

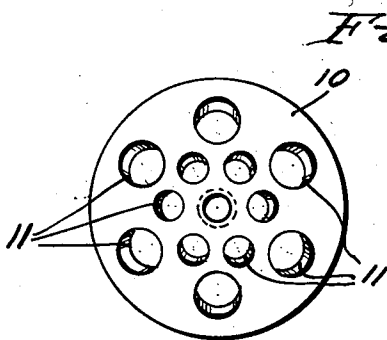
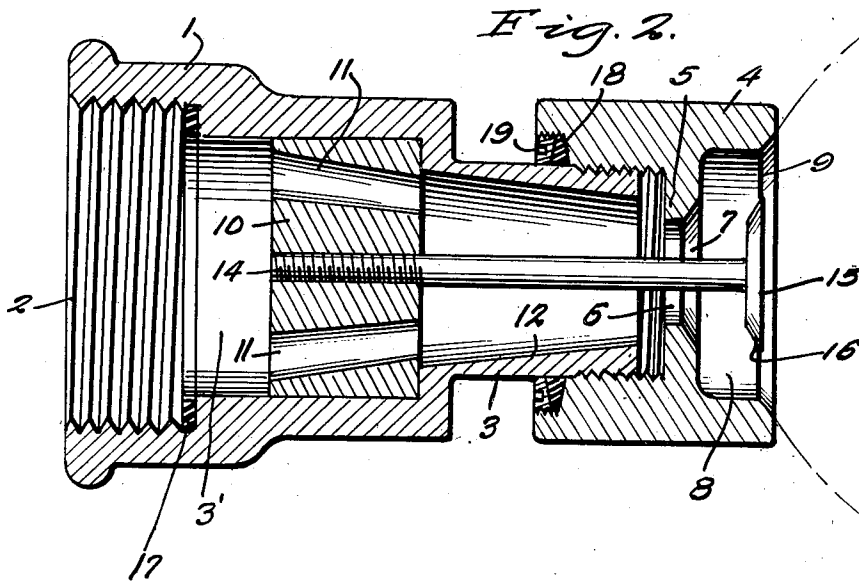
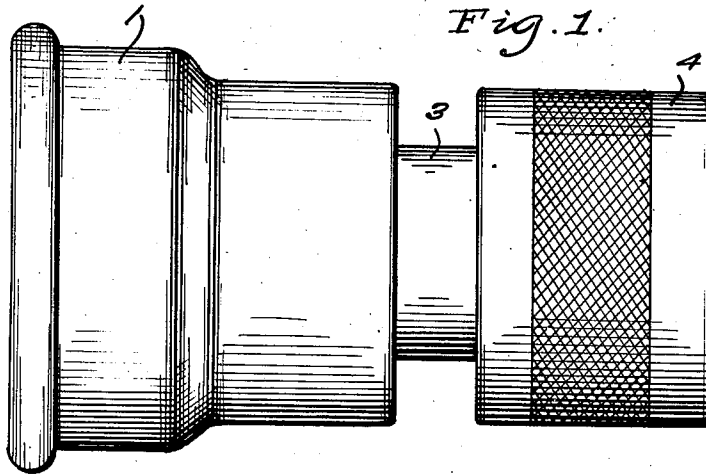
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H. D. GRAHAM

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HOSE NOZZLE

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## UNITED STATES PATENT OFFICE

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## HOSE NOZZLE

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1 Claim. (Cl. 299—131)

My invention relates to improvements in hose nozzles for use in quenching the flames of burning volatile liquids, such as oil.

The primary object of my invention is to provide a simply constructed, practical nozzle adapted to break up water, or liquid chemicals, passed therethrough under pressure, into such finely divided, atomized form as to cause the liquid to issue from the nozzle in the form of a mist, or fog, forming a cloud which, when settling on flaming liquids, will smother the flames without spreading the liquid and hence the fire.

Another object is to provide a nozzle of the character and for the purposes above set forth which will not clog or otherwise get out of order.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvements, will be readily understood when the succeeding descriptions and claim are read with reference to the drawing accompanying and forming part of this specification.

In said drawing:

Figure 1 is a view in side elevation of my improved nozzle in its preferred embodiment,

Figure 2 is a view in longitudinal section, and

Figure 3 is a view in rear elevation of the plug.

Referring to the drawing by numerals, my improved nozzle, as illustrated, comprises a tubular body 1 having an internally threaded rear end 2 for a coupling to a hose, or the like, not shown, and a reduced axial front end nipple 3.

Intermediate the end 2 and the nipple 3, the body 1 includes a cylindrical smooth bore 3' relatively larger in diameter than said nipple 3.

A cylindrical head 4 is threaded on to the front end of the nipple 3 and provided intermediate its ends with a transverse internal web 5 having an axial, circular discharge opening 6 therein smaller in diameter than the outside diameter of the nipple 3 and provided with a beveled outer edge forming an annular seat 7 for a purpose presently seen. The head 4, forwardly of the web 5 forms a circular, enlarged open front chamber 8 forwardly of the discharge opening 6 and the outer end of the head 5 is internally beveled around said chamber 8 to form a circular flaring mouth 9 in the head.

A circular plug 10 is fitted in the bore 3' and provided with two circular series of forwardly tapering round ducts 11, one series within the other, the ducts in each series converging relatively toward the discharge opening 6 and opening at front ends thereof into the rear end of a bore 12 in the nipple 3 which tapers forwardly

toward the discharge opening 6 in the same degree as the degree of convergence of the ducts 11. Preferably, the ducts 11 in the inner series are smaller than those in the outer series.

A rod 13 is threaded, as at 14, at its rear end, into the plug 10 axially thereof and extends axially through the nipple 3 and opening 6 into the chamber 8 with a disk-like spreader 15 fixed on its outer end in front of the seat 7 and having an edge 16 beveled in correspondence with the seat 7 and mouth 9 and dimensioned to fit in said seat.

The usual packing gasket 17 is provided in the end 2 of the body 1, and a suitable water sealing gasket 18 and gland nut 19 are provided in the rear end of the head 4.

The operation of my improved nozzle will now be explained. With the head 4 turned back on the nipple 3 to locate the spreader 15 in the chamber 8, liquid introduced into the end 2, under pressure, is separated by the ducts 11 into a plurality of small streams directed by said ducts and the bore 12 of the nipple 3 approximately through the discharge opening 6 and against the rear face of the spreader 15 to impact said spreader and become broken up into fine spray under such impact. The spray rebounds from said spreader against the wall of the chamber 8 to be subdivided into finer, atomized, mist form and deflected by the beveled edge 16 and beveled mouth 9 out of the head 4 in a cloud resembling a fog. The atomized particles are also deflected by the edge 16 outwardly against the wall of the chamber 8 and the mouth 9 and breaking up of the liquid into very fine particles thereby facilitated. By turning the head 4 in opposite directions on the nipple 3, the discharge openings 6 may be adjusted toward or from the spreader 15 to vary the density of the mist issuing from the mouth of the head 4, or, to close the head by seating the spreader in the seat 7 as will be clear.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claim.

What I claim is:

A hose nozzle comprising a tubular body having an internally threaded rear end for coupling to a hose and provided with a reduced front end nipple, a cylindrical head threaded onto said nipple and provided with an internal diametrical web intermediate its ends having an axial circu-

lar discharge aperture therein, said head including a circular open front chamber in its front end into which the discharge aperture opens, said head having a beveled internal front edge forming a flaring mouth for said chamber, a cylindrical plug fixed in said body in the rear of said nipple and provided with two inner and outer concentric circular series of forwardly tapered ducts converging relatively in each series forwardly to direct fluid passing therethrough at said nipple in separate streams at said discharge aperture, the apertures of the inner series being smaller in diameter than those in the outer series to provide for smaller streams issuing therefrom

than from the outer series to maintain the streams separate, and a disk-like baffle in said chamber in front of said aperture concentric to said aperture and chamber for baffling liquid issuing from said aperture, breaking up liquid impacting the same into finely divided form and deflecting the finely divided liquid against the wall of said chamber to be subdivided under impact against said wall into mist to issue out of said mouth in the form of a cloud, said nipple having a forwardly tapering bore coacting with said ducts to direct liquid issuing from said ducts at said discharge aperture.

HARRY D. GRAHAM.