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PERSONAL SAFETY ALARM

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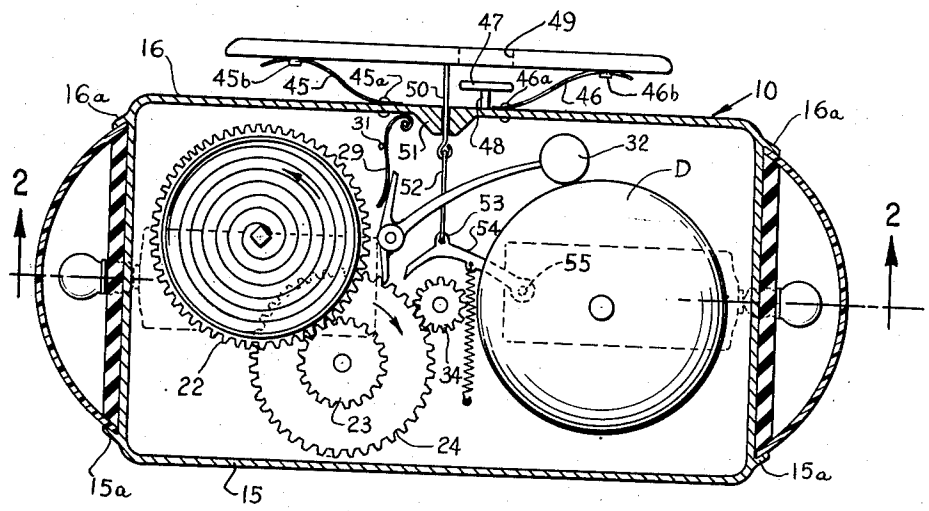


Fig. 1.

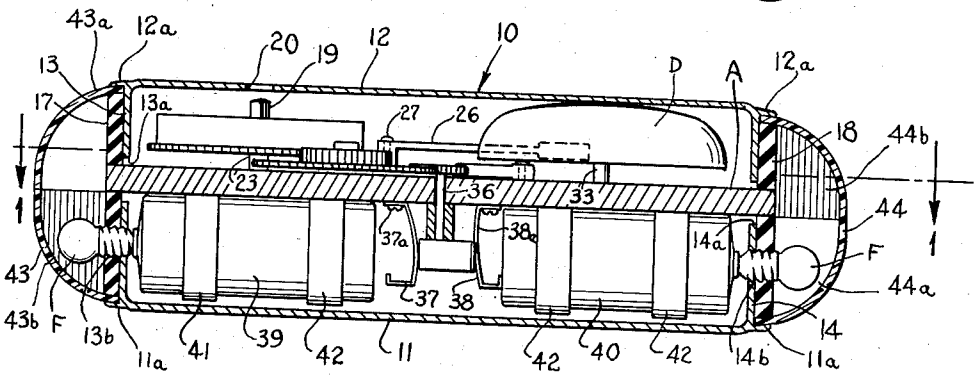


Fig. 2.

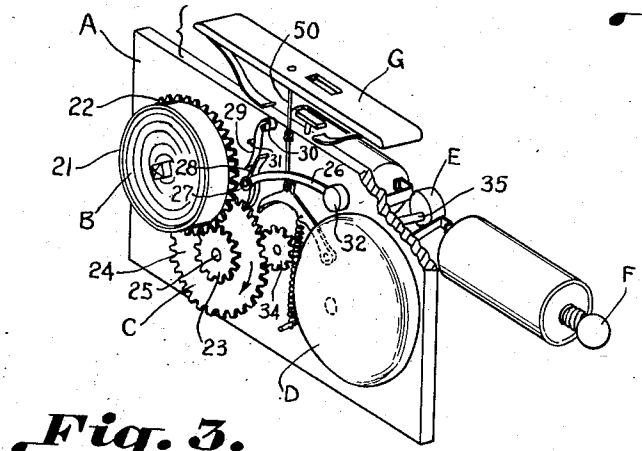


Fig. 3.

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PERSONAL SAFETY ALARM

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5 Claims. (Cl. 116—67)

This invention relates to alarms and more particularly to a personal safety alarm which provides an audible and visible signal for aid.

Devices constructed in accordance with the present invention are adapted to be carried in the hand of the user or otherwise on the person of the user in a position of ready access to the user in the event it becomes necessary to summon aid to repel an attack or if, for any other reason, the user may wish to summon aid.

It is an object of this invention to provide an alarm device which may be easily carried on the person of the user and which may be made operative readily for the purpose of giving a visible and audible appeal for aid.

A further object is the provision of an alarm device in which substantially all of the operating parts are contained within a casing which may be readily carried on the person of the user and which will contain its own power supply for actuating the alarm and signaling devices.

Another object of the invention is to provide an alarm which will continuously emit a visible and audible signal when released from the hand of the user and which may be thrown or kicked into the street or area in the immediate vicinity but beyond the reach of the attacker where the audible and visible signals may call attention to the area in which aid is needed.

Still another object of the invention is the provision of a personal safety alarm in which substantially all the operating parts are carried on a plate which is resiliently mounted within a casing so that the alarm may be subjected to rough treatment without damage to the operating parts and to make for easy assembly of parts.

The construction designed to carry out the invention will be hereinafter described, together with other features thereof.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings forming a part thereof, wherein an example of the invention is shown and wherein:

Figure 1 is a sectional elevation taken along a vertical plane passing through the casing of a device constructed in accordance with the present invention, substantially along the line 1—1 in Figure 2,

Figure 2 is a sectional plan view taken substantially along the line 2—2 in Figure 1, and

Figure 3 is a perspective view looking from the right-hand side of Figures 1 and 2 with the casing removed.

Referring more particularly to the drawing, a casing is broadly designated at **10**. The casing **10** contains a vertical, resiliently mounted plate A positioned in the medial portion of the casing. A source of mechanical energy in the form of a wound spring B is mounted on the plate A and is provided with a system of gears C for actuating suitable mechanism to actuate an audible signal producing device, in this case the bell D. The gear system C also rotates the cam E which intermittently connects and disconnects sources of a visible signal, in this case, light bulbs F. As will be pointed out in greater

detail below, the mechanism actuating the signal devices is placed in operation by release of the control bar G.

The casing **10** is substantially rectangular in shape and is flat so as to be carried conveniently on the person or in the hand of the user. The casing **10** includes a pair of parallel side portions **11** and **12** as well as a pair of end portions **13** and **14**. Bottom and top portions **15** and **16** are also provided. The vertical longitudinally disposed plate A is resiliently positioned within the casing **10** within the end abutments **17** and **18**. The abutments **17** and **18** are constructed of rubber or other suitable resilient flexible material so as to protect the parts carried by the plate A from receiving undue shock when the device is thrown or kicked by the user to be put in operation. These parts may be assembled in any desired manner (not shown).

The plate A carries a wound spring B on a suitable winding stem **19** which is fixed to the spring. Access may be had to the square shank of the winding stem **19** through the aperture **20** within the wall **12** of the casing **10**. The casing **21** of the wound spring B carries a gear **22** mounted adjacent the plate A. The casing **21** and the gear **22** have fixed connection and are rotatably carried on the stub shaft **23** which has fixed connection with the plate A. The gear **22** is engaged by a gear **23**, having a lesser number of teeth, so as to increase the gear ratio so as to increase the speed of rotation of an enlarged gear **24** which has fixed connection with the gear **23** and which is rotatably carried on a stub shaft **25** which has fixed connection with the plate A.

A clapper arm **26** is pivotally positioned on the frame as at **27** and has integral therewith a link **28** substantially at right angles thereto so that the lower portion of the link **28** engages the teeth of the gear **24** so as to be urged counterclockwise by the gear **24** against the action of the leaf spring **29** which normally urges the link **28** in a clockwise direction in Figure 3. The spring **29** is fixed at its upper end as at **30** to the plate A and is restrained against movement in its medial portion by the pin **31**. The reciprocatory action of the clapper **26** which results from this movement produces ringing of the bell D by the clapper **32**. It will be noted that the bell D is fixedly mounted on the plate A on the mounting stem **33** in isolated relation to the casing **10** and the plate A.

A smaller gear **34** also engages the teeth of the gear **24** so as to impart rotation to the shaft **35** on which the gear **34** is mounted. The shaft **35** is rotatably carried by the plate A and is journaled therein as at **36**. The shaft **35** carries the cam E adjacent its free end and upon rotation the cam E, which is eccentrically mounted, will alternately engage the resilient contacts **37** and **38** to cause contact with suitable sources of electrical energy in the form of a pair of batteries **39** and **40** which are spaced and in opposed relation to each other. The batteries **39** and **40** are carried by the plate A by suitable brackets **41** and **42**, respectively. The spring biased contacts **37** and **38** are fixedly carried by the plate A as at **37*a*** and **38*a*** respectively. Suitable light bulbs F are threadably carried by each of the end plates **13** and **14** of the casing as at **13*b*** and **14*b***, respectively, and are surrounded for protection by suitable curved Plexiglas portions **43** and **44**. It will be noted that the Plexiglas portions are preferably divided into plain and colored portions **43*a***, **43*b***, **44*a***, and **44*b***, respectively, so as to produce flashing lights of mixed coloration.

These cover portions **43** and **44** are retained by the casing by suitable projections **12*a*** and **13*a*** at the sides and at the bottom and top portions by projections **15*a*** and **16*a***. These cover portions **43** and **44** are together with the actuating bar G and associated parts are the only elements of the device not included within the

casing. The actuating bar G is carried by a pair of leaf springs 45 and 46 which are fixed to the casing as at 45*a* and 46*a* and which have sliding connection with the control bar G as at 45*b* and 46*b*. Means normally holding the control bar G in a lower position so as to fix the operating elements of the device against operation is provided in the form of a latch 47 which may be turned on the shaft 48 which has connection with the casing 10. The latch 47 may be turned to pass through the slot 49 provided in the actuating bar G. This release 47 is manually actuated by the user to place the device in operation as will be further explained below.

The actuating bar G carries a vertical plunger 50 which is slidably positioned within an abutment 51 carried by the casing 10. The plunger 50 is pivotally connected on its free end to a link 52 which is in turn pivoted as at 53 to a latch member 54 which is pivoted as at 55 to the plate A so as to be restrained against lateral movement. The latch member 54 normally engages the teeth of the gear 24 to restrain the action of the wound spring B thus holding the various parts in an inoperable position.

In operation, therefore, when the user is attacked or when it is desired to summon aid, the catch 47 may be turned so as to release the control bar G which is spring biased upwardly by the leaf springs 45 and 46 so as to release the operating mechanism so that upon release from the hand the device will emit visible and audible signals to summon aid to the user.

While a preferred embodiment of the invention has been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit or scope of the following claims.

What is claimed is:

1. A personal safety alarm including, a casing adapted to be carried in the hand of the user, means providing an audible alarm carried within the casing, means providing a visible alarm carried within the casing, a source of mechanical energy actuating said audible alarm carried within the casing, a source of electrical energy also carried within the casing, cam means intermittently contacting the source of electrical energy also actuated by said source of mechanical energy to actuate the visible alarm, and automatic control mechanism which actuates the source of mechanical energy to thereby simultaneously actuate both the audible and visible alarm.

2. A personal safety alarm including, a casing adapted to be carried in the hand of the user, means providing an audible alarm carried within the casing, means providing a visible alarm carried within the casing, a wound spring carried within the casing, means operated by the spring actuating said audible alarm carried within the casing, a source of electrical energy also carried within the casing, cam means intermittently contacting the source of electrical energy also actuated by said spring to actuate the visible alarm, and automatic control mechanism which actuates the spring to thereby simultaneously actuate both the audible and visible alarm.

3. A personal safety alarm including, a casing adapted to be carried in the hand of the user, a plate resiliently mounted within the casing, a source of mechanical energy carried by said plate, means producing an audible signal carried by said plate, a source of electrical energy carried by said plate, manually operable means releasing said source of mechanical energy actuating said means producing an audible signal, at least one light bulb energized by said source of electrical energy, and cam means also simultaneously actuated by said source of mechanical energy causing intermittent energization of said light bulb, whereby visible and audible signals are simultaneously emitted.

4. A personal safety alarm including, a casing adapted to be carried in the hand of the user, a plate resiliently mounted within the medial portion of said casing, a wound spring carried by said plate, means producing an audible signal carried by said plate, at least one battery carried by said plate, means actuating said means producing an audible signal, manually operable means releasing said spring actuating said means producing an audible signal, at least one light bulb energized by said battery, and cam means also simultaneously actuated by spring causing intermittent contact between said cam means and said battery causing intermittent flashing of said light bulbs, whereby visible and audible signals are emitted.

5. A personal safety alarm including, a casing adapted to be carried in the hand of the user, a plate resiliently mounted within the medial portion of said casing, a wound spring carried by said plate, a bell carried by said plate, a pair of batteries carried by said plate, means ringing said bell, manually operable means releasing said spring actuating said means ringing said bell, a pair of light bulbs energized by each of said batteries, and cam means also actuated by said spring causing intermittent contact between said cam means and said batteries causing intermittent flashing of said light bulbs, whereby visible and audible signals are emitted.

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