Feb. 22, 1927. 1,618,179

G. W. FERGUSON

TOY

Filed Jan. 23, 1922 2 Sheets-Sheet 1

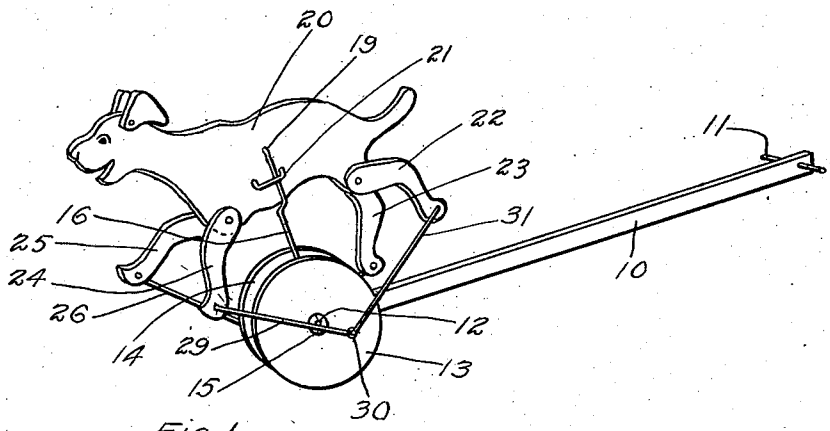


Fig. 1

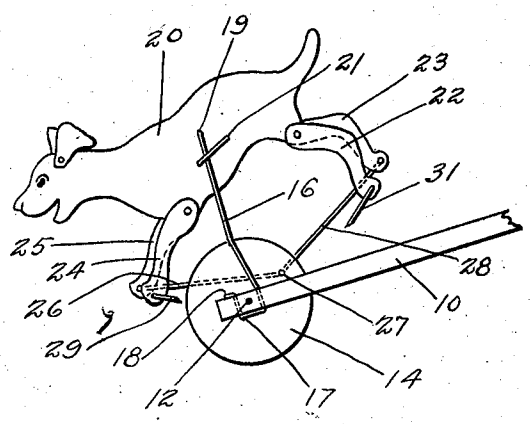


Fig. 2

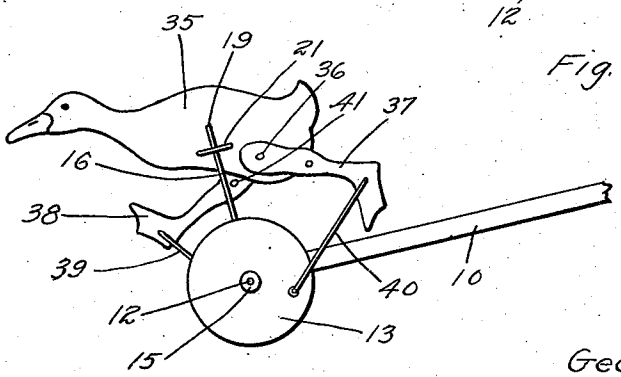


Fig. 3

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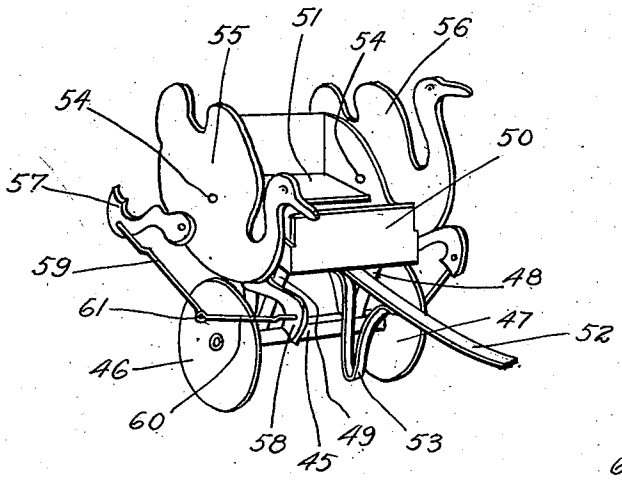


Fig. 4

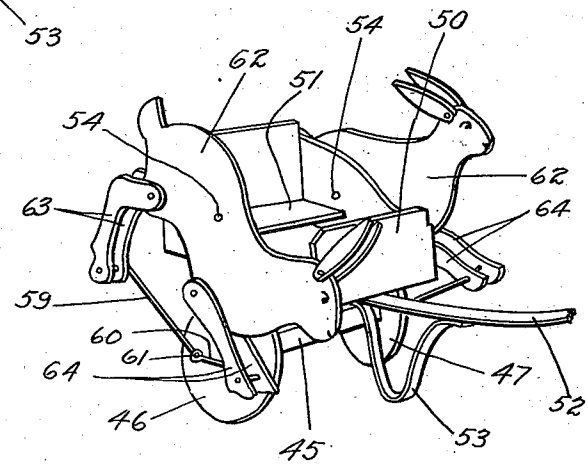


Fig. 5

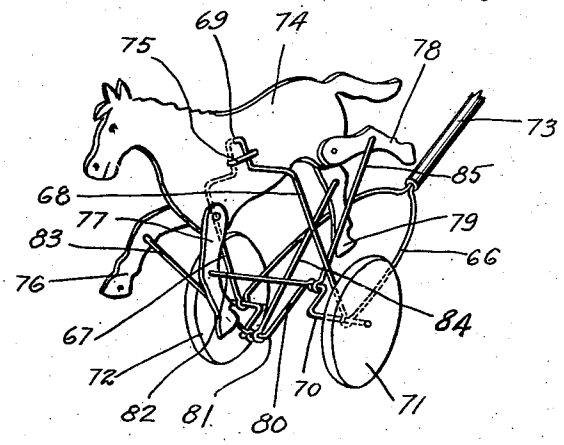


Fig. 6.

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Patented Feb. 22, 1927. 1,618,179

UNITED STATES PATENT OFFICE.

GEORGE W. FERGUSON, OF MINNEAPOLIS, MINNESOTA.

TOY.

Application filed January 23, 1922. Serial No. 531,052.

My invention relates to toys mounted on wheels and has for its object to produce a toy having a body portion in the form of an animal adapted to be operatively connected to said wheels so as to pass through a number of motions as the toy is drawn about upon the floor.

Another object is to form the figure with limbs pivoted thereto and to provide operating connections between said wheels and means whereby the limbs are moved as the toy is operated.

A still further object is to pivot the body of said figure to the frame of the toy and to operatively connect the pivoted limbs thereof to the wheels or axle of said toy so that the body is given an oscillatory movement through the movement of said limbs.

A still further object is to independently connect different limbs to the different wheels of the toy so that as the toy is drawn about in a curved path the wheels thereof rotate at different rates of speed and cause the respective limbs of the animal to travel in different relation to one another.

In carrying out my objects I provide a frame work having journalled thereto a pair of wheels. Upon the frame work I pivotally mount the body of a figure comprising a portion of the toy and on the figure I pivotally connect a number of limbs. These limbs are pivotally connected at their lower ends by means of arms to eccentric points on the wheels or to cranks on the axle so that as the wheels rotate, the limbs are caused to oscillate and simultaneously move the body of the animal.

The full objects and advantages of my invention will appear in connection with the detailed description thereof and are particularly pointed out in the claims.

In the drawings, illustrating the application of my invention in one form:—

Fig. 1 is a side elevational view of my improved invention.

Fig. 2 is a detail view of part of the device shown in Figure 1 illustrating the connection of the frame member thereto.

Fig. 3 is a side elevational view of another form of the invention.

Fig. 4 is a perspective view of another form of the invention.

Fig. 5 is a perspective view of a modified form of the invention shown in Figure 4.

Fig. 6 is a perspective view of still another form of the invention.

The form of the invention shown in Figures 1 and 2 comprises a handle 10 by means of which the toy is drawn about on the floor, said handle having a hand grasping portion 11 positioned at the end thereof. At the other end of said handle 10 the same is provided with an axle 12 extending directly through the same upon which are journalled two wheels 13 and 14. These wheels are held in place upon the axle 12 by means of washers 15 which are held thereon by means of riveting the ends of said axle 12. Wheels 13 and 14 are free to rotate upon the said axle 12.

Issuing upwardly from the lower end of handle 10 is provided an upright 16 which is formed with a looped portion 17 passing directly through the handle 10 on each side of the axle 12, the extreme end 18 of this upright being bent over as clearly indicated in Figure 2 to securely clamp and hold the said upright in place upon the handle. Upright 16 is provided at its uppermost end with a portion 19 which is bent outwardly at right angles therefrom, and which serves to provide a trunnion on which the body of the animal is pivoted. In the drawings I have shown an animal having a body 20 which body is pivoted to the trunnion 19 as indicated. A keeper 21 secured to body 20 serves to hold the trunnion 19 in place upon the body and also serves to limit the oscillatory movements of said body.

To the body 20 are pivotally connected rear legs 22 and 23 and fore legs 24 and 25 which extend downwardly in proper fashion. These legs are formed in pairs, being positioned one on each side of the body of the animal. The leg 25 has pivotally connected to it an arm 26 which is pivotally connected to wheel 14 in an eccentric portion thereof as indicated at 27. Leg 23 is similarly connected by an arm 28 to the wheel 14 in the same point 27 thereof. In like manner leg 24 is pivotally connected by an arm 29 to an eccentric point 30 on wheel 13 and leg 22 is connected by an arm 31 to the same point 30 on wheel 13.

The operation of the device is as follows. When the toy is drawn about on the floor wheels 13 and 14 are caused to rotate which rotation manipulates the arms 26, 28, 29, and 31 to oscillate the legs 22, 23, 24, and 25. These legs being pivotally connected to the body 20 of the animal cause the same to oscillate about the trunnion 19. This move-

ment given to the limbs and body of the animal mounted upon the standard 16 causes the said animal to pass through movements characteristic of a running animal. When the toy is drawn about on the floor in a curved path the two wheels travel at relatively different speeds and the pairs of legs travel in different relation to one another than when the wheels are traveling together. This has the effect of varying the movement imparted to the body proper through said legs and also varying the relative position of the legs. In this manner the toy can pass through a great number of motions which give the same the appearance of an animated object.

In Figure 3 I have shown a toy similar to that indicated in Figure 1, which differs principally in that particular form of figure mounted on the same. In this case a body 35 is provided which is in the shape of a bird. This body has pivoted to it by a single pivot 36 two legs 37 and 38. An arm 39 is pivoted to leg 38 and to the wheel 14 while an arm 40 is pivoted to the leg 37 and the wheel 13. A stop 41 formed on each of the legs 38 and 37 adjacent the body 35 is adapted to engage said body when the said legs are positioned relative to said body in their extreme relation thereto. These stops serve to give the body a quick reverse motion and thereby cause the movements of the animal to be more pronounced.

The operation of this toy is identical with that previously described, the figure passing through animated motions as the toy is drawn about on the floor. The dotted positions shown in Figure 3 indicate the various positions which the body of the bird may take.

If desired, my invention may be applied to a cart as shown in Figure 4. In this form of the invention an axle 45 is used which has journalled on the ends of the same a pair of wheels 46 and 47. Upon the axle 45 is attached two upwardly extending brackets 48 and 49 which are rigidly secured thereto and which support a box 50 which serves as a body for the cart. Box 50 is provided with a seat 51 in which a child may sit and has attached to its underside a handle 52 by means of which the cart may be drawn about upon the floor. A rest 53 secured to the underside of handle 52 serves to support the cart in a proper position when the handle 52 is not held in the hand.

Upon the outer sides of the box 50 are pivotally mounted on pivots 54 two figures 55 and 56 which may be in the shape of a bird or other desired animal. These figures have pivoted to them on opposite sides legs 57 and 58, which legs are connected by means of arms 59 and 60 to an outwardly extending pivot 61 eccentrically attached to each of the wheels 46 and 47. As the cart is drawn about on the floor the two animals pivoted to the sides of the body on box 50 are caused to pass through motions in a manner similar to the other forms of the invention.

The form of the invention shown in Figure 5 differs from that shown in Figure 4 principally in the type of animal used in connection with the same. In this form of the invention I have shown the method of applying a four legged animal having a body 62 with hind legs 63 and fore legs 64 pivoted to the same. In this case both of the legs 63 are pivoted to the end of the arm 59 and travel together and similarly both of the fore legs 64 are pivoted to the same end of arm 60 and also travel together. The operation of this device is identical with that shown in Figure 4, the animal passing through movements similar to those described for the other forms of the invention excepting that the hind and fore legs travel together in pairs.

In the form of the invention shown in Figure 6 I employ a U-shaped wire frame 66 which is formed with two upstanding uprights 67 and 68 connected together at their upper portions at 69 to form a trunnion. At the points of juncture of the uprights 67 and 68 and frame 66 is journalled an axle 70 to which is rigidly attached two wheels 71 and 72. The end of frame 66 has secured to it a handle 73 by means of which the device may be drawn or pushed about upon the floor.

Upon the trunnion 69 is pivoted a body 74 of an animal which in this particular instance is shown to be in the shape of a horse. A keeper 75 similar to the keeper 21 described in another form of the invention is provided which limits the movement of the body 74 relative to the device. At the forward end of the body 74 is pivotally connected thereto fore legs 76 and 77 and in the rear end of the body 74 hind legs 78 and 79 are pivoted which issue outwardly therefrom in a natural manner.

The legs 76, 77, 78 and 79 are operatively connected to the wheels 72 and 73 as follows. Axle 70 is provided with two offset portions. An arm 82 pivotally connected to crank 80 is pivotally connected to the fore leg 77. In like manner an arm 83 pivotally connected to crank 81 is pivoted to the fore leg 76. Similarly arms 84 and 85 are respectively pivoted to the cranks 81 and 80 at one end and at their other ends to the hind legs 79 and 78.

It can readily be comprehended that with wheels 71 and 72 fast upon the axle 70 that as the toy is pushed about on the floor by means of handle 73 the cranks 80 and 81 serve to manipulate the various arms 82, 83, 84 and 85 which in turn actuate legs 76, 77, 78, and 79 and cause the same to pass

through various motions. These legs in turn being pivoted to the body 74 impart an oscillatory movement to the body when said legs reach their extreme positions thus giving the figure movements which are quite characteristic to a running animal. The principal difference between this toy and others lies in the fact that the arms connected with the legs are pivoted to cranks formed on the axles instead of being directly pivoted to the wheels, and that the relative movements of the legs in opposite sides of the animal are fixed.

The advantages of my invention are manifest. The device can be very cheaply constructed and still it can be made very spectacular. In the forms of the invention where the legs are independently operable the motions through which the animal pass continually vary as the relation of the wheels to one another becomes altered. All of the parts are driven from the rotatable parts mounted on a single axle thereby greatly reducing the number of parts thereof.

In accordance with the patent statutes I have described the principles of operation of my invention together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the construction shown is only illustrative and that the invention can be carried out by other means and applied to uses other than those above set forth within the scope of the following claims.

I claim:—

1. A toy comprising a support, a single axle mounted on said support, wheels independently journalled upon said axle, a figure movably supported on said support, a rigid one-piece limb pivoted to said figure, a connecting link pivoted at one end to the heel of said limb and at its other end to an eccentric point on one of said wheels, another rigid one-piece limb pivoted to said figure and another link pivoted to said second limb at its heel and at its other end to an eccentric point on said other wheel.

2. A toy comprising a wooden handle, wheels pivotally connected to said handle, an upright mounted upon said handle, an angular end portion formed integral with said upright and adapted to attach said upright to said handle, a movable figure mounted upon said upright and means limiting the movement of said figure, said angular end portion consisting of a portion bent back upon itself which passes through and is secured to the handle.

3. A toy comprising a supporting member, a single axle mounted thereon, a pair of wheels mounted on said axle, a figure pivotally supported directly on said supporting member, sets of movable members on said figure and means secured eccentrically to said wheels for jointly operating pairs of said movable members from each of said wheels.

4. A toy comprising a supporting member, a single axle mounted thereon a pair of wheels mounted on said axle, a figure pivotally supported directly on said supporting member, pairs of limbs pivotally connected to said figure and means for operatively connecting pairs of said limbs eccentrically with each of said wheels.

5. A toy comprising a wooden handle, a wire axle passing directly through one end of said wooden handle and held therein, a wire upright having an angularly shaped end adapted to extend through said handle, and attached thereto, a figure pivotally mounted on the free end of said upright, and means for operating said figure from said wheels, said angular end portion consisting of a portion bent back upon itself which passes through and is secured to the handle.

6. A toy comprising a wooden handle, a wire axle passing directly through one end of said wooden handle and held therein, a wire upright having an angularly shaped end adapted to extend through said handle, about said axle, a figure pivotally mounted on the free end of said upright, and means for operating said figure from said wheels, said angular end portion consisting of a portion bent back upon itself which passes through and is secured to the handle.

7. A toy comprising a frame, a single axle mounted in said frame, a pair of wheels independently rotatable upon said axle, a figure having a body portion pivotally mounted on said frame, a pair of fore legs pivoted to said body portion, a pair of hind legs pivoted to said body portion, a pair of arms pivoted at one end to an eccentric point on one of said wheels and at their other end to a fore and hind leg respectively on one side of the figure, a corresponding pair of arms pivoted at one end eccentrically to the other of said wheels and at their other end respectively to the hind and fore legs on the other side of the body.

8. A toy comprising a narrow handle, an upright extending upwardly from said handle and in the same plane therewith, a pair of closely spaced wheels mounted one on each side of said handle and in close proximity thereto, a figure pivotally mounted upon said upright, stops limiting said pivotal movement, limbs pivoted to said figure, and means connected to said wheels at their outer surfaces and operating said limbs, whereby diverse varying movements can be given to the limbs by the wheels.

In testimony whereof I affix my signature.

GEORGE W. FERGUSON.