Nov. 6, 1928. 1,690,811

H. F. BARTLEY

ANIMATED TOY

Filed July 23, 1926

Fig. 1.

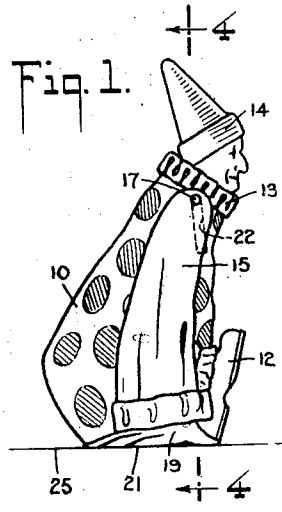


Fig. 2.

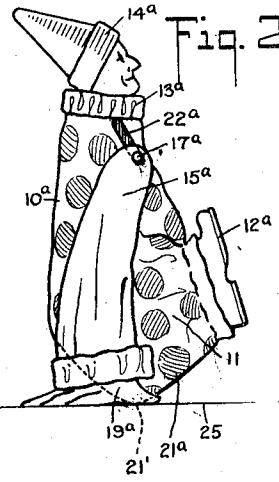


Fig. 3.

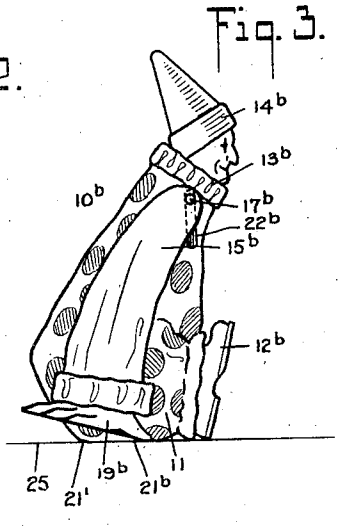


Fig. 4.

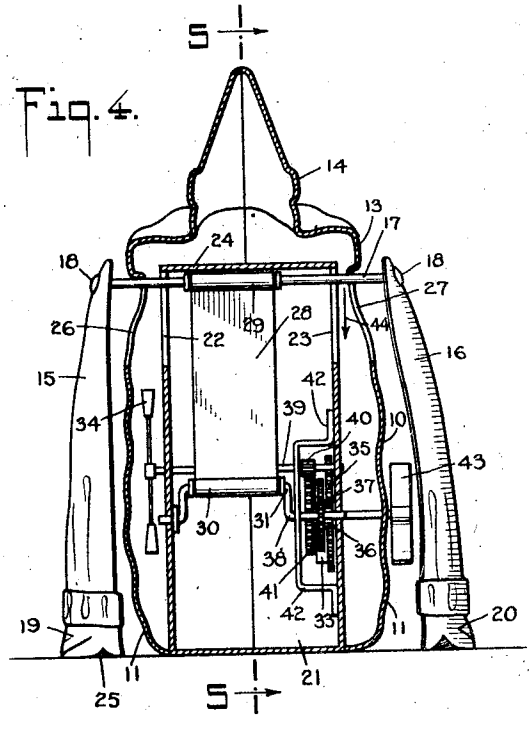
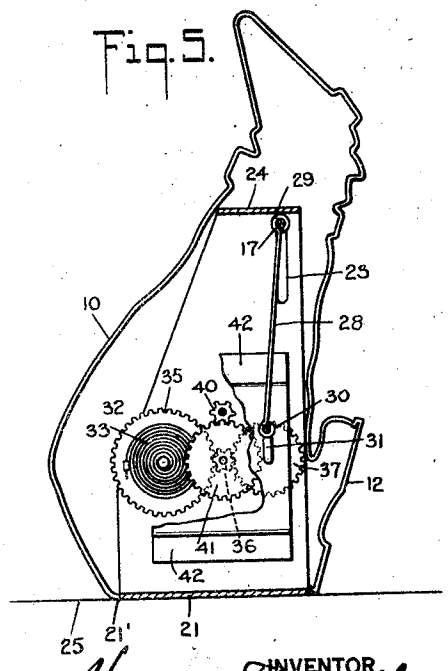


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ANIMATED TOY.

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This invention relates to animated toys.

My invention is particularly directed to animated toys of the mechanically actuated type provided with suitable means for effecting the progressive motion of the toy along a table, floor or the like by a movement imparted to the body of the toy in the nature of "sliding on its seat" or "dragging itself along".

Pursuant to a preferred form of my invention, as exemplified by the body of the toy representing a clown in sitting posture, the mechanical actuating parts, operated by a spring of the clock-spring type, or the like, effects a semblance of the motion of a clown "sliding on his seat", or "dragging himself along."

To effect such or similar movement of the toy, for a clown or other form of toy-body, the parts representing the arms of the toy-body are suspended from a rod, such rod being pivotally carried by a link disposed within the casing or frame of the mechanically actuating parts of the toy-body; such rod is reciprocated in and guided by a pair of oppositely disposed slots in such casing or frame, the opposite end of such link being pivotally connected to a crank arm, or a crank shaft or equivalent, driven by the clock mechanism. Such slots are positioned in the casing to extend up and down and at one side of the center of gravity of the mass formed of the toy-body and of the actuating parts directly carried thereby, whereby upon the drive of the clock mechanism and the consequent reciprocation of such rod within such slots, the body of the toy is elevated by the downward movement of such rod in such slots, thereby causing the toy-body and its combined parts to move to a position of unstable equilibrium and drag itself along, thus effecting a forward movement of the toy as a whole.

Further features and objects of the invention will be more fully understood from the following detail description and the accompanying drawings, in which

Fig. 1 is a side elevation of a toy representing a clown, embodying my invention; this view shows the body of the toy in its lowered position;

Fig. 2 is a similar side elevation, but showing the body of the toy raised to an elevated position by the downward movement of the rod connecting the arms preparatory to advancing the toy;

Fig. 3 is a similar view but showing the parts of my toy at an advanced position;

Fig. 4 is a sectional elevation on line 4—4 of Fig. 1, on a somewhat enlarged scale; and

Fig. 5 is a sectional elevation on line 5—5 of Fig. 4.

Referring to Figs. 1, 4 and 5, the outer body 10 of the toy is illustrated in representation of a clown in sitting posture, the oppositely disposed portions 11, 11 representing the leg portions, the terminal portion 12 representing the two feet, the neck portion 13 and the head and cap portion 14, being stamped or otherwise shaped unitarily with the body portion in any suitable manner. It is convenient to stamp such body portions 10 to 14, inclusive, in halves, meeting centrally along the back and the front of the toy-body and secured together by interlocking lugs and notches formed or punched out in the stamped material, or by other suitable means. It will be understood that the representation of the toy-body may be appropriately varied as desired.

The arms 15, 16 are movable relative to the aforesaid body portions and are respectively suspended from the opposite ends of the rod 17 by a riveted, or soldered or other suitable connections as indicated at 18. The lower portions 19, 20 of the arms 15, 16, respectively, may be shaped as hands, and pursuant to my invention serve as elements in the forward or other movement of the toy.

The bottom 21, see Figs. 4 and 5, of the toy-body or equivalent may be substantially flat, or at least of a character of surface to serve as a support, wholly or partially, for the toy-body in its successive stages of movement, as will appear.

Such rod 17 extends through the oppositely disposed slots 22, 23, in the frame 24 of the actuating parts of my toy. In the instance illustrated, see Fig. 5, such slots 22, 23, are disposed at one side of the center of gravity of the toy body and parts carried thereby, and extend substantially rectilinearly, and vertically when the bottom 21 is in full contact with the table, floor or other suitable support 25, i. e., at a stage when wholly supporting the toy. Such slots are of a width to permit the rod 17 to be reciprocated therein under actuation of the mechanism, as appears more fully hereinafter, and accordingly serve as guides for the rod 17. Appropriate slots 26, 27, are formed in the body portion 10 to permit the rod 17 to extend exteriorly thereof for

connection at its ends with the arm portions 15, 16.

As one form of reciprocation of the rod 17, I have illustrated the link 28 which is freely pivotally connected at its upper end 29 to the rod 17 and is freely pivotally connected at its lower end 30 to the crank shaft 31. The crank shaft 31 is driven continuously or intermittently as desired. In the form of the mechanism illustrated in the drawings, the actuation of the crank shaft 31 is continuous, and effected by means of a clock mechanism 32, see Figs. 4 and 5, under drive of a spirally coiled spring 33; the speed and character of rotation of the crank shaft 31 is substantially uniform under control of the flywheel 34.

The number of gears and pinions of the clock mechanism may be as desired, as will be understood; in the particular mechanism illustrated, I have shown the main gear 35 rotated directly by the spiral spring 33 and driving the pinion 36, in turn meshing with the gear 37, fixed to the shaft 38 of the crank shaft 31. The rotation of the shaft 39 of the fly wheel 34 may be had by means of the pinion 40 meshing with the gear 41 which is fixed on the shaft of the pinion 36; the ratio of the respective trains is selected as desired.

Preferably, the link 28 is in the form of a strip of metal, the ends of which are diepressed to form elongated eyes for the pivotal connections.

If desired, and as illustrated, the clock mechanism may be mounted within a subcasing 42.

My invention will be largely understood from the foregoing particulars, taken in connection with the following. Assuming the spring 33 of the clock mechanism to have been wound by means of its winding key 43, and the toy placed on a table 25 in substantially vertical position, and the actuating rod 17 to be at its uppermost position relative to the slots 22, 23, as is indicated in Fig. 1. The rotation of the clock mechanism and therewith of the crank shaft 31 and the link 28, operates to force the rod 17 downwardly in the respective slots 22, 23, namely, in the direction of the arrow 44, see Fig. 4, whereby the body 10 of the top is elevated at the location of application of the elevating force by the rod 17 in its downward movement, as aforesaid, whereby the body of the toy is elevated relative to the floor 25, and by reason of the slots 22, 23 being disposed at the side of the center of gravity of the toy body toward the direction of progress of the toy, the toy body swings freely under gravity to bring the seat portion 21′ of its bottom 21 to a location closer to a line passing through the center of the respective hand portions 19^a, 20^a into contact with the floor 25, thus effecting a movement in similitude of being dragged forwardly to its position 10^a as shown in Fig. 2, the arms 15, 16, remaining in substantially quiescent position and "carrying" the weight of the body and its combined actuating parts.

By such movement, the feet portion 12 is elevated to its position 12^a and the bottom 21 to its position 21^a, all as indicated in Fig. 2. It will be noted that the slot 22 now appears in the relatively rearwardly inclined position 22^a, also indicated in Fig. 2.

Upon the rod 17^a having attained its lowermost position, as indicated in Fig. 2, the continued actuation of the clock mechanism, the crank shaft 31 and the link 28 causes the rod 17 to move upwardly in the slots 22, 23, that is to say, in a direction opposite to the aforesaid arrow 44 of Fig. 4. Such return reciprocation of the arms 15, 16, permits the body of the toy to "lower" itself under gravity from its position 10^a shown in Fig. 2 to its position 10^b shown in Fig. 3, and the hand portions 15, 16, to swing under gravity from their inclined positions (see position 15^b of arm portion 15 shown in Fig. 3) to vertical position as shown in Fig. 1, whereupon the parts of the toy have returned to their originally assumed positions, preparatory for repetition of the respective movements just described.

In such dragging movement, I prefer that a part such as the seat portion 21′, see Fig. 5, of the bottom 21 remain in contact with the surface of the table 25, floor or the like. If desired, the body of the toy may be elevated sufficiently by extending the slots 22, 23, downwardly and increasing the radius arm of the crank shaft 31, to thereby in such dragging movement free the bottom 21 from the table 25, floor or the like, and thereby attain additionally an accentuated to and fro swinging movement of the body 10 and of the arm portions.

From the above, it will be observed that my invention provides for elevating and dragging motions imparted to the body of the toy, the arms or equivalent relatively movable portions of the toy swinging at a stage succeeding the elevating and dragging movements of the body portion.

It will be observed from Fig. 3 that the position 17^b of the rod 17 at the stage at which the hand portion 19^b, is released from contact with the table 25, floor or the like, is vertically or otherwise below the upper end of the slot 22, thereby insuring the free suspension of the arm portion 15 and its hand portion 19 for effecting the swinging motion under gravity from its position 15^b shown in Fig. 3 to its position 15 shown in Fig. 1. Corresponding action and movement takes place relative to the arm portion 16 and its hand portion 20.

It will be observed that the area of contact of the hand portions 19, 20 with the table 25, floor or the like is sufficient to sustain the

weight of the body during the stage of the dragging motion of the body.

It will be apparent that my invention is applicable to other forms of toys mechanically animated to produce a dragging motion imparted to the body portion of the toy and a swinging motion imparted to another portion representing an arm, leg or other natural or imposed movable member or element.

Whereas, I have described my invention by reference to specific forms thereof, it will be understood that many changes and modifications may be made without departing from the spirit of the invention.

I claim:

1. In a toy, a body portion provided with oppositely disposed vertically extending slots disposed at one side of the center of gravity of the body portion, a rod disposed in said slots, arm means pivotally carried by said rod, a link for reciprocating said rod within said slots to thereby elevate said body portion to cause said body portion to swing under gravity and effect a dragging movement of the same and means for actuating said link.

2. In a toy, a body portion provided with oppositely disposed slots extending vertically at a location at one side of the center of gravity of said body portion, a rod reciprocated within said oppositely disposed slots, oppositely disposed arm portions suspended from the opposite ends of said rod for free swinging movement relative to said body portion and motive means for reciprocating said rod.

3. In a toy, a body portion, a member for elevating said body portion and disposed on said portion to be reciprocated vertically in a path at one side of the center of gravity of said body portion, oppositely disposed arm portions suspended from said member for free swinging movement relative to said body portion, said arm portions having an area of contact with a floor or other support to sustain the toy in equilibrium, and motive means for reciprocating said member.

4. In a toy, a body portion, a member for elevating at certain stages said body portion and disposed on said body portion to be reciprocated vertically in a path at one side of the center of gravity of said body portion, oppositely disposed arm portions suspended from said member for free swinging movement relative to said body portion, said arm portions having an area of contact with a floor or other support to sustain the toy in equilibrium, and motive means for reciprocating said member.

5. In a toy, a body portion provided with vertically extending slot means extending at a location at one side of the center of gravity of said body portion, a member for elevating said body portion and reciprocated within said slot means, oppositely disposed arm portions suspended from said members for free swinging movement relative to said body portion, said arm portions having an area of contact with a floor or other support to sustain the toy in equilibrium and motive means for reciprocating said member.

6. In a toy, a body portion provided with vertically extending slot means extending at a location at one side of the center of gravity of said body portion, a member for elevating at certain stages said body portion and reciprocated within said slot means, oppositely disposed arm portions suspended from said member for free swinging movement relative to said body portion, said arm portions having an area of contact with a floor or other support to sustain the toy in equilibrium and motive means for reciprocating said member.

7. In a toy, a body portion having a substantially flat bottom, said body portion being provided with oppositely disposed substantially vertical slots at an upper portion thereof and disposed at one side of the center of gravity of the body portion and vertically above the normal position of said bottom, a rod disposed in said slots, arm portions suspended from said rod for free swinging movement relative to said body portion, said arm portions having parts to contact with a floor or other support when said rod is reciprocated downwardly to sustain the toy in equilibrium, and means for reciprocating said rod in said slots, to thereby elevate said body portion while fully supported by said arm portions and effect a self-dragging movement to the toy.

8. In a toy, a body portion having a substantially flat bottom, said body portion being provided with oppositely disposed substantially vertical slots at an upper portion thereof and disposed at one side of the center of gravity of the body portion and vertically above the normal position of said bottom, a rod disposed in said slots, arm portions suspended from said rod for free swinging movement relative to said body portion, said arm portions having parts to contact with a floor or other support when said rod is reciprocated downwardly to sustain the toy in equilibrium, a link connected to said rod, and a clock-wound mechanism for reciprocating said link and to thereby reciprocate said rod in said slots, to thereby elevate said body portion while fully supported by said arm portions and effect a self-dragging movement to the toy.

In testimony whereof I have signed this specification this 21st day of July, 1926.

HAROLD F. BARTLEY.