April 26, 1938. W. T. EMERY 2,115,442

SPRAY NOZZLE

Filed Oct. 28, 1937

Fig. 1.

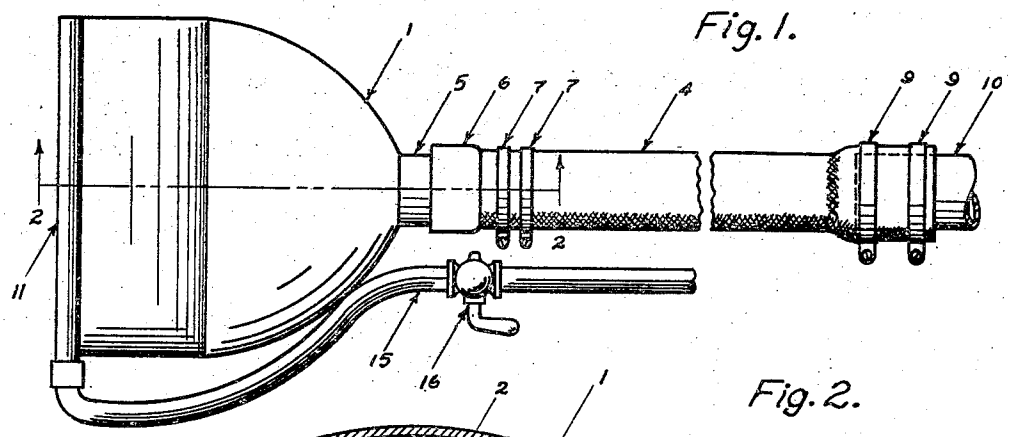


Fig. 2.

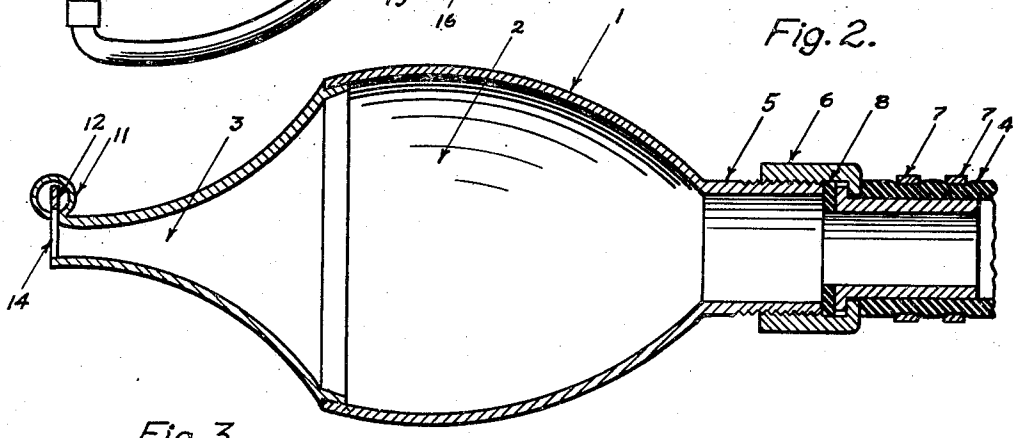


Fig. 3.

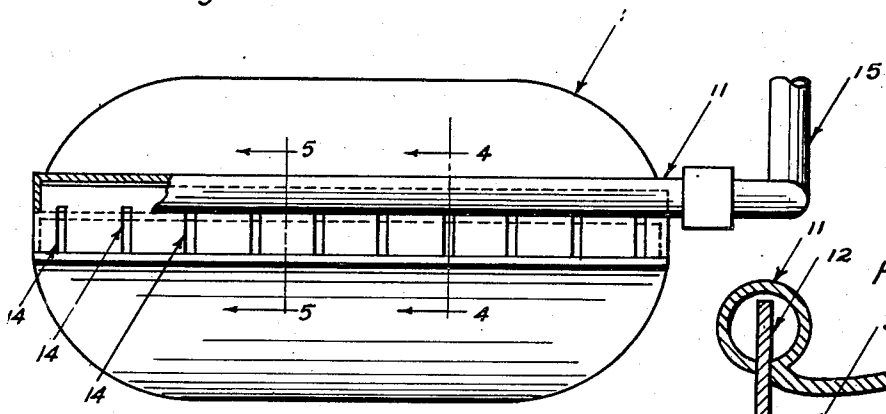


Fig. 4.

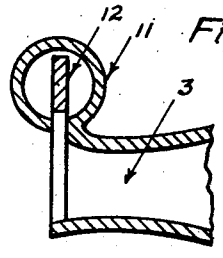


Fig. 5.

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2,115,442

UNITED STATES PATENT OFFICE

2,115,442

SPRAY NOZZLE

Walter T. Emery, Manhattan, Kans.; dedicated to the free use of the People of the United States

Application October 28, 1937, Serial No. 171,515

2 Claims. (Cl. 299—140)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This application is made under the act of March 3, 1883, as amended by the act of April 30, 1928, and the invention herein described and claimed, if patented, may be manufactured and used by or for the Government of the United States for governmental purposes without the payment to me of any royalty thereon.

I hereby dedicate the invention herein described to the free use of the People of the United States of America to take effect on the granting of a patent to me.

This invention relates to spray nozzles and is more particularly concerned with a spray nozzle adapted to utilize the exhaust gases of petroleum engines to spread a liquid insecticide into a mist or spray.

An object of this invention is to provide an article for the use of anyone possessing an automobile, truck, tractor, or other machine, having a power plant of the types mentioned, to combat injurious insects simply by attaching this article to the exhaust of the power plant and to reservoir of a spray solution.

The following specification, taken in consideration with the accompanying drawing, will fully disclose this invention, and other objects and advantages thereof will be apparent.

In the drawing:

Figure 1 is a plan view of this invention.

Figure 2 is a cross-sectional view of Figure 1 along the line 2—2.

Figure 3 is an end elevational view.

Figure 4 is a fragmentary cross-sectional view of Figure 3 along the line 4—4.

Figure 5 is a fragmentary cross-sectional view of Figure 3 along the line 5—5.

Referring with more particularity to the drawing in which like parts are designated by like numerals, the numeral 1 designates the main body portion having an expansion chamber 2 communicating with a recompression chamber 3, substantially as shown. A flexible hose is secured to the screw-threaded nipple 5 by means of the screw-threaded cap 6. The bands 7 and the washer 8 are employed to provide a tight seal for the hose connection. The other end of said hose 4 is adapted, by means of the bands 9, for attachment to the exhaust pipe 10 of an engine.

Integral with said recompression chamber is a tube 11 having an internal grid member 12 disposed longitudinally through said pipe and extending exteriorly therefrom to form a wall for the narrowed end of said recompression chamber. A plurality of slotted sections 14 are provided at intervals along said grid member. Each of these slotted sections extend a short distance into the interior of said tube 11, substantially as shown. One end of said tube 11 is closed, while the othter end is connected to a pipe 15 adapted to conduct a fluid spray. Said pipe 15 is provided with a valve 16 for regulating the flow of said fluid.

The operation of this invention is as follows: The hose member 4 is attached to the exhaust pipe of an engine and the pipe 15 is attached to a spray fluid reservoir. As the exhaust gases from the engine pass into the expansion chamber 2 and then continue to flow into the recompression chamber 3, they spread and produce a uniform pressure on the slots 14. The spray fluid is conducted to the grid slots through the pipe line 15 by any convenient method, such as gravity flow, forced feed, etc. The suggestion is made that the exhaust gases from the engine can be passed through an enclosed barrel or tank containing the fluid spray, thereby maintaining a constant delivery pressure.

The operation of this invention has the effect of spreading the spray fluid into a thin film preparatory to being blown out as a spray or mist.

Having thus described my invention, I claim:

1. In a spray nozzle, an expansion chamber communicating with the exhaust gases of a petroleum engine, a recompression chamber communicating with said expansion chamber, a slotted grid section disposed as a wall of said recompression chamber, and a spray fluid delivery tube, said grid section extending into the interior of said tube.

2. An article of manufacture comprising a flexible hose, one end of which is adapted to be attached to the exhaust pipe of a petroleum engine, an expansion chamber attached to the other end of said flexible hose, a recompression chamber attached to said expansion chamber, a slotted grid section forming an outlet end wall for said recompression chamber, and a fluid spray delivery tube integral with said grid section and communicable with the slots thereof.

WALTER T. EMERY.