May 3, 1949. P. LA PORTA 2,468,829

ALARM AND PROTECTOR

Filed July 9, 1947

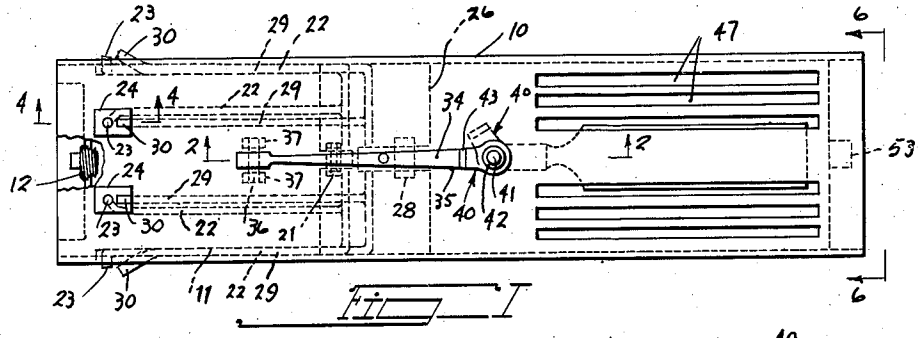


FIG. 1

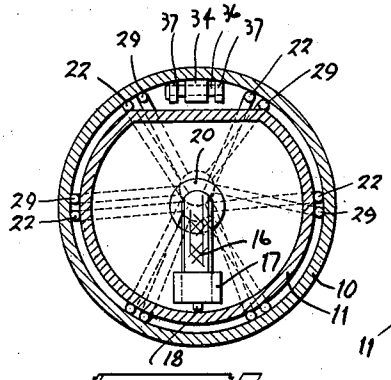


FIG. 3

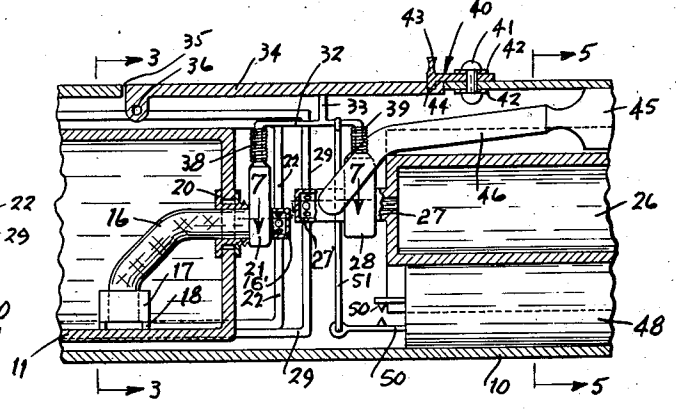


FIG. 2

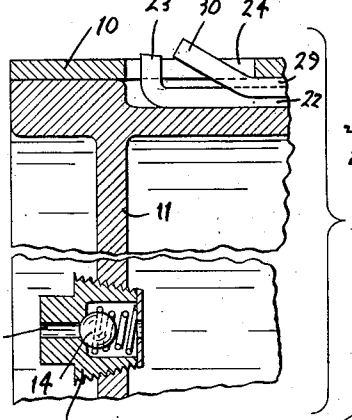


FIG. 4

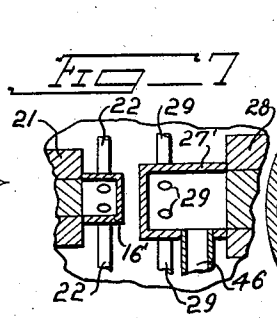


FIG. 7

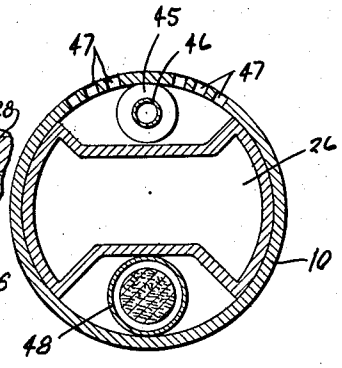


FIG. 5

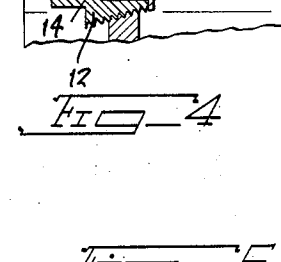
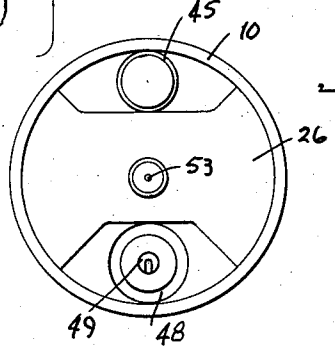


FIG. 6



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ALARM AND PROTECTOR

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8 Claims. (Cl. 116—67)

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This invention relates to new and useful improvements in alarms and protectors, and has more particular reference to a small article of the character mentioned which may be conveniently carried in a lady's handbag or pocket, and which is particularly intended to protect persons.

The alarm and protector is specifically for women, though it may be used by men also, who are required to travel through lonely sections of cities or outlying areas at night. Frequently such people are accosted by hold up men, morons or degenerates, and become so frightened that they cannot scream for help. However such people may carry the new alarm and protector which does not require any manipulation whatsoever to become activated and give an alarm. If the device is dropped it will go off. If the person has sufficient control of her faculties she may also set it off and aim it as desired.

It is an important object of this invention to so construct the alarm and protector that it is harmless and will not cause permanent injury and therefore will not be illegal to carry.

Another object of this invention is to so construct the device that when it is set off it will give an acoustic signal, such as a shrill and loud whistle, which will continue for a short period of time, which may vary from a half minute to several minutes. The device will also discharge a spray of liquid which may be in the nature of a chemical of an obnoxious odor, and/or a paint, and/or fumes which will be highly uncomfortable to an assailant, such as tear gas. It should be noted that not only does the device give an alarm but it takes steps of spraying the assailant so as to identify him when captured, and also tending to rout him with fumes.

Still another object of the invention is to provide an automatic light which immediately goes on when the alarm and protector goes off so that the general area of disturbance may be seen by persons in the vicinity.

Another and important object of this invention is to construct the alarm and protector of a convenient form so that it may be easily carried in one's handbag or pocket, and subsequently carried in one's hand. For example, it may be of cylindrical form about six or seven inches long and an inch or inch and a half in diameter. An article of this type may easily be carried in one's hand.

Another object resides in providing the cylindrical alarm and protector with a trigger by which a person may control its operation. It is also proposed to provide a safely latch for normally holding the trigger from operating so that the article will not go off accidentally.

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A further object of this invention is to construct the alarm and protector compact and light, and simple so that it may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side elevational view of an alarm and protector constructed in accordance with this invention.

Fig. 2 is a fragmentary enlarged vertical sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a transverse vertical sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary enlarged longitudinal sectional view taken on the line 4—4 of Fig. 1.

Fig. 5 is a transverse vertical sectional view taken on the line 5—5 of Fig. 2.

Fig. 6 is an end elevational view looking in the direction of the line 6—6 of Fig. 1.

Fig. 7 is a fragmentary enlarged sectional view taken on the line 7—7 of Fig. 2.

The alarm and protector, in accordance with this invention, includes a hollow cylindrical casing 10 of a size to be conveniently carried in one's hand. A liquid container 11 is mounted within the casing 10 for holding paint, an odorous chemical, or other chemical which may be sprayed. The container 11 is located at one end of the casing 10. The outer end of the container 11 is provided with a plug 12 which may be unscrewed from an opening through which the liquid may be placed into the container. The plug 12 is provided with a vent 13 which is controlled by a one way valve 14 which will permit air to enter the container 11 as the liquid is being used up, but which will prevent the liquid from leaking out.

A tube system is associated with the container 11 for conducting the liquid to points around the container from which it will be sprayed. This tube system includes a main tube 16 mounted through the inner end of the container 11 and constructed of flexible material so that it may bend in all directions. A weight 17 is mounted upon the inner end of the tube 16. This weight 17 has several projections 18 at its bottom end to always keep the bottom end of the tube 16 slightly spaced from the bottom of the container 11. The

tube 16 passes through a liquid seal 20 mounted on the end of the container 11 so that the liquid from the container does not leak out. The outer end of the tube 16 is provided with a valve 21 controlling passage of liquid through the main tube 16 to a plurality of small auxiliary tubes 22 connected to the short tube 16' past the valve 21. These auxiliary tubes 22 extend radially within the casing 10 to different points around the interior of the casing 10 and then along the sides of the container 11 to points near the front end of the casing 10. At these points the auxiliary tubes 22 have discharge nozzles 23 which extend out through slots or openings 24 formed in the casing 10.

An air drum or container 26 is also mounted within the casing 10, preferably at the other end of the casing. This air container 26 connects with a tube system for spraying the liquid from the container 11. More particularly, the air container 26 is provided with a main tube 27 which is controlled by a valve 28. A plurality of auxiliary air tubes 29 connected with the short tube 27' pass the valve 28 and extend radially within the casing 10 and then forwardly and terminate in air discharge nozzles 30 disposed to blow streams of air across the liquid discharge nozzles 23. Air discharging through the nozzles 30 will pass across the nozzles 23 and spray the liquid discharged by these nozzles.

The valves 21 and 28 have their valve stems connected by a connecting rod 32 which is provided with an abutment rod 33 engaging against a trigger lever 34. The trigger lever 34 is mounted through an opening 35 formed in the casing 10. One end of the trigger lever 34 is pivotally supported by a pintle 36 engaging bosses 37 formed or mounted on and within the casing 10. Springs 38 and 39 are mounted upon the stems of the valves 21 and 28, respectively, and act against the valve bodies and tend to normally urge the valves 21 and 28 into open positions. The trigger lever 34 normally holds the valves 21 and 28 closed. A safety latch 40 is mounted on the casing 10 adjacent the end of the trigger lever 34 for normally locking the trigger lever in its down position. This safety latch 40 is pivotally supported by a rivet 41. Friction washers 42 are mounted upon the rivet 41 for normally holding the safety latch 40 from accidentally turning open. The latch 40 is provided with a small handle 43 by which it may be manually gripped and moved. It is also provided with a projection 44 engaging a complementary keeper opening in the trigger lever 34.

A police whistle or other acoustic signal 45 is mounted within the casing 10 and is connected with the main tube 27 of the air container 26 by a tube 46. The connection takes place past the valve 28 so that the whistle 45 will receive air when the valve 28 is opened. The casing 10 is formed with a plurality of slots 47, or other openings, through which the sounds from the whistle 45 may pass.

A flashlight 48 is also mounted within the casing 10 and has its front end which is provided with a lamp 49 directed outwards from one end of the casing 10. The flashlight 48 is of standard construction operated by the usual dry cells. The circuit of the flashlight 48 is controlled by a switch 50. This switch 50 is operated by a link 51 which is connected with the connecting rod 32. The arrangement is such that when the connecting rod 32 moves due to the valves 21 and 28 opening, the switch 50 will be moved and the flashlight 48 will go on, and the lamp 49 thereof will throw a beam of light from the end of the casing 10.

The outer end of the air container 26 is provided with a tire valve 53 through which compressed air may be supplied to the container.

The operation and use of the alarm and protector may be understood from the following:

The air container 26 is supplied with compressed air through the tire valve 53. Persons may obtain the air from automobile gas stations and other places having a compressed air supply. Preferably, the container 26 should be filled with compressed air from 60 to 120 lbs. per square inch, depending upon design of the particular instrument. If the higher pressures are used it may be advisable to supply each user of the device with a small air pump for this purpose. The liquid which is used with the alarm and protector is placed in the container 11 by removing the plug 12 and then replacing the plug after the container is filled. The device is now ready to be used and may be carried in one's purse or pocket.

When a person armed with the alarm and protector reaches a deserted area she removes the device from her purse and carries it in her hand. The safety latch 40 is opened but the control lever 34 is held down. The person walks along holding the device so as to hold the trigger lever 34 down. Should the person be accosted she may aim the end of the casing 10 which is provided with the nozzlen 23 and 30 towards her assailant and threaten to set off the alarm. If the accosted person is struck on the head from behind or is attacked, and drops the alarm and protector, the springs 38 and 39 will set it off. The springs 38 and 39 push up on the connecting rod 32 and the abutment rod 33. As soon as the trigger lever 34 is released the springs 38 and 39 are free to open the valves 21 and 28. The compressed air from the air container 26 now passes through the tube 46 and through the whistle 45 which gives out a shrill whistle. Simultaneously the air passes through the auxiliary tubes 29. The valve 21 controls the liquid from the container 11. The liquid will pass through the tubes 22. The flexible main tube 16 will bend down because of the weight 17 and will always assume a down position irrespective of the position into which the alarm and protector may fall on the ground. The liquid nozzles 23 and air nozzles 30 will discharge a cloud of the liquid which will be dispersed in many directions.

If the alarm and protector is aimed at an assailant the assailant will positively be sprayed. If the alarm and protector is dropped the chances are very great that the assailant will also be covered with a spray since the spray will reach a large area of the vicinity. The light 49 will become illuminated because the switch 50 will be closed by the rod 51.

The shrill whistle and the spray, which may be a noxious chemical or an irritating substance, may drive off the assailant. Persons in the vicinity will hear the whistle and undoubtedly come to the rescue.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I

claim as new and desire to secure by United States Letters Patent is:

1. An alarm and protector, comprising a casing of a size to be conveniently carried in one's hand, a liquid container within said casing for a paint or odorous chemical spray, a tube system for liquid and having discharge nozzles around said casing and connected with said liquid container and including a supply tube for liquid extending into said liquid container, an air container within said casing, a tube system for compressed air and having discharge nozzles directed across said first named nozzles for spraying liquid from said liquid container and including a supply tube for air connected with said air container, valves controlling the flow of liquid and air respectively through said supply tubes in order to control passage of liquid and air, respectively, through said tube system for liquid and said tube system for air, a trigger lever movably mounted on said casing and adapted to be manually held down, a safety latch for holding said trigger lever down, and resilient means for opening said valves and connected with and normally held inoperative by said trigger lever in its down position.

2. An alarm and protector, comprising a casing of a size to be conveniently carried in one's hand, a liquid container within said casing for a paint or odorous chemical spray, a tube system for liquid and having discharge nozzles around said casing and connected with said liquid container and including a supply tube for liquid extending into said liquid container, an air container within said casing, a tube system for compressed air and having discharge nozzles directed across said first named nozzles for spraying liquid from said liquid container and including a supply tube for air connected with said air container, valves controlling the flow of liquid and air respectively through said supply tubes in order to control passage of liquid and air, respectively, through said tube system for liquid and said tube system for air, a trigger lever movably mounted on said casing and adapted to be manually held down, a safety latch for holding said trigger lever down, and resilient means for opening said valves and connected with and normally held inoperative by said trigger lever in its down position, said discharge nozzles being arranged at points around said casing.

3. An alarm and protector, comprising a casing of a size to be conveniently carried in one's hand, a liquid container within said casing for a paint or odorous chemical spray, a tube system for liquid and having discharge nozzles around said casing and connected with said liquid container and including a supply tube for liquid extending into said liquid container, an air container within said casing, a tube system for compressed air and having discharge nozzles directed across said first named nozzles for spraying liquid from said liquid container and including a supply tube for air connected with said air container, valves controlling the flow of liquid and air respectively through said supply tubes in order to control passage of liquid and air, respectively, through said tube system for liquid and said tube system for air, a trigger lever movably mounted on said casing and adapted to be manually held down, a safety latch for holding said trigger lever down, and resilient means for opening said valves and connected with and normally held inoperative by said trigger lever in its down position, said air container being provided with a tire valve through which compressed air may be supplied to it.

4. An alarm and protector, comprising a casing of a size to be conveniently carried in one's hand, a liquid container within said casing for a paint or odorous chemical spray, a tube system for liquid and having discharge nozzles around said casing and connected with said liquid container and including a supply tube for liquid extending into said liquid container, an air container within said casing, a tube system for compressed air and having discharge nozzles directed across said first named nozzles for spraying liquid from said liquid container and including a supply tube for air connected with said air container, valves controlling the flow of liquid and air respectively through said supply tubes in order to control passage of liquid and air, respectively, through said tube system for liquid and said tube system for air, a trigger lever movably mounted on said casing and adapted to be manually held down, a safety latch for holding said trigger lever down, and resilient means for opening said valves and connected with and normally held inoperative by said trigger lever in its down position, the inner end of said main tube of said tube system for liquid being flexible and bendable to the bottom of said liquid container, and a weight mounted on the end of said flexible main tube to maintain it downwards by gravity.

5. An alarm and protector, comprising a casing of a size to be conveniently carried in one's hand, a liquid container within said casing for a paint or odorous chemical spray, a tube system for liquid and having discharge nozzles around said casing and connected with said liquid container and including a supply tube for liquid extending into said liquid container, an air container within said casing, a tube system for compressed air and having discharge nozzles directed across said first named nozzles for spraying liquid from said liquid container and including a supply tube for air connected with said air container, valves controlling the flow of liquid and air respectively through said supply tubes in order to control passage of liquid and air, respectively, through said tube system for liquid and said tube system for air, a trigger lever movably mounted on said casing and adapted to be manually held down, a safety latch for holding said trigger lever down, and resilient means for opening said valves and connected with and normally held inoperative by said trigger lever in its down position, and projections from said weight for holding the end of said flexible main tube slightly spaced from the bottom of said liquid container.

6. An alarm and protector, comprising a casing of a size to be conveniently carried in one's hand, a liquid container within said casing for a paint or odorous chemical spray, a tube system for liquid and having discharged nozzles around said casing and connected with said liquid container and including a supply tube for liquid extending into said liquid container, an air container within said casing, a tube system for compressed air and having discharge nozzles directed across said first named nozzles for spraying liquid from said liquid container and including a supply tube for air connected with said air container, valves controlling the flow of liquid and air respectively through said supply tubes in order to control passage of liquid and air, respectively, through said tube system for liquid and said tube system for air, a trigger lever movably mounted on said casing and adapted to be manually held

down, a safety latch for holding said trigger lever down, resilient means for opening said valves and connected with and normally held inoperative by said trigger lever in its down position, and a whistle connected with said tube system for compressed air at a point past the valve thereof for operating when said valve is opened.

7. An alarm and protector, comprising a casing of a size to be conveniently carried in one's hand, a liquid container within said casing for a paint or odorous chemical spray, a tube system for liquid and having discharge nozzles around said casing and connected with said liquid container and including a supply tube for liquid extending into said liquid container, an air container within said casing, a tube system for compressed air and having discharge nozzles directed across said first named nozzles for spraying liquid from said liquid container and including a supply tube for air connected with said air container, valves controlling the flow of liquid and air respectively through said supply tubes in order to control passage of liquid and air, respectively, through said tube system for liquid and said tube system for air, a trigger lever movably mounted on said casing and adapted to be manually held down, a safety latch for holding said trigger lever down, resilient means for opening said valves and connected with and normally held inoperative by said trigger lever in its down position, and a whistle connected with said tube system for compressed air at a point past the valve thereof for operating when said valve is opened, said whistle being mounted within said casing, and said casing being provided with openings through which the sounds of the whistle may pass.

8. An alarm and protector, comprising a casing of a size to be conveniently carried in one's hand and having an opening at one end through which the light of a flashlight may pass, a liquid container within said casing for a paint or odorous chemical spray, a tube system for liquid and having discharge nozzles around said casing and connected with said liquid container and including a supply tube for liquid extending into said liquid container, an air container within said casing, a tube system for compressed air and having discharge nozzles directed across said first named nozzles for spraying liquid from said liquid container and including a supply tube for air connected with said air container, valves controlling the flow of liquid and air respectively through said supply tubes in order to control passage of liquid and air, respectively, through said tube system for liquid and said tube system for air, a trigger lever movably mounted on said casing and adapted to be manually held down, a safety latch for holding said trigger lever down, resilient means for opening said valves and connected with and normally held inoperative by said trigger lever in its down position, a whistle connected with said tube system for compressed air at a point past the valve thereof for operating when said valve is opened, a flashlight mounted in said casing for throwing a beam of light through said opening in said casing and having a control switch, and means for closing said switch simultaneously with the opening of said valves.

PHILIP LA PORTA.

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