

May 24, 1960

E. M. VAUGHN  
PORTABLE FUMIGATOR APPARATUS FOR  
VAPORIZING GERMICIDAL LIQUIDS  
Filed July 29, 1958

2,937,419

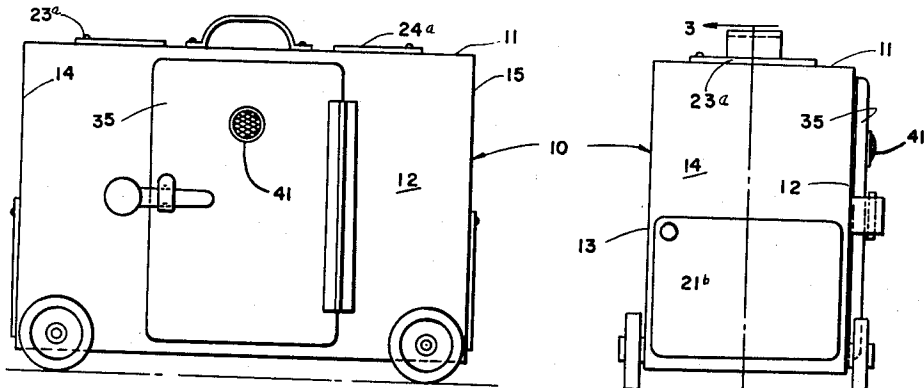


FIG. 1.

FIG. 3

FIG. 2

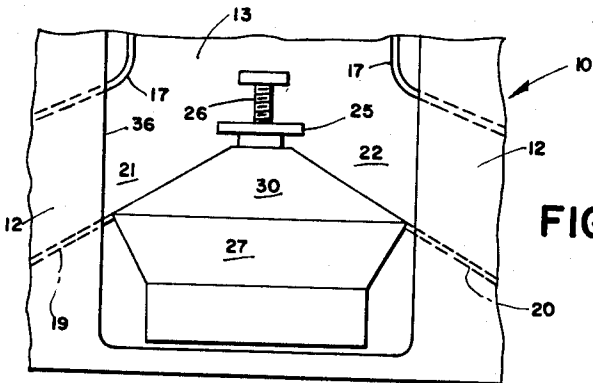
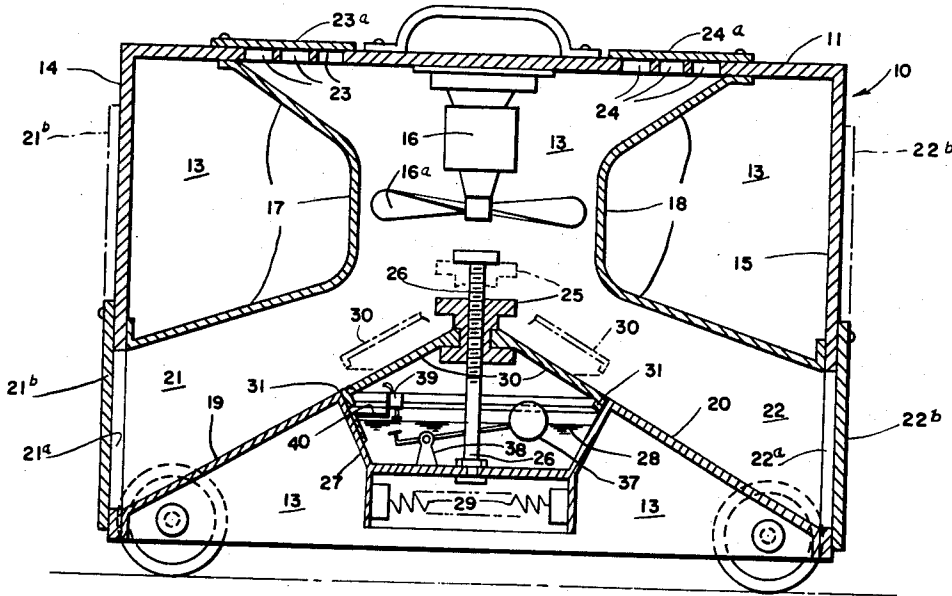


FIG. 4

INVENTOR.  
EDNA M. VAUGHN

BY

*Marion S. Hamilton*  
ATTORNEY

1

2,937,419

## PORTABLE FUMIGATOR APPARATUS FOR VAPORIZING GERMICIDAL LIQUIDS

Edna M. Vaughn, 326 Muson Ave., San Rafael, Calif.

Filed July 29, 1958, Ser. No. 751,781

4 Claims. (Cl. 21-126)

My present invention relates to fumigators and more particularly to portable fumigators for use in fumigating rooms and the like.

The principal object of my invention is to produce a portable type of fumigator which may be moved from place to place, such as hospital rooms, private dwellings and the like, which operates by electrical current, and makes use of suitable germicidal fluid.

Another object is to produce an improved fumigator for vaporizing germicidal liquids in which the liquids are covered when not in use and cannot be spilled when moving the apparatus from place to place.

Other objects and novel features comprising the construction and operation of the apparatus will be more apparent as the description progresses.

In the drawings illustrating the preferred embodiment of the invention;

Fig. 1 is a front side elevation of the apparatus;

Fig. 2 is an end elevation;

Fig. 3 is an enlarged cross-section taken on the lines 3-3 of Fig. 2, portions being shown in elevation, and

Fig. 4 is a fragmentary side elevation of the lower area of the door portion but with the door removed and showing one end of the container in which is placed germicidal fluid, etc.

Referring more in detail to the drawings, 10 indicates the exterior case which is composed of a top 11, front side 12, back side 13, and portions 14 and 15. The bottom of the case is open, shown in Fig. 3.

To the central portion of the under side of the top 11 is fixed an electric motor 16 and fan 16a. On opposite sides of the fan 16a are transverse partitions 17 and 18 extending all the way across between the sides 12 and 13. In the lower portion of the case 10 is another set of partitions 19 and 20 angularly disposed to each other and extending downwardly to the right and left-hand ends or corners of the case. The partitions 19 and 20 also extend all the way across the case 10 between the sides 12 and 13.

It will thus be seen that the area of the motor 16 leads into tapered channels 21 and 22 terminating in openings 21a and 22a in the respective ends 14 and 15. The openings 21a and 22a may be closed by means of the closure plates 21b and 22b. In the upper motor chamber are air ports 23 and 24 which may be closed, as shown by pivoted closure plates 23a and 24a.

Referring again to the partitions 19 and 20, it will be noted that the apex of the partitions are provided with a nut portion 25 which is threaded on a rod 26 fixed at its lower end in the bottom side of basin 27 within which is placed the germicidal liquid 28. Under the basin 27 is located electrical resistance unit 29 which furnishes heat to vaporize the fluid 28 when the apparatus is in operation.

The threaded nut 25 is journaled around its outer sides in a basin cover portion 30 having oppositely pitched upper sides being continuations of angled sides of parti-

2

tion members 19 and 20 when the apparatus is closed as shown in Fig. 3.

In Fig. 3 the basin 27 and cover 30 are shown closed, as are end openings 21a and 22a and also the upper ports 23 and 24 in the top portion 11 of the case 10.

In the position shown in Fig. 3, the apparatus is closed and may be moved from place to place. The lower edges 31 are flanged to engage the angular sides of the basin 27. Water-tight gaskets not shown may be used on the lower edges of the cover 30 if desired so that the basin 27 is reasonably sealed against spillage and evaporation when being moved about at inactive periods.

I may also provide in the apparatus of the invention means for indicating the height of the fluid level in the basin 27 and particularly indicating by means of a signal light when the volume of fluid has been exhausted.

As one suitable means of accomplishing this I provide a bracket 38 solidly fixed in the bottom of the basin 27. At the upper end of the bracket is pivotally supported an arm and float 37 which is normally supported in a position such as that shown in Fig. 3 by means of a body of germicidal fluid 28. The free end of the pivoted arm and float 37 is arranged to swing upwardly as the level of fluid drops in the basin and at one point actuates a switch 39. The switch 39 may control a battery 40 which is adapted when the switch is closed to engage a warning light 41 mounted in the door 35 as suggested in Fig. 1. It will be apparent that the light when energized will be apparent and will furnish a signal that the level of fluid is low and that a fresh supply of fluid is required.

In operation, the airports 23 and 24 are opened to the desired degree and the cover plates 21b and 22b are likewise opened. A hinged door 35 covering an opening 36 in the front side 12 of the case 10 is opened giving access to the interior of the case. The nut 25 is turned on the threaded rod 26 and the basin cover 30 is raised the desired amount. The heat unit 29 is now electrically energized causing vapor to form above the liquid surface under the cover 30.

With the energizing of the motor 16 air is taken in through the ports 23 and 24 and forced down over the raised cover 30, as indicated in dot-and-dash lines. Vapor from the basin 27 is drawn out and expelled with the air admitted from the ports 23 and 24. As the operation continues, the expelled air becomes more and more saturated with the germicidal vapor from the basin 27.

The speed of the motor may be varied by the use of a rheostat, not shown, as well as temperature in the electrical heater coils.

Either end of the apparatus may be used individually or both together. Vaporization of the germicidal liquid may be speeded up or retarded by the manipulation of the variables mentioned in operating of the apparatus.

The apparatus may be of any size and proportion desired, and while I have shown and described my invention somewhat in detail yet it is to be understood that I may vary the structure and use equivalent structure within wide latitude while still remaining within the spirit of the appended claims.

Having thus described my invention, what I claim as new is:

1. An improved fumigator comprising in combination, a casing, an electric motor and fan mounted inside the upper portion of said casing, air inlets located above said motor in the top of said casing, said inlets, motor and fan inclosed by cross partitions forming an air passage extending downwardly and having a bottom cross partition composed of oppositely pitched surfaces terminating at openings located at the lower portion of two end portions of said cabinet, said air passage partitions above said pitched surface inclined and terminating at the top

3

of said end openings in said cabinet, a basin centrally located in said casing below said inclined surfaces and communicating with the high ends of said inclined surfaces, said basin being for the purpose of holding germicidal liquid, an electric heating unit located beneath said basin for the purpose of vaporizing said germicidal liquid, and a cover member for closing the top of said basin, and a threaded nut rotatably located in the top of said basin cover for raising and lowering the said cover.

2. An improved fumigator comprising a casing having inclined air passages internally located within said casing and upper air inlet ports and lower air outlets, an electric motor and fan located in said casing in said air passage, the lower side of said air passages being inclined surfaces joining each other in the central portion of the said casing, a basin located below said fan containing a germicidal liquid and having a basin cover element, said cover element being vertically adjustable, an electric heater unit located below said basin for vaporizing

4

said germicidal liquid in said basin, and communicating means located on one side of said casing adjacent to said basin for making adjustments to said cover element and adding germicidal liquid to said basin.

3. A structure according to claim 2 including a signaling light element for indicating a drop in level in the germicidal liquid.

4. A structure according to claim 3 in which the signaling light means comprises a signal light mounted in the casing of the fumigator, an electrical switch for controlling said light and a pivoted float and lever responsive to changes in the level of germicidal liquid in the basin to close said switch in one position.

#### References Cited in the file of this patent

#### UNITED STATES PATENTS

1,439,881	Fontaine	Dec. 26, 1922
2,205,831	Hartman	June 25, 1940