

No. 813,254.

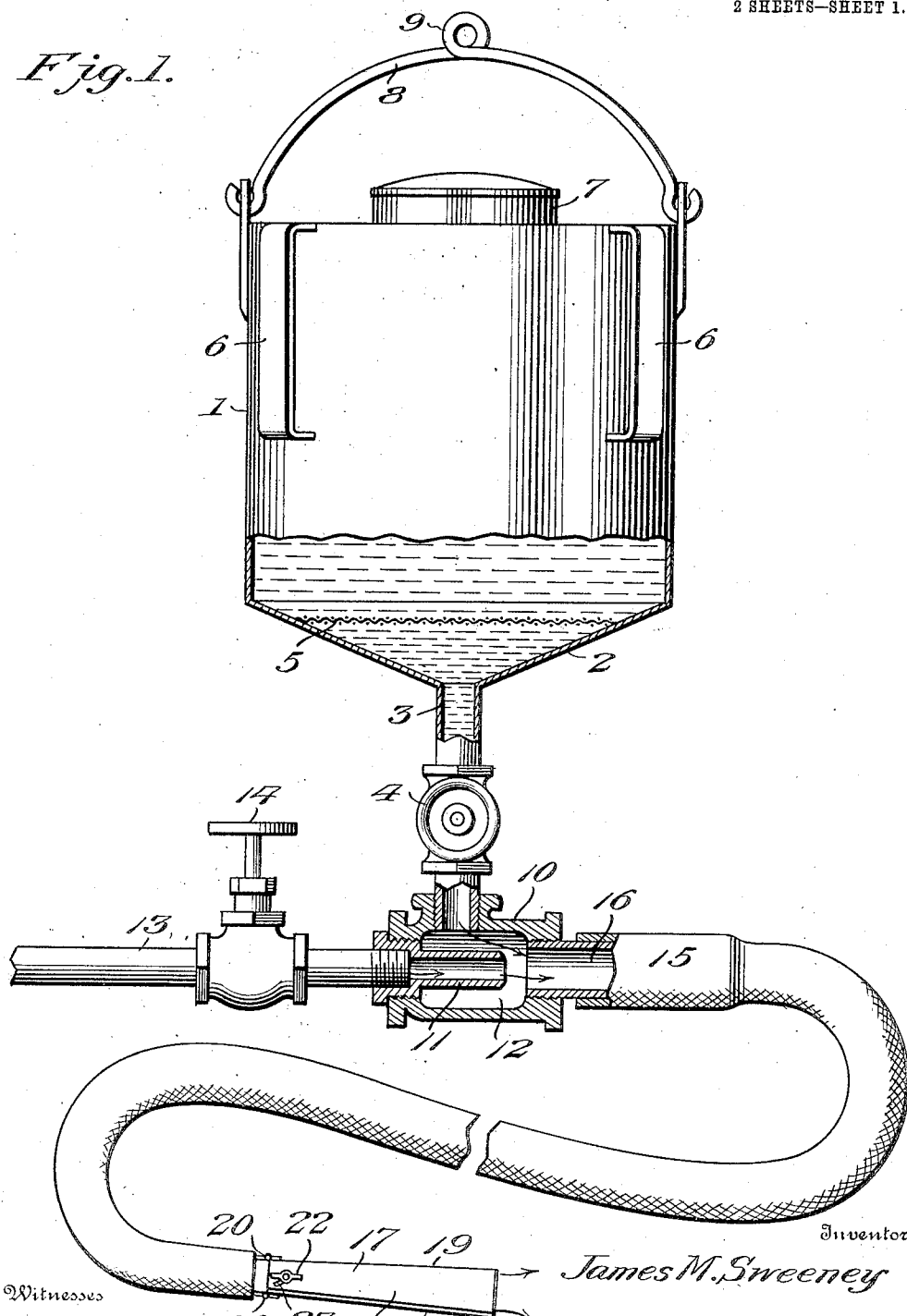
PATENTED FEB. 20, 1906.

J. M. SWEENEY.
SPRAY.

APPLICATION FILED APR. 27, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



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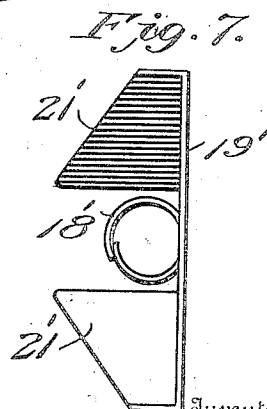
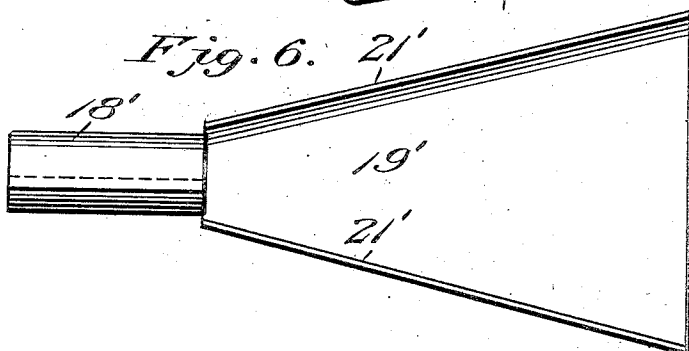
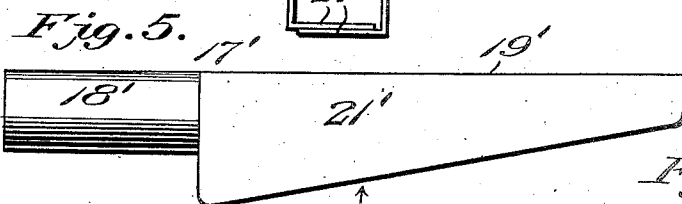
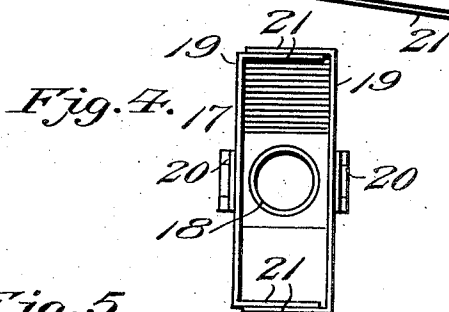
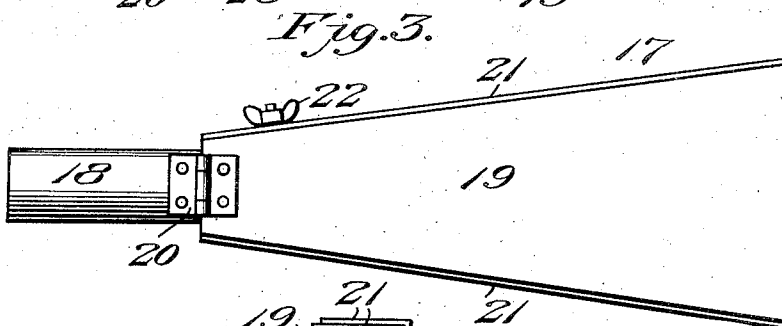
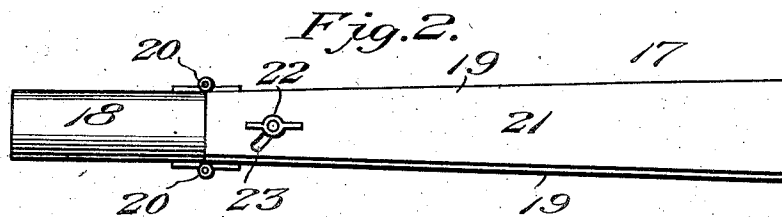
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JAMES M. SWEENEY, OF ANACONDA, MONTANA, ASSIGNOR OF ONE-THIRD
TO FRED M. SCHWARTZ, OF ANACONDA, MONTANA, AND ONE-THIRD
TO HUGH H. SWEENEY, OF SEATTLE, WASHINGTON.

SPRAY.

No. 813,254.

Specification of Letters Patent

Patented Feb. 20, 1906.

Application filed April 27, 1905. Serial No. 257,716.

To all whom it may concern:

Be it known that I, JAMES M. SWEENEY, a citizen of the United States, residing at Anaconda, in the county of Deerlodge and State of Montana, have invented new and useful Improvements in Sprays, of which the following is a specification.

This invention relates to spraying devices designed especially for use in spraying paint, whitewash, and the like, and has for its objects to produce a comparatively simple inexpensive device of this character in which the liquid will be spread smoothly and evenly over the surface under treatment, one where-
in the flow of liquid from the tank or reservoir may be readily controlled, and one in which the volume of air or other fluid employed for impelling the liquid through the discharge-duct may be regulated to accord with the amount of liquid expelled.

A further object of the invention is to provide a device of this character in which the liquid acted upon will enter the mixing-chamber somewhat in rear of the air, whereby liability of the latter forcing the liquid back into the reservoir is obviated.

A further object of the invention is to provide an improved form of spraying-nozzle through which the liquid is delivered from the discharge-duct onto the body to be coated.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a device embodying the invention. Fig. 2 is a top plan view of one form of spraying-nozzle. Fig. 3 is a side elevation of the same. Fig. 4 is a front elevation thereof. Fig. 5 is a top plan view of another form of spraying-nozzle. Fig. 6 is a side elevation thereof viewed in the direction of the arrow in Fig. 5. Fig. 7 is a front end elevation of the same.

Referring to the drawings, 1 designates a tank or reservoir having a downwardly-inclined conical bottom 2, terminating at its central point in a feed pipe or conduit 3, equipped with a controlling-valve 4, there being disposed in the tank above the feed-pipe 3 a reticulated screen or shield 5. The tank 1 is further provided with a pair of longitudinally-disposed relatively-spaced han-

dles 6, an inlet-opening or mouth 7, and a pivoted bail 8, provided at its center with an eye 9 for a purpose which will hereinafter appear.

Threaded onto the lower end of the feed-pipe 3 is a hollow body or casting 10, constituting the mixing-chamber, into the rear end of which there is entered an air-nozzle 11, which is of considerably-reduced diameter comparative with the interior of the chamber 10, whereby a space 12 for the circulation of liquid around the nozzle is presented. The nozzle 11, which has an enlarged rear end threaded into the end of the body 10, is in turn in threaded engagement with the forward end of the compressed-air pipe or duct 13, equipped with a controlling-valve 14, it being observed in this connection that the pipe 13 is suitably connected with an air or other fluid compressor, (not shown,) whereby a supply of fluid under pressure is discharged through the nozzle 11 into the mixing-chamber.

Connected with the forward end of the body 10 and communicating with the chamber 12 therein is a flexible discharge pipe or duct 15, the receiving end 16 of which is in line with the discharge end of the nozzle 11 and is of somewhat greater diameter than the latter, whereby the air discharged from the nozzle may enter freely into the discharge-duct 15.

Connected with the outer or discharge end of the duct 15 is a spraying member or nozzle 17, which, as illustrated in Figs. 2, 3, and 4, comprises a tubular portion 18, designed for entrance into the end of the pipe 15, and a pair of relatively movable side members or sections 19, pivotally connected, preferably by means of hinges 20, with the tubular portion 18, the sections 19 being equipped with overlapping edge walls or flanges 21, as seen more clearly in Fig. 4, whereby the sections may be moved relatively on their pivotal axes 20 for enlarging or contracting the discharge end of the nozzle, as will be readily understood. The sections 19 are normally fixed against movement, and in their adjusted positions by a clamping member or screw 22, engaged with the inner flange of one of the sections and working in a slot 23, formed in the outer flange of the other section, said slot being curved to accord with the

arc of movement of the sections on their pivotal axes 20.

In practice the tank or reservoir 1 is supported from a hook or support entered through the eye 9 of bail 8, and upon opening of the valve 4 the liquid within the tank flows by gravity through the feed-pipe 3 into the mixing-chamber 12, in which it circulates freely around the air-discharge nozzle 11, it being noted in this connection that the discharge end of feed-pipe 3 is disposed slightly in rear of the discharge end of the nozzle, whereby liability of the fluid under pressure forcing the liquid back into the tank 1 is obviated. As the liquid flows into the chamber 12 it is caught by the current of air passing from the pipe 13 through the nozzle 11 and expelled under pressure through the discharge-duct 15 and nozzle 17, by which latter it is spread smoothly and evenly upon the surface to be coated, it being apparent that the force of expulsion of the liquid may be regulated through the medium of valve 14, which controls the volume of air discharged through the nozzle 11, and, furthermore, that by means of the valves 4 and 14 the volumes of liquid and air may be regulated to properly accord with each other. It is further apparent that by adjusting the sections 19 of the nozzle relatively to regulate the size of its discharge end and the volume of the spray may be controlled to accord with the area of the surface to be covered.

In Figs. 5 to 7 there is illustrated a modified form of spraying-nozzle which comprises a tubular portion 18', carrying at its forward end the nozzle proper, which in turn comprises a sheet-metal plate or section 19', having edge walls or flanges 21', the outer edges of which taper or incline from the discharge end of the nozzle, while the longitudinal side edges of the section 19' diverge relatively from the inner toward the outer end of the nozzle. In operation with this form of nozzle, which, it will be seen, presents an open side, the latter is disposed toward the surface to be coated, with the inclined

edges of the side walls bearing thereon, whereby the side wall 19' is maintained at a proper inclination relative to said surface for properly directing the material onto the latter, while at the same time the material will be sprayed from the front open end of the nozzle onto and over the surface under treatment. It is apparent that the capacity of this form of nozzle is comparatively greater than that of the nozzle above described, thus especially adapting it for the performance of work in which rapidity enters as an essential factor.

From the foregoing it is apparent that I produce a simple inexpensive device admirably adapted for the attainment of the ends in view, it being understood that minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, a reservoir, a discharge-duct communicating therewith and a spraying-nozzle carried by the duct, said nozzle comprising a pair of relatively movable sections comprising said portions and overlapping edge flanges, and means for securing the sections in relatively adjusted positions.

2. In a device of the class described, a spraying-nozzle comprising a tubular portion, a pair of relatively movable sections pivoted at one end to said portion, said sections having overlapping edge flanges and being adjustable for varying the size of the discharge end of the nozzle, and a clamping-screw carried by one of the flanges and cooperating with the companion flange for fixing the sections in adjusted positions.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES M. SWEENEY.]

Witnesses:

JOHN LEVICK,
PEARL CARIHER.