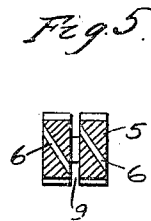
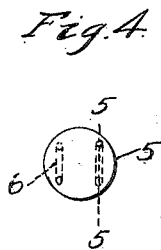
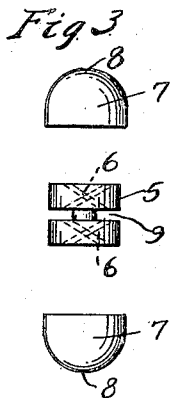
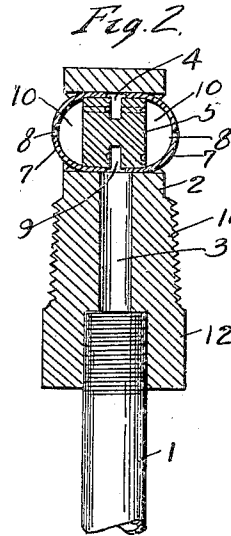
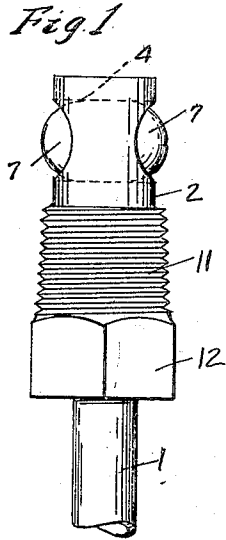


J. E. DESMOND.
 ATOMIZING NOZZLE.
 APPLICATION FILED JAN. 23, 1920.

1,377,756.

Patented May 10, 1921.



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JOHN E. DESMOND, OF DETROIT, MICHIGAN.

ATOMIZING-NOZZLE.

1,377,756.

Specification of Letters Patent.

Patented May 10, 1921.

Application filed January 23, 1920. Serial No. 353,402.

To all whom it may concern:

Be it known that I, JOHN E. DESMOND, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Atomizing-Nozzle, of which the following is a specification.

This invention relates to nozzles for atomizing liquids, and particularly for such liquids as are used for fuel in internal combustion engines.

The invention has for its object the provision of a simple and efficient nozzle for discharging hydrocarbon liquids under pressure by which the liquid in its delivery from the nozzle will be reduced to a finely divided state and diffused into the air in the form of a gaseous combustible vapor. The device is especially adapted for connection with a fluid pressure conduit and to be extended into the intake manifold of an internal combustion engine for producing and delivering thereto an explosive mixture to serve as an initial or priming charge on which to start the engine.

This object is accomplished by the construction of which a preferred embodiment is hereinafter specifically described, and is illustrated in the accompanying drawings, wherein,

Figure 1 is a view in side elevation of the improved nozzle.

Fig. 2 is an axial sectional view of the same.

Fig. 3 is a disassembled view of a pair of cap members through which the liquid is adapted to oppositely discharge, and an intermediate member having passages through which the liquid is oppositely delivered to said caps.

Fig. 4 is a side view of said intermediate member.

Fig. 5 is a sectional view of the same, the section being taken on line 5—5 of Fig. 4.

Referring now more particularly to the parts of the nozzle, the reference character 1 designates a discharge pipe which may conduct any fluid but is primarily intended by applicant to supply liquid fuel under pressure to the nozzle. This latter comprises primarily a fitting 2 with which the pipe 1 has screw-threaded engagement, said fitting having the passage 3 formed centrally therein, into one end of which the pipe 1 discharges. Said fitting is formed, adjacent its other end, with a relatively

large transverse bore 4 to which the passage 3 is extended, and within said bore there is located a central member 5 formed with passages 6 for deflecting the liquid laterally, and a pair of substantially semispherical caps 7 arranged one at each side of the member 5 and formed with central discharge openings 8. The member 5 is formed, midway of its ends, with an annular groove 9, and from said groove two of the passages 6 are extended to each end of said member, said passages being formed at opposite sides of the axis of said member and being oppositely inclined. Thus the liquid entering the groove 9 passes oppositely through the member 5 by way of the passages 6 and in entering the chambers 10, formed between the member 5 and the caps 7, the liquid acquires a whirling motion due to its flow through the oppositely inclined passages 6. In discharging from the two chambers 10 through the openings 8 of the caps 7, the liquid, because of its whirling tendency, is broken up into fine particles such as will unite with the air to produce a highly explosive mixture. It is preferred to proportion the cap members 7 to snugly embrace the end portion of the member 5, and to project respectively from the end of the bore 4. Thus the proper position of the member 5, centrally within said bore, may be maintained by said cap members, and the latter may be permanently secured in place by soldering or brazing, or in any other suitable manner.

Preferably the fitting 5 has an exteriorly screw-threaded portion 11 for engagement with a manifold or other member wherein the nozzle discharges, and is further provided with a polygonal portion 12 for engagement by a wrench or other tool.

What I claim is:

1. An atomizing nozzle comprising a fitting having a passage therein engageable at one end by a liquid delivery pipe and formed with a bore transversely intersecting said passage, caps closing the ends of said bore and respectively having central discharge openings, and a cylindrical member intermediate said caps having an annular groove intermediate its ends communicating with said passage and formed with two oppositely inclined passages extending from said groove to each end of the cylindrical member, through which the liquid passes to said caps, a whirling motion being imparted

to the liquid through the opposite inclination of said passages.

2. An atomizing nozzle comprising a fitting having an opening therethrough, a cylindrical member centrally located in said opening and formed with an annular channel, and having eccentric inclined passages extending from said groove to each end of said member, and substantially semi-spherical caps closing the ends of said opening and embracing the ends of said cylindrical mem-

ber and formed with central discharge openings, the discharging liquid being subjected to a whirling motion intermediate said cylindrical member and caps, due to the inclination of said passages and consequently being highly subdivided in discharging through said openings of the caps. 15

In testimony whereof I sign this specification.

JOHN E. DESMOND.