

June 10, 1930.

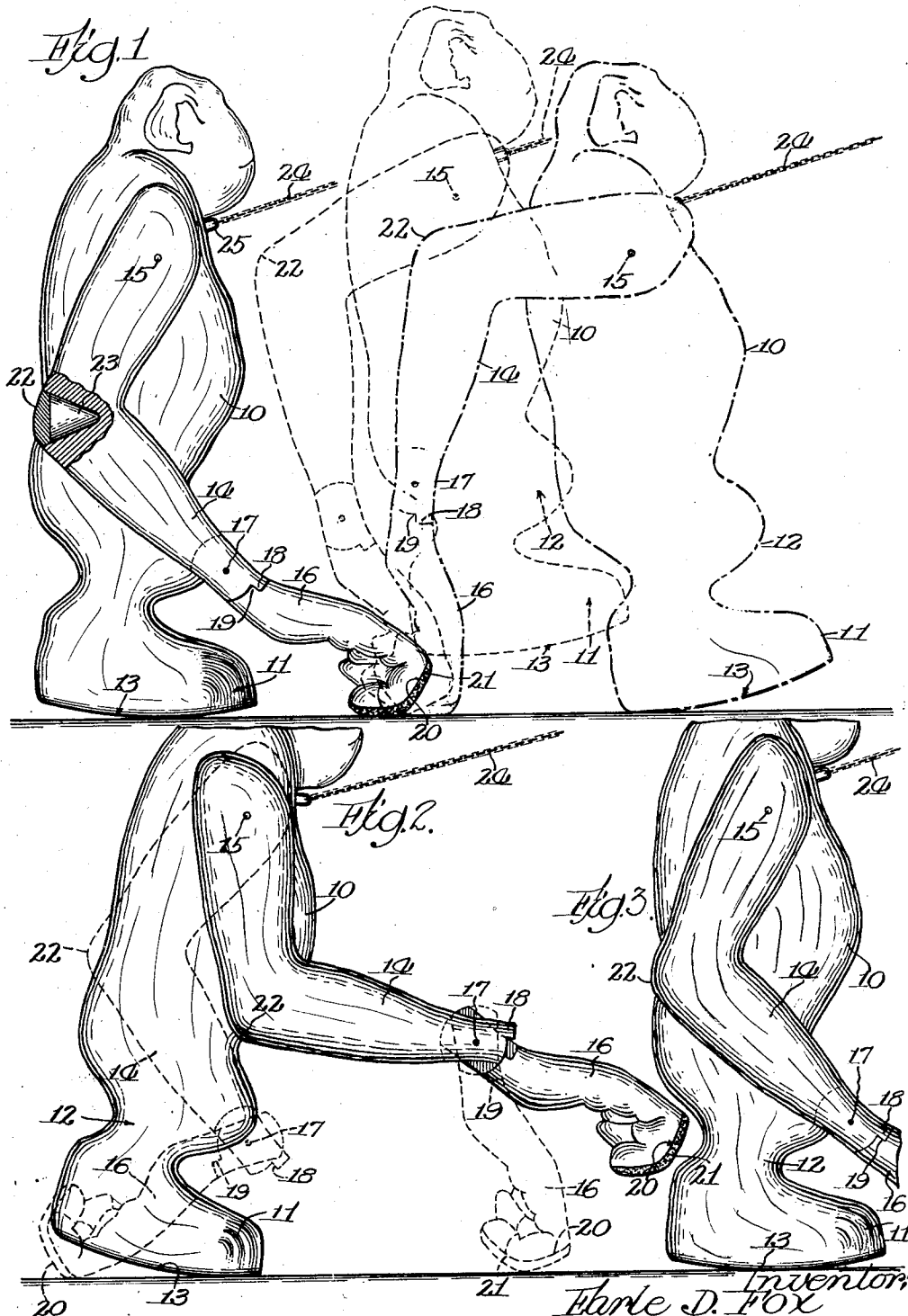
E. D. FOX

1,762,574

MECHANICAL TOY

Filed Nov. 14, 1928

2 Sheets-Sheet 1



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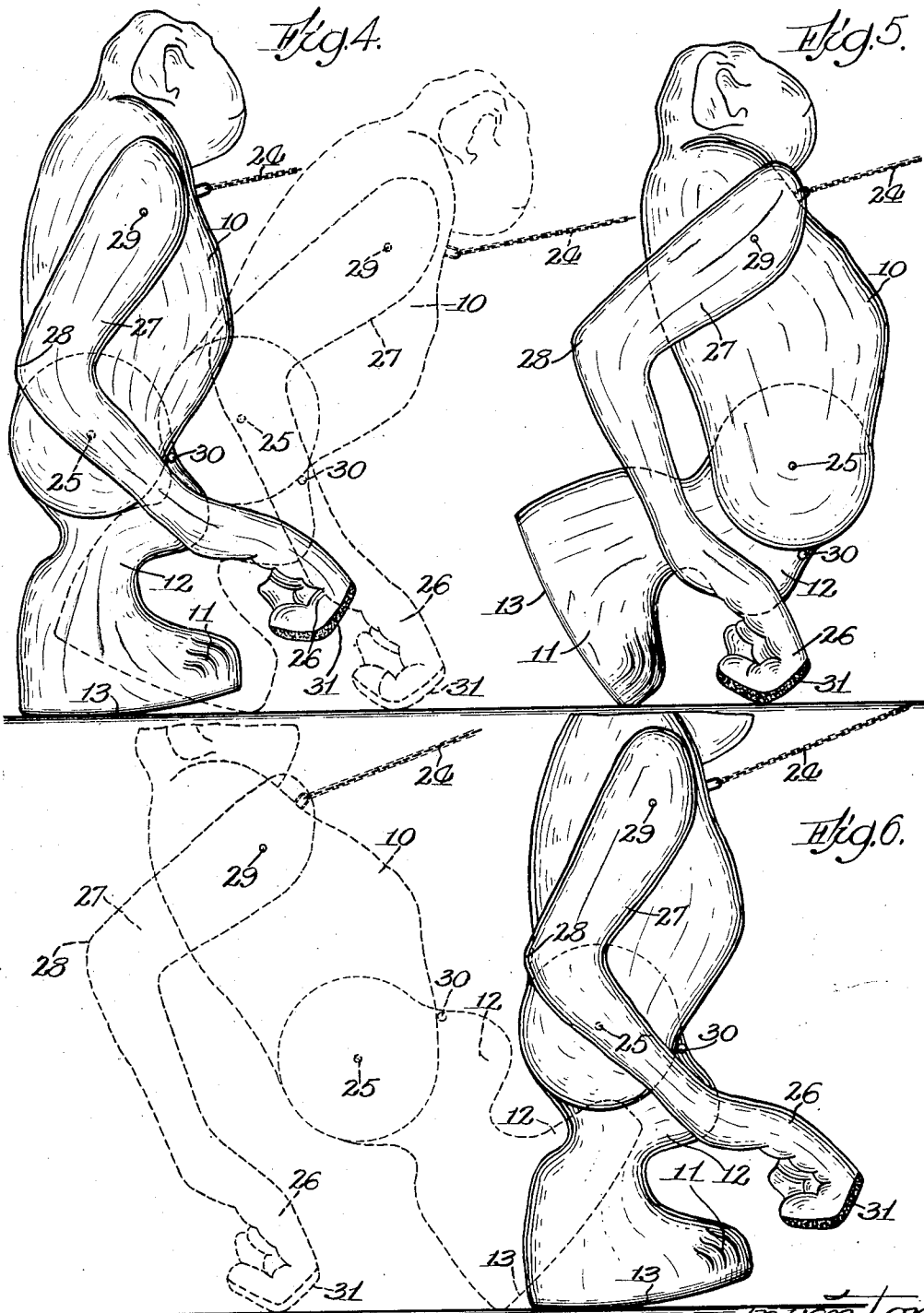
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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MECHANICAL TOY

Application filed November 14, 1928. Serial No. 319,216.

One of the principal objects of the invention is to provide an improved toy constructed and designed to simulate or represent an animal of the simian type, and the invention comprehends more particularly the provision of a toy of this character adopted to be articulated in a way that it will be propelled or advanced in a manner in natural semblance of the manner in which the character or object represented or simulated thereby usually walks or advances or propels itself.

A further object is to provide an improved toy of this character so constructed that it will counterbalance itself while at rest or while changing positions, and which is adapted to be operated by drawing or pulling upon a draw chain or leash without the necessity of having any further attention given thereto, in so far as the operation of the toy is concerned.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention and in which

Figure 1 is a view in side elevation, partly broken away, of a toy of this character constructed in accordance with the principles of this invention and showing the same in full lines in normal or starting position and in dotted lines two other positions assumed during one cycle of operation of the toy.

Figures 2 and 3 are views of the toy showing the same in different positions during the different stages of its advancing or propelling movements.

Figures 4, 5 and 6 illustrate a modified form of the invention and show the toy in the different positions which it will assume during its advancing or propelling motions.

Referring more particularly to the drawings the numeral 10 designates generally the body of the toy which may be of any de-

sired size and configuration but is here shown as simulating one of the larger animals of the simian type, the feet thereof being designated by the reference character 11 while the legs are designated by the reference character 12.

The feet are preferably formed with a curved bottom 13 upon which the body may rock, and 14 designates the arms. The arms are of an abnormal length with relation to the body and are pivotally connected as at 15 with the body portion near the shoulders thereof. The hands 16 are pivotally connected at the wrists by means of a pivot 17 with the forearm, and in order to limit the hands in their movement in one direction about their pivot, co-operating shoulders 18 and 19 are formed respectively on the forearm and the wrist. The fingers of the hands are preferably partially closed so as to form a surface 20 adjacent the knuckles, and if desired suitable material 21 may be secured to such surface, which contacts with the ground, to prevent slipping when the toy is operated in a manner to be hereinafter set forth.

The arms 14 are preferably bent at the elbow 22 and the arms are of an abnormal length, that is to say, the length of the arm from the pivot 15 to the surface 20 is of a greater length than the length of the body 10 of the toy from the pivot 15 to the surface 13, and portions of the arms are slanted when the body is erect so that when the surface 20 is in contact with the ground, as shown in full lines in the Figure 1, the body 10 may swing about the pivot 15 between the arms as indicated in dotted lines in the intermediate position in Figure 1.

If desired, the arms 14 may be weighted, and to that end a weight 23 may be provided at any suitable point but is preferably located adjacent the elbow 22 and may be concealed in any suitable manner.

The operation of the toy is as follows.

The full line position shown in Figure 1 is the normal or standing position of the toy, that is with the hands 16 in advance of the body and resting upon the ground. In this position the toy will counterbalance it-

self and will stand erect. A draw chain or
 leash 24 is connected as at 25 with the toy,
 preferably adjacent the neck thereof and
 by means of which draw chain the toy may
 be articulated. When the toy is in the
 position shown in Figure 1, and by draw-
 ing upon the chain 24, the toy will begin
 to rock about the surface 13 and also about
 the surface 20 formed by the fingers. A
 further movement of the toy in the same
 direction will result in the body 10 being
 lifted from the ground to the position shown
 in dotted lines in Figures 1 and 2, and at
 the same time a forward movement will be
 given to the toy by reason of the fact that
 the toy will then be supported by the arms
 14 and hands 16, the latter forming a lever
 or fulcrum that turns about the surface 20.

From the dotted line position shown in
 Figures 1 and 2, a further pulling upon the
 toy will cause the body 10 to swing about
 the pivot 15 until the end of the surface 13
 contacts with the ground at a point consider-
 ably in advance of the point where the sur-
 face 20 formed by the fingers engages the
 ground. During this movement the hands
 16 will be held against a knuckling or swing-
 ing movement with respect to the arm 14
 by the shouldered portions 18 and 19.
 After the toy has assumed the position
 shown in Figure 2 in full lines, a further
 drawing upon the chain 24 will cause the
 toy to rock about the surface 13, as shown in
 Figure 3, to swing the arms 14 forwardly
 about the pivots 15. In order to permit of
 this movement the hands 16 knuckle with
 respect to the arm 14 as shown in dotted
 lines in Figure 3. The arms 14 will be
 thrown forward with considerable momen-
 tum due to the weight 23, or if desired, the
 arms may be made of sufficient weight to
 cause such action. During the forward
 movement of the arm 14 to the position
 shown in Figure 3 in full lines, the hands
 16 will again move about their pivots 17
 until they assume the position shown in full
 lines in Figures 1 and 3. This will be
 caused by reason of the fact that the sur-
 face 20 will engage the ground and as the
 arms 14 swing backwardly the shoulders 18
 and 19 will engage. Just at the time that
 the hands 16 assume the position with re-
 spect to the arm 14 as shown in Figure 1,
 the toy will be further advanced in a sim-
 ilar manner by pulling upon the draw
 chain 24.

Thus by a steady pull upon the draw chain
 24 it will be manifest that the toy will ad-
 vance itself in a manner to simulate the
 manner of advancement or propulsion em-
 ployed by the animal which the toy is de-
 signed to simulate.

In the form of the invention shown in
 Figures 4 to 6, the operation is the same as
 that shown in Figures 1 to 3, but in Figures

4 to 6 the legs 12 and feet 11 instead of being
 rigid with the body, are pivotally connected
 to the body as at 25, and the hands 26 in-
 stead of being pivotally connected with the
 arms 27 as shown in Figure 1, are rigid with
 the arms. The arms 27, however, are of an
 abnormal length with respect to the body
 and are preferably bent at the elbow 28, the
 length of the arms being such that when
 the toy is tilted as shown in dotted lines
 in Figure 4, the surface 31 will contact with
 the ground before the legs and feet 12-11
 knuckle or swing with respect to the body
 portion 10.

With this form of the invention and when
 a pull is exerted upon the draw chain 24,
 the first movement of the toy will be to the
 position indicated in dotted lines in Figure
 4, the legs 12 and feet 11 being prevented
 from knuckling with respect to the body in
 any suitable manner preferably by means of
 a stop 30 so arranged that it may engage
 a portion of the body. The toy will then
 rock upon the surface 11 and also upon the
 surface 31 formed by a portion of the
 fingers of the hand. Inasmuch as the arms
 27 are of considerable length they will form
 levers and fulcrums about which the arms
 will swing and at the same time the body
 portion 10 will swing about the pivots 29
 from the position shown in Figure 4 to the
 position shown in Figure 5, the legs 12
 and feet 11 swinging about the pivot 25 so as
 to permit the legs and feet to pass between
 the arms 28, as indicated in Figure 5, until
 the toy assumes the position shown in dotted
 lines in Figure 6. A further movement of
 the toy in the same direction will cause it
 to assume an upright or erect position as
 shown in full lines in Figure 6.

While in the drawings there is shown and
 described a toy in simulation of a particular
 animal, it is to be understood that the in-
 vention is particularly adapted for use in
 connection with the simulation of other
 animals and objects.

While the preferred forms of the inven-
 tion have been herein shown and described,
 it is to be understood that various changes
 may be made in the details of construction
 and in the combination and arrangement of
 the several parts, within the scope of the
 claims, without departing from the spirit
 of this invention.

What is claimed as new is:—

1. A mechanical toy embodying a body,
 feet and leg portions constituting a body
 unit and arms and hands constituting a
 lever unit, means connecting the lever unit
 with the body unit for free swinging move-
 ment with respect thereto on a pivot fixed
 against bodily movement with respect to
 said body, the said toy adapted to be sup-
 ported on the ground by the body unit, one
 of said units being longer than the other

unit whereby when the body unit is tilted upon the ground the lever unit will engage the ground and the body unit will swing past the lever unit and engage the ground in advance of the point of contact of the lever unit with the ground, and a joint in one of said units for causing the distance between said pivot and the free extremity of the jointed unit to be increased and decreased during the operation of the toy.

2. A mechanical toy having a body, legs and feet constituting a body unit and arms and hands constituting a lever unit, said arms being connected to the body on a pivot fixed against bodily movement with respect to said body portion, the said arms and hands being of a combined normal length from said pivot greater than the normal length of the body of the toy from said pivot to the bottom of the feet, means for advancing the toy to cause the same to move about a fulcrum formed by the free extremities of the arms and hands in contact with the ground, said body swinging between said arms to cause the feet portion to engage the ground in advance of the point of contact of the arms and hands with the ground, to form another fulcrum or pivot about which the body may be rocked as the body is further advanced, to cause the said arms to be swung forwardly with respect to the body about said pivot to cause the ends of the arms and hands to contact with the ground in advance of the last recited fulcrum, and means whereby the length of one of said units will be alternately increased and decreased during the operation of the toy.

3. A mechanical toy embodying a body, feet and leg portions constituting a body unit and arms and hands constituting a lever unit, means connecting the lever unit with the body unit for free swinging movement with respect thereto on a pivot fixed against bodily movement with respect to said body, the said toy adapted to be supported on the ground by the body unit, one of said units being longer than the other unit whereby when the body unit is tilted upon the ground the lever unit will engage the ground and the body unit will swing past the lever unit and engage the ground in advance of the point of contact of the lever unit with the ground, and a joint in one of said units for causing the distance between said pivot and the free extremity of the jointed unit to be increased and decreased during the operation of the toy, the said lever unit being weighted, impetus being imparted to the lever unit when the toy is rocked upon the fulcrum formed by the engagement of the body unit with the ground.

4. A mechanical toy having a body, feet and leg portions constituting a body unit

and arms and hands constituting a lever unit, means connecting the lever unit with the body unit for free swinging movement with respect thereto on a pivot fixed against bodily movement with respect to the said body, the said toy adapted to be supported upon the ground by the body unit, the lever unit being of a length that when the body unit is tilted upon the ground the lever unit will swing about said pivot to engage the ground to form a fulcrum upon which the lever unit is rocked to cause the body unit to swing upon said pivot to pass between the arms to contact the ground in advance of said fulcrum, means for maintaining the point of contact of the lever unit with the ground from slipping with respect thereto, and a joint in one of said units whereby the sections of the jointed unit will swing with respect to each other.

5. A mechanical toy embodying a body, feet and leg portions constituting a body unit and arms and hands constituting a lever unit, means connecting the lever unit with the body unit for free swinging movement with respect thereto on a pivot fixed against bodily movement with respect to said body, the said toy adapted to be supported on the ground by the body unit, one of said units being longer than the other unit whereby when the body unit is tilted upon the ground the lever unit will engage the ground and the body unit will swing past the lever unit and engage the ground in advance of the point of contact of the lever unit with the ground, a joint in one of said units for causing the distance between said pivot and the free extremity of the jointed unit to be increased and decreased during the operation of the toy, and means for limiting the movement of the jointed portion of the last said unit in one direction.

In testimony whereof I have signed my name to this specification, on this 3rd day of November, A. D. 1928.

EARLE D. FOX.