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T. A. ANDERSEN

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FUMIGATOR

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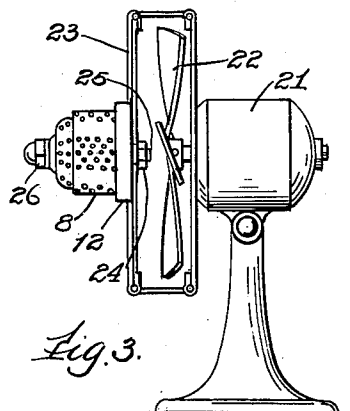
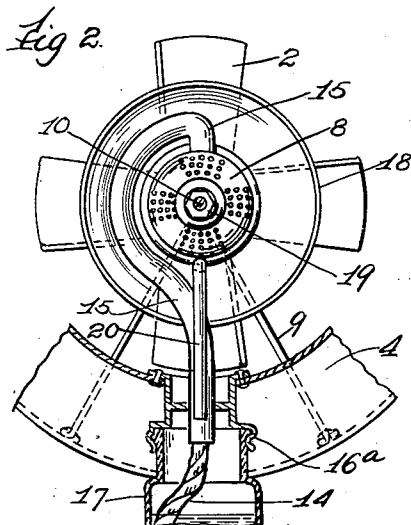
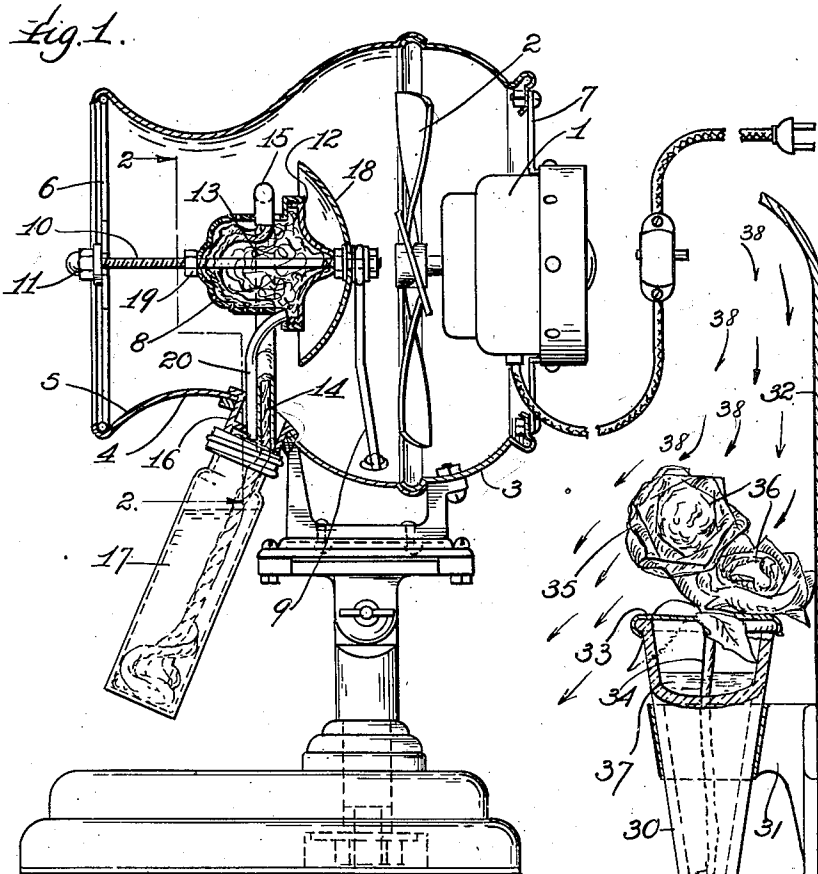


Fig. 4.

Witness
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UNITED STATES PATENT OFFICE

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FUMIGATOR

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This invention is concerned with means for disseminating into the air vapors of various natures, such as perfumes, deodorizers or fumigating compounds, and its object is to provide a relatively simple mechanism requiring the minimum of attention, and also adapted to employ the vaporous re-agent in an economical manner. It consists in certain features and elements of construction as shown and described, and as indicated by the claims.

In the drawing:

Figure 1 is a side elevation partly in section, showing one form of mechanism embodying this invention.

Figure 2 is a fragmentary sectional view taken as indicated at line 2—2 on Figure 1.

Figure 3 is a side elevation of a modified form of the invention.

Figure 4 is an elevation partly in section showing a second modification.

The structure shown in Figures 1 and 2 comprises an electric fan having a motor, 1, and the usual type of rotary fan blade, 2, supported in a housing, 3, which is formed to control and direct the air blast produced by the fan. Said housing is shown as including a constricted neck at 4, with a somewhat flaring mouth, 5, which may be fitted with a wire grille of any suitable design, at 6, if desired. The motor, 1, is carried on supporting arms, 7, at the opposite end of the housing, 3, leaving ample space for the ingress of air which is driven by the fan blade, 2, toward the mouth or outlet at 5. Interposed in the housing between said fan and the outlet is a perforated or reticulated shell, 8, which may be supported upon a pair of uprights, 9, and an axially disposed bolt, 10, extending forwardly and anchored in the grille, 6, by a nut, 11. The shell, 8, is provided with a detachable cover or head, 12, shown as screwed into a flange of the shell, 8, and within the shell is contained a quantity of absorbent fibrous material, such as wicking, indicated at 13. Leading from the mass of wicking within the shell, the drawing shows a twisted wick, 14, enclosed in a metallic tube, 15, which leads preferably from the upper portion of the shell, 8, and

thence downwardly into an annular flange, 16, projecting from the under side of the housing, 3. Said flange is threaded at 16^a, to receive the threaded neck of a bottle or container, 17, which carries in liquid form the re-agent to be vaporized and disseminated by the action of the fan blade, 2. The wick, 14, extends from the end of the tubing 15, down into the container so as to be saturated with such liquid to carry it by capillary action up into the mass of absorbent material at 13 in the shell, 8.

Preferably, between the shell, 8, and the rotary blade, 2, there is mounted a baffle, 18, which tends to deflect the air current toward the wall of the housing, 3, at its constricted portion, 4, from which the air is reflected back against the perforated wall of the shell, 8. The flow of air against and past the shell, 8, tends to evaporate the liquid held in the absorbent material at 13, and the vapor is thus entrained in the air currents and carried outwardly into the room. At the same time, the relatively small quantity of the re-agent which is thus exposed to the action of the air currents avoids loading the air excessively with the perfume, or fumigating chemical, and ensures comparatively economical use of the same. When the supply in the container, 17, is exhausted, it is a simple matter to unscrew the container and refill it, this being the only attention which the device requires to keep it in operating condition. Occasionally, the wicking at 13 and 14 may require renewal, and this, also, is a relatively simple matter, since upon removal of the nut, 11, the grille, 6, may be snapped out of its position in the mouth of the housing, 3, and upon removal of the inner nut, 19, the shell, 8, may be unscrewed from its head member, 12.

The tube, 14, may be permanently fixed by soldering, or otherwise, to the shell, 8, or to the annular flange, 16, but need not be permanently secured at both points; hence, it does not embarrass removal of the shell, 8, for refilling it with absorbent wicking, and leading a portion of the wicking out through the tube, 15, to extend into the con-

tainer, 17. Since the liquid in the saturated material at 13 may tend to settle, and might drain from the perforations of the shell, 8, when the fan, 2, is not running, I provide
 5 a drain tube, 20, leading from the lowest portion of the shell, 8, to carry back to the container, 17, any excess of liquid thus accumulating in the shell.

A somewhat simplified form of the device is shown in Figure 3, and consists in a stand-
 10 ard type of electric fan having a motor, 21, with a rotary blade, 22, and the usual wire guard, 23, for the blade. The reticulated shell, 8, is secured directly to this guard in
 15 any convenient manner, as by means of a clamping nut, 24, on the axial bolt, 25, which passes through the shell and through a central portion of the guard, 23. A cap nut, 26, on the outer end of the bolt, may serve to
 20 hold the shell, 8, to its head portion, 12, or the two parts may be screwed together exactly as shown in Figure 1. It will be understood that within the shell, 8, there
 25 is contained a quantity of absorbent wicking like that shown at 13 in Figure 1, and that the entire supply of liquid material for this form of the invention is carried by this
 30 wicking, being replenished from time to time by opening the shell, 8, and pouring the liquid onto the wicking in relatively
 35 small quantities. If preferred, the reticulated container may be attached to the wire guard grille, 23, of the fan merely by radi-
 ally extending hooks, not shown, instead of
 35 by the more permanent clamping nut, 24.

Figure 4 illustrates a container, 30, of the general style frequently carried in closed automobiles as a flower vase. It is supported
 40 in a bracket, 31, shown secured to the side wall, 32, of the vehicle, and is provided with a cover, 33, through which there
 emerges a wick, 34, arranged to resemble the stem of an artificial flower indicated at
 45 35. The material of which the flower is composed, or, at least, the central portion of it, at 36, may be understood to be of an
 absorbent nature similar to, and substantially continuous with, the wick, 34, so that
 50 the liquid at 37 in the container, 30, will be drawn by capillary action upwardly through the wick, 34, into the absorbent
 material at 36, and will thus be exposed to the air currents indicated by arrows, 38,
 55 which are practically always introduced within the vehicle when it is in motion. For this particular use the liquid, 37, will
 ordinarily be in the nature of a perfume, but with the other forms of the device it will be
 60 understood that various deodorizers or medicated fumigating re-agents may be used.

While I have shown and described herein certain specific structures embodying the
 invention, it will be manifest to those skilled
 65 in the art that various modifications and re-
 arrangements of the parts may be made

without departing from the spirit and the scope of the invention, and that the same is not limited to the particular forms herein shown and described, except in so far as indicated by the appended claims.

I claim:

1. In combination, a housing having an inlet and an outlet, a motor-driven fan in the housing for producing a blast of air from the inlet to the outlet, a chamber disposed between said fan and the outlet and having a reticulated wall, a quantity of absorbent material in said chamber with a wick leading therefrom and a receptacle for liquid into which said wick extends, the housing being constricted adjacent said chamber to direct the flow of air in contact with the reticulated wall for evaporating liquid from the absorbent material.

2. In combination, a housing with a fan mounted therein, and driving means for the fan, said housing having an inlet and an outlet for the air blast induced by the fan, a chamber mounted in the housing between the fan and the outlet, and having a reticulated wall, a quantity of absorbent material in the chamber with a wick leading therefrom, a receptacle for liquid into which said wick extends, and a baffle disposed between the fan and said chamber for deflecting the air blast against the walls of the housing at such a point as to cause reflection of the blast against the reticulated wall of the chamber for evaporating the liquid from the absorbent material and entraining the vapor thus formed.

3. In combination, a fan and a motor therefor with a housing extending in the direction of the air blast induced by the fan for confining said blast, a chamber mounted in the housing in the path of the air blast, and having a reticulated wall, a quantity of absorbent material in said chamber with a wick leading therefrom, an enclosing tube for the wick leading outside the housing, a receptacle for liquid outside the housing into which the wick extends, and means on the housing for detachably supporting said receptacle in communication with said tube, together with a drain tube leading from the lower portion of said chamber through the housing wall for discharge into said receptacle.

4. In combination, a fan and a motor therefor with a housing extending in the direction of the air blast induced by the fan for confining said blast, a chamber mounted in the housing in the path of the air blast, and having a reticulated wall, a quantity of absorbent material in said chamber with a wick leading therefrom, an enclosing tube for the wick leading outside the housing, a receptacle for liquid outside the housing into which the wick extends, and means on the housing for detachably supporting said re-

ceptacle in communication with said tube, said housing wall having a constricted portion adjacent the chamber, and a baffle interposed between the fan and the chamber for deflecting the air blast against said restricted portion of the wall to direct it against the reticulated wall of the housing.

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