Dec. 31, 1935. H. E. MENG 2,025,767

SPRINKLER NOZZLE

Filed July 7, 1933

Fig. 1

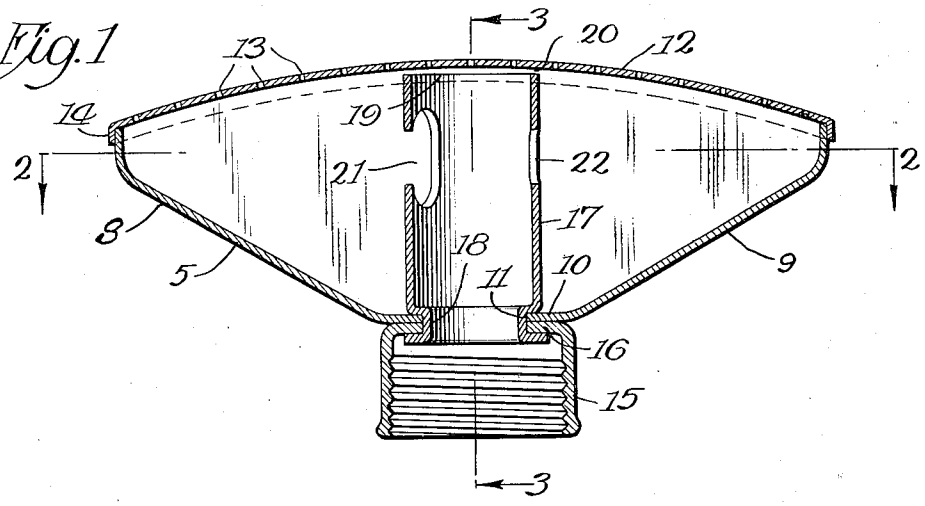


Fig. 2

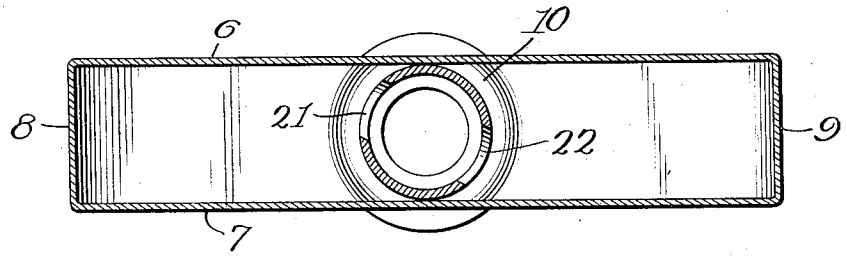
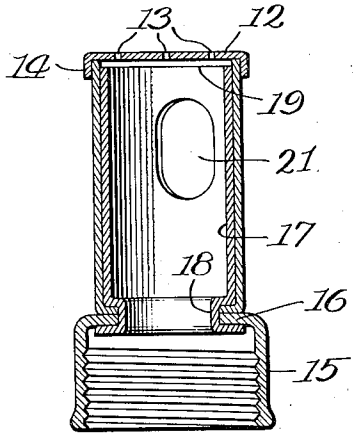


Fig. 3



Inventor
Harry E. Meng
By Fisher, Cluff, Evans & Pond
Attys.

Patented Dec. 31, 1935

2,025,767

UNITED STATES PATENT OFFICE

2,025,767

SPRINKLER NOZZLE

Harry E. Meng, Oak Park, Ill., assignor to W. D. Allen Manufacturing Company, Chicago, Ill., a corporation

Application July 7, 1933, Serial No. 679,376

4 Claims. (Cl. 299—141)

This invention relates to sprinkler nozzles and more particularly to a more or less fan-shaped nozzle which discharges a wide but thin spray.

The main objects of the invention are to provide a sprinkler nozzle of the type referred to which will discharge a uniformly distributed spray; to provide a sprinkler construction which can be produced at a low cost so that the sprinkler may be sold at a correspondingly low price; to provide a sprinkler which is light in weight, yet durable; and other objects and advantages will be understood by reference to the following specification and accompanying drawing in which there is illustrated a sprinkler nozzle embodying a preferred form of the invention.

In the drawing—

Fig. 1 is a longitudinal section;

Fig. 2 is a section on the line 2—2 of Fig. 1; and

Fig. 3 is a section on the line 3—3 of Fig. 1.

Referring now to the drawing, the improved sprinkler nozzle therein disclosed embodies a hollow sheet metal body 5 which is stamped or pressed so as to provide an elongated, narrow, hollow member comprising substantially parallel side walls 6 and 7 and end walls 8 and 9. The front end of the body is substantially elongated as indicated and the rear end of the body is provided with an end wall 10 having an opening 11 punched therethrough.

The front end of the body is provided with a spray head 12 which has a multiplicity of apertures 13 therein. The spray head 12 may be secured to the body 5 in any suitable manner, for example, through the agency of a marginal flange 14 which may be conveniently soldered to marginal portions of the body.

At the rear end of the body there is provided a coupling member 15 which is provided with suitable screw threading for receiving a hose coupling or the like. Adjacent the rear wall 10 of the sprinkler body, the coupling has a rim flange 16 which is disposed in contact with the outside of the rear wall 10.

Within the body there is disposed a sleeve or tube 17 which has its rear end bent around the adjacent end wall and flange portions 10 and 16, as clearly shown at 18 in Figs. 1 and 3. By this means the coupling member 15 and body 5 are securely united.

The front end 19 of the sleeve 17 is open as indicated and it is spaced rearwardly from the spray head 13 a short distance, as indicated at 20. The spacing may be varied somewhat. A space of approximately $\frac{1}{32}$ of an inch has been found to be satisfactory in a commercial size of sprinkler, which is approximately $\frac{2}{3}$ the size of the structure illustrated.

In the sides of the sleeve there are provided openings 21 and 22, which serve to deliver water to the side or end portions of the body and spray head.

It will be evident that in the described construction, the sleeve or tube 17 serves to conduct water directly from the inlet or coupling to the central portion of the spray head. For some reason unknown to applicant, the arrangement of the sleeve with side discharge openings within the spray head causes a substantially uniform discharge of water through the openings of the spray head over its entire area. In the absence of some such arrangement as the apertured sleeve, there is a tendency for the discharged spray to be greater at the ends than in the central portion of the spray head. The reason for this is not known to applicant. However, it has been found that the described arrangement satisfactorily distributes the water in the sprinkler in such a way that the discharged spray will be substantially uniform over the entire length of the spray head.

As shown in the drawing, the side openings 21 and 22 are preferably arranged in diametrically opposed portions of the sleeve at a short distance from the front end thereof and in an alignment which is at an angle to the length of the spray head. This disposition of the openings produces a better result than is obtained if the openings are aligned with the length of the spray head.

It is probable, or at least possible, that the described sleeve arrangement in the body serves to prevent a sort of swirling action of the water in the central portion of the body, and to cause the proper amount of water force to be delivered to the central portion of the spray, to thereby cause such central portion to discharge a spray substantially equal to that discharged by the end portions. It will be noted that the diameter of the sleeve 17 is such that it just fits between the side walls 6 and 7 of the body so as to, in effect, divide the interior of the body into three compartments, i. e., two end compartments and a central compartment within the sleeve. It is not considered important that the sleeve fit snugly in the body or to constitute a water-tight partition. There may be some space left between the tube and the side walls if desired. However, the disclosed arrangement appears quite satisfactory and has a reinforcing effect on the sprinkler, inasmuch as the sleeve tends to support the side walls of the body against inward bending.

Changes may be made in the described structure without departing from the spirit of the invention, the scope of which should be determined by reference to the following claims, the same being construed as broadly as possible consistent with the state of the art.

I claim:

1. A sprinkler comprising an elongated, narrow, multi-apertured spray-head and a hollow body member to which said head is secured, the body member being provided with an inlet opening spaced rearwardly from the head and located approximately centrally of the length of the head, and means for effecting substantially uniform discharge of water through the openings throughout the length of said head, comprising a tube element communicating at its rear end with said inlet opening and having its front end open and spaced from said spray-head for permitting direct flow of water from said inlet to the spray-head, said tube also having a pair of diametrically oppositely disposed openings in its side for delivering water sidewise to the ends of the spray-head, the alignment of said openings being arranged at an angle to the length of the spray-head.

2. A sprinkler comprising a hollow body member having an elongated, narrow, multi-apertured spray-head at its front end and a rear end provided with an opening therethrough, a coupling element disposed coaxially with said opening, and a sleeve disposed within said body member and having a recess formation receiving adjacent portions of said body and coupling for uniting the same, said sleeve having its front end spaced from said spray-head and serving to conduct water directly from said opening to the central portion of the spay-head, a pair of diametrically opposed side openings spaced from the front end of the sleeve for delivering water sidewise to the end portions of the spray-head.

3. In a sprinkler of the class described, the combination of a hollow body member having an elongated, narrow, multi-apertured spray-head at its front end and a rear end provided with an opening therethrough, a coupling element disposed coaxially with said opening and having an inwardly projecting rim flange disposed adjacent said rear end, and a sleeve having one end bent around said rim flange and the adjacent portion of said rear end for uniting the coupling and body member, said sleeve having its front end spaced from said spray-head and serving to conduct water directly to the central portion thereof, said sleeve also having side openings spaced rearwardly from its front end for delivering water sidewise to the end portions of the spray-head.

4. In a sprinkler of the class described, the combination of a hollow sheet metal body member having an elongated, narrow front end portion provided with a multiplicity of apertures, whereby said front end constitutes a spray-head, said body having substantially parallel side walls and end walls inclined towards each other from the ends of said spray-head towards the rear end of the body, the rear end of the body being provided with an opening therethrough, a coupling member disposed coaxially with said opening and having a rim flange disposed adjacent said rear wall, a sleeve element also disposed coaxially with said opening and coupling and having an end portion bent around said rim flange and the adjacent portion of said rear wall so as to unite said body and coupling and so as to anchor the sleeve in fixed position within the body, said sleeve having its front end spaced from said spray-head and serving to conduct water directly to the central portion thereof, said sleeve also having a pair of diametrically opposed openings spaced rearwardly from the front end of the sleeve and aligned at an angle to the length of the spray-head for delivering water sidewise to the end portions of the body.

HARRY E. MENG.