

J. W. McCONNELL.
SPRAY NOZZLE.
APPLICATION FILED MAY 23, 1918.

1,296,542.

Patented Mar. 4, 1919.

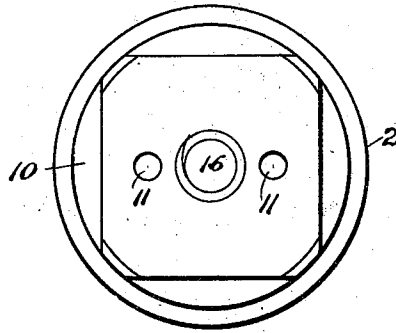


Fig. 2

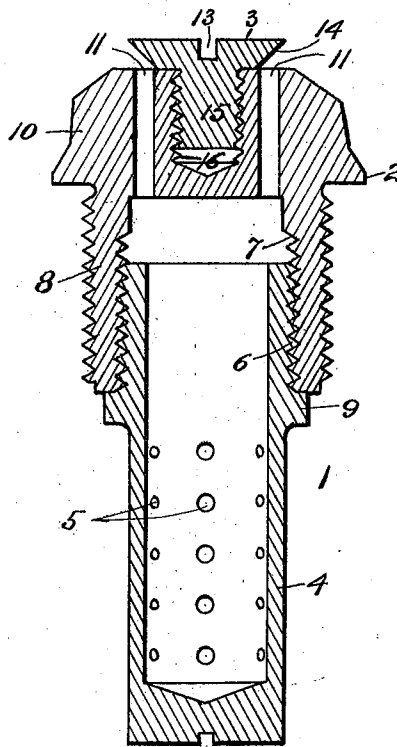


Fig. 1

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SPRAY-NOZZLE.

1,296,542.

Specification of Letters Patent.

Patented Mar. 4, 1919.

Application filed May 23, 1918. Serial No. 236,242.

To all whom it may concern:

Be it known that I, JAMES W. McCONNELL, a citizen of the United States, residing at Washington, District of Columbia, have
5 invented a new and useful Improvement in Spray-Nozzles, of which the following is a specification.

This invention relates to a spray nozzle, and while applicable for a variety of purposes, it is especially adapted for use in
10 spraying a liquid into the combustion or expansion chamber of a torpedo, and will be hereinafter described with relation to such application.

15 One of the objects of this invention is to provide an improved spray nozzle of such simple and practical form as to prevent clogging when in use thereby providing a more reliable and efficient device. Another
20 object is to provide a spray nozzle adapted to discharge a fine spray in the general shape of a cone, having relatively few parts, which may be readily manufactured, assembled, and kept clean.

25 Other objects will be in part obvious from the annexed drawings, and in part indicated in connection therewith by the following analysis of this invention.

This invention accordingly consists in the
30 features of construction, combination of parts and in the unique relations of the members and in the relative proportioning and disposition thereof; all as more completely outlined herein.

35 To enable others skilled in the art so fully to comprehend the underlying features thereof that they may embody the same by the numerous modifications in structure and relation contemplated by this invention, drawings depicting a preferred form have
40 been annexed as a part of this disclosure, and in such drawings, like characters of reference denote corresponding parts throughout all the views, of which:—

45 Figure 1 is a central longitudinal cross sectional view of the preferred form of my device, and Fig. 2 is an end view of the cap.

The spray nozzle comprises three main interfitting coacting parts, namely, a hollow
50 cylindrical body member 1, a cap 2 and a dispersing member 3.

The body member provides a strainer 4 in the form of a hollow cup, closed at its inner end and provided with openings or perfora-
55 tions 5 adapted to strain the liquid or fluid

passing through such openings into the interior of the hollow body member. The forward end of the strainer is threaded, as at 6, and engages internal threads 7 on a hollow rear annular portion 8 of the cap member 2. An annular flange 9 on member 1 abuts the adjacent end of the cap when the members are assembled. This cap 2 is externally threaded, as shown, to provide for attachment of the cap to any suitable support.
60 65

The forward part of the cap 2 is provided with a head member 10 in which are disposed diametrically opposite cylindrical passageways 11, forming ports. These ports
70 are arranged substantially parallel to the axis of the cap.

The dispersing member 3 is in the form of a screw, provided with a head having the usual kerf, or driving slot 13, and a conical under-surface 14, and has a threaded stem 15 which engages a threaded opening 16 in the head of cap 2. When screwed into this opening, the under-surface 14 of the screw head is disposed directly in front of the passages
80 11, thereby to provide a suitable dispersing means.

In operation, the liquid or fluid, forced through the nozzle under pressure, is first strained on passing through openings 5. It
85 then passes through passageways 11 as jets and strikes the conical under-surface 14 of the head of the screw, whereupon it is thrown out as a spray of substantially cone-shaped form.

It may thus be seen that my device provides a simple and practical structure, which may be readily assembled and disassembled, is readily kept clean and free of foreign matter, and is composed of relatively few
90 95 parts.

Without further analysis, the foregoing will so fully reveal the gist of this invention that others can by applying current knowledge readily adapt it for various applications without omitting certain features that, from the standpoint of the prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention, and therefore such adaptations should and
100 105 are intended to be comprehended within the meaning and range of equivalency of the following claims.

I claim as follows:

1. A spray nozzle for the combustion flask
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of torpedoes, comprising a head member, a flange formed integral with said head member and defining with said head member a chamber open at one end, said head member
5 being provided with a plurality of passages communicating with said chamber and having their longitudinal axes parallel to the longitudinal axis of the head member and disposed so that the points of their periph-
10 eries at the greatest radial distance from the center of the head member is tangent to the inner periphery of said chamber, and a dispersion member secured to said head member having dispersion surfaces projecting
15 above said passages.

2. A spray nozzle for the combustion flask of torpedoes, comprising a head member, a flange formed integral therewith and defining with said head member a chamber open

at one end, said head member being provided 20 with a plurality of passages communicating with said chamber and having their longitudinal axes parallel to the longitudinal axis of the head member, and disposed so that the points of their peripheries at the 25 greatest radial distance from the center of the head member is tangent to the inner periphery of said chamber, and a dispersion member having dispersion surfaces, secured in said head member and arranged directly 30 adjacent the discharge end of said passages whereby the air gap between the dispersion surfaces of said dispersion member and the discharge end of said passages is reduced to a minimum. 35

Signed at Washington, District of Columbia, this 16 day of May, 1918.

JAMES W. McCONNELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."