

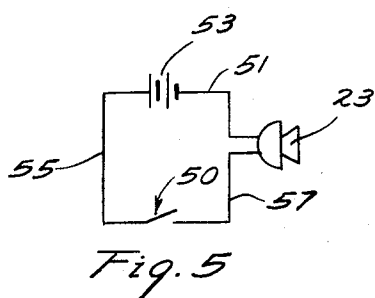
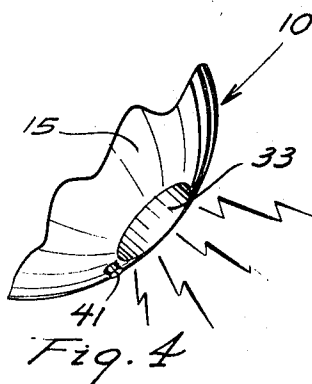
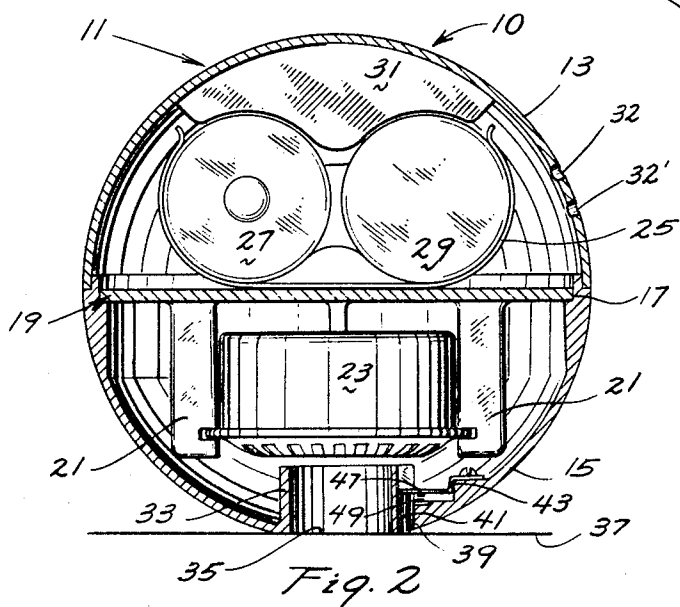
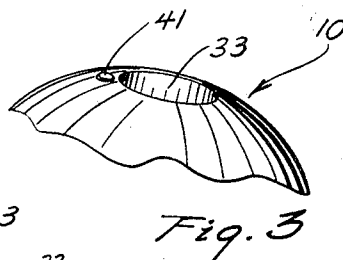
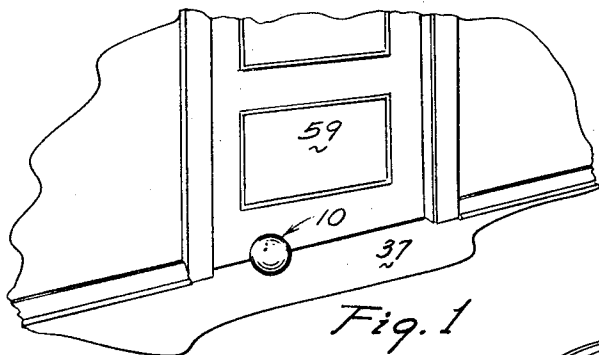
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SIGNAL MEANS

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SIGNAL MEANS

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7 Claims

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## ABSTRACT OF THE DISCLOSURE

A spherical signal means with a signal unit therein maintained in an inoperative position by a spring loaded plunger operatively connected to a power unit for the signal unit, whereupon when the weight of the device rests on the spring loaded plunger, the unit will remain dormant, but the signal unit will be energized whenever the device is moved so as to release the spring loaded plunger.

This invention relates to a signal means and more particularly to a signal means of the alarm type which is designed to be energized by the unauthorized opening or passage through a door, window or the like.

Conventional alarm systems or "burglar alarms" as they are commonly called are too expensive for home use. Additionally, the conventional alarm systems are usually installed within the door assembly and can be de-energized by a professional burglar.

Therefore, it is a principal object of this invention to provide a signal means which is energized by the opening of a door, window or the like.

A further object of this invention is to provide a signal means which is spherical in shape and which is provided with a supporting surface thereon; the signal means being deactivated when its supporting surface is in supporting engagement with a support means but being activated when moved therefrom.

A further object of this invention is to provide a spherical signal means which is top heavy to assist the signal means in rolling from its static inoperative position to cause the signal means to be activated when the signal means is slightly moved.

A further object of this invention is to provide a battery powered signal means which is economical of manufacture to permits its use in homes.

A still further object of this invention is to provide a signal means which is durable in use and refined in appearance.

These and other objects will be apparent to those skilled in the art.

This invention consists in the construction, arrangements, and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in the claims, and illustrated in the accompanying drawings in which:

FIG. 1 illustrates the manner in which the signal means is positioned adjacent a door;

FIG. 2 illustrates the interior of the signal means with the housing shown in section and the components therein shown in elevation;

FIG. 3 is a partial bottom perspective view of the signal means illustrating the plunger thereon in a withdrawn position;

FIG. 4 is a partial bottom perspective view of the signal means illustrating the plunger thereon in its normal extended position, the jagged lines depicting the sound being omitted from the signal means; and

FIG. 5 is a wiring diagram of the signal means.

The signal means of this invention is generally referred

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to by the reference numeral 10. The numeral 11 generally refers to a hollow spherical housing comprised of upper and lower semispherical housing members 13 and 15 which are adapted to be detachably secured together as seen in FIG. 2.

The interior of lower housing member 15 is provided with a shoulder portion 17 extending therearound which detachably receives a frame means 19. Frame means 19 includes a plurality of downwardly extending arms 21 to which an electric buzzer or horn 23 is secured as shown in FIG. 2.

A battery support means 25 is secured to the upper surface of frame means 19 by any convenient means and is adapted to detachably embrace batteries 27 and 29. A battery retaining member 31 is secured to the upper interior end of upper housing member 13 and is adapted to partially embrace batteries 27 and 29 as seen in FIG. 2 to aid in maintaining the batteries in their support means. Upper housing member 13 is provided with a pair of openings 32 and 32' extending therethrough (FIG. 2) for a purpose to be described later.

The lower end of lower housing 15 is provided with a hollow cylinder portion 33 extending into the interior of housing 11 thereby providing a flattened supporting surface 35 at the bottom of lower housing 15 which will supportingly engage a support surface 37 to maintain the housing 11 in the position seen in FIG. 2. The lower end of housing member 15 is also provided with a bore 39 extending thereinto adjacent one side of cylinder portion 33 which is adapted to slidably receive plunger 41 therein. A spring leaf 43 is secured at one of its ends to is secured at its other end to lower housing member the inner end of plunger 41 by any convenient means and 15 by a screw 45. A contact point 47 is mounted on spring leaf 43 and is adapted to engage contact point 49 secured therebelow to lower housing member 15. Contact points 47 and 49 and their associated structure will be referred to by the reference numeral 50. The spring action of spring leaf 43 normally maintains plunger 41 in an extended position (FIG. 4) and normally maintains contact points 47 and 49 in electrical contact with each other.

The electrical wiring of signal means 10 is not shown in FIG. 2 for purposes of clarity therein but is illustrated in FIG. 5. A wire 51 is electrically connected to and extends between horn 23 and power source 53 (batteries 27 and 29). A wire 55 is electrically connected to and extends between power source 53 and one side of the switching mechanism 50 (e.g., contact point 49) and a wire 57 is electrically connected to and extends between the other side of the switching mechanism 50 (e.g., contact point 47) and horn 23. As previously stated, switching mechanism 50 is normally closed to energize horn 23.

Signal means 10 is constructed so that its center of gravity will be positioned in a vertical plane above flattened supporting surface 35 when signal means 10 is positioned as seen in FIG. 2. The construction of signal means 10 is such that it will be "top heavy," that is, the majority of the weight thereof will be positioned above the center of housing 11.

The normal method of operation is as follows.

The spring action of spring leaf 43 normally maintains the switching mechanism in a closed position and urges plunger 41 outwardly from bore 39 as previously stated. Thus, when plunger 41 extends from bore 39 (FIG. 4) the horn 23 will generate sound. Conversely, when plunger 41 does not extend outwardly of bore 39, horn 23 will not be energized due to the separation of contact points 47 and 49. The flattened supporting surface 35 provides a means for positioning signal means 10 in a static position when surface 35 engages the support surface 37 (FIG. 2). In the position illustrated in FIG. 2, support

surface 37 forces plunger 41 inwardly in bore 39 to cause separation of contact points 47 and 49.

Signal means 10 is ideally suited for home use in that it can be positioned adjacent an inwardly swinging door 59 (FIG. 1) in a static position (FIG. 2). When door 59 is opened by a burglar or the like, door 59 causes signal means 10 to roll from its static position thereby permitting plunger 41 to extend from bore 39 and to cause the separation of contact points 47 and 49. The spherical shape of signal means 10 causes it to roll away from the opening door so that the burglar cannot reach around the door and quickly deactivate the signal means. Additionally, the top heavy signal means will roll from its static position with only the slightest force being applied thereto.

As previously stated, the arrangement of the power source 53 and the horn 23 on the frame means 19 is such that when signal means 10 is assembled, the center of gravity of the assembled components (53, 23, 19) is vertically disposed above that of the housing 11. When the two center of gravities are not so vertically disposed, due to the greater mass of the assembled components (53, 23, 19) the center of gravity thereof will tend to revolve around that of the housing 11 until some new equilibrium position is reached. Therefore, due to the structure of signal means 10, no signal will occur when the center of gravity of components 53, 23 and 19 and the housing 11 lie in the same vertical plane. Once the center of gravities previously described pass beyond the flattened supporting surface 35, as determined by a vertical line dropped to the support surface 37 and falling outside of surface 35, then automatic readjustment for equilibrium occurs along an axis other than that which coincidentally holds the switching mechanism in an open position.

Additionally, the signal means 10 may be used in environments other than that shown in FIG. 1. For example, a string could be attached to housing 11 by means of openings 32 and 32' and the string could be secured to a window or the like and when the window was raised, the string would lift signal means 10 from its static position, thereby activating horn 23 as previously described.

The signal means may be stored in an inoperative position when not in use by simply positioning it in the position shown in FIG. 2. It can be appreciated that signal means 10 may be conveniently moved to any door in the home with a minimum of effort. It can also be appreciated that the signal means 10 is inexpensive of manufacture and easily serviced. Thus, the device accomplishes at least all of its stated objectives.

Some changes may be made in the construction and arrangement of my signal means without departing from the real spirit and purpose of my invention.

I claim:

1. In a signal means,  
a spherical housing having a supporting surface adapted to engage a support means,  
a signalling means in said housing,  
a power source operatively connected to said signalling means,  
and a switch mechanism operatively connected to said signalling means adapted to engage the support means when said housing supporting surface is in supporting engagement with the support means, said switch mechanism adapted to maintain said sig-

nalling means in an inoperative condition when said switch mechanism engages the support means and adapted to activate said signalling means when said housing supporting surface is moved out of engagement with the support means,

5 said power source being positioned within said housing at a location above said signalling means and said housing supporting surface when said housing supporting surface is in supporting engagement with support means, said power source being of sufficient weight whereby the center of gravity of the power means and signalling means will be located above the center of gravity of the housing when said housing supporting surface is in supporting engagement with the support means.

2. The signal means of claim 1 wherein said housing supporting surface consists of a flattened portion provided on the spherical-shaped housing.

3. The signal means of claim 1 wherein said switching mechanism includes a plunger means extending from said spherical-shaped housing.

4. The signal means of claim 3 wherein said switching mechanism consists of a spring leaf contact means adapted to normally engage a second contact means to close said switching mechanism, said spring leaf being secured to said plunger.

5. The signal means of claim 1 wherein said spherical shaped housing includes upper and lower semispherical housing members adapted to be detachably secured together, a frame means in said lower housing member, said signalling means being operatively secured to said frame means, said power source being detachably secured to said frame means and being positioned in said upper housing member, said housing supporting surface being formed in said lower housing member by a bore extending thereinto, said signalling means being positioned adjacent the inner end of said bore whereby sound generated by said signalling means will be emitted from said housing through said bore.

6. The signal means of claim 5 wherein a plunger means is operatively connected to said switching mechanism, said plunger means slidably extending from said lower housing member adjacent said bore, said switching mechanism being normally in a closed position, said plunger means protruding from said lower housing member when said switching mechanism is in a closed position.

7. The signal means of claim 1 wherein said housing is adapted to be secured to a flexible member, said signalling means being activated when the flexible member causes the housing supporting surface to move out of its supporting engagement with the support means.

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