

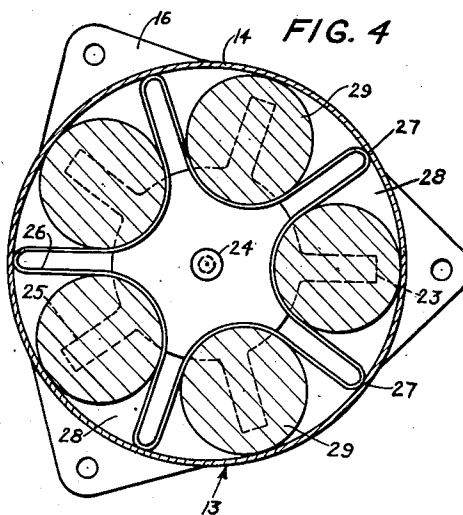
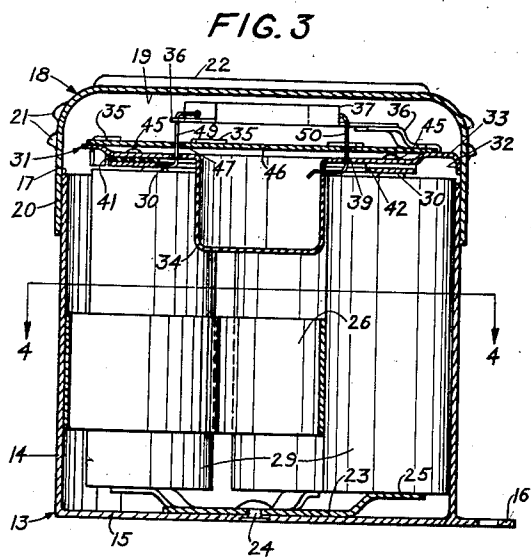
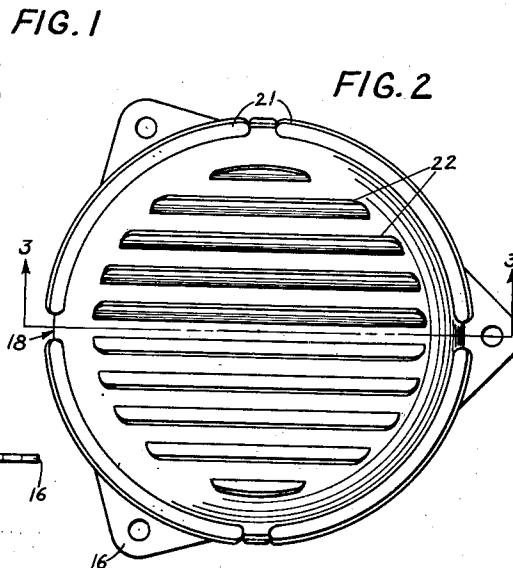
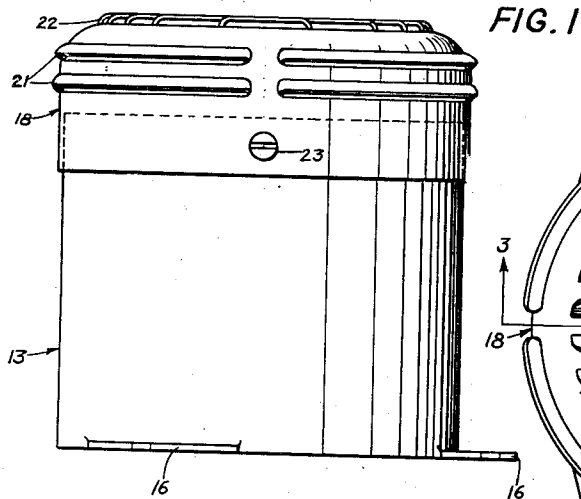
May 10, 1949.

T. GOGNIAT
PORTABLE FIRE ALARM

2,469,501

Filed Oct. 7, 1947

2 Sheets-Sheet 1



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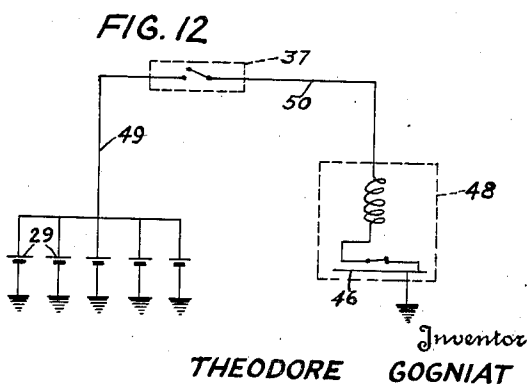
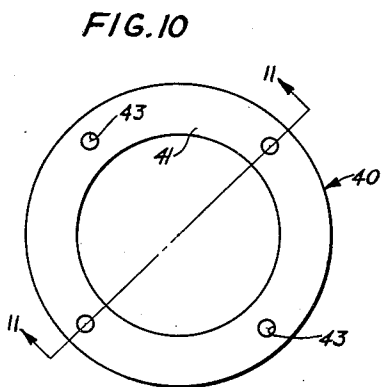
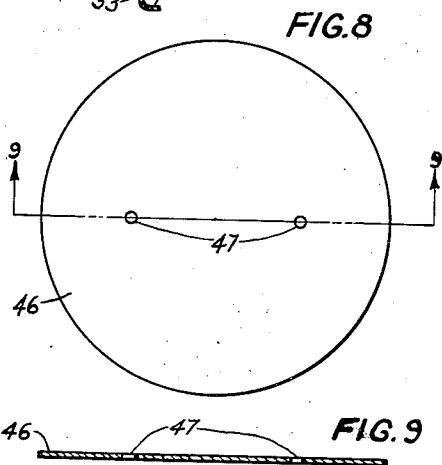
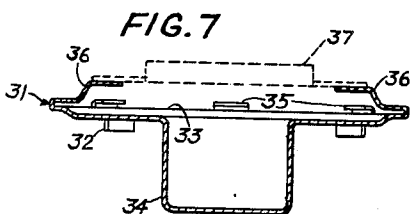
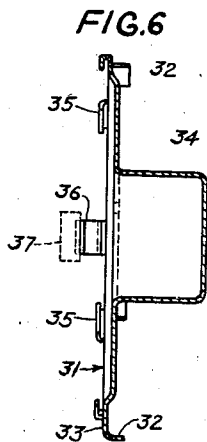
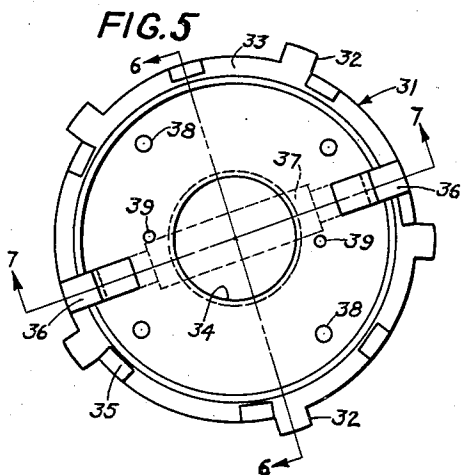
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UNITED STATES PATENT OFFICE

2,469,501

PORTABLE FIRE ALARM

Theodore Gogniat, Pittsburgh, Pa.

Application October 7, 1947, Serial No. 778,482

5 Claims. (Cl. 177—311)

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My invention relates to fire alarms, and more particularly to small, compact, electrically operated fire alarms which are self-sufficient in that batteries, alarm and alarm actuating means are contained in a portable container which is adapted to be installed wherever desired without the necessity for electric wiring or the need of special tools or special skill.

It is contemplated that such an alarm will include means whereby the same may be readily connected if desired to a further alarm which is operated at a point remote from the place on installation of the portable alarm.

With the foregoing in view an object of my invention is to provide an improved fire alarm of the class described.

A further object is to provide in a novel fire alarm of the class described a novel combination of casing, alarm and alarm actuating means.

A further object is to provide in a portable fire alarm, novel means mounting a plurality of alarm actuating batteries and simultaneously connecting the same in parallel.

A further object is to provide in a portable fire alarm novel means mounting the alarm mechanism which includes a portion simultaneously connecting a plurality of alarm actuating batteries and partially completing a circuit to the alarm mechanism.

Other objects and advantages reside in the particular structure of the invention, combination and arrangement of the several parts thereof, and/or in the particular method or mode of operation, all of which will be readily apparent to those skilled in the art upon reference to the attached drawings together with the following specification wherein the invention is shown, described and claimed.

In the drawings:

Figure 1 is an elevation of a casing for the alarm of my invention;

Figure 2 is a plan view thereof;

Figure 3 is a transverse vertical section taken substantially on the plane of the line 3—3 of Figure 2;

Figure 4 is a transverse horizontal section taken substantially on the plane of the line 4—4 of Figure 3;

Figure 5 is a plan view of a contact ring and alarm mounting bracket;

Figure 6 is a transverse vertical section taken substantially on the plane of the line 6—6 of Figure 5;

Figure 7 is a transverse vertical section taken

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substantially on the plane of the line 7—7 of Figure 5;

Figure 8 is a plan view of a diaphragm for the alarm mechanism;

Figure 9 is a transverse vertical section taken substantially on the plane of the line 9—9 of Figure 8;

Figure 10 is a plan view of the contact ring and insulating means utilized with the bracket of Figure 5;

Figure 11 is a transverse vertical section taken substantially on the plane of the line 11—11 of Figure 10; and

Figure 12 is a wiring diagram showing the circuit utilized with my alarm.

Referring specifically to the drawings, wherein like reference characters have been used throughout to designate like parts, 13 designates generally a casing which is preferably made of current conducting metallic material and which comprises a substantially cup-shaped member having a cylindrical side wall 14 and a substantially circular closed bottom wall 15. The bottom wall 15 may be provided with any suitable means such as the lugs 16 whereby the casing may be secured to a support for the same. The casing 13 is open at the top and the upper free edges 17 of the cylindrical wall 14 are adapted to be closed by a cover member generally indicated at 18. The cover member 18 comprises a substantially inverted cup-shaped member having a substantially circular top portion 19 and substantially cylindrical depending side flanges 20. Such side flanges 20 are adapted to have a sliding and frictional interfit with the upper free edges 17 of the side wall 14 of the casing. The cover 18 is preferably made of current conducting metallic material for a purpose to be described later. The top 19 and the side flange 20 of the cover are formed respectively to provide louvers 22 and 21 for a purpose to be described later. The cover is adapted to be secured on the casing 13 by any suitable fastening means 23 which is adapted to secure the cover in place and yet permit ready removal of the same when such is found to be desirable.

The inner surface of the floor 15 of the casing mounts a suitable contact member 23 which is permanently secured thereto in any suitable manner as by the rivet 24. As is best seen in Figure 4 and Figure 3, the contact 23 comprises a substantially disc-shaped center to which are integrally connected a plurality of radially extending and upwardly offset spring contact arms 25. A substantially star-shaped spacer member 26 extends

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across the cylindrical wall 14 of the casing and the tips of the member are secured to the inner surfaces of said cylindrical wall in any suitable manner at the points 27 as by welding or the like. The arms of the star-shaped member are connected by arcuate portions whereby to provide a substantially annular arrangement of compartments 28 around the inner surface of the cylindrical wall 14. As is apparent from Figure 4 each of the compartments 28 is positioned above one of the spring contact arms 25 whereby to maintain a battery 29 seated upon each contact arm 25. The batteries 29 are preferably of the flashlight type, dry cell, whereby the bottom of the cell provides a ground contact and which have contacts 30 extending above the upper end surfaces thereof. As is readily apparent from Figures 3 and 4 the arrangement just described provides a substantially cylindrical space axially of the casing 13 and of the annular arrangement of batteries 29.

The cover 18 has secured thereto inwardly thereof a member mounting the alarm and the thermostatic circuit breaker therefor and this feature is best understood by reference to Figures 3, 5, to 10 inclusive. A substantially circular member 31 extends across the depending flange 20 of the cover 18 inwardly thereof and is secured thereto in any suitable manner as by the radially outwardly and downwardly extending ears 32 which are extended from a raised rim 33 of the member 31. The axial portion of the member 31 is downwardly dished to provide a receptacle 34 for any suitable electrically operated alarm, not shown, except diagrammatically, as at 48, in Figure 12. The raised rim 33 of the member 31 is formed to provide a plurality of upwardly offset and radially inwardly directed clips 35 which are adapted to clasp to the raised rim 33 the marginal portions of any suitable diaphragm 46 for the alarm 48. As is clearly shown in Figures 8 and 9 the diaphragm 46 is substantially circular and is provided with a pair of spaced apertures 47 there-through for a purpose to be described later. The raised rim 33 of the member 31 is provided with a pair of diametrically opposed and upwardly offset brackets 36 on which is mounted any suitable normally open thermostatic circuit closer 37 which has been diagrammatically illustrated in the several figures. The brackets 36 are upwardly offset to a greater extent than the clips 35 whereby the thermostat 37 is axially outwardly spaced relative to the diaphragm 46.

The under side of the member 31, inwardly of the raised rim 33, has attached thereto an annular contact member 40, Figures 10 and 11, which comprises an annulus 41 of insulating material and a second annulus 42 of current conductive material arranged together in superposed relation. The members 41 and 42 are formed to provide a plurality of registering apertures 43 and 44 through the same which in turn are adapted to be registered with a like number of apertures 38 formed through the member 31. Any suitable fastening means such as plastic rivets 45 are adapted to be extended through the registering apertures 38, 43 and 44 to integrally secure the contact 40 to the member 41. As is clearly shown in Figure 3, when the cover 18 is secured in place on the casing the contact annulus 42 bears against the upper contacts 30 of all of the batteries 29 whereby to operatively connect the same together. The opposite ends of the normally open thermostatic circuit closer 37 are connected respectively by leads 49 and 50 to the con-

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tact ring 42 and to the alarm 48. As is also apparent from Figure 3, the lower contact 23 and the member 31 by virtue of their connection to the current conductive cover 18 and casing 13 provide a common ground for the alarm 48 and the batteries 29.

With the foregoing in view, and with particular reference to Figure 12, it is apparent that when sufficient heat is present the normally open thermostatic circuit closer 37 will be closed and a circuit will be completed through the leads 49 and 50 to the alarm 48 whereby to sound the same.

By mounting the thermostatic circuit closer 37 in the cover 18 closely adjacent to the top wall 19 and the louvers 22 therein, it is apparent that such circuit closer will be sensitive to heat in the vicinity of the cover 18. The device may be readily tested by applying heat to this region and the alarm will automatically shut itself off when the thermostat 37 has cooled sufficiently. If it is found to be desirable to connect a plurality of alarms such as has been described hereinabove together to a central and/or to a signal board indicating the location of the affected alarm, it is readily apparent that this may be accomplished merely by adding a branch lead to the lead 50 and a second branch lead connected to one of the mounting lugs 16 of the case.

While I have shown and described what is now thought to be the preferred embodiment of the invention, it is to be understood that the same is susceptible of other forms and expressions. Consequently, I do not limit myself to the precise structure shown and described except as herein-after claimed.

What is claimed is:

1. In a portable, self-contained electric fire alarm, the combination with a plurality of battery cells, an electric alarm and a thermostatic circuit closer for said alarm; of a container mounting said cells in a substantially annular arrangement, and comprising a common ground for said batteries and alarm, a substantially circular member, means mounting said member on said container across one end of said arrangement, said member including portions respectively mounting said alarm and said closer axially of said arrangement, said member including a contact ring operatively connecting all of said cells, and separate leads operatively connecting opposite ends of said closer to said contact ring and to said alarm respectively.

2. In a portable, self-contained electric fire alarm, the combination with a plurality of battery cells, an electric alarm and a thermostatic circuit closer for said alarm; of a container mounting said cells in a substantially annular arrangement and comprising a common ground for said batteries and alarm, a substantially circular member, means mounting said member on said container across one end of said arrangement, said member including an axial recess extending inwardly of said arrangement axially thereof, said alarm being seated in said recess, said member including a portion mounting said closer outwardly and axially thereof, said member including a substantially annular contact portion insulated therefrom and operatively connecting all of said cells together, and separate leads connecting opposite ends of said closer to said contact portion and to said alarm respectively.

3. In a portable, self-contained electric fire alarm, the combination with a plurality of battery cells, an electric alarm and a thermostatic

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circuit closer for said alarm; of a container mounting said cells in a substantially annular arrangement and comprising a common ground for said batteries and alarm, a substantially circular member, means mounting said member on said container across one end of said arrangement, said member including an axial recess extending inwardly of said arrangement axially thereof, said alarm being seated in said recess, said member including a raised marginal rim, radially inwardly directed clips formed on said rim, a diaphragm for said alarm carried by said clips, a pair of opposed and radially inwardly directed brackets carried by said rim axially outwardly of said clips, said brackets mounting said circuit closer, said member including a substantially annular contact portion insulated therefrom and operatively connecting all of said cells together, and separate leads connecting opposite ends of said closer to said contact portion and to said alarm respectively.

4. In a portable, self-contained electric fire alarm, the combination with a plurality of battery cells, an electric alarm and a thermostatic circuit closer for said alarm; of a hollow casing having a cylindrical side wall and a circular bottom wall, a ground contact fixed to said bottom wall axially thereof and including a plurality of upwardly offset, radially extending cell supporting spring contact arms, one of said cells being supported on the free end of each arm, spacer means fixed to said cylindrical wall and maintaining said cells in a substantially annular arrangement along the same, a cover for said casing detachably fitting over the free end edge of said cylindrical wall, said cover being formed to

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provide louvres, means mounting said circuit closer and said alarm on said cover inwardly thereof, an annular contact carried by said cover inwardly thereof and operatively connecting said batteries together, leads connecting opposite ends of said circuit closer to said last named contact and to said alarm respectively, and said casing and cover comprising a common ground for said batteries and said alarm.

5. In a portable, self-contained electric fire alarm, a support comprising a cup-shaped container adapted to mount a plurality of battery cells in a substantially cylindrical arrangement, a cover mountable on said container and adapted to support an alarm and a normally open thermostatic circuit closer for the same axially of said arrangement, said cover including a contact ring adapted to operatively connect all of said cells, leads carried by said cover and adapted to operatively connect opposite ends of said closer to said portion and to said alarm respectively, and said container being operatively connected to said cells and said alarm to provide a common ground for the same.

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