

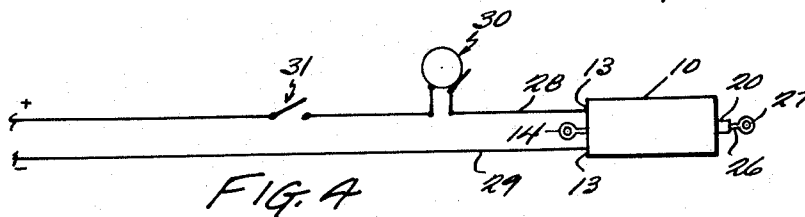
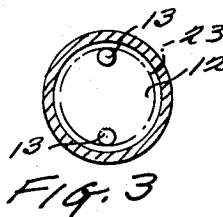
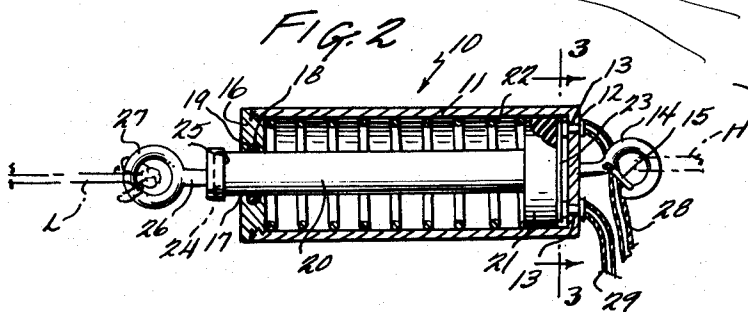
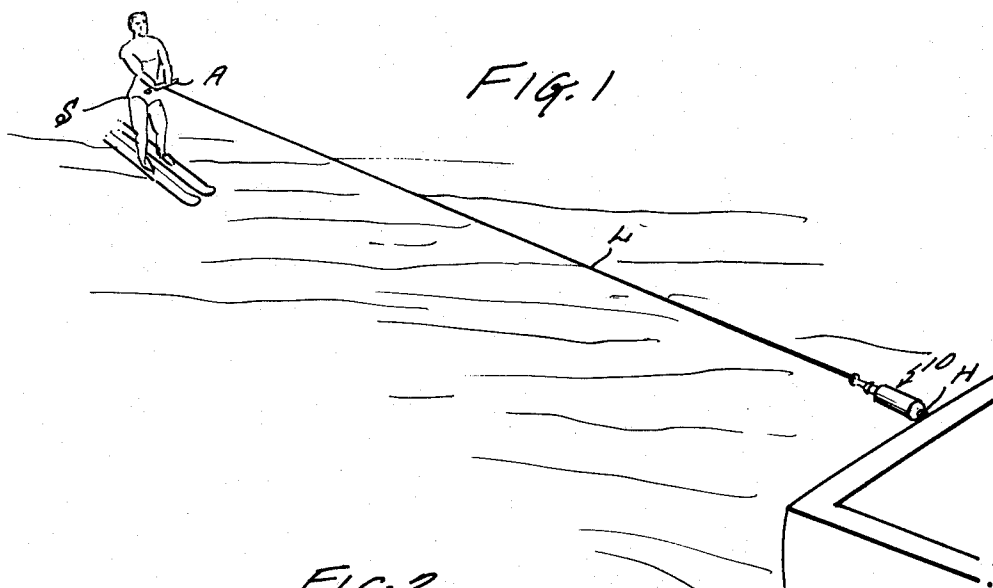
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3,109,075

SKIER ALARM SWITCH

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3,109,075

SKIER ALARM SWITCH

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1 Claim. (Cl. 200—52)

This invention relates to a water ski alarm and has as its primary object the provision of a means whereby an alarm is actuated in the tow boat in the event that a water skier falls or loses the tow bar or bridle.

An additional object of the invention is the provision of the device of this character which will automatically actuate either a visual or audible alarm immediately upon the loss of tension on the tow rope.

Still another object of the invention is the provision of such a device which is associated with the tow rope and which is water-tight and buoyant so as to prevent the entanglement of the tow line with the propeller of the towing craft in the event of loss of tension.

A further object of the invention is the provision of a device of this character having means for attaching the same in a suitable position between the boat and the water skier and to the eye of the ski rope or tow line, the latter being formed with a swivel arrangement to prevent entanglement of the rope.

Still other objects reside in the combinations of elements, arrangements of parts, and features of construction, all as will be more fully pointed out hereinafter and shown in the accompanying drawing wherein:

FIGURE 1 is a schematic perspective view showing a water skier and a portion of the tow boat with the alarm of the instant invention positioned in the tow rope;

FIGURE 2 is an enlarged longitudinal section through the device of the instant invention;

FIGURE 3 is a sectional view taken substantially along the line 3—3 of FIGURE 2 and viewed in the direction indicated by the arrows; and

FIGURE 4 is a schematic wiring diagram of the device.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Having reference now to the drawings in detail, the device of the instant invention comprises a cylinder generally indicated at 10 which is adapted to be attached between a towing boat B and the tow line L, at the end of which is a tow bar or bridle A which is adapted to be held by a water skier S in the usual manner (see FIGURE 1). The device 10 comprises a plastic or other hollow tube 11 which has one closed end 12 through which extend metallic electrical contacts 13. The outer surface of the end portion 12 carries a hook 14 having a snap closure 15 thereon which is adapted to engage a corresponding hook H or the like carried by the boat B, or be otherwise attached thereto.

The opposite end of cylinder 11 is closed by a threaded plug 16, which has a central opening 17 therein and a groove 18 containing a sealing gasket 19. A piston rod 20 extends through the opening, and carries at its inner end a piston 21. A coiled spring 22 surrounds piston rod 20 and engages the inner side of plug 16 at one end and bears against the inner side of piston 21 at the other. A circular contact disc 23 is carried by the outer side of piston 21 and normally engages contacts 13 bridging a circuit thereacross.

The opposite end of piston 20 is recessed as at 24 and

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contains a stud 25 carried by the shank 26 of a swivel eye 27 to which the end of the line L is adapted to be attached, thus forming a swivel connection between the device and the line.

Suitable insulated wires 28 and 29 extend from the contacts 13, the wire 29 comprising a negative line and the wire 28 comprising a positive line. A suitable alarm 30 which may take the form of a bell or a light, or a combination of both, is interposed in the line 28, the bell being positioned in the towing boat. A manual cut-off switch 31 is also positioned interiorly of the boat and the line 28.

The arrangement is thus such that as long as tension is exerted on the line L by the water skier, the piston 21 is pulled inwardly against the compression of spring 22 and holds the contact disc or bridge 23 away from the contact 13.

As soon as this tension is relieved, either by the skier falling into the water, or the rope breaking, or the bridle escaping the hands of the skier, spring 22 forces piston 21 and its associated contact disc into engagement with the contact 13 and bridges the same to actuate the alarm 30, thus indicating immediately to the operator of the boat that an accident has occurred so that he may take suitable steps.

The cylinder 11 is water-tight, and will float if necessary in order to prevent entanglement of either it or the line L with the propeller of the boat.

From the foregoing it will now be seen that there is herein provided an improved ski alarm which accomplishes all of the objects of this invention, and others, including many advantages of great practical utility.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

I claim:

An alarm for water skiers adapted to be interposed between a tow line held by a skier and a tow boat, said alarm comprising a switch including a tubular cylinder open at one end and having an integrally formed end wall at the other end thereof, portions of said cylinder being interiorly threaded adjacent the open end, a hook having a snap closure mounted thereon fixed to said end wall in centrally disposed relation, said hook engaging a corresponding hook carried by the tow boat, portions of said end wall on opposite sides of said hook defining a pair of spaced openings therethrough, electrical contacts extending through said openings, conductors for connecting said electrical contacts to a source of current and to an alarm positioned in the tow boat, a piston slidably positioned in said tubular cylinder, a piston rod fixed at one end to said piston and having its free end extending outwardly from said tubular cylinder through the open end thereof, a threaded plug secured in the open end of said tubular cylinder, said threaded plug having portions defining a centrally disposed opening therein through which the free end of said piston rod passes, portions of said plug surrounding said opening defining an annular groove, a sealing gasket positioned in said groove engaging with said piston rod, a swivel eye mounted at the free end of said piston rod and to which one end of a tow line is attached, a contact disc carried by said piston and normally in en-

gement with said electrical contacts, a coiled spring surrounding said piston rod to bias said piston toward the closed end of said tubular cylinder, one end of said spring being in engagement with said piston and the other end being in engagement with said threaded plug, said tubular cylinder being water tight whereby the same will float if disengaged from the tow boat.

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References Cited in the file of this patent

UNITED STATES PATENTS

2,790,863 Towle ----- Apr. 30, 1957

FOREIGN PATENTS

398,549 Great Britain ----- Sept. 18, 1933

OTHER REFERENCES

Popular Mechanics, March 1959, pp. 156-157.