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MODEL SAILBOAT RACING GAME APPARATUS

Filed July 13, 1964

2 Sheets-Sheet 1

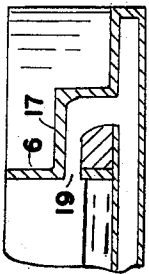
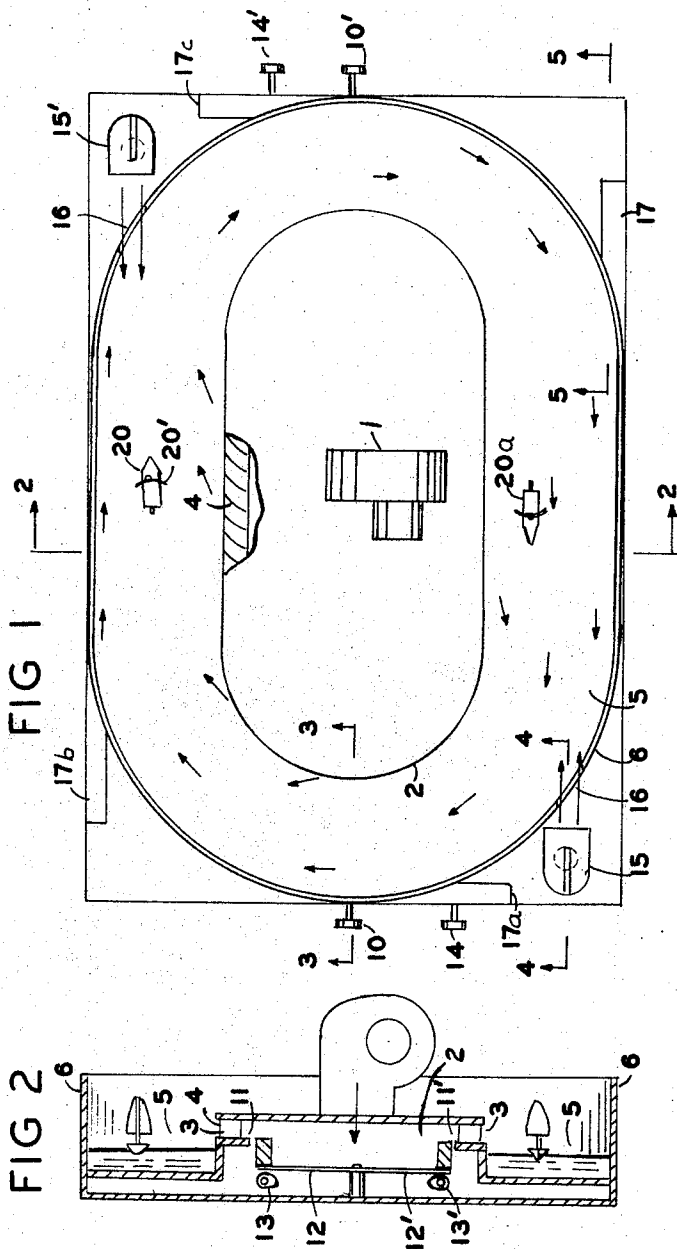


FIG 5

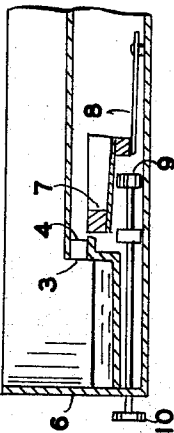


FIG 3

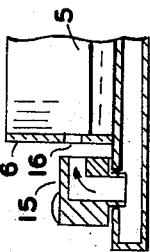


FIG 4

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2 Sheets-Sheet 2

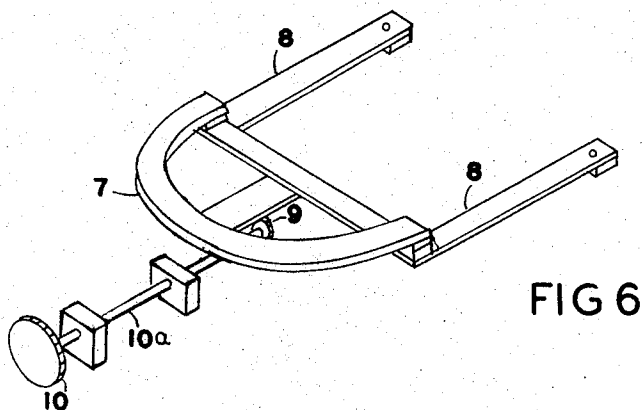


FIG 6

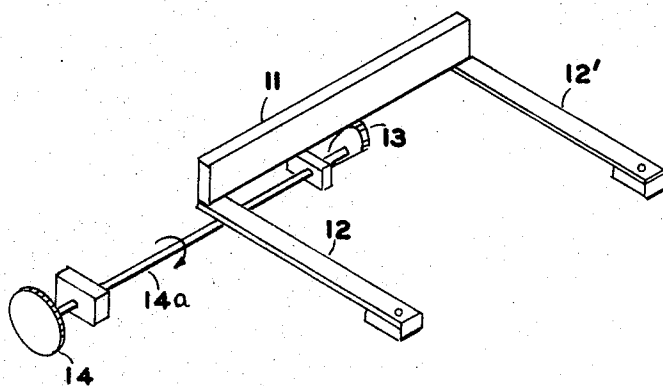


FIG 7

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MODEL SAILBOAT RACING GAME APPARATUS

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2 Claims. (Cl. 273-86)

This invention relates to means for sailing model sailboats around a closed course in a tank, with an artificial source of wind.

A principal object of the invention is to provide a novel toy or game device whereby one or more players may race model sailboats by manipulating the amount and direction of wind at various points of the course, thereby advancing one or more boats and retarding others.

Another object of the invention is to provide new and improved game apparatus.

Another object of the invention is to provide new and improved game apparatus comprising a water trough forming a closed path, a source of air under pressure and means to control the air under pressure across the surface of the water in order to control the sailing of model sailboats.

Another object of the invention is to provide new and improved model sailboat racing game means comprising, a plenum enclosure chamber, a water trough forming a closed path mounted adjacent said chamber, means to provide air under pressure in said plenum chamber, said chamber having slot means located so that air may escape from said chamber and blow across the surface of water in said trough, and slot valve means to regulate said air flow.

The illustrations show a preferred form of the device. The main elements are: a water trough forming a closed path, a plenum chamber which is filled with air under low pressure, a blower furnishing air to the plenum chamber, a peripheral slot in said chamber whereby air may flow from the chamber, valves for selectively closing parts of this slot and fixed movable air jets around the peripheral of the trough.

FIGURE 1 is a plan view of an embodiment of the device showing a preferred form of the water trough which is of oval shape.

FIGURE 2 is a sectional view, on line 2-2 of FIGURE 1, near the center of the device showing details of the side valves.

FIGURE 3 is a sectional view, on line 3-3 of FIGURE 1, through an end of the device, showing an end valve.

FIGURE 4 is a sectional view, on line 4-4 of FIGURE 1, through a movable jet.

FIGURE 5 is a sectional view, on line 5-5 of FIGURE 1, through a fixed jet.

FIGURE 6 is a perspective representation of an end valve assembly.

FIGURE 7 is a perspective representation of a side valve assembly.

In the form of the invention illustrated, the device comprises a blower 1, discharging air under low pressure into a plenum chamber 2. Air escapes for the plenum through the various orifices, the principal being the peripheral slots 3. This slot is equipped with guide vanes 4 which extend completely around which are best seen in the partial section of FIGURE 1.

The water trough 5 forms a shallow depression in the plenum and is bounded around the outside by the side wall 6. The peripheral slot may be partially or completely blocked off by manipulation of valves of which four are shown. Two end valves 7, FIGURES 3 and 6, of a shape conforming to the shape of the peripheral slot at the ends of the plenum, are normally held open by the leaf springs 8. Valves are closed by cams 9 bearing against the

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bottom of the valve body the cams being rotated by control knobs 10, 10'.

In a similar manner the side valves close off the two straight portions of the peripheral slot. Side valves 11, 11' are normally held open by leaf springs 12, 12' and are raised into the closed position by cams 13, 13' which are rotated by control knobs 14, 14'. See FIGURE 3.

The air plenum 2 provides a source of pressurized air which may be tapped at various points to provide additional air currents. In the form illustrated, two movable jets 15, 15' discharging through slots 16 in side wall 6 are shown see FIGURE 4. Also, four fixed jets 17, 17a, 17b, 17c, discharging through slots 19, are shown, see FIGURE 5. Model sailboats 20, 20a are shown floating in the water. The purpose and function of these jets will become apparent from the description of the use of the device.

In use, the blower discharges air into the plenum said air escaping from the peripheral slot and jets, sets up a circulation of air around the water trough, generally parallel to the side walls. The arrows in the plan view of FIGURE 1 illustrates the normal wind pattern. The vanes 4 of FIGURE 1 are provided to direct the air in the manner of fixed turbine blades.

The continued circulation of air also sets up a current of water flow on the trough, assisting the boats in following the closed path provided. Model sailboats may be raced or sailed in a conventional fashion without manipulation of the controls.

In another form of game, two players may compete by using the controls provided. Each player is stationed at an end of the tank where each manipulates a movable jet 15, an end valve control knob 10 and a side valve control knob 14. Two model boats are placed in the trough approximately a half lap apart and allowed to sail around the course. At the starting signal, each player attempts to advance his own boat and retard his opponent's boat by manipulation of the controls. In the form shown, each player controls the air in the channel immediately upstream of his movable jet, through the side valve 11 and the air immediately downstream of his movable jet by the end valve 7. A player scores when his boat succeeds in overtaking and passing his opponent's boat. Play is continued until a predetermined score is reached.

It is evident that when all four valves are closed the main circulation of air will be cut off. Therefore, the fixed jets 17 are provided to maintain a certain amount of air circulation and prevent boats from being becalmed.

FIGURE 6 shows a perspective view of the end valves 7, 7', one of which is located at each end of the chamber. The curved piece 7 is adapted to close the corresponding slot at the end of the chamber. The curve piece 7 is mounted on the leaf springs 8, 8' which are anchored to the bottom of the chamber. The valves are closed by turning the valve 10 which operates the shaft 10a, which turns the cam 9 which raises the member 7 into closed position.

FIGURE 7 shows a similar arrangement for the side valves. The valve member 11 is mounted on leaf springs 12, 12' which are anchored to the bottom of the chamber. The valve 7 is closed by rotating the knob 14 which turns the shaft 14a to rotate the cam 13 to raise the member 11 and close the member 11 and close the side slot.

In a typical embodiment the overall dimensions are 24 inches by 36 inches and utilizes a conventional blower of about 100 cubic feet per minute capacity. The boats 20, 20a preferably have fixed rudders and fixed single sails 20'. In operation, the boats are not touched and the entire control is by means of the wind being manipulated by the various controls. It is possible to even turn a boat

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around or cause one boat to cut off the wind from another in the same manner as a full size sailboat.

Many modifications may be made by those who desire to practice the invention without departing from the scope thereof which is defined by the following claims.

I claim:

1. Model sailboat racing game means comprising:
 - a plenum enclosure chamber,
 - an oval water trough forming a closed path mounted adjacent said chamber,
 - means to provide air under pressure in said plenum chamber, said chamber having vertical angled slot means disposed about the periphery of said chamber and positioned to blow across the surface of water in said trough,
 - a plurality of slot valve means to regulate the air flow from said slots,
 - and fixed and manually movable air jet means supplied by said chamber and mounted about the periphery of said trough,
 - said slot valve means and said movable jet means thereby providing variable air currents over the surface of said trough,
 - and control means to control said slot valve means.
2. Model sailboat racing game means comprising:
 - a plenum enclosure chamber,
 - a water trough forming a closed path mounted adjacent said chamber,

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means to provide air under pressure in said plenum chamber, said chamber having vertical, angled slot means disposed about the periphery of said chamber and positioned to blow across the surface of water in said trough,

a plurality of slot valve means to regulate the air flow from said slots,

and fixed and manually movable air jet means supplied by said chamber and mounted about the periphery of said trough,

said slot valve means and said movable jet means thereby providing variable air currents over the surface of said trough,

controls for said valve means mounted at each end of said trough so that two players may race boats in said water trough.

References Cited

UNITED STATES PATENTS

743,820	11/1903	Brown.	
1,499,875	7/1924	Rosenheim	273—101 X
1,709,373	4/1929	Pulsifer	272—32 X
1,899,706	2/1933	McClellan	273—86
2,582,844	1/1952	Mourfield	273—86
2,630,320	3/1953	Francis	273—86

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