

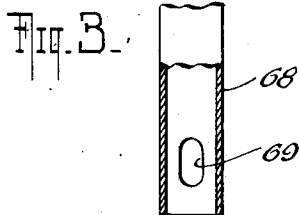
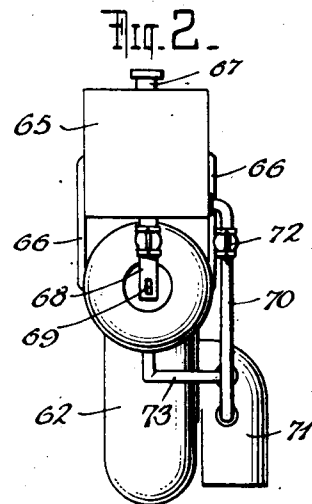
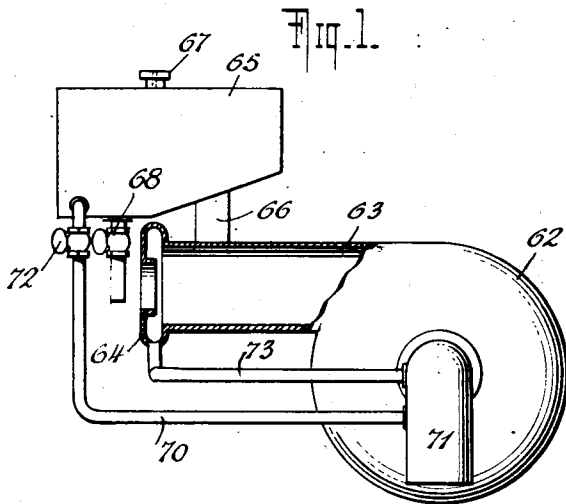
April 2, 1929.

E. WALKER

1,707,696

SPRAYING APPARATUS

Filed April 20, 1926



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UNITED STATES PATENT OFFICE.

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SPRAYING APPARATUS.

Application filed April 20, 1926. Serial No. 103,214.

This invention relates to improvements in spraying apparatus, and has particular reference to an apparatus of the type disclosed in my United States Patent No. 1,561,039, dated November 10, 1925.

In said patent there is disclosed an apparatus wherein the material to be sprayed is forced from a container by pressure created by a fan or rotor mounted in the body of the device. The material, after leaving the container, enters the fan at its center and is there atomized or transformed into a spray which is projected through a discharge pipe by the current of air created by the fan. It has been found in practice that, when atomizing the liquid, a considerable amount of the atomized material after leaving the fan rotor strikes the walls of the fan casing and discharge pipe where it returns to its original liquid state and flows out of the discharge pipe and is thus wasted.

An object of the present invention is to increase the efficiency of the apparatus by reducing to a minimum the amount of unatomized liquid which may flow through the discharge pipe.

Another object is to cause any unatomized liquid, which may pass into the discharge pipe of the apparatus, to flow back into the rotor of the device where it will be atomized along with the main supply of the liquid being fed to said rotor.

The above and other objects will appear more clearly from the following detail description, when taken in connection with the accompanying drawing, which illustrates a preferred embodiment of the inventive idea.

In the drawing—

Figure 1 is a side elevation of the device, partly broken away and shown in section; Figure 2 is a front elevation thereof; and Figure 3 is a fragmentary view, partly in section, of the nozzle employed in the form of the invention shown in Figures 1 and 2.

Experiments with prior devices have shown that some of the liquid drawn into the fan casing and atomized by the rotor therein, strikes against the walls of said casing and discharge pipe and is thereby caused to return to its original liquid state. This liquid then flows out through the discharge pipe and is lost or wasted by dripping from said pipe.

In accordance with this invention, the

liquid to be atomized may be fed from the reservoir to the fan rotor, or directly to the outer end of the discharge pipe where it will be atomized by the current of air passing through the discharge pipe. In such case, the device includes a fan casing 62 enclosing a rotor (not shown) and having a discharge pipe 63 provided with a trap 64 at the outer end thereof. The reservoir 65 is supported above the discharge pipe by the arms 66 and has a vented plug 67 for closing the filling opening of the reservoir. To atomize the liquid at the outer end of the discharge pipe instead of in the fan casing the reservoir 65 has depending therefrom a valve nozzle 68 in the form of a pipe provided with an opening 69 adjacent its lower end, which opening is disposed in direct alignment with the opening of the outer end of the discharge pipe 63. Thus as the liquid is fed downwardly through the nozzle 68 the current of air created in the fan casing 62 will be discharged through the pipe 63 and a part of said air will pass through the opening 69 and atomize the liquid in the nozzle. Any liquid which may drip from the lower end of the nozzle 68 will also be affected by the current of air from the discharge pipe. Should it be desired to atomize the liquid in the fan casing, the valve of the nozzle 68 is closed and a feed pipe 70 is connected at one end to the reservoir 65 and its other end to the suction pipe 71 joined to the fan casing. A valve 72 in the pipe 70, which valve is closed when the nozzle 68 is in operation, may be opened to permit the liquid to flow into the pipe 70 and from thence into the suction pipe 71 from whence it enters the fan casing 62 to be atomized by the rotor therein. Any unatomized liquid passing outwardly through the discharge pipe 63 will be caught in the trap 64 and be conveyed therefrom to the center of the fan rotor by means of the return pipe 73.

What is claimed is:

A spraying apparatus including a discharge pipe having a trap formed at its outer end, a reservoir supported by said discharge pipe, a nozzle extending from the reservoir and having its outlet disposed in the path of discharge from said discharge pipe, means for supplying a current of air to said discharge pipe, means for feeding liquid from

said reservoir to said air current supplying means, said air current supplying means including means to atomize the liquid supplied to it and mingle said atomized liquid with said air current, a connection between said trap and said air current supplying means to reconvey any unatomized liquid from the trap to said air current supplying means, and independent control means for said nozzle and said liquid feeding means. 10

In testimony whereof I have affixed my signature.

EDWARD WALKER.