July 10, 1956 A. G. AGRA 2,753,829

FENDER FOR BOATS AND THE LIKE

Filed Sept. 25, 1952

FIG. 1

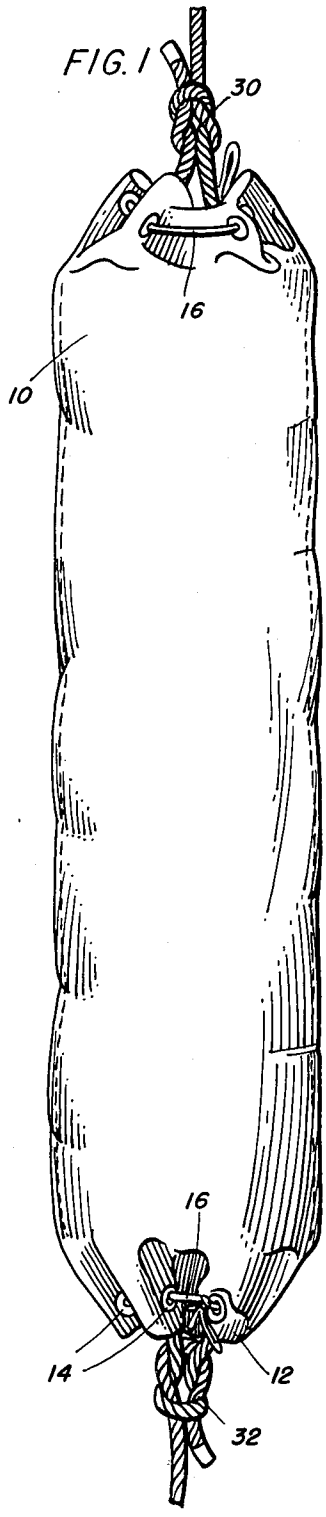


FIG. 2

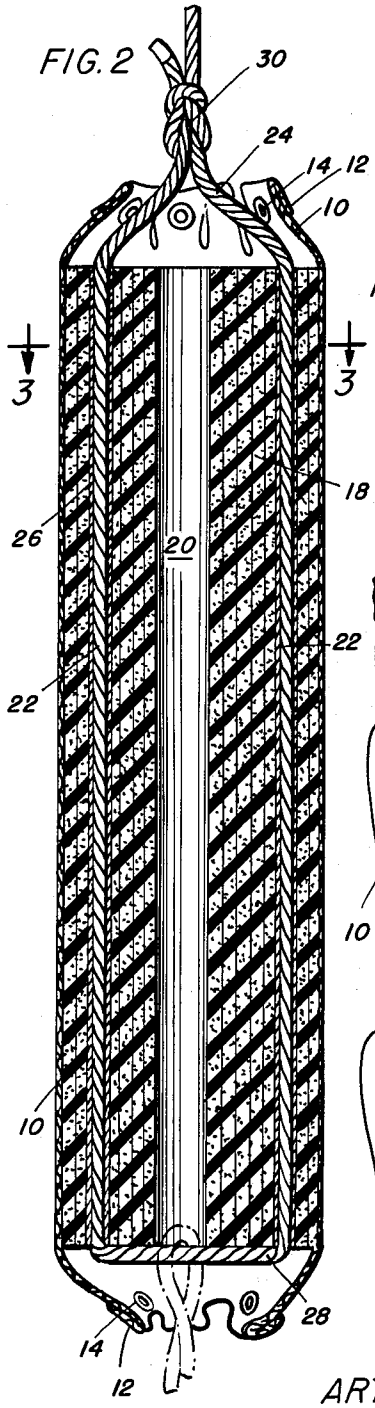


FIG. 3

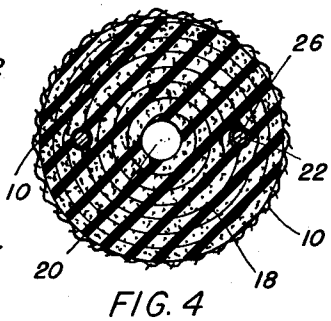
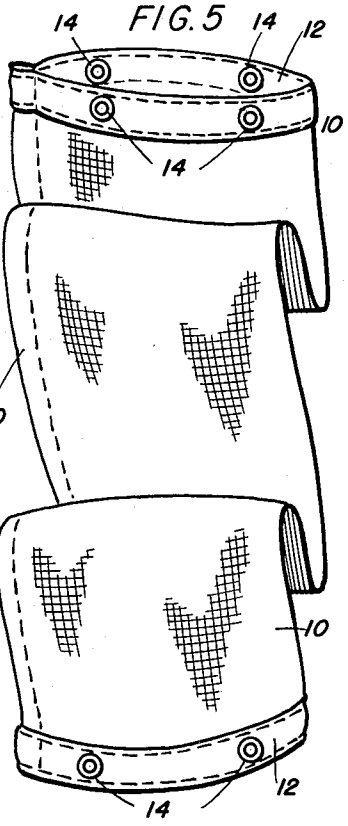


FIG. 4



FIG. 5



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FENDER FOR BOATS AND THE LIKE

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1 Claim. (Cl. 114—219)

This invention relates in general to a bumper or fender commonly used as a protection for boats and suspended at the side of a boat between it and a dock, or other obstruction but may have a more general use wherever applicable.

An important object of the invention is to provide a new and improved fender which resembles the fender commonly used in having a canvas cover, but having an entirely different interior construction.

A further object of the invention is to provide a fender of this kind composed of sheet material wound in a spiral and of an outside diameter adapted to be encased in a suitable cover of canvas or other material.

A still further object of the invention is to provide a fender composed of a light-weight resilient material such as sponge rubber which may be wound about an open core in spiral form including portions of a supporting rope between the windings.

A further object of the invention is to provide a fender construction in which the cover is removable and open at both ends so that it may be easily fastened and supported from either or both ends.

A still further object of the invention is to provide a sleeve which is non-adhesive as a cover for the rope wound in the material of which the fender is composed so that the rope will not adhere thereto and may be replaced by inserting another rope through the sleeves.

Other objects of the invention will appear in the specification and will be apparent from the accompanying drawings in which,

Fig. 1 is a side elevation of a boat fender in accordance with the invention.

Fig. 2 is a sectional view of the fender shown in Fig. 1;

Fig. 3 is a cross sectional view of the fender taken on the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary view of a supporting rope and a sleeve in which the rope is enclosed; and

Fig. 5 is a perspective view of a cover for the fender.

The boat fenders now commonly used comprise a canvas bag or cover filled with cork or some other resilient and usually buoyant material such that the fender will float and will have a certain amount of resilience to resist compression of the fender when it engages between the boat and a dock, for example, to which the boat is moored. This type of a fender soon becomes dirty and objectionable when used with passenger or pleasure boats. It is usually supported from one end only, and if the cover becomes damaged, the packing therein, if it consists of ground cork or other material, will escape from the cover and soon make the fender of little value.

The present fender differs from the type now commonly used in providing a cover **10** of canvas or other similar strong fabric or other material which is stitched or otherwise fastened to form a hollow bag open at both ends and of uniform diameter throughout. Each end is folded over to form a hem **12** and a number of metal grommets **14** are fastened in the hem to provide means

for easily inserting and fastening cord **16** throughout to draw together and partially close the ends.

Within the casing is a filler of light resilient and buoyant material preferably in the form of sheet sponge **18** of rubber, cellulose or other material which will float and does not become water-logged. The sheet sponge is rolled in a spiral to the desired diameter preferably leaving an open central bore **20**, and as the sheet material is wound, two parallel reaches **22** of a supporting rope **24** are included between the turns of the sponge material. This sponge material is usually supplied in a roll which has an adhesive coating on one face so that when it is assembled as a filler for the fender by rolling a portion of a long length of sponge material upon itself, the layers tend to adhere together. They would also tend to adhere to the portions of the rope **24** which are included between the layers of the sponge material so that a sleeve **26** of fiber, paper or other suitable material is applied around each reach of the rope where it passes through the adhesively attached sponge layers so that the rope itself will pass freely in the sleeve and will not adhere to the adhesive layers of the sponge.

With this construction, the rope may be renewed from time to time as it becomes worn without unrolling the sponge material and there is no tendency for the rope to adhere to the inside of the sleeve which is non-adhesive.

The side reach portions **22** of the rope are usually connected by a continuous portion **28** at one end of the sponge rubber material and a knot **30** connects the portions at the other end.

When the fender is assembled within a casing **10**, the cover is closed or partially closed over the ends by inserting the cord **16** through the grommets **14** and drawing up and tying the cord over the end of the bumper and over the rope **24** which projects from the center thereof.

If desired, the normally lower end of the fender may have another guide rope **32** attached to the connecting portion **28** of the supporting rope at that end and this rope **32** may also project from the drawn end of the cover **10**.

With this construction, the interior resilient filler of sponge rubber or other material will form a core which is buoyant and does not deteriorate because of the adherence of the spiral layers to each other and once wrapped in this form, the cover **10** may be easily applied to or removed from the sponge material. It is necessary only to remove the rope **32** if it has been applied to the fender and to loosen the cord **16** at the other end whereupon the cover may be pulled off at the reverse end or bottom of the fender. If the cover becomes dirty or worn, a new casing or cover of the same kind may be applied thereto and the fender is thus renewed for the cost of the cover only and also presents a new and pleasing appearance without necessity of renewing the entire fender which is the more costly part. In this way, since the sponge material does not deteriorate, the life and usefulness of the fender is greatly extended and increased.

This fender may be supported by the rope **24** at one end and thus suspended at the side of a boat and between it and a dock or another obstruction to prevent damage to the boat, or if desired, the fender may be supported by two ropes, one at each end and thus manipulated or applied in any desired location.

While the fender is particularly designed for use of boats, it may also be used as a resilient bumper for other purposes, and since it is buoyant, it may serve as a life preserver for use in the water.

While I have thus described a preferred construction of the invention in some detail, it should be regarded

as an illustration or example rather than as a limitation or restriction of the invention, since various changes in the construction, combination and arrangement of the parts may be made without departing from the spirit and scope of the invention.

I claim:

In a fender for boats, and the like, the combination with a filler comprising a sheet of buoyant sponge material wound upon itself in spiral form and having an adhesive on one side of the sheet which causes the material to adhere and maintain the spiral form when it is wrapped about itself, of a supporting rope having a loop of material with parallel reaches disposed between the layers of sponge material intermediate the center and the outside and projecting at the ends of the material, a free-fitting sleeve for each reach of the supporting rope extending around those portions of the rope which are included between the layers of the sponge material to prevent the rope from sticking to the said material, and

a fabric cylindrical cover fitting over the filler and projecting beyond the ends thereof, the projecting portions of the cover having grommets therein and flexible ties inserted through the grommets for gathering the ends of the casing to partially close it and permitting the supporting rope at the ends of the fender to project from the gathered ends of the cover at the center thereof.

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