Jan. 9, 1934. C. J. McLEOD 1,943,129

TOY

Filed June 17, 1931

Fig 3.

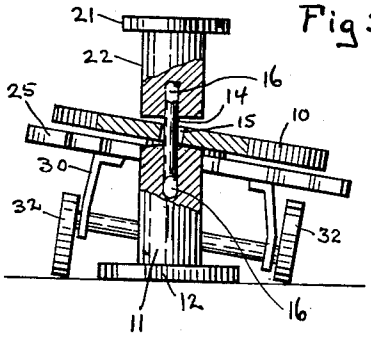


Fig 4.

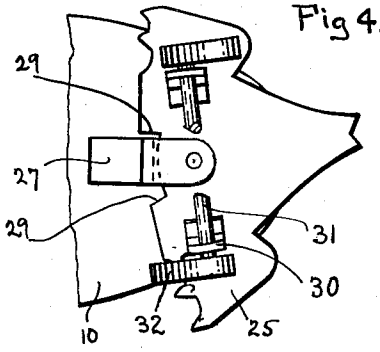
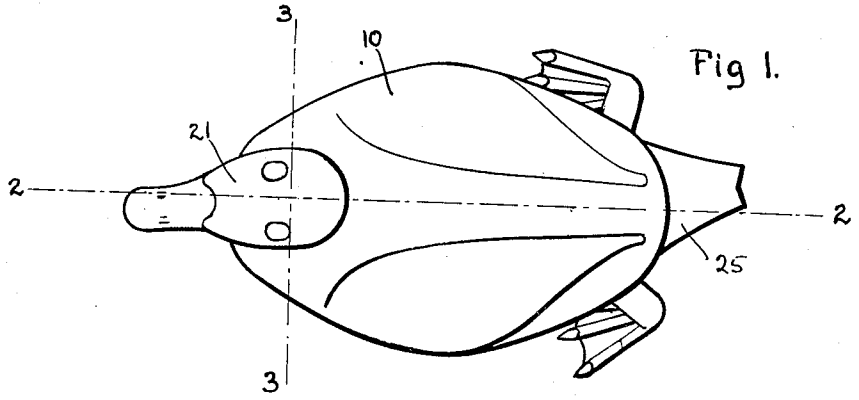


Fig 1.



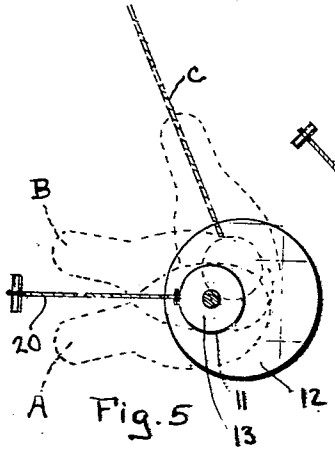
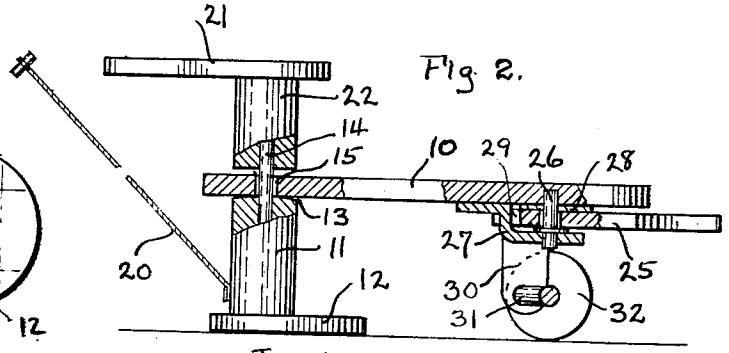


Fig. 5

Fig. 2.



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Patented Jan. 9, 1934 1,943,129

UNITED STATES PATENT OFFICE

1,943,129

TOY

Clifford J. McLeod, Quincy, Mass.

Application June 17, 1931. Serial No. 544,939

19 Claims. (Cl. 46—45)

This invention relates to a toy figure which, when drawn across a floor, is given a motion resembling the movements of certain animals or fowl, such as ducks, turtles, alligators, etc. By way of example, a toy figure resembling a duck is hereinafter described and is illustrated on the drawing, of which,—

Figure 1 is a plan view of a figure embodying the invention.

Figure 2 is a side elevation of the same, portions being broken away to show in section on the line 2—2 of Figure 1.

Figure 3 is a front elevation of the same, portions being broken away to show in section on the line 3—3 of Figure 1.

Figure 4 is a plan view of the rear portion of the figure, from beneath.

Figure 5 is a plan view of a member of the figure.

Referring to the drawing in detail, the figure illustrated is intended to represent a duck, the body member being generally horizontal. As illustrated on the drawing, this body portion may consist of a flat plate of wood or other suitable material cut to proper contour and suitably decorated on its upper face to resemble the back and wings of a duck. The forward portion of this body 10 may be supported by a post 11 which rises eccentrically from a circular plate 12. The latter is adapted to rest flat upon the floor. The upper end of the post 11 may, if desired, be slightly rounded as at 13. Projecting upwardly from the center of the post 11 is a spindle 14 of reduced diameter, this spindle being preferably of metal. The spindle 14 projects loosely through a vertical bore 15 in the forward end portion of the body 10 so that the body may rock on the upper end 13 of the post 11. As hereinbefore stated, the post 11 is preferably eccentric to the plate 12, the greater portion of the plate 12 extending normally toward the rear from the post. A flexible member 20, such as a string, is preferably attached to the forward face of the post near the lower end thereof, that is, slightly above the upper surface of the plate 12. Thus the frictional drag of the floor on the lower face of the plate 12 tends to align the center of the frictional force on the bottom of the plate with the direction of pull of the string 20.

On the upper end of the spindle 14, above the body 10, I may mount a head piece 21 which may also include a neck portion 22, these pieces being suitably decorated. The end portions of the spindle 14 may be flattened as at 16 so as to prevent any turning of either the post 11 or the head piece 22 about the spindle.

The rear portion of the body 10 is preferably supported by means capable of imparting to the body itself a lateral rocking motion. To this end a tail-piece 25 may be provided, this tail-piece being mounted on a vertical pivot 26 fixed to the under side of the rear portion of the body 10. As shown, the tail-piece may consist of a flat member having a suitable contour to represent the feet and tail of a duck, these portions preferably projecting beyond the contour of the body 10, as indicated in Figure 1. The pivot pin 26 may be supported at its lower end by a suitable bracket 27 attached to the under face of the body 10, a spacing member 28 being provided between the tail-piece 25 and the body 10, so that the tail-piece is clear of the body 10, and is free to rock in its own plane about the pivot 26. The forward edge of the tail-piece 25 is indented to form a pair of shoulders 29 to limit the swing of the tail-piece about its pivot pin 26. Thus the tail-piece is kept substantially aligned with the body 10. Extending downwardly from the tail-piece 25 are a pair of lugs 30 in which may be journaled a shaft 31. On the ends of the shaft 31, a pair of wheels 32 may be eccentrically mounted, these wheels, as shown in Figures 3 and 4, being preferably in opposite phase, so that when the figure is drawn along the floor, the rotation of the wheels 32 raises alternate sides of the tail-piece and hence of the body 10, causing these members to rock laterally. The end portions of the shaft 31 may be flattened similarly to the end portions 16 of the spindle 14 to prevent turning of the wheels 32 with respect to the shaft 31. As shown in Figure 4, the normal amplitude of swing of the tail-piece about its pivot resulting from the eccentricity of the wheels is insufficient to bring either shoulder 29 up against the bracket 27. The shoulders thus permit free oscillation of the tail-piece through its ordinary amplitude, but prevent excessive angular movement thereof such as might otherwise occur when the direction of progress of the figure as a whole is changed.

Due to the eccentricity of the wheels 32, the portions of the shaft 31 adjacent to the respective wheels will advance at different speeds with each revolution of the wheels so that there will also be an oscillation of the shaft on a vertical axis. In lieu of eccentric wheels, elliptic wheels may be employed to oscillate the shaft. This component of oscillation caused by the eccentricity of the mounting of the wheels 32 is taken

up by the motion of the tail-piece 25 on its vertical pivot 26, so that this component of oscillation is not wholly transmitted to the body 10. Hence the oscillation of the body 10 is mostly lateral and does not include alternate surging of the opposite sides of the body. This action results in a motion of the figure as a whole closely resembling the natural waddle of a live duck. As the figure is drawn forwardly across a floor or other suitable surface, the lateral locking of the body causes the weight of the forward portion thereof to bear unevenly on the top 13 of the post 11. This causes the plate 12 to bear more heavily on the floor first on one side and then on the other.

When the body 10 and the tail-piece 25 are actuated in the manner above described, the pivot 26 is tipped in opposite directions alternately so that the forward end of the body tends by gravity to swing sidewise about the pivot 26, since most of the body is forward of the pivot, and thus tends to exert a lateral thrust against the spindle 14 and to throw the weight of the forward part of the body on one side of the upper face 13 of the post 11. This causes the plate 12 to bear more heavily upon the floor at one side than the other, due to resistance to said thrust. The lateral thrust on the spindle 14 is augmented by the friction which occurs between the body 10 and the tail-piece 25 as the latter is oscillated about the pivot 26. As the toy is drawn across the floor or other frictional surface, the uneven bearing of the plate 12 thereon imparts a transverse rocking movement to the post 11 about a vertical axis, when the figure advances, causing a lateral movement of the forward part of the body and an oscillating movement of the head piece between positions such as are illustrated at A and B in Figure 5.

Since it is desired to limit the amount of swinging of the head as the toy travels, the draft string is attached to the front side of the post 11, so that a forward stress is constantly exerted thereon which prevents excessive oscillation of the head and body. Furthermore, when the angle of leading is changed as by pulling the string 20 in another direction, as indicated at C, the head piece 21 turns to follow the string.

I claim:

1. A toy figure comprising a generally horizontal body, a fore member loosely supporting the forward end portion of said body for rocking motion relatively to said fore member, said fore member including a horizontal plate and an upright post on said plate, and means for rocking said body relatively to said post when the figure advances.

2. A toy figure comprising a generally horizontal body with a vertical bore near its forward end, a fore member including a plate adapted to remain flat on the floor, an upright post on said plate, a spindle of reduced diameter extending upwardly from said post and loosely through said bore, a head-piece on the upper portion of said spindle, and means for rocking said body laterally with respect to said post as the figure advances.

3. A toy figure comprising a generally horizontal body with a vertical bore near its forward end, a fore member including a circular plate adapted to bear flat on the floor, a vertical post rising eccentrically from said plate, a spindle of reduced diameter extending upwardly from said post and loosely through said bore, a head-piece on the upper portion of said spindle, a draft string attached to said fore member, and means for rocking said body laterally with respect to said post as the figure advances.

4. A toy figure comprising a generally horizontal body, means rockably supporting the forward end portion of said body, said means including a horizontal plate and a post rising from said plate, means for rocking said body laterally with respect to said post when the figure advances, a string attached to said post near the lower end and forward of the center thereof, and a head-piece mounted on said post.

5. A toy figure comprising a generally horizontal body, means for supporting the forward end portion of said body, a tail-piece pivotally connected to the rear portion of said body to swing laterally on a vertical axis, a pair of lugs projecting downwardly from said tail-piece, a shaft journaled in said lugs, and a pair of wheels eccentrically mounted on said shaft.

6. A toy figure having a flat, generally horizontal body having a bore therethrough near its forward end, a fore member supporting the forward part of said body, said fore member including a horizontal plate and an upstanding post secured thereto, a spindle extending upwardly from the top of said post and loosely through said bore, a head-piece mounted on the upper end of said spindle, a flat tail-piece pivotally mounted on said body beneath the rear portion thereof, said tail-piece having portions projecting laterally and rearwardly beyond the contour of said body, bearing members carried by said tail-piece, a shaft journaled in said bearing members, and a pair of wheels eccentrically mounted on said shaft.

7. A toy figure comprising a body having a vertical bore near its forward end, a fore member supporting the forward part of said body, said fore member including a horizontal plate with an upstanding projection thereon, a spindle of reduced diameter extending upwardly from the top of said projection and loosely through said bore, and a head-piece mounted on the upper end of said spindle, a tail-piece pivotally mounted on said body beneath the rear portion thereof, said tail-piece having portions projecting beyond the contour of said body, bearings carried by said tail-piece, a shaft journaled in said bearings, wheels eccentrically mounted on said shaft, and a draft string attached to said fore member, forward of its center.

8. A toy figure comprising a body with a vertical bore near its forward end, a fore member adapted to rest upon the floor, a body supporting portion thereon, a spindle of reduced diameter extending upwardly from said body-supporting portion and loosely through said bore, said bore being of sufficient size to permit rocking movement of said body on and relatively to the body-supporting portion of the fore member, a head piece on the upper portion of said spindle, a draft string attached to said fore member, means coacting with said fore member for supporting the body, and means for rocking the body on its longitudinal axis.

9. A toy figure comprising a body, a carrying shaft having journals thereon which are adapted to support and impart rocking movements to said body and to move longitudinally relatively thereto when the shaft is rotated, a movable element pivotally secured to said body to swing on a substantially vertical axis, means connecting said element with said shaft whereby the former

is reciprocated when the latter is rotated, and travel wheels fixed on said shaft.

10. A toy figure comprising a body, means for rockably supporting said body, a movable element pivotally connected to said body to swing on a vertical axis, bearings secured to said element, a carrying shaft journaled in said bearings, eccentric travel wheels mounted on said shaft, and means beyond the normal amplitude of oscillation of said element about its pivot for preventing excessive angular movement of said element on its pivot.

11. A toy figure comprising a body rockable on its longitudinal axis, a horizontally oscillatable supporting member for said body having a convex supporting surface adapted to support a portion of the body for rocking movement thereon whereby to bear a portion of the weight of the body successively on different points of said supporting surface according to the inclination of the body as the body is rocked whereby the bearing point shifts from side to side, a draft string attached to said supporting member, means actuable by forward progress of the figure for rocking said body, and a horizontally oscillatable part connected to said supporting member to be actuated thereby.

12. A toy figure having a body, a member horizontally oscillatable with respect to said body, said member having laterally projecting integral portions which extend beyond the body horizontally on either side thereof and a longitudinally projecting portion, a pair of lugs projecting downwardly from said oscillatable member, a supporting shaft for said member journalled in said lugs, and a pair of travel wheels eccentrically mounted on said shaft, said wheels being arranged in different phase relatively to the shaft.

13. A toy figure adapted to move on a supporting surface, said figure having a generally horizontal body, means for supporting said body for rocking movement on its longitudinal axis, a leg assembly including laterally projecting foot members attached to the body to oscillate on a pivot substantially perpendicular to the longitudinal transverse plane of the body, means for supporting said members above said supporting surface and for simultaneously oscillating said leg assembly on its pivot for alternate forward and rearward movement of said foot members and rocking said leg assembly on its forwardly and rearwardly extending axis when the figure advances.

14. A toy figure adapted to move on a supporting surface, said figure having a body, means for supporting said body for rocking movement on its longitudinal axis as the figure moves forward, a pair of foot members, means for supporting said members above said supporting surface, said means being operable by forward movement of the figure to actuate said members forwardly and rearwardly in a plane parallel to the longitudinal transverse plane of the body so that said foot members advance alternately relatively to each other, and to rock the body on its longitudinal axis as the figure advances.

15. A toy figure having a head and a body, means independent of the body for supporting the head, means for supporting said body for rocking movement on its longitudinal axis relatively to the head as the figure moves forward, and means for rocking the body on its longitudinal axis as the figure advances.

16. A toy figure having a head and body, a member having a floor-engaging portion for supporting the head independent of the body and for supporting the forward portion of the body for rocking movement on its longitudinal axis relatively to the said floor-engaging portion as the figure advances, a draft string connected to said member, and means independent of said member for rocking the body on its longitudinal axis as the figure moves forward and for supporting the rear portion thereof.

17. A toy figure comprising a head, a member connected with said head having a pair of foot-simulating portions, and means for rocking said member on its front-to-rear axis and for alternately advancing said foot-simulating portions relatively to each other as the figure advances, said means including shaft journals secured to said member, a shaft mounted in said journals and travel wheels secured to said shaft.

18. A toy figure having a body, means for rockably supporting the body, said means including an oscillatable member having a pivotal connection with the body to swing horizontally relatively thereto, and a single floor engaging portion the center of which is located rearwardly of said pivot connection with the body and adapted to occupy positions alternately on either side of the center line of the body as the figure advances, a movable part connected to the said oscillatable member to be actuated thereby, and means for rocking the body on its forwardly and rearwardly extending axis as the figure advances.

19. A toy figure comprising a body with a vertical bore near its forward end, means for supporting the body for rocking movement on its front to rear axis, said means including a member having a spindle of reduced diameter extending upwardly through, and being sufficiently loose in, said bore to permit said rocking movement of the body relatively to said member, a head simulating piece mounted on the upper end of said spindle, and means for rocking the body on its front to rear axis as the figure advances.

CLIFFORD J. McLEOD.