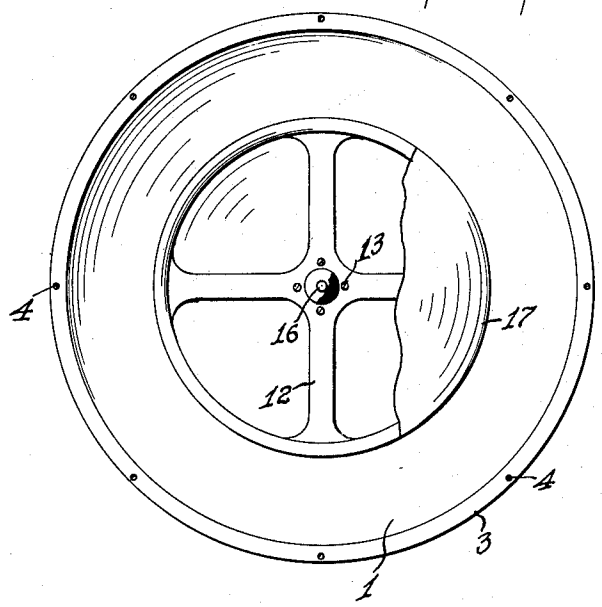
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FLOAT SUPPORTED SIGNALLING DEVICE

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Fig. 2.



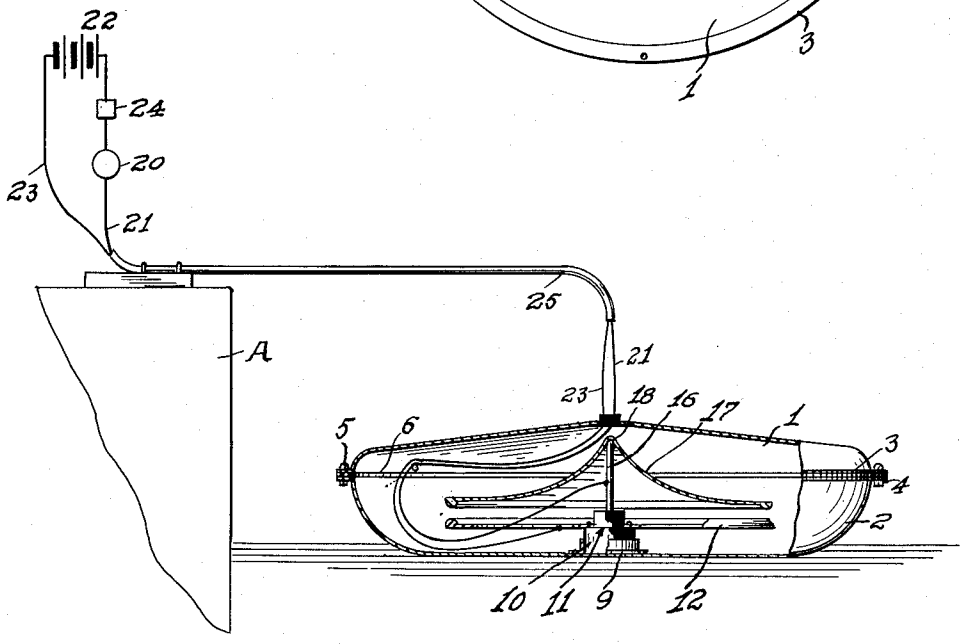


Fig. 1.

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Fig. 5.

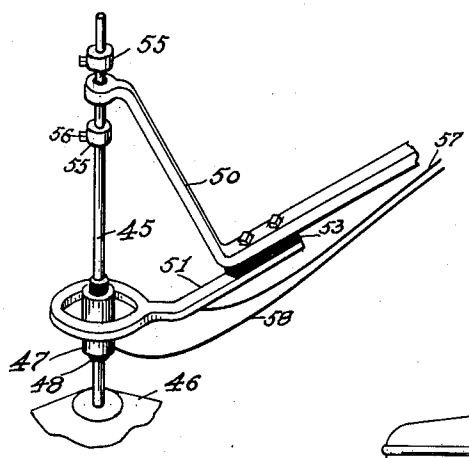
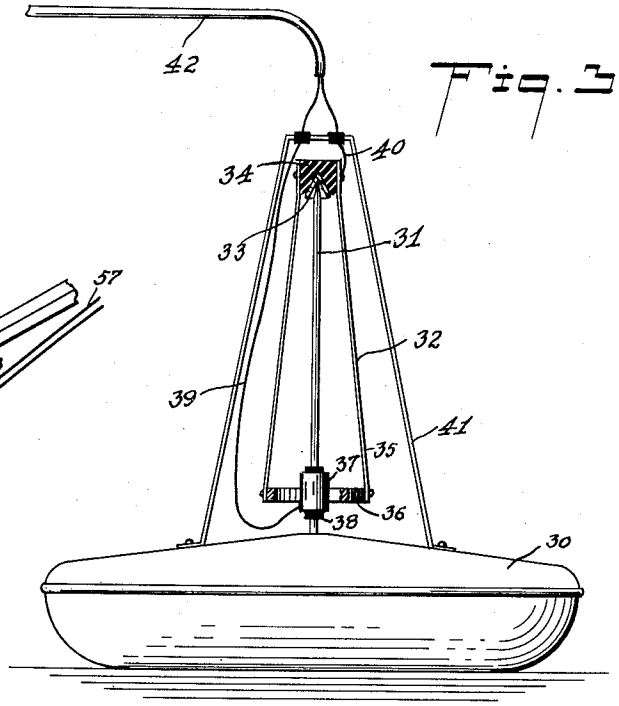


Fig. 3.



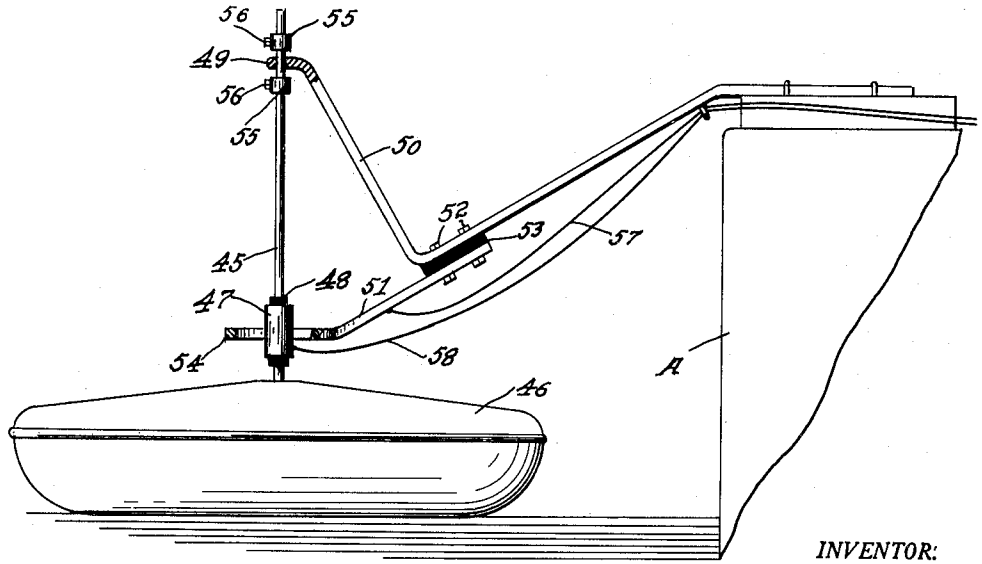


Fig. 4.

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FLOAT SUPPORTED SIGNALLING DEVICE

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Application September 28, 1951, Serial No. 248,690

2 Claims. (Cl. 340—261)

This invention relates to a signaling device forming part of a float which may be placed on the surface of a body of water and which is designed to give warning of any disturbance of the water surface.

It is becoming increasingly popular to install on residential properties swimming pools for the enjoyment of the occupants and their guests. Such pools are generally placed very close to the living quarters on the property for the convenience of the occupants thereof and also usually on account of space limitations. Nor is it customary to fence in such pools, mostly because such fence would materially detract from the appearance of the property. However, there is great danger in leaving such to or may find the opportunity to play on the grounds surpools exposed, particularly where children are allowed to or may find the opportunity to play on the grounds surrounding the pool at times when no one is near to keep an eye on the children.

It is in view of the foregoing the object of the present invention to provide a signaling device which is embodied into a float so small and light that it may easily be carried to and from the pool by anyone in the house and so sensitive to vibration that any disturbance of the water within the pool on which the float is placed will be effective to energize a warning signal. Another object is to provide means extending from the signal mechanism of the float to a desired point at or within the residence for sounding or otherwise giving warning whenever the water of the normally quiet pool is agitated.

With these and other objects in view, the invention resides in the combinations hereinafter fully described and illustrated in the accompanying drawing of which:

Fig. 1 is a side elevational view of a device embodying the invention and with parts of the wall of the float casing broken away in order better to illustrate the interior mechanism thereof;

Fig. 2 is a plan view of the device with the upper portion of the casing thereof removed;

Fig. 3 is a side elevational view of a somewhat modified form of the invention; and

Figs. 4 and 5 illustrate a further modification of the invention.

As indicated in Fig. 1, the float consists of a casing including an upper member, or cover **1** and a bottom part, or body **2**. These parts may be tightly assembled in any suitable manner, illustrative of which I have shown the abutting edges thereof flared to provide flanges **3**, **4** through which bolts **5** extend tightly to draw the flanges together. In addition, it may be found necessary to place a resilient gasket **6** between the flanges of the casing. But, as above stated, any other suitable method of assembly may be substituted.

Centrally positioned on the bottom of the casing is a post **10** on which the devices forming the signaling mechanism of the invention are mounted in the following manner. The post is preferably cylindrical in shape and the upper portion thereof is shown reduced in diameter to form a shelf **11** on which a disc **12** is rigidly mounted

as by means of screws **13** extending through perforations **14** of the disc. This member is made from non-flexing, current conducting material and it is electrically insulated, from the post **10** which, for this purpose, may be made from rubber or other non-conducting material. A rod **16** rises co-axially from the center of the post to a position near the inner surface of the cover **1** to support a circular plate **17** the material of which rises from the edge thereof on a gradually increasing curve to form at the top a centrally positioned seat **18** for the pointed upper end of the rod **16**.

When so shaped, it is found that a slight tilting movement of the casing in any direction, in response to a disturbance of the water on which the float is set to ride, will cause the edge of the inertia restrained plate to contact the peripheral edge of the disc **12** at some point, or successively at various points, to close a circuit to energize a bell **20** at any preferred location near or within the residence. A conductor **21** leads from a source of energy **22** through the bell to the rod **16** and the current returns from the disc through a wire **23** to the source of energy. It is found convenient to cut the bell into the light circuit of the house in which case it will be necessary to step down the current by placing a transformer **24** into the float circuit. Perhaps the most convenient manner of completing this arrangement would be to cut the float circuit directly into the door bell circuit of the house. It is, of course, necessary that both the rod **10** and the plate **17** are made from current conducting material and that they are insulated from each other and the float.

The conductors **21** and **23** should be guided into the casing through a non-conducting, watertight bushing, such as indicated at **25** Fig. 1, and this bushing is placed in the center of the casing. It was above stated that the pointed upper end of the rod **16** is near the inner surface of the cover **1**. When so positioned, it is seen that, while the plate **17** is afforded sufficient of freedom for oscillations on the point of the rod it cannot become disengaged therefrom until the cover is removed from the bottom member of the float. The post **10** should, of course, be rigidly mounted within the float the bottom of which for this purpose is shown provided with a circular flange **9** within which the post is tightly seated.

Means should be provided for supporting the weight of the wires extending from the float and such means may take the form of a tubular wire conduit **26** extending from the surface of the ground above the wall of the pool. This conduit may conveniently be held in position on the ground by means of a weighted base plate **27** and the outer end of the conduit is shown downwardly curved to take a position a short distance above the bushing **25** of the float. When so anchored, it is seen that the float will have some freedom of movement on the surface of the water and, as the weight of the wires is completely supported, nothing is present in the device tending to urge the float out of balance. The conduit **26** should be long enough to maintain the float a distance away from the wall A of the pool.

The modified device of Fig. 3 differs from the foregoing merely in placing the signaling mechanism on top of the float, but the principle of operation remaining substantially unchanged. On the float **30** is rigidly placed a stem **31** which rises axially from the center of the float to support on the pointed upper end thereof a frame **32**. The latter includes a conical bearing member **33** which is seated within a cap **34** and the latter is made from current insulating material. Rods **35** extend downwardly and outwardly from this cap to support an annular contact element **36** in radially spaced relation to a sleeve **37** of the stem **31**. This sleeve is electrically insulated from the stem by means of a non-conducting lining **38**.

When these parts are properly shaped and proportioned, it is found that a slight tilting movement of the float in any direction will cause the annular element **36** to contact the sleeve **37** and so to close a circuit through conductors **39** and **40**, which, in turn, may be connected to a source of energy in the manner above described. All of this mechanism is shown mounted within a waterproof casing **41**, conical in shape and rising from the upper surface of the float to a position a short distance above the top of the cap **34**. The frame **32** is in this manner afforded freedom of oscillating movement on the stem but cannot become dislodged therefrom until the casing **41** is detached from the float.

The wires extending from the casing **41** should, of course, be supported substantially as the wires **21**, **23** of Fig. 1 are supported in order to maintain the float a distance from the pool wall without disturbing the equilibrium thereof. The outer end of a conduit **42**, similar to the conduit **26** is, for this purpose, shown in position in Fig. 3 to maintain the float away from the wall of the pool.

The structure of Figs. 4 and 5 differs from the foregoing merely in the manner in which the signaling mechanism of the float is held suspended from the shore. This mechanism includes a stem **45** which rises from the center of the float **46** and is at or near the lower end fitted with a tubular contact member **47**. The latter is by a non-conducting sleeve **48** held rigidly in position on the stem. The upper end of the stem is held guided within a loop **49** of a bar **50** which, like the conduits **42** and **26** is removably anchored on the ground above the wall of the pool. An arm **51** is secured to this bar by suitable means, such as bolts **52**. Insulation **53** is provided electrically to insulate the arm from the bar. The outer end of the arm is shaped to provide a loop **54** in axial alignment with the loop **49** of the bar. When the inner diameter of the loop **54** is somewhat larger than the diameter of the contact element **47**, it is seen that tilting movement of the float, due to disturbance of the water within the pool, will cause the stem to oscillate within the guide loop **49** and so to close contact between the elements **47** and loop **54**. Means such as collars **55** should be mounted on the stem to retain the float in correct relation to the water level and when these collars are secured in position by set screws **56**, it is seen that the stem and float may readily be adjusted to suit the elevation of the water level. Wires **57**, **58** lead from the two contacts to complete a signal circuit in a manner similar to that indicated in Fig. 1.

I claim:

1. A signaling portable device including a circular float on the surface of a normally calm pool of water, said float having in its center a vertically directed stem, a contact sleeve on and insulated from said stem, a frame pendently hung for oscillation on the upper end of the stem, an annular contact member secured to and insulated from the frame in coaxial spaced relation to said contact sleeve, an electric circuit extending from a point away from the pool over the float and downwardly to said contacts, and a warning signaling element in said circuit, movement of the float due to disturbance of the water of the pool causing said frame to oscillate on the stem to close the circuit through the contacts thereby to energize said element.

2. A portable device for signaling warning of disturbance of the surface of a normally calm pool of water comprising, a float on the surface of the pool, an electric circuit including wires extending from a point a distance away from the pool downwardly to contacts of the float, means actuated by disturbance of the water surface to close said circuit through said contacts, and means for supporting the weight of said wires directly above the float.

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