May 11, 1954 S. A. SCHOOLFIELD 2,678,378

DIFFUSER

Filed Aug. 28, 1952

FIG. 1

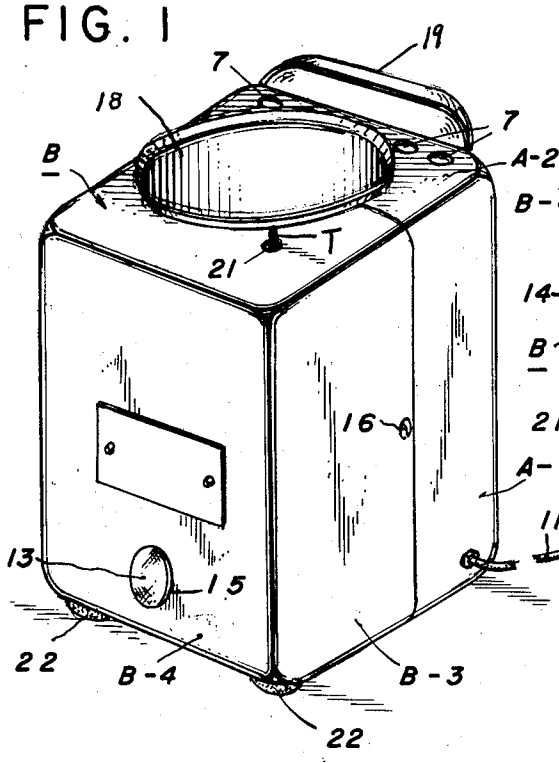


FIG. 2

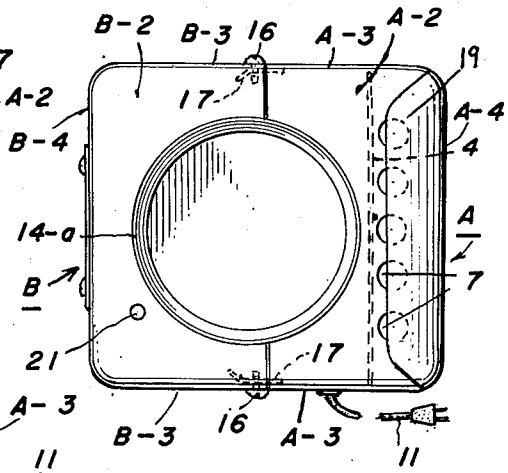


FIG. 3

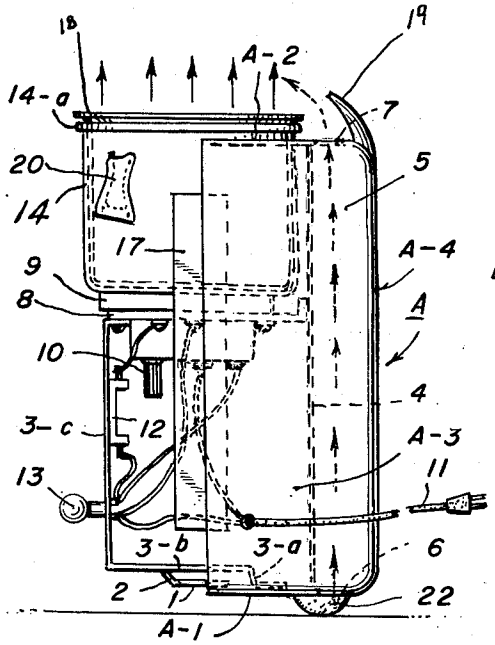
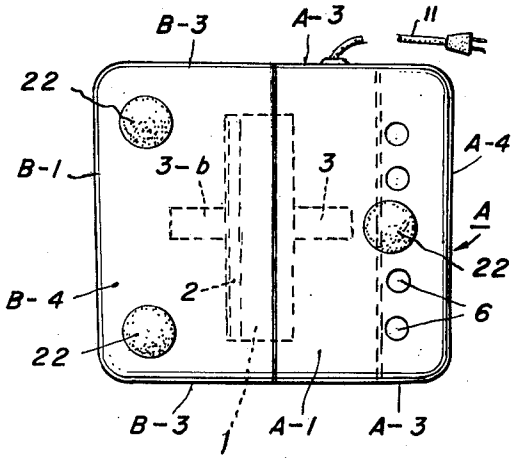


FIG. 4



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DIFFUSER

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2 Claims. (Cl. 219—43)

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My invention consists in a new and useful improvement in Diffusors and is designed more particularly to provide a device for diffusing insecticides. It is adapted to vaporize a liquid and diffuse the vapor by inducing an air current flowing to the area of vaporization of the liquid. The particularly novel and useful feature of my device is the functioning of a single heating unit to produce the vaporization and the current. Other advantageous features of the device are the simplicity of its structure which provides a thermostatically controlled electric heating unit, in light metal construction and its small size making it readily portable. Its outstanding feature is that it is a circulating unit which effectively circulates the vapor, giving increased effective area and preventing the vapor from reaching the ceiling of the room where the device is operating. This is a distinctly novel feature all its own. Because of the portable and circulating features, my device is adapted for use under a house to eliminate termites and other pests, economically and effectively. It conforms to all government requirements for safety having a pilot light and a fuse for over load.

While there is illustrated in the drawing forming a part hereof and described in the specification a specific embodiment of my invention, it is to be distinctly understood that I do not consider my invention to be limited to said specific embodiment but refer to the claims for the scope of the invention.

In the drawing:

Fig. 1 is a perspective of the device.

Fig. 2 is a top plan.

Fig. 3 is a side elevation, the front cover being removed.

Fig. 4 is a bottom plan.

The device has a casing comprising a fixed portion A and a removable portion B. The portion A has a bottom wall A–1, a top wall A–2, two side walls A–3 and a rear wall A–4. The portion B has a bottom wall B–1, a top wall B–2, two side walls B–3 and a front wall B–4.

A metal strip 1 is suitably mounted on the inner surface of the bottom wall A–1, as by welding, so that it is parallel with the rear wall A–4 and projects beyond the front edge of the bottom wall A–1 (Figs. 3 and 4). This strip 1 has an upwardly bent flange 2 on its front edge. A metal strip 3 is suitably mounted on the inner surface of the bottom wall A–1, as by welding, so that it is normal to the strip 1 and substantially equi-distant from the walls A–3. This strip 3 has an upward bend 3–*a* so that

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its horizontal portion 3–*b* rests on the flange 2 and projects from the portion A. A vertical portion 3–*c* of the strip 3 projects upwardly from the portion 3–*b*. A partition wall 4 is disposed between the bottom wall A–1 and the top wall A—*a* (Fig. 3) and connects the side walls A–3 (Figs. 2 and 4) to provide a draft conduit 5 between the wall 4 and the rear wall A–4 (Fig. 3), inlet vent holes 6 being provided in the bottom wall A–1 (Fig. 4) and outlet vent holes 7 in the top wall A–2 (Fig. 2) for the conduit 5. A metal strip 8, suitably attached to the upper end of the vertical portion 3–*c* of the strip 3, extends horizontally to the wall 4 and is suitably attached thereto (Fig. 3).

A suitable electric heating unit 9 is suitably mounted on the upper face of the strip 8 and is provided with a suitable thermostatic electric switch 10 mounted on the lower face of the strip 8. The unit 9 and its switch 10 are provided with a suitable electric conductor cable 11 which passes into the device through one of the side walls A–3. A suitable fuse 12 to prevent over load and an indicator lamp 13 are also provided for the circuit, being carried by the vertical portion 3–*c* of the strip 3.

Suitably mounted on the unit 9 there is a receptacle 14 of suitable heat-conducting and electrical non-conducting material and having a peripheral lip 14–*a*.

The removable portion B is adapted to enclose the forward parts of the unit 9 and the switch 10, and the strip 3 and the fuse 12. It has a hole 15 through which the lamp 13 projects when the portion B is mounted on the portion A by means of bolts 16 which are screwed into strips 17 projecting from the front edges of the side wall A–3. As shown in Figs. 1, 2 and 4, when the portion B is mounted on the portion A, its side walls B–3 register with the side walls A–3 of the portion A, the bottom wall B–1 registers with the bottom wall A–1, and the top wall B–2 registers with the top wall A–2.

It will be noted (Figs. 1 and 2) that the walls A–2 and B–2 are suitably apertured so that the bead 14–*a* of the receptacle 14 projects slightly therefrom.

A suitable container 18 of heat-conducting material is removably received in the receptacle 14. A baffle hood 19 is mounted on the upper end of the rear wall A–4 and projects over the outlet vent holes 7 (Figs. 2 and 3).

A suitable pocket 20 is mounted on the side of the receptacle 14 (Fig. 3) to receive a thermometer T which can be inserted into and re-

moved from the pocket 20 through a hole 21 in the wall B–2 (Fig. 1) whenever the temperature in the receptacle 14 is to be ascertained.

Suitable feet 22 are disposed on the bottom walls A–1 and B–1 to space the device from a supporting medium, such as a table. The device may be provided with suitable openings in the rear wall A–4 so that it can be hung up on suitable pins or hooks on a wall or other such supporting medium.

Having described the structure of my improved device, I will now describe its operation. The device being positioned by being placed on or hung from a suitable supporting medium in the desired location and the conductor cable 11 being plugged-in to a source of electric power, the liquid insecticide is put into the receptacle 18 which is then placed in the receptacle 14. The electric current supplied by the cable 11 raises the temperature of the unit to a degree sufficient to vaporize the liquid. It is obvious that the heat from the unit 9 induces an upwardly flowing current of air in the conduit 5, air being drawn into the conduit 5 through the inlet holes 6 and flowing out through the outlet holes 7, and that this current is deflected by the hood 19 (arrows in Fig. 3) to the area of vaporization of the liquid above the receptacle 18 thereby diffusing the vapor.

Having described my invention, what I claim is:

1. In a device for diffusing a vaporizable insecticide, the combination of a housing comprising two co-acting members having bottom and top walls, said top walls having arcuate openings coacting to form a circular orifice in said housing; a frame mounted on the bottom wall of one of said members and having a portion projecting over the bottom wall of the other member; a heater element mounted on said frame; a receptacle mounted on said element, portions of said element and said receptacle being on said projecting portion of said frame; and a container for the insecticide removably mounted in said receptacle and disposed in said orifice, the other member of said housing being adapted to be removably attached to the first member and enclose the projecting portions of the frame, element and receptacle when so attached.

2. A device according to claim 1 having an air duct disposed in said first member and having a discharge opening in the top wall of said first member adjacent said receptacle.

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