SWIMMING FIGURINE WITH STEERING MEANS AND PROPULSION MOTOR

Filed Nov. 8, 1966

2 Sheets-Sheet 1

Fig. 1

Fig. 2

Fig. 3

INVENTOR.

ANTHONY JOSEPH DI LEVA

BY

ATTORNEY.
SWIMMING FIGURINE WITH STEERING MEANS AND PROPULSION MOTOR

Filed Nov. 8, 1966

2 Sheets-Sheet 2

INVENTOR.

ANTHONY JOSEPH DI LEVA

BY

ATTORNEY.
ABSTRACT OF THE DISCLOSURE

A toy, buoyant figure provided with motor-operated arms and/or legs in which the operating motor is battery or spring powered, and in which either or both of the legs of the figure have adjustable, rodder-like elements remotely mounted under simulated ankle portions of the figure to afford a peculiar movement to the figure as the arms and/or arms and legs simulate a swimming movement caused by the motor.

This invention relates to a toy, and, more particularly, to a buoyant doll with movable arms and a propulsion motor in the body to rotate the arms in a swimming motion.

Accordingly, it is an object of this invention to provide a swimming toy figure or doll with a permanent buoyancy which includes means to seal an interior chamber housing of a propulsion motor for rotating the arms of the figure and propelling the doll through water.

It is another object of this invention to provide a swimming figure as set forth in the preceding paragraph which also includes means to connect the legs of the figure to the torso and to the propulsion motor for imparting a swimming type of kicking motion to the doll.

It is another object of this invention to provide a swimming toy figure which may be driven either by mechanical or electrical means and which may be used in bubs, small ponds and the like by children.

It is another object of this invention to provide a swimming figure having legs and arms which are driven by an internally carried propulsion motor in the torso of the figure which includes steering means on the legs to cause the figure to assume a natural-like swimming motion.

It is a general object of this invention to provide a swimming toy figure in alternative constructions which are simple in construction, inexpensive to manufacture and which are adapted to provide an amusing device for children and which is instructive in teaching the fundamental movements required to master the activity of swimming.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with reference to the accompanying drawings in which:

FIGURE 1 is a side elevation view of a male figure constructed in accordance with this invention;

FIGURE 2 is a partly broken away top plan view of the figure of FIGURE 1;

FIGURE 3 is a view in cross section taken along the plane indicated by the lines 3-3 of FIGURE 2 and looking in the direction of the arrows;

FIGURE 4 is a view similar to that of FIGURE 2 and illustrating an electric propulsion motor as an alternative to the clock spring driving motor or mechanical driving motor of FIGURE 2;

FIGURE 5 is a top plan view similar to FIGURE 4 and illustrating a female figure and the cover panel for the interior of the torso of the figure;

FIGURE 6 is a view in cross section taken along the plane indicated by the line 6-6 of FIGURE 4 and looking in the direction of the arrows;

FIGURE 7 is a partially broken away view of a figure having legs operatively connected to reciprocate relative to the body in a simulated swimming motion;

FIGURE 8 is a partial schematic view to illustrate the operation of the embodiment of FIGURE 7.

Referring to the drawings, wherein like reference characters designate like or corresponding parts throughout the different views, and referring particularly to FIGURE 1, the numeral 12 generally designates a figure having a torso 14 and connected thereto a head 16, legs 18 and 20 and arms 22 and 24, the torso, head, arms and legs being buoyant. The interior of the torso is provided with an operating chamber 26 to accommodate a propulsion motor 28 and having a pair of shoulder openings 30 and 32 through which one end of a driven axle 34 extends through bearings such as 36 and 38 which include sealing means to maintain the operating chamber in a fluid tight relation with respect to water in which the figure is intended to be immersed. The bearings include felt and may be of nylon or other plastic material or graphited or oil-charged felt so as to avoid internal leakage, and which are well known in the art. The ends of the axle 34 are provided with serrated distal portions 42 and 44 which are companionably shaped and sized for driving connection with the proximal ends of the jaws in simulated shoulder joints. Also, the torso, head and legs of the figure may be of two-piece mating, shell-type construction 46 and 48 adapted to be fastened together along a mating line 50 in any suitable water tight relation. Also, the figure may be either of a male or female type which is indicated by clothing, such as the trunk 52 on the male figure of FIGURE 1 or by the female swimming suit on the figure of FIGURE 5 which may be of bikini type showing the lower portion 54 and the halter 56.

The propulsion motor generally designated by the numeral 28 may be either of a mechanical type indicated in the embodiment of FIGURES 1-3 or of the electrical type indicated in the embodiment of FIGURES 4-6.

Referring first to the mechanical embodiment of FIGURES 1-3, the motor is a clock spring driving motor type and includes a frame 60 suspended from the axle 34 which carries a gear 62 to be driven. A coil spring 64 for the motor is carried on the frame and circumposed intermediate the length of an operating shaft 68 to which it is connected, which shaft is provided with a handle 70 on the end thereof exterior of the figure for tightening the coil spring to release energy stored in the spring when it is tightened to drive the motor gear 66 on the interior end of the shaft in the embodiment shown. The motor gear 66 is connected to a gear train 72 having a connecting gear 74 to impart torque to the gear 62 and turn the axle.

Turning now to the electrical type of propulsion motor, reference is made to FIGURES 4, 5 and 6 in which the figure is the same with the exception that the interior chamber or main operating chamber 26 is provided with an access door 76 large enough to pass a combined battery and motor unit 78 and 80 through the same. The margin of the opening is provided with a U-shaped recess 82 therearound to accommodate a confronting male ridge 84 around the margin of the door 76 for snug receipt and to provide an effective water seal. This door is opened only for the purpose of charging the battery which is receivable in the cradle defining ribs 86 and supported by the figure as by the connection to the transverse septum wall 88. Also, the motor 89 is similarly supported and connected to gearing 90 to drive the axle previously designated by the numeral 34 and, consequently, the arms.
To control the circuit through the battery and motor a turnable switch button 92 is provided on the cover plate or door 76 with suitable circuit connections with the motor and battery.

Means may also be provided to manipulate the legs in a swinging up and down simulated swimming motion. In the embodiment shown in FIGURES 7 and 8, means are provided for imparting this motion to the legs and although the propulsion motor of the embodiment in FIGURE 7 is indicated as being of the mechanical type, it is understood that an electrical means may alternatively be provided. In either type of embodiment, the axle 34' is provided with circumferentially balanced, U-shaped offsets 94 and 96 of equal size, each of which loosely connects through a ring at one end of a rearwardly extending link 98 and 100 which terminate at a hip joint 102 and 104 now to be described. The torso of the figurine is indented in the hip area to provide hip sockets 106 and 108 to facilitate swinging movement of the legs with respect to a transverse axis. Each of the hip joints includes an opening for passage of a shaft 110 and 110' through a sealed opening of the torso to the end of which the proximal ends of the legs are connected in a driving connection. On the interior of the shaft a plate 112 is connected for rotation with the shaft. Thus, it can be seen in FIGURE 8 on rotation of the shaft in the direction indicated the offset will cause a forward and rearward reciprocal movement of the link to take place which in turn will cause the plate 112, shaft and legs to rock back and forth with respect to the transverse hip axis 114.

In either embodiment steering means are provided for the figurine of FIGURE 7 as well as the embodiments of FIGURES 1 and 4 and comprise a snap-on, transparent plastic clip 116 (see FIG. 1) to connect adjacent the ankle of each leg to which there is a depending steering rudder 118 pivotally connected by means of a pin 120 so that adjustment of the rudder may be accomplished to cause the toy figurine to move in a circular swimming pattern when being driven. Also, when this steering means is provided for the embodiment of FIGURE 7, it has been found that there is imparted a highly simulated, life-like motion to the figurine.

Suitable lightweight plastic material of a flesh color is selected and provides a highly buoyant body by reason of the interior operating chamber as well as the hollow head, legs and arms. Also, the hand of the figurine is cupped or dished so as to pull the toy through the water, and the swimming suit may be provided with snap means for ready removal of the body and interchanging for either a boy or a girl toy figurine. In a more advanced embodiment, a small receiver may be included in the torso operating chamber and in the circuit means of the motor and battery of the embodiment of FIGURE 4 to intermittently supply current to the motor on signals from a remote transmitter so that a remote control embodiment of the device may be utilized. By reason of the structure described, the circumferentially balanced position of the arms may be modified for simulated breast strokes and other types of movement of the toy figurine through water of immersion.

What is claimed is:

1. A buoyant figurine having a torso with an interior chamber, and a hollow head, arms and legs; a propulsion motor in the chamber; an axle extending out of the torso at simulated shoulder portions; sealing means circumposed about said axle to prohibit the entrance of water into said chamber when the figurine is immersed; means drivingly connecting said motor to said axle; means connecting the arms to ends of the axe; and at least one independent steering means on the distal end of at least one leg and including a rudder portion adjustable about a forward to aft axis through the distal end of the one leg.

2. A device as set forth in claim 1 wherein said propulsion motor is a clock spring driving motor and frame means are suspended from the axle to carry said clock spring driving motor.

3. A device as set forth in claim 2 wherein winding means are provided for said motor having an operator at all times exteriorly of said figurine.

4. A device as set forth in claim 1 wherein said propulsion motor comprises an electric motor and a battery means to energize said motor, and cradle means in the said chamber portion of the figurine to hold the motor and battery in operative relation and an access door in said figurine to said interior chamber, sealing means interconnecting said access door and said figurine to prohibit entrance of water into said operating chamber and switch means operable exteriorly of the figurine and electrically intermediate said battery and motor to control rotation of the axle.

5. A device as set forth in claim 1 wherein said torso is provided with opposed hip sockets and a shaft extending outwardly of each socket to connect said leg to said torso and means to interconnect each shaft and the axle to reciprocate the legs on rotation of said axle.

6. A device as set forth in claim 2 wherein said torso is provided with opposed hip sockets and a shaft extending outwardly of each socket to connect said leg to said torso and means to interconnect each shaft and the axle to reciprocate the legs on rotation of said axle.

7. A device as set forth in claim 4 wherein said torso is provided with opposed hip sockets and a shaft extending outwardly of each socket to connect said leg to said torso and means to interconnect each shaft and the axle to reciprocate the legs on rotation of said axle.

8. A device as set forth in claim 1 wherein a pair of trunks are provided to fit exteriorly on the lower portion of the torso of the figurine.

9. A device as set forth in claim 1 wherein a pair of trunks are provided to fit exteriorly on the lower portion of the torso of the figurine and a halter is provided to fit around the upper portion of the figurine.

References Cited

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Patent</th>
<th>Number</th>
<th>Date</th>
<th>Inventor</th>
<th>Examinee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,673,701</td>
<td>6/1926</td>
<td>Lindstrom</td>
<td>46—93</td>
<td></td>
</tr>
<tr>
<td>3,153,879</td>
<td>10/1964</td>
<td>Lucas</td>
<td>46—92</td>
<td></td>
</tr>
<tr>
<td>3,247,613</td>
<td>4/1966</td>
<td>Parker</td>
<td>46—92</td>
<td></td>
</tr>
<tr>
<td>3,265,036</td>
<td>8/1966</td>
<td>Hockman et al.</td>
<td>46—92 X</td>
<td></td>
</tr>
<tr>
<td>3,332,165</td>
<td>7/1967</td>
<td>Lousceney et al.</td>
<td>46—92</td>
<td></td>
</tr>
</tbody>
</table>

FOREIGN PATENTS

<table>
<thead>
<tr>
<th>Patent</th>
<th>Number</th>
<th>Date</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>445,703</td>
<td>2/1949</td>
<td>Italy</td>
<td></td>
</tr>
</tbody>
</table>

LOUIS G. MANCENE, Primary Examiner
ROBERT F. CUTTING, Assistant Examiner

U.S. Cl. X.R.