Aug. 16, 1938. P. J. F. BATENBURG 2,126,718

PORTABLE LIQUID DIFFUSING DEVICE

Filed Feb. 28, 1936

Fig. 1.

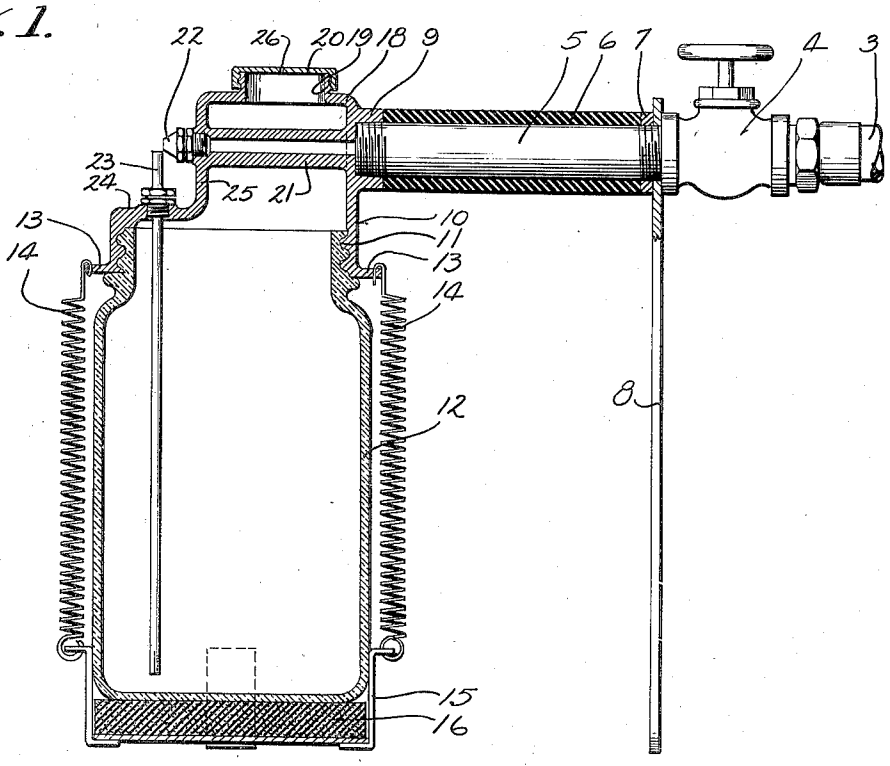
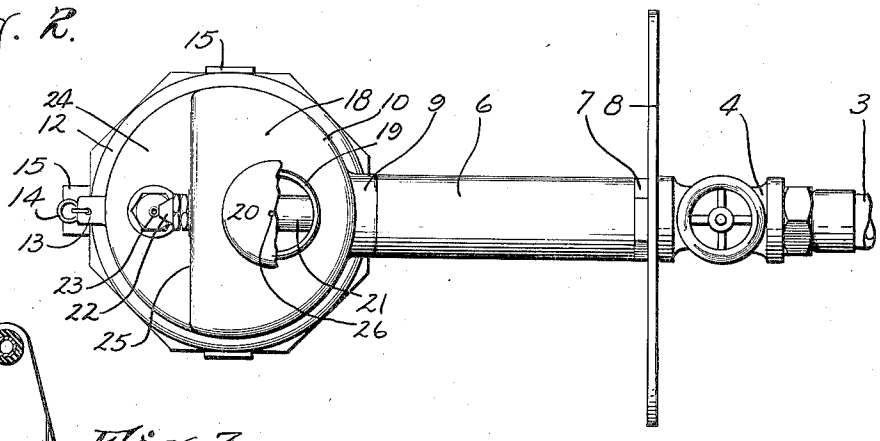


Fig. 2.



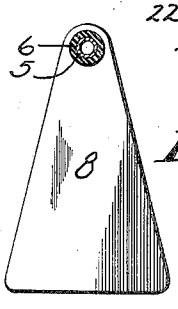


Fig. 3.

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PORTABLE LIQUID DIFFUSING DEVICE

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3 Claims. (Cl. 299—88)

This invention relates to improvements in portable liquid diffusing devices.

The invention has particular application to that class of diffusor in which air or steam is supplied under substantial pressure through a flexible hose to a portable nozzle. Ordinary hand sprays operated by self-contained pumps are ineffective because the low pressure available does not result in adequate diffusion. I have worked with diffusors installed in more or less fixed positions on semi-portable stands and supplied with high pressure fluid and while these are very satisfactory for some purposes, they will not under all circumstances avoid precipitation. Complete diffusion seems to be promoted by a more or less constant movement of the nozzle about the area of the space which is being treated so that no one portion of the air in such space is subjected to a prolonged treatment. While movement of the diffusing device from point to point is thus a desirable incident to treatment, it is also desirable to carry a substantial quantity of the insecticide disinfectant, deodorant, perfumes, or other liquid to be sprayed, and one of the objects of the present invention is to provide a diffusing device of this general character with a steady rest which greatly facilitates the transportation and manipulation of the diffusing mechanism and also provides a stable support which prevents the diffusing mechanism from being tipped over by the weight of the hose and maintains it erect under all conditions.

It is another object of the invention to provide a novel and improved diffusor head adapted to receive connection with a conventional jar and provided with an improved disposition of the nozzles and filling cap.

In the drawing:

Figure 1 is a view in vertical axial section showing a device embodying the present invention.

Figure 2 is a plan view of the device.

Figure 3 is a rear elevation of the support on a reduced scale showing the preferred form thereof.

Like parts are designated by the same reference characters throughout the several views.

I have shown at 3 the flexible hose through which the compressed gas used in the spraying operation is delivered. Ordinarily compressed air will be used subject to the control of a valve 4 at the end of the hose.

The valve casing is rigidly connected with the spraying mechanism hereinafter to be described by means of a short length of rigid pipe 5 which serves as a handle for the device and is preferably covered with a piece of hose 6 which serves as a grip and heat insulator. A flat nut 7 screwed onto the pipe clamps to the valve casing 4 a plate 8 which preferably broadens toward its base as indicated in Figure 2 and may conveniently be made of aluminum, for lightness. This plate serves as a steady rest as will hereinafter be explained.

The forward end of pipe 5 is screw threaded or otherwise fixed in a boss 9 in the spray head 10. This spray head consists of a casting internally threaded at 11 to receive any standard glass or metal jar 12 in which the insecticide or other spray material is contained. Integral ears at 13 are apertured to receive the hooked ends of tension springs 14 which support a skeletonized strap metal carrier 15 which supports the bottom of the jar, preferably through an interposed cushion 16 of sponge rubber or the like to minimize shocks when the device is set down.

The spray head 10 is provided integrally with an upstanding half dome at 18 in which there is centrally disposed a screw threaded flange 19 with which a conventional closure cap 20 is detachably engageable. The opening within the flange facilitates the refilling of the jar 12 without the necessity of unscrewing the jar from the spray head.

The half dome 18 is spanned from front to rear by an integral tube 21 which communicates with the interior of the boss 9 and comprises an extension of the pipe 5. Screw threaded into the end of tube 21 is a nozzle fitting 22 which delivers a pneumatic jet across the end of a pipe 23 which leads from a point near the bottom of jar 12 upwardly through the flat wall 24 of the spray head 10 into adjustably operative proximity to the nozzle 22.

The horizontal wall 24 of the spray head and the adjacent vertical wall 25 at the forward side of the half dome 18 provide a convenient arrangement for the disposition of the spray tube 23 and the atomizing nozzle 22, where they can be accurately located and adjustably fixed with reference to each other.

The pipe 21 serves as a baffle which prevents the liquid in jar 12 from becoming splashed through the vent 26 which is provided in the closure cap 20. Yet the pipe 21 does not sufficiently obstruct the filling opening to reduce the ease with which the supply of liquid in the jar may be replenished. While the jar 12 is readily removable for cleaning or for filling, the filler

cap makes the removal unnecessary for the latter purpose.

The length of the steady rest or support at **8** is substantially equal to the combined height of the spray head **10**, the jar **12** and the holder and cushion **15** and **16** so that when the device is set down on the floor or any other flat surface, it will be maintained upright in the position shown in the drawing. The length of pipe **5** spaces the support **8** sufficiently far to the rear of the spraying device so that it is difficult to upset the mechanism notwithstanding the weight of the hose **3** attached thereto.

The weight of the device and the hose is substantial and as the operator manipulates the spray and swings it from side to side, he finds it very convenient to be able to rest the plate **8** against his leg or some other portion of his body. The operator may also grasp plate **8** with one or both hands to direct or guide the spray upward or downward. The breadth of plate **8** enables it to serve as a partial protection to the operator, tending to keep from his person some of the mist which might tend to drift backwardly along the apparatus, or any of the spray material which may have carelessly been allowed to accumulate on the outside of the jar.

I claim:

1. A device of the character described comprising a spray head having a jar receiving thread and a half dome arising thereabove to provide surfaces approximately at right angles, a pipe connected with one of said surfaces and extending below said thread to be received into a jar, a pressure nozzle connected with the other of said surfaces in operative atomizing relation to the pipe, a supply tube spanning said half dome and communicating with said nozzle, together with a vented cap applied to the top of said half dome, said dome providing a filling opening and having a threaded flange for the reception of said cap.

2. A device of the character described comprising the combination with a receptacle, a spray head thereon having a tube communicating with the receptacle, and a nozzle connected with the spray head and disposed in atomizing relation to the tube, of a tubular supply pipe connected with said spray head and communicating with said nozzle, said pipe constituting a handle projecting rigidly from the spray head, means providing a stop at the end of the handle remote from the spray head, a plate of generally triangular form having in its apex an aperture engaged over the handle and abutting the stop, the base margin of said plate being substantially at the level of the bottom of the receptacle, and means including a hose connection threaded to said handle and in clamping engagement with said plate.

3. A spray device comprising the combination with a spray head having a nozzle and a receptacle therebeneath, of a pipe communicating with said nozzle and rigidly connected with said spray head and projecting rearwardly therefrom to constitute a handle therefor, a hose connection at the end of the handle remote from said spray head, a steady-rest comprising a plate having a broad and substantially imperforate portion below said handle end and extending to a margin substantially at the level of the bottom of the receptacle, and means including said hose connection for fixing the position of said plate and securing it at said handle end.

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