

N. C. JESSUP.  
SAILING VESSEL.

No. 492,022.

Patented Feb. 21, 1893.

FIG. 1.

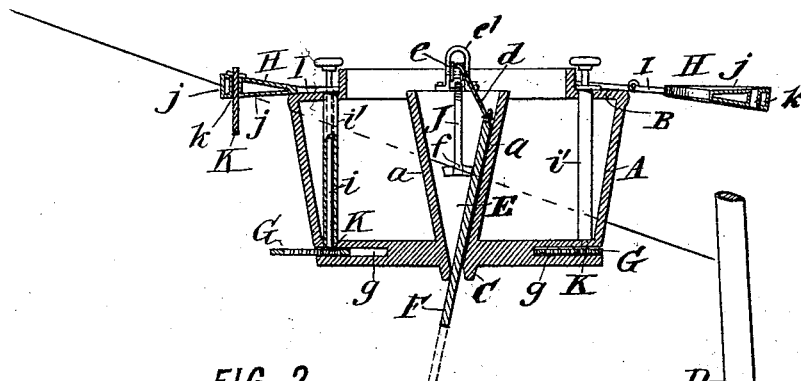


FIG. 2.

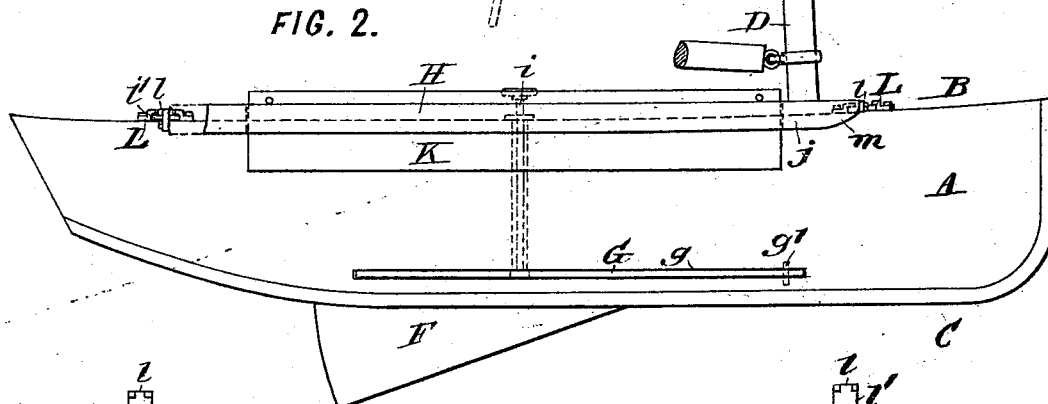


FIG. 3.

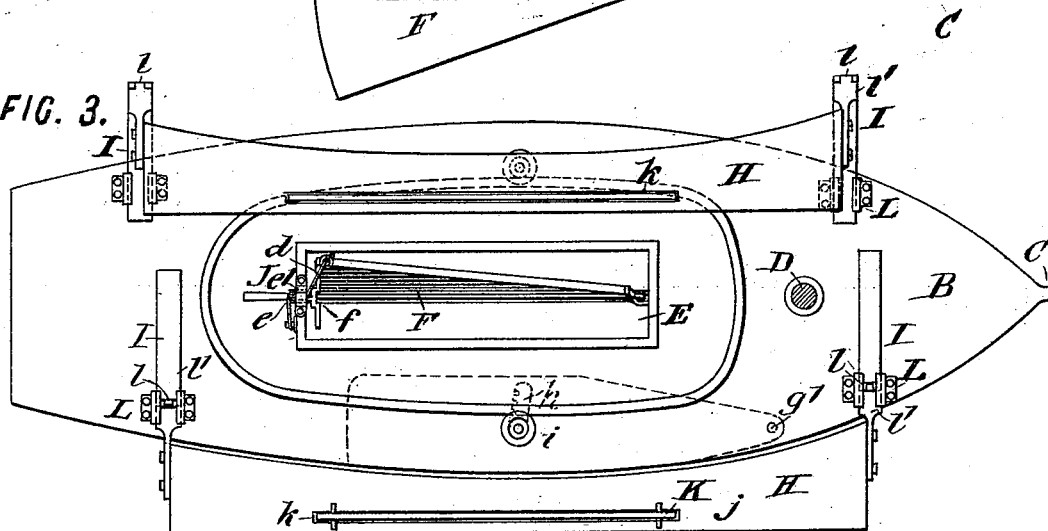
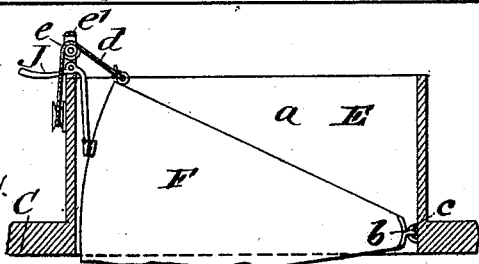


FIG. 4.

WITNESSES:

L. K. Fraser.

Fred White



INVENTOR:

Nathan C. Jessup.

By his Attorneys,

Arthur C. Fraser & Co.

(No Model.)

3 Sheets—Sheet 2.

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FIG. 5.

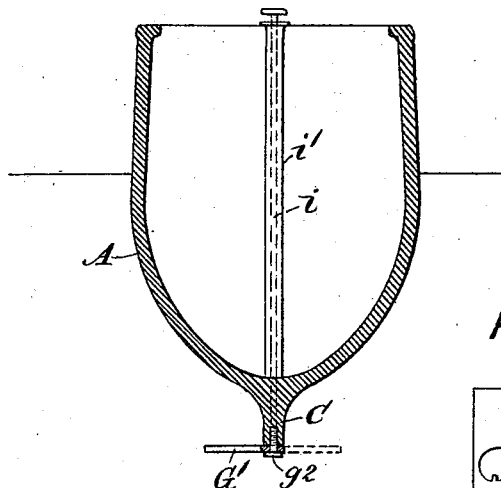


FIG. 7.

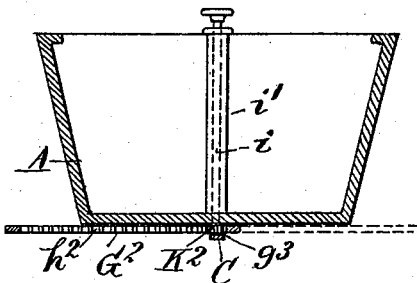


FIG. 8.

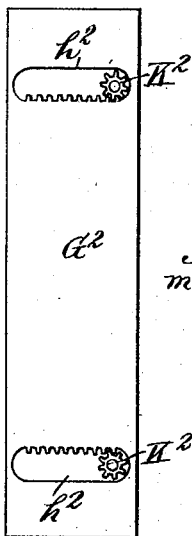


FIG. 9.

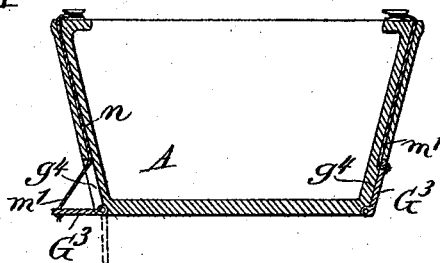


FIG. 6.

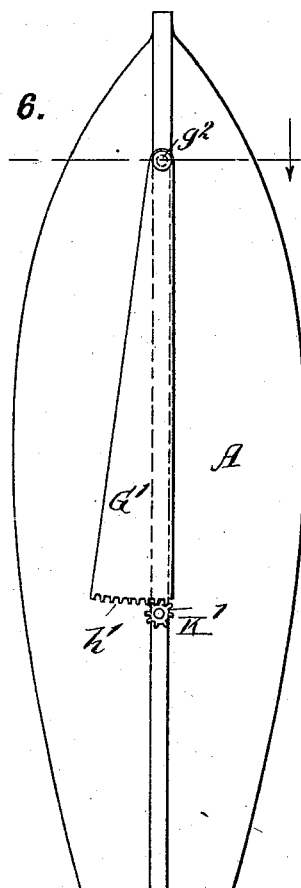
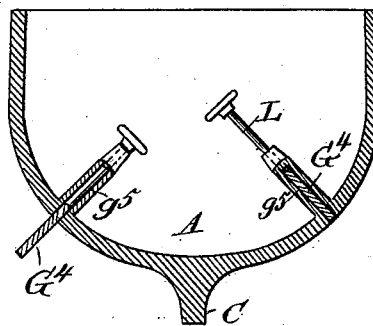


FIG. 10.



WITNESSES:

L. K. Fraser.  
Fred White.

INVENTOR:

Nathan C. Jessup,

By his Attorneys,

Arthur C. Fraser & Co.

(No Model.)

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FIG. 11.

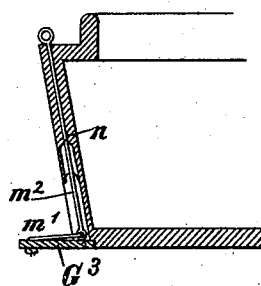
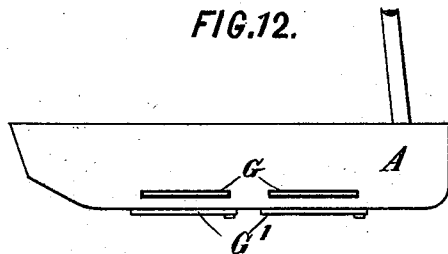


FIG. 12.



WITNESSES:

*John Becker*  
*Fred White*

INVENTOR:

*Nathan C. Jessup,*

By his Attorneys,

*Arthur C. Fraser & Co.*

# UNITED STATES PATENT OFFICE.

NATHAN C. JESSUP, OF WEST HAMPTON BEACH, NEW YORK.

## SAILING VESSEL.

SPECIFICATION forming part of Letters Patent No. 492,022, dated February 21, 1893.

Application filed March 23, 1892. Serial No. 426,155. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN C. JESSUP, a citizen of the United States, residing at West Hampton Beach, in the county of Suffolk, State of New York, have invented certain new and useful Improvements in Sailing Vessels, of which the following is a specification.

This invention relates to sailing vessels, and its object is to provide means whereby such vessels will sail close to the wind. To this end in carrying out my invention in its preferred and most complete form, I provide a vessel with boards or plates, preferably seated in recesses in the hull of the vessel and constructed to be adjusted outwardly and laterally from the latter at the leeward side of the vessel and when thus adjusted to present their faces to the water during sailing in a plane out of the perpendicular of the vessel and extending in direction to act against the water to resist leeward movement of the boat.

In the accompanying drawings, Figure 1 is a cross section, on the line 1—1 of Fig. 2, of a flat bottom sailing vessel, provided with my improvements in their preferred form. The oblique dotted line in the figure indicates the water level when the boat has heeled to the left. Fig. 2 is a side elevation of the vessel shown in Fig. 1; Fig. 3 is a plan view thereof, the windward side wing being shown as turned in; Fig. 4 is a fragmentary mid section through the centerboard well; Fig. 5 is a cross section of a boat constructed according to the cutter pattern, to which a simple form of my invention is applied; Fig. 6 is an under side plan thereof; Fig. 7 is a cross section of a flat bottom boat to which a simple form of my invention is applied; Fig. 8 is a detached view, on a smaller scale, of the board or plate shown in Fig. 7; Fig. 9 is a cross section of a flat bottom boat to which another form of my invention is applied; Fig. 10 is a cross section of a round bottom boat showing a modified form of my invention; Fig. 11 is a fragmentary cross section showing a modification, and Fig. 12 is a side elevation on a small scale, showing another modification.

Referring to the drawings let A represent the hull of a sailing vessel, B the deck, C the keel, D the mast, E the centerboard well, F the centerboard, G my improved plates or boards as a whole, H my improved side guards, and I the carriers for the latter.

The boat A may be of any construction com-

mon to sailing vessels, that shown in Figs. 1 to 4 being an ordinary flat bottom boat, that in Figs. 5 and 6 a cutter built boat and that in Fig. 10 an ordinary round bottom boat.

I will now describe the preferred form of my invention, as illustrated in Figs. 1 to 4 inclusive to which reference is made. In these figures the well E is shown as constructed with inclined side walls *a a*, diverging outwardly as they rise from the keel C, whereby the well is broadest at its upper part, while having the normal width at its outlet through the keel. The centerboard F is pivotally connected in the well at its forward end to have the usual vertical movement, and also to permit oscillatory movement on an axis approximately parallel with the keel. The pivotal connection preferably consists of an eye *b* on the front end of the board which is loosely engaged by an eye *c* near the bottom of the well. The board is manipulated vertically by the usual rope *d* connected to its upper corner and running over pulley *e* carried by frame *e'*, the end of the rope being fastened in any well known manner to preserve the desired vertical adjustment of the board. In sailing as the boat heels toward the leeward under the force of the wind, according to my invention the centerboard should be tilted relative to the perpendicularity of the hull toward a position perpendicular to the level of the water, whereby its acting face will present a greater resistance to leeward movement. This is accomplished by shifting the centerboard F to the windward side of the well, whereupon it will bear at its upper part against one of the side walls *a*, while its projecting lower part will depend in the water, inclined toward the leeward side of the boat. This position will be occupied until the course is changed, whereupon as the boat is going about for the opposite tack the board will be shifted to the opposite position. In sailing before the wind, or when the board is not depressed, it will be maintained centrally of the well as ordinarily. To hold the board in its respective positions any suitable means may be employed. I have shown one simple construction for this purpose, consisting of a lever J pivoted to the frame *e'* having a handle at its outer end, and at its other end depending into the well and constructed with a central notch *f* into which the centerboard F fits when the latter is in the mid position and

with abutting ends toward the side walls *a* of the well adapted to come against the board when it is in either tilted position, and thereby to hold it tilted against the side wall. To release the board from the rocking lever *J*, the handle of the latter is raised thereby throwing its inner end rearwardly out of engagement with the board.

I make no claim in this application to the improvements in centerboards just described, these being thus fully set forth herein only for the purpose of illustrating the construction of the vessel with which I prefer to use my invention hereinafter claimed.

It is essential to my improved boards or plates that they should be constructed to be adjusted outwardly laterally from the hull, for presenting their acting faces to the water in a plane out of the perpendicular of the vessel and which will present a surface to the water to resist leeward movement of the boat. The plate *G* shown in Figs. 1 to 4 are constructed to be received in guide ways or recesses *g*, formed in the hull of the boat, and are shown as pivoted therein at *g'*. They may be adjusted in any manner, those shown in these figures being constructed with a toothed slot *h* in which operates a pinion *K* carried on a rod *i* housed in a tube *i'* and having an operating hand wheel at its upper end above the deck. By rotating the pinion the plate or board is adjusted relatively to the hull. The plates or boards should be constructed to be adjusted inwardly toward the hull at the windward side and outwardly therefrom at the leeward side, as shown in Fig. 1, whereby the contour of the hull on the windward side will be normal while that at the leeward side will be increased by a projecting face acting to catch the water as the boat tends to leeward movement. This projecting face will further have a tendency to move the hull to windward as the vessel assumes the vertical position, since the plate tends to raise the water as the vessel rights, and the resistance incident to this tends to force the hull windwardly.

The side guards *H* are preferably buoyant members connected to the upper part of the hull above the water line and adapted to contact with the water when the boat heels to prevent capsizing of the latter, and having faces which when presented to the water serve to resist the leeward movement of the boat. Those shown in Figs. 1 to 4 are constructed of thin top, bottom, and outer boards *j*, secured together to form a hollow air tight member of great lightness and buoyancy and preferably covered with metal for protection. The outsides are straight and parallel with the keel *C* of the hull, while the inner edge corresponds to the curvature of the side of the hull, and is preferably sufficiently removed from the hull to leave an intervening space through which any water on the guard or on the adjacent deck may escape. In the construction shown slots or wells *k* are formed

through the guard through which slots plates or boards *K* may be passed as shown in Figs. 1 and 2, for presenting faces to the water to resist leeward movement. The plates preferably rest loosely in these slots and are prevented from falling therethrough by small cross pins. I prefer to connect the guards *H* pivotally to the vessel. They are shown as carried by the rods *I* which in this construction have butt hinges *l*, and flattened portions *l'*, shoes *L* being secured to the deck *B* and constructed with overhung grooves in which the rods *I* slide in such manner that when the hinges *l* are within the shoes as shown in the lower half of Fig. 3, the guides are rigidly held relatively to the hull, but when these hinges are beyond the shoes, as shown in the upper half of the figure the guards can be folded over against the deck. Preferably the guards are rounded at their forward ends as shown in Fig. 2 at *m* to avoid catching against the water.

In sailing when the leeward guard is rigid as the vessel heels it strikes the water and by its lateral resistance prevents leeward movement, while by its buoyancy and its rigidity it gives stability to the vessel against further heeling. When thus sailing the windward guard may be folded over as shown in Fig. 3 or it may be left projecting to windward, in which case it will tend to prevent flying spray from falling on the deck. When circumstances render it desirable the leeward guard will be adjusted outwardly until its hinges *l* are beyond the shoes *L*, whereupon as the boat heels more or less the guard will float upon the water presenting its outer edge and the face of the board *K* substantially perpendicularly thereto, while its buoyancy alone tends to prevent capsizing.

I make no claim in this application to the improvements in side-guards for vessels just described, these being thus fully set forth herein for the purpose of illustrating the construction of vessel with which I prefer to use my invention hereinafter claimed.

It will be seen that my invention provides a sailing vessel which can sail closer to the wind, and which will be less liable to capsize than those heretofore made, and that it accomplishes this without materially modifying the customary construction of the hull of the vessel, and by mechanism simple in construction and operation and easy of manipulation.

My invention may be variously modified, as circumstances or those skilled in the art may dictate without departing from its essential features and it will be understood that I do not limit myself to the specific details herein set forth and shown, as various equivalents may be substituted therefor. In the construction so far described all my improvements have been applied to one vessel, but this is not necessary, since the improvements can be used independently if desired.

Figs. 5 and 6 show a modification in which a board or plate only is used. According to

this adaptation the board or plate here lettered  $G'$ , is pivoted at  $g^2$  to the keel C of the cutter shaped hull A, near the bow thereof, and extends thence with gradually increasing width toward the stern where it terminates in rack teeth  $h'$ , meshing with a pinion  $K'$ , carried on a rod  $i$  rising through a tube  $i'$  and terminating above the hull in a hand wheel. By operating the pinion  $K'$  the board  $G'$  is adjusted laterally of the hull to bring it to the leeward side of the vessel. It is shown at the extreme left hand position in full lines in Fig. 5 and at the opposite position in dotted lines. When thus laterally adjusted as the vessel heels the plate or blade captures the water and tends to prevent leeward movement.

Figs. 7 and 8 illustrate a modification in which the board or plate here lettered  $G^2$  rests against the flat bottom of the vessel, in a guide or recess  $g^3$  formed laterally through the keel C. In this modification the board or plate  $G^2$  is constructed with two toothed slots  $h^2 h^2$ , in which operate pinions  $K^2 K^2$ , carried on rods  $i$  passing upwardly through tubes  $i'$ . The board or plate can be adjusted outwardly at either side of the vessel, being shown in full lines in Fig. 7 at the extreme left position and in dotted lines at the reverse position.

Fig. 9 shows a modification in which the hull A is formed with recesses  $g^4$  at its opposite sides, while the boards or plates here lettered  $G^3$  are pivoted therein on an axis substantially parallel with the longitudinal center line of the hull to fold against the side of the latter or outwardly therefrom when in use. The right hand line is here shown as drawn in its recess, and the left hand one as turned outwardly. In dotted lines it is shown as turned to the extreme outer position. A simple provision for operating the plates, consisting of a cord or chain  $m'$  attached to the free end of the plate and pressing upwardly through a passage  $n$  to the deck where it is secured is here shown. The leeward plate will be turned outwardly and the windward plate folded up into its recess in operating a vessel constructed in this manner. The leeward plate will catch the water and prevent leeway.

Fig. 10 shows a modification in which the plates here lettered  $G^4$  seat in recesses  $g^5$  being operated by rods L extending into the vessel. In this construction the left hand plate is shown as projected and the right hand plate as retracted.

Fig. 11 shows a boat equipped like that shown in Fig. 9, except that the provision for manipulating the plate in this construction consists of a rod  $m^2$ , to the end of which the cord  $m'$  is attached, which rod slides vertically through the hole  $m$  in the hull to the deck. When lifted, it draws the cord with it and the cord in ascending folds the plate against the hull.

Fig. 12 shows an outline elevation of a hull having two receiving recesses in its side, corresponding to the single recess  $g$  shown in Figs. 1 and 2. Each of these recesses will receive a short plate.

What I claim is, in sailing vessels, the following-defined novel features and combinations, substantially as hereinbefore set forth, namely:

1. In a sailing vessel, the hull constructed with a substantially horizontal recess at its outer side extending laterally in direction out of the perpendicular of the vessel, in combination with a board or plate pivotally mounted in said recess and constructed to be adjusted outwardly from said recess and laterally from the outside of the hull, and when so adjusted to present its face exteriorly of the hull to the water during sailing in a plane out of the perpendicular of the vessel and means, as the rack  $h$  and pinion  $K$ , for adjusting said board or plate.

2. In a sailing vessel, the hull in combination with a substantially horizontal board or plate pivotally connected to the outside thereof, extending laterally in a plane angular to the perpendicular of the vessel, and constructed to be adjusted on its pivotal connection outwardly and laterally from the outside of the hull, and when so adjusted to present its face to the water during sailing in the plane out of the perpendicular of the vessel.

3. In a sailing vessel, the hull, in combination with a board or plate extending longitudinally thereof and laterally at substantially right angles to the perpendicular of the vessel, pivoted to the outside of said hull on a substantially vertical axis, and constructed to be adjusted on its pivotal connection laterally of and outwardly from the outside of said hull.

4. In a vessel, the combination with the hull A, constructed with a guideway at its outside, of a board or plate  $G$  arranged and operating in the latter, and constructed to be adjustable outwardly from said guideway and when so adjusted to project exteriorly of the hull in a lateral plane angular to the perpendicular of the vessel.

5. In a vessel the hull A having a longitudinal recess,  $g$ , at its outside extending laterally in a direction angular to the perpendicular of the vessel, in combination with a horizontal board or plate,  $G$ , entering said recess, extending laterally in a plane angular to the perpendicular of the vessel, and adjustable outwardly therefrom outside of the hull, and means for so adjusting said board or plate.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

NATHAN C. JESSUP.

Witnesses:

GEORGE H. FRASER,  
CHARLES K. FRASER.