

Feb. 14, 1939.

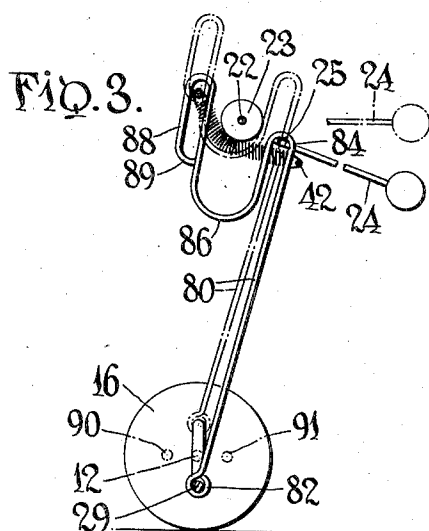
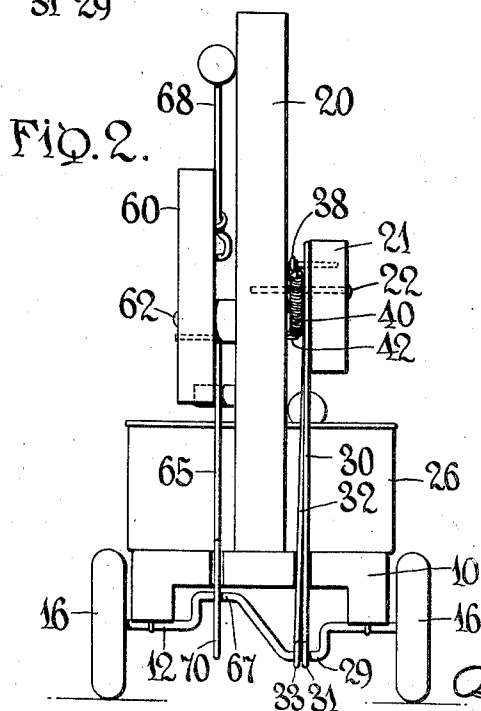
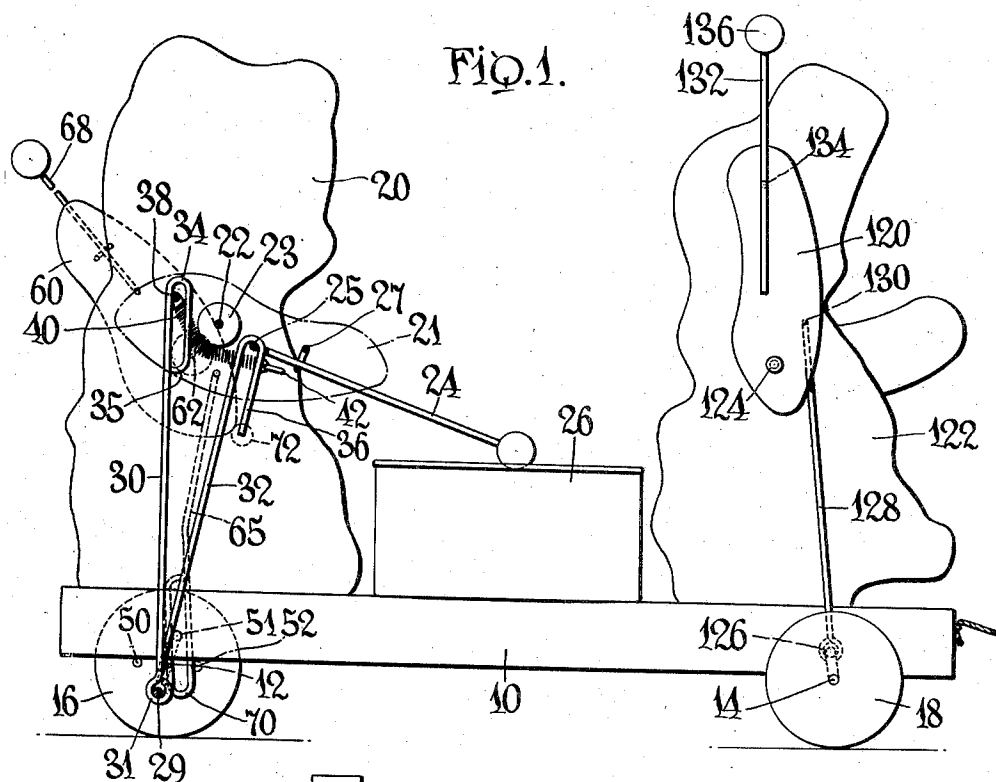
H. G. FISHER

2,147,600

ACTION TOY

Filed June 20, 1938

2 Sheets-Sheet 1



INVENTOR
Herman G. Fisher,
BY
F. B. Buckley & Bean.
ATTORNEYS

Feb. 14, 1939.

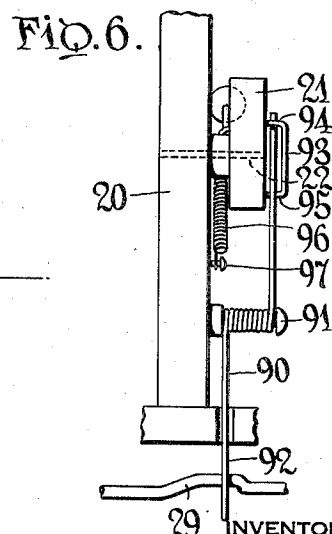
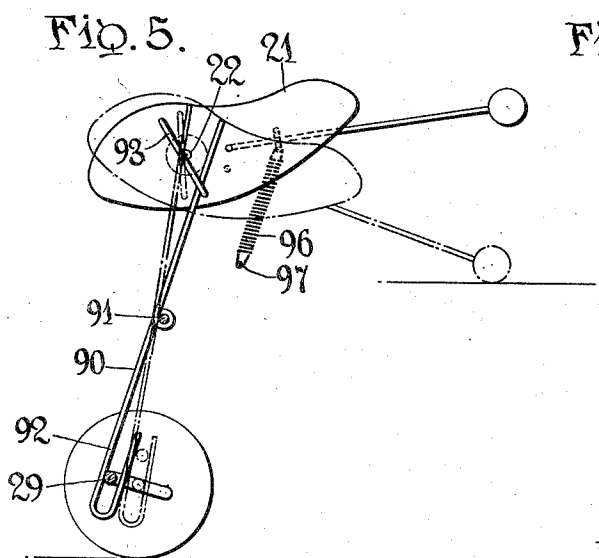
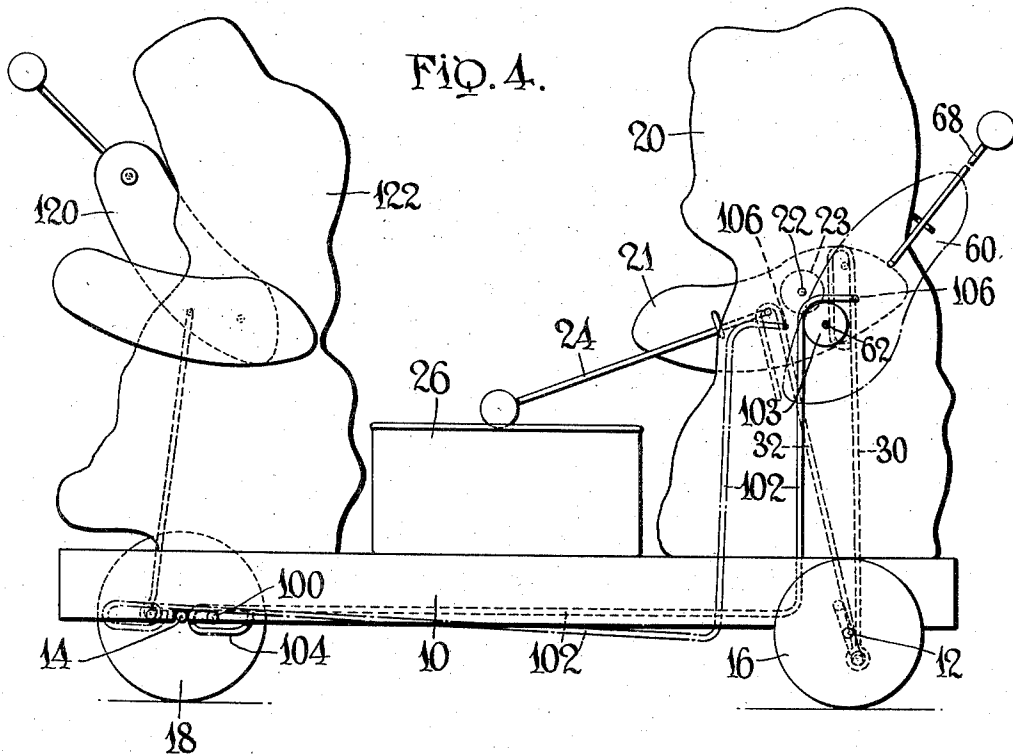
H. G. FISHER

2,147,600

ACTION TOY

Filed June 20, 1938

2 Sheets-Sheet 2



INVENTOR
Herman G. Fisher,
BY
Beau, Brooks, Buckley & Beau.
ATTORNEYS

UNITED STATES PATENT OFFICE

2,147,600

ACTION TOY

Herman G. Fisher, East Aurora, N. Y., assignor
to Fisher-Price Toys, Inc., East Aurora, N. Y.

Application June 20, 1938, Serial No. 214,614

11 Claims. (Cl. 46—107)

This invention relates to action toys, and more particularly to the actuation of movable elements thereof in a novel manner, and to the provision of means for procuring such novel movement.

One of the objects of the invention is to provide an improved toy embodying a simplified mechanism for imparting movements of novel character to an element thereof.

Another object of the invention is to provide a toy in which axle means and movable elements thereof are so arranged and connected that rotational axle motion is translated into reciprocative movement of the movable elements in novel manner.

Another object of the invention is to provide an improved toy having opposed movable elements adapted to be actuated in cyclic movements of different periods.

Other objects and advantages of the invention will appear in the claims and in the specification which is exemplary thereof.

In the drawings:

Fig. 1 is a view, partly in side elevation and partly in section, of a toy incorporating features of the invention;

Fig. 2 is an end elevation of the toy shown in Fig. 1;

Fig. 3 is a view of a modified form of a detail of the operating mechanism of the toy of Fig. 1;

Fig. 4 is a view similar to Fig. 1 of another form of the invention;

Fig. 5 is a fragmentary view in elevation of a modified form of actuating mechanism of the toy of Fig. 1; and

Fig. 6 is a fragmentary end view of the mechanism shown in Fig. 5.

In practicing the invention, a toy may be provided in the form illustrated as comprising a base or frame portion 10 mounted upon axles 12 and 14, to which are connected traction wheels 16 and 18 respectively, for rolling support of the toy upon a floor or other surface. A toy figure 20 is mounted upon the base 10 and may be provided in any desired form to illustrate any kind of animal or fictitious figure as may be desired.

A movable element 21, in the form of a limb or any other appropriate movable feature of the figure 20, is pivotally mounted upon the figure 20 as by means of a pivot pin 22. A washer 23 disposed upon the pin 22 between the figure 20 and the limb 21 serves as a spacer member therebetween. The limb 21 is provided with an outwardly extending arm portion 24 one end of which is adapted to beat upon a drum element 26 of the toy, the other end of which is inwardly bent

into pivotal engagement with the limb 21 as by insertion in an opening 25 in the limb. A staple 27 mounted upon the limb in spaced relation with respect to the pivotal connection at 25 provides a limited lost motion arm retaining means for the arm relative to the limb. Thus the arm 24 is adapted to beat upon the drum 26 upon oscillation of the limb 21, but a limited freedom is provided for at the end of each stroke to preclude the possibility of jamming of the parts. It will be apparent that the movable element 21 may take any other form desired, such as any other limb or movable body portion of an animal toy figure to which reciprocating movement is to be imparted. For example, the movable element 21 may be in the form of a head or lip, or any other movable portion of a toy animal figure.

Means for imparting reciprocative movement to the element 21 in response to rotation of the axle 12 is provided in the form of a combination crank and pitman arrangement of novel form. The crank portion of the combination is provided as an integral axially offset part 29 of the axle 12. The pitman portion of the combination is shown in Figs. 1 and 2 as comprising a pair of links 30 and 32, each of which are formed of wire or rod stock and so bent as to be provided with looped lower end portions 31 and 33 respectively which are adapted to embrace the crank portion 29 of the axle 12 in freely rotatable relation therein. The links 30 and 32 are also provided at each of their upper ends with looped over portions 34 and 36 respectively, the loop 34 of the link member 30 being closed at its lower end portion as at 35. A pin 38 is mounted upon the limb 21 and extends therefrom into the space between the limb 21 and the figure 20 for cooperation with the looped end 34 of the link 30 to assist in actuation of the limb as will be fully explained hereinafter. The pin 38 (Fig. 1) is horizontally spaced from the location of the pivot pin 22 of the limb.

Means for operatively connecting the looped end 36 of the link 32 may be provided in the form of a second pin similar to the pin 38 and spaced horizontally in the opposite direction from the pivot pin 22; or, in the alternative, the arm 24 may be so proportioned that the intumed portion 25 thereof is disposed at the proper location relative to the pivot pin 22 and the pin 38 so as to provide also a suitable mounting for the looped end 36 as shown in Fig. 1. The loops 34 and 36 are of elongate form so as to permit alternate relative movements of the coacting pin elements in different directions relative to movement of

the crank portion 29. A tension spring 40 is connected at one of its ends to the pin 38 and at the other of its ends directly to the figure 20 as by means of a staple 42, being normally slightly stretched and under tension so as to constantly and resiliently urge the limb 21 toward counterclockwise rotational movement, as viewed in Fig. 1. Such motion of the limb 21 is resisted however by coaction at alternate times of the finger 25 with the upper end of the loop 36 of the link 32 and of the lower closed end portion 35 of the link 30 and the pin 38; depending upon the relative vertical positions of the links 30 and 32 as determined by the disposition of the crank portion 29.

For example, the parts are so proportioned and arranged that when the crank 29 is in the solid line position shown in Fig. 1, the link 32 maintains the arm 24 as shown in its lower drum beating position against the action of the spring 40. Rotation of the axle 12 in a clockwise direction as viewed in Fig. 1 toward the crank position indicated by numeral 50 causes both of the links 30 and 32 to shift upwardly relative to the figure and thus relieves the previous restraint of the link 32 upon the limb 21 to permit the limb 21 to be raised at its outer extending end relative to the drum 26 under the influence of the action of the spring 40. Further movement of the crank 29 toward its uppermost position indicated by the numeral 51, however, causes the lower closed end portion 35 of the link 30 to come into abutting contact with the pin 38, and by reason thereof forces the limb 21 to rotate in a clockwise direction about its pivot pin 22 to return the outer end of the arm 24 to drum beating position against the action of the spring 40. Further movement of the crank portion 29 in a clockwise direction toward the position indicated by numeral 52 removes the restraint of the closed end portion 35 upon the pin 38 and allows the limb 21 to move again in a counter clockwise direction under the action of the spring 40. Further movement of the crank portion 29 in clockwise direction toward its lowermost solid line position shown causes the upper closed end portion of the loop 36 of the link 32 to pull downwardly upon the finger 25 to return the limb 21 to drum beating position, or the starting point of the hereinabove description of operation.

Thus, actuating means have been provided in the form of a spring and a pair of simple bent wires whereby a single rotation of the crank 29 imparts two complete cycles of oscillative movement to the limb 21. For the purpose of improving the outer appearance of the toy, spring 40 may be substantially concealed behind the limb 21 as by partially wrapping it about the washer 23, as shown in Fig. 1. It will be understood that in lieu of the spring 40 any other type of limb rotating means may be employed. For example, any other desired form of spring may be arranged in suitably connected relation to the limb 21 for constantly and resiliently urging the limb 21 in a counterclockwise direction of rotation as viewed in Fig. 1; or other means such as rubber bands, may be employed for the same purpose. Also, it will be understood that the limb 21 may be so balanced with respect to the pivot pin 22 that its center of gravity is offset to the left of the pivot pin as viewed in Fig. 1, with the result that the limb will normally tend to rotate in a counterclockwise direction away from its drum beating position under the influence of the forces of gravity.

A second movable limb member 60 is pivotally mounted upon an opposite side of the figure 20 as by means of a pin 62 for oscillatory movement thereabout in response to reciprocatory motion of a third link member 65 which is pivotally connected at its lower end to a crank portion 67 of the axle 12 and at its upper end to the limb 60 at a location having a horizontally offset component with respect to its point of pivotal connection with pin 62. Thus, the limb 60 will be adapted to be moved through one complete cycle of oscillation about the pivot pin 62 in response to each movement of the axle 12 in one of its complete cycles of rotation. The limb 60 is shown as being provided with a second arm 68 for beating upon the drum 26 and; thus the arm 68 is adapted to be reciprocated with only half of the rapidity of the drum beating action of the first mentioned arm 24 upon rotation of the axle 12 as when the toy is rolled across a floor or other surface.

As an additional feature, the limb 60 may be arranged, if desired, to oscillate with a further reduced frequency as compared to that of the limb 21, in response to rotation of the axle 12 by providing the looped lower end 70 of the link 65 in elongate closed end form (Fig. 1) and so proportioning and arranging the parts that when the crank 67 moves toward its lowermost position the limb 60 is rotated toward a vertically disposed position with sufficient rate of motion to carry it over and beyond a dead center position with relation to the link 65 and pin 62. Thus the arm 60 tends to rotate further rearwardly and away from the drum 26 under the forces of gravity toward the position illustrated in Fig. 1 wherein a stop member 72 extending from the figure 20 acts to prevent further counterclockwise rotation of the limb 60. Immediately subsequent and further clockwise rotation of the crank 67 is ineffective with respect to the limb 60 because of the elongate shape of the loop 70 until such time as the crank 67 returns again toward its lowermost position at which time it presses downwardly against the lower closed end portion of the loop 70 and giving the limb 60 a clockwise movement toward its vertical position. Momentum forces then cause it to continue to swing further in clockwise direction and beyond dead center position with respect to the pivot pin 62. As the crank 67 continues to move in clockwise direction and upwardly, the limb 60 is permitted to move downwardly under the influence of gravity forces until the drum beater portion of the arm 68 comes into contact with the drum 26 of the toy.

Thus means have been provided for procuring oscillatory movement of a movable element of the toy at a reduced rate of oscillation in response to rotation of an axle element thereof by the use of a simple bent wire link member in an improved and simplified manner. Also, it will be apparent that by reason of the combination of the link mechanisms of Fig. 1 that a multiple variance of rate of oscillation between two opposed movable members of the toy are obtained in response to simple rotation of a single axle element of the toy.

Fig. 3 illustrates a modified form of actuating means for the limb 21 wherein a single bent wire link 80 is provided in lieu of the pair of links 30 and 32 of the construction shown in Figs. 1 and 2. In this latter form of construction the link 80 is provided with a looped end 82 for journalled connection with the crank portion 29 of the axle 12, 75

and at its upper end is bent into the form of a closed top loop section 84, an intermediate U-shaped section 86 and a terminal closed loop section 88. The lower end portion of the looped section 88 is closed by bending the extreme end portion of the wire inwardly, as at 89, against the U-shaped section 86. The loop portions 84 and 88 of the link are substantially in the same relative arrangement as are the loops 34 and 36 of the construction shown in Fig. 1, and are adapted to engage and co-act with the pin 38 and the finger 25 in substantially the same manner to procure multiple oscillative movements of limb 21 in response to rotation of the axle 12 through a single cycle of rotation. As in the case of the construction of Fig. 1 means for normally and resiliently urging the limb 21 in a counterclockwise direction of movement about its pivot pin 22 is provided, and as shown herein is in the form of a spring 40.

The solid line position (Fig. 3) of the link 80 illustrates the position of the parts when the crank portion 29 is in its lowermost position, the arm 24 being motivated downwardly to its drum beating position at this stage of operation. Upon rotation of the axle 12 to either of the crank positions 90 or 91 it will be seen that restraint upon the limb 21 is to some extent removed, thus permitting the action of the spring 40 to move the limb 21 in a counterclockwise direction of rotation toward the dotted line position of the arm 24. Continued rotation of the axle 12 will cause the crank portion 29 to be moved to its uppermost position which in turn will move the link member 80 to the broken line position shown with the result that the lower end closure 89 of the loop 88 will press against the pin 38 and force the limb 21 to rotate in a clockwise direction, thus returning the arm 24 to its lowered or drum beating position. Thus, for each single complete cycle of rotation of the axle 12 the arm 24 will be moved through two complete cycles of oscillative movement about the pivot pin 22 as an axis.

Another form of the actuating mechanism for imparting multiple rate of oscillation to the limb 21 in response to rotation of crank 29 is illustrated in Figs. 5 and 6 wherein a link 90 which is in the form of a beam pivotally mounted upon the figure 20 intermedially of its length as by means of a pivot pin 91 engaging a looped portion thereof. The lower end of the link 90 is provided with an elongate loop portion 92 for engagement with the crank portion 29 of the axle 12 in such manner as to avoid interference therebetween with respect to vertically relative movements but to provide for horizontal oscillative movements of the looped portion 92 about the pivot pin 91 as a center in response to rotation of the crank portion 29 about its axial center. Thus, the upper end portion of the link 90 is simultaneously given oppositely directed oscillative movements. The upper end portion of the link 90 is arranged for operative engagement with the limb 21 through means of a pair of opposed operative connections which are diametrically opposed with respect to the axis of the pivot pin 22 and which are adapted to be alternatively brought into action to procure counterclockwise rotation of the limb 21 at each end of the oscillative stroke of the upper end of the link 90. As shown herein, this operative connection means may be in the form of a simple U-shaped wire or staple 93 having upper and lower leg portions 94 and 95 respectively engaging the limb 21 and extending laterally therefrom. The outer intermediate or leg connecting portion of

the staple 93 serves as a guide to keep the upper end of the link 90 in operative position relative to the legs 94 and 95.

It will be seen that upon horizontal oscillation of the upper end of the link 90, as in response to rotation of the crank 29, the upper end of the link 90 will bear alternately against the opposed leg portions of the staple at opposite sides of the pivot 22 in each instance to urge the limb 21 to move in a counterclockwise direction of rotation, as viewed in Fig. 5, and away from drum beating position. Intermedially of each bearing action of the link 90 against the legs 94 and 95, the limb 21 will be permitted to rotate to a limited extent in a clockwise direction and to return to its drum beating position under the influence of the action of a spring 96, one end of which is fixedly mounted upon the figure 20 as at 97. It will be noted that the provision of the spring 96 is similar to that of the spring 40 in the forms of construction illustrated in Figs. 1 to 3, except that the spring 96 procures clockwise rotation of the limb, and the principles employed are the same. Likewise, it is understood that other forms of resilient force means may be employed, or that in lieu thereof the forces of gravity may be availed of for the purpose, by arranging a suitable disposition of the center of gravity of the limb 21 relative to the pivot pin 22.

As illustrated in Fig. 6, the link 90 may be in the form of a wire which is intermediately looped about the pivot pin 91 in the form of a coil. Thus, a simple yet effective method of constructing the link 90 is provided, and at the same time provision is made for ample resiliency within the limb actuating mechanism whereby the possibility of the mechanism becoming jammed or locked at either end of its reciprocative stroke is precluded.

It will be understood also that the actuating means of Fig. 5 may be used in combination with the limb actuating means of either Fig. 1 or Fig. 3. In such case the link mechanism of Fig. 5 will operate to move the limb 21 in counterclockwise rotation intermedially of clockwise rotational movements which are imparted to the limb by the link mechanism of Fig. 1 (or Fig. 3, as the case may be.) Thus, the need of spring means for moving the limb 21 in one direction of its rotative movement is dispensed with. It will be noted that the mechanism of Fig. 5 operates to lift the arm of the toy away from the drum beating position during movements of the crank 29 through its upper right hand and lower left hand quadrants of circular movement; and that the mechanisms of Figure 1 and Figure 3 operate to lower the arm 24 to drum beating position during movements of the crank 29 through its upper left hand and lower right hand quadrants of circular movement about its axis of rotation. Thus the mechanisms of Fig. 1 (or Fig. 3) and Fig. 5 function alternately to procure two complete cycles of oscillative movement of the drum beating arm 24 in response to movement of the axle 12 through only one cycle of its rotational movement.

It will be apparent that the actuating mechanism of Figure 5 may be arranged to operate in a manner which is the reverse of that illustrated in the figure by altering the arrangement of the staple 93 relative to the limb 21 so as to dispose the staple transversely of the position illustrated and with the upper leg portion 94 thereof located to the right of the pivot pin 22 and the lower leg portion 95 disposed to the left thereof. In such case the horizontal components of the oscillative movements of the upper end of the leg 90 will pro-

duce clockwise rotational movements of the limb 21 instead of counterclockwise movements as in the form of construction illustrated. In such case means for providing intermedial counterclockwise movements of the limb may be provided as in the form of the spring 40 of Figure 1, or in any of the other previously described manners.

Fig. 4 illustrates another mode of obtaining cyclic variance between oscillative motions of the limbs 21 and 60 by actuating said arms from crank portions of different axles which are rotated at different speeds. As illustrated herein, the wheels 18 of the toy may be formed of diameters differing from the diameters of the wheel 16 whereby the axles 12 and 14 rotate at different speeds upon rolling movement of the toy across a floor or other supporting surface. The limb 60 in this case is motivated about its pivotal axis pin 62 by means of a link connection with a crank portion 100 on the axle 14. As shown, the link connecting member is in the form of a wire or rod 102 which is bent L-shaped to enhance the outer appearance of the toy, one arm portion of which extends horizontally beneath the frame of the toy, the other arm portion of which extends substantially vertically and in alignment with the toy figure 20. One end of the link 102 is provided with a loop portion 104 for engagement with the crank portion 100 of the axle 14. The other end of the link 102 is provided with a turned finger portion 106 which is inserted in a suitable opening in the limb 60 for pivotable connection therewith at a location having at all times during movement of the limb 60 an offset component with relation to the dead center line extending through the crank portion 100 and the pivot pin 62. Thus rotation of the crank portion 100 will procure oscillative drum beating movement of the arm 60 about the pivot pin 62. As shown, the loop 104 may be of elongate form so that a lost motion type of connection is provided whereby the crank 100 will impart jerking movements to the limb 60. To provide such jerking movements at each end of the oscillative strokes of the limb 60, provision is made for permitting the limb 60 to carry over its vertical dead center position relative to the pivot pin 62 under the impetus gained during rearward movement of the limb whereby the limb 60 is enabled to carry over and recline under the forces of gravity in a retracted position as shown in Fig. 4. The upper end portion of the link 102 may be so shaped as to conform to a washer 103 mounted upon the pivot pin 62 between the limb 60 and a figure 20 as shown in Fig. 4, so as to provide a stop for limiting rearward and downward movement of the limb 60 such as to the position shown. Thus, for each cycle of rotation of the crank 100 the limb 60 is moved through one complete cycle of oscillation but with a jerking movement at each end of its oscillative stroke.

The wheels 18, being larger in diameter than the wheels 16, impart rotation to the axle 14 at a rate differing from that of the rotation of axle 12, and the difference in these rates of rotation may be varied to provide any desired relative frequency of movements between the limb 60 and the limb 21 intermediate of the integral multiple frequencies obtainable by the device when employing wheels of equal diameters. Consequently any desired relative frequency of movement of the opposed drum beating elements of the toy may be obtained through the use of a minimum number of simple and easily made parts.

If desired, the elements actuating the limb 60 of the construction shown in Fig. 1 may be so

proportioned and arranged that the necessary momentum forces for carrying the limb 60 over and beyond its gravity dead center position in either direction of its movement about the pin 62 will be developed only whenever the rate of rolling the toy across a supporting surface exceeds a predetermined rate. In such case the rolling of the toy at a reduced rate of motion will result only in alternative lifting and lowering of the arm 60 away from and toward drum beating position at a rate of oscillation equal to the rate of rotation of the axle 14, the limb being lifted in response to pressure of the crank 100 on the inner closed end of the loop 104 as the crank moves from its most remote left hand position toward its right hand position as viewed in Fig. 4 and returning to its lowered drum beating position in response to the forces of gravity thereon during return movement of the crank 100 from its right hand to its left hand position. Rolling of the toy in excess of such predetermined rate, however, brings into effective action the forces of momentum hereinabove described, and the arm 60 thereupon moves at a rate of oscillation equal to one half of the rate of rotation of the axle 14. Thus, in addition to the relative frequency variables previously described and provided for, a still further change in operation is provided for through the optional employment of momentum forces acting upon a movable element of the toy, which may be brought into play at will by the user of the toy by merely varying the rate of travel of the toy.

A modified form of momentum actuated movable element is shown in Fig. 1 as comprising a movable element, which may be in the form of an arm 120 pivotally mounted upon a toy figure 122, as by means of a pivot pin 124, and operatively connected for oscillative movement thereto about a crank portion 126 of axle 14 by means of a push-pull link 128. The link 128 may be in the form of a simple bent wire, having a lower looped end section for rotative engagement with the crank 126 and an upper intumed finger portion 130 for pivotal connection with the arm 120 as by being inserted in a suitable opening therein. The point of pivotal connection 130 between the link 128 and the arm 120 is at a location having an offset component with respect to the dead center line extending between the crank 126 and the pivot pin 124, whereby rotation of the crank portion 126 produces oscillation of the arm 120. A freely swingable member which may be in the form of a baton 132 is pivotally mounted adjacent an outer end portion of the arm 120 and in parallel offset relation thereto as by means of a suitable pin or hanger 134 in such manner that the baton 132 is free to rotate about the hanger 134 as a center without interference with the arm 120. One end of the baton 132 is weighted as at 136 in such manner as to make the opposite ends of the baton slightly unequal in weight. Operation of the toy, however, as by rolling it across a supporting surface, produces oscillative movement of the arm 120 as hereinabove explained, with the result that the hanger point 134 moves in a vertical plane and alternately back and forth in an arc shaped path relative to the toy figure 122 in such manner as to produce unbalanced inertia forces acting upon the baton 132 tending to provide rotation of the baton 132 about the hanger point 134. The rate and regularity of this rotation is subject to great variation because of the multiplicity of force applications

upon the baton, with the result that the baton will appear to be twirled by the figure 122 in very effective "bandmaster style". The rotation of the baton may in some instances be regular and at a uniform rate provided the toy is pulled uniformly and at the proper rate of speed. Variations in the rate of the rolling of the toy however will change the external force system acting upon the baton with the result that the baton will appear to be vigorously flourished.

A toy has thus been provided which comprises in combination a multiplicity of movable members actuated in novel manner. The toy is particularly applicable, for example, in connection with the simulation of a bandmaster and drummer combination; and for this purpose produces very effective results, yet uses only a relatively small number of inexpensively made actuating parts. It will be apparent that when employed in connection with a drum beating device the invention is capable of providing a large variety of realistic sounding drum beating effects, but that they may also be applied to the actuation of any other desired type or form of toy device with equal facility.

Although only a limited number of forms of the invention have been shown and described in detail, it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. In an action toy, an animal simulating figure having a pair of opposed movable limb simulating elements pivotally mounted thereon and adapted for oscillation about their respective points of pivotal mounting in substantially parallel planes for simulating drum beating action, and means operatively associated with said movable members for imparting oscillative movements to said movable members at different frequencies in response to rolling movement of said toy across a supporting surface.

2. In an action toy, an animal simulating figure mounted upon a traction wheel for rolling contact with a supporting surface and having a plurality of limb simulating movable elements pivotally mounted thereon for independent oscillative movement about their respective points of pivotal mounting, and means operatively associated with said traction wheel and each of said movable members for procuring oscillative movements of the latter at different frequencies in response to rolling movement of the toy across a supporting surface.

3. In an action toy, a figure element mounted upon opposed traction wheels for rolling contact with a supporting surface and having a plurality of limb simulating elements pivotally mounted thereon and adapted for oscillation about their respective points of pivotal mounting in substantially parallel planes for simulating drum beating action, means operatively connecting one of said opposed wheels with one of said opposed limb elements and means operatively connecting another of said wheels with the other of said limb elements for procuring independent oscillative movements of said limb elements, said wheels being of different diameters so as to provide oscillative movement of said limb members at different frequencies.

4. In an action toy, a frame, a shaft rotatably carried by said frame and being provided with an axially offset crank portion, a movable element

pivotally mounted upon said frame for oscillative movement about the point of said pivotal mounting, and a pair of link members extending between and connected at their opposite ends to said crank portion and said movable member, means for connecting said links to said movable member comprising a pair of pins extending laterally from said movable member and disposed at opposite locations with respect to said point of pivotal mounting for cooperation with looped end portions of said links respectively, said looped end portions of said links being of axially elongate form to provide alternate lost motion connecting effects with respect to the opposed link and pin connections, whereby rotation of said shaft causes said movable element to oscillate through two complete cycles of oscillation during one cycle of rotation of said shaft.

5. In an action toy, a frame, a traction wheel adapted to be rotated upon movement of said toy across a supporting surface, a crank operable in response to rotation of said wheel, a movable element pivotally mounted upon said frame and connected to said crank for oscillative movement about the point of said pivotal connection by means of a link extending therebetween, said element being movable by motion of said crank and said link toward a gravity dead center position with respect to said point of pivotal connection and swingable therebeyond under momentum forces, said crank and said link mechanism being adapted to subsequently move said element in a return direction toward said gravity dead center position whereby reversely directed momentum forces are enable to cause said element to swing therebeyond and to return to its initial starting position at the expiration of two cycles of rotative operation of said crank.

6. In an action toy, a crank carried by a support, a movable element pivotally mounted upon said support in offset relation with respect to said crank, means associated with said movable element for resiliently maintaining it in a normal position, and means acting upon said movable element and operatively associated with said crank for imparting to said movable element multiple time spaced movements of said movable element about said point of pivotal mounting against the action of said resilient means during a single rotative cycle of said crank, said movable element being allowed to return to normal position under the influence of said resilient means between element actuating movements of said crank associated means.

7. In an action toy, a movable limb simulating element, means associated with said limb simulating element for causing oscillation of said movable element, and a second movable member mounted for free rotation upon an extending end portion of said first mentioned movable member and in a plane substantially parallel to the plane of oscillation thereof, the center of gravity of said second mentioned movable element being offset with respect to the point of pivotal mounting thereof, whereby oscillative movement of said first mentioned movable member imparts periodic unbalanced momentum forces to opposite portions of said second mentioned movable member to procure rotation thereof about its point of pivotal mounting.

8. In an action toy, a frame, a shaft rotatably carried by said frame and being provided in an axially offset crank portion, a movable element pivotally mounted upon said frame for oscillative movement about the point of pivotal mount-

ing, means operatively associated with said movable member and resiliently urging said movable member toward one direction of its movement, and a link system extending between and operatively connected at its opposite ends to said crank portion and said movable member, the operative connection of said link system and said movable member being in the form of a pair of oppositely disposed lost motion connections located at points spaced at opposite sides of said point of pivotal mounting and having offset components with respect to the dead center line between said crank portion and said point of pivotal mounting, whereby the lost motion connection means at one side of said point of pivot mounting operates to move said movable element against the action of said resilient operating means during one operation of a cyclic movement of said crank portion and the other of said lost motion connection means operates to move said movable member against the action of said resilient means during another portion of a cyclic movement of said crank portion, said resilient means being free to return said movable member to its original normal position between said actuating movements of said link system.

9. In an action toy, a frame, a shaft rotatably carried by said frame and being provided with an axially offset crank portion, a movable element pivotally mounted upon said frame for oscillative movement about the point of said pivotal mounting, means operatively associated with said movable member and resiliently urging said movable member toward one direction of its movement, and a link system extending between and operatively connected at its opposite ends to said crank portion and said movable member, the operative connection of said link system and said movable member being in the form of a pair of oppositely disposed lost motion connections located at points spaced at opposite sides of said point of pivotal mounting and hav-

ing offset components with respect to the dead center line between said crank portion and said point of pivotal mounting, whereby the lost motion connection means at one side of said point of pivotal mounting operates to move said movable element against the action of said resilient operating means during one portion of a cyclic movement of said crank portion.

10. In an action toy, a frame, a shaft rotatably carried by said frame and being provided with an axially offset crank portion, a movable element pivotally mounted upon said frame for oscillative movement about the point of said pivotal mounting, and a pair of link members extending between and connected at their opposite ends to said crank portion and said movable member, means for connecting said links to said movable member comprising a pair of pins extending laterally from said movable member and disposed at opposite locations with respect to said point of pivotal mounting for cooperation with looped end portions of said links respectively, said looped end portions of said links being of axially elongate form to provide alternate lost motion connecting effects with respect to the opposed link and pin connections, whereby rotation of said shaft causes said movable element to oscillate through two complete cycles of oscillation during one cycle of rotation of said shaft.

11. In an action toy, an animal simulating figure having opposed movable limb simulating elements pivotally mounted thereon and adapted for oscillation about their respective points of pivotal mounting in substantially parallel planes for simulating drum beating action, and means operatively associated with said movable members for imparting oscillative movements to said movable members at variable frequency relationships in response to rolling movement of said toy across a supporting surface.

HERMAN G. FISHER.