July 2, 1968 R. D. FLOWERS 3,390,656

ONE-MAN SAILBOAT

Filed Oct. 6, 1966 2 Sheets-Sheet 1

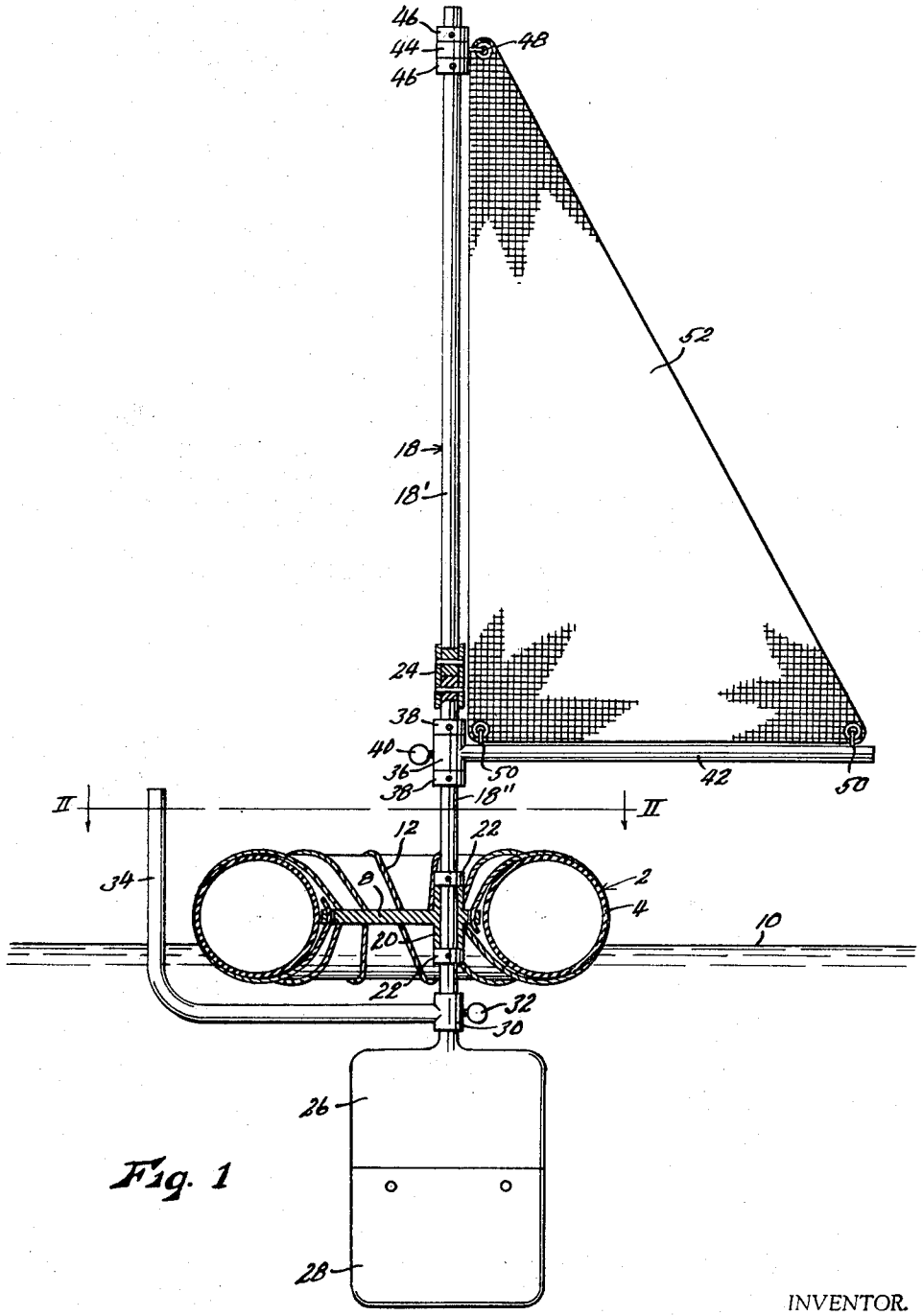


Fig. 1

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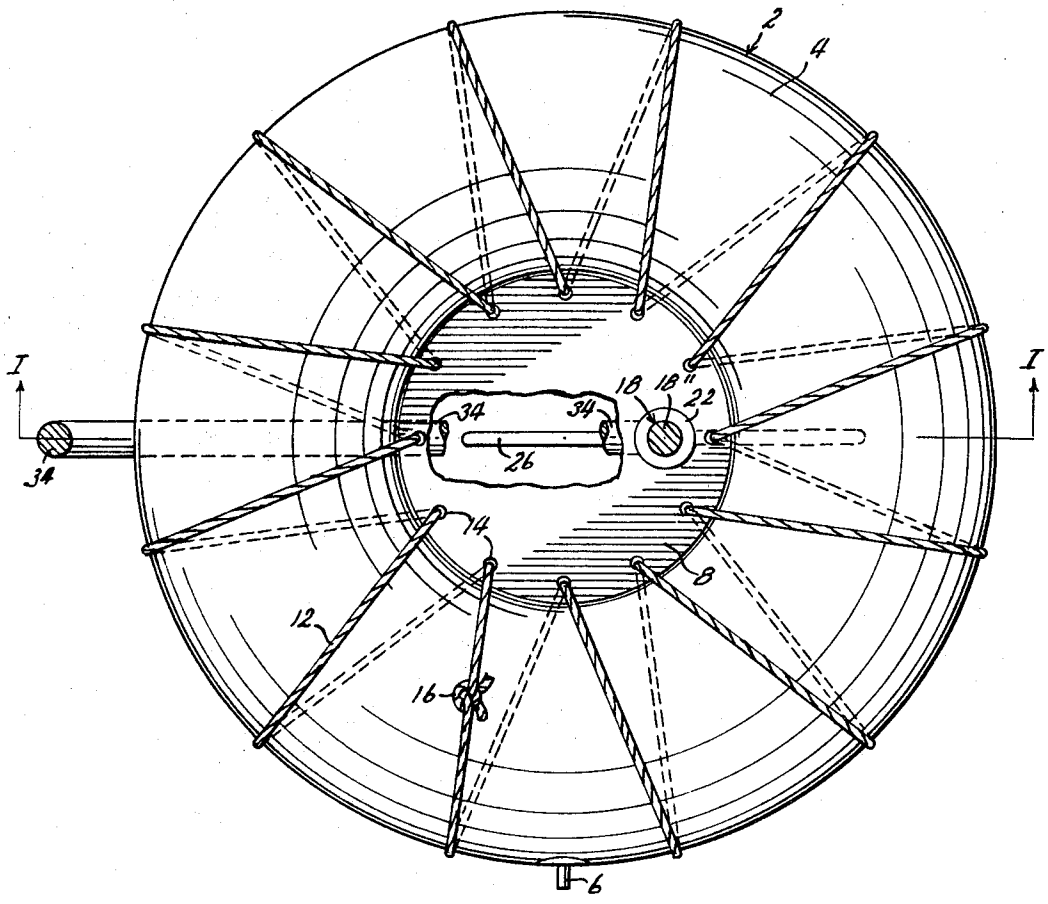


Fig. 2

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ONE-MAN SAILBOAT

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ABSTRACT OF THE DISCLOSURE

A sailboat comprising a buoyant hull, a vertical mast mounted for rotation about its axis in said hull and extending both upwardly and downwardly therefrom, a rudder mounted on the downwardly extended end of said mast, a sail mounted on the upwardly extended portion of said mast and extending transversely therefrom in a generally vertical plane, and means for rotating said mast about its axis with respect to said hull.

This invention relates to new and useful improvements in sailboats, and has particular reference to a one-man sailboat particularly adapted for sporting or recreational purposes.

The principal object of the present invention is the provision of a sailboat of the character described having novel steering means whereby both the rudder and the attitude of the sail may be controlled with one hand by the boatman when desired, or whereby the rudder can be controlled with one hand and the sail with the other.

Another object is the provision of a sailboat of the character described which is capable of disassembly and storage in a small space when desired, for convenience of transporting the same, for example, in the trunk of an automobile.

Other objects are simplicity and economy of construction, efficiency and dependability of operation, and the provision of a sailboat the operation of which can furnish a considerable degree of amusement and diversion.

With these objects in view, as well as other objects which will appear in the course of the specification, reference will be had to the accompanying drawing, wherein:

FIG. 1 is a vertical sectional view of a sailboat embodying the present invention, taken on line I—I of FIG. 2, with parts left in elevation and partially broken away, and

FIG. 2 is an enlarged sectional view taken on line II—II of FIG. 1, with parts broken away.

Like reference numerals apply to similar parts throughout the several views, and the numeral **2** applies generally to the hull of the boat. Said hull comprises a tubular ring **4** of pliable material such as rubber or the like and being inflatable with air or gas by means of filling valve **6** to give it a firm form and a high degree of buoyancy, and a platform **8** of wood or other suitable rigid material and comprising a flat circular disc disposed horizontally and substantially filling the central aperture of ring **4**. Said platform is releasably secured in ring **4**, preferably at a level at least slightly above the water level **10** when the hull is floated as shown in FIG. 1, by a rope or other pliable line **12** wrapped spirally around ring **4** and laced through holes **14** formed in platform **8** at angularly spaced intervals about the periphery thereof, the ends of the rope being knotted together at **16**. However, while ring **4** is illustrated as having a circular doughnut or torus configuration, so that platform **8** is also necessarily circular, the ring could also be formed with a generally square, rectangular, oval or other configuration if desired, with the platform correspondingly shaped.

The boat also includes a mast **18**, preferably formed of a light-weight metal, which is disposed vertically and is rotatably mounted for oscillation about its axis in a bearing sleeve **20** affixed to or integral with platform **8**,

and extending both upwardly and downwardly from the hull. It is prevented from sliding vertically in said sleeve by collars **22** releasably secured thereon respectively above and below said sleeve. Said mast is divided intermediate its ends to provide an upper section **18'** and a lower section **18''**, said sections being rigidly but releasably joined together by a coupling **24** (see FIG. 1). The mast is offset eccentrically from the center of platform **8**, the direction of offset determining what will ordinarily be the forward end or bow of the boat.

A rudder **26** which is generally planar is rigidly affixed to the lower end of mast **18** beneath the hull, so as to be disposed vertically in a plane containing the axis of the mast. Either the entire rudder, or the lower portion **28** thereof as indicated in FIG. 1, may be weighted, as by being formed of steel or other heavy material, in order to stabilize the boat by tending to prevent capsizing thereof in high winds. Just above the rudder, a sleeve **30** is mounted on the mast, and is releasably secured against rotation thereon by means of set screw **32**. Affixed to said sleeve is a tiller handle **34** which extends horizontally beneath the hull and is then angled to extend upwardly, in outwardly spaced relation from ring **4**, to an elevation above the hull.

Mast **18** extends to any desired elevation, perhaps 6 or 8 feet, above the hull. Just above the hull, a sleeve **36** is rotatably mounted on said mast, being secured against vertical movement by a pair of collars **38** releasably secured on the mast respectively above and below sleeve, and being releasably securable against rotation on said mast by means of a set screw **40**. Affixed to said sleeve is a horizontally extending arm **42**. At the top end of the mast a sleeve **44** is rotatably mounted thereon and secured against vertical movement thereon by a pair of collars **46** releasably secured on the mast respectively above and below said sleeve. A hook or eye member **48** is affixed to sleeve **44**, and a pair of similar hooks or eyes **50** are affixed to arm **42** respectively adjacent the inner and outer ends thereof. A triangular sail **52**, preferably formed of canvas or other pliable sheet material, is provided along its horizontal lower edge wtih grommets into which hooks **50** of arm **42** are releasably engaged, and at its apex with a grommet into which hook **48** of sleeve **44** is releasably engaged. Thus the sail extends laterally to the mast, and can rotate freely about the mast as an axis, as long as set screw **40** is loosened, but is secured in a fixed angular relationship to the mast when said set screw is tightened.

In usage, the boatman normally sits on ring **4** at the stern of the boat, this being the portion of the ring opposite to the eccentric offset of the mast, with his feet resting on the upper surface of platform **8**. Then, with set screw **40** loosened, he can steer the boat by controlling rudder **26** by one hand on tiller handle **34**, and controlling the angular relation of the sail to the mast by his other hand on arm **42**. As is well known, the direction the boat will travel is the result of a combination of these two factors. In this connection, it will be appreciated that FIG. 1 illustrates a rather artificial position of the parts, the sail and rudder seldom if ever being disposed in coplanar relation in actual practice, although this relationship is shown in the interests of providing a clear and simple drawing. By loosening set screw **32**, the angular relationship of the tiller and rudder can be adjusted to the individual preference of the boatman, as determined by such factors as whether he is left or right handed, where he prefers to position himself with respect to the mast, etc. Furthermore, in a boat of the small size shown and contemplated, the boatman can make this adjustment simply by leaning over and reaching beneath the hull.

If the boatman desires to free one hand for other purposes, as for example to make the adjustment described above, he can, while holding arm **42** with his knees or

some other portion of his anatomy, tighten set screw **40** to fix the sail in a given angular relationship to the mast. The sail will then be maintained in its set position by his grasp on the tiller, leaving the boatman's other hand free.

The principal reason for mounting the sail and the rudder on a single rotatable mast, so as to be adjustable simultaneously by means of tiller **34**, is to provide a cumulative steering effect with both elements. It will be seen that turning the sail about the mast, or turning the mast itself if set screw **40** is tightened, will tend to turn the boat in the same direction, since the wind always tends to advance the boat in a direction at right angles to the plane of the sail, even if the wind direction is at an acute angle to said plane. Also, so long as the rudder is on the same axis as the sail, turning the rudder in the same direction as the sail is turned will also tend to turn the boat in the same direction. Thus the turning or steering effects of both the sail and rudder operate to turn the boat in the same direction with their cumulative effect, and by tightening set screw **40** so that both must turn together, the entire steering operation may be brought under the control of tiller **34**. This type of steering operation is useful principally only when the boat is running before the wind, and not in tacking, when the sail and rudder generally must be controlled separately.

The type of steering operation just described would not be possible if the rudder were mounted on the hull itself, not on the mast. It will be seen that if the mast were centrally located in platform **8**, a rudder carried by the hull at any position offset from said mast would probably have no steering effect at all, but would simply cause free rotation of the hull around the mast. Offsetting the mast eccentrically in the platform as shown does provide that the side of the boat toward which the mast is offset will tend to lead, with the major portion of the hull trailing behind the mast, and further that resistance of the boat to movement out of this line would provide some steerage effect for a rudder mounted at the stern. However, this steerage effect would be only slight due to the limited degree to which the mast may be offset with the structure shown, and due to the shape of the hull itself. Moreover, a stern-mounted rudder tends to turn the boat in a direction opposite to the direction the rudder itself is turned, so that if the rudder and sail were connected to turn together, they would tend to turn the boat in respectively opposite directions with cancelling effects.

Finally, it will be seen that the boat can be disassembled for compact packing and storage. By removing and rolling the sail, detaching arm **42** and tiller **34** from the mast, detaching the mast from platform **8** and releasing coupling **24** divide the mast, and by detaching platform **8** from ring **4** and deflating and folding the latter, the entire boat may easily be stored and transported, for example, in the trunk of an automobile.

While I have shown and described a specific embodiment of my invention, it will be readily apparent that many minor changes of structure and operation could be made without departing from the spirit of the invention as defined by the scope of the appended claims.

What I claim as new and desire to protect by Letters Patent is:

1. A sailboat comprising

(a) a buoyant hull,

(b) a vertical mast mounted for rotation about its axis in said hull and extending both upwardly and downwardly from said hull,

(c) a generally planar, vertically disposed rudder mounted on the lower end of said mast,

(d) a sail mounted on the upwardly extended portion of said mast and extending transversely therefrom in a generally vertical plane, and

(e) means for rotating said mast about its axis with respect to said hull, said means comprising an elongated handle secured at one end to said mast beneath said hull, said handle extending laterally to said mast beneath said hull and then upwardly at a position spaced outwardly from the periphery of said hull.

2. A sailboat as recited in claim **1** wherein said handle is freely rotatable on said mast, and with the addition of:

(a) means releasably securing said handle against rotation relative to said mast.

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