

[54] **MAST CABLE ASSEMBLY**

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[58] Field of Search 174/45 R, 68 C, 70 R, 70 C, 174/72 A, 95, 97, 99 R, 100, DIG. 11; 114/39, 90; 138/103, 108, 111, 114, 115, 116, 117, 166; 240/7.5

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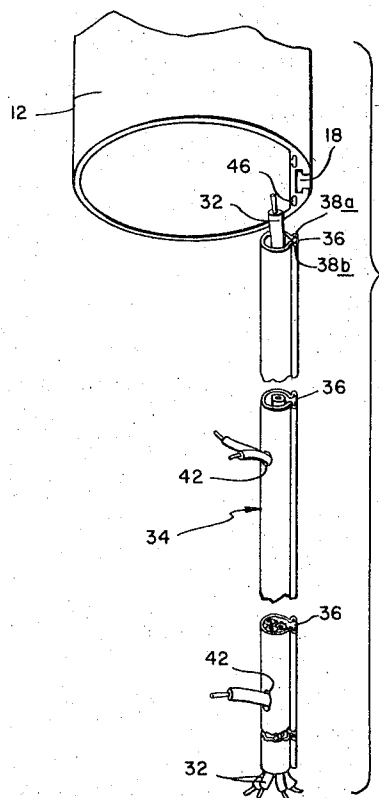
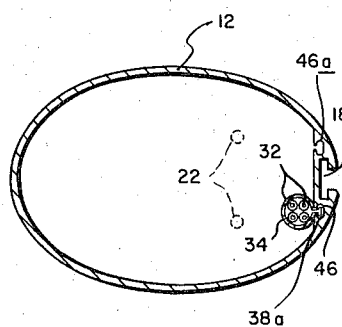
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[57] **ABSTRACT**

In order to protect the electrical cables extending up through a hollow sailboat mast, the cable is inserted side-ways into a split tube made of flexible, impact-resistant material. The tube has an exterior longitudinal bead which is slid into a correspondingly-shaped keyway formed on the inside wall of the mast to hold the tube against the mast wall.

6 Claims, 3 Drawing Figures



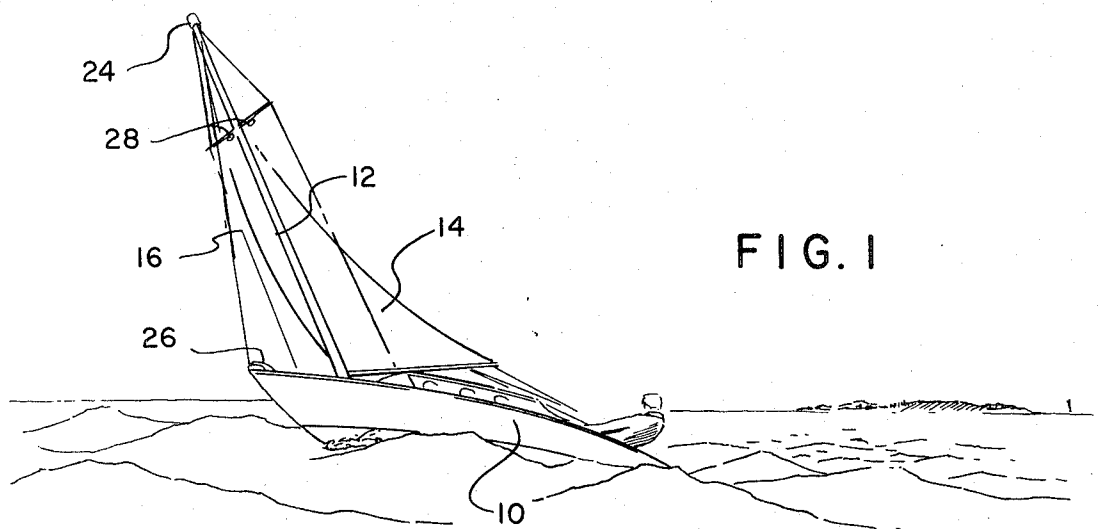


FIG. 1

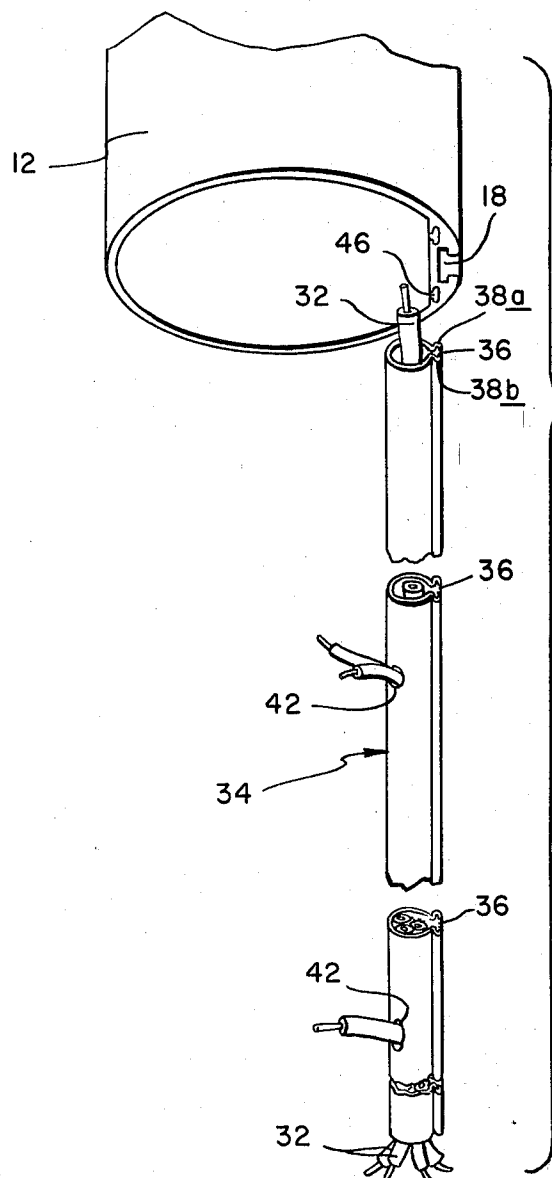


FIG. 2

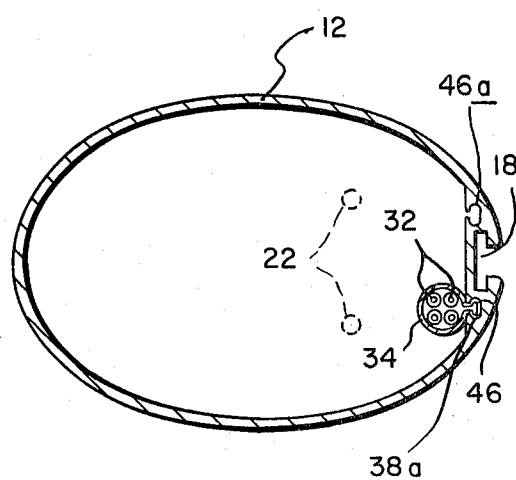


FIG. 3

MAST CABLE ASSEMBLY

BACKGROUND OF THE INVENTION

This invention relates to sailboats. It relates more particularly to a sailboat of the type having a hollow mast with electrical cables extending up through the mast to conduct electrical current to lights at the top of the mast and elsewhere.

Safe navigation practice requires that sailboats exhibit a mast light during night sailing. Many boats also have spreader lights and a bow light. In many cases, the current for operating the lights is conducted from a battery below deck to the lights by cables extending up through the hollow boat mast.

Frequently these cables become frayed because the constant motion of the boat causes the cables to rub against one another and against the inside wall of the mast. As a result, short circuits occur which extinguish the lights. Not only does this create a problem as far as maintenance is concerned, but also a short circuit may occur at night, thereby creating a navigation hazard. Also, in some cases, the mast may contain lines for raising and lowering the sails. Sometimes these lines become entangled with the cables so that the sails can no longer be operated properly.

SUMMARY OF THE INVENTION

Accordingly, this invention aims to provide a mast cable system which shields and protects the electrical cables within the mast.

Another object of the invention is to provide a mast cable assembly which prevents lines inside the mast from becoming entangled with the cables.

Yet another object of the invention is to provide a mast cable assembly which is relatively easy to manufacture and install.

A further object of the invention is to provide a mast cable assembly which does not add appreciably to the overall cost of the boat.

Other objects will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth and the scope of the invention will be indicated in the claims.

Briefly, the present assembly includes a split sleeve formed of a suitable flexible, resilient, impact-resistant material such as vinyl resin. The sleeve is formed with lips at opposite edges of the split. The lips are parted slightly when the sleeve is in its relaxed state so that wires or cables can be inserted sideways into the sleeve. However, when the lips are pressed together, the cables are retained inside the sleeve with the lips forming a bead extending the length of the sleeve.

The sleeve carrying the cables is slid into the mast from one end with the bead riding in a longitudinal keyway or channel formed in the inside wall of the mast. When the cable-containing sleeve is in place within the mast, its lips are pressed together within the channel so that the cables are protectively enclosed within the sleeve and held firmly against the inside of the mast.

Suitable openings may be provided in the sleeve and mast so that one or more of the cables can be picked off partway along the mast to service auxiliary lights.

The mast and sleeve can be made relatively inexpensively by conventional extrusion processes. Also, the separate components are relatively easy to assemble because side access into the sleeve permits even very long cables to be installed relatively quickly. On the other hand, the sleeve itself is guided properly into the mast by the interfitting lips and channel. Finally, since the sleeve is itself retained tightly against the inside wall of the mast, it cannot possibly become entangled with moving lines within the mast.

BRIEF DESCRIPTION OF THE DRAWING

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

FIG. 1 is a perspective view of a sailboat having a mast cable assembly made in accordance with the present invention;

FIG. 2 is an exploded fragmentary perspective view on a larger scale showing the components of the assembly in greater detail; and

FIG. 3 is a transverse section of the mast in FIG. 1, on a still larger scale with the elements of the assembly shown in place.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning to FIG. 1 of the drawing, the sailboat 10 is outfitted with a hollow mast 12 made of aluminum. The mast 12 supports the usual sails 14 and 16 with sail 14 being retained against the mast by means of a series of keys (not shown) which slide in a keyway 18 (FIG. 3) formed in the rear face of the mast. Sail 14 can be raised and lowered by means of lines extending down inside mast 12. Two of these lines are indicated in dotted lines at 22 in FIG. 3. Boat 10 is provided with the usual mast light 24, bow light 26 and spreader lights 28.

Turning now to FIG. 2, electrical current is conducted to these lights by means of cables 32 which extend up through the mast. Four such cables are shown, one for each of the aforementioned lights,

Cables 32 are inserted into a protective sleeve 34 which is extruded of a suitable, flexible, resilient, impact-resistant material such as relatively stiff vinyl resin. Sleeve 34 is split, having a lengthwise slit 36 extending its entire length. Also, the sleeve is formed with a pair of lips 38a and 38b at each edge of the slit which are curved or bowed toward one another.

As best seen in FIG. 2, when the sleeve 34 is in its relaxed state, the lips 38a and 38b are parted slightly so that access is provided through the slit 36 into the sleeve 34. Accordingly, the cables 32 do not have to be slid endwise into the tube. Rather, the cables, no matter how long, can be inserted easily through the side of the sleeve simply by pressing the cables through the parted lips 38a and 38b.

Still referring to FIG. 2, openings 42 are provided at suitable locations along sleeve 34 so that certain ones of the cables 32 can exit the sleeve at the proper locations to serve lights partway up the mast. This arrangement provides access to the interior of the sleeve adjacent the openings so that the cable ends can easily be inserted through the openings. When the cables are all in place within the sleeve 34, the lips 38a and 38b are pressed together. Their shape is such that they form a

continuous bead which extends the entire length of the sleeve.

Turning now to FIGS. 2 and 3, an extruded mast 12 is formed with an interior channel 46 which extends the length of the mast. This channel is shaped to receive the pressed-together, bead-forming lips 38a and 38b. Sleeve 34 is inserted endwise from one end of the mast with the bead riding in the channel 46. Since the sleeve is made of a relatively rigid material having a smooth finish, it slides relatively easy in the channel even though there is resilient engagement between the lips and the channel wall. As the sleeve is fed into the mast, it is guided by the channel to the top of the mast, whereupon any excess cable and sleeve material projecting from the bottom of the mast can be cut off.

It is apparent from FIG. 3 that sleeve 34 bunches the cables together so that they cannot chafe against one another. The sleeve also protectively encloses the cables so that they are shielded from any water that might find its way into the mast. Also, the interfitting lips and channel securely hold the sleeve and its contents against the inside wall of the mast so that neither the cables nor the sleeve can become entangled with any of the moving lines 22.

For larger boats requiring additional lights, the extruded mast 12 may be provided with a second channel 46a to retain a second sleeve 34 protectively enclosing additional cables or wires.

Thus, the mast cable assembly described herein provides significant advantages in terms of reduced incidence of electrical failures and entanglement between wires and running lines within the mast. Yet the initial cost of the components is relatively low and they are easy to assemble so that installation and maintenance costs are kept to a minimum.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A mast cable assembly comprising
 - A. a hollow mast having a lengthwise keyway along its inside wall,
 - B. a sleeve extending a substantial distance inside the mast,
 - C. a lengthwise deflectable key affixed to the outside of the sleeve, said key slidably fitting in said keyway, and
 - D. means for providing access into the sleeve for electrical conductors whereby, when conductors are placed inside the sleeve, they are protectively enclosed and held tightly against the inside wall of the mast.
2. The assembly defined in claim 1 wherein said means for providing access into the sleeve comprises a lengthwise split in the sleeve so that the conductors can be inserted sidewise into the sleeve.
3. The assembly defined in claim 2 and further including one or more openings along the length of the sleeve so that selected conductors can exit the sleeve partway along its length, and corresponding openings in the mast so that the selected conductors can exit the mast.
4. The assembly defined in claim 2 wherein the key is comprised of lips integral with the sleeve at each side of the split.
5. The assembly defined in claim 4 wherein
 - A. the lips on each side of the split are flexible and resilient and bowed toward one another so that they form said key in the shape of a lengthwise bead, and
 - B. the keyway inside the mast is shaped to receive the bead.
6. The assembly defined in claim 5 wherein the sleeve is formed so that
 - A. when the sleeve is in its relaxed state, the lips are parted slightly to provide access for the conductors, and
 - B. when the lips are retained within the keyway, they are pressed tightly together so that they resiliently engage the walls of the keyway.

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