

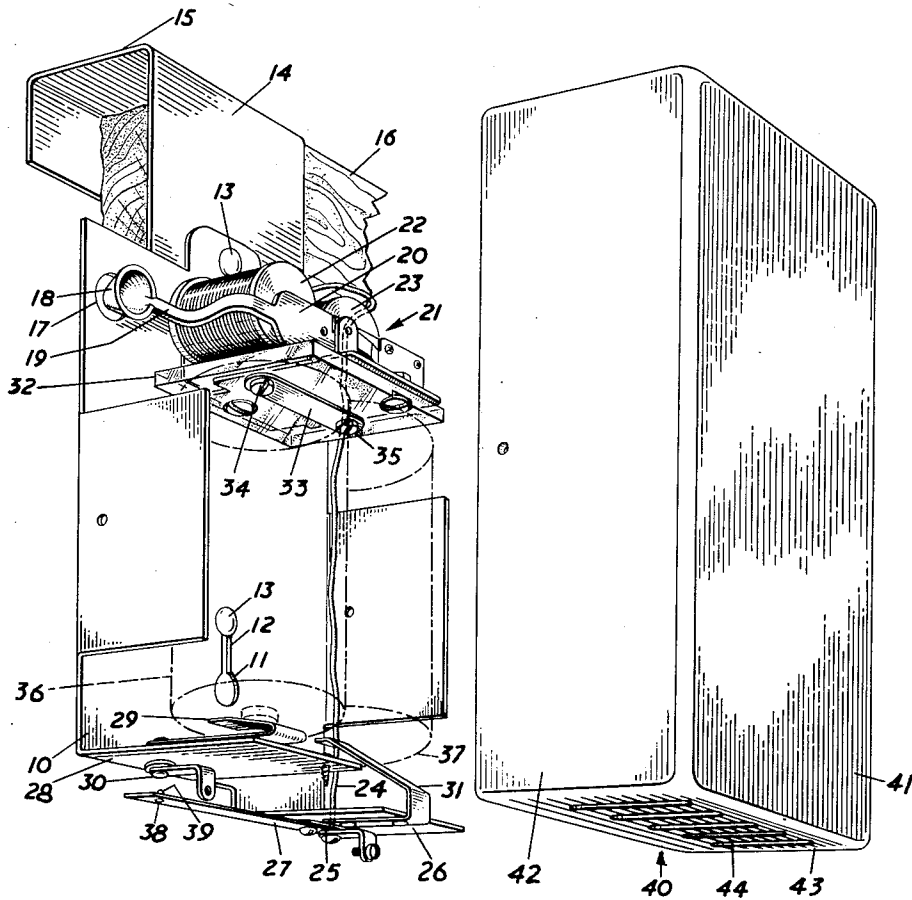
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PORTABLE FIRE ALARM

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PORTABLE FIRE ALARM

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1 Claim. (Cl. 340—227)

This invention relates to a portable fire alarm. Probably the most important function of a household type fire alarm is to warn sleepers of a fire occurring in an adjoining room and before the fire has reached the room of the sleeper. It is the main object of the invention to provide an alarm device of particularly inexpensive construction that will give a more efficient warning than the bell type of alarm, of a fire occurring in an adjoining room when the doors between such rooms are closed.

It has been observed that in bedrooms, hotel rooms, apartment houses, rooming houses and summer cottages, a bell alarm device situated in a room outside that of the occupant may not be heard distinctly through a closed door particularly if there are other noises in the vicinity to which the sleeper has become accustomed.

It is the object of the invention to provide a self-powered fire alarm device embodying an electrically actuated vibrating striker adapted to strike a surface, such as a door upon which the device of the invention is supported, upon increase of air temperature to a predetermined value. The door or other supporting object acts as a sounding board creating an exceptionally noisy and unusual alarm which is heard as distinctly on the inside of the room as on the side to which it is attached.

It is another object of the invention to provide a fire alarm device which may be attached to a cold air duct or cold water pipe in a furnace room or other room containing heating equipment and, in the event of a fire breaking out in such room, the alarm device will send an alarm throughout the house by means of the air duct or water pipe as its conductor of sound.

Other objects of the invention will be appreciated by a study of the following specification taken in conjunction with the accompanying drawings.

In the drawings, a fire alarm device of the invention is shown in perspective with the cover thereof removed, showing the device in a suspended position upon the outer surface of a door.

According to the invention, a base 10 formed of sheet metal or other suitable material, has opening 11 incorporating slots 12 whereby the base 10 may be suspended or hung upon suitable screws (not shown) partially inserted into a door or other suitable sound-board like surface for a more or less permanent installation.

In a temporary installation, base 10 may be suspended upon rivet post 13 extending from suspension strap 14 having an upper flange 15 adapted to seat on the upper edge of a door panel 16. A small hole (not shown), may be provided in upper flange 15 through which a thumb tack may be inserted into the top of the door to hold the base 10 substantially against the door surface. Generally, however, the stop strip (not shown) for the door panel will press the strap 14 into close engagement with the door surface.

Base 10 has an opening 17 adapted to freely accommodate therethrough, the striker member 18 mounted on arm 19 extending from a movable armature 20 of a con-

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ventional electrical bell actuating unit 21 having coils 22 and 23, one lead of which is grounded to metal base 10. The other lead is carried through insulated cable 24 to insulated connection 25 on bracket 26, whereby it is joined electrically to the fixed end of bi-metallic arm 27.

Lower bracket 28 supports connecting strip 29 which is made of spring copper or other suitable material. The lower end of the spring connecting strip 29 is connected electrically to contact 30 but is insulated from bracket 28. The lower bracket 26 supports connecting strip 31 which is made of spring copper or other suitable material and is grounded at its lower end to base 10 through bracket 26.

A supporting bracket 32 of suitable insulating material is affixed to the back of the bell actuating unit 21. A metal terminal bar 33 is affixed to the under-side of insulated bracket 32 and carries terminals 34 and 35 adapted to electrically engage one negative and one positive end of dry cells 36 and 37 shown in chain lines. Spring connecting strips 29 and 31 engage the opposite negative and positive ends of dry cells 36 and 37 also serving to hold the dry cells in place.

The electrical circuit is completed when the free end 38 of bi-metallic arm 27 is deflected upwardly by increase in temperature of air moving past the same to cause engagement of contacts 30 and 39 to complete the electrical circuit of the coils 22 and 23 across the dry cells 36 and 37 connected in series.

A housing 40 having a front wall 41, side walls 42 and top and bottom walls 43, has openings 44 in both the top and bottom walls whereby an air draft may pass through the openings of the bottom wall and pass the bi-metallic arm 27 by way of hot air updraft to the openings in the top wall. In the present illustration, the structure disclosed is conducive to sensitivity of hot air updraft over the top of a closed door as usually arises when heated air passes from an area of conflagration into a room having an open window.

In use, the device of the invention is preferably suspended on the outside of a door. In this respect, the rivet post 13 is placed sufficiently close to the supporting flange 15 of suspension member 14 that any attempt to remove the device from the suspension member 14 is prevented by engagement of the housing with the construction of the upper margins of the door opening. Accordingly, the top wall of the housing 40 should be spaced approximately one inch below the flange 15. Thus the slots 12 in base 10 should be of a suitable length.

When the coils 22 and 23 are energized, armature 20 vibrates, causing striker 18 to vibrate against the outer surface of the door 16 effecting a particularly loud noise different from that ordinarily encountered with a bell device and different from sounds one may ordinarily hear in a bedroom hotel or apartment near crowded traffic intersections. Elimination of the bell from the device of the invention and the direct action of the striker preferably against the surface supporting the device not only provides an efficient concept of construction but eliminates a large element of cost of former portable fire alarm devices, namely, the bell component.

What I claim as my invention is:
A portable fire alarm adapted to be mounted on a door or the like, said door in a normal closed position presenting an outer surface, said alarm comprising in combination: a base; means supporting said alarm on the door to align the base adjacent a surface of said door; an armature including a striker member; means in said base permitting passage of the striker member there-through for engagement of the striker member with a surface of the door; means including an electrical circuit having a source of electrical current for vibrating the striker member against a surface of the door to create a noise alarm thereby; a thermal switch device normally

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opening said electrical circuit and responsive to a predetermined temperature effecting closure of said circuit and vibration of the striker member against a surface of said door; a housing; upper and lower open means in said housing adapted to conduct a hot air draft upwardly through said housing; and means supporting said thermal switch device in the path of an air draft passing through said housing.

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