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Dec. 27, 1966 P. S. EMERY, JR 3,294,053

TOW CONNECTOR FLOAT

Filed Aug. 27, 1965

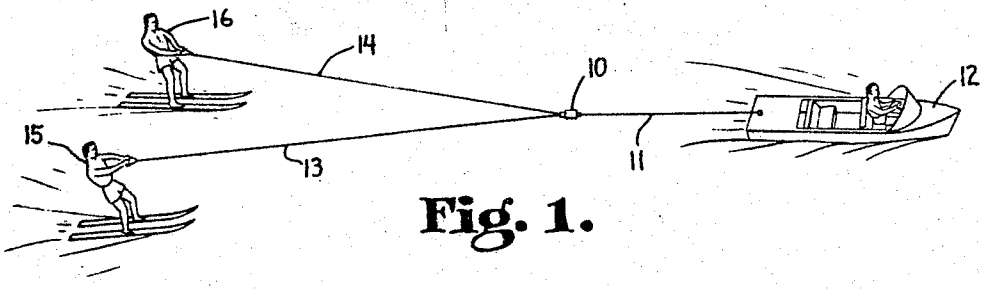


Fig. 1.

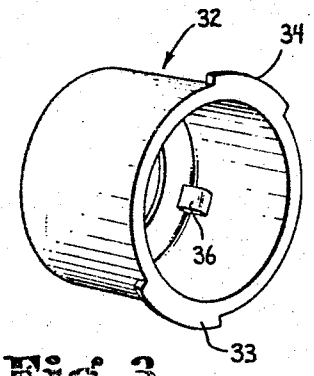


Fig. 3.

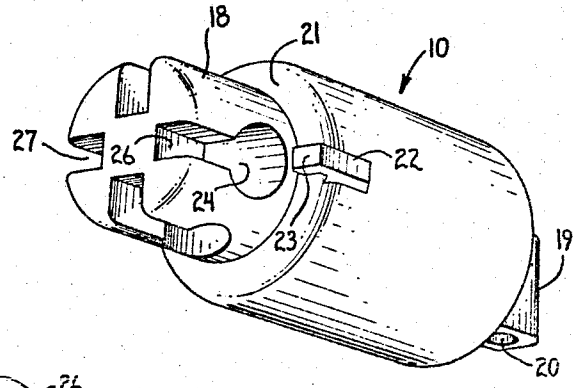


Fig. 2.

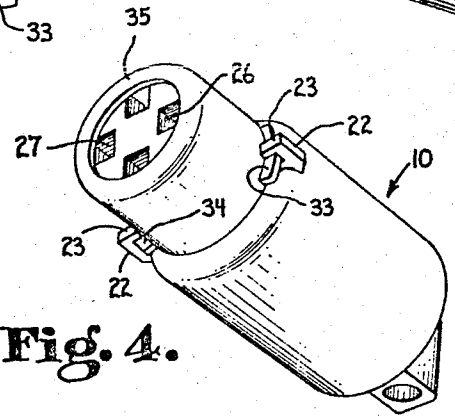


Fig. 4.

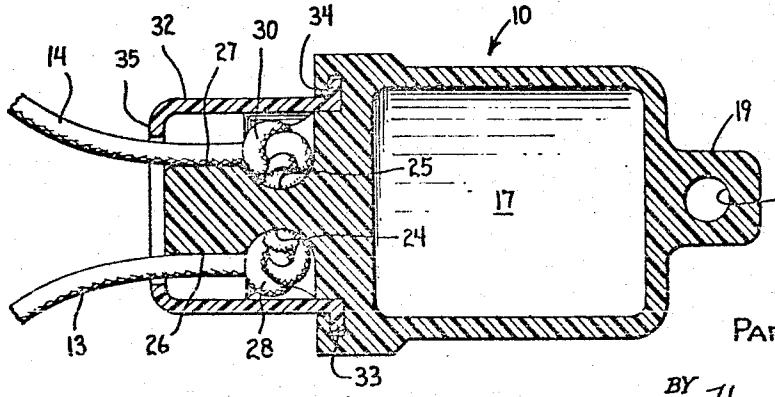


Fig. 5.

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TOW CONNECTOR FLOAT

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5 Claims. (Cl. 114—235)

The present invention relates to a tow connector float, and is primarily concerned with the provision of an inexpensive, yet highly effective, device which, when connected between a hitch rope secured to a boat and one or more tow lines through which the lead boat may tow one or more water skiers or following units, will sustain a relatively heavy load, including shock loads, and will float in the water, when quiescent, supporting a plurality of ropes which may be connected therewith.

More specifically, the invention seeks to provide a device which may be inexpensively produced from synthetic plastic, which is adapted for the ready connection thereto and disconnection therefrom of a plurality of separate tow lines, and which embodies novel, inexpensive and easily-manipulable means for facilitating the operative association therewith of any selected number of separate tow lines within a predetermined range.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific construction illustrated and described, so long as the scope of the appended claims is not violated.

FIG. 1 is a somewhat diagrammatic view illustrating the mode of use to which the present connector is adapted;

FIG. 2 is an enlarged perspective of the body portion of the said connector, illustrating its reduced nose and tail portions;

FIG. 3 is a perspective view of a cap forming an element of my invention;

FIG. 4 is a perspective view of the connector in assembled condition; and

FIG. 5 is a longitudinal section through the assembled connector, illustrating fragments of two tow lines operatively connected thereto.

Referring more particularly to the drawings, it will be seen that in FIG. 1 I have illustrated my tow connector float **10** attached by a hitch rope **11** to a towing boat **12**, said connector having associated therewith two tow lines **13** and **14** through which two water skiers **15** and **16** are being towed by the boat **12**.

As is most clearly illustrated in FIG. 5, the connector float **10** comprises an integral, hollow body defining an internal, water-tight chamber **17** so proportioned that, if the float becomes disconnected from the boat **12**, its buoyancy will be sufficient to keep it afloat while supporting the rope **11** and the tow lines **13** and **14** as well as any further tow lines which may be associated with it.

At its rear or distal end, the float body is formed with a solid, reduced, preferably cylindrical tail portion **18**; and at its forward or proximal end said body is formed with a further reduced stud or nose portion **19**. The nose portion **19** is formed with a transverse opening **20** therethrough whereby the float may be attached, either directly or through an intervening hook, catch or eye, to the hitch rope **11**.

The reduction of the tail portion **18** defines a distally facing shoulder **21** at its juncture with the main body portion; and the body is formed with a plurality of peripherally-spaced fingers **22**, **22** whose distal portions **23**, **23** are inturned to overlie the shoulder **21** in axially-spaced relation thereto.

Near it proximal end, the tail portion **18** is formed with

a plurality of peripherally-spaced, outwardly opening cavities such as those indicated at **24** and **25** in FIG. 5. As shown, four such cavities are provided, but it will be understood that any desired number thereof may be provided, within the limitations established by the perimetral dimension of the tail portion **18**. For each such cavity, there is provided a groove such as those indicated by the reference numerals **26** and **27**, each such groove extending from its cavity through the distal end of the tail portion **18**, and opening also through the perimeter of the tail portion **18**.

Each cavity **24**, **25** is proportioned and designed to receive the knotted or otherwise-expanded end **28** or **30** of one of the ropes **13** or **14**, each such rope being accommodated in the corresponding groove **26** or **27** to extend rearwardly away from the float.

A cap **32**, which may conveniently be formed of the same kind of material from which the float body is made, is proportioned and designed snugly to embrace the whole perimetral surface of the tail portion **18**, said cap being provided with a number of radially-outwardly extending ears **33** and **34**, corresponding in number and spacing to the fingers **23**, **23**, and each such ear being dimensioned for snug reception between one of said fingers and the shoulder **21**, as is clearly illustrated in FIGS. 4 and 5. Obviously, said cap overlies and closes the openings of the cavities and their associated grooves through the perimeter of the tail section **18**, thus confining the ropes and their enlarged ends **28** and **30** within their respective grooves and cavities. Preferably, the distal end of the cap **32** is formed to provide an inturned flange **35** which overlies the radially outward regions of the grooves **26** and **27**.

At a point in the interior of the cap **32** near the distal end thereof, there is formed an integral key **36** so arranged, with respect to the ears **33** and **34**, that when said ears are fully seated between the fingers **23** and the shoulder **21**, said key will be seated in one of the rope-accommodating grooves. When four sets of cavities and grooves are provided, as in the illustrated form of the invention, the key **36** will be peripherally offset from the median point of either of the ears **33** and **34** by 90°.

It will be apparent that any number of tow lines, up to the number of groove and cavity sets provided in the tail section **18**, may be threaded through the opening at the distal end of the cap **32** and each rope may then have its enlarged end seated in one of the cavities and its adjacent portion entered in the corresponding groove. Thereupon, when the cap is pressed home upon the tail section **18**, the several rope ends will be securely retained relative to said tail section. While the ropes will not themselves exert any significant force tending to cause axial movement of the cap **32** relative to the tail portion **18**, water resistance might exert such a tendency as the boat **12** moves; and therefore it is deemed desirable to provide the retaining means **23**, **33**, **34** to hold the cap affirmatively in place. Thus, the cap will be initially mounted upon the tail section **18** with its ears **33** and **34** peripherally spaced from the fingers **23**, **23**. Thereupon, a turning movement of the cap in one direction or the other relative to the connector body will cause the ears **33** and **34** to enter the spaces between the fingers **23** and the shoulder **21**; and such turning movement will be continued until the key **36** snaps into one of the rope-accommodating grooves. In this fashion, the cap will be securely retained against any movement relative to the tail section which might result from forces encountered as the boat moves with its tows; yet the cap may be readily manually removed to permit assembly or disassembly of one or more tow lines with the connector.

I claim as my invention:

1. A tow connector comprising a hollow, water-tight,

integral body having a reduced, solid tail portion and a further reduced, solid nose portion, said nose portion having a transverse opening therethrough, said tail portion being formed with a plurality of perimetrally-spaced cavities, each opening through the perimeter of said tail portion adjacent the proximal end of said tail portion, and said tail portion further being formed with a longitudinally-extending, perimetrally-opening groove extending from each cavity through the distal end of said tail portion, and a cap snugly embracing said nose portion and overlying the radially-outward region of the distal ends of all of said grooves.

2. The tow connector of claim 1 in which said body and cap, when assembled, is sufficiently water-buoyant to remain afloat while supporting a rope threaded through said opening and a rope having an expanded end seated in each cavity and emerging through the associated groove.

3. The tow connector of claim 1 including cooperable retainer means on said body and on said cap, said register means resisting axial movement of said cap relative to said body when mutually engaged.

4. The tow connector of claim 3 in which said retainer means comprises a plurality of outturned ears at the proximal end of said cap and a corresponding number of inturned fingers on said body adjacent the proximal end of said tail portion, said fingers overlying and spaced from the shoulder defined at the juncture of said body and said tail portion and said ears being engageable, by rotational movement of said cap, between said shoulder and said fingers.

5. The tow connector of claim 4 in which said cap is internally provided with a key disposed to enter one of said grooves when said ears are so engaged, to resist rotational movement of said cap relative to said body.

No references cited.

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