United States Patent

[11] 3,537,418

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[54] **SKI TOW HAND GRIP**
10 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** **115/6.1**
[51] **Int. Cl.** **B63b 21/56**
[50] **Field of Search** 115/6.1, 70

[56] **References Cited**
UNITED STATES PATENTS

3,092,068	6/1963	Brownson	115/6.1
3,219,007	11/1965	Kiefer	115/6.1

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ABSTRACT: The hand grip disclosed herein provides an elongated tube having a cushion covering and resilient end caps closing and sealing the open ends of the covered tube. A pair of spaced apart transverse holes are formed through the respective end caps and tube ends that receive a curve headed sleeve adapted to conduct a tow line therethrough so that a line terminating loop may be drawn taut about the handle ends.

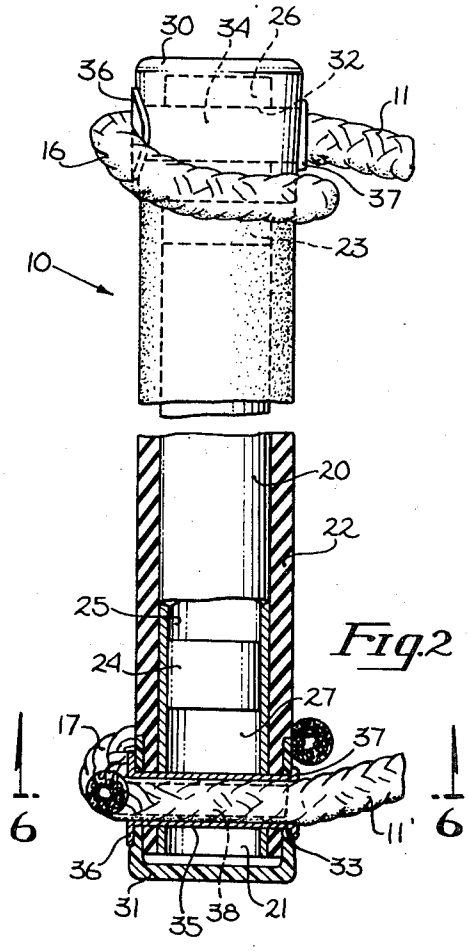


Fig.2

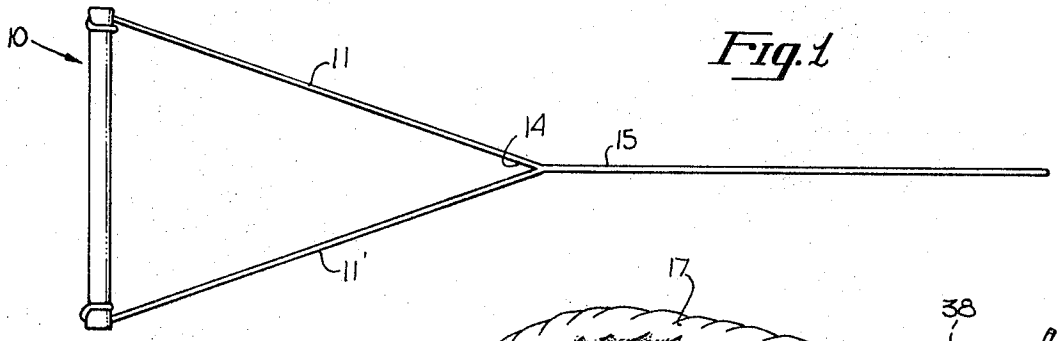


Fig. 1

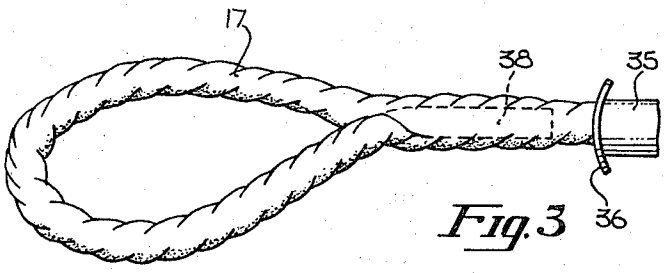


Fig. 3

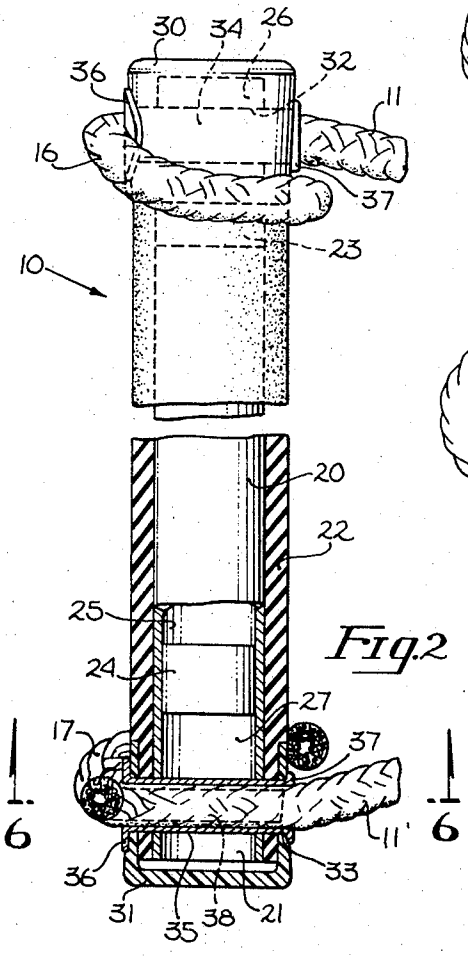


Fig. 2

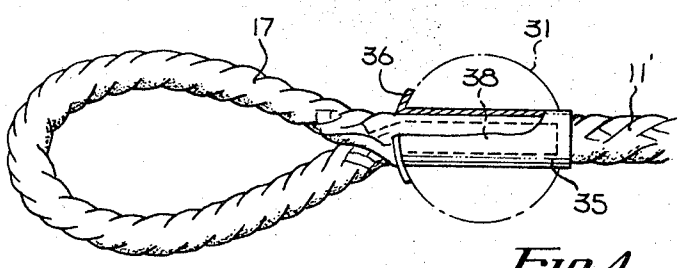


Fig. 4

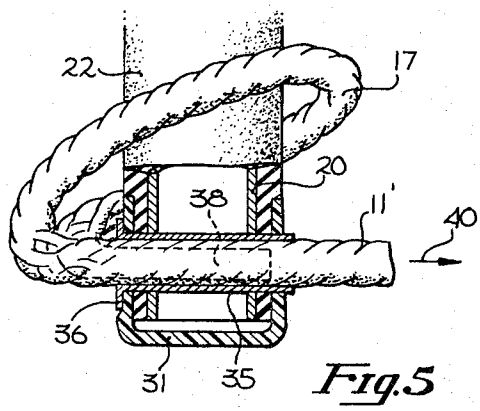


Fig. 5

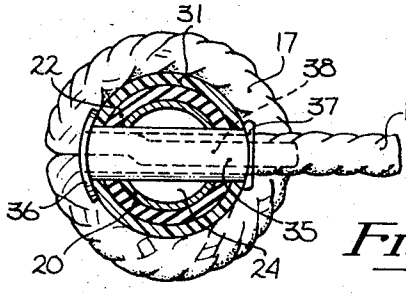


Fig. 6

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SKI TOW HAND GRIP

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a hand grip for sporting equipment and in particular to a hand grip for use with a water ski tow line or the like which incorporates improved tow line attachment means.

2. Description of the Prior Art

The conventional handle for water ski tow lines consists of a cylindrical length of solid wood or plastic having a transverse hole near each end. Lines are threaded through these holes and the ends knotted to prevent them from becoming disengaged from the handle. Wood has been used for these handles because, among other reasons, it is lighter than water and will float on the water when not held by the skier. An undesirable characteristic of these handles is that the wood becomes roughened on the surface due to the frequent wetting and drying to which they are subjected. Also, wood is not a durable material for this purpose, being subject to surface abrasions, cracks, splintering, deformations. These surface conditions of wooden handles and the nonresilient properties of either solid plastic or wood make these handles hard on the hands of the user, and frequently cause fresh blisters to form and result in the formation of callouses after continuous use. Furthermore, hand cramps frequently result from the use of either wooden or plastic handles.

An improved water ski hand grip which overcomes some of these aforementioned problems and difficulties is disclosed in U.S. Pat. No. 3,092,068 which comprises a length of lightweight metal tubing having the ends thereof sealed to provide an airtight and watertight floatation chamber. The terminating ends of the lines are threaded through holes in the end of the handle and are knotted so that when the lines are drawn taut, the knots are drawn inside the central bore of the tube so that when the end caps are installed, the knots are completely hidden from sight. Although this latter device presents improvements over the prior art, it sometimes happens that the knots become undone resulting in release of the tow line and separation of the tow line from the handle. The occurrence of this event is highly undesirable when the skier is holding on to the handle. Also, it is necessary to remove the end caps and reknot the line end in order to reassemble the hand grip with the tow line. Such a procedure weakens the securement of the end caps with the main body of the grip so that the end caps may inadvertently separate therefrom after continued use.

SUMMARY OF THE INVENTION

Accordingly, the problems and difficulties described with respect to conventional water ski hand grips are obviated by the present invention which provides an elongated metal tube which is provided with a resilient and cushioned covering carried on its external surface adapted to be held by the hand of the user. A pair of fixed plugs or wall seals are disposed within the bore of the tube in fixed spaced apart relationship to provide stability to the tube when gripping pressure and pulling force is applied to the grip via the tow line. A pair of transverse holes are provided at each end of the tube in coaxial alignment which extend through the end caps so that the ends of a tow line may be conducted therethrough. A pair of end caps having an annular rim flange are forcibly fitted over the opposite ends of the tube and covering so as to effectively close and seal the open bore of the tube. A plastic insert or sleeve is placed through the aligned holes at each end of the handle grip through which the body of the tow line may be conducted. A feature resides in the fact that one end of the sleeve is headed with an oval-shaped curved or arcuate flange conforming to the rounded configuration of the grip. The opposite end of the sleeve is upset so as to firmly engage with the handle to prevent the sleeve from detaching therefrom.

The extreme end of the line is braided to form a loop which is placed over the handle grip and inserted into the sleeve before the sleeve is assembled with the handle. By this means, the joint of the endless loop resides within the sleeve when the line is pulled taut with the loop of the line drawn tight about the end cap of the handle.

Therefore, it is among the primary objects of the present invention to provide an improved water ski hand grip having novel tow line attachment means which not only provide strain relief for the lines but which are integral in construction so as to resist separation during use.

Another object of the present invention is to provide a water ski handle having improved ski tow line attachment means that are readily assembled during manufacture and which represent a reduction in the cost thereof as represented by the material, labor and simplicity.

Still another object of the present invention is to provide a novel tow line attachment means for a water ski handle grip which may be easily, yet securely, attached to the tow line so that the stress distributed as applied to the handle by the line when drawn taut is in such a manner as to obviate weakening of the line at its jointer with the handle.

Yet another object of the present invention resides in the provision of a novel securement means for joining the end of a tow line to a handle grip which resists any tendency to disengage so that the safety of the grip to the user is greatly enhanced.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other advantages of the present invention will become more apparent from the following detailed specification in conjunction with the accompanying drawings. In addition, reference numerals have been carried forward where appropriate throughout the drawings to designate like parts of the invention.

FIG. **1** is a plan view of a water ski tow line or rope system employing a handle incorporating the present invention for gripping by the hand of the skier;

FIG. **2** is a partial sectional view and partial elevational view of the handle shown in FIG. **1** illustrating the manner in which the ends of the line are secured thereto;

FIG. **3** is an enlarged plan view of the braided line loop terminating the end of each of the tow lines preparatory to securement with the end of the handle;

FIG. **4** is a view similar to that of FIG. **3** showing the braided joint of the loop inserted through a sleeve;

FIG. **5** is a sectional view of the handle showing the braided loop placed around the handle end prior to being pulled taut; and

FIG. **6** is a cross-sectional view of the handle as taken in the direction of arrows **6–6** of FIG. **2** showing the line pulled taut to secure the braided loop about the handle.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. **1**, a handle **10** for the hand of the skier is shown connected by a system of ropes to a tow boat (not shown). The ropes of the rope system may be of any conventional kind. Ropes of woven plastic strand, which float on the water are in common use. In the rope system shown in FIG. **1**, a pair of rope lengths **11** and **11'** are connected to the two ends respectively of the hand grip **10**. The line or rope lengths **11** and **11'** of the rope lengths are spliced at point **14** to a rope length **15** which is secured to the boat. The end of rope length **11** and **11'** are terminated in an endless loop indicated by numerals **16** and **17** associated with handle **10**, wherein the loops are carried about the opposite ends of each handle between the space defined by the rope lengths **11** and **11'**.

Referring now to FIG. **2** in detail, ski handle grip **10** comprises an elongated cylindrical metal tube **20** having a central open-ended bore **21**. The external surface of the tube is suitably provided with a resilient cushion covering **22** which is preferably composed of a foam neoprene or the like. Two tightly fitting plugs **23** and **24** are mounted in the bore **21** of the tubing **20**. These plugs are arranged in fixed spaced apart relationship which define a floatation chamber **25**

therebetween. The plugs may be made of any suitable material and are so inserted in the bore **21**, that they are stationary relative to the tubing wall and have a fluid-tight joint with the inner surface of the tubing. Tight fitting cork discs forced into the tubing under pressure have proven satisfactory. Since the plugs **23** and **24** are spaced a short distance from the adjacent tube ends respectively, they provide a pair of cylindrically shaped end pockets **26** and **27** respectively.

The opposite ends of the cushion covered tube **20** are provided with end caps **30** and **31** which are preferably composed of a soft resilient material such as plastic, for example. The end caps not only close the open ends of the tube but provide a waterproof seal when the caps are press fitted over the cushion material **22**.

Each end of the handle **10** is formed with a transverse hole, indicated by numerals **32** and **33**, respectively, which are formed through each end cap, cushion material and ends of tube **20**. Each aligned set of holes **32** and **33**, respectively, receive a sleeve **34** and **35** which extends through the bore **21** at each end of the tube substantially midway between its associated plug and extreme end of the tube. Each sleeve, such as sleeve **35** includes an oblong, rounded head or flange **36** that engages with the external surface of the cap **31** so as to prevent the sleeve from passing through the hole. The opposite end of each sleeve is provided with a crimped, upset or turned over portion **37** that bears against the opposite side of the end cap to fully retain the sleeve in its installed position.

The loops **16** and **17** of the rope lines **11** and **11'**, respectively, encompass the covered tube adjacent the sleeves **34** and **35** so that the joint of the loop occupies the interior of each of the respective sleeves. The loops **16** and **17** are passed over the ends of the handle and reside between the linear or extended portions of the rope lengths **11** and **11'**. The loop joint is indicated by numeral **38** occupying the bore of sleeve **35**. This joint is formed by braiding the extreme end of the rope back upon itself so that the strands become integrally formed to create the endless loop.

Referring now to FIG. **3**, the loop **17** has been formed by integrally joining the extreme end of the rope with itself to form the joint **38**. The length of rope is inserted into the bore of sleeve **35** which is subsequently drawn toward the loop **17** to the position shown in FIG. **4**. The sleeve **35** is inserted through the end cap **31** via aligned holes **3** on the end of cushion tube **20** so that after the end of the cushioned tube has been inserted through the central opening of the loop, the rope **11** may be pulled in the direction of arrow **40** as shown in FIG. **5**. Once the rope has been drawn taut, the loop **17** will tighten about the cushion of the handle and any excess in the loop will cause the joint **38** to be drawn into the central passage or opening of the sleeve **35**. This relationship is shown in FIG. **6** wherein the line **11** has been drawn taut. This action also causes the segments of the rope loop adjacent flange **36** to further hold the sleeve **35** in position. The opposite end of the sleeve may be readily upset to form an annular bead **37** to secure the sleeve on the handle grip.

By this invention, there is provided a hand grip for a rope or line used for water ski towing or for other purposes in which the rope is in or on a body of water, which floats on the water, which has strength in flexture, which is easy on the flesh of the hands, is long-lived, is durably assembled, is smoothly contoured at its ends and from end to end, and is of neat appearance. The handle of this invention has another major advantage. It is the usual practice in water skiing for someone on the tow boat to throw the handle or handles and the attached rope away from the boat as near as can be to the skier where he is swimming or is stationary in shallow water so that the skier may grasp the handle and take position for starting his run. Even though this throw is skillfully made, the motion of the boat and the difficulty of correctly judging the distance to the skier results many times in the handle striking the body, possibly the head of the skier. The handle of this invention, because of its cushioned surface, and its rounded, smoothly contoured ends, is little apt to injure or even disconcert the skier, in the event of a handle striking any part of the body. It is apparent that the invention may have varied embodiments without departure from its principles and it is therefore to be remedied only by the definitive language of the appended claims.

I claim:

1. In a hand grip for a water ski tow rope and the like, the combination of:

a relatively short length of hollow tubing composed of rigid material;

a pair of water tight transverse sealing walls disposed in said tube spaced a relative short distance from the adjacent tube ends respectively to define two opposite cylindrical tube end portions;

said pair of sealing walls providing a fluid tight floatation chamber therebetween;

said tube end portion being formed with two longitudinally aligned holes respectively, each disposed between said adjacent sealing wall and the adjacent tube end;

a hollow sleeve disposed in each of said apertures respectively having the opposite ends thereof enlarged to retain each of said sleeves on said tube; and

a flexible rope arrangement adapted for connecting the grip to a tow boat including a rope end threaded through each of said sleeves respectively and terminating on its end with an endless loop encircling said tube, said loop being drawn taut about said tube in response to applied tension of said rope arrangement.

2. The invention as defined in claim **1** including:

an end cap of flexible material carried on the respective end portions of said tube to close the tube openings; and

aligned holes formed in the annular side wall of each end cap coaxial with said tube holes for receiving said sleeves.

3. The invention as defined in claim **1** wherein said sleeve includes a preformed curved flange carried on one end adapted to conform to the curvature of said tube and having an outer surface engageable by said loop to hold said sleeve in place on said tube end portion.

4. The invention as defined in claim **3** wherein each of said sleeves is composed of deformable material and said sleeve end opposite to its end carrying said flange includes an annular bead having a greater diameter than said sleeve and said hole insertably receiving said sleeve.

5. The invention as defined in claim **1** including a bonded layer of a soft compressible material carried on the external surface of said tube.

6. The invention as defined in claim **5** including a pair of circular caps, each with an annular rim flange of a diameter to snugly fit over the tube ends including said soft compressible material to close said tube end portions respectively.

7. The invention as defined in claim **6** wherein said rim flange of each of said circular caps is formed with a hole which is so located longitudinally of the cap as to register with said associated hole in said tube end portion, whereby said associated sleeve extends through said aligned and registered holes to lock said associated cap in position longitudinally of said tube.

8. The invention as defined in claim **7** wherein said rope loops are formed to provide an integral junction disposed to occupy the hollow of its associated sleeve.

9. The invention as defined in claim **8** wherein said rope arrangement includes a pair of rope lines terminating in said loops and wherein said loops are disposed about said cap rim flanges between said pair of lines and between said sleeves.

10. The invention as defined in claim **9** wherein each of said sleeves includes an oval shaped curved flange adjacent the exterior surface of said cap rim flange and wherein segments forming said loop diverge to encircle said covered tube.