United States Patent [19]

Wieder

[11] **3,892,930**

[45] **July 1, 1975**

[54] **LOUDSPEAKER ENCLOSURE**

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[22] Filed: **July 2, 1974**

[21] Appl. No.: **485,120**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 377,761, July 9, 1973, Pat. No. 3,835,256.

[52] **U.S. Cl.** ..... **179/179;** 340/237 S

[51] **Int. Cl.²** **G08B 17/12**

[58] **Field of Search** ..... 179/1 E, 179; 312/7 R, 312/DIG. 17; 325/119, 352, 353, 355, 356; 340/228.1, 237 S

[56] **References Cited**

UNITED STATES PATENTS

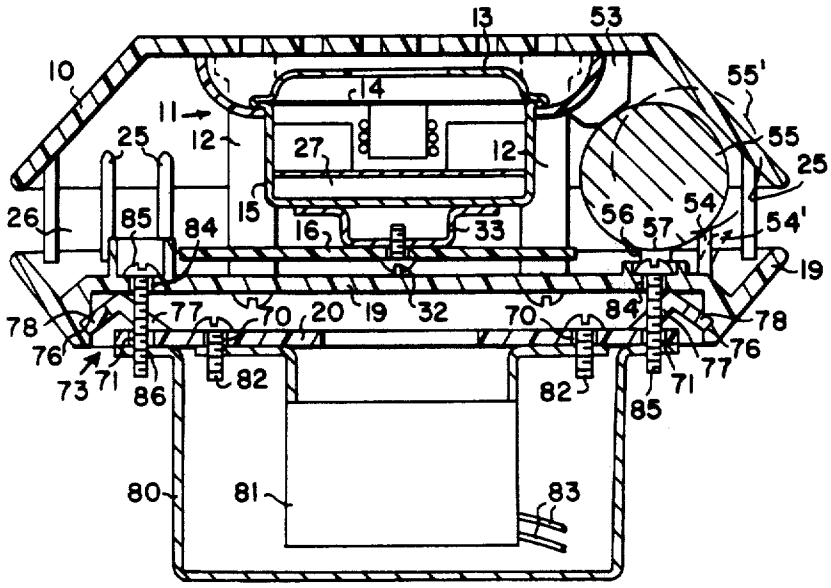
3,594,751 7/1971 Ogden et al. 340/228

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Assistant Examiner—George G. Stellar
Attorney, Agent, or Firm—John M. Diehl

[57] **ABSTRACT**

Enclosure and mounting for a loudspeaker is combined with enclosure and mounting for an ionization sensor, a printed circuit board and a battery. The battery and portions of the front portion and rear portion of the device intersect with the other portions in such fashion that no fasteners such as screws, rivets, adhesive or the like are utilized to retain these portions in assembled relation.

11 Claims, 9 Drawing Figures



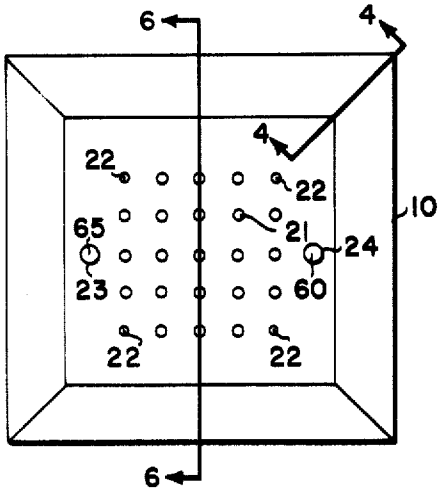


Fig. 1.

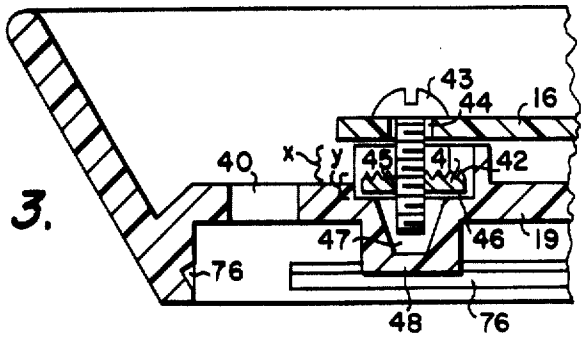


Fig. 3.

Fig. 2.

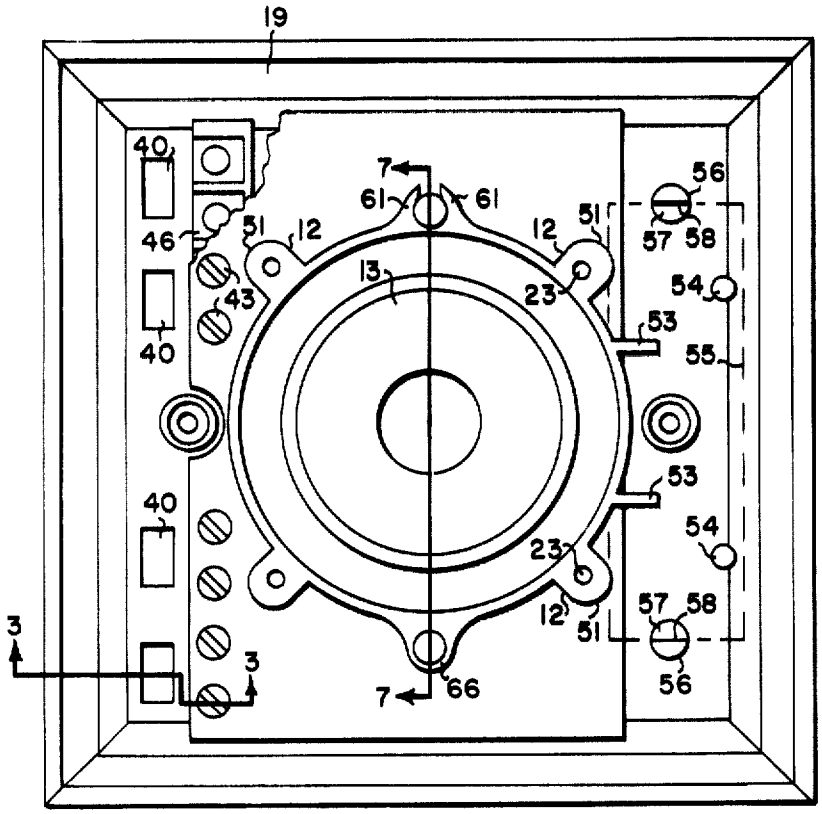


Fig. 4.

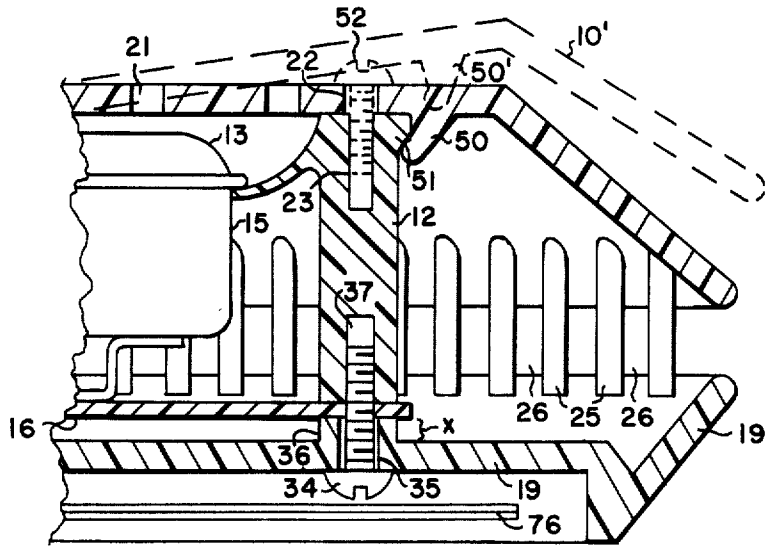
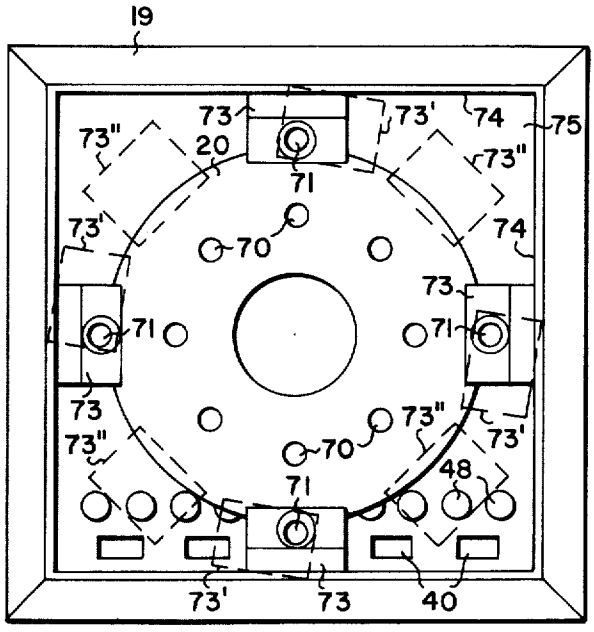

52
21
22
10'
50'
13
50
51
23
12
15
37
26
25
26
16
X
19
36
34
35
19
76

Fig. 5.


19
73
73'
74
75
73"
20
71
73"
73'
74
70
73
71
71
73
73
73"
73'
73"
70
48
71
73'
73
40

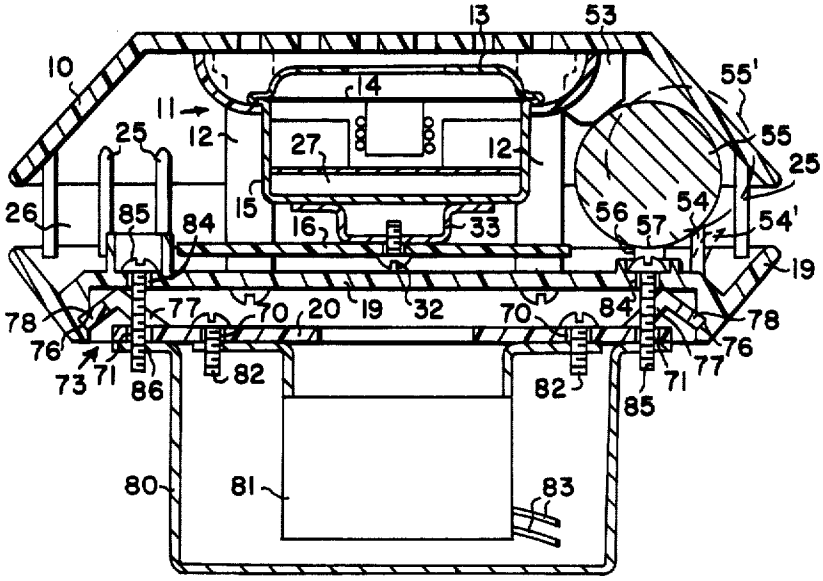


Fig. 6.

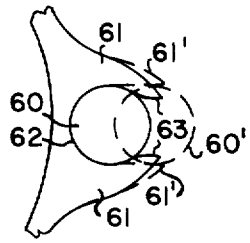
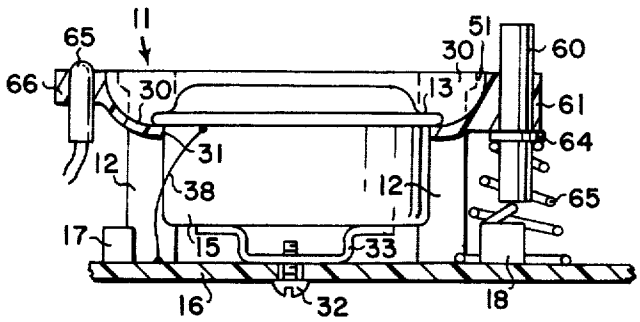


Fig. 8.

Fig. 7.



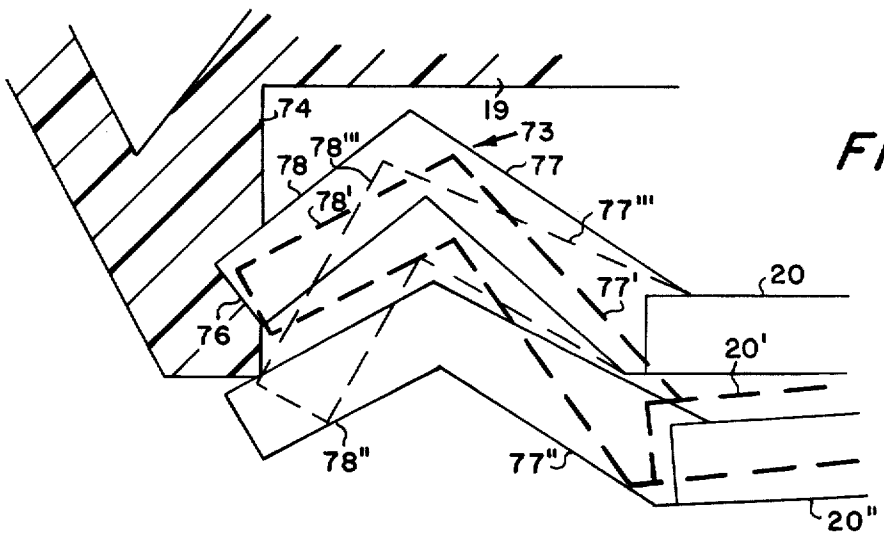


Fig. 9.

LOUDSPEAKER ENCLOSURE

CROSS-REFERENCES

This application is a continuation-in-part of my co-pending application Ser. No. 377,761 filed July 9, 1973, having the same title now U.S. Pat. No. 3,835,256.

FIELD

This invention relates to a loudspeaker enclosure and more particularly to a combination enclosure for a loudspeaker and other components.

PRIOR ART

The device of the invention is particularly adapted to serve as a heat detector and smoke detector which provides an audible alarm signal in response to temperature rise or ionization of the ambient atmosphere which exceeds preselected limits.

Many devices fitting this general description have been marketed and many others have been proposed.

However, the combination of mechanical features which characterize the device disclosed herein is believed to be heretofore unknown.

The present device is believed to be, from a mechanical point of view, essentially a loudspeaker enclosure wherein other components, notably a printed circuit board, an ionization sensor and a battery, have been combined within the same enclosure.

No similar relationship between a speaker and a printed circuit board or a speaker and a battery is believed to have been heretofore proposed.

Likewise, no such device is believed to have been proposed heretofore wherein the use of fasteners such as screws has been so limited.

SUMMARY

Combination speaker and printed circuit board asembly is provided as in the above-referenced application of which this application is a continuation-in-part application. As in the disclosure therein, the assembly comprises a minimum of parts other than the speaker itself, the printed circuit board with such components as an ionization sensor and a testing switch mounted thereon, the associated wiring and in this instance, a battery; the number of such other parts in that case was three and in this case four. Two of these parts together with the printed circuit board are assembled with screws and then the remaining parts, which are made slightly resilient, are snapped together.

The device which is thus provided may be assembled with great economy and may also be installed with ease, thereby with little labor and thereby also with economy.

The device may be operated off 110v. AC line current or off a self-contained battery or off a remote battery or may be operated off 110v. AC line current with either a self-contained battery or remote battery on automatic standby to provide continued functioning in the event of interruption of line current.

It may be attached either to a plain wall surface or to a standard electrical outlet box depending on the source of power to be used.

The device may operate other alarm devices in addition to the one contained within the device.

For locations in such places as homes, it may be installed to provide easy removability from the wall and easy disassembly, both without tools, for any desired purpose, such as to change a battery.

For locations in such places as motels, it may be made "tamper-proof" to anyone unwilling to use a screwdriver simply by installing four screws.

If line current is relied upon as a power source, a light emitting diode may be provided to indicate continued operation of the device.

If power is obtained solely from the battery which may be provided within the device, means is provided to test the battery's functioning from time to time.

OBJECTS

It is an object of the invention to provide an improved speaker enclosure.

Another object is to provide an improved combination enclosure for printed circuit board and loudspeaker.

Another object is to provide such a device as an alarm device of the type usually referred to as a "smoke detector."

Another object is to provide such a device which may be both manufactured and installed with great economy.

Another object is such a device which may be assembled with a minimal number of fasteners.

Further objects will become apparent from the drawings and from the following detailed description.

DRAWINGS

In the drawings like reference numerals refer to like parts and:

FIG. **1** is a plan view from the top or front of the device of the invention;

FIG. **2** is a partially cut-away plan view of the embodiment of FIG. **1** with the grill and guard portion removed;

FIG. **3** is a fragmentary cross-sectional view taken on lines **3—3** in FIG. **2**;

FIG. **4** is a fragmentary cross-sectional view taken on lines **4—4** in FIG. **1**;

FIG. **5** is a plan view from the back, bottom or rear of the device;

FIG. **6** is a cross-sectional view taken on lines **6—6** in FIG. **1** showing the attachment of one embodiment of the invention to a standard electrical outlet box;

FIG. **7** is a fragmentary cross-sectional view taken on lines **7—7** in FIG. **2** with the base portion omitted;

FIG. **8** is a fragmentary enlarged portion of the plan view of FIG. **2**; and

FIG. **9** is a schematic view showing operation of part of the device.

DESCRIPTION

Alarm devices which respond to heat and smoke to indicate the presence or potential presence of fire have traditionally been relatively expensive and some have been relatively unreliable. In accordance with the objects, the present invention provides a relatively economical relatively reliable such alarm device.

Referring now to the figures, the enclosure of the invention comprises resiliently deformable guard portion **10**, speaker bracket portion **11** having leg portions **12**, loud speaker **13** comprising diaphragm **14** and cup **15**, printed circuit board **16** having ionization sensor **17** and test switch **18** mounted thereon, base portion **19** and rear bracket portion **20**.

Grill and guard portion **10** is provided with a plurality of apertures in its face which provide a grill and are disposed in front of the loudspeaker system to facilitate outward travel of sound waves emitted by the diaphragm of the loudspeaker. A certain number of these apertures **21** which are indicated as **22** are disposed to register with corresponding apertures **23** in legs **12**. Two additional apertures respectively **24** and **25** are provided in the face of grill and guard portion **10** respectively to receive a light emitting diode and a test button. Near its outer periphery grill and guard portion **10** is provided with a plurality of rearwardly extending projecting members **25** to provide apertures **26** on each of the four sides of the device to facilitate passage of gas into the interior of the device, particularly the gas of the ambient atmosphere, which if a fire is present may be relatively hot and may contain smoke. By providing members **25** in the form of pin-like members as shown, a simple two-part mold devoid of cams may be utilized to economically mold grill and guard portion **10** of any suitable plastic (synthetic polymer resinous) material such as a polycarbonate, polypropylene, ABS or the like. Likewise, portions **11, 19** and **20** may also be made with two-part molds, without cams, of the same plastic material.

Speaker bracket portion **16** is provided with an annular curved portion **30** which extends outwardly from loudspeaker **13** on all sides of loudspeaker **13** and provides a horn for the loudspeaker. Loudspeaker **13** is received in an aperture **31** in the center of horn portion **30** and is retained in place by a threaded member such as screw **32** which may extend through printed circuit board **16** and threadedly engage bracket **33** extending from cup **15**.

Base portion **19**, printed circuit board **16** and speaker bracket portion **11** may be secured together by threaded members such as screws **34** extending upwardly through holes **35** provided in base portion **19** and in bosses **36** extending upwardly from base portion **19** which space the lower surface of circuit board **16** above the upper surface of the interior of base **19** a distance indicated as X. Screws **34** extend through holes in printed circuit board **16** into holes **37** in legs **12** which are preferably threaded by self-tapping action of screws **34**.

Two required electrical connections to loudspeaker **13** from printed circuit board **16** are provided respectively by wire **38** and (on the ground side) by contact of screw **32** with bracket **33** which is in electrical contact with cup **15**.

Base portion **19** may be provided with a plurality of apertures **40** such as the four apertures **40** shown through which wires may pass from the rear of the device to the interior of the device and thence to means which are provided to connect the wires with various circuits of the printed circuit board. Such means may comprise contact plates **41** having serrated upper surfaces **42** and screws **43** which may extend downwardly through holes **44** in printed circuit board **16** and be threadedly engaged with threaded holes in plates **41** provided at **45**. As hereinbefore mentioned the printed circuit board **16** may be supported above base portion **19** by bosses so that the lower surface of printed circuit board **16** is a distance above the upper surface of base **19** (in the interior of the device **19**) a distance indicated as X. In order to prevent contact plates **41** from falling out of the device if screws **43** are disengaged therewith, distance X is made just slightly less than the thickness of plates **41** which is indicated as Y. Recesses **46** are provided in base **19** to receive plates **41** in order to provide clearance for wire ends between the bottom surface of plate **16** and upper surfaces **42** of plates **41**. The wire ends need not be bent or twisted. They are clamped between plate **16** and surfaces **42** by operation of screws **43**. Recesses **47** are provided in bosses **48** which are parts of portion **19** to receive the ends of screws **43** as shown.

Grill and guard portion **10**, as previously mentioned, is resiliently deformable and may be provided with downwardly and inwardly projecting portions **50** which may interlock with outwardly projecting portions **51** (which project outwardly from the upper ends of legs **12**) to attach grill and guard portion **10** to speaker bracket portion **11**. Grill and guard portion **10** is then removable from speaker bracket portion **11** by withdrawing grill and guard portion **10** outward to thereby provide resilient deformation thereof as indicated at **10'** and concurrent resilient deformation of downwardly and inwardly projecting portions **50** as indicated at **50'**, whereby the interlocking of portions **50** and **51** is overcome so that portion **10** may be removed. To prevent unauthorized removal of portion **10** when the device is located in a relatively public place such as a motel room, a threaded member such as screw **52** may be inserted through each of holes **22** (which as before mentioned are in registry with holes **23** in legs **12**) and thence into each of holes **23** where each may preferably be threadedly engaged by self-tapping action of the screw with respect to the interior surfaces of holes **23**. When threaded members such as screws **52** are installed, tampering by removal of portion **10** is prevented by persons who are not equipped with screw drivers. Such tamper prevention may be facilitated by providing threaded members **52** as screws which have heads which cannot be engaged with commonly available screw drivers.

A plurality of members **53**, two, as shown, being preferable, may extend laterally outwardly from portion **30** of speaker bracket portion **11** to engage one side of longitudinally extended battery **55** and resiliently deformable pin-like members **54** may extend upwardly from base **19** to engage a substantially opposite side portion of longitudinally extended battery **55**. Two of members **54** may be provided as shown or a greater number may be provided. Battery **55** may be substantially cylindrical as shown or may have any other desired shape. Members **56** may be provided extending upwardly from base portion **19** and may be provided with surfaces **57** to support battery **55** near its ends and may also be provided with surfaces **58** to restrict longitudinal movement of battery **55**. Battery **55** is shown in full lines in FIG. **6** but is shown in dashed lines in FIG. **2** in order to avoid obscuring the view which may be seen in the absence of the battery. Battery **55** is retained in place by the combined action of members **53** and **54** and surfaces **57** and **58** of members **56**. Battery **55** is removable by withdrawing it laterally as indicated in dashed lines at **55** and thereby resiliently deforming members **54** as shown in dashed lines at **54'** to permit the battery to be withdrawn. In like manner a battery may be installed by pushing it into place with concurrent resilient deformation of members **54**.

When the device is drawing on a battery for its power source, its operation may be tested to insure that the

battery is supplying adequate power and the rest of the device is working properly by depressing depressible member **60** which may constitute a test button and may extend outwardly through hole **24** in grill and guard portion **10**. To slidably support depressible member **60**, two members **61** are provided extending laterally from portion **30** of portion **11**. Member **61** may provide a portion of a cylindrical bore **62** which may be somewhat open on one side as indicated at **63**. Member **60** may be provided with an outwardly extending portion **64** which may have an annular form as shown and which restricts upward movement of member **60** and also serves as a retainer which is engaged by the upper end of spring **65** which acts against printed circuit board **16** as shown and biases member **60** upwardly. Attached to printed circuit board **16**, as previously mentioned, is provided switch **18** which is disposed to be operated by downward movement of member **60** in order to make the necessary connection to cause the battery to operate a loudspeaker **13** in order to test operation of the device. Member **60** may be removed by withdrawing it outwardly as indicated at **60'** to provide resilient deformation outwardly of member **61** as shown at **61'** and it may be installed similarly simply by forcing it laterally between members **61** to cause them to move into positions shown at **61'**.

In the event the device is supplied with 110 volt line current for its operation, a light emitting diode **65** which remains lighted at all times that the device is supplied with power may be mounted in a hole provided in extending portion **66** of member **11** and may extend upwardly through hole **23** in grill and guard portion **10**. If only a battery is used, light emitting diode **65** is preferably omitted in order to avoid the drain on a battery which is imposed by the diode.

An oscillator to drive loudspeaker **13** may be mounted on the printed circuit board in the usual manner or may be incorporated within cup **15** as indicated at **27** and may comprise a buzzer or oscillating relay. Diaphragm **14** in an alternative embodiment might suitably be operated directly by the clapper of a buzzer rather than being driven by a voice coil.

Rear bracket portion **20** may be attached to a wall by screws not shown extending through two or more of holes **70** or two or more of holes **71**, holes **70** and **71** being provided in portion **24** for this purpose as well as for other purposes. Rear bracket portion **20** is provided with a plurality of outwardly extending resiliently deformable portions **73** which correspond in number to the number of walls **74** which are rearwardly extending from portion **19** and which provide recess **75** in the rear of portion **19**. Said portions **73** and walls **74** are four in number (see FIG. **5**) in the embodiment shown but may be **3**, **5** or **6** or any other number. Wall **74** is provided with a groove or recess **76** as shown in FIGS. **6** and **4** which need not extend entirely to the end of the wall as indicated in FIGS. **3** and **4**. Each of said members or portions **73** may comprise an inwardly extending portion **77** and an outwardly extending portion **78** as indicated in FIG. **6** and shown most clearly in FIG. **9**. When portion **19** is attached to portion **20** as shown in FIG. **5**, the ends of portions **78** are received in said recesses **74** and said recesses **74** may be described as extending laterally with respect to each of said resiliently deformable outwardly extending members **73**.

Base portion **19** may be removed from rear bracket portion **20** by rotating base portion **19** with respect to rear bracket portion **20** so that members **73** are resiliently deformed to a certain extent, the relative positions of portions **19** and **20** during such rotation being successively indicated by dashed lines **73'** and **73''**.

Alternatively, portion **19** may be removed from portion **20** by withdrawing it directly outward to provide resilient deformation of extending member **73** as shown in FIG. **9**. The position of portion **20** with respect to portion **19** is indicated in full lines at **20**, the end of portion **78** being received in recess **76**, and the position of portion **20** with respect to portion **19** as portion **19** is withdrawn and members **73** are resiliently deformed is indicated in dashed lines at **20'**, **77'** and **78'**.

It is usually desirable to install base portion **19** on rear bracket portion **20** by twisting portion **19** with respect to portion **20** as indicated in FIG. **5** by considering the steps described above in connection with FIG. **5** as being reversed in the order in which they are carried out. Nonetheless portion **19** may be installed in portion **20** simply by forcing portion **19** directly downward onto portion **20** as indicated in FIG. **9** where the position of portion **20** with respect to portion **19** prior to such installation is indicated in full lines at **20''**, the position of the portions of member **73** being indicated in full lines at **77''** and **78''**. When portion **19** is pushed toward portion **20** and just before portion **78** snaps into place in recess **76** to provide the orientation indicated in full lines at **77** and **78**, the portions have the positions shown in dashed lines at **77'''** and **78'''**.

As indicated in FIG. **6**, portion **20** instead of being fastened directly to a wall may be attached as shown to a standard electrical outlet box **80** which may be recessed in a wall in conventional manner and transformer **81** received in box **80** may be attached to portion **20** by screws **82** self-tapped into holes **70**.

Line current such as 110v. AC may be supplied from a source, not shown for simplicity, to transformer **81** through wires **83** and power at any suitable voltage may be supplied from transformer **81** to printed circuit board **16** through wires extending from transformer **81** to contact plates **41** and screws **43**, said wires being not shown for simplicity. Holes **84** may be provided in base portion **19** so that it may be attached directly to an outlet box **80** by screws **85** which may extend through holes **71** in portion **20** and be tapped into holes **86** in the ears of outlet box **80**. In a modification of the embodiment shown in FIG. **6**, portion **20** may be attached by screws extending through one pair of opposite holes **71** into holes **86** of an outlet box **80** and portion **19** may be oriented with respect to portion **20** so that holes **84** register with the other pair of holes **71** in portion **20**. Either portion **19** or portion **20** may be attached to an outlet box oriented in any position, whether vertical or horizontal and on either a wall or ceiling. Screws may then be extended through holes **84** and self-tapped into said other pair of holes **71** so that an unauthorized person cannot then remove portion **19** from portion **20** in the manner discussed in connection with FIG. **5**, or for that matter in the manner discussed in connection with FIG. **9**, thus preventing an operation which could be considered tampering if carried out by such unauthorized person.

There is thus provided a loudspeaker enclosure which is believed to be unique in comprising a superior combination of superior features as hereinabove described.

It will be apparent to those skilled in the art that equivalents may be utilized.

Accordingly, the present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and acordingly, reference should be made to the appended claims rather than to the foregoing specification as indicating the scope of the invention.

It is claimed:

1. A combination loudspeaker, sensor and printed circuit board enclosure device comprising the combination of:

a resiliently deformable grill and guard portion,

a speaker bracket portion having leg portions,

a loudspeaker comprising a diaphragm and a cup,

a printed circuit board,

an ionization sensor,

a base portion,

a rear bracket portion removably attached to said base portion,

said base portion connected together with said printed circuit board and said speaker bracket portion by threaded members extending from said base portion through holes in said printed circuit board into said leg portions of said speaker bracket portion,

said loudspeaker connected to said printed circuit board by a wire and also connected to said printed circuit board and retained in seated relation to said speaker portion by a threaded member extending from said printed circuit board to a portion of said loudspeaker,

said speaker bracket portion provided with an annularly curved portion extending outwardly from said loudspeaker and providing a horn for said loudspeaker,

said sensor connected to said printed circuit board,

said base portion provided with a plurality of apertures for receiving wires from the rear of said base portion to connect to said printed circuit board,

said base portion provided with a plurality of means near each of said apertures to connect wires to said printed circuit board,

said grill and guard portion having apertures in front of the loudspeaker and providing a plurality of apertures on each side of the device to receive gas into the device,

said grill and guard portion attached to said speaker bracket portion by projecting interlocking portions and removable from said speaker bracket portion by resilient deformation of said grill and guard portion and said projecting interlocking portions.

2. The device of claim **1** wherein:

said rear bracket portion is provided with a plurality of outwardly extending resiliently deformable members, and

said base portion has a plurality of rearwardly extending walls equal in number to the number of said resiliently deformable members extending outwardly from said rear bracket portion, and

each of said walls is provided with a recess in which is received one of said resiliently deformable members extending outwardly from said rear bracket portion, and

each of said recesses is extended laterally with respect to each of said resiliently deformable members extending outwardly from said rear bracket portion which is received therein,

whereby said base portion may be removed from said rear bracket portion by rotating said base portion with respect to said rear bracket portion and thereby resiliently deforming said resiliently deformable members with which said rear bracket portion is provided.

3. The device of claim **1** wherein:

said rear bracket portion is provided with a plurality of outwardly extending resiliently deformable members, and

said base portion has a plurality of rearwardly extending walls equal in number to the number of said resiliently deformable members extending outwardly from said rear bracket portion, and

each of said walls is provided with a recess in which is received one of said resiliently deformable members extending outwardly from said rear bracket portion, and

each of said recesses is extended laterally with respect to each of said resiliently deformable members extending outwardly from said rear bracket portion which is received therein,

whereby said base portion may be removed from said rear bracket portion by withdrawing said base portion away from said rear bracket and thereby resiliently deforming said resiliently deformable members with which said rear bracket portion is provided.

4. The device of claim **1** wherein means are provided to receive a longitudinally extended battery in said device, said means comprising the combination of:

a plurality of extending members extending from one side of said speaker bracket portion to abut a side of said battery,

two portions extending upwardly from said base portion to support said battery near each of its ends and to restrict its longitudinal movement, and

a plurality of resiliently deformable members extending upwardly from said base portion to contact a side of said battery,

said battery being removable by withdrawing it laterally and resiliently deforming said resiliently deformable members which extend from said base portion.

5. The device of claim **4** wherein:

said rear bracket portion is provided with a plurality of outwardly extending resiliently deformable members, and

said base portion has a plurality of rearwardly extending walls equal in number to the number of said resiliently deformable members extending outwardly from said rear bracket portion, and

each of said walls is provided with a recess in which is received one of said resiliently deformable members extending outwardly from said rear bracket portion, and

each of said recesses is extended laterally with respect to each of said resiliently deformable members extending outwardly from said rear bracket portion which is received therein,

whereby said base portion may be removed from said rear bracket portion by rotating said base portion with respect to said rear bracket portion and thereby resiliently deforming said resiliently de-

formable members with which said rear bracket portion is provided.

6. The device of claim **4** wherein:

said rear bracket portion is provided with a plurality of outwardly extending resiliently deformable members, and

said base portion has a plurality of rearwardly extending walls equal in number to the number of said resiliently deformable members extending outwardly from said rear bracket portion, and

each of said walls is provided with a recess in which is received one of said resiliently deformable members extending outwardly from said rear bracket portion, and

each of said recesses is extended laterally with respect to each of said resiliently deformable members extending outwardly from said rear bracket portion which is received therein,

whereby said base portion may be removed from said rear bracket portion by withdrawing said base portion away from said rear bracket and thereby resiliently deforming said resiliently deformable members with which said rear bracket portion is provided.

7. The device of claim **1** wherein each of said means to connect wires to said printed circuit board comprises a contact plate of conductive material having a serrated upper surface, a recess is provided in said base portion to receive each of said contact plates, said printed circuit board is supported above said base portion to provide an aperture to receive the end of a wire above each contact plate, said aperture is of less height than the thickness of each contact plate so that said contact plate cannot pass outwardly therethrough, and each of said contact plates is provided with a threaded hole to receive a screw extending from said printed circuit board to clamp an end of a wire between the serrated surface of each of said contact plates and said printed circuit board without bending said end around said screw.

8. In the device of claim **1**, said grill and guard portion having a plurality of rearwardly extending projecting members to provide said apertures on each side of the device to receive gas into the device.

9. The device of claim **1** wherein at least two of said apertures in said grill and guard portion which provide a grill in front of the loudspeaker are disposed above two of said leg portions of said speaker bracket portion and said two leg portions are provided with means to receive in threaded engagement therewith threaded members which extend through said two apertures in said grill and guard portion to prevent removal of said grill and guard portion without first unscrewing said threaded members.

10. In the device of claim **1**:

said grill and guard member having an aperture to receive a rearwardly slidably depressible member extending frontwardly through said aperture,

said speaker bracket portion having two laterally extending resiliently deformable portions,

said depressible member received rearwardly slidably between said two laterally extending deformable portions,

a spring operating between said printed circuit board and said depressible member to bias said depressible member forwardly,

a switch attached to said printed circuit board which is contacted and operated by said depressible member when said depressible member is depressed rearwardly,

characterized by said depressible member being removable by laterally withdrawing said depressible member from said speaker bracket member and thereby resiliently deforming said two laterally extending resiliently deformable portions and installable by laterally introducing said depressible member between said laterally extending resiliently deformable portions and thereby resiliently deforming them.

11. In the device of claim **1**:

said rear bracket portion provided with two pairs of holes to receive screws to attach it to an electrical outlet box,

said base portion provided with holes to receive screws to attach it to an electrical outlet box in both absence and presence of said rear bracket portion,

said holes in said rear bracket portion disposed to provide both for attachment to an electrical outlet box using one pair of holes and to receive threaded members extending through said holes in said base member and thence through said other pair of holes in said rear bracket member to prevent rotation of said base member with respect to said rear bracket member without first unscrewing said threaded members.

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