

Dec. 3, 1957

A. H. ORVIS
TOY OUTBOARD MOTOR

2,814,906

Filed Nov. 19, 1956

2 Sheets-Sheet 1

Fig. 1.

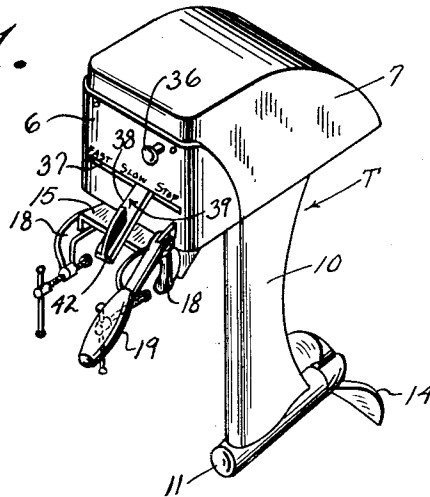
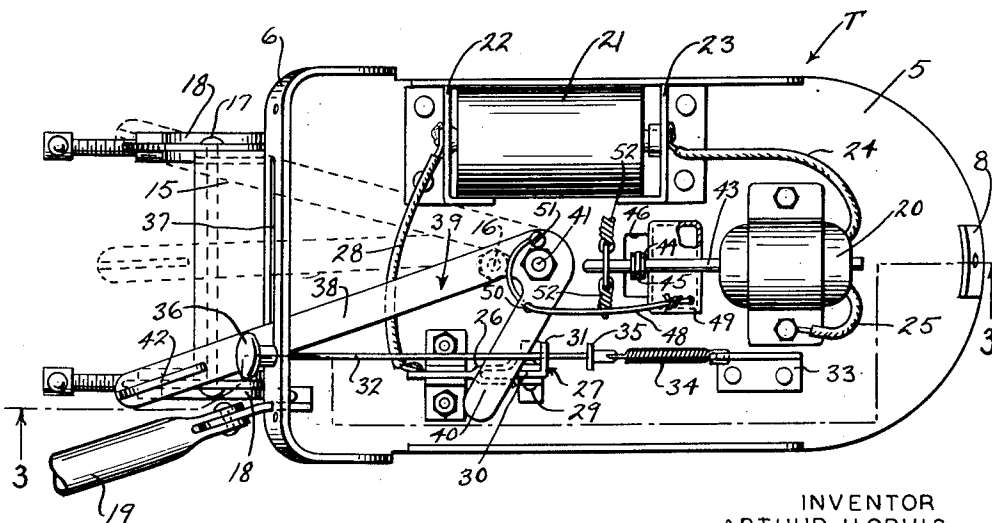


Fig. 2.



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Fig. 3.

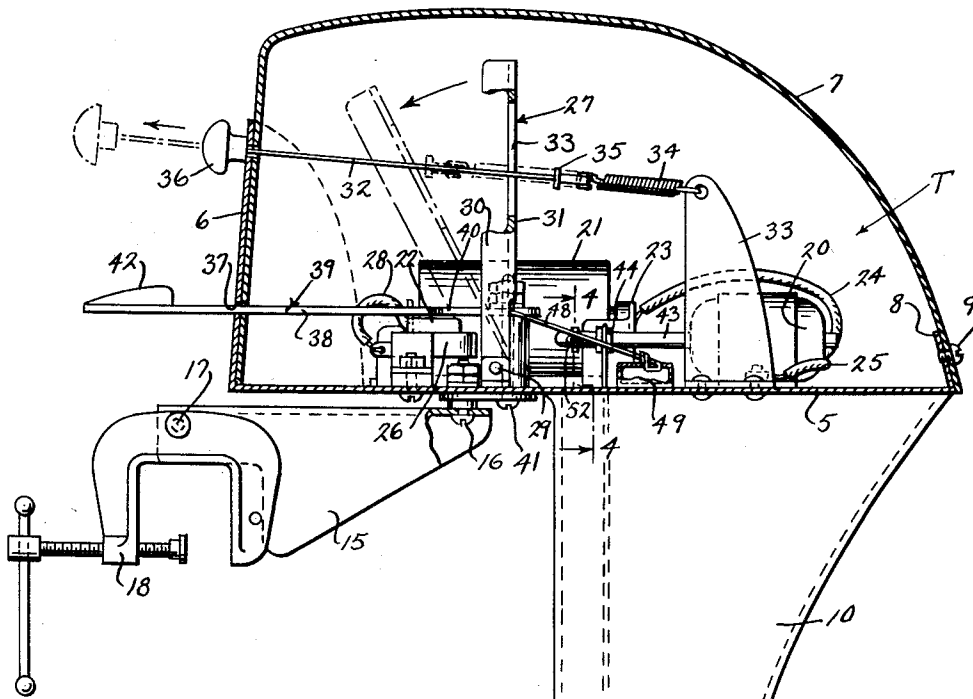
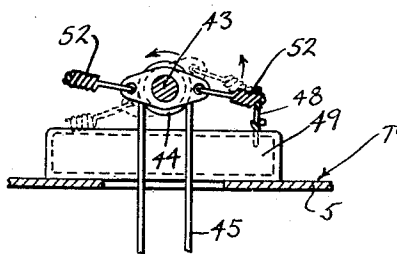


Fig. 4.



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TOY OUTBOARD MOTOR

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Application November 19, 1956, Serial No. 622,918

8 Claims. (Cl. 46—39)

This invention appertains to amusement devices and the like, and more particularly to a toy closely simulating the appearance and operation of an outboard motor.

One of the primary objects of my invention is to provide a toy outboard motor having the shape and exterior appearance of any well known make of outboard motor and in which a small electric motor operated off a dry cell battery is utilized for rotating the propeller shaft, with means simulating the controls of an actual outboard motor for starting and stopping the electric motor.

Another salient object of my invention is the provision of novel means for simulating the sound of an outboard motor operating at different speeds, the sound device embodying a control lever functioning similar to the throttle of an actual outboard motor and movable to positions indicating "Stop," "Slow," "Fast" etc., the movement of the lever tightening or loosening a piano or like stringed musical instrument wire for changing the tone or pitch of the wire when the same is vibrated by being struck by weights or fingers rotating with the armature shaft of the electric motor.

A further object of my invention is to provide a pivoted switch blade for opening and closing the circuit to the electric motor operated from a pull member simulating the starter cord of an actual outboard motor, the control lever for speed sound, and the switch blade being so positioned and related that upon movement of the control lever to a "Stop" position, the switch blade will be automatically moved to an off circuit open position, the switch blade also automatically moving the control lever to a position indicating "Slow" speed when the pull member is operated for closing the circuit through the electric motor.

A further important object of my invention is to provide a toy outboard motor not only having control means simulating the actual control means of an outboard motor but also which embodies other devices found on outboard motors, such as a steering lever, attaching clamps etc.

A still further important object of my invention is to provide a toy outboard motor of the above character, which will be durable in use, one that will be simple and easy to manufacture, one that can be placed upon the market at a reasonable cost and one that will have eye appeal to children and others.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts as will be hereinafter more specifically described and claimed, and illustrated in the accompanying drawing, in which drawing,

Figure 1 is a perspective view of my outboard motor;

Figure 2 is a top plan view of the toy outboard motor with the housing shell removed, the figure being taken on a larger scale than Figure 1;

Figure 3 is a vertical sectional view taken through the toy on the line 3—3 of Figure 2, looking in the direc-

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tion of the arrows, the view showing the switch blade in its off position in full lines and in its circuit closed position in dotted lines, and

Figure 4 is a detail vertical transverse sectional view taken on the line 4—4 of Figure 3, looking in the direction of the arrows and illustrating more particularly the means employed for producing a sound simulating different outboard motor speeds.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter T generally indicates my toy outboard motor and the same embodies a base plate 5 having formed on its front edge an upwardly extending panel 6 which is utilized as an instrument panel and this panel simulates the shape of the front of any well known type of outboard motor. Detachably mounted on the base plate 5 is a housing or cover shell 7 and this shell or cover also simulates the appearance of any well known type of outboard motor. The shell or cover 7, the panel 6 and the base plate 5 constitute a housing or casing for certain operating parts of the toy. The rear edge of the base plate 5 has formed thereon an upstanding ear 8 and when the shell or cover is placed in position the same can be secured to the ear by a screw 9. The engagement of the cover or shell with the panel 6 and the screw 9 will effectively hold the cover or shell in place, but obviously, other screws can be utilized if so desired and passed through the sides of the panel 6 into the cover or shell.

Formed on or secured to the base plate 5 is the depending hollow column or drive casing 10 and the lower end of the column or casing 10 carries bearings 11 and 12 for rotatably receiving a propeller shaft 13. Secured to the propeller shaft 13 and disposed exteriorly of the column 10 is the propeller 14.

Means is provided for connecting the toy T to a suitable support or toy boat and hence I provide a bracket 15 disposed below the face plate 5. The bracket has its rear portion connected to the base plate 5 by a pivot bolt 16 so that the motor T can be swung on a vertical pivot on the bracket plate. The bracket plate 15, in turn, has connected thereto by horizontal pivots 17 U-clamps 18 and the clamps of course provide means for securing the bracket to a support. Pivotaly fastened to one lower corner of the panel 6 is a steering lever 19. When the clamps 18 are connected to a support, the lever can be utilized for swinging the motor on the pivots 16 and 17.

Secured to the upper face of the base plate 5 adjacent to its longitudinal center is a miniature electric motor 20 of the type which can be operated from an electric dry cell battery 21. The battery 21 is removably held in place by the spaced electric conducting holding plates or brackets 22 and 23 and these plates are insulated from the base plate 5. An electric conducting wire 24 connects one plate with one terminal of the motor 20 and the other terminal of the motor 20 is grounded by a wire 25 to the base plate. Disposed forwardly of the electric motor 20 and at one side of the longitudinal center of the base plate are contact jaws 26 for the reception of a switch blade 27. The plate 22 is electrically connected to the jaws 26 by means of an electric wire 28. The switch blade 27 is grounded to the base plate 5 and when the switch lever engages the jaws 26 a circuit will be closed through the electric motor.

The switch blade 27 is rockably mounted on a horizontal pivot 29 at its lower end so that the blade can be swung toward and away from the jaws 26. The blade is preferably of an angle shape in cross-section so as to define right angularly extending flanges 30 and 31. The flange 30 is the part of the switch blade which engages

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the jaws and the flange 31 is utilized for another purpose, which will now appear.

Slidably extending through the panel 6 is a stiff pull wire 32 and this wire also slidably extends through an enlarged opening or slot 33 formed in the flange 30 of the blade 27. The inner end of the wire 32 is connected to a bracket 33 by means of a contractile coil spring 34. The bracket 33 itself is riveted or otherwise secured to the base plate 5. Forwardly of the spring 34 and in rear of the blade 27 the wire has formed thereon or secured thereto a stop button 35. The extreme forward end of the pull wire 32 has secured thereto a pull handle 36 and the spring 34 normally functions to hold this handle against the panel 6. The handle 36 and the pull wire 32 simulate the starter cord of an actual outboard motor and obviously by pulling forwardly on the handle 36 the spring 34 will stretch and the stop button 35 will contact the flange 31 of the blade 27 and move the blade into electrical contact with the jaws 26. If desired, the instrument panel can be marked adjacent to the pull handle 36 with the word "Starter" or some similar term.

The panel 6 below the pull handle 36 is provided with a horizontally disposed slot 37 and one arm 38 of a bellcrank 39 slidably extends through this slot. The other arm 40 of the bellcrank extends directly in front of the blade 27 and above the jaws 26. The bellcrank lever 39 is rockably mounted at its angle on a vertical pivot 41 carried by the base plate. The arm 38 of the bellcrank can be provided with any desired type of handle 42. The panel 6 above the slot 37 is marked with suitable indicia, such as the words "Stop," "Slow" and "Fast."

Now referring to the operation of the toy, as far as the description has proceeded, it can be seen that upon the pulling of the handle 36, the switch blade 27 will be swung forwardly and downwardly into contact with the jaws 26 as heretofore described and in view of the position of the arm 40 of the bellcrank 39 the bellcrank will be pushed and swung on its pivot 41 by the switch blade and actually the arm 38 of the bellcrank will be moved from its position indicated by the word "Stop" toward the word "Slow." Upon release of the pull handle 36, the same will be returned to its normal position by the spring 34 and the stop 35 will be moved away from the switch lever; however, the switch lever or blade will stay in its engaged position with the jaws 26 in view of its frictional engagement with said jaws. When the arm 38 of the bellcrank 39 is swung manually back to a position under the word "Stop" the arm 40 of the bellcrank will push the blade 27 back to its normal position and out of electrical contact with the jaws 26 and thus the circuit through the motor 20 will be opened.

The electric motor 20 includes an armature shaft 43 and the shaft has secured thereto a pulley 44. Trained about the pulley is a pulley belt 45 and this belt extends through an opening 46 in the base plate and through the hollow column 10. The propeller shaft 13 has connected therewith a pulley 47 and the pulley belt 45 is also trained about the pulley 47. Consequently, when the electric motor 20 is operating the propeller shaft 13 will be driven thereby.

One of the important features of the invention is the novel means for producing a sound simulating different speeds of an actual outboard motor and to bring this about I employ a piano wire or like stringed instrument wire 48. One end of this wire is fastened to a sound box 49. The opposite end of the wire is threaded through an opening 50 in the arm 40 of the bellcrank 39 and the wire is then fastened to the bellcrank, as at 51. When the arm 38 of the bellcrank is swung manually toward "Slow" and then further toward "Fast," the piano wire 48 is tightened and when the lever or arm 38 is moved toward the "Stop" position the wire is loosened. Means is provided for striking and vibrating this wire and this means includes weights or fingers 52 pivotally carried

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by the armature shaft 43 and during rotation of the shaft the weights will be swung outwardly by centrifugal force and as the wire 48 is arranged in the path of these weights the weights will strike and vibrate the wire. As the wire is tightened or loosened, the tone or pitch of the wire will be changed and the tone or pitch of the wire simulates the sound of an actual outboard motor operating at varying speeds.

Hence after the starting of the electric motor 20 and the rotation of the propeller 14, the bellcrank 39 or its arm 38 can be swung toward the word "Fast" and the wire 48 will be gradually tightened and the tone will be changed.

From the foregoing description it can be seen that I have provided an attractive toy in the form of an outboard motor embodying controls simulating controls of an outboard motor and which will imitate sounds of different speeds of an outboard motor.

Various changes in details may be made without departing from the spirit or the scope of this invention but what I claim as new is:

1. A toy outboard motor comprising a housing having a front instrument panel, a depending hollow drive casing column carried by the housing, a propeller shaft rotatably carried by the lower end of the column, a propeller on said shaft, an electric motor in said housing having an armature shaft, means operatively connecting the armature shaft and propeller shaft, an electric circuit including the motor, a battery and a switch, said switch having a pivoted blade and a stationary contact in advance of the blade, a pull wire slidably extending through the panel and the blade, a pull handle for the wire disposed exteriorly of the panel, a stop on said pull wire for engaging the blade, and a contractile coil spring normally urging the wire and its stop to an inoperative position with the stop spaced from the blade, so that upon forward pull on the wire the stop will engage the blade and swing the same forwardly toward the contact and whereby upon release of the wire the same will be returned to its inoperative position with the stop away from the blade.

2. A toy outboard motor as defined in claim 1, and a lever pivoted in said housing and extending through said panel simulating a speed control lever having an arm disposed in front of said blade and movable by said blade to a certain speed indicating position upon forward pull on the wire, said arm being movable into engagement with the blade for returning the blade to an inoperative circuit open position away from the contact when the lever is moved to a stop position.

3. A toy outboard motor as defined in claim 2, and means controlled by said lever for cooperation with the armature shaft for producing a sound simulating different motor speeds.

4. A toy outboard motor as defined in claim 2, and means controlled by the lever and cooperating with the armature shaft for producing a sound simulating different motor speeds including a sound producing piano wire anchored at one end and secured to the lever at its opposite end, movement of the lever functioning to tighten or loosen the piano wire to produce different tones, and weights carried by the armature shaft for striking said wire upon rotation of the armature shaft.

5. A toy outboard motor comprising a housing having a front panel, a depending hollow drive casing column carried by the housing, a propeller shaft rotatably carried by the lower end of the column, a propeller on said shaft, an electric motor in said housing having an armature shaft, means operatively connecting the armature shaft and propeller shaft and disposed within said column, an electric circuit including the motor, a battery and a switch, said switch having a pivoted blade and a stationary contact in advance of the blade, a pull wire slidably extending through the panel and the blade, a pull handle for the wire disposed exteriorly of the panel, a stop on said

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pull wire for engaging the blade, a contractile coil spring normally urging the wire and its stop to an inoperative position with the stop spaced from the blade, so that upon forward pull on the wire, the stop will engage the blade and swing the same forwardly toward the contact, and whereby upon release of the wire the same will be returned by the spring to its normal inoperative position with the stop away from the blade, means for simulating motor speed control including a bellcrank pivot in said casing and having angularly related arms, one of said arms extending forwardly through said panel and said panel having a slot slidably receiving said arm, the other arm extending in front of and in engagement with the blade, the panel having indicia for the first mentioned arm indicating a "Stop" position, and different speed positions, said crank being movable to a "Slow" speed position upon forward movement of the blade, and said blade being returnable to an inoperative circuit open position upon the manual return of the crank to a "Stop" position.

6. A toy outboard motor as defined in claim 5, and

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means for producing a sound simulating different speeds of an actual outboard motor including centrifugal weights carried by the armature shaft and a piano wire disposed in the path of said weights having one end anchored to the housing and its opposite end anchored to the crank, whereby movement of the crank will tighten or loosen the wire to produce different tones.

7. A toy outboard motor as defined in claim 6, and said anchoring means for the wire including a sound box.

8. A toy outboard motor as defined in claim 6, a supporting bracket for said housing and pivotally supporting the housing, attaching clamps carried by the bracket and a steering lever connected with the panel.

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