April 27, 1965 J. L. ZOGLIO 3,181,135

SIGNAL DEVICE

Filed Feb. 6, 1962 2 Sheets-Sheet 1

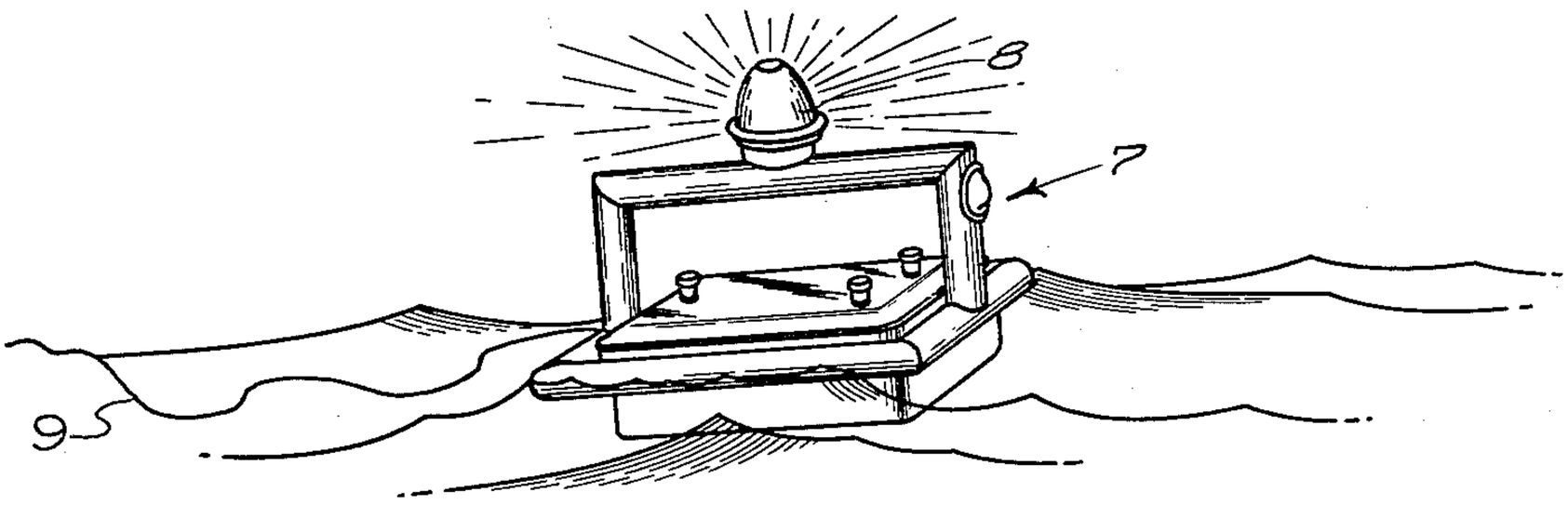

FIG. 1

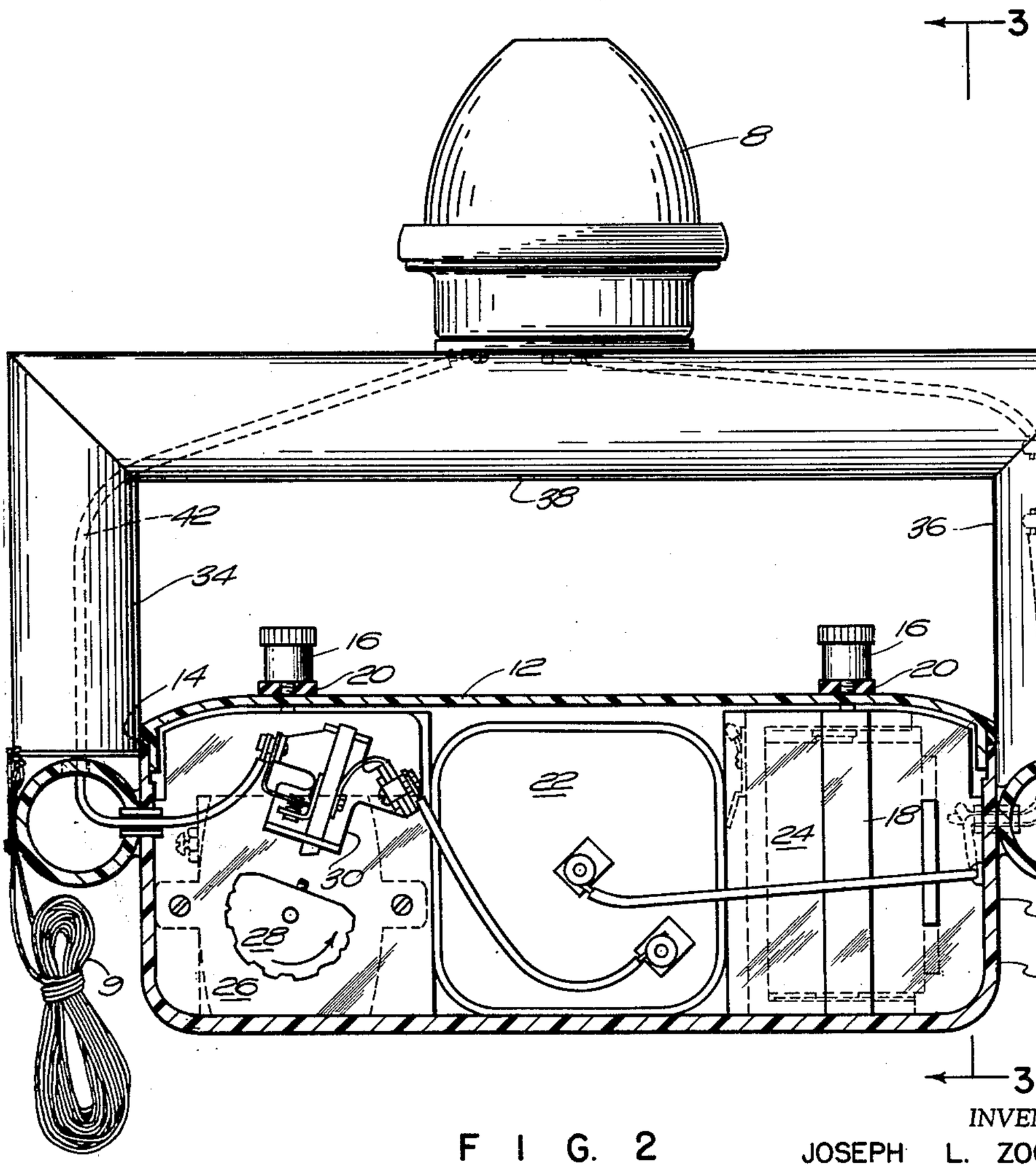

FIG. 2

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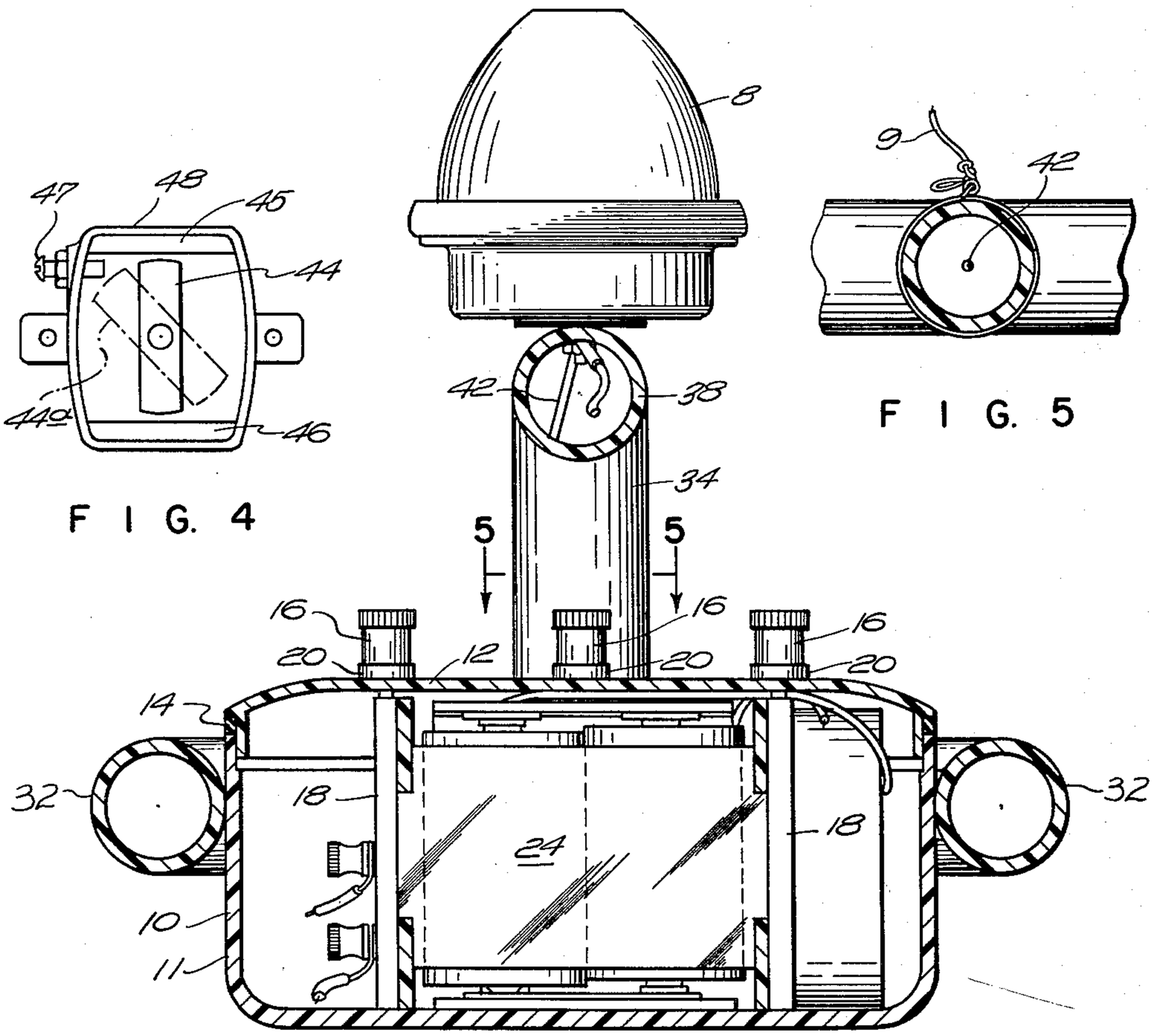
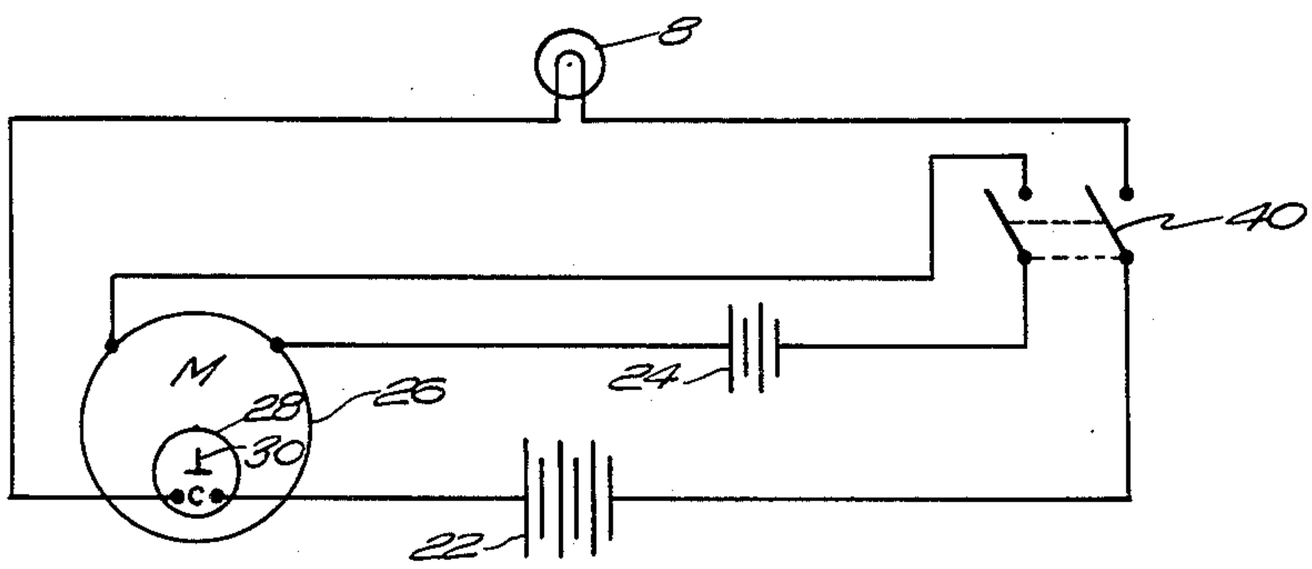
F I G. 4

F I G. 5



F I G. 3



F I G. 6

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3,181,135

Patented Apr. 27, 1965

3,181,135

SIGNAL DEVICE

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Filed Feb. 6, 1962, Ser. No. 171,400
12 Claims. (Cl. 340—331)

This invention relates to signalling devices and more particularly to an electrically controlled buoyant signal device. It is designed primarily for use in saving lives but it is to be understood that it may be used for any purpose for which it may be found applicable.

My novel device is particularly suited as a relatively small compact, easily carried, self-contained device which will emit intermittent signals of a visual and/or radio type in a predetermined sequence.

Despite the fact that many types of signal devices exist, with and without flashing devices, these have not been designed with compactness and ease of carrying, primarily in mind.

It is an object of my invention to provide a device which is compact and easily carried, thus making it possible to provide people with a safety factor where little has existed before.

It is another object of my invention to provide a device whose novel construction makes it definitely buoyant and exceedingly stable in its floating position.

It is a further object to provide a device which has an electrical motor and a circuit within which is a means for assuring the starting of the motor.

Further objects and advantages will be made evident in the following specification and in the accompanying drawings in which:

FIGURE 1 is a perspective view of the novel device riding in the water and having an attached antenna extended.

FIGURE 2 is a vertical sectional view taken through the body of the novel device.

FIGURE 3 is a vertical section taken on line 3—3 of FIGURE 2.

FIGURE 4 is an open ended diagrammatic view of the signal motor showing the novel anti-stall arrangement.

FIGURE 5 is a sectional view of the handle showing the relationship of signal carrying wire and antenna.

FIGURE 6 is a diagrammatic depiction of the basic electrical circuit in the novel signal device.

Referring now in greater particularity to the drawing, 7 generally indicates the preferred form of the novel device which is shown in FIGURE 1 with a flashing light 8 and a trailing antenna 9.

The signal device 7 is preferably made of a waterproof plastic case 10 which is generally rectangular in configuration. This case is preferably assembled from two parts, a body portion 11 and a lid 12. Along the entire meeting edges between the body portion 11 and lid 12 is a sealing gasket 14. The lid and body portion are retained in sealing engagement by means of three thumb screws 16 which are turned down on supporting members 18 fastened to the bottom of the body portion. To insure that the body will remain water tight a sealing gasket 20 is placed beneath each thumb screw.

The case contains three major components: a battery 22 for supplying current to the light 8, a motor 26 and a battery source 24 for supplying current to the motor. There is also within the case a code wheel 28 and a small switch 30 which is actuated by this wheel. The wheel 28 is driven by motor 26 and may have contacts on its surface in any desired order to make contact with switch 30 in a desired sequence.

Fastened to the casing near the top of the body portion is a sealed flotation chamber 32. This chamber is preferably a continuous tube around the casing of sufficient volume to floatably support the entire device. Fastened

to the chamber 32 on opposite sides of the casing is a handle made of two parallel sections of tubing 34 and 36 and a cross member of tubing 38. This handle is sealingly joined to chamber 32 and also serves as a flotation member. As a result of the handle, should the device be dropped in the water with the light and handle down, the buoyancy of the handles will turn the device upright as shown in FIGURE 1.

Fastened to the handle section 36 is a double pole switch 40 which is covered by a sealing membrane 41 sealed to the handle. This switch may of course be placed at some other convenient location.

When the switch 40 is closed two circuits become operative. One circuit permits current to flow from the battery source 24 to motor 26 and back. The other circuit permits current to flow from battery source 22 to switch 30, through light 8 and return. The motor 26 turns the code wheel 28 to operate the switch 30 in a predetermined sequence. This in turn will flash the light 8 in the same sequence.

It will be noted the wire (here designated as 42) to the lamp is contained within the handle. If it is desired to transmit a radio type of signal, then an antenna wire 9 may be tied around the handle as shown in FIGURE 5. The current to the lamp 8 will induce the production of an electromagnetic type of signal current in line 9 in the same sequence as that of the lamp.

In many electric motors it is possible for an armature such as 44 (see FIGURE 4) to stop in such a position as to be directly in line with the poles 45 and 46 of the magnetic field. When this occurs the motor will not start unless the armature is placed in an out of line position. By inserting a screw 47 in the motor casing 48 it has been found that the residual magnetism in the armature when the motor is shut off will cause the armature to be attracted toward the screw and assume the position indicated by *44a*. In this position the armature will readily turn when the motor is started.

Having shown and described a preferred embodiment of the present invention by way of example, it should be realized that structural changes could be made and other examples given without departing from either the spirit or scope of this invention.

What I claim is:

1. In a signalling device containing an electric motor, a first power source for supplying electricity to said motor, and a second power source for supplying additional electric power:

(*a*) a casing comprising sides, a bottom, and an opening at its top and containing said motor and said first and second power sources supported on said bottom;

(*b*) said casing further including:

(1) a cover sealingly closing said opening,

(2) a flotation chamber fastened to said sides adjacent said opening;

(*c*) a buoyant handle extending over said casing and fastened to said chamber on opposite sides of said casing,

(1) said handle having means for emitting a signal fastened thereto,

(*d*) wire means within said handle for transmitting electric power from said second power source to said signal emitting means.

2. Apparatus according to claim 1 wherein said signal emitting means includes a light fastened to the top of said handle.

3. Apparatus according to claim 1 wherein said signal emitting means includes an antenna wire tied about a portion of said handle containing said wire means.

4. In a signalling device for emitting an intermittent visible signal, the combination of:

(*a*) a water tight casing having sides, a bottom and a removable top,
(*b*) a flotation chamber fastened to said sides adjacent said top,
(*c*) a buoyant handle extending over said casing and fastened to said chamber on opposite sides of said casing,
(*d*) an electric motor within said casing,
(*e*) first battery means for supplying electric power to said motor,
(*f*) a light fastened to the top of said handle,
(*g*) second battery means for supplying electric power to said light,
(*h*) a double pole switch fastened to said handle,
(1) said switch being water proofed,
(*i*) a first wiring circuit interconnecting one pole of said switch with said motor and said first battery means,
(*j*) a second wiring circuit interconnecting the other pole of said switch with said light and said second battery means,
(1) a portion of said second wiring circuit extending through said handle,
(*k*) and means between said second wiring circuit and said motor for interrupting the flow of electricity through said second circuit in a preselected sequence.

5. A combination as called for in claim 4 wherein said casing is in the shape of a rectangular box and said flottation chamber is of a sealed hollow tubular construction.

6. A combination as called for in claim 5 wherein said buoyant handle is of hollow tubular construction.

7. A combination as called for in claim 4 wherein said motor has an armature, a field, a motor casing containing said armature and field, and means in said motor casing for assuring that said armature is always in a skew position with respect to said field when said motor is stopped.

8. A combination as called for in claim 7 wherein said means is a steel set screw inserted through a wall of said motor casing whereby the residual magnetism in said armature causes it to be attracted to said screw.

9. In a signalling device for emitting an intermittent visible signal, the combination of:
(*a*) a watertight rectangular box shaped casing having four sides, a bottom and a removable top,
(*b*) a sealed, hollow tubular flotation chamber fastened adjacent said top to at least two opposite sides of said casing,

(*c*) a sealed, hollow tubular handle fastened to said chamber on opposite sides of said casing,
(*d*) an electric motor within said casing,
(*e*) first battery means for supplying electric power to said motor,
(*f*) a light fastened to the top of said handle,
(*g*) second battery means for supplying electric power to said light,
(*h*) a double pole switch fastened to said handle,
(1) said switch being waterproofed,
(*i*) a first wiring circuit interconnecting one pole of said switch with said motor and said first battery means,
(*j*) a second wiring circuit interconnecting the other pole of said switch with said light and said second battery means,
(1) a portion of said second wiring circuit extending through said handle,
(*k*) a code wheel fastened to said motor to be driven thereby,
(*l*) a switch in said second circuit actuated by said code wheel in a predetermined sequence when said motor is operative to complete said second circuit to said light when said double pole switch is closed.

10. A combination as called for in claim 9 wherein an antenna wire is fastened about a portion of said handle containing said second wiring circuit.

11. A combination as called for in claim 9 wherein said motor has an armature, a field, a motor casing containing said armature and field and means for assuring that said armature is always in a skew position with respect to said field when said motor is stopped.

12. A combination as called for in claim 11 wherein said means is a steel set screw inserted through a wall of said motor casing whereby the residual magnetism in said armature causes it to be attracted to said screw.

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