June 4, 1957 W. E. MICHAELS 2,794,683

SPRAYING NOZZLE

Filed June 15, 1954

Fig. 1

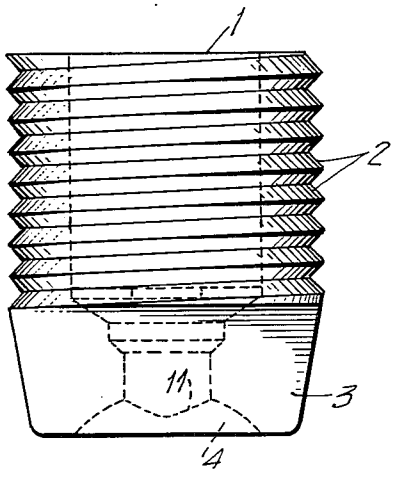
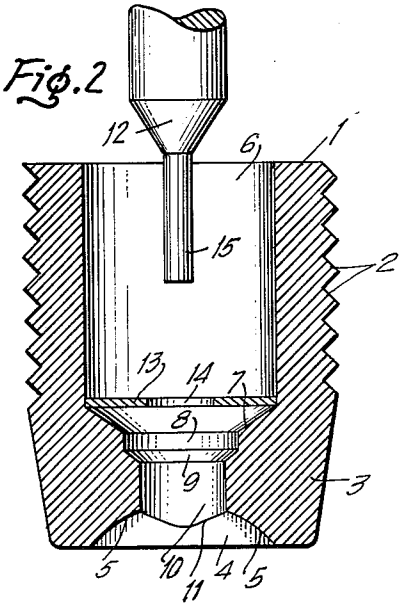


Fig. 2



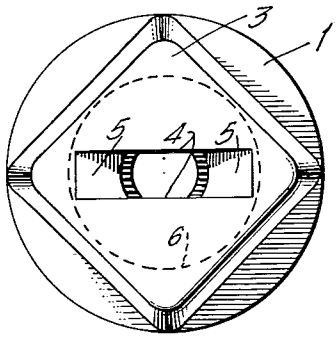


Fig. 3

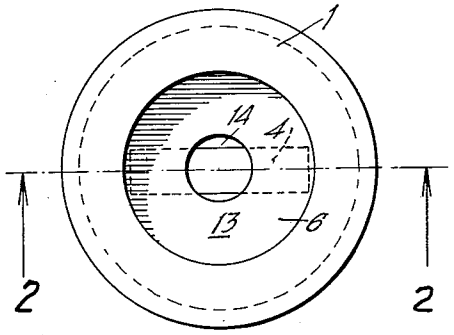


Fig. 4

Inventor
Walter E. Michaels
by Cushman & Smith
His Attorneys

United States Patent Office

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SPRAYING NOZZLE

Walter E. Michaels, Bethlehem Center, N. Y., assignor to Industrial Molasses Corporation, Leonia, N. J., a corporation of New Jersey

Application June 15, 1954, Serial No. 436,806

1 Claim. (Cl. 299—149)

My invention relates to nozzles particularly adapted for spraying more or less viscous liquids, such as molasses, which is frequently sprayed on cattle feed.

So far as I have been able to discover, there is no nozzle presently available which functions satisfactorily in spraying molasses. Therefore, the principal object of my invention is to provide a simple, easily fabricated nozzle which will satisfactorily spray molasses on cattle feed. Another object is to provide a device of this character which can readily be formed almost entirely by simple drilling operations from a standard plug. Since lumps are frequently found in molasses, a further object is to provide a nozzle equipped with a needle shutoff valve which will function to force out of the nozzle any lumps or foreign matter which might otherwise obstruct the same.

I accomplish these objects by the means and in the manner described below and illustrated in the accompanying drawing in which—

Fig. 1 is an outside elevation view of my nozzle;

Fig. 2 is a vertical section through the axis of Fig. 1;

Fig. 3 is a bottom view of the nozzle; and

Fig. 4 is a top view.

As illustrated, my nozzle may be formed from a standard plug **1** having the usual threaded portion **2** and the square head **3**, to which a wrench may be applied for attaching and detaching the nozzle from the tubes or pipes conveying the molasses thereto.

In forming the nozzle, a slot **4** having a cylindrical bottom **5** may be machined in the end of the head. A cylindrical passage **6** is then drilled in the other end of the plug to a depth approximating the length of the threaded portion of the plug. The conical end of the drill will then form a frusto-conical portion **7** of the passage extending partially into the head **3**. A second cylindrical portion **8** of the passage is drilled with a drill of somewhat smaller diameter than that used in drilling the portion **6** and the conical portion **9** of the passage. A third cylindrical portion **10** is then drilled with a still smaller drill until it intersects the sides of the slot **4**, as shown by the line **11**.

It will thus be apparent that the passage through the plug comprises a plurality of cylindrical sections which are axially spaced by frusto-conical portions.

In order to form a seat for a needle valve **12** which serves to shut off the nozzle, a washer **13** having an opening **14** therein of much smaller diameter than the cylindrical portion **6** and approximating the diameter, or even slightly less than that of the smallest cylindrical portion **10** of the passage, is press-fitted in the bottom of the cylindrical portion **6**. The needle valve **12** is provided with an elongated portion **15** which will pass freely through the opening **14** in the washer and force out the end of the nozzle any obstructions which may become lodged therein.

While I have described my invention in its preferred embodiment, it is to be understood that the words which I have used are words of description rather than of limitation and that changes, within the purview of the appended claim, may be made without departing from the true scope and spirit of my invention in its broader aspects.

What I claim is:

A nozzle adapted for spraying molasses or the like; said nozzle comprising an externally threaded plug having a discharge passage extending axially therethrough and comprising a first cylindrical portion of substantial diameter forming the entrance to said passage and the major portion of the length thereof; a comparatively short, second, cylindrical portion of smaller diameter than said first portion, and a frusto-conical portion connecting said first and second portions; a third cylindrical portion of smaller diameter than said second portion and a frusto-conical portion connecting said second and third portions; said cylindrical and frusto-conical portions having a common axis whereby said portions of said passage may be formed with standard drills; said passage at the discharge end having oppositely disposed plane portions, and oppositely disposed cylindrical portions having a common axis disposed at right angles to the common axis of said frusto-conical and the other cylindrical portions of said passage; and a disk having a central opening therein of smaller diameter than any of said cylindrical portions tightly fitted in said passage at the inner end of said first cylindrical portion forming the seat for a needle shutoff valve of a length in excess of the distance between said seat and the discharge end of said passage.

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