

[54] NON-FOULING SAILING INDICATOR

[76] Inventor: Noah Lamport, 2447 Lanterman Ter., Los Angeles, Calif. 90039

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[51] Int. Cl. B60q

[58] Field of Search 116/28, 114 R, 63 P, 173; 40/10 C; 73/180, 188; 24/DIG. 11, DIG. 19; 248/205 A

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Primary Examiner—Louis J. Capozzi
Attorney, Agent, or Firm—Herzig & Walsh

[57] ABSTRACT

A sailing indicator to indicate optimum pointing angle when sailing to weather and most efficient sail-trim setting for reaching and running. The indicator is in the form of a ribbon or tell-tale material which is attached to the sail a suitable distance aft of the luff and preferably simply by way of an adhesive disc or the like to adhesively secure the ribbon to the sail. Similar ribbons are attached optionally back to back on opposite sides of the sail; and by means of similar adhesive strips, the ribbons can be secured to a stay or shroud line simply by folding the adhesive member or part around the line with the ribbon around the line underneath the adhesive member, or by means of a double-faced adhesive there-between leaving in either event, two free ribbon parts in free-flowing juxtaposition. The ribbons fly substantially in face to face relationship, and in so doing, they do not individually or collectively become fouled or entangled with themselves or the surrounding rigging to which they are attached, or which is there-adjacent.

1 Claim, 8 Drawing Figures

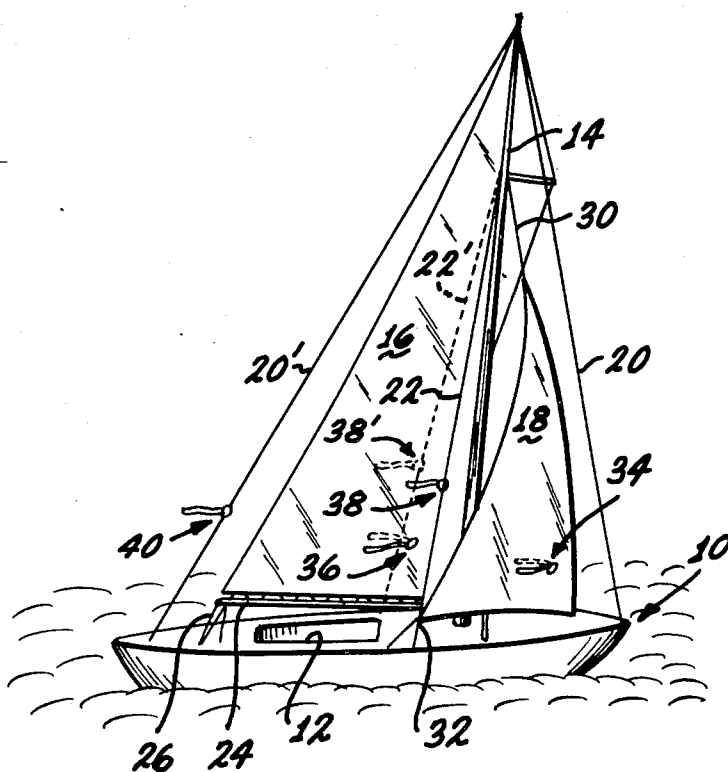


FIG. 1

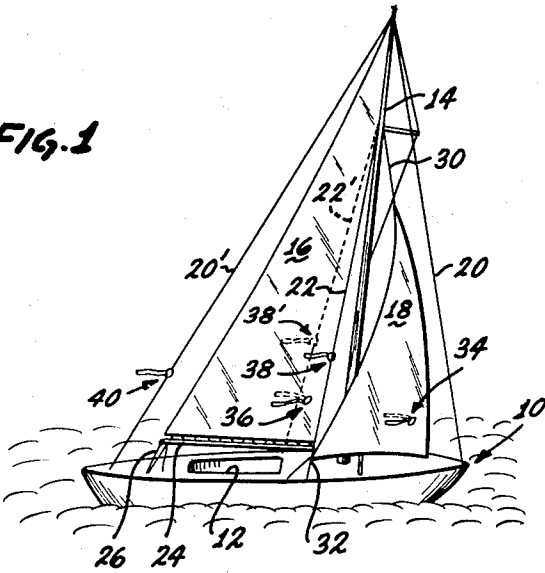


FIG. 5

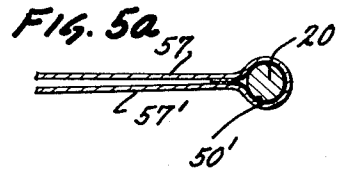
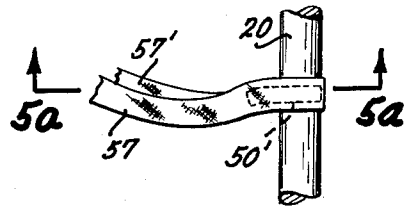


FIG. 3

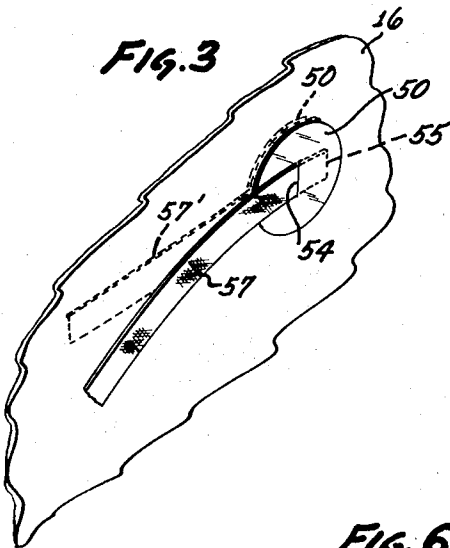


FIG. 2

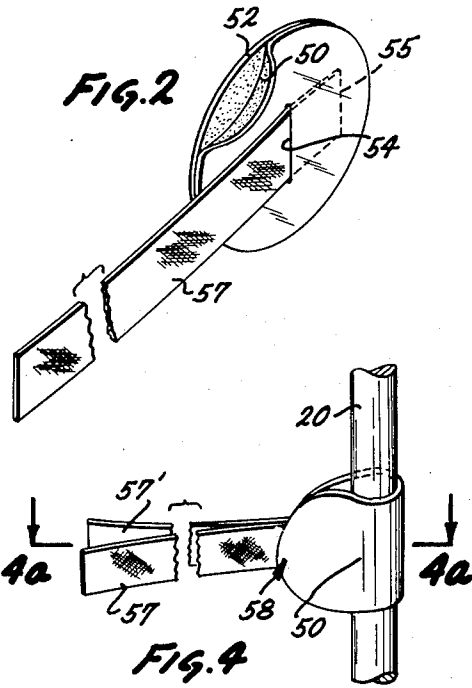


FIG. 4

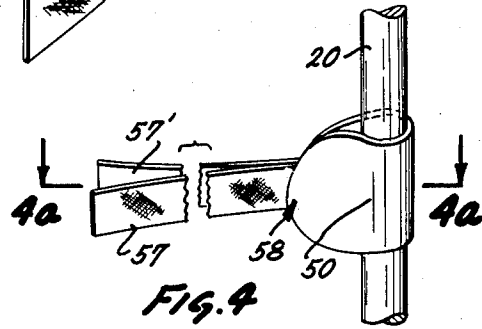
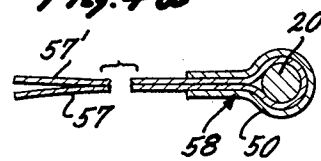


FIG. 6

	A	B	C	WIND
SAILING TO WEATHER	SAILING TOO HIGH	SAILING TOO LOW	SAILING CORRECT	←
REACHING & RUNNING	TOO TIGHT	TOO SLACK	CORRECT	

FIG. 4a



NON-FOULING SAILING INDICATOR

SUMMARY OF THE INVENTION

The invention relates to a sailing indicator to indicate optimum or correct trim of the sails of a sailing vessel as when pointing and reaching and as a wind-direction indicator when two or more ribbons are mounted to stream freely in any direction.

Experienced and professional sailors become very skilled in the art of sailing and are adept in handling and steering the vessel and trimming the sails to produce the most effective results. Optimum results are realized when the setting of the sails and the heading of the vessel with respect to the direction of the wind is correct for that particular sail and vessel. Experienced sailors have also the ability to detect or observe the relative effectiveness of the wind on the sails simply by observing the sails, for example, by observing luffing and other characteristics of the sails themselves.

The herein-described invention provides an indicator to directly indicate to the sailor, whether expert or not, the correct or optimum heading of the vessel and setting of sails relative to the wind direction. The primary object of the invention is to provide such an indicator, and more particularly, to realize such an indicator which is extremely simple and inexpensive, but yet completely effective for its purpose, and which does not become knotted or entangled in the structures with which it may come in contact, but on the contrary, acts in a manner to free itself.

An object, therefore, is to realize such an indicator having utility for use both by experienced or professional sailors and those less qualified including amateurs.

BRIEF DESCRIPTION OF THE DRAWINGS

Further objects and additional advantages of the invention will become apparent from the following detailed description, wherein:

FIG. 1 is a pictorial view of the sailboat having wind and sail-trim indicators respectively of the invention installed thereon.

FIG. 2 is a perspective view of a preferred form of sail trim indicator.

FIG. 3 is another perspective view illustrating installed positions of the indicator on opposite sides of the sail as modified with but a single ribbon on each side of the sail as and for sail-trim indicators.

FIG. 4 is a view illustrating installation of a modified form of the indicator of FIG. 2 on a stay or shroud line as and for a wind direction indicator.

FIG. 4a is a sectional view taken along the line 4a-4a of FIG. 4.

FIG. 5 is a view of a modified form of the invention utilizing integral adhesive strips.

FIG. 5a is a sectional view on a line 5a-5a of FIG. 6; and

FIG. 6 is an illustrative view showing how the indicator indicates sailing too close or not close enough to the wind and a correct heading when sailing close hauled and giving similar indications when sailing free, as applied to a sail in the modified form thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 is for illustrative purposes only; a typical sailboat having a hull 10, a cockpit 12, a single mast 14,

a mainsail 16, and a jib 18. Associated with mast 14, there may be a forestay 20 and a backstay 20. Numerals 22 and 22' designate shroud lines.

At the foot of the sail 16 is a boom 24 of typical construction, its position being controlled by mainsheet 26. Any suitable halyard is provided for raising and lowering the mainsail.

Jib 18 is of typical construction having halyard 30 and being sheeted at 32 as shown.

A number of the sailing indicators of the invention are shown installed on the craft of FIG. 1. One of the sail-trim indicators is indicated at 34 on the jib 18. These indicators are mounted optionally back to back but in any event on opposite sides of the jib as shown, approximately a foot aft on the luff and at a height most readily and conveniently observable from the tiller. Numeral 36 designates an indicator on the mainsail 16 which is comparable to that on the jib. Numeral 38 designates a wind direction indicator on one shroud line, and numeral 38' designates such an indicator on the other shroud line. Numeral 40 designates one of the wind direction indicators secured to the backstay 20'.

FIGS. 2 and 3 indicate a preferred form of sail-trim indicator ribbons. The indicators may be in the form of a disc of sheet material having adhesive on one side as designated at 50 with a removable disc of thin, peel-off material 52 adhered to the disc as shown. Numeral 54 designates a slit provided diametrically through one or both of the two discs and through one of which may be passed an end 55 of a ribbon designated at 57, the free end of which constitutes the sail-trim ribbon which plays against one side of the sail. Said other end 55 is adhesively secured between the disc 50 and the corresponding side of the sail.

In use, discs 52 are peeled off discs 50. Then, these discs can be adhered directly to the sail, that end part of the ribbon at 55 being adhered to the sail beneath the disc as stated.

FIG. 3 shows a typical installation with adhesive discs 50 back to back on opposite sides of the sail, each adhering a ribbon 57 and 57' respectively to the sail on opposite sides thereof in the stated manner.

The indicator may also be installed as a wind direction indicator on shroud lines or stays as desired. In FIG. 4, adhesive disc 50 is wrapped around the stay as shown. The bight of the ribbon is around the stay underneath said disc 50 with ends extended as shown at 57 and 57'. Parts of the disc 50 adhere to each other with intermediate plies of ribbon between them at 58. The ribbons are thus pinched and/or held together at their secured portions and are free to stream at their other ends to indicate wind direction whilst retaining their desired parallel face to face, free confronting streaming and/or fluttering relationship sometimes in confronting touching relationship and sometimes merely in parallel contiguity.

FIG. 5 shows a modified form of the invention, wherein strip 57-57' is merely wrapped around shroud 20 and adhesively secured to it by a double-faced strip of adhesive 50', but operating as a wind direction indicator in a similar manner to the ribbons 57 and 57' of FIGS. 4 and 4a.

FIG. 6 illustrates how the indicator indicates correct or optimum sailing either when sailing to weather, reaching or running. As understood by the foregoing, one ribbon is on the windward and one of the leeward side of the sail. In FIG. 6, the ribbon on the leeward

side is shown dotted. Thus, as may be observed, the sailor, when observing the indicator will know that when sailing to weather, the ribbon on the windward side does not trail back directly but rather flutters, he is sailing too high (too close hauled). Sections A and B of FIG. 6 illustrate how the indicator indicates sailing too tight or too slack when reaching and running. This enables the sailor to correct the position of the sail with respect to wind direction for correct sailing. If the ribbon on the windward side trails back directly as shown in Section B of FIG. 6, and the ribbon on the leeward side flutters, he is sailing too low, that is, not close enough to the wind. Section C of FIG. 6 illustrates correct sailing, either when sailing to weather or reaching. In this condition, both ribbons trail back directly from the adhesive disc parallel to each other, as shown.

It has been found that the use of strip or ribbon material in the manner described, severs very effectively for the purposes described in indicating wind conditions on opposite sides of a sail. The streamlined trailing of the ribbon on both sides of the sail as shown in Section C clearly indicates correct and favorable air movement on opposite sides of the sail.

But more importantly, the ribbons trail in free parallel, generally face to face relation, when secured in directly contiguous relationship and in such capacity as free-streaming wind direction indicators. Even though one or both may temporarily curl or foul, they soon restore themselves under influence of the wind, to their parallel streaming unrestrained flow or flutter without fouling or tangling in the undesired manner of the prior art.

The ribbons may be of a woven fabric such as linen, nylon, or the like, or of any flexible and drapable sheet material, such as nylon or the like. Ribbons of mylar sheet material approximately 0.002 inch thick, 3/8 inch wide and 6 inches long have shown a tendency to flow freely in a stable manner as desired, without excessive flutter. Even more advantageous results have been obtained through the use of streamers (ribbons), again by way of example only, of a Dupont sheet material sold under the tradename KAPTON of the so-called "H" type, and believed to be a polyimide material, the examples being approximately 0.005 inch thick, approximately 5/8 inch wide, and approximately 8 to 9 inches long. Different lengths widths, thicknesses and degrees of stiffness can be employed within the skill of the art, depending on the specific result to be achieved as to the stability of flow, degree of flutter, drapability, and wind velocity. However, it has been found advanta-

geous to use a wind direction indicator made of "KAPTON" a DuPont polyimide from material approximately 16 inches long, 3/8 inch wide and .005 inch thick, providing when doubled and secured as intended, two streamers, having an approximate length of 8 inches each. Embossing of the surfaces, at least on their confronting sides ensures against their undesired adhesion to each other or to surrounding structures which is more particularly noticable in damp or rainy conditions.

The strip or area covered by the adhesive 50' is typically inset from the edge of the ribbon 57-57' in the form of device of FIGS. 5 and 6 for example and is long enough only to ensure good adhesion of the ribbons to each other and to the stays 20 and 20' or shrouds 22, or their like. An improved streamer material for the double tell-tale if made from calendared polyimide approximately .0005 inch becomes a particularly sensitive indicator. It can also incorporate a simple means of securement to a shroud or the like by the use of a double-faced adhesive strip portion 50' (FIGS. 5 and 5a).

From the foregoing, those skilled in the art will understand the nature of the invention, its utilization and the manner in which it achieves all of the objects as set forth in the foregoing.

The foregoing disclosure is representative of a preferred form of the invention and is to be interpreted in an illustrative rather than in a limiting sense, the invention to be accorded the full scope of the claims appended hereto.

What is claimed is:

1. A sailing indicator for a sailing vessel having a sail and rigging provided with support surfaces comprising: a pair of thin flat strips of flexible material; adhesive tab means adhered to one end of each of said strips and adhesively securing said end in face-to-face contact with a said support surface, said support surfaces being opposite faces of said sail and said strips being secured by said tabs to said opposite faces, respectively, in mutually opposed relation with said one end of said strips being directly opposed to each other, the other ends of said strips being free to trail in the wind; said tab means each comprising a tab of material having an adhesive on one surface thereof and a slit therethrough, said one end of a strip extending through said slit into engagement with said adhesive.

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