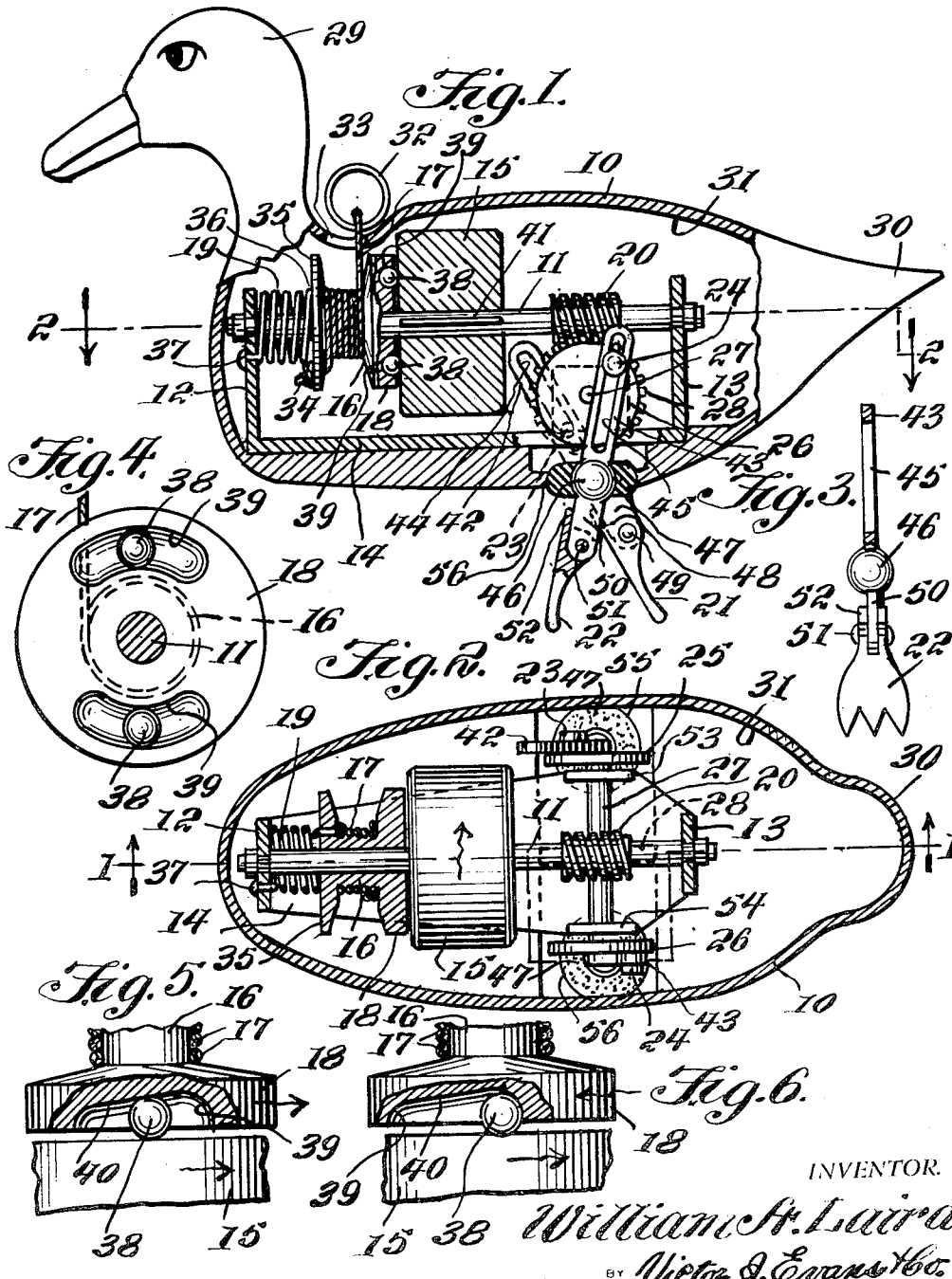
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AQUATIC TOY

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AQUATIC TOY

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This invention relates to toys having propelling means incorporated therein, and in particular a toy duck having feet actuated to form paddles and a string actuated motor and clutch combination in the body of the duck and positioned to reciprocate the paddles forming the feet for propelling the duck.

The purpose of this invention is to provide propelling means adapted to be used for toys positioned in the water. With the conventional spring actuated motors for propelling toys it is difficult to enclose the motors sufficiently to warrant use thereof for toys positioned in the water because with the water entering the mechanical elements the parts readily corrode and rust to such an extent that operation thereof is prevented. With this thought in mind this invention contemplates a string actuated motor with a spring for returning the string and with a clutch for releasing a counterweight whereby momentum imparted to the weight by the string continues the rotation of the weight after the force of the string is discontinued.

The object of this invention is, therefore, to provide means for forming a motor for toys adapted to be used in the water wherein the driving force is the result of momentum imparted to the device by the quick movement of a string drawn from the body of the toy.

Another object of the invention is to provide a string actuated motor for toys in which means is provided in the toy for rewinding the string.

A further object of the invention is to provide a self-propelled toy having a string actuated motor therein in which the toy is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a substantially hollow body having a shaft journaled in a bracket in the body with a weight on the shaft adapted to be actuated by a string through a clutch combination with a spring for rewinding the string upon release of the clutch and with a worm on the shaft for actuating paddles forming feet of the toy with the paddles extended through a grommet of elastic material incorporated in the base of the body of the toy.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:

Figure 1 is a side elevational view of the toy with parts broken away to show the operating mechanism within the body of the toy and with parts shown in section.

Figure 2 is a sectional plan through the body of the toy taken on line 2—2 of Fig. 1.

Figure 3 is a detail illustrating one of the paddles of the toy with the paddle removed from the body of the toy.

Figure 4 is a cross section through the toy looking toward the face of the clutch and illustrating balls of the clutch positioned in pockets having inclined inner surfaces.

Figure 5 is a detail showing the clutch in combination with a portion of the weight and with part of the clutch broken away to show one of the balls in one of the pockets having inclined inner surfaces.

Figure 6 is a similar detail showing the ball in the end of the pocket.

Referring now to the drawing wherein like reference characters denote corresponding parts the improved toy of this invention includes a body 10, a shaft 11 journaled in upwardly extended ends 12 and 13 of a bracket having a base 14 from which the ends extend, a flywheel 15, a drum 16 for winding a string 17, a clutch 18 on

one end of the drum 16, a spring 19 for rewinding the string 17 on the drum 16, and a worm 20 positioned on the shaft 11 and adapted to actuate paddles 21 and 22 by pins 23 and 24 on crank arms 25 and 26 of a shaft 27 that is provided with a worm gear 28 with which the worm 20 meshes.

In the design shown the body 10 is provided with a head 29 and a tail 30, representing a duck, however, it will be understood that the body may be formed to represent different animals or other objects. The body 10 is provided with a cavity 31 in which the operating mechanism is positioned and with the bracket mounted in the body, in the position shown in Fig. 1, the string 17, on the outer end of which is a ring 32, extends through an opening 33 in the upper part of the body.

The opposite end of the string 17 is secured, as shown at the point 34 to a flange 35 of the drum 16. One end of the spring 19 is also secured to the flange 35 as shown at the point 36 and the opposite end of the spring is secured to the end 12 of the bracket, as shown at the point 37.

The clutch 18 is formed at the opposite end of the drum 16 and, as illustrated in Figs. 5 and 6 balls 38 are positioned in pockets 39 of the clutch 18 and with the pockets having sloping inner surfaces 40 the clutch is free to travel in one direction, in relation to the flywheel 15, however, when the clutch is rotated in the opposite direction by the string 17 the balls grip the end surface of the flywheel 15 thereby rotating the flywheel and shaft 11 upon which the flywheel 15 is secured with a key 41.

By this means the flywheel 15 is rotated by the string as the string is drawn outwardly and upon reaching the termination of its outward movement the string is released whereby the spring 19 rotates the drum 16 to rewind the string whereas the balls 38 assume positions as illustrated in Fig. 6 wherein the flywheel 15 is released and continues to rotate the shaft 11.

With the shaft 11 rotating the worm gear 28 is rotated by the worm 20 whereby the shaft 27 is rotated, and as the shaft rotates the cranks 25 and 26, through the pins 23 and 24 reciprocate the arms 42 and 43 and thereby actuate the paddles 21 and 22.

The arms 42 and 43 are provided with elongated slots 44 and 45 in which the pins 23 and 24 travel and, as illustrated in Fig. 1 the arms 42 and 43 extend from balls 46 in sockets in the grommets 47. The arm 42 is provided with an extension 48, which extends from the balls 46 and on which the paddle 21 is pivotally mounted with a pin 49. The arm 43 is provided with a similar extension 50 and the paddle 22 is pivotally mounted on the extension 50 with a pin 51. The paddles are provided with extensions 52 that engage the forward edges of the extensions 48 and 50 to limit forward movement of the paddles.

The shaft 27 is journaled in bearings 53 and 54 extended upwardly from the base 14 of the bracket and as long as the shaft 27 is actuated by the flywheel 15 through the shaft 11 and worm and gear the paddles will continue to operate.

The grommets 47 which may be formed of rubber or other suitable resilient material are positioned in openings 55 and 56 in the lower surface of the body and the grommets may be secured in position with cement or the like.

It will be noted that the flywheel 15 is formed with a weight and the momentum thereof continues to rotate the shafts 11 and 27 after the string is released.

It will be understood that modifications, within the scope of the appended claims, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. In an aquatic toy, the combination which comprises a shaft, means rotatably mounting the shaft, a transversely disposed shaft, means rotatably mounting said transverely disposed shaft, worm gears operatively connecting the transversely disposed shaft to the former shaft, pivotally mounted propelling elements, crank arms connected to said transversely disposed shaft, eccentrically mounted pins on said crank arms, arms having slots

therein connected to said propelling elements and said pins positioned in said slots for operatively connecting said propelling elements to the transversely disposed shaft, a weight providing a fly wheel mounted on said former shaft, a drum having clutch elements in one end mounted on said former shaft and positioned whereby the clutch elements coact with one side of the weight for rotating the weight as the drum is rotated in one direction, a string wrapped on the drum and adapted to rotate the drum as it is drawn therefrom, and a spring for rewinding the string on the drum.

2. In a toy, the combination which comprises a substantially hollow body, a bracket having upwardly extended ends mounted in said body, a shaft journaled in the upwardly extended ends of the bracket, a cylindrical weight providing a fly wheel mounted on said shaft, a drum having clutch elements in one end mounted on the shaft and positioned whereby the clutch elements grip the weight for rotating the weight with the shaft with the drum rotating in one direction, a string wrapped on the drum and having an end with a ring therein positioned on the outside of said body, propelling elements pivotally connected to the hollow body and depending below the body, a transversely disposed shaft, worm gears

connecting the transversely disposed shaft to the shaft journaled in the upwardly extended ends of the bracket, cranks having eccentrically positioned pins thereon carried by said transversely disposed shaft, arms having elongated slots therein connected to said propelling elements and positioned with the eccentrically positioned pins extended into said slots for actuating the propelling elements.

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