

[54] SECURING OF SERVICE LINES IN
HOLLOW BOAT MASTS

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138/108; 174/45 R

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174/100; 52/27, 28, 40, 110, 173; 114/39,
89-101; 138/93, 94, 103, 108; 240/7.5; 343/709

[56] References Cited

UNITED STATES PATENTS

329,773	11/1885	Perry	138/93
587,102	7/1897	Meany	138/93
2,889,892	6/1959	Schaub et al.	138/93 X
3,100,812	8/1963	Mildner	138/93 X
3,339,011	8/1967	Ewers, Jr. et al.	138/93 X
3,814,835	6/1974	Merry	174/70 R

FOREIGN PATENTS OR APPLICATIONS

1,218,455 1/1971 United Kingdom..... 114/101

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[57] ABSTRACT

A hollow boat mast having a service line therein, such as an electric power line. The line is secured at spaced points along the mast, and the line tends to slap against the mast inner wall in response to pitching or rocking of the boat, thus generating a disturbing noise. To reduce the noise, a balloon outfitted with a valve, is inserted through an opening in the mast wall intermediate said spaced points, and is inflated within the mast so that it closes the passageway of the hollow mast and holds the line against the mast inner wall. The valve is secured to the mast, as by threading, at said opening.

6 Claims, 3 Drawing Figures

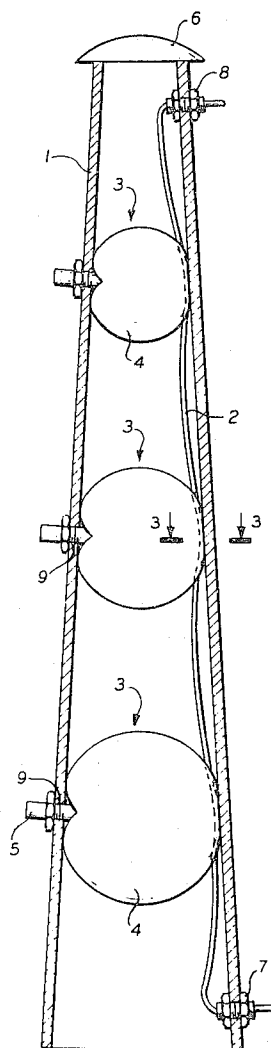


FIG. 1.

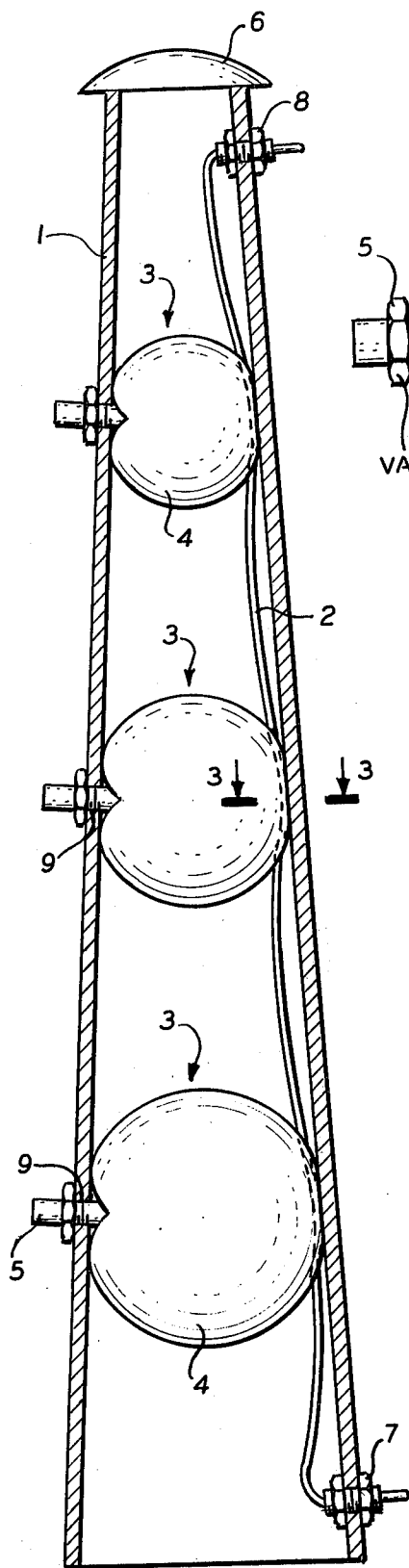


FIG. 2.

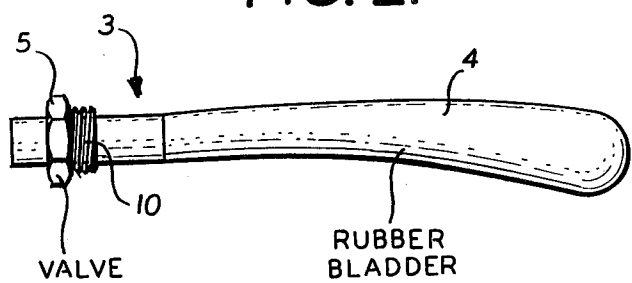
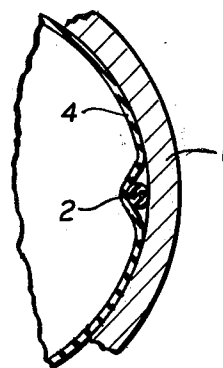


FIG. 3.



SECURING OF SERVICE LINES IN HOLLOW BOAT MASTS

BACKGROUND

The present invention is addressed to the problem of reducing disturbing noise caused by the slapping of service lines within a hollow boat mast.

Sailboat masts of present-day construction are commonly hollow aluminum tubing. The wires for mast-head lights and antennas are disposed within the hollow tube, entering at the bottom, and leaving at the top. Pitching or rocking of the boat causes the lines to slap against the inner wall of the tubing, causing disturbing noise which is particularly so when passengers are sleeping aboard.

Prior art proposals for dealing with the problem include the filling of the mast with foam plastic balls; the use of U-bolts disposed at spaced intervals along the length of the mast, clamping the lines to the inside wall of the mast. In U.S. Pat. No. 3,814,835, a keyway is utilized for the purpose of preventing fraying of the cables which normally rub against the mast and against each other.

The prior art proposals are accompanied by disadvantages. The foam rubber balls are inconvenient and cumbersome to handle when the mast is to be serviced, as for replacing or adding service lines. In like situations, the U-bolts are inconvenient to manipulate.

According to the invention, rubber balloons are installed at spaced intervals along the length of the mast. After installation, the balloons are inflated so that each balloon closes the mast passageway, and presses the service lines against the inner wall of the mast. Thereby, the tendency for slapping is reduced or eliminated.

Servicing of the mast is facilitated by the balloons, since for that, the balloons can merely be deflated, and after servicing can then be inflated to again secure the lines as is desired.

Inflatable plugs for conduits intended for fluid flow, to close the flow passageway, installed in conduits as the balloons are installed in the mast herein, are known. See U.S. Pat. Nos. 740,795, 827,835, 2,889,892, 3,298,398, 3,339,011, and 3,805,844. So far as is known to the applicant, however, there is no suggestion in the prior art to utilize balloons or inflatable plugs in accordance with the instant invention.

THE INVENTION

The invention will be better understood by reference to the accompanying drawing, taken in connection with the following description thereof, and the following summary of the invention.

In the drawings:

FIG. 1 is a cross-sectional view of a mast outfitted with a service line and balloons according to the invention;

FIG. 2 is a showing of a balloon, in deflated condition, for installation in a mast; and

FIG. 3 is a fragmentary sectional view taken on line 3—3 of FIG. 1.

In the drawings, like reference characters refer to corresponding parts.

A hollow aluminum mast 1 closed at its upper end by a cap 6, has a service line 2 extending along the inner passageway of the mast, which enters the bottom of the mast through a fitting 7 and leaves the top of the mast

through a fitting 8. The line 2 is secured to the mast at said fittings. The line is a flexible line such as an electrical cable or antenna wire. Inflated balloons 3 are installed in the mast, at spaced intervals along the length of the service line. Each of the balloons closes the passageway and holds the line against the passageway wall so that slapping of the line against the passageway wall is reduced.

Referring to FIG. 2, each of the balloons comprises an inflatable bag or bladder 4, and a valve assembly 5 which is secured to the bag in any suitable manner such as vulcanizing, and serves for supplying gas to the bag for the inflation, and removal of the gas from the bag, to effect deflation. The valve assembly includes threaded plug 10, which can be a self-tapping thread. The threaded plug 10 is threaded into an opening 9 in the mast, so that the valve assembly extends through the opening 9 and is secured to the mast at opening 9.

The openings 9 can be, for example, three-eighths inch. The balloons 3 can be at any suitably spaced interval, for example, 5-6 feet. The valve 5 can be such as is provided for tires, or, alternatively, such as is provided for athletic balls, such as basketballs, and means as are used for tires or athletic balls can be used for inflating and deflating of the bag or bladder 4. The bag 4 can be rubber or neoprene.

SUMMARY OF THE INVENTION

Thus, the invention provides an improvement in a boat mast having a longitudinally extending passageway therein rendering the mast hollow, and having a line disposed therein within the passageway extending longitudinally thereof over a length such that the line tends to slap against the inside wall of the passageway when the boat rocks or pitches, thereby generating disturbing noise. The invention provides the improvement which comprises at least one inflated balloon disposed within the passageway intermediate the ends thereof, closing the passageway, and holding the line against the passageway wall so that the slapping of the line against the wall is reduced, whereby said generating of disturbing noise is reduced.

What is claimed is:

1. In a boat mast having a longitudinally extending passageway therein rendering the mast hollow and having a line disposed within the passageway extending longitudinally thereof over a length such that the line tends to slap against the inside wall of the passageway when the boat rocks or pitches, thereby generating disturbing noise, the improvement which comprises at least one inflated balloon disposed within the passageway intermediate the ends thereof, closing the passageway, and holding the line against the passageway wall so that the slapping of the line against the passageway wall is reduced, whereby said generating of disturbing noise is reduced.

2. A boat mast according to claim 1, there being a plurality of said balloons disposed within the mast passageway at spaced intervals along the passageway.

3. A boat mast according to claim 1, the balloon comprising an inflated bag which provides said closing of the passageway, and a valve assembly secured to the bag and for supplying gas to the bag for said inflation, means defining an opening in the wall of the passageway, said valve assembly extending through said opening and being secured to the mast at said opening.

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4. A boat mast according to claim 3, there being a plurality of said balloons disposed within the mast passageway at spaced intervals along the passageway.

5. A boat mast according to claim 3, wherein the valve assembly is threaded into said opening whereby 5

the balloon is secured to the mast.

6. A boat mast according to claim 5, there being a plurality of said balloons disposed within the mast passageway at spaced intervals along the passageway.

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