Oct. 2, 1962 E. F. EILERS 3,056,272

ICE-FISHING DEVICE

Filed May 23, 1960

FIG. 1

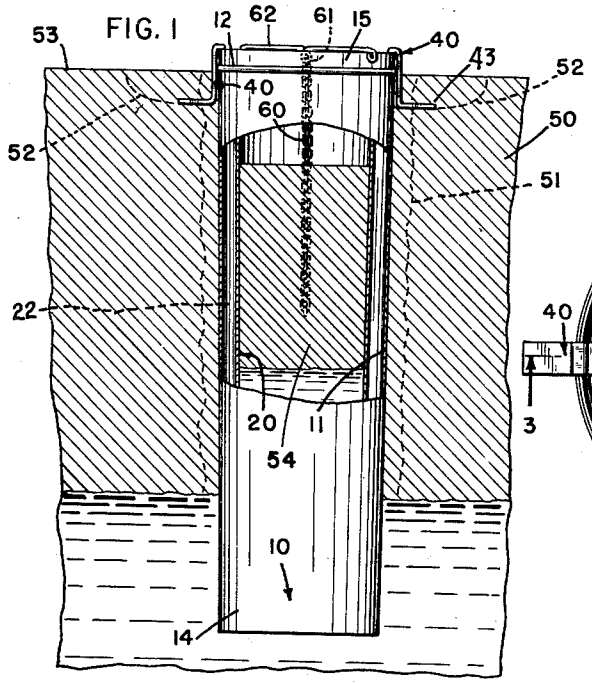
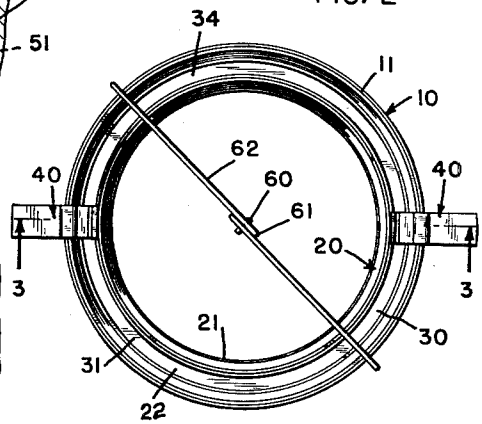


FIG. 2



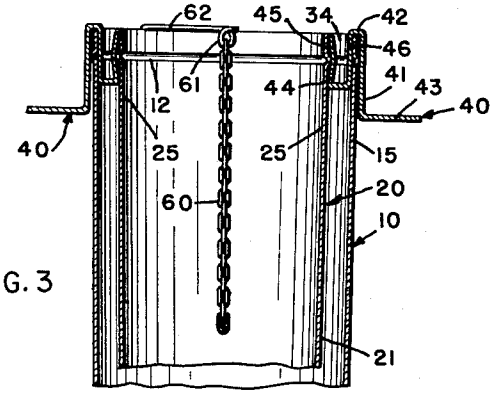
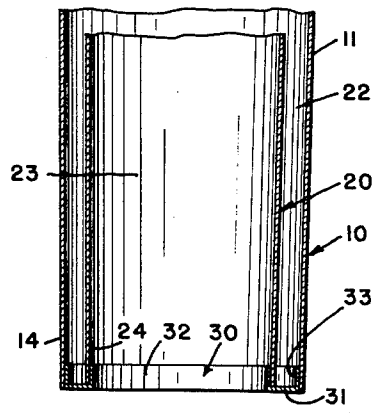


FIG. 3



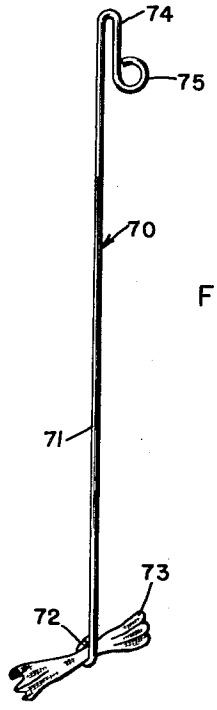


FIG. 4

INVENTOR.

ERVIN F. EILERS

BY

Caswell, Lagaard & Wicks

ATTORNEYS

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ICE-FISHING DEVICE

Ervin F. Eilers, Minneapolis, Minn.
(1284 Hartford Ave., St. Paul 16, Minn.)

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The herein described invention relates to ice fishing devices and, particularly, to a device for reopening the hole cut through the ice.

An object of the invention resides in providing a device having an outer shell and an inner liner spaced from one another to form an annular chamber therebetween and, further, having an annulus connected to the lower ends of said shell and liner for closing said chamber at the bottom thereof.

An object of the invention resides in arranging said shell and liner so that the lateral wall structures thereof diverge in an upward direction, whereby the walls, when heated, will release the ice formed within the liner as well as releasing the shell from the ice proper.

A still further object of the invention resides in providing a tether supported by the liner and extending into the interior of the same and adapted to be embedded within the ice frozen within said liner for facilitating the removal of the same therefrom.

An object of the invention resides in providing heating means for heating both the shell and the liner to release the ice frozen within the liner and, also, to free the shell from the ice proper when the ice is to be removed.

An object of the invention resides in providing retainers connected to the uppermost portion of the shell and liner whereby the same may be held in position in the hole cut through the ice when the shell is heated.

Another object of the invention resides in constructing the liner, open at the top and bottom to provide a passageway therethrough so that when the ice within the liner is removed, fishing may be accomplished through the passageway in the liner.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

FIG. 1 is an elevational view, partly in section, showing an embodiment of the invention installed in the ice.

FIG. 2 is a plan view of the structure shown in FIG. 1 and removed from the ice.

FIG. 3 is an elevational, sectional, view taken on line 3—3 of FIG. 2.

FIG. 4 is a perspective view of the heater.

The invention consists of a shell 10 constructed of sheet metal, or some other similar material. This shell is tubular in form, being open at the top and bottom. The shell 10 is formed with a wall structure 11 of an inverted frusto-conical form which diverges in an upward direction and is of a greater diameter at its upper end than at its lower end. The shell 10 has a bead 12 extending circumferentially about the same adjacent its upper end to stiffen and reinforce the same. Mounted within the shell 10 is a liner 20 similar in construction to the shell 10. This liner has a wall structure 21 constructed of sheet metal and which is of an inverted frusto-conical form, the same as the shell 10. This wall structure is of lesser diameter than the wall structure 11 and also diverges upwardly. By means of this construction, an annular chamber 22 is formed between the said shell and liner. The liner 20 is open at both the top and bottom, as illustrated, and forms an inner passageway 23 extending completely through the same.

Attached to the lowermost marginal portions 14 and 24 of the shell 10 and liner 20 is an annulus 30. This

annulus has an annular planiform portion 31 with arcuate flanges 32 and 33 extending up from the marginal portions thereof. The flange 32 engages the marginal portion 24 of the liner 20 and is soldered thereto. In a similar manner, the flange 33 engages the marginal portion 14 of the shell 10 and is, likewise, soldered thereto. By means of this construction, the chamber 22 between the liner 20 and the shell 11 is closed at the lower end thereof. The upper end of this chamber is formed with an annular opening 34 through which access to the chamber 22 may be had.

For retaining the device in position within the hole in the ice, two retainers 40 are employed. These retainers being identical in construction, only the retainer on the right hand side of the device, as viewed in the drawings, will be described. This retainer is constructed from a strip of metal which is bent to form an upright 41 and flanges 42 and 43 extending outwardly from the upper and lower edges thereof and in opposite directions. The flange 42 terminates in a U-shaped clip 44 having legs 45 and 46, the leg 46 issuing from the flange 42. This clip is adapted to be received within the chamber 22 and between the upper marginal portions 15 and 25 of the shell 10 and the liner 20. These clips are of somewhat resilient material and the leg 45 is urged outwardly from said leg 46 so that when the clips are inserted, as shown in the drawings, into the chamber 22 the same are frictionally engaged with the marginal portions 15 and 25 and remain attached thereto. In addition, these clips hold the liner 20 in concentric relation with the shell 10.

The method of using the invention is as follows and will be best understood from an inspection of FIG. 1. The ice proper is indicated by the reference number 50. In this ice, at the proper locality, a hole 51 is cut with an ice chisel, or appropriate tool, and in the customary manner. This hole is of sufficient dimensions to receive the entire device with the shell 10 clearing the surface of said hole. In addition, two pockets 52 are formed in the surface 53 of the ice proper and are adapted to receive the uprights 41 and the flanges 43 of the retainers 40. These pockets are of a depth such that the marginal portion 15 of the shell 10 projects somewhat above the upper surface 53 of the ice. Water is filled in these pockets and the same allowed to freeze, thereby embedding the flanges 43 in the ice. A weight may be placed across the upper end of the device while freezing takes place to hold the same in position, the device being usually buoyant due to the air within the chamber 22. As soon as the ice in the pockets 52 has frozen, ice fishing may be commenced in the usual manner. A baited line is inserted into the passageway 23 and lowered down into the water below the device. When a fish is caught, the same is elevated through the passageway 23 and retrieved in the customary manner.

When the fishing has been completed for a day, the fisherman uses a tether 60, which may be in the form of a chain and which is attached to a loop 61 formed on a crossbar 62. This tether is lowered into the water within the interior of the passageway 23 and the crossbar is extended across the marginal portions 15 and 25 of the shell 10 and liner 20, as shown in FIGS. 2 and 3. The device is then abandoned. Ice then freezes within the passageway 23, forming a block 54 in which tether 60 is embedded.

When fishing is to be resumed, the fisherman utilizes a heater 70 which has an elongated shank 71 terminating at its lower end in an eye 72. A wick 73 is clamped in the eye 72 and projects outwardly therefrom on opposite sides thereof. The upper end of the shank 71 is provided with a hook 74 and which terminates in a finger-piece 75. In use, the wick 73 is dipped in alcohol. The

alcohol is then ignited and the burner inserted through the annular opening 34 at the upper end of chamber 22 and the heater lowered into said chamber. Hook 74 is then hooked over the marginal portion 15 of shell 10 and with the fingerpiece 75 disposed upon the exterior thereof. After the alcohol in the wick 73 has burned out, the burner is removed. While the heater is in operation, sufficient heat is imparted to the liner 21 to melt the block of ice 54 at the surface thereof so that the same is loosened from the liner. The entire block may then be raised out of the passageway 23 by drawing upwardly on the crossbar 62. The passageway 22 then becomes reopened and fishing may continue as before.

When the fishing hole is to be abandoned, the same procedure is applied as used for removal of the block 54, the heater 70 being set in action and lowered into the annular chamber 22. While heating is taking place, the two flanges 43 of the retainers 40 are freed from the ice from within the pockets 52 by chopping out the ice in which they are embedded. After the alcohol in the wick 73 has burned sufficiently, the wall structure 11 of the shell 10 melts the ice proper along the outer surface of said shell and the entire device raises automatically through the buoyancy provided through the air in the chamber 22. The entire device may then be removed from the hole and the hole abandoned.

The advantages of the invention are manifest. The fisherman may reopen a previous hole in which the device is set without chopping or the use of other hard labor. The ice block within the liner can be rapidly freed to permit immediate fishing through the passageway in the liner when the block is removed therefrom. The device can be constructed at an extremely economical cost and there are no complicated parts to get out of order. Different sizes of shells and liners may also be provided to give fishing holes of the desired diameter.

While the invention has been shown as constructed with parts frusto-conical in form, the same may also be in the form of a polygon with upwardly diverging sides.

Changes in the specific form of the invention, as herein described, may be made within the scope of what is claimed without departing from the spirit of the invention.

Having described the invention, what is claimed as new and desired to be protected by Letters Patent is:

1. An ice fishing device comprising an elongated tubular shell open at its upper end, said shell having greater transverse dimensions at its upper end than at its lower end uniformly increasing toward the upper end of the shell to permit withdrawal of the device in an upward direction from a mass of ice formed about the shell, a tubular liner disposed within said shell and open at both ends, said liner having greater transverse dimensions at its upper end than at its lower end uniformly increasing toward the upper end of the liner to permit withdrawal in an upward direction of a core of ice formed within said shell, the transverse dimensions of said liner being less than those of said shell to form a chamber extending about said liner and within said shell, said chamber being open at its upper end, means extending between said shell and liner at their lower ends and forming a water tight closure for the lower end of said chamber, and heating means within said chamber.

2. An ice fishing device comprising an elongated tubular shell open at its upper end, said shell having greater transverse dimensions at its upper end than at its lower end uniformly increasing toward the upper end of the shell to permit withdrawal of the device in an upward direction from a mass of ice formed about the shell, a tubular liner disposed within said shell and open at both ends, said liner having greater transverse dimensions at its upper end than at its lower end uniformly increasing toward the upper end of the liner to permit withdrawal in an upward direction of a core of ice formed within said shell, the transverse dimensions of said liner being less than those of said shell to form a chamber extending about said liner and within said shell, said chamber being open at its upper end, means extending between said shell and liner at their lower ends and forming a water tight closure for the lower end of said chamber, a heater insertable into said chamber through the upper open end thereof and serving to heat said liner and shell, said liner having less surface area than said shell, said heater first freeing a core of ice formed within said liner, and said heater upon further operation freeing the shell from the ice formed about the same.

3. An ice fishing device comprising a tubular shell of a frusto-conical form, open at both ends, and disposed with the larger end uppermost for reception in a hole in the ice, a tubular liner disposed within said shell and of a frusto-conical form open at both ends and disposed with the larger end uppermost, said liner being of smaller diameters than said shell to form an annular chamber between said shell and liner open at its upper end, an annulus connecting the lower edges of said shell and liner and closing the annular chamber at the bottom thereof, means for supporting the device within the hole in the ice prior to freezing of the water in the hole, a tether supported from above said liner and extending downwardly into the interior of the liner and a heater disposed within said annular chamber and insertable therein through the open upper end thereof, said heater serving to melt the ice within the liner sufficiently to form a block of ice in said liner, said block being removable therefrom through the upper end thereof and attached to said tether.

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