July 28, 1964 J. B. NICHOLS 3,142,282

SAILING VESSEL

Filed Aug. 9, 1962

3 Sheets-Sheet 1

Fig. 1

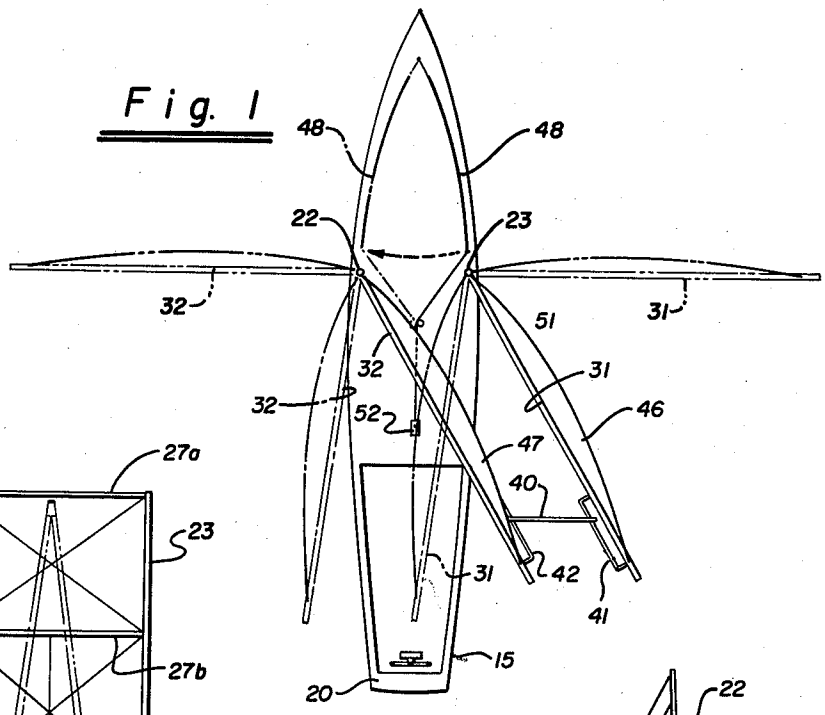
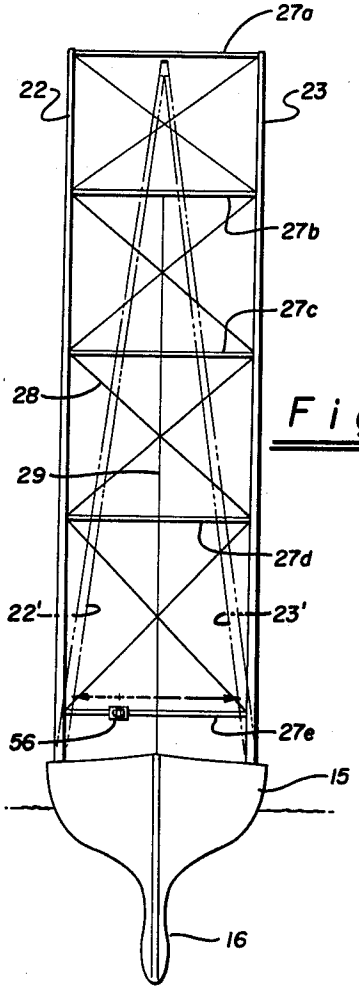


Fig. 3



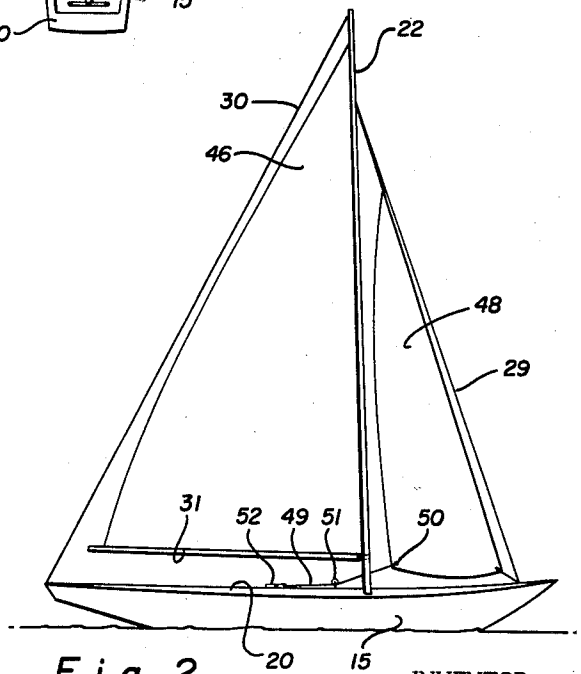


Fig. 2

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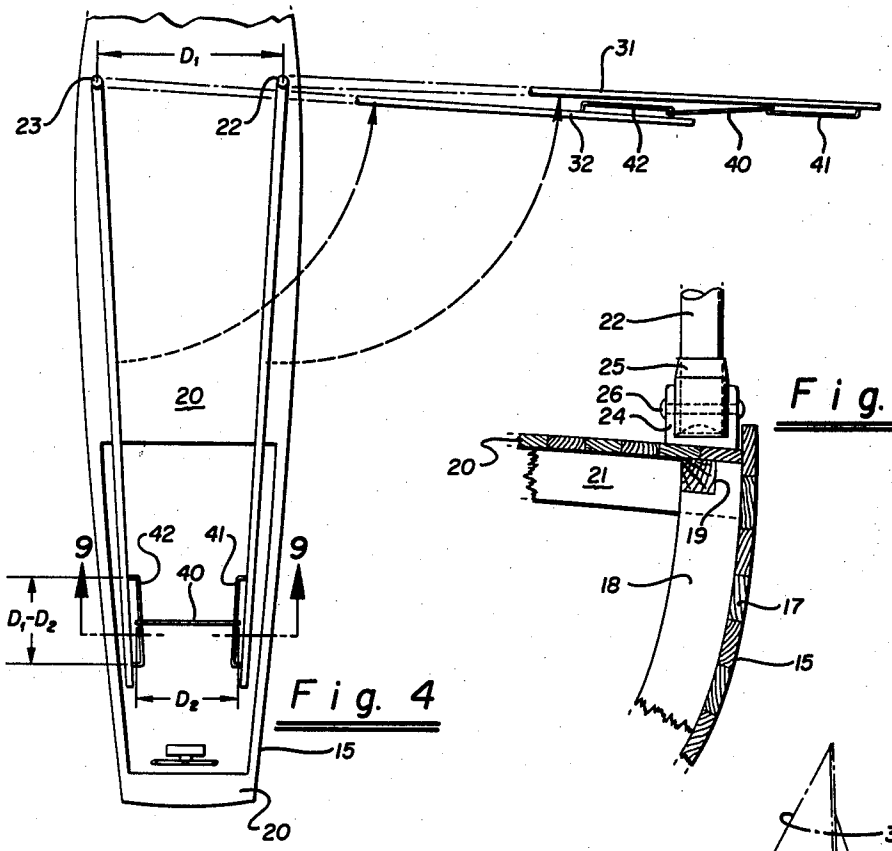

Fig. 4

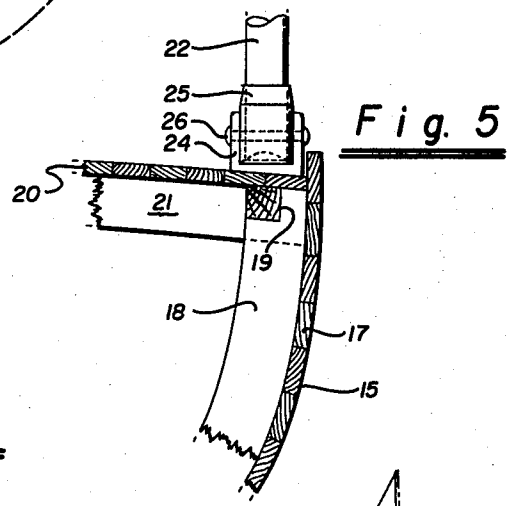

Fig. 5

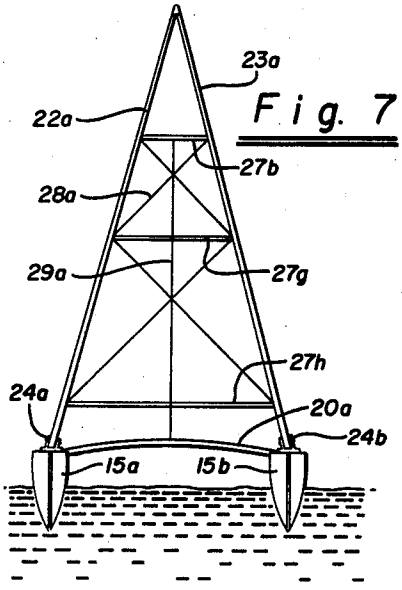

Fig. 7

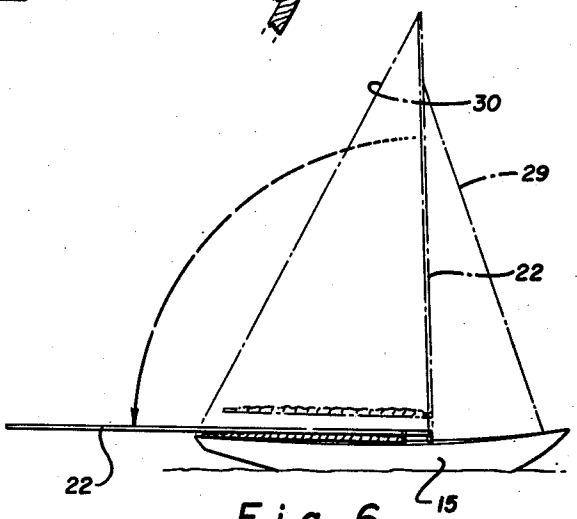

Fig. 6

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Fig. 8

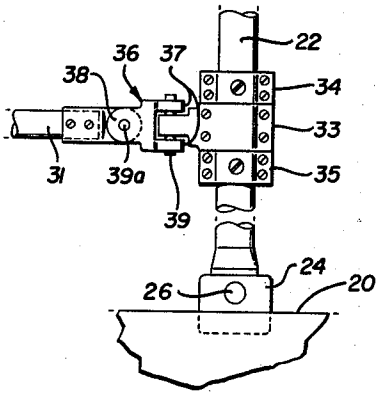
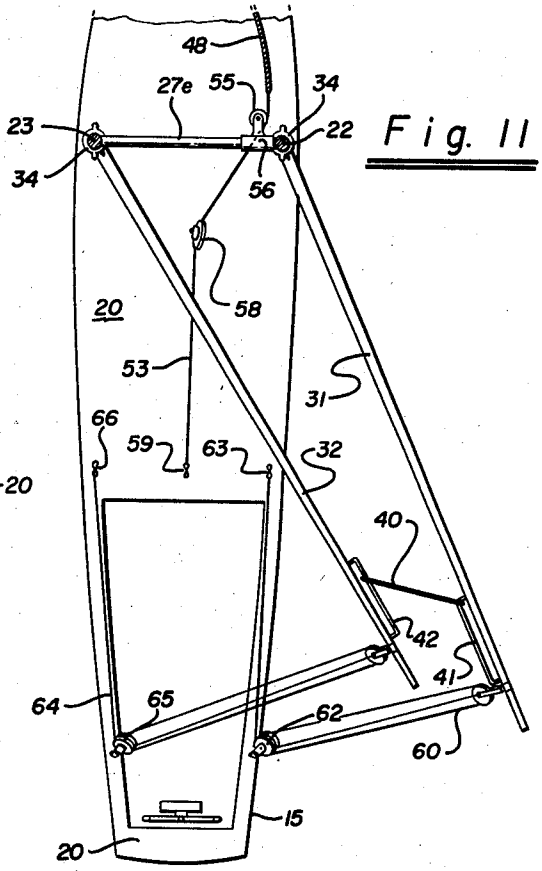


Fig. 11



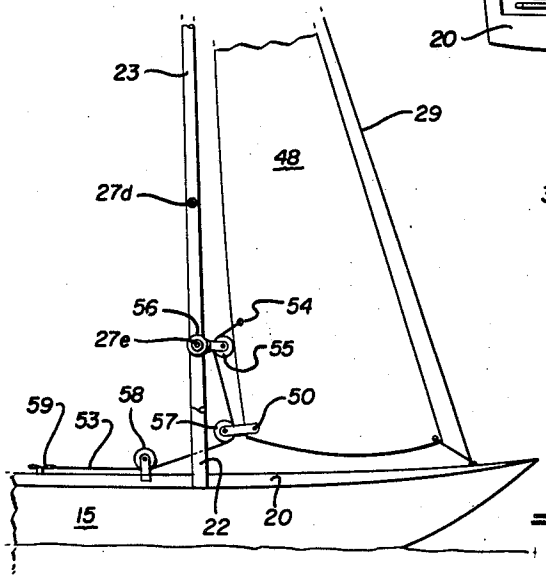


Fig. 10

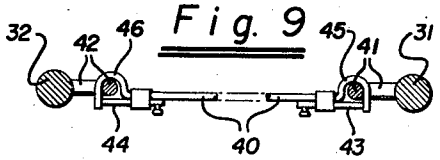


Fig. 9

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3,142,282

SAILING VESSEL

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Filed Aug. 9, 1962, Ser. No. 215,996
5 Claims. (Cl. 114—102)

The invention relates to a sailing vessel, and more particularly to a sailing rig for vessels such as sailboats and the like.

The sailing rig of many modern sailboats, sailing yachts, and similar craft usually includes a mainsail supported intermediate the ends of the vessel and a jib sail supported at the forward end portion thereof. The function of the jib sail is at least two-fold: first, it acts as an ordinary sail in the sense that the air stream is effective thereon to impart motion to the vessel; and secondly, it makes the mainsail more effective in that the jib sail is intended to be positioned at a lower angle of attack to the air stream than the mainsail and serves to guide the air stream around the leading edge of the mainsail which obviates the development of a condition of stall along such leading edge thereof. In the absence of a jib, the mainsail could not efficiently operate at relatively high angles of attack with respect to the air stream, and the vessel would not be able to "point" as high or angle as sharply into the wind when moving in the windward direction.

The evolution of the sailing rig has been, to a great extent, one of continually increasing the size of the jib sail in comparison with the size of the mainsail, and performance improvements have paralleled such increases in the size of the jib. As a result, it is not uncommon today to see vessels equipped with Genoa jibs in which the clews (the lower aft corner of the sail) thereof extend as far aft as the clew of the mainsail when the vessel is pointing or moving in the windward direction. Such large jib sails have a serious disadvantage, however, and it concerns the handling characteristics thereof. That is to say, each time the vessel is tacked or changed from one windward course to another, the jib must be shifted from one side to the other of the mainsail mast which necessitates moving the clew of the jib forwardly, around the mast, and then rearwardly to its aft operating position on the opposite side of the mainsail.

Thus, the operator not only has to tend the rudder and manipulate the mainsail, but he must also manipulate the jib sail which involves repeatedly loosening and tightening the "sheets" (lines fastened to the sail to control the set thereof in relation to the air stream) therefor and shifting such sail from one side to the other of the mainsail and its mast. Because of the problems and difficulties inherent in the use of large jib sails, small or working jibs are still used in many instances since they can be fitted with a "club foot" rig which permits the small jib to tend itself—flipping from side to side as the various tacks are made—but, quite evidently, the aerodynamic advantages of the large Genoa jib sails are lost when the small jibs are used in their place.

In view of the foregoing, an object of the present invention is in the provision of a sailing rig for sailboats, sailing yachts and similar vessels having a mainsail and jig sail composition that provides the advantageous aerodynamic characteristics of the large Genoa jib while also providing the advantageous handling characteristics of the small or working jibs.

Another object of the invention is to provide a sailing rig of the character described having an improved mast structure that eliminates the need for much of the complex stay and shroud arrangement which is used to stiffen and support conventional masts and which increases aero-

dynamic drag and thereby detracts from the efficient use of the available air stream as the vessel-propelling force.

A further object is that of providing an improved sailing rig composition wherein a pair of transversely spaced mainsails and masts therefor are carried by the sailing vessel intermediate the ends thereof, and wherein a single jib sail forms a part of such rig composition and is supported forwardly of the mainsails and may be selectively associated with either of the mainsails in general alignment therewith in accordance with the point taken by the vessel to cooperate with such aligned mainsail and effectively provide therewith the aerodynamic advantages of a large Genoa jib—the jib sail being relatively small, however, so that it can be flipped quickly and easily from side to side as the various tacks are made.

Additional objects and advantages of the invention will become apparent as the specification develops.

Embodiments of the invention are illustrated in the accompanying drawings, in which:

FIGURE 1 is a top plan view of a sailing vessel embodying the invention, alternate positions of the mainsail and jib sail being shown by broken lines;

FIGURE 2 is a side view in elevation of the vessel illustrated in FIGURE 1;

FIGURE 3 is a front view in elevation of the vessel, but with the sails removed and an alternate form of mainmast structure being shown by broken lines;

FIGURE 4 is an enlarged, broken top plan view of the vessel illustrated in FIGURE 1, but with the sails removed;

FIGURE 5 is an enlarged, broken vertical sectional view showing the connection of one of the mainmasts to the deck of the vessel;

FIGURE 6 is a side view in elevation of the vessel, similar to that of FIGURE 2 but illustrating the mainmast structure in the lowered position thereof;

FIGURE 7 is a front view in elevation of a modified sailing vessel;

FIGURE 8 is an enlarged, broken side view in elevation illustrating the connection of one of the booms to a mainmast;

FIGURE 9 is an enlarged, transverse sectional view taken along the plane 9—9 of FIGURE 4;

FIGURE 10 is essentially an enlarged, broken side view in elevation, partly in section, illustrating a modified rig for controlling the jib sail; and

FIGURE 11 is a broken top plan view of the vessel shown in FIGURE 10, but with the mainsails removed and the masts shown in section.

The primary form of sailing vessel illustrated in the drawings may have a substantially conventional hull **15** which ordinarily is equipped with a depending keel **16**. Thus, the hull may be fabricated in accordance with any of the presently used and well known techniques, and the sectional illustration of FIGURE 5 is intended to be typical thereof. Accordingly, the hull **15** has upwardly extending side walls **17** secured to the upwardly extending frame elements **18** which are supported at their upper ends by a main frame component **19**. A deck **20** is secured to a plurality of longitudinally spaced transverse frame members **21** that, at their opposite ends, may be fastened to the main frame component **19** and to certain of the upwardly extending frame elements **18**. The precise details of the construction of the hull **15** are not germane to the present invention, and with respect thereto the vessel exemplifies the usual sailboat, sailing yacht or similar craft.

The vessel is equipped with a pair of mainmasts **22** and **23** that are disposed in spaced-apart transverse alignment intermediate the ends of the hull **15** somewhat forwardly of the transverse center line thereof. The

masts 22 and 23 are respectively located adjacent the outer rails of the hull; and therefore, they may be respectively referred to as the starboard and port masts. As shown most clearly in FIGURE 5, each of the masts is pivotally carried by the hull for swinging movement between generally vertical and generally horizontal positions, as indicated in FIGURE 6. To accommodate such movement, each of the masts is hingedly mounted upon the deck 20 as by means of a support 24 of generally U-shaped configuration, the base of which is rigidly secured to the deck and main frame component 19 by bolts or screws or other similar fastener structures.

The lower, base end of each mast is equipped with a reinforcing cap 25 that is received between the upwardly extending ears of the associated U-shaped support 24; and extending through each mast, cap, and ears of the support therefor is a pin 26 that defines the pivotal axis for such mast. Evidently then, the masts are swingable about the pivot axes therefor between the horizontal and vertical positions shown in FIGURE 6; and with the particular construction described, the masts are swingable through substantially 180°. As seen in FIGURE 3, the masts 22 and 23 are mechanically interrelated by a plurality of transversely extending struts or cross braces 27 that are fixedly connected at their opposite ends to the respective masts. In the particular illustration, there are five such cross braces which, for identification, are denoted with the numerals 27*a* through 27*e*; and such cross braces are spaced from each other along the length of the masts. The masts 22 and 23 may be further rigidified by a plurality of stiffeners such as the angularly oriented tension wires 28 shown in the drawings.

The starboard and port masts are maintained in a generally vertical position, as shown in FIGURE 2, by fore and aft stays 29 and 30—the first of which may be anchored at one end to the transverse brace 27*b* and at its other end to the deck 20, and the second of which may be anchored at one end to the cross brace 27*a* and at its other end to the deck of the vessel. It will be appreciated that addition stays may be employed if necessary or desirable; and various additional arrangements may be used to further lock the masts in the vertical position thereof as, for example, a pair of removable locking pins (not shown) respectively extending through the vertical ears of the supports 24 and through the lower ends of the masts and the caps 25 thereon.

The masts 22 and 23, as is most apparent in FIGURE 3, are substantially parallel but may be angularly disposed, as shown in broken lines in that figure; and in such event the masts (denoted 22' and 23' for identification) will angle upwardly and inwardly toward each other and may be fastened in substantially contiguous relation at their upper ends. An inverted V-shaped configuration of such type can reduce the requirement for cross bracing and stiffeners since the basic rigidity of such triangular orientation would reduce the need therefor, thereby reducing the weight of the sailing rig and also the aerodynamic drag thereon. In this arrangement, the masts could also be used as positive guides for the trailing edge of the jib sail, which will be described hereinafter.

An inverted, generally V-shaped mast structure is also especially useful with a catamaran vessel, as shown in FIGURE 7. Such a vessel, as is well known, has transversely spaced hulls or buoyant members 15*a* and 15*b* interconnected and unified by transverse connector structure 20*a*. The vessel shown has extending upwardly from the respective hull members 15*a* and 15*b* thereof a pair of mainmasts 22*a* and 23*a* supported for pivotal movement between generally vertical and horizontal positions by supports 24*a* and 24*b*, as heretofore described. A plurality of cross braces 27*f* through 27*h* may be used to add rigidity to the masts, and stiffener elements 28*a* may be incorporated in the mast composition for the same

purpose. The masts are maintained in the vertical position shown by one or more fore and aft stays—a single forward stay being shown in FIGURE 7 and denoted therein with the numeral 29*a*.

Respectively carried by the masts 22 and 23 for swinging movement relative to the longitudinal axes thereof are booms 31 and 32. The booms are swingable in either direction about the respectively associated longitudinal axes of the masts 22 and 23, as shown in both FIGURES 1 and 4; and conventional mounting means may be used to secure the booms to the masts for such movement. As an example, the arrangement illustrated in FIGURE 8 may be employed and it comprises a segmented sleeve 33 circumjacent the mast 22 and constrained thereon against longitudinal displacements therealong by segmented clamp collars 34 and 35 pinned to the mast, as shown, or anchored thereto by any other suitable means. The respective segments of the sleeve and collars may be clamped together about the associated mast by bolts, and extending laterally outwardly from the sleeve 33 is a socket 36.

As shown in FIGURE 8, the socket 36 has a pair of bifurcated ends 37 and 38 oriented at 90° with respect to each other; and the end 37 is secured to the socket 36 by a pivot pin 39 for swinging movement relative thereto and about the axis of the mast 22. The boom 31 is supported in the bifurcated end portion 38 of the socket for swinging movement about a generally horizontal axis defined by a pivot pin 39*a* along a generally vertical plane toward and away from the mast. The pivot pin 39*a* may be withdrawn to permit removal of the boom without having to release the sleeve 33 from the mast. The boom 32 and mast 23 are related by the same type of structure.

Ordinarily, the booms 31 and 32 extend in the same general direction and are spaced from each other, as shown in FIGURES 1 and 4. Rather than being exactly parallel, however, the outer free ends of the booms converge toward each other as is illustrated most clearly in FIGURE 4. The rear end portions of the booms are usually linked together so that the booms pivot about the respective masts thereof in unison or mechanically enforced synchronism; and in the form shown, such linkage of the rear end portions of the booms is accomplished through a tie rod 40 that at its opposite ends loosely connects with slide bars 41 and 42 that are respectively secured to the booms 31 and 32 and extend therealong in spaced apart relation therewith. As seen most clearly in FIGURE 9, the tie rod 40 at its opposite ends slidably engages the bars 41 and 42 and is releasably secured thereto. Any suitable means for removably securing the tie rod to the bars 41 and 42 may be employed as, for example, the conventional spring biased latches 43 and 44 slidably related to the tie rod 40 and which are adapted to close the arcuate ends or eyes 45 and 46 of the tie rod to releasably constrain the same about the slide bars.

As noted in FIGURE 4, the distance between the masts 22 and 23 is approximately defined by the distance D_1, the length of the tie bar 40 is defined by the distance D_2, and the minimum length of each of the slide bars 41 and 42 is indicated by the distance D_1—D_2. This dimensional relationship in which the length of the slide bars 41 and 42 is at least as great as the distance D_1—D_2 permits the booms 31 and 32 to swing together in either direction to a fully outboard position—such swinging movement to the starboard side being shown in FIGURE 4—without first releasing or removing the tie bar 40 linking the booms together. Quite apparently, the tie rod 40 must be removed when the booms 31 and 32 are respectively swung outboard to their associated starboard and port sides, as illustrated in FIGURE 1.

The masts 22 and boom 31 are adapted to be equipped with a mainsail 46 and, in a similar manner, the mast 23 and its associated boom 32 are adapted to be equipped with a mainsail 47. Each of the mainsails may be run

up and secured to the associated booms and masts by conventional rigs which, since well known, are not illustrated. The vessel is also provided with a jib sail 48 that is positioned forwardly of the main sails and masts 22 and 23 therefor. As seen in FIGURE 1, the jib sail 48 at its leading or forward end is located and supported substantially along the longitudinal axis of the hull 15 which is located approximately midway between the masts 22 and 23. Such orientation is achieved by securing the leading edge of the jib sail 48 along the fore stay 29, as shown in FIGURE 2. Securing the leading edge of the jib sail in this manner may follow conventional practice, and involves the use of a rig having the usual lines and cleates therefor.

The jib sail 48 is relatively small, and the trailing edge thereof extends rearwardly toward the masts 22 and 23 but terminates forwardly thereof. This sail is adapted to be manipulated or swung from side to side in accordance with the point taken by the vessel when moving toward windward, and such manipulation may be accomplished by the rig illustrated in FIGURES 1 and 2 in which a single sheet or line 49 is secured to the clew 50 of the jib sail, passes rearwardly between the masts 22 and 23, through a centrally disposed pulley 51 secured to the deck 20, and is anchored to a cleat 52 also secured to the deck 20 rearwardly of the pulley 51. Although adequate control of the jib sail is achieved through the arrangement described, a conventional arrangement may be employed in which two control lines or sheets are connected to the jib sail at the clew 50 thereof and respectively extend rearwardly therefrom toward the cockpit, one along each side of the vessel. Additionally, somewhat better control of the jib sail may be provided if it is fitted with a boom along the lower edge thereof or is provided with a standard club foot rig.

A modified arrangement affording excellent control is shown in FIGURES 10 and 11, and employs a rig having a single sheet 53 secured to the jib sail at an eyelet 54 spaced upwardly from the cleat or lower aft corner thereof. The sheet passes over a pulley 55 carried by a generally tubular collar 56 slidably mounted upon the cross brace 27*e* for reciprocable movement between the masts 22 and 23. The sheet 53 then passes downwardly from the pulley 55 and is entrained about a sheave or pulley wheel 57 carried by the jib said at the cleat 50 thereof, it extends rearwardly from the pulley 55 and between the masts 22 and 23, about a pulley 58 secured to the deck 20 of the vessel, and is then anchored to a cleat 59 also secured to the deck of the vessel adjacent the cockpit thereof rearwardly of the pulley wheel 58. Such modified rig permits the jib sail to align itself along one or the other of the masts 22 and 23 during a point, and such alignment is substantially automatic in that transverse movement of the collar 56 is terminated in either direction by abutment thereof with the mast 22 or the mast 23 which, then, act as stops defining the location of the trailing edge of the jib sail. Such movement of the collar 56 and jib usually occurs when the tack of the vessel is changed from one direction to another in travelling to windward.

The mainsails may be controlled and manipulated in any convenient manner as, for example, by the rig arrangement illustrated in FIGURE 11 in which a sheet 60 is connected to the boom 31, is entrained about a sheave or pulley 62 secured to the deck 20, and is anchored to a cleat 63 located adjacent the cockpit of the vessel. In a similar manner, a sheet 64 is secured to the boom 32, is entrained about a pulley or sheave 65, and is anchored to a cleat 66 also secured to the deck 20 adjacent the cockpit of the vessel. Since the booms 31 and 32 are interconnected at the outer end portions thereof by the linkage composition comprising the tie rod 40 and slide bars 41 and 42, the sheets 60 and 64 are not necessarily used together and one or the other thereof may be sufficient to properly manipulate and control both of the sails—the other sheet simply being loosened and made slack so that it is ineffective.

In use of a vessel equipped with a sailing rig embodying the invention, the masts are erected and secured in a generally vertical position by the fore and aft stays 29 and 30. The booms 31 and 32 are properly positioned, and the mainsails 46 and 47 as well as the jib sail 48 are run up and secured in their erected positions. In a downwind run, the booms 31 and 32 and their respectively associated mainsails 46 and 47 generally will be swung in opposite directions to the starboard and port outboard positions thereof illustrated in FIGURE 1. In such orientation, they are disposed in substantially transverse alignment and are generally normal to the direction of the air stream.

The jib sail 48 may be secured in either of the positions shown in FIGURE 1—that is, in general alignment with the mast 22 or with the mast 23—in which case some use is made thereby of the air stream for propelling the vessel forwardly. Usually, no advantage is obtained by positioning the jib sail behind either of the mainsails and in general parallel alignment therewith, since in such position the jib is effectively shielded from the air stream and would contribute little to the forward motion of the vessel and might actually impede the same by affording resistance to such forward motion.

The twin-mast sailing rig facilitates the advantageous employment of a balloon-type jib sail (not shown) which is frequently used and would be located forwardly of the masts 22 and 23 with a substantial portion of such sail being in the path of the air stream passing therebetween. Thus, a balloon sail could be utilized advantageously to further propel the vessel during downstream runs and if used, the jib sail 48 could then best be run down.

It will be appreciated that the tie rod 40 must be removed or at least released from one of the slide bars in order to orient the mainsails in their respective starboard and port outboard positions. However, an alternate though less effective sail arrangement could be used in which both of the mainsails are swung to either the port or starboard position—the latter being illustrated in FIGURE 4. In this event, the tie rod 40 would not have to be removed; however, such overlapping orientation of the two mainsails would not make the most efficient and effective use of the air stream, and would not be employed usually for downwind runs of any significant duration.

One of the lines or sheets 60 or 64 is ordinarily sufficient to control both of the mainsails when they are secured together at their outer ends by the tie rod 40, and the other sheet can simply be loosened so as not to interfere with the control and manipulation of the mainsails. However, both of the sheets 60 and 64 are necessarily employed to control and manipulate the respective mainsails 46 and 47 when the tie rod 40 is removed or released as, for example, when the mainsails are swung to their respective outboard positions as heretofore described. In a downwind run using a conventional single mast and a large Genoa jib, the mainsail is swung outboard in one direction and the Genoa jib swung to an outboard position in the opposite direction; but to maintain the jib in such outboard position it is necessary to secure a whisker pole or small boom thereto. Consequently, with such a sailing rig each time a downwind run is made a crew member must crawl forwardly over the deck to attach such pole at one end thereof to the jib sail, and at its other end to the vessel, usually to the mainmast thereof.

In substantially all sailing conditions other than the downwind run, the mainsails and booms thereof are maintained in a substantially parallel position in which the booms are linked together and the jib sail 48 is generally aligned with one or the other of the mainsails depending upon the tack thereof. For example, considering the position of the mainsails as shown by full lines in

FIGURE 1, such sails extend rearwardly and overhang the hull **15** slightly on the starboard side thereof. In such position, the jib sail **48** extends rearwardly toward the mainmast **23**, and, therefore, is in general alignment with the mainsail **46** and provides an effective extension thereof. Assuming that the vessel is travelling in a windward direction, it will be pointed slightly into the wind, which in the orientation of FIGURE 1 might have an angle, for example, of about 45° relative to the longitudinal axis of the vessel and would be blowing toward the vessel from the port side thereof. Thus, the jib sail **48** together with the mainsail **46** function as a large Genoa jib and, in operating at a lower angle of attack to the air stream than the mainsail **47**, guides the air stream around the leading edge of the mainsail **47** without allowing a stalling condition to develop thereat, which permits the mainsail **47** to function more efficiently at a higher angle of attack. The vessel, then, is thereby able to have a greater point or angular orientation relative to the direction of the air stream.

When the point of the vessel is changed and the tack of the mainsails shifted to the position shown by broken lines in FIGURE 1, in which the sail **47** extends over the deck **20** and the sail **47** overhangs the deck on the port side thereof, the jib sail **48** is shifted to a position in which it is in general alignment with the mast **22** and forms an effective extension of the mainsail **47** thereby defining therewith a large Genoa jib that guides the air stream about the leading edge of the mainsail **46**. Since the jib sail **48** does not extend rearwardly of the masts **22** and **23**, it is readily flipped from one position to another; and such shifting of the position thereof can be accomplished, in most cases, without loosensing the sheet or control line **49** or **53** therefor—the air stream itself serving to shift the position of the jib sail as the point of the vessel is changed. Therefore, the advantages of the large Genoa jib are obtained without the disadvantages thereof; and in fact, the advantageous handling and control features of the small or working jib are realized.

Since the masts may be selectively lowered to a horizontal position, it is convenient to work thereon, and the cross bracing between the two mainmasts can be used as a ladder in the event that it is necessary to climb toward the top of the masts when they are in the vertical position thereof. Additionally, since the masts are located adjacent the side rails of the vessel, they are directly supported by the main frame thereof and it is unnecessary to cut the deck, as is the case with a single mainsail, to extend the same downwardly to the keel of the vessel to find adequate support for the mainmast or, alternatively, to construct a step support for the mainsail below the deck of the vessel.

While in the foregoing specification embodiments of the invention have been set forth in considerable detail for purposes of making an adequate disclosure thereof, it will be apparent to those skilled in the art that numerous changes may be made in such details without departing from the spirit and principles of the invention.

I claim:

1. In combination with a sailing vessel, a pair of transversely spaced masts carried by said vessel intermediate the ends thereof, a pair of mainsails respectively carried by said masts and each being movable about the longitudinal axis of the associated mast to afford selective positioning of said mainsails, coupling structure linking said mainsails to each other to enforce synchronous movements thereon in the same angular directions relative to the axes of said masts, and including a pair of longitudinally extending bars respectively connected with said mainsails and a tie rod slidably connected adjacent the respective end portions thereof with said longitudinally extending bars, the length of each of said longitudinally extending bars being at least as great as the difference between the transverse separation of said masts and the length of said tie rod, an auxiliary sail carried by said vessel forwardly of said masts, rigging means for controlling said mainsails to determine a plurality of adjusted positions thereof, and control rigging connected with said auxiliary sail for selectively orienting the same in association with either of said mainsails to effectively provide an aerodynamic continuation of such associated mainsail.

2. The combination of claim 1 and further comprising a pair of booms respectively secured to said masts for swinging movements thereabout relative to the associated longitudinal axes thereof for supporting the respectively associated mainsails, said longitudinally extending bars being respectively supported by said booms, and said tie rod being equipped adjacent each end thereof with fastener structure for removably connecting the same to said longitudinally extending bars.

3. In combination with a sailing vessel, a sailing rig comprising a pair of transversely spaced masts carried by said vessel intermediate the ends thereof, a pair of booms respectively secured to said masts for swinging movements thereabout relative to the associated longitudinal axes thereof, releasable coupling structure linking said booms to enforce substantially synchronous movements thereon in the same angular directions relative to the axes of said masts, and rigging means for controlling at least one of said booms to determine a plurality of adjusted positions therefor, said coupling structure including a pair of elongated bars respectively connected with said booms and extending therealong and a tie element slidably connected at the respective ends thereof with said elongated bars, said tie element being equipped at least at one end thereof with fastener structure for removably connecting the same thereat to the associated elongated bar, the length of each of said elongated bars being at least as great as the difference between the transverse distance separating said masts and the length of said tie element.

4. In combination with a sailing vessel, a sailing rig comprising a pair of transversely spaced masts carried by said vessel intermediate the ends thereof, a pair of booms respectively secured to said masts for swinging movements thereabout relative to the associated longitudinal axes thereof, releasable coupling structure linking said booms to enforce substantially synchronous movements thereon in the same angular directions relative to the axes of said masts and including a tie element respectively coupled adjacent the ends thereof with said booms for reciprocable displacements relative thereto throughout predetermined distances along the lengths thereof, each of said predetermined distances being at least as great as the difference between the transverse distance separating said masts and the length of said tie element, and rigging means for controlling at least one of said booms to determine a plurality of adjusted positions thereof.

5. In combination with a sailing vessel, a pair of transversely spaced masts carried by said vessel intermediate the ends thereof and converging upwardly to define an inverted generally V-shaped configuration, a main sail carried by each mast and movable about the longitudinal axis of the mast to selected adjusted positions, rigging means for effecting adjustments of said main sails to a plurality of positions, an aerodynamically single triangularly shaped auxiliary jib sail forwardly of said masts having aerodynamically single trailing and leading edges, means anchoring the bottom leading corner of said jib sail to said vessel and the top corner of said jib sail to the masts adjacent the top of their inverted V, and rigging means secured to the bottom trailing corner of said jib sail; the bottom edge of said jib sail being otherwise unanchored to said vessel between the bottom corners thereof whereby the single trailing edge of said jib sail can be quickly orientated by mere flipping of said rear corner to a position adjacent either of said masts while said jib sail remains anchored at the top corner and front

bottom corner thereof to enable said jib sail to provide substantially an aerodynamic continuation of a main sail associated with such mast upon adjustment of said rigging means.

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