

Aug. 4, 1970

E. R. LEWIS

3,522,935

AIR TREATMENT DEVICE

Filed July 12, 1968

2 Sheets-Sheet 1

Fig. 1.

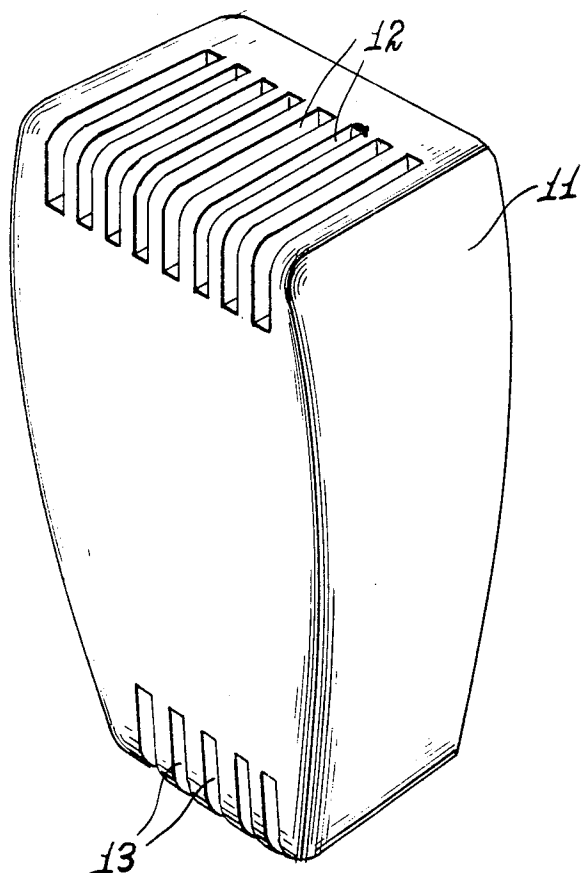


Fig. 4.

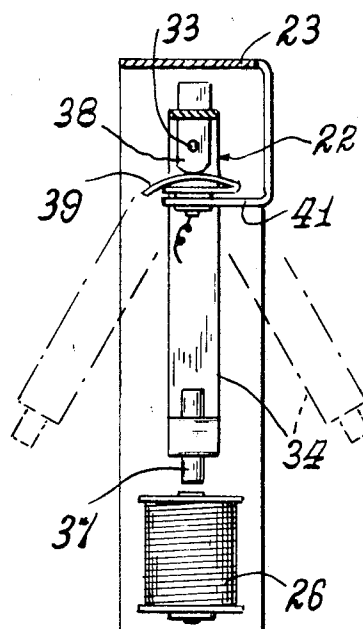
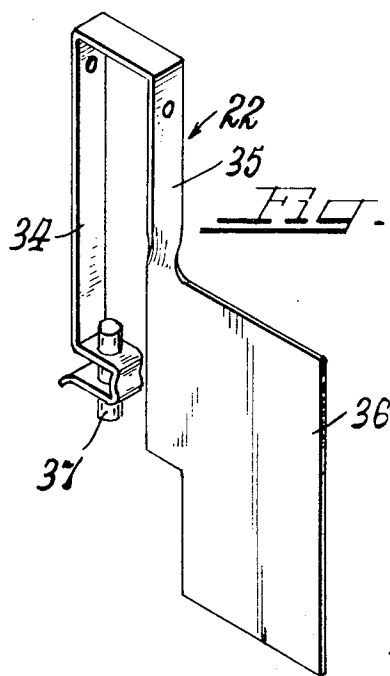


Fig. 5.

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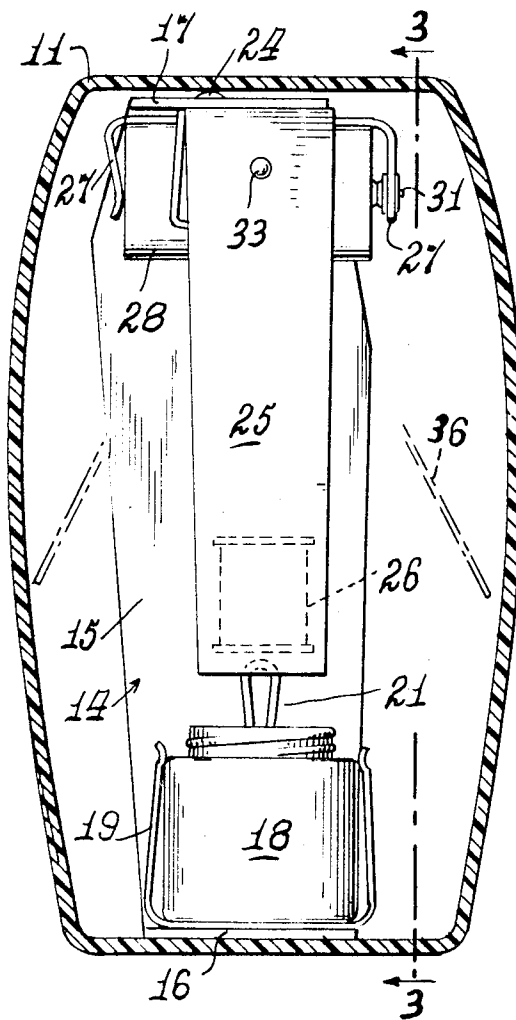


Fig. 2.

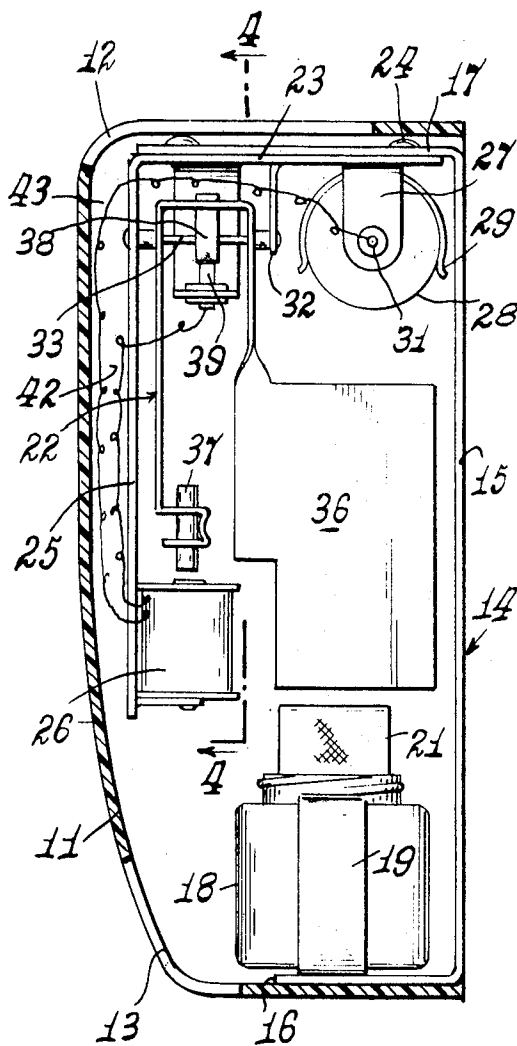


Fig. 3.

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AIR TREATMENT DEVICE

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U.S. Cl. 261—30

3 Claims

ABSTRACT OF THE DISCLOSURE

An air treatment device of a character which includes a housing having passageways therein and enclosing a source of deodorant and electro-mechanical means to maintain circulation of room air through said housing.

The invention relates to improvements in air treatment devices and is more particularly concerned with the novel means provided in a housing to maintain the circulation of air therethrough so as to distribute deodorant vapors into the region surrounding the housing. The distribution means is characterized by a pendulum type vane swingable in an arc through power generated by means of intermittently applied electromagnetic forces.

It is therefore an object of the invention to provide a device of the character referred to.

Another object is to provide novel means to cause intermittent energization of an electromagnet power source for activating an air distribution element.

Another object is to provide, in a device of the character referred to, a novelly constructed air distribution element.

Another object is to provide an air treatment device which is not expensive or difficult to manufacture, is substantially service free and which is very efficient in use.

The structure by means of which the above noted and other objects and advantages of the invention are attained will be described in the following specification, taken in conjunction with the accompanying drawings, showing a preferred illustrative embodiment of the invention, in which:

FIG. 1 is a perspective view of the air treatment device;

FIG. 2 is a front view showing the housing in section;

FIG. 3 is a vertical sectional view taken substantially on line 3—3 of FIG. 2;

FIG. 4 is a detail sectional view taken substantially on line 4—4 of FIG. 3; and

FIG. 5 is a perspective view of the air circulating element.

Referring to the exemplary disclosure of the invention as shown in the accompanying drawings, the air treatment device is enclosed in a housing 11 having passageways 12 and 13 for the free flow of room air into and through the housing. The housing encloses means and mechanism to be described that is carried on a mounting bracket 14. As best shown in FIG. 3, this bracket comprises a back wall 15 having a bottom leg 16 and a top leg 17. The bottom leg affords a support for a container 18, which may be held by spring clips 19, having a wick 21 protruding therefrom for disseminating vapor rising from the container contents. This contents may be any known liquid deodorant, preferably one having germicidal and disinfectant properties.

The top leg 17 of said bracket affords a support for an assembly including an electro-mechanically actuated

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air distribution element 22, disposed, when in service, to swing to and fro like a pendulum over the top of wick 21 so as to generate an air flow within the interior of the housing for dispensing deodorant aroma through passageways 12 and/or 13.

More particularly, the assembly includes a metal frame comprised of an upper reach 23 that is secured firmly to top leg 17, as by screws 24, and a depending strap 25 which carries on its lower end a vertically disposed electromagnet 26. Depending from the upper reach 23 are a pair of spaced apart ears 27 between which may be mounted an electric dry cell 28, a spring clip 29 being provided to retain it in place. The dry cell makes ground contact at one end with one ear 27 and the other ear carries a terminal 31, insulated therefrom, which contacts the other end of the cell.

The top leg 23 also has a depending ear 32 spaced from strap 25. An electric conductive journal pin 33 bridges ear 32 and strap 25 and provides a pivotal mounting for the upper end of the air distribution element 22. As best shown in FIG. 5, the element 22 comprises a strap bent into an inverted U to define depending arms 34 and 35. The arm 35 terminates in a wide plate-like member or vane 36 whereas the arm 34 is formed on its lower end to mount a permanent magnet 37. When the element is mounted on journal pin 33, the magnet is disposed in a plane to pass over the electromagnet 26, and the vane 36 is disposed above the wick 21.

The upper pivoted end of element 22 carries an electric conductive wiper 38 that is arranged to have wiping contact with the free blade 39 of an electrical contact carried on a lug 41 disposed below wiper 38 and connected integrally with the upper reach 23 of the assembly frame. The switch contact 39 is of course insulated from said lug 41 and it has a wire 42 leading therefrom to the electromagnet 26. Another wire 43 leading to the electromagnet is connected with the dry cell contact 31.

In operation, when the electromagnet 26 is energized through wiping contact between the contact blade 39 and the wiper 38, its electromagnetic force repels the permanent magnet 37 which is of opposite polarity, causing the element 22 to swing through an arc about its pivot pin 33. This results in breaking the blade-wiper contact whereupon gravity returns the element 22 to its vertical position. At this time the circuit is again closed by wiper 38 to cause the element to swing in an arc in the opposite direction again breaking the circuit. This intermittent breaking and making of the circuit to the electromagnet is continuously repeated so as to cause the element 22, through vane 36, to generate circulating of air over the wick and discharge deodorant aroma through the housing passageways 12 and/or 13.

Although I have described a preferred embodiment of my invention, in considerable detail, it will be understood that the description thereof is intended to be illustrative, rather than restrictive, as details of the structure may be modified or changed without departing from the spirit or scope of the invention. Accordingly, I do not desire to be restricted to the exact construction described.

I claim:

1. An air treatment device comprising an elongated vertically disposed housing having air passageways therethrough, a container for deodorant arranged in the lower portion of said housing, an upstanding bracket arranged in said housing, a bearing on the upper end of said bracket, an inverted substantially U-shaped element having its bight portion journaled in said bearing, one arm of said element comprising a vane disposed above the con-

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tainer, a permanent magnet carried by the other arm of said element, a stationary electromagnet arranged below the magnet, an electric dry cell in said housing, an electric circuit connecting said electromagnet and dry cell, a normally open switch in said circuit, and means carried by the element operable to intermittently close the switch to energize the electromagnet and swing the element in opposite directions alternately.

2. The air treatment device recited in claim 1, in which a spring clip mounts the dry cell on the bracket. 10

3. The air treatment device recited in claim 1, in which the electromagnet is carried by the bracket.

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