United States Patent [19]

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[54] **DEVICE FOR APPLYING STOPS TO SPINNAKER SAILS**

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[52] **U.S. Cl.** **114/104**

[51] **Int. Cl.** **B63h 9/04**

[58] **Field of Search** 114/39, 102, 104, 105

[56] **References Cited**

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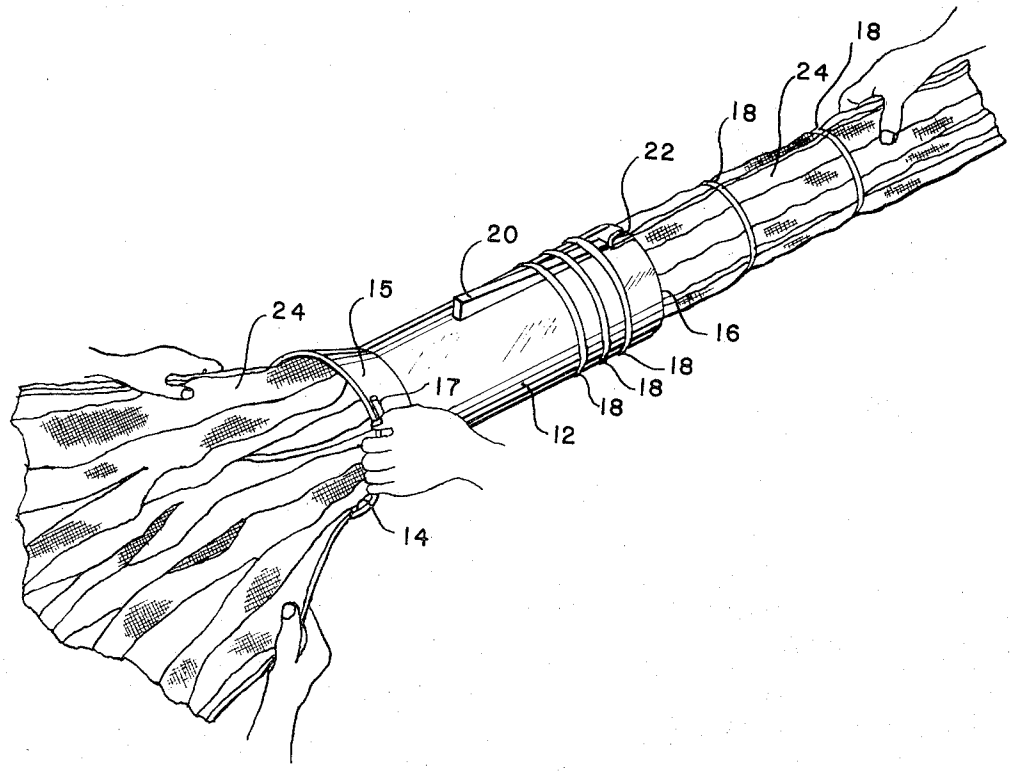
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[57] **ABSTRACT**

A device for applying "stops" to a spinnaker sail comprising a hollow tubular member through which the sail is passed. The sail is thereby compressed into a tight roll configuration and elastic bands positioned on the tubular member are slipped off of the tubular member and onto the sail as it exits from the member to maintain the sail in a tight roll configuration.

9 Claims, 7 Drawing Figures



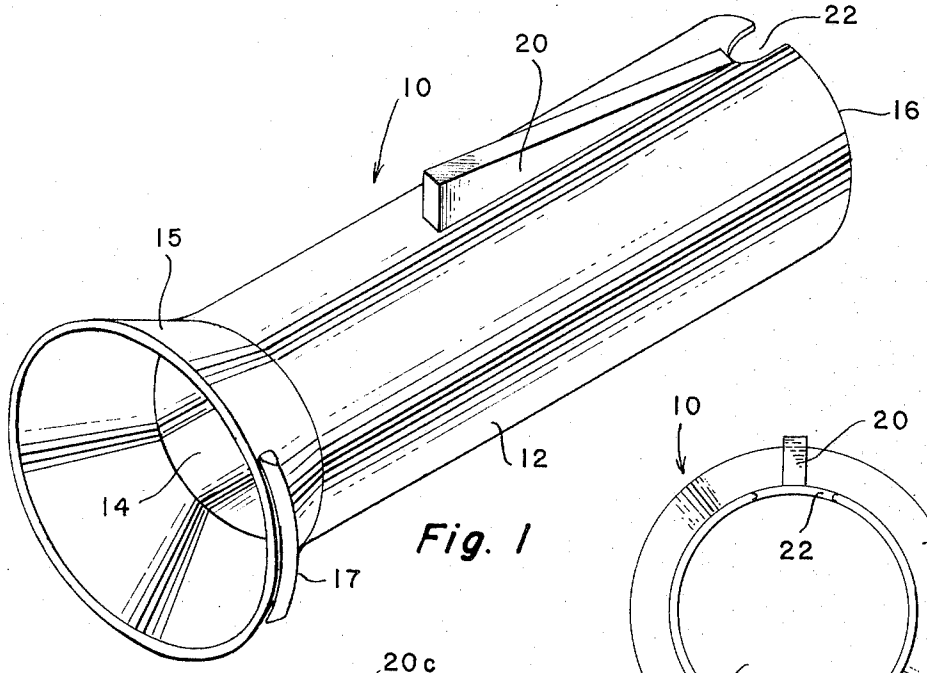


Fig. 1

Fig. 2

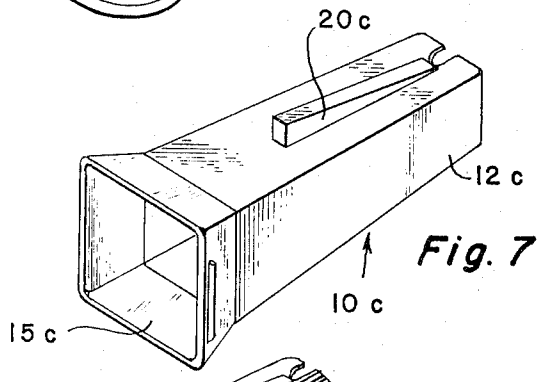


Fig. 7

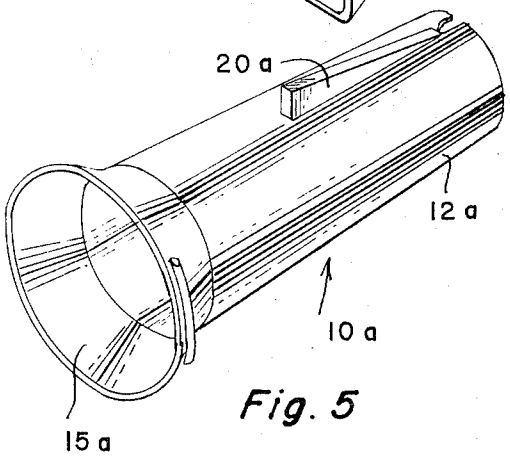


Fig. 5

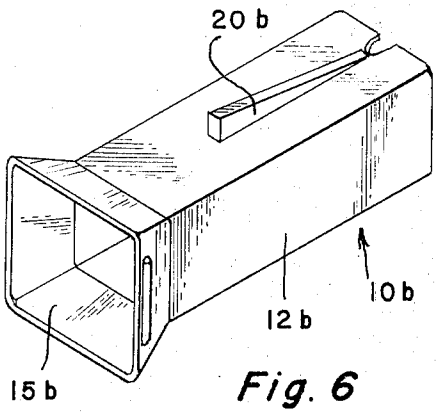


Fig. 6

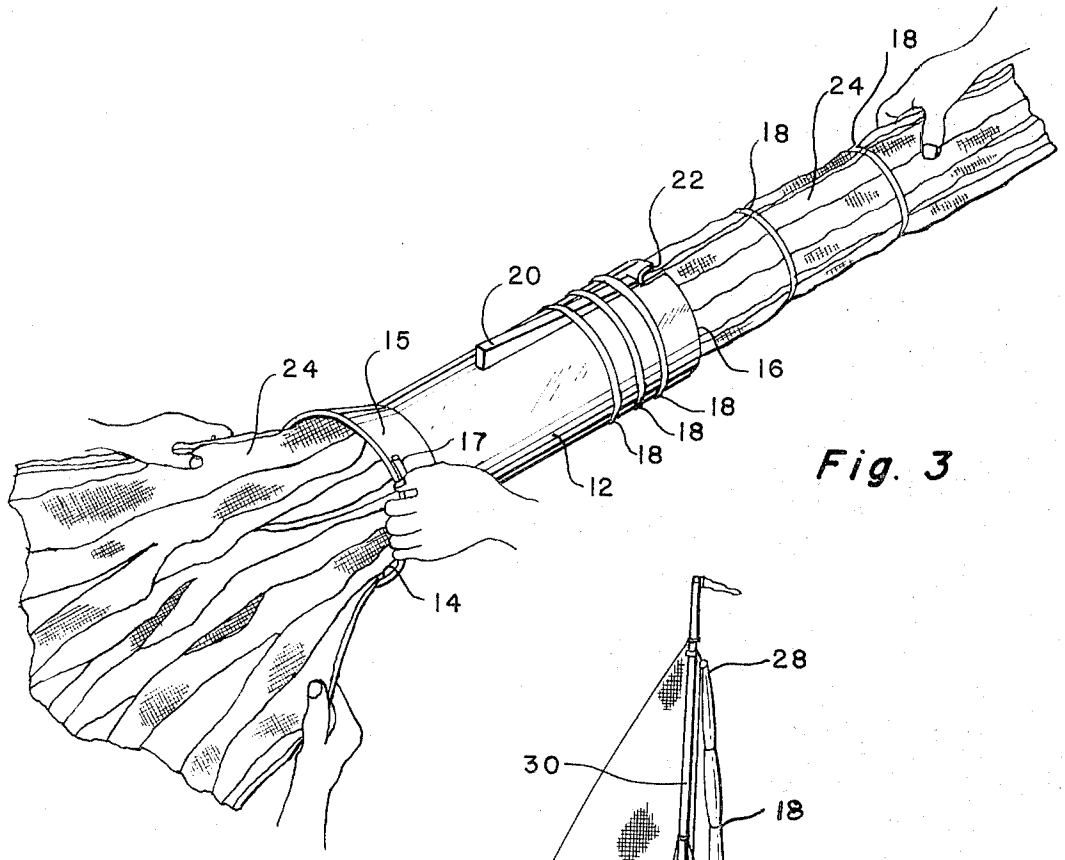


Fig. 3

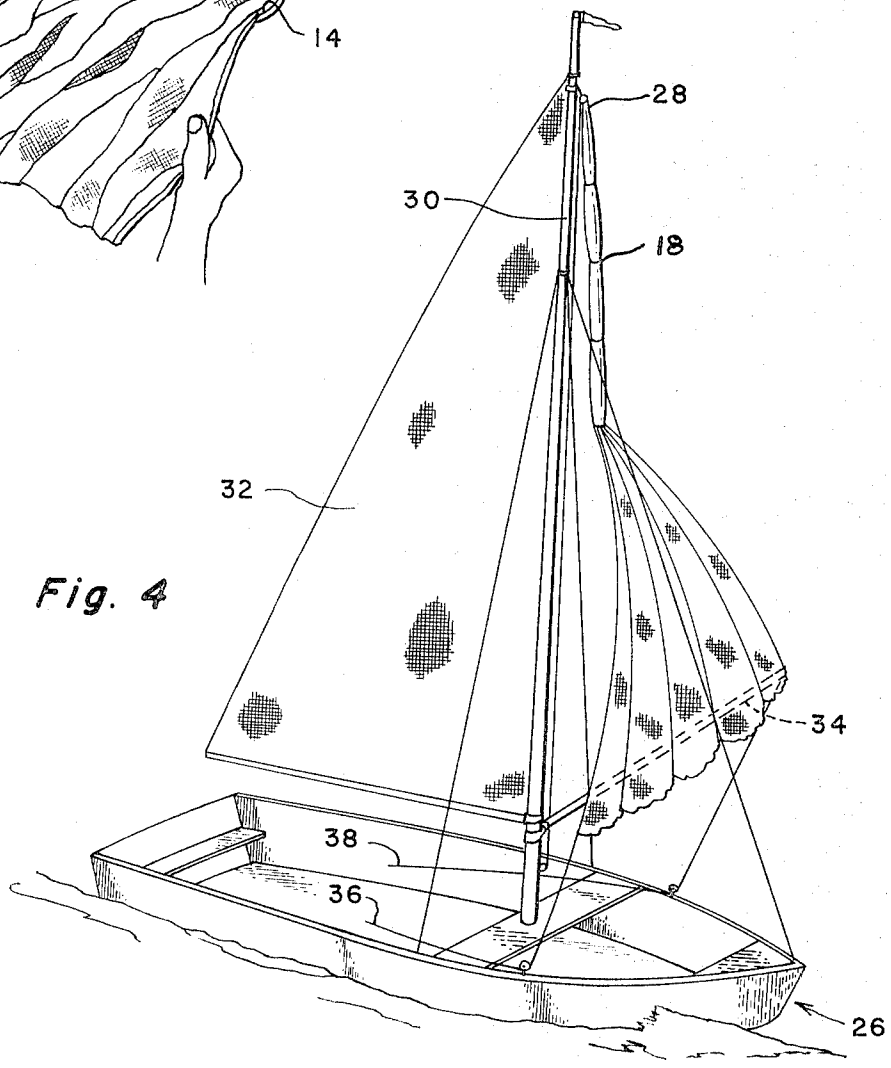


Fig. 4

DEVICE FOR APPLYING STOPS TO SPINNAKER SAILS

This invention relates to devices for use in sailing, and more particularly to a device for use in applying "stops" to a spinnaker sail.

The spinnaker sail is on the forward side of the mast and is used in conjunction with the mainsail, and, sometimes with both the mainsail and the jib, when running before the wind. It is comprised of a large triangular sail having a head or apex and two lower corners. When set, the forward lower corner is termed the "tack" while the rearmost lower corner is termed the "clew." Prior to deploying the spinnaker the halyard is attached to the head and a line or sheet is attached to the rearmost lower corner or the clue of the spinnaker and run back to the pilot's position in the boat. A relatively lightweight spinnaker boom is attached to the mast by means of a connection which permits vertical sliding movement and pivotal movement on the mast such that the boom stays generally parallel to the water surface. A line or guy is attached to the other bottom corner or the tack of the spinnaker and run through an eyelet on the outboard end of the boom and back to the pilot's position on the boat. The boom is now ready to be deployed. This is done by hoisting the head up the mast by means of the halyard.

A well-known expedient for deploying the spinnaker sail comprises applying "stops" to a rolled-up spinnaker sail. Usually the spinnaker is "stopped" by laying it out on the deck, or below deck as the case may be, with its side edges along side each other. The center portion of the spinnaker is rolled tightly into a long, thin, tight roll configuration with the lower corners at the bottom end and the upper corner at the top end. At spaced intervals of 2 ft. or so the roll is tied with light twine after which the head of the sail is run up the forward side of the mainmast. The sheet is run through a block aft and wrapped around an appropriate winch. The tack is made fast to the guy which passes through the outboard fitting on the spinnaker pole and back to a winch. The guy and sheet are winched in and out to manipulate the sail. The spinnaker is now ready for quick and easy displacement merely attaching the inboard end of the boom to the mast and then pulling the boom to a position perpendicular to the longitudinal axis of the boat. Since the rearmost corner is tightly secured by the sheet which is attached to a cleat, as the boom is swung around the lightweight strings snap progressively as the lower corners of the spinnaker sail are further separated. Stopping is particularly useful when sailing in races in that the spinnaker sail is already in the hoisted position and ready for deployment when the situation requires it.

The above-described prior art method of stopping spinnaker sails is quite time consuming since each strand of string must be individually tied and the spinnaker must be twisted to the proper configuration. Accordingly, it is an objective of this invention to provide a device which will facilitate the stopping of spinnaker sails.

More particularly, it is an object of this invention to provide an inexpensive and simply manufactured device which will compress the sail into a roll configuration to permit stops to be applied at spaced points along the length of the rolled sail.

It is a further objective of this invention to provide stopping means in the form of endless elastic bands

which are applied by means of the device of this invention.

More specifically, the device of this invention is comprised of a hollow elongated tubular element of either circular or rectangular, constant or tapered cross-section. Both ends of the device are open and one end is flared and constitutes the entrance while the other end constitutes the exit. Rubber bands, or other elastic elements that are relatively easily ruptured, are positioned on the body of the device adjacent the exit end. The spinnaker sail is fed through the tubular member, top corner or "head" first, and is thereby compressed into a roll configuration. As it is drawn through the tubular member, the elastic bands are periodically pulled off of the tubular member and applied at spaced points to the rolled sail. In this manner, the sail is "stopped." A wedge or slide is affixed to the surface of the device adjacent the exit end to facilitate removal of the elastic bands.

These and other objects of the invention will become more apparent to those skilled in the art by reference to the following detailed description when viewed in light of the accompanying drawings wherein:

FIG. **1** is a perspective view of the spinnaker-sail stopping device of this invention;

FIG. **2** is a cross-sectional view taken through lines **2—2** of FIG. **1**;

FIG. **3** is a perspective view showing the device of FIG. **1** in operation;

FIG. **4** is a side view in elevation of the "stopped" spinnaker sail in raised position on the mast with a portion of the sail having been broken out;

FIG. **5** is an alternate embodiment of the device of this invention;

FIG. **6** is another alternate embodiment of the device of this invention; and

FIG. **7** is a further embodiment of the device of this invention.

Referring now to the figures wherein like numerals indicate like parts, the spinnaker sail stopping device of this invention is generally indicated by the numeral **10** and comprises an elongated hollow body portion **12** having open ends **14** and **16.** The end **14** is provided with a flared flange **15** and is the entrance end while the end **16** is the exit end. A projection **17** on the flange **15** serves as a finger hold for steadying the device when in use. The device **10** may be constructed of any suitable material such as plastic, wood, fiberglass, metal or any other durable substance, or, if desired, can be made of a disposable material such as cardboard or the like.

FIG. **3** shows rubber bands **18** or any other suitable endless elastic means which will rupture upon the bottom corners of the sail being spread apart when it is broken out. Prior to use the device **10,** a plurality of the bands **18** are positioned on the body portion **12** adjacent the exit end **16** as best seen in FIG. **2.** The bands ride over a longitudinally extending wedge member **20** which is integrally attached to the surface of the body member **12.** The wedge **20** raises the bands above the surface of the body member **12** such that individual bands may be easily gripped and moved toward the exit end. At the exit end a slot or finger access opening **22** facilitates gripping of a band positioned immediately adjacent the end **16** such that the band can be readily slipped off of the end of the device **10** and onto the spinnaker sail **24.** The sail, of course, is fed through the flared end **14** and is continuously pulled through the

elongated body member **12.** The device of this invention serves two purposes, it compresses the sail into a roll configuration as seen in FIG. **2** and serves as a means by which bands **18** can readily be applied to the compressed sail. The sail can be stopped in much less time than is presently required in tying individual strands to the sail.

It has been found that the sail is compressed into a sufficiently tight roll if the device is of a diameter of between 3½ to 6 in. although it is to be understood that this dimension varies with different sails. The diameter must be sufficient to adequately compress the sail into a tight roll. A suitable length has been found to be approximately 12 in. although this invention is not limited to any particular length and other lengths will also work adequately.

FIG. **4** shows the stopped spinnaker in place on a sailboat **26.** The upper corner **28** or "head" of the spinnaker is in hoisted position on the forward side of the mast **30** to which the mainsail **32** is also attached on the rear side thereof. One of the bottom corners of the sail (the "tack") is attached to the outboard end of a boom **34** which is universally attached at its other end to the mast **30.** The other corner of the triangular spinnaker sail (the "clew") is attached to a line or "sheet" **36** which runs to a winch at the pilot's position on the boat **26.** Likewise a line or "guy" **38** runs from the "tack" through an eyelet in the outer end of the boom **34** to a winch at the pilot's position. The clew and tack are trimmed simultaneously by winching in the guy and sheet. The boom rotates to a position wherin it extends substantially perpendicular to the longitudinal axis of the boat **26.** During the course of travel of the boom, the stops or bands **18** are progressively snapped as illustrated in FIG. **3** as the lower corners of the sail are spread further apart.

Alternate embodiments of the invention are shown in FIGS. **5–7.** In FIG. **5,** the body portion **12***a* of the device **10***a* is tapered as shown to facilitate to a certain extent the compressing of the sail into the roll configuration. In FIG. **6,** the device **10***b* shown therein is rectangular in cross section, and in FIG. **7,** the device **10***c* is a rectangular cross section and is tapered. It must be emphasized that any cross section is acceptable as long as the device performs two functions; namely, compressing the sail into a rolllike configuration and serving as a positioning member for the elastic bands or stops as the sail is fed through the device.

The device of this invention will normally be used by holding it in the left hand, utilizing hand guys, while pulling the sail through with the other. Of course, if there is another person available, one can hold the device and apply the stops while the other keeps the sides or leaches taut and feeds the sail through. Alternately, the device can be mounted on a suitable support directly to the sailboat.

In a general manner, while there has been disclosed effective and efficient embodiments of the invention, it should be well understood that the invention is not limited to such embodiments as there might be changes made in the arrangement, disposition, and form of the parts without departing from the principle of the present invention as comprehended within the scope of the accompanying claims.

I claim:

1. A device for applying stops to a spinnaker sail comprising an elongated hollow member having first and second open end portions through which the spinnaker sail is passed, said first and second end portions serving as entrance and exit ends respectively, said member having a cross-sectional dimension sufficient to compress said spinnaker sail into a relatively tight elongated roll as said sail is passed therethrough, and a means on said second end portion for supporting discrete binder devices which are removed from said second end portion and thereby are applied to said spinnaker sail as it exits from said second end portion to maintain said sail in said roll configuration.

2. The device of claim **1** and including a radially outwardly flared flange surrounding said first open end portion to facilitate the entrance of said spinnaker sail into said member.

3. The device of claim **2** and including a finger-hold attachment on said flange.

4. The device of claim **1** wherein said binder devices are endless elastomeric bands.

5. The device of claim **1** wherein the means for supporting said binder devices comprises a surface area of said member, and a longitudinally extending wedge-shaped member affixed to said surface area and over which said binder devices are positioned, said wedge member raising said binder devices above said surface to facilitate grasping said discrete binder devices.

6. The device of claim **1** wherein said member is of circular cross section.

7. The device of claim **6** wherein said dimension of said cross-section progressively diminishes from said first end to said second end.

8. The device of claim **1** wherein said device is rectangular in cross-section.

9. The device of claim **8** wherein said dimension of said cross-section progressively diminishes from said first end to said second end.

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