of the operating mechanism as a whole. Fig. 4 is a rear elevation thereof. Fig. 5 is a fragmental bottom plan view of the platform showing the buffer. Fig. 6 is a detail plan view of the sounding disk. Fig. 7 is an enlarged perspective view of the cam that operates the disk. Fig. 8 is an enlarged plan view of the mutilated gear employed. Fig. 9 is an enlarged view of the notched gear employed.

The moving dolls, the devices for supporting the same, and the operating mechanism of the toy, are inclosed in a casing A which, as shown in Fig. 1, comprises a pair of L-shaped sides 1, top and bottom

members 2 and 3, and front and rear members 4 and 5, the front member being so arranged as to connect the forward ends of the lower or horizontal arms of the sides, leaving the upper portion of the front of the casing open.

The dolls 6, three being shown in the present instance, are each connected to the outer end of a radially-extending arm 7 secured to the upper portion of a vertical shaft 8 which is journaled in bearings provided upon the spaced top and bottom members of a frame 9, resting upon the bottom member 3 of the casing, said shaft being received in an inwardly extending seat 10' formed in the rear edge of a platform 10 which is pivoted adjacent said edge to a horizontal rod 11 whose ends fit in openings formed in the sides 1 of the casing. This platform serves as the stage across which the procession of dolls passes. To the under face of the platform a slight distance in advance of this rod there is secured a depending buffer 12 formed of rubber or other suitable material, and adapted to be engaged by a bumper 13 rigidly secured to the horizontal drive shaft 14 whose ends are likewise journaled in openings formed in the casing sides, the bumper being in the form of a wheel having four radially-extending arms arranged at right angles to each other, the free ends of the said arms contacting successively with the bumper when the shaft is rotated, one end of the shaft extending beyond the adjacent casing side and being bent to form a crank handle 15.

The drive shaft is provided with a pair of gears 16 and 17 located adjacent the right and left hand ends thereof, the gear 16 being arranged to mesh with a larger gear 18 rigidly secured to the upper end of a vertical shaft 19 whose lower end is provided with a much smaller gear 20. The shaft 19 has its ends journaled in the members of the frame 9 in which latter the ends of a second vertical shaft 21 are also journaled, the last mentioned shaft carrying a mutilated gear 22 provided with a pair of teeth, and a gear 23, this last-mentioned gear engaging with the gear 20 above referred to. The teeth of the mutilated gear are arranged to engage the teeth of a gear 24 carried by the shaft 8. As a result of this construction it will be apparent that during the rotation of the drive shaft the platform 10 will have imparted thereto a continuous rocking or vibratory

movement, while the doll-carrying shaft 8 will be intermittently rotated, thus causing each doll to successively pass through the open front end of the casing, travel across the platform, and finally retire, being halted for a period between its entrance and its exit, this period being coextensive in time with the time that it takes the mutilated gear to make one complete revolution.

In order that the halting of each doll may take place when the latter is exactly at the center of the platform or stage, the gear 24 has its hub formed with a series of three notches 25 which are successively engaged by the free end of a spring pawl 26 carried by one of the posts that connect the members of the frame 9.

Each of the dolls has its arms and legs jointed to its body, as a result of which construction it will be readily apparent that during the passage of each doll across the platform, as well as during the time that the doll is halted at the center of the platform, the vibration of the latter will cause the doll to present the appearance of dancing, the dolls being so arranged that their feet touch the platform during their travel thereacross. The shaft 8 by which the dolls are carried is further provided with a triangular screen 27, the sides of which are so arranged and proportioned with respect to the dolls and the open front of the casing, that during the time that each doll is halted, the open front of the casing is closed by one of the screen sides, the arms which carry the dolls being arranged to extend through openings formed in the screen sides.

The invention further includes a music box attachment which is operated by the rotation of the drive shaft. This attachment includes a stationary slotted disk 28 supported a slight distance above the bottom of the casing and provided with a series of spring sounding tongues 29. These tongues are arranged to be operated by a double-ended cam 30 rigidly secured to a third vertical shaft 31 which is journaled at its lower end in a bearing provided upon the casing bottom, and which extends upwardly through an axial opening in the disk. The cam shaft carries at its upper end a crown gear 32 which engages with and is driven by the left hand gear 17 carried by the drive shaft. The rotation of the drive shaft will therefore effect the operation of the music box attachment, as will be apparent.

While the figures carried by the main vertical shaft have been shown and described as dolls, it is to be understood that there is no necessary limitation to this particular type of figure, as jointed animals or the like may be employed instead. It will also be understood that the number of such figures, and in consequence, the number of arms, may be increased or decreased at will.

Further description of the invention and its operation is deemed unnecessary in view of the foregoing.

What is claimed, is:—

1. The combination, with a platform, of a shaft; a series of dolls carried by the shaft and arranged to travel in succession across the platform; and means for intermittently rotating said shaft.

2. The combination, with a platform, of a shaft; a series of dolls carried by the shaft and arranged to travel in succession across the platform; means for intermittently rotating said shaft; and means for causing each doll to dance during its passage across the platform.

3. The combination, with a platform, of a shaft; a series of jointed dolls carried by the shaft and arranged to travel in succession across the platform; means for intermittently rotating said shaft; and means for vibrating the platform, to cause each doll to dance during its passage thereacross.

4. The combination, with a platform, of a vertical shaft; a series of radial arms carried by the shaft; a doll secured to each arm and arranged to travel across the platform; and means for intermittently rotating said shaft.

5. The combination, with a platform, of a vertical shaft; a series of radial arms carried by the shaft; a jointed doll secured to each arm and arranged to travel in succession across the platform; means for intermittently rotating said shaft; and means for vibrating the platform, to cause each doll to dance during its passage thereacross.

6. The combination, with a platform, of a shaft; a series of dolls carried by the shaft and arranged to travel in succession across the platform; means for intermittently rotating said shaft; and positive means for halting each doll as it reaches the center of the platform.

7. The combination, with a platform, of a shaft, a series of dolls carried by the shaft and arranged to travel in succession across the platform; means for intermittently rotating said shaft; positive means for halting each doll as it reaches the center of the platform; and means for causing each doll to dance continuously during its passage across the platform.

8. The combination, with a platform, of a shaft, a series of dolls carried by the shaft and arranged to travel in succession across the platform; means for intermittently rotating said shaft; positive means for halting each doll as it reaches the center of the platform; and means for vibrating the platform, to cause each doll to dance continuously during its passage across the platform.

9. The combination, with a platform, of a vertical shaft; a series of radial arms carried thereby; a jointed doll secured to each arm and arranged to travel across the platform;

a second shaft; a bumper carried by the second shaft; a buffer secured to the under face of the platform and arranged to be struck by the bumper to effect the vibration of the platform; and gear connections between the two shafts for intermittently rotating the first-named shaft.

10. The combination, with a platform, of a shaft; a series of dolls carried thereby and arranged to travel in succession across the platform; a gear secured to said shaft; a second shaft; a mutilated gear secured to the second shaft and arranged to engage the first-named gear; and means for rotating said second shaft.

11. The combination, with a platform, of a vertical shaft; a series of jointed dolls carried thereby and arranged to travel in succession across the platform; a gear secured to said shaft; a horizontally-disposed drive-shaft; a second vertical shaft; a mutilated gear carried thereby and arranged to engage the first-named gear at predetermined periods, for intermittently rotating the first-named shaft; connections between the drive-shaft and the second vertical shaft, for continuously rotating the latter; and inter-engaging devices carried by said drive-shaft and said platform, for vibrating the latter during the rotation of the drive-shaft.

12. The combination, with a platform, of a shaft; a series of dolls carried thereby and arranged to travel across the platform; a drive-shaft; connections between the drive-shaft and the first-named shaft, for rotating the latter; a music-box; and operating connections between the music-box and the drive-shaft.

13. The combination, with a platform, of a shaft, a series of dolls carried thereby and arranged to travel across the platform; a drive-shaft; connections between the drive-shaft and the first-named shaft, for intermittently rotating the latter; a music-box; and connections between said drive-shaft and said music-box for continuously operating the music-box.

14. The combination, with a casing including a platform, of a shaft; a series of dolls carried thereby and arranged to travel in succession across the platform; a drive-shaft, both of said shafts being located within the casing; connections between the drive-shaft and the first-named shaft, for intermittently rotating the latter; inter-engaging devices carried by the drive-shaft and the platform, for vibrating the platform when said drive-shaft is rotated, to cause each doll to dance during its travel across the platform; a music-box located within the casing; and operating connections between the music-box and the drive-shaft.

15. The combination, with a platform, of a shaft, a series of dolls carried thereby and arranged to travel in succession across the platform; a gear secured to said shaft; a second shaft; means for rotating the second shaft; a mutilated gear carried by the second shaft and arranged to engage the first-named gear at predetermined periods, to intermittently rotate the first-named shaft; and means arranged for engagement with the first-named gear, to halt each doll as it reaches the center of the platform.

16. The combination, with a platform, of a shaft; a series of dolls carried thereby and arranged to travel in succession across the platform; a gear secured to said shaft and having its hub formed with a series of notches; a second shaft; means for rotating the second shaft; a mutilated gear carried by the second shaft and arranged to engage the first-named gear at predetermined intervals, to intermittently rotate the first named shaft; and a member arranged to engage the notches in said first-named gear to halt each doll when it reaches the center of the platform.

In testimony whereof, I affix my signature, in presence of two witnesses.

EPHRAIM EASTMAN.

Witnesses:

THOS. SMURTHWAITE,
FRED CASHMORE.