May 31, 1927. 1,630,974

O. W. SHELOR ET AL

SPRAY NOZZLE

Filed July 23, 1925

Fig. 1.

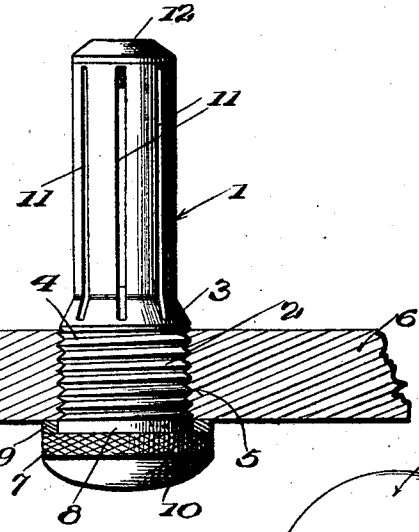


Fig. 3.

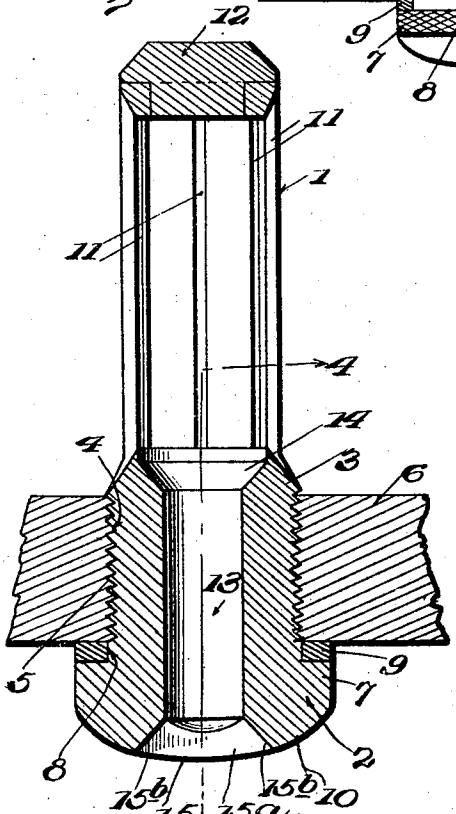


Fig. 2.

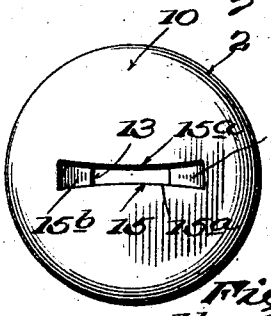
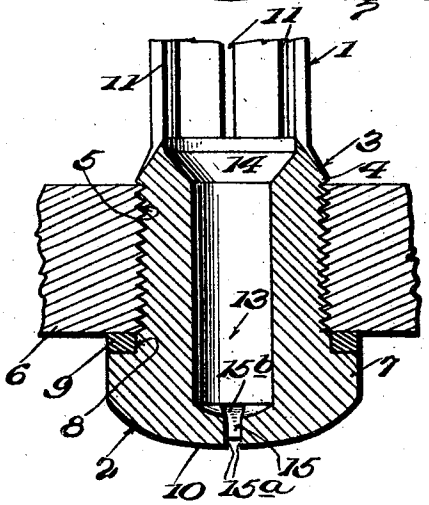


Fig. 4.



WITNESSES

W. A. Williams.

W. F. Buckley.

INVENTOR

O. W. Shelor.

E. G. Butts

BY Munn & Co

ATTORNEYS

Patented May 31, 1927. 1,630,974

UNITED STATES PATENT OFFICE.

OLIE WARREN SHELOR AND EDWARD G. BUTTS, OF SALEM, VIRGINIA.

SPRAY NOZZLE.

Application filed July 23, 1925. Serial No. 45,662.

This invention aims to provide a spray nozzle or distributing jet especially designed and adapted for use in applying viscous liquids, such as tar or tarry oils to roadways.

The object of the invention resides in the provision of a nozzle of this character which will thoroughly and evenly distribute the viscous liquid, such as the oil or the tar without choking or clogging.

Another object is to provide a spray nozzle having these advantages and capacities and which is of simple and durable construction, reliable and efficient in operation and easy and comparatively inexpensive to manufacture.

Other objects and advantages reside in certain novel features of the construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claim, reference being had to the accompanying drawings forming part of this specification and in which:

Figure 1 is a view showing the spray nozzle in elevation, associated parts being shown in section,

Figure 2 is a bottom plan view of the spray nozzle,

Figure 3 is a view showing the spray nozzle and associated parts in section, and

Figure 4 is a fragmentary view in section on line 4—4 of Fig. 3.

Referring to the drawings it will be seen that the distributor constituting the present invention comprises an elongated tubular body 1 at the lower end of which a hollow head designated generally at 2 is integrally formed. The body 1 and head 2 are preferably of cylindrical form, the body being somewhat smaller than the head and merging thereinto as at 3.

The head 2 is externally threaded as at 4 so as to be engageable with internal threads 5 in the wall of the opening of the member 6 of the road machine on which it is mounted. In order that the connection between the jet and the member 6 may be effectively packed the head is formed with a flange 7 and a smooth peripheral portion 8 adjacent the flange. A gasket 9 is mounted on the smooth portion 8 and is compressed between the flange 7 and the member 6. The periphery of the flange 7 is knurled to facilitate application and removal of the jet. Below the flange the head is rounded as at 10.

The elongated tubular body 1 is provided with a plurality of longitudinally extending parallel inlet slots 11 located at equal angular intervals about the body and extending for the entire length thereof. The upper end of the body 1 is closed by a plug 12. The lower end of the interior of the tubular body 1 communicates with an axial discharge passage 13 in the head 2 through a frustro-conical intermediate passage 14 provided at the juncture of the head and body. The discharge passage 13 is of cylindrical form and at its lower end communicates with a discharge opening or jet designated generally at 15. The discharge opening 15 is defined by curved side walls 15^a which approach each other at the center of the opening while diverging at their ends and by diverging or flaring end walls 15^b.

The viscous liquid such as oil or tar passes into the interior of the tubular body portion 1 through the slots 11, then flows into the discharge passage 13 and finally issues through the discharge opening 15. The slots 11 provide for the proper feed of fluent tar or oil and the passage 13 and the specially designed discharge opening 15 thoroughly and uniformly spread the discharge. Proper application of the tar or oil is insured and along with this advantage it has been found that the jet or spray nozzle will not clog or choke even over a long period of use.

Because the inlet slots 11 provided in the elongated tubular body 1 are narrower than the most restricted portion of the discharge opening 15 it is impossible for any foreign substance or solid or semisolid particles that might be in the viscous liquid or tarry oil to get into the tubular body 1 that cannot and will not be immediately expelled through the large discharge opening 15. But while the slots 11 are narrower they are long (especially in proportion to the discharge opening 15) and therefore the total area of any one inlet slot is equal to or greater than the total area of the discharge opening 15. Moreover there are a relatively large number of inlet slots 11 and consequently even though the entire lower portion of each of the slots 11 be clogged the nozzle will nevertheless function perfectly since the inlet area of the upper por-

tions of the slots 11 is ample to feed viscous liquid to the discharge opening 15 to the limit of the discharge openings capacity.

We claim:

A spray nozzle for applying viscous fluids, particularly for applying the same to roadways, comprising an elongated tubular body closed at its inner end and provided with a plurality of slots extending the entire length of the body, and an integral and flanged head at the outer end of the body, said head being externally screw threaded inward of its flange and provided with a passage of less cross sectional area than that of the tubular body, said passage terminating at its inner end in a frusto-conical opening communicating with said tubular body and at its outer end in a discharge opening flaring outwardly in a single plane.

OLIE WARREN SHELOR.
EDWARD G. BUTTS.