J. C. HULL.

SPRAYING NOZZLE.

APPLICATION FILED JUNE 12, 1907.

915,180. Patented Mar. 16, 1909.

Fig. 1.

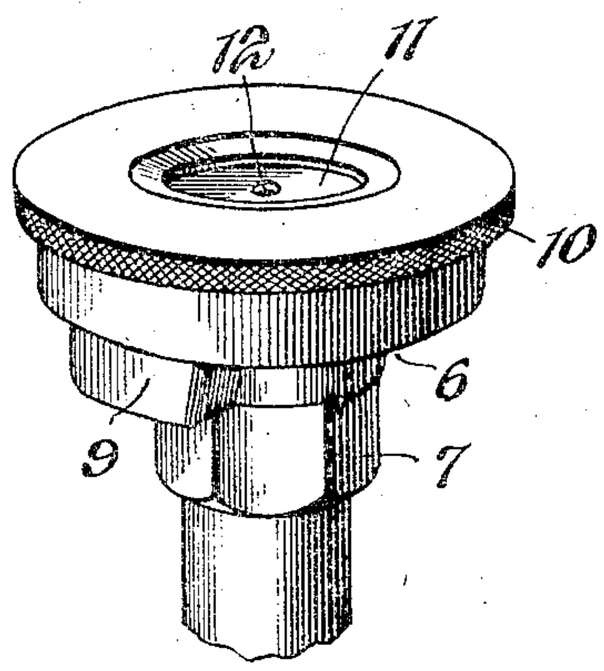


Fig. 2.

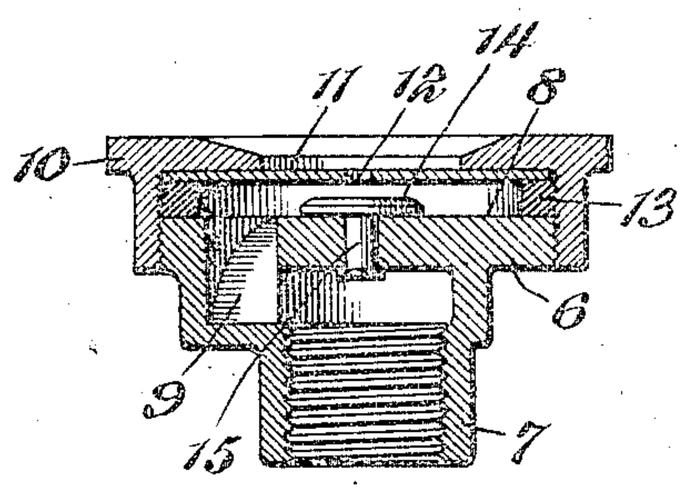


Fig. 3.

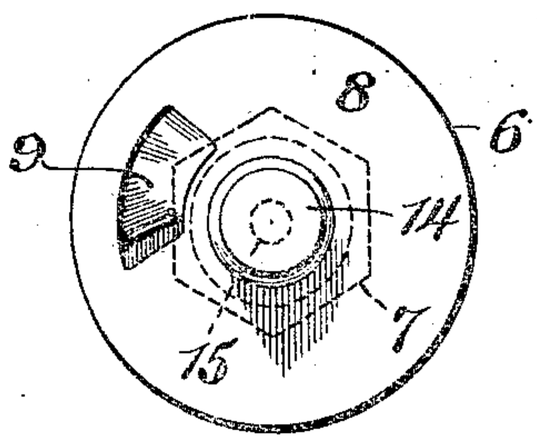


Fig. 4.

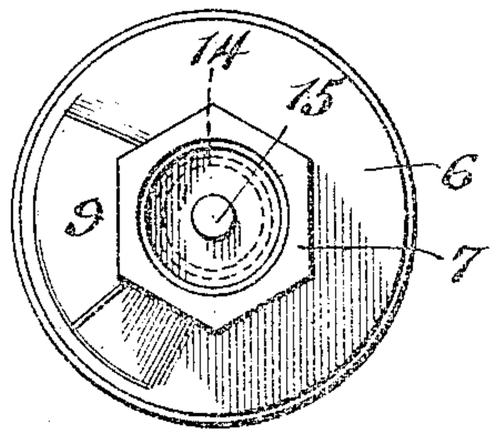
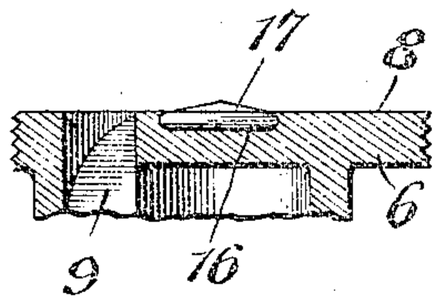


Fig. 5



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Witnesses
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UNITED STATES PATENT OFFICE.

JOHN C. HULL, OF GASPORT, NEW YORK.

SPRAYING-NOZZLE.

No. 915,180. Specification of Letters Patent. Patented March 16, 1909.

Application filed June 12, 1907. Serial No. 378,568.

To all whom it may concern:

Be it known that I, JOHN C. HULL, a citizen of the United States, residing at Gasport, in the county of Niagara and State of New York, have invented a new and useful Spraying-Nozzle, of which the following is a specification.

In spraying nozzles of the type disclosed in Patent, No. 848,995, granted to A. B. Hull on April 12, 1907 and in the patent of John C. Hull, dated July 2, 1907, experience has demonstrated that with certain classes of heavy insecticides, the whirling body of liquid in the chamber prior to its escape will grind an opening downwardly through said body into the channel, thus quickly destroying the usefulness of the nozzle.

The primary object of the present invention is to provide means which will prevent this grinding action, and at the same time will greatly improve the structure by producing a much finer spray under less pressure.

Two embodiments of the invention are disclosed in the accompanying drawings, wherein:—

Figure 1 is a perspective view of the nozzle. Fig. 2 is a vertical sectional view therethrough. Fig. 3 is a plan view of the nozzle. Fig. 4 is a bottom plan view of the same. Fig. 5 is a detail sectional view through a modified form of construction.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment illustrated, a body 6 of soft material, such as brass, or the like is employed, and has a central rearwardly projecting boss 7 and a flat front face 8. A tortuous channel 9 is formed in the body and opens through the flat front face at one side of its center, the discharge portion of said channel being disposed obliquely to said front face. A cap, comprising a flanged ring 10, is threaded upon the periphery of the body, and has inclosed therein, a disk 11 of steel or other hard material. This disk has a central orifice 12. A packing washer 13 is interposed between the margin of the disk and the margin of the front face 8, said washer being located outside the discharge mouth of the channel 9. This washer thus serves to space the disk from the flat front face 8, and provides an inclosed chamber, with which the tortuous channel 9 and discharge orifice 12 communicate. A plug is employed that has a central boss 14 located on the flat front face 8 in line with the orifice 12, but spaced from the disk 11. This boss 14 is preferably of steel or hard metal, and may be secured in place in a variety of ways. Thus in the embodiment disclosed in Figs. 2, 3 and 4, it has a shank 15, which passes through a central opening formed in the front wall 8, said shank being upset to maintain the boss in position. A socket 16, may however, be formed in the front face and the boss 17 seated therein. Moreover said boss may be of different shapes, for instance it may have a flat outer face, as shown in Fig. 2, or it may be in the form of a cone, as illustrated in Fig. 5. It will thus be evident that the whirling body of insecticide in the inclosed chamber caused by the forward and obliquely disposed stream delivered by the channel, is reduced at its vortex between two hard walls, which it cannot materially wear. Thus the defects noted in the preliminary portion of the specification are eliminated, but experience has also demonstrated that with this particular arrangement, a much finer and more widely diffused spray is produced with a less pressure than with the ordinary well known type to which reference has already been made. The boss therefore performs a double function in the particular relation described, and in the form shown in Figs. 2, 3 and 4, the rear end of the shank is exposed so that the plug can be driven out by a tool inserted through the rear end of the channel.

From the foregoing, it is thought that the construction, operation, and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. A spraying nozzle comprising a body having a fluid conducting channel therethrough, the discharge portion of which opens through the front end of the body obliquely to its front face and at one side of its center, a cap secured to the body and having an inflexible front wall that covers the front end of said body and is spaced therefrom, form-

ing an inclosed chamber in which the liquid delivered by the channel is given a rotary movement, said front wall having a central discharge orifice in line with the center of the body, and a boss of harder material than the body secured thereto and projecting centrally from and beyond the front face of the body, terminating short of the front wall and being disposed in rear of the discharge orifice, said boss thus contracting the chamber at the discharge orifice and constituting means for preventing the wear of the center of the body by the rotating fluid.

2. A spraying nozzle, comprising a body having a tortuous channel, the inlet end of which opens through the rear side of the body, the discharge end opening through the front end of the body at one side of the center, a boss located centrally on the front side and having a stem extending through the body into the inlet end of the channel, and a cap located over the front side of the body in spaced relation to the boss and having a central opening in line therewith.

3. A spraying nozzle comprising a single piece body having a substantially flat front face and a substantially central rearwardly projecting boss that is threaded to receive a conduit, said body having a channel extending through the boss and having its discharge portion opening through the flat front face of the body at one side of its center and obliquely to said face, a hooded cap threaded on the front end of the body and having a detachable front wall or disk provided with a discharge orifice, a packing washer located in the cap and interposed between said front wall or disk and the front face of the body, the washer surrounding the discharge end of the channel and the discharge orifice and forming a chamber between the front wall or disk and the front face of the body, and a tapered head or boss of harder material than the body secured to and projecting beyond the front face of said body, said boss terminating short of the front wall or disk, thereby contracting the central portion of the chamber at the discharge orifice and constituting means for preventing the wear of the body in rear of said orifice.

4. A spraying nozzle comprising a body having a channel, the inlet end of which opens through the rear side of the body, the discharge end opening through the front face of the body at one side of its center and disposed obliquely to said face, a cap located over the front face of the body in spaced relation to the front face and having a central opening in line therewith, said body also having a central opening in line with the cap opening and communicating with the inlet end of the channel, and a plug having a shank passing through and closing said central opening and having the front end exposed at the front face of the body.

5. A spraying nozzle comprising a body having a fluid conducting channel therethrough, the discharge portion of which opens through the front end of the body and obliquely to its front face and at one side of its center, a cap secured to the body over said front face and having an inflexible front wall spaced from the face, forming an inclosed chamber in which the liquid delivered by the channel is given a rotary movement due to the oblique disposition of said channel, said front wall having a central discharge orifice in line with the center of the body, and a boss of harder material than the body secured thereto and projecting centrally from and beyond the front face of the body, terminating short of the front wall and being disposed in rear of the front orifice, said boss tapering toward the orifice and contracting the central portion of the chamber, at the same time constituting means for preventing the wear of the center of the body by the rotating fluid.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN C. HULL.

Witnesses:
CHARLES RICE,
J. B. WICKS.