

July 21, 1964

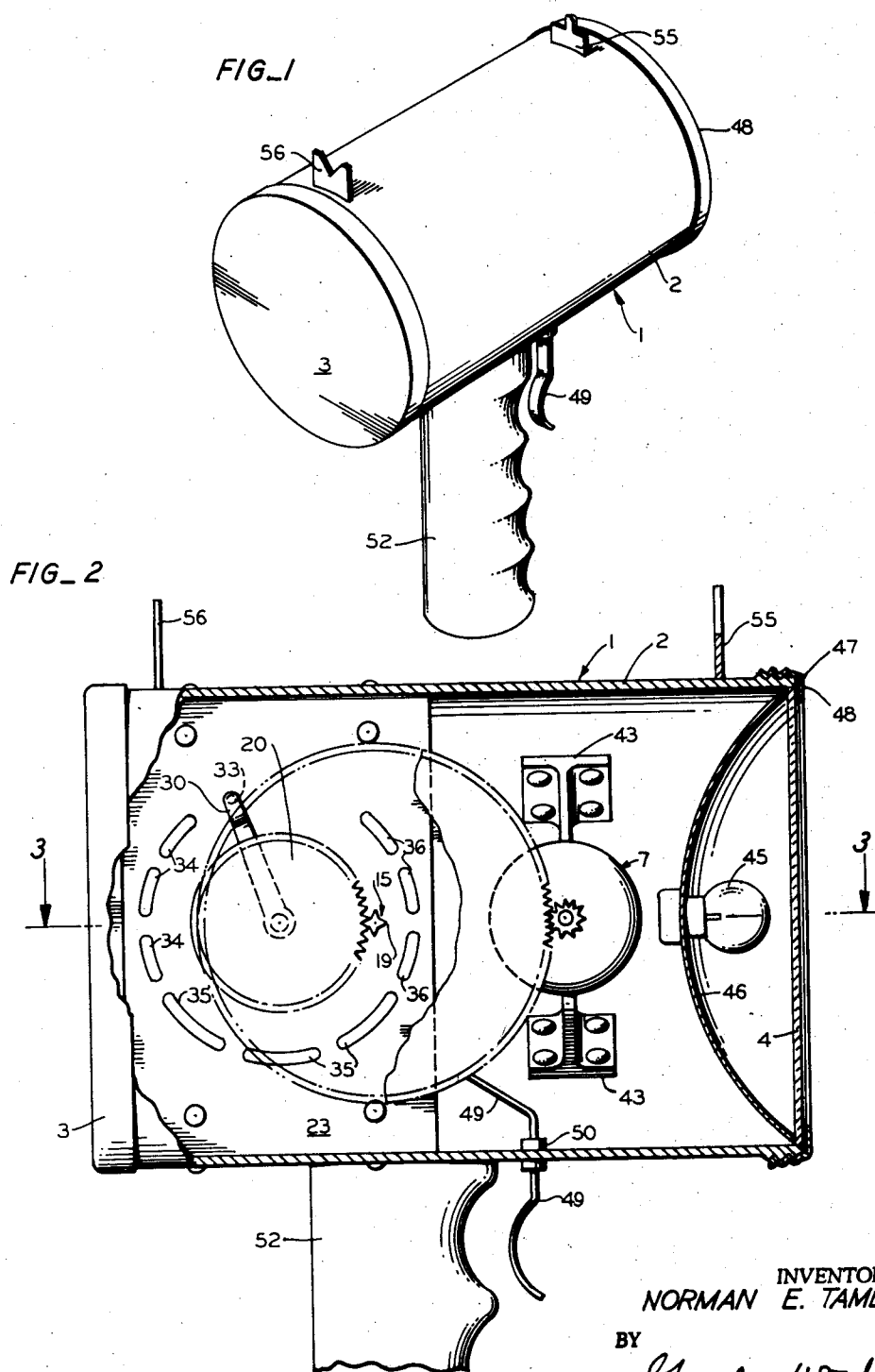
N. E. TAMBERT

3,142,052

EMERGENCY SIGNALLING DEVICE

Filed April 30, 1962

2 Sheets-Sheet 1



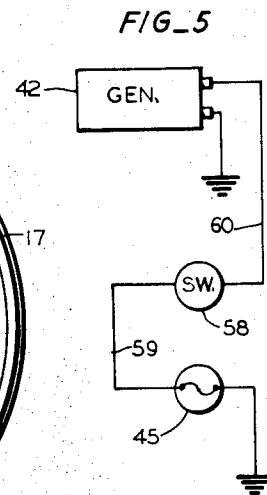
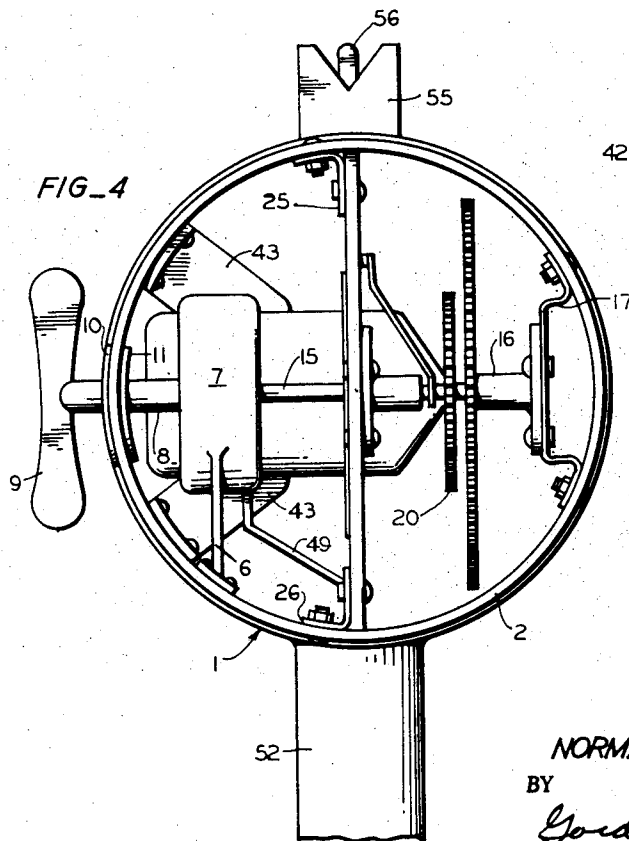
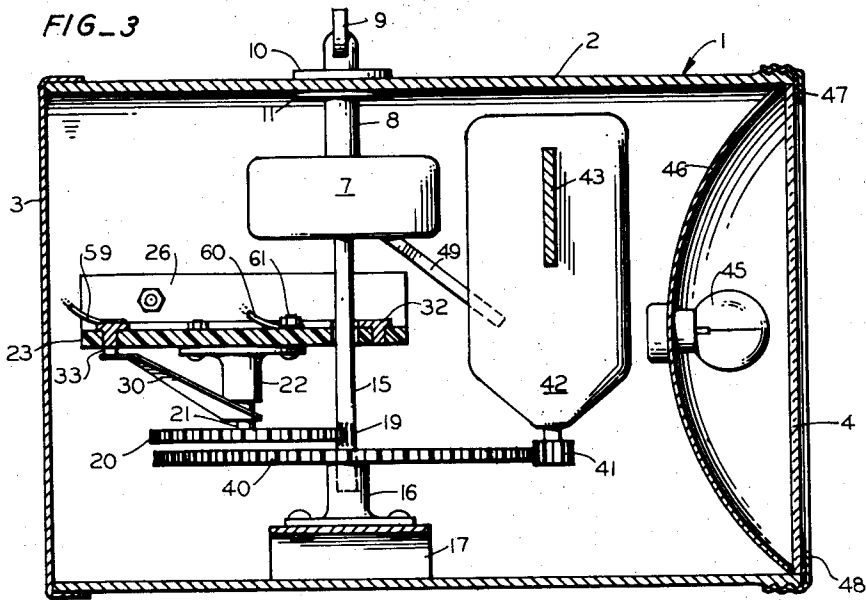
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EMERGENCY SIGNALLING DEVICE

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1 Claim. (Cl. 340—321)

This invention relates to a signalling device which may be employed in cases of emergency for sending a distress signal. More particularly the invention is adapted to be carried by small boats as standard equipment and available for immediate use in case of an emergency for signalling other ships or aircraft as the case may be.

In the past, dangerous situations have arisen and in some instances fatalities have resulted when small boats have depleted their fuel reserve at a considerable distance from land. In some cases when the occupants of such distressed crafts have attempted to signal other boats and aircraft their actions have not been clearly understood to indicate distress with the result that such dangerous conditions have been disregarded by those in a position to assist.

The main object of this invention is the provision of an inexpensive portable signalling device adapted to emit a beam of light in a manner such that an observer clearly understands the signal to indicate distress.

Another object of the invention is the provision of a signalling device which does not employ batteries and, therefore, does not become impaired after a long period of nonuse.

Other objects and advantages will be understood from the following specification in which:

FIG. 1 is a perspective of the device;

FIG. 2 is a vertical section;

FIG. 3 is a horizontal section as taken along lines 3—3 of FIG. 2;

FIG. 4 is a transverse section, and

FIG. 5 is a simplified wiring diagram.

In detail, and first with reference to FIG. 1, the preferred form of the invention includes a housing generally designated 1 having cylindrical sidewalls 2 and an endwall 3. The end opposite the endwall 3 is provided with a lens 4 which is preferably made of transparent plastic material, preferably red in color.

Mounted on sidewalls 2 by means of a bracket 6 (FIG. 4) is a spring wound motor 7 having a winding shaft 8 extending through sidewall 2 and provided at its outer end with a winding element 9. To maintain water tightness within housing 1 a pair of water tight grommets 10, 11 are provided on sidewalls 2 and surrounding shaft 8.

The driven shaft 15 of spring motor 7 extends across the housing and is rotatably supported at its outer end in a bearing 16 which in turn is supported by means of bracket 17 on sidewalls 2 (see FIG. 3). Shaft 15 is formed to provide gear teeth 19 which are in mesh with the teeth of a large gear 20 carried by a shaft 21. Shaft 21 in turn is rotatably supported in a bearing 22 fastened to a vertically extending circuit board 23 formed of insulating material. Said board 23 may be secured to the cylindrical sidewalls 2 by means of upper and lower clips 25, 26 (FIG. 4).

The shaft 21 is provided with an arm 30 which, when rotating with shaft 21, engages contacts mounted on circuit board 23. As best seen in FIG. 3 a contact plate 32 is secured to the side of circuit board 23 that is opposite the arm 30. Contact plate 32 is annular in shape and is provided with integral contacts extending through circuit board 23 to the opposite side of said board so as to be contacted by a contact 33 on arm 30 as the latter rotates with shaft 21.

Referring to FIG. 2 it will be seen that three contacts 34 are provided in spaced apart relationship so as to be

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successively engaged by the contact 33 on arm 30. Upon further rotation of arm 30 in a counterclockwise direction contact 33 engages somewhat longer contacts 35 on circuit board 23 and hereafter engages three contacts 36 which are similar in all respects to contacts 34. Regardless of the direction of rotation of arm 30 it will be seen that the same engages three short contacts and three long contacts and again engages three short contacts before engaging a relatively long arc on the circuit board which is not provided with any contacts.

At this point it will be seen that the sweeping movement of arm 30 may be employed to complete a circuit intermittently with the period of time during which the circuit is closed being determined by the lengths of contacts 34, 35, 36 and the spacing between them. As will subsequently be seen, said contacts are connected in a circuit with a light source so that said light source automatically emits the distress signal of the Morse code, which is three dots followed by three dashes followed by three dots.

Referring again to FIG. 3, the driven shaft 15 of the spring wound motor 7 is also provided with a relatively large gear 40 which in turn meshes with a relatively small gear 41 on the output shaft of an electric generator 42. Generator 42 is secured by means of brackets 43 to the sidewalls 2 of housing 1.

From the above described structure it will be seen that the spring wound motor 7 drives the electric generator 42 and at the same time drives the sweep arm 30 of the rotary switch that includes the contacts 34, 35, 36.

Mounted behind the transparent lens 4 is an electric bulb 45 mounted on a reflector 46 which in turn is secured at its periphery to the housing 1. An annular water tight seal 47 may be secured to the end of housing 2 by means of a threaded ring 48 to prevent the entrance of water around the lens 4. The opposite end 3 of the housing may be permanently secured to the sidewalls 2 or, if desired, may be removably secured and sealed.

For the purpose of actuating the spring wound motor 7 a trigger 49 extends downwardly from said motor through the sidewall 2 as best seen in FIG. 2. In order to preserve water tightness a water tight bushing 50 may be provided around trigger 49. Trigger 49 is connected in a conventional manner with spring wound motor 7 so that upon movement of the lower end of the trigger in a rearward direction the spring wound motor 7 is started. Upon release of the trigger the motor stops. Also secured to the housing 1 intermediate the ends of the sidewall 2 is a handle 52 that is adapted to be grasped in the hand of the user so that the device may be pointed in any desired direction. The trigger 49 is positioned adjacent to handle 42 so that it may be actuated by the finger of the user as desired.

A forward sight 55 (FIG. 1) and a rear sight 56 may be provided to facilitate pointing the device in exactly the direction desired.

Referring now to FIG. 5, the rotary switch is indicated at 58 and is connected by lead 59 with bulb 45. The latter being grounded in a conventional manner. Switch 58 is also connected by lead 60 with the generator 42 which is also grounded. Referring again to FIG. 3, the lead 59 is connected to the annular contact ring 32 and lead 60 is connected through a screw 61 with the bearing 22 that supports shaft 21. In this manner it will be seen that the circuit includes the generator and the bulb is opened and closed in accordance with the arrangement of contacts 34, 35, 36.

As a practical example, the gear ratios, the speed of the spring wound motor, and the disposition of the contacts have been arranged so that three dots of three quarters of a second each followed by a pause of one-quarter of a second each are emitted before and after three

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dashes of one and one-half seconds each with a pause of one-quarter of a second between each dash. Such an arrangement gives a desirable practical effect. However, it will be understood that any desired arrangement of contacts may be made to achieve the desired result.

I claim:

A signalling device comprising:

a watertight housing provided with a transparent side and with a handle extending outwardly from another side thereof and adapted to be held and manipulated in one hand of a user,

an electric generator and a spring wound motor contained in said housing with said motor connected with said generator for driving the same,

a light source adjacent said transparent side and an electrical circuit in said housing,

said electrical circuit including said light source and said generator with said generator energizing said light source,

a rotatable contact member in said circuit,

drive means connecting said motor and said member for driving the latter,

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a plurality of spaced contacts in said circuit adapted to be successively engaged by said contact member for opening and closing said circuit and energizing and deenergizing said light source to emit the intermittent light beams of a distress signal, and

a trigger alongside said handle and adapted to be engaged by a finger of the hand of the user, said trigger being operatively connected with said motor for starting and stopping the latter.

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