Jan. 1, 1957 A. GAZDA 2,775,846

ANIMATED TOY

Filed Feb. 15, 1956 2 Sheets-Sheet 1

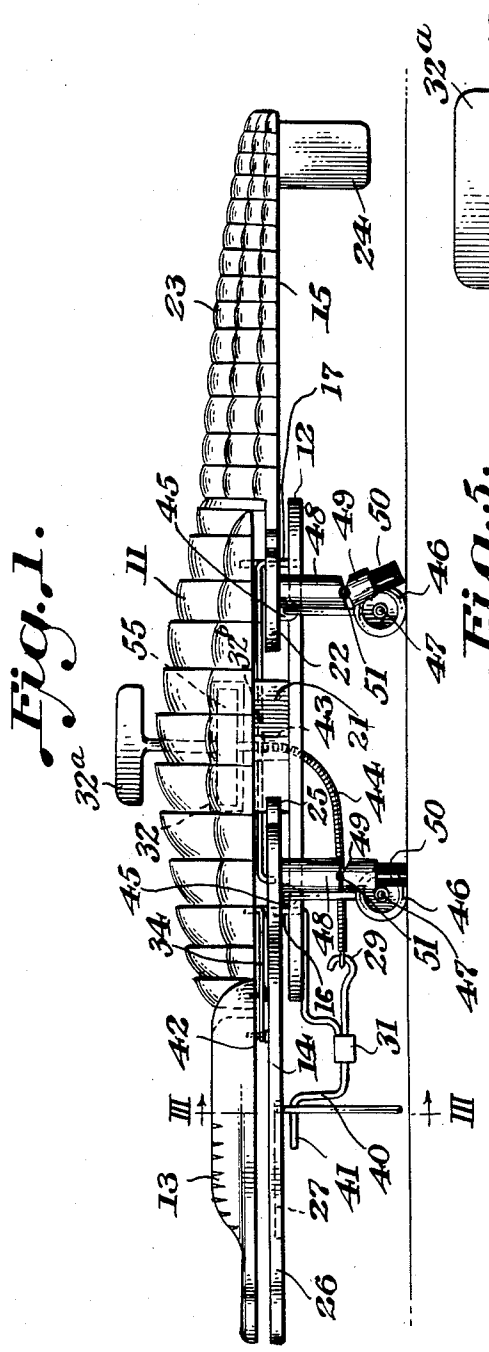


Fig. 1.

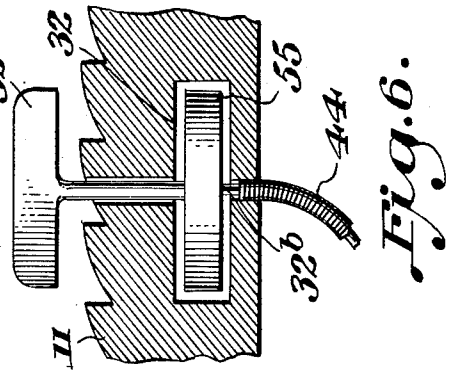


Fig. 6.

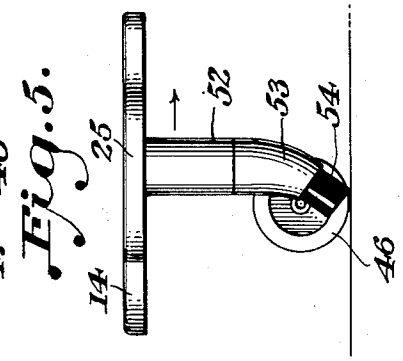


Fig. 5.

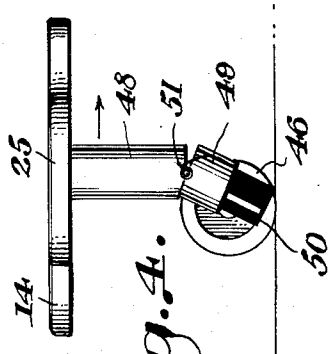


Fig. 4.

INVENTOR.
Antoine Gazda,
BY Wenderoth, Lind and Ponack

ATTYS.

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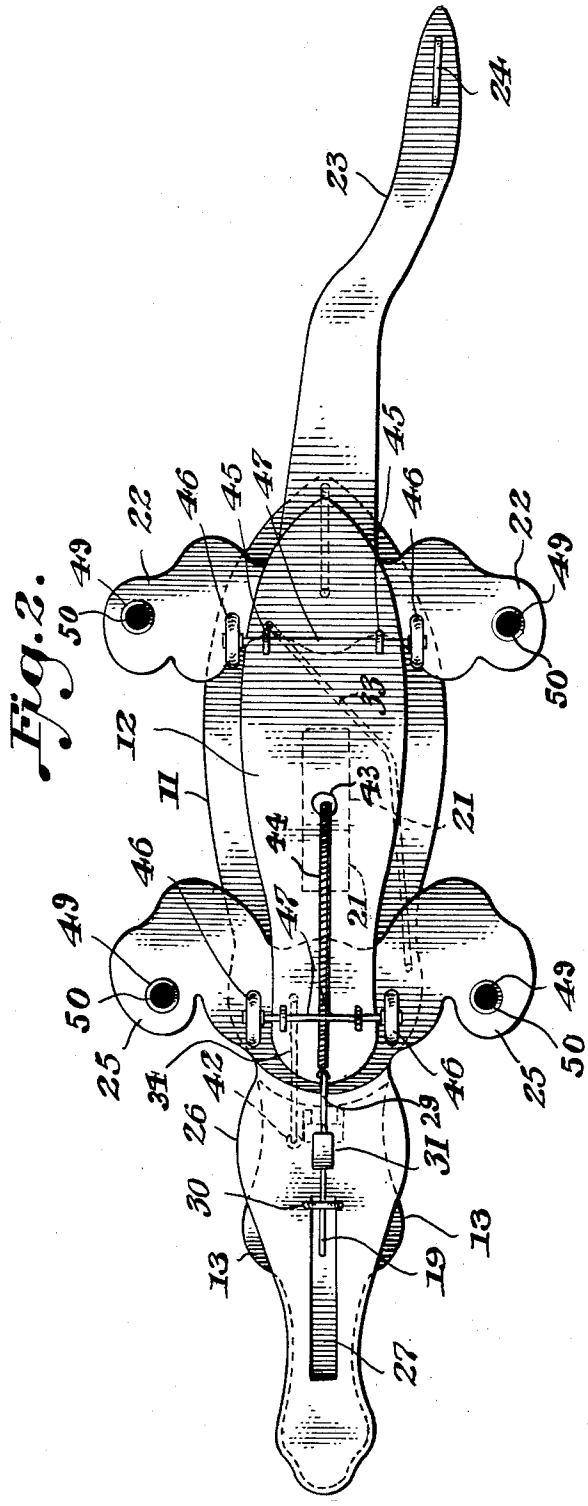


Fig. 2.

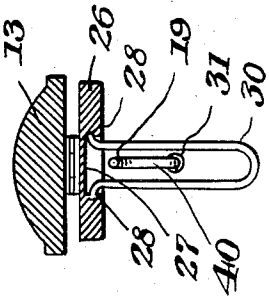


Fig. 3.

INVENTOR.
Antoine Gazda,
BY Wenderoth, Lind & Ponack

ATTYS.

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ANIMATED TOY

Antoine Gazda, Cranston, R. I.

Application February 15, 1956, Serial No. 565,647

3 Claims. (Cl. 46—104)

This invention relates to a toy device in the form of an animal which is adapted to be propelled along the surface of a body of water or along a relatively smooth, hard surface in such a manner that the legs and tail of the animal move and the mouth opens and closes.

It is desirable to have animated toys which are able to move through water, not only because they afford an inducement for children to approach water for washing and bathing purposes, but also because they delight and amuse the children, as well, on occasion, as their parents. It is also desirable that these toys also function on a dry, hard surface, since their use is not then limited to use in water.

Heretofore toys of this type have been cumbersome and difficult to operate because of the complex nature of the mechanism which has been necessary to produce the wiggling motion and the propulsion. This has resulted in their failure to produce the desired results and their consequent lack of appeal to the purchasing public.

It is therefore an object of this invention to provide an animated toy in the form of an animal which has the desirable characteristics mentioned and which overcomes the above mentioned drawbacks and which is simple and easy to operate and which is animated by a mechanism that is simple and durable.

It is a further object of this invention to provide an animated toy which is adapted to be propelled along the surface of the water or a hard, smooth surface and which moves its legs and tail and opens and closes its mouth during its movement.

Other and further objects of this invention will become apparent from a reading of the following specification, taken together with the appended claims and the accompanying drawings, in which:

Fig. 1 is a side elevation of the device according to the invention;

Fig. 2 is a view of the bottom of the device showing the operating mechanism;

Fig. 3 is a section taken along line III—III of Fig. 1;

Fig. 4 is a detail of one form of the means depending from each of the legs;

Fig. 5 is a detail of a second form of the means depending from each of the legs, and

Fig. 6 is a sectional elevational view of a part of the central portion of the body of the device.

In the drawing, the toy according to the invention, which is here shown as an alligator, is comprised of an upper body 11 to which a lower body 12 is joined by a support 21. From the center of the rear of the upper body 11 is suspended a rear pivot 17 which projects through the rear of the lower body 12. Pivoted on rear pivot 17 between the upper body 11 and lower body 12 is the tail portion 15 having a leg 22 projecting to each side and a tail 23 projecting to the rear. From the rear extremity of the tail 23 is suspended a rudder 24.

From the center of the front of the upper body 11 is suspended a front pivot 16 which projects through the front of the lower body 12, extends along the front portion thereof past the front end thereof and then is bent downwardly and forwardly. A crank bearing 31 is attached to the forwardly extending portion of the front pivot. Pivoted on the front pivot 16 between the upper body 11 and lower body 12 is a head portion 14 having a leg projecting to either side and lower mouth portion 26 projecting forwardly. In the underside of the lower mouth portion 26 is a slot 27 having two small holes 28 at the rear end thereof projecting laterally from the side walls of the slot. Actuating loop 30 is positioned with the free ends having portions bent over inserted in the holes, and extending downwardly from the lower mouth portion 26.

Rotatably mounted in the crank bearing 31 is operating crank 19 having hook 29 at its rear end and a crank arm 40 and extension 41 at its other end. Extension 41 projects through actuating loop 30.

Located within the upper body 11 is spring driven driving means 32 in the form of a spiral spring 55 wound by a key 32*a* which projects through the top of the upper body. Shaft 32*b* projects downwardly into the bore 43 extending through the support 21 and the bottom of the lower body 12. A flexible cable 44 is attached to the shaft 32*b* and extends to the hook 29 on the end of the operating crank 19.

Depending from beneath the lower body 12 are four wheel supports 45, two towards the front end and two towards the rear end. Through the lower extremities thereof are mounted two axles 47 on the ends of which are carried wheels 46.

Means depending from each of the legs 22 and 25 are provided for frictionally engaging a surface over which the toy is to move only when the means are urged in one direction relative to the surface. As seen in Figs. 1 and 4, the means may take the form of an upper portion 48 rigidly attached to each of the legs 22 and 25 and having the rear half of the lower end thereof beveled upwardly. A lower portion 49 has the rear half of the upper end thereof beveled downwardly, and is hinged to the lower end of the upper portion at the edges of the beveled portions at 51. On the lower end of the lower portion is provided a piece of frictional material 50.

The means for frictionally engaging the surface over which the toy is to move may also take the form shown in Fig. 5 in which an upper portion 52 is attached rigidly to each of the legs 22 and 25. A tubular portion 53 is attached to the lower end of upper portion 52 and is flexible to a limited degree. To the lower end of the tubular portion 53 is attached a piece of frictional material 54.

Hingedly attached to the head portion 14 adjacent the upper body 11 is upper mouth portion 13. A pin 42 projects from the lower surface of upper mouth portion 13 and offset from the center line thereof. Pivotally attached to pin 42 is mouth operating link 34 which extends to a point in the lower surface of upper body 11 adjacent the front pivot 16.

Pivotally attached to one of the front legs 25 is leg operating link 33 which extends to the rear leg 22 on the opposite side of the body from the front leg 25 to which it is attached. It is pivotally attached to this rear leg.

In operation, the actuating loop 30 is removed from the slot 27 by squeezing the legs toward each other and removing the bent over portions from the holes 28 in the sides of the slot. The driving mechanism 32 is then wound up by rotating the key 32*a* clockwise. When the driving mechanism is wound tightly, the actuating loop 30 is returned to the slot with the extension 41 on the crank arm 40 projecting through the loop.

Upon the release of the crank arm 40 the driving mechanism 32 will begin to unwind, causing the crank arm to rotate counterclockwise. The crank 19, after turning 90

degrees will reach a position in which extension 41 has forced the actuating loop 30 to pivot the lower mouth portion 26 to the right, carrying with it the front legs 25. This causes the leg operating link 33 to be pulled forward which causes the rear leg 22 to which the leg operating link is pivotally connected to move forward. This in turn causes the tail portion 23 to move to the right.

As the crank 19 continues to rotate it will reach the position opposite that shown in Fig. 1, i. e. with the extension 41 in the lower portion of the actuating loop 30. This will cause the head portion and the tail portion to be in line with the body.

When the crank 19 has rotated 270 degrees it will have reached the position opposite that described above, the leg operating link 33 having forced the rear leg 22 to which it is attached to the rear, thereby causing the tail 23 to turn to the left. Thus, it is seen that as the crank rotates under the influence of the unwinding driving mechanism, the head will oscillate to the right and then to the left and, through the leg operating link, will cause the tail to oscillate to the right and to the left.

The mouth of the animal is caused to open and close by the mouth operating link 34. Since it is offset from the center line of the toy, when the head portion 14 is turned to the right, the end of the mouth operating link 34 which is attached to the upper mouth portion 13 will tend to move away from the upper body 11, thereby lifting the upper mouth portion 13. When the head is turned toward the left, the end of the mouth operating link 34 attached to the upper mouth portion 13 tends to approach the upper body 11, thereby causing the mouth to close.

The means depending from each of the legs 22 and 25 serve to move the toy along a surface by reason of the oscillating movement of the head portion 14 and the tail portion 15. In the form shown in Fig. 4, since the rear halves of the lower end of the upper portion 48 and the upper end of lower portion 49 are beveled, and the lower portion is hinged to the upper portion at the edges of the beveled halves, when the leg 25 moves in the direction of the arrow, the lower portion 49 will pivot to the rear out of alignment with the upper portion 48. However, when the leg 25 reverses its movement by reason of the oscillation of the head portion 14, the forward halves of the upper portion 48 and lower portion 49 not being beveled, the lower portion 49 cannot hinge forwardly. The piece of frictional material 50 engages the surface, and prevents the leg 25 from moving. The entire head piece 14 thus pivots about the depending means and the entire toy moves forward on the wheels 46.

It will be obvious that when the leg 25 on one side of the toy is in the forward position where the piece of frictional material will engage the surface, the leg 22 on the corresponding side of the toy is to the rear, and will move forwardly with the lower portion 49 hinged to the rear. However, on the opposite side of the toy the leg 25 will be to the rear, while the leg 22 will be in the forward position, the latter leg thus serving as a pivot for the tail portion 15. The combined effect of the head portion and tail portion and the depending means engaging the surface will be to urge the entire toy forward in a substantially straight line.

The means shown in Fig. 5 operate in precisely the same manner. The tubular portion 53 is sufficiently flexible so that when the leg from which it depends is moving forward, the tube will flex and permit the piece of frictional material 54 to drag over the surface on which the toy is moving. However, when the leg 25 is urged toward the rear, the tubular portion 53 is sufficiently inflexible to resist bending, thus serving to drive the toy forward.

It is obvious that the invention can be adapted to many and varied forms of animated toys, the alligator which is illustrated in the drawings being but one adaption. In addition, various forms of motive power which cause the crank arm or its equivalent to rotate may be substituted without departing from the spirit of the invention. In addition, it is obvious that the positions of the various operating links and the actuating loop and crank arm may be varied without departing from the scope of the invention.

Having thus disclosed the invention, what is claimed is:

1. In an animated toy having an upper body portion and a lower body portion connected thereto, a tail portion having legs protruding therefrom adjacent said body portions, said tail portion pivoted for horizontal movement between the rear ends of said body portions, a head portion having legs protruding therefrom pivoted for horizontal movement between the front ends of said body portions, and a connecting link pivoted on one leg of said head portion and on the leg on the opposite side of said tail portion, that improvement comprising spring driven driving means in said upper body portion acting on said head portion for oscillating said head portion and said tail portion, means depending from each of said legs comprising an upper portion rigidly attached to said leg and a lower portion hinged to said upper portion for movement only in one direction from a position in which said lower portion is aligned with said upper portion, said lower portion having a piece of frictional material on the lower end thereof for frictionally engaging a surface over which said toy is to move only when said means is urged in one direction relative to said surface, and wheels on said lower body portion for supporting said toy on said surface.

2. In an animated toy having an upper body portion and a lower body portion connected thereto, a tail portion having legs protruding therefrom adjacent said body portions, said tail portion pivoted for horizontal movement between the rear ends of said body portions, a head portion having legs protruding therefrom pivoted for horizontal movement between the front ends of said body portions, and a connecting link pivoted on one leg of said head portion and on the leg on the opposite side of said tail portion, that improvement comprising spring driven driving means in said upper body portion acting on said head portion for oscillating said head portion and said tail portion, means depending from each of said legs comprising an upper portion rigidly attached to said leg, the lower end of which portion has the rear half thereof beveled upwardly, and a lower portion, the upper end of which has the rear half thereof beveled downwardly, said lower portion being hinged to said upper portion at the center of the upper end thereof, and said lower portion having a piece of frictional material on the lower end thereof for frictionally engaging a surface over which said toy is to move only when said means is urged in one direction relative to said surface, and wheels on said lower body portion for supporting said toy on said surface.

3. In an animated toy having an upper body portion and a lower body portion connected thereto, a tail portion having legs protruding therefrom adjacent said body portions, said tail portion pivoted for horizontal movement between the rear ends of said body portions, a head portion having legs protruding therefrom pivoted for horizontal movement between the front ends of said body portions, and a connecting link pivoted on one leg of said head portion and on the leg on the opposite side of said tail portion, that improvement comprising spring driven driving means in said upper body portion acting on said head portion for oscillating said head portion and said tail portion, means depending from each of said legs comprising an upper portion rigidly attached to said leg and a tubular portion which is flexible to a limited degree and having a piece of frictional material on the lower end thereof, whereby when the leg is urged in one direction the tubular lower portion remains rigid and when the leg is urged in the other direction the tubular lower portion flexes, said frictional material being for frictionally engaging a surface over which said toy is to move only when

said means is urged on one direction relative to said surface, and wheels on said lower body portion for supporting said toy on said surface.

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