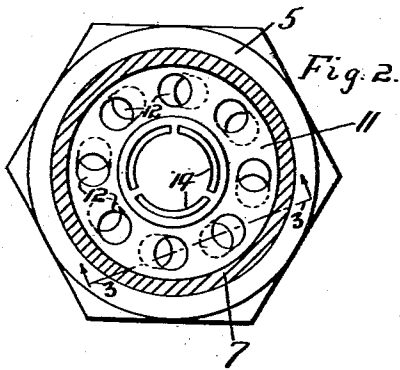
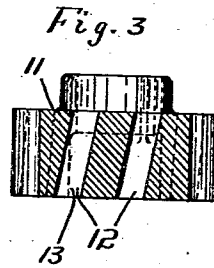
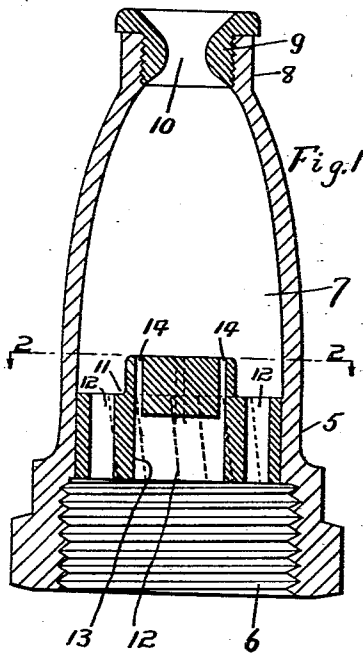


F. B. COMINS.
NOZZLE.
APPLICATION FILED JUNE 19, 1916.

1,245,569.

Patented Nov. 6, 1917.



INVENTOR
Frank B. Comins
BY Henry J. Miller
ATTORNEY

UNITED STATES PATENT OFFICE.

FRANK B. COMINS, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO AMERICAN
MOISTENING COMPANY, A CORPORATION OF MAINE.

NOZZLE.

1,245,569.

Specification of Letters Patent.

Patented Nov. 6, 1917.

Application filed June 19, 1916. Serial No. 104,493.

To all whom it may concern:

Be it known that I, FRANK B. COMINS, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Nozzles, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

10 This invention has reference to improvements in that class of nozzles adapted to deliver water to the atmosphere for the purpose of cooling or treating the water by subjecting the same to the free action of the air.

15 One object of the invention is to provide a nozzle adapted to assist in the distribution of water issuing therefrom as a spreading sheet and to avoid undue rotary action of the water after it leaves the nozzle.

20 Other objects of the invention will appear from the following description.

The invention consists in the improved nozzle as shall hereinafter be more fully described and pointed out in the claim.

25 Figure 1, represents a longitudinal sectional view of the improved nozzle.

Fig. 2, represents a cross sectional view of the same taken on line 2—2 Fig. 1.

30 Fig. 3, represents a detail sectional view of the nozzle member for controlling certain action of the water within the nozzle.

Similar characters of reference designate corresponding parts throughout.

35 In carrying this invention into practice I construct a nozzle comprising the shell 5 having the screw threaded bore 6, constituting the inlet, the chamber 7 contracted at one end to the collar 8 which has an inner thread to receive the member 9 which has the outlet bore 10 flared at both ends.

40 The inner wall of shell 5 adjacent the bore 6 preferably is parallel to receive the plug member 11 which has the series of passages 12, 12 which are inclined to the axis of this plug and are arranged around the central chamber 13 the area of which is considerably greater than the area of any one of the passages 12, 12. Through the wall of the upper end of said chamber 13 is formed a series of curved slots or orifices 14, 14 the radius of the curves of which coincides with the wall of said chamber 13.

When water under suitable pressure is supplied to the nozzle through the bore 6 the chamber 13 is filled with such water 55 which then passes through the orifices 14, 14 and reaches the chamber 7 substantially as an annular stream having a diameter greater than the bore 10. The greater portion of the water thus supplied through the bore 60 6 passes through the inclined passages 12, 12 whereby this portion of the water is directed in a tangential direction as it enters the chamber 7 whereby a vortex is created in said chamber of which the annular stream 65 supplied to the chamber 7 through the orifices 14, 14 may be considered the wall although, as a matter of fact, said annular stream mingles or merges with the embracing centrifugal body of water and tends to 70 push forward said body of water through the outlet bore 10. As the combined bodies of water reach said bore 10 the pressure exerted by the straight annular stream, from orifices 14, 14, tends to resist the centripetal 75 action of the swirling body of water passing through such contracted outlet with the result that as the water issues from said bore 10 it spreads laterally as a comparatively thin sheet or sheets of water which 80 is particularly subject to the action of air.

In actual practice I find that the chamber 13 is desirable as by its use a body of water is maintained, as a supply immediately at 85 the orifices 14, 14, which is not influenced by water passing into the passages 12, 12.

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

90 A nozzle comprising a shell having an inlet and an outlet and a chamber, the wall of which is cylindrical adjacent said inlet end and contracted at said outlet, a plug member fitting said cylindrical wall and spaced 95 from said outlet, said plug having a series of perforations inclined to the length of said plug and a central bore having a wall extending beyond said plug, and a deflector member fixed in the mouth of said bore and 100 spaced at points from the wall of said bore to provide curved orifices.

FRANK B. COMINS.