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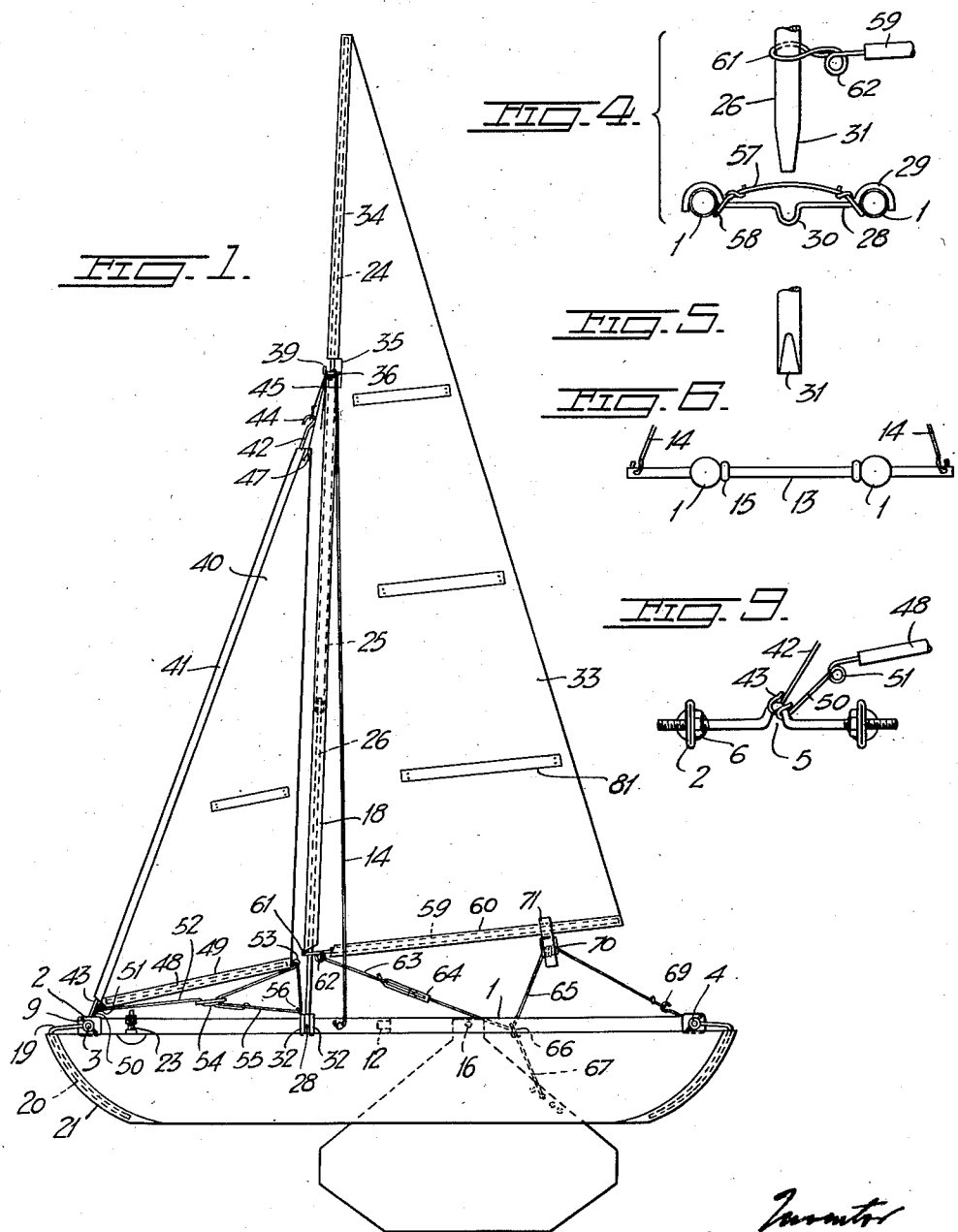
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2,573,745

MODEL YACHT

Filed Sept. 15, 1948

2 SHEETS—SHEET 1



Nov. 6, 1951

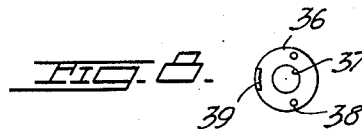
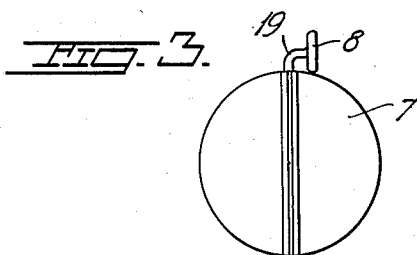
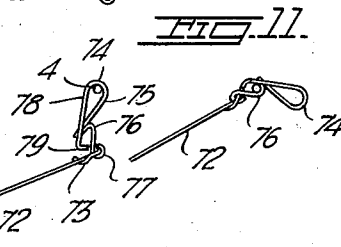
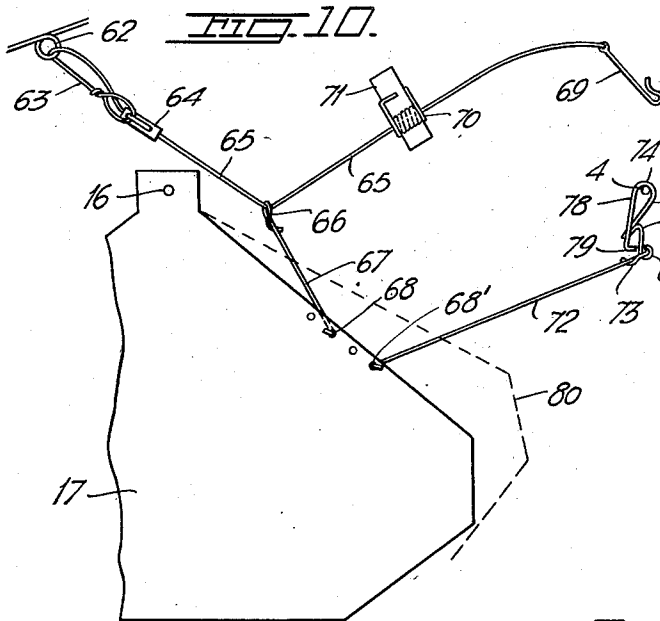
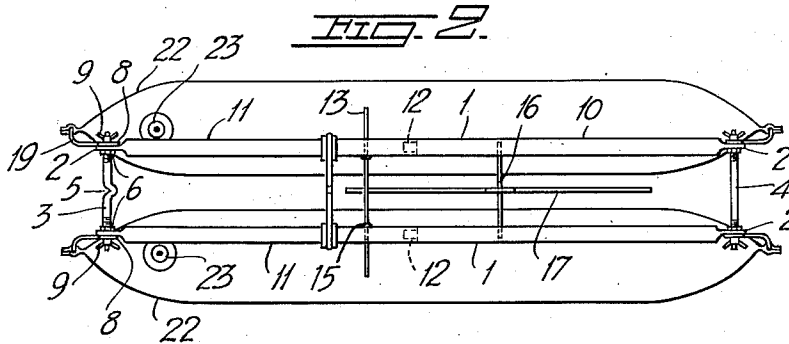
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MODEL YACHT

Filed Sept. 15, 1948

2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE

2,573,745

MODEL YACHT

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Application September 15, 1948, Serial No. 49,393

8 Claims. (Cl. 114—39)

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This invention relates to a model yacht and more particularly to a model yacht of catamaran type, consisting of a longitudinal supporting element and two identical pontoons fastened to said supporting element on either side, further supports being movably mounted on said supporting element and one of these supports carrying a mast with rig, while a keel or centerboard pivoted to be swung in the plane of symmetry of the yacht is suspended on another one of the supports and sheeted to a mainsail which is part of the yacht's rig.

A similar model yacht is disclosed in the patent application Serial No. U. S. 22,420, filed April 21, 1948, now abandoned. The present invention relates to further improvements of the proposed new model yacht.

A purpose of this invention is to provide a model yacht at a low cost resulting from the fact that each part of same is so constructed that it is suitable for mechanical manufacture and that the yacht is composed of few parts.

Another purpose is to provide a light but nevertheless large model yacht, in order to attain speed and rigidity.

Another purpose is to provide a model yacht which can be disassembled into separate components and which is easily and quickly assembled and stripped as well as trimmed and in disassembled condition can be carried in an ordinary portfolio or small hand bag. Certain parts are intended to be supplied permanently mounted, while other parts are intended to be mounted for each sailing with a view to creating a hobby article, which is interesting for the purchaser to assemble and disassemble. Moreover, the components of the yacht are so designed that no tools are required for assembling.

Another purpose is to provide a model yacht sailing at least as well as a model yacht of the ordinary design and of the most expensive kind with the same sail area.

Still another purpose is to provide a model yacht which may be manoeuvred with greater ease than ordinary model yachts.

A number of important details of construction will be described below:

Fig. 1 shows a longitudinal view of a design of my model yacht.

Fig. 2 shows the model yacht seen from above, without the rig mounted thereon.

Fig. 3 shows—in a larger scale—a front view of a pontoon.

Fig. 4 shows—also in a larger scale—a detail of a fastening device for the mast of the model yacht.

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Fig. 5 shows—also in a larger scale—the lower part of the mast turned 90° as compared with Fig. 4.

Fig. 6 shows—also in a larger scale—the chain plate of the mast.

Fig. 7 shows—also in a larger scale—the upper fastening device for the stays of the mast and the shrouds of the foresail.

Fig. 8 shows—also in a larger scale—this fastening device seen from above.

Fig. 9 shows—also in a larger scale—details of the lower fastening device for the foresail's shroud and the front fastening device respectively for the foresail's boom.

Fig. 10 shows—also in a larger scale—the manoeuvring device for the centerboard of the model yacht in a turned down position.

Fig. 11 shows—also in a larger scale—a detail of the manoeuvring device shown in Fig. 10 in its position when the centerboard is lifted.

The supporting frame of the model yacht consists of two longitudinal tubes 1 which are squeezed together at their ends and drilled through at the squeezing points 2, so that cross-wise extending pins 3, 4 can be inserted through the ends of the tubes. The front bow pin 3 is, moreover, bent in the middle to form a yoke 5 or fitted with an eye for staying the forestay and thus also the mast and for fastening the foresail. The bow pin is threaded and the distance between the longitudinal tubes is adjusted by means of nuts 6 on the inner sides of the tube ends. On the outer ends of the bow pin the fastening eyes 8 of the pontoons 7 are placed, which are held in position by means of wing-nuts 9. In this way tubes 1 and pins 3, 4 together form a supporting frame. The tubes are made in two parts 10, 11, one of which, 10, is inserted by means of a plug 12 in the end of the other one, 11. The tubes can thus be taken apart and carried in a small hand bag or portfolio.

There are holes in the tubes for inserting the chain plate or shroud pin 13, which extends a sufficient distance outwardly of the tubes to be used for attaching the mast shrouds 14. Shroud pin 13 is prevented from sliding sideways by shoulders 15. In addition to this, there are holes at the inner sides of the tubes for inserting the keel shaft 16, on which the keel or centerboard 17 is suspended. This suspension permits easy installation and removal of the keel. The outer sides of the frame tubes 1 support the keel shaft 16, preventing it from being pushed sideways. Centerboard 17 can be swung on its shaft 16 in a longitudinal direction. Suitably two or more holes are arranged successively for the shroud

pin and keel shaft, in order to permit trimming of the mast 18 and keel 17 in relation to each other.

Each pontoon 7 consists of rubber cloth vulcanized together to form a tube with fastening yokes 19 vulcanized in, by means of which the pontoon ends are connected to the pins 3, 4. The vulcanized-in part 20 of fastening yoke 19 is bent to the shape of a circle, and the ends 21 of the cloth, which are to be vulcanized to these yoke parts, are cut to form tapering ends 22 which, moreover, are curved downwards in bow-shape towards the stern. The upper part 19 of the pontoon yokes, as will be seen, is bent rearwardly towards fasteners 2 on the supporting tubes and there forming fastening eyes 8. To each pontoon tube 7 a valve 23 is attached, for instance an ordinary bicycle type valve, by means of which the pontoon tubes can be inflated. Alternatively the pontoon tubes can be inflated by means of simple valves such as those used on toy balloons. When inflated, the pontoons are stiffened and carry the supporting frame, the longitudinal tubes of which in their turn serve to stay the pontoons.

When the model yacht is taken apart, each pontoon can be rolled on one of the end yokes—after the air is let out—and made into a package, which does not require much space.

The mast 18 as shown consists of three tubes 24, 25, 26, which permits convenient packing. The middle tube 25 is made a little thicker than the other tubes 24, 26, which are inserted into the ends of the middle tube against their stops 27 (Fig. 7). The lower mast tube 26 is supported by a carrying pin 28, the ends of which 29 are bent to grip around tubes 1 on the supporting frame. The carrying pin has in the middle a downward bend 30, and the lower part of the mast is tapered as at 31 to permit the mast to be pushed down and held in the downward bend. For trimming purposes the carrying pin of the mast can be moved along the tubes, and a pair of stop rings 32 of rubber on each tube 1 fixes the position of the carrying pin.

The forepart of the mainsail 33 forms a sheath 34, closed at the top, through the channel of which the mainsail can be threaded upon the mast 18. At the joint of the two upper parts 24, 25 of the mast, the mainsail has a recess 35, into which a disc 36 is inserted after the top tube 24 has been separated from the thicker tube 25. Disc 36 is provided with a hole 37 having the same diameter as the top tube, which results in the disc being held by the top tube and resting on the thicker middle tube. The disc is also provided with a pair of holes 38 for receiving the shrouds 14 and a peg pointing upwards—39—for fastening the forestay and the foresail. The foresail 40 has a sheath 41, through which a stay 42 is pulled, which at the lower end is shaped to form a hook 43, intended to be hooked to the fastening yoke 5 formed on bowpin 3. The top end of forestay 42 is also shaped to form a hook 44, to which is attached a wire 45, by means of which the forestay is attached and fastened by a few half-hitches 46 (Fig. 7) around peg 39 of disc 36. The same wire is then put around a hook 47 at the top of the foresail and is again fastened by a few half-hitches around peg 39, while the foresail is stretched. The foresail boom 48, which rests in a sheath at the foot edge 49 of the foresail, has at its front end a hook 50, which is attached to yoke 5 of the bow pin 3. Hook 50 forms also an eye 51 for the foresail sheet 52

which, in addition to this, is attached to another eye at the rear end 53 of the boom, so that these two eyes are connected by means of the sheet. On this fixed part of the sheet there is arranged a movable stretcher 54, of rubber for instance, to which the rear end 55 of the sheet is attached after having passed down through an eye 56, formed on an elastic hook, which in its turn is threaded on a lee-fang 57. Lee-fang 57 consists of a bent wire, which at its ends forms eyes 58, threaded on mast carrying pin 28. The eyes rest against the supporting frame so that the wire is held stretched between the tubes 1 of the frame.

When taking down the rig, the foresail can be rolled on its boom together with the sheet, after the forestay has been loosened and taken out of the front edge sheath.

The boom 59 of mainsail 33 rests also in a sheath at the foot edge 60 of the mainsail and is at its front end fitted with an eye 61 threaded on mast 18 and shaped of a wire, which, in addition to this, is bent to form another eye 62. Through this eye 62 the fore end 63 of the mainsail sheet is threaded and by means of a stretcher 64 adjustably fastened to a part 65 of the mainsail sheet passing through an eye 66 at the top of a hook 67 attached to keel 17. Hook 67 is hooked into a hole 68 on the keel. This part 65 is in its turn either fastened to stern pin 4 by means of a hook 69 and also threaded through the spiral-shaped part 70 of the spring on a clothes pin or similar 71, or only threaded through the hook 67 and fastened to the clothes pin. This clothes pin is clamped around a point on boom 59 of the mainsail, which is suitable with regard to sailing conditions.

The mainsail can be rolled around its boom after the sheet has been taken off the stern pin, and the keel hook off the keel.

The sails are shown sewed on strengthening ribs 81 of, for instance, suitable plastic.

Fig. 10 shows, as already mentioned, the keel in its lowered position, as used when heaving. The function of the keel is then to move the centre of leeway resistance with the aid of the wind pressure of the mainsail. For wind aft sailing the keel is to be pulled up, and at the same time the stern hook 69 of the mainsail sheet is loosened, so that the mainsail swings out. The mainsail sheet 65 is then no longer with its hook 67 influencing keel 17. Pulling up the keel is effected by the following arrangement. In another hole in the keel, 68', there is a hook 72 attached, which at its outer end forms an eye 73. On stern pin 4 there is another hook 74, consisting of a wire first bent to U-shape, with one part of same, 75, bent to form a yoke 76, and at the free end bent to form an eye 77, which is fastened to eye 73 of keel hook 72. The other part is at its free end bent to form a catch peg 79 in front of yoke 76. When hook 74 rests on stern pin 4 with the upper part of its loop, hook 72 will not influence the keel. If the hook is pulled stern-wards past the bend to yoke 76, when catch 79 prevents hooking off and is released, the yoke is attached to stern pin 4 (Fig. 11). By this movement hook 72 is pulled sternwards and thus the keel to the position shown by dotted line 80 in Fig. 10. For lowering the keel, hook 74 can be easily returned to its previous position. As the keel has a row of holes 68, 68', for hooks 67 and 72, trimming can be effected for various conditions. The ends of hook 67 may also have backwardly bent catches to fasten the lifted keel to pin 4 or elsewhere.

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With regard to the material selected for various parts of the boat, it may be mentioned that the pontoons can also be made of plastic or similar material equivalent to rubber. Instead of vulcanizing together, gluing together can then be employed. The tubes of the supporting frame as well as the parts of the mast can be made of aluminium or some other rustproof or rust-protected material. Shrouds, stays and hooks, eyes etc. as well as bow and stern pins, keel shaft and carrying pin for the mast can be made of stainless steel wire.

The centerboard, which can be swung in the plane of symmetry of the yacht, is a means for automatically keeping a given course in spite of variations in wind pressure when sailing. Good course balance is also attained for the intensity of wind prevailing when sailing. Without complicated devices a previously not available possibility is obtained to change completely from beating to sailing before the wind, and to manoeuvre from tacking to wind aft sailing and vice versa, by means of a simple manipulation, i. e. by moving hook 74 and changing over the mainsail.

What I claim is:

1. A model sailing yacht, comprising, a pair of inflated collapsible pontoons disposed in side by side spaced parallel relationship, a longitudinal frame member for each pontoon removably secured thereto adjacent each end, relatively rigid bow and stern cross members detachably connecting said frame members and said pontoons in spaced parallel relationship, a cross bar connecting said frame members intermediate the ends thereof, a keel mounted on said cross bar for fore and aft pivotal movement and extending below said pontoons, a second cross bar mounted on said frame members for movement in a fore and aft direction and forming a mast step, means to secure said second cross bar in adjusted position, a sectional mast stepped in said second cross bar, shrouds secured to an intermediate point on said mast and to said frame members, a foresail shroud secured to an intermediate point on said mast and to said bow cross member, a foresail supported by said foresail shroud and having a foresail boom received in a tubular portion adjacent the foot thereof, a foresail sheet connected to said foresail boom and slidably connected to said second cross bar, means to adjust the length of said foresail sheet whereby said foresail may be trimmed, a mainsail having a tubular portion adjacent the peak thereof received over the upper section of said mast and supported thereby, a main boom received in a tubular portion at the foot of said mainsail, a main sheet detachably secured to said main boom for adjustment in a fore and aft direction and adjustable flexible means connecting said mast, said keel and said main sheet whereby upon movement of said second cross bar said keel will be pivoted in a fore or aft direction to balance said yacht and said mainsail will be trimmed.

2. A model sailing yacht as defined in claim 1 in which said frame members comprise sectional tubes and in which the parts may be disassembled, the pontoons deflated and folded, and the complete yacht packed in a relatively small space.

3. A model sailing yacht as defined in claim 1 in which additional means is provided to adjust said keel for sailing before the wind or on the wind, said means comprising a flexible member connected to said keel and a hook hav-

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ing two connecting portions for engaging said stern cross member whereby said keel may be raised or lowered.

4. A model sailing yacht as defined in claim 1, in which the means to secure said second cross bar in adjusted position comprises a resilient ring received on each frame member on each side of said second cross bar.

5. A model sailing yacht comprising a pair of pontoons disposed in side by side relationship, a longitudinal frame member for each pontoon secured thereto adjacent each end, bow and stern cross members connecting said frame members and said pontoons in spaced parallel relationship, a cross bar connecting said frame members intermediate the ends thereof, a keel mounted on said cross bar for fore and aft pivotal movement and extending below said pontoons, a second cross bar mounted on said frame members for movement in a fore and aft direction and forming a mast step, means to secure said second cross bar in adjusted position, a mast stepped in said second cross bar, shrouds secured to an intermediate point on said mast and to said frame members, a foresail shroud secured to an intermediate point on said mast and to said bow cross member, a foresail supported by said foresail shroud and having a foresail boom received in a tubular portion adjacent the foot thereof, a foresail sheet connected to said foresail boom and slidably connected to said second cross bar, means to adjust the length of said foresail sheet whereby said foresail may be trimmed, a mainsail having a tubular portion adjacent the peak thereof received over the upper portion of said mast and supported thereby, a main boom received in a tubular portion at the foot of said mainsail, a main sheet detachably secured to said main boom for adjustment in a fore and aft direction and adjustable flexible means connecting said mast, said keel and said main sheet whereby upon movement of said second cross bar said keel will be pivoted in a fore or aft direction to balance said yacht and said mainsail will be trimmed.

6. A model sailing yacht comprising a pair of pontoons disposed in side by side spaced parallel relationship, a longitudinal frame member for each pontoon secured thereto adjacent each end, bow and stern cross members connecting said frame members and said pontoons in spaced parallel relationship, a keel supported on said frame members for fore and aft pivotal movement and extending below said pontoons, a cross bar mounted on said frame members for movement in a fore and aft direction and forming a mast step, means to secure said cross bar in adjusted position, a mast stepped in said cross bar, shrouds secured to an intermediate point on said mast and to said frame members, a foresail shroud secured to an intermediate point on said mast and to said bow cross member, a foresail supported by said foresail shroud and having a foresail boom received in a tubular portion adjacent the foot thereof, a foresail sheet connected to said foresail boom, and slidably connected to said cross bar, means to adjust the length of said foresail sheet whereby said foresail may be trimmed, a mainsail having a tubular portion adjacent the peak thereof received over the upper portion of said mast and supported thereby, a main boom received in a tubular portion at the foot of said mainsail, a main sheet detachably secured to said main boom for adjustment in a fore and aft direction and ad-

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justable means connecting said mast, said keel and said main sheet whereby upon movement of said cross bar said keel will be pivoted in a fore or aft direction to balance said yacht and said mainsail will be trimmed.

7. A model sailing yacht comprising a pair of pontoons disposed in side by side spaced relationship, a longitudinal frame member for each pontoon secured thereto adjacent each end, bow and stern cross members connecting said frame members and said pontoons in spaced relationship, a keel supported on said frame members for fore and aft pivotal movement and extending below said pontoons, a cross bar mounted on said frame members for movement in a fore and aft direction and forming a mast step, means to secure said cross bar in adjusted position, a mast stepped in said cross bar, shrouds secured to an intermediate point on said mast and to said frame members, a foresail shroud secured to an intermediate point on said mast and to said bow cross member, a foresail supported by the said foresail shroud, a foresail sheet connected to said foresail and slidably connected to said cross bar, means to adjust the length of said foresail sheet whereby said foresail may be trimmed, a mainsail supported by said mast, a main boom secured to said main boom for adjustment in a fore and aft direction and adjustable means connecting said mast, said keel, and said main sheet whereby upon movement of said cross bar said keel will be pivoted in a fore or aft direction to balance said yacht and said mainsail will be trimmed.

8. A model sailing yacht comprising a pair of pontoons disposed in side by side relationship, a longitudinal frame member for each pontoon secured thereto adjacent each end, bow and stern cross members connecting said frame members and said pontoons in spaced relationship, a keel

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supported on said frame members for fore and aft pivotal movement and extending below said pontoons, a cross bar mounted on said frame members for movement in a fore and aft direction and forming a mast step, means to secure said cross bar in adjusted position, a mast stepped in said cross bar, shrouds secured to an intermediate point on said mast and to said frame members, a foresail shroud secured to an intermediate point on said mast and to said bow cross member, a foresail supported by said foresail shroud, a foresail sheet connected to said foresail and slidably connected to said cross bar, a mainsail supported by said mast, a main boom secured to said mainsail, a main sheet detachably secured to said main boom and adjustable means connecting said mast, said keel and said main sheet whereby upon movement of said cross bar said keel will be pivoted in a fore or aft direction to balance said yacht and said mainsail will be trimmed.

VICTOR HENRI WALLENBERG.

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