

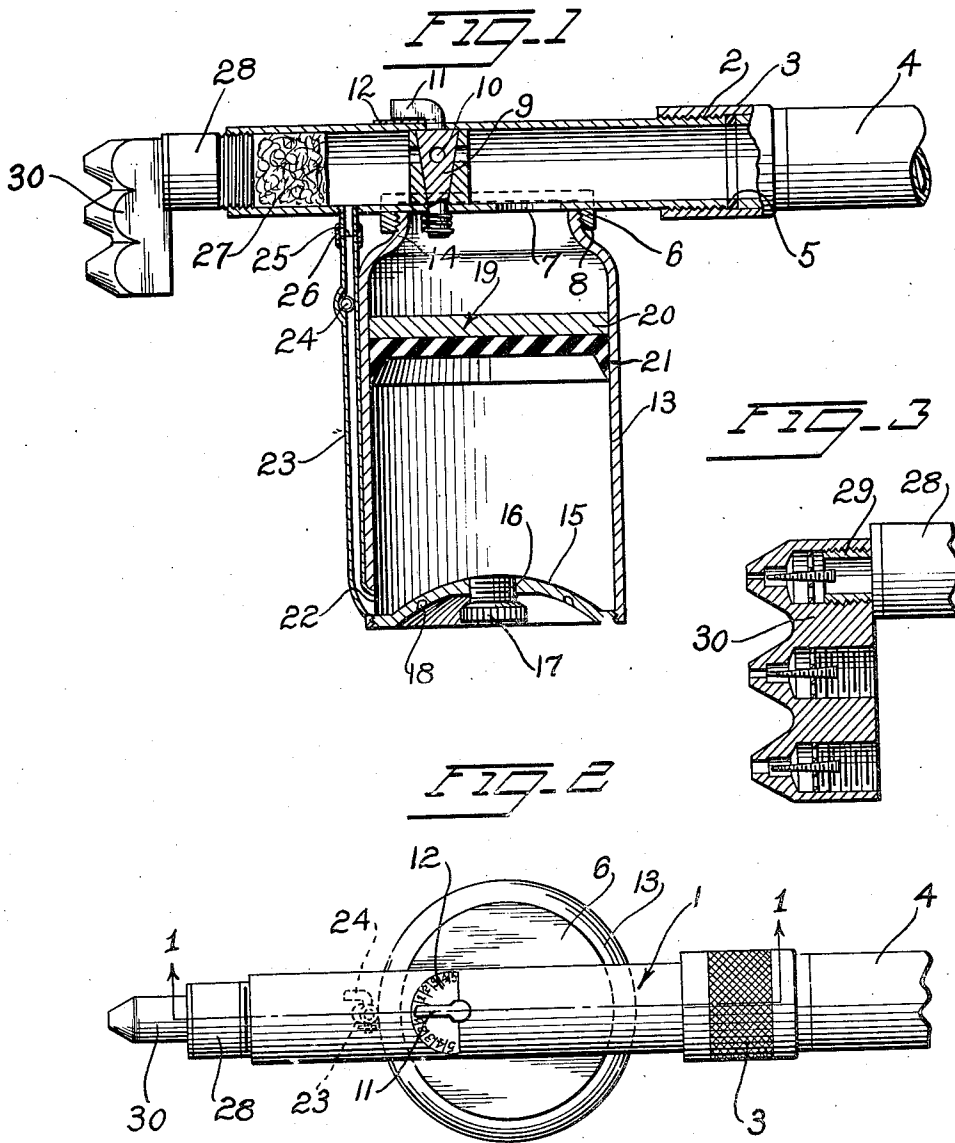
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SPRAY GUN

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SPRAY GUN

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1 Claim. (Cl. 299—85)

This invention relates to an improved spray gun and has for one of its objects to provide a device of this character which may be used effectively for killing insects on plants, trees and the like.

A further object of the invention is to provide a spray gun which will be operated by water pressure from a hose, which pressure will force both water and a spraying solution through the nozzle employed.

A further object of the invention is to provide a spray gun employing means for varying the amount of water in the mixture of water and spraying solution to be forced through the nozzle.

A still further object of the invention is to provide a spray gun wherein water pressure will serve a two-fold purpose, i. e., that of forcing the spraying solution from the container employed and that of mixing water with said spraying solution, inwardly of the nozzle, for regulating the strength of said solution.

And still another object of the invention is to provide a gun of the type set forth wherein the barrel employed has positioned therein a mixing element which will be effective for assuring thorough mixing of water and spraying solution preliminary to the spraying thereof from the nozzle.

Other objects of the invention, not specifically mentioned hereinbefore, will become apparent during the course of the following description.

In the drawing:

Figure 1 is a longitudinal sectional view of my improved spray gun on the line 1—1 of Figure 2,

Figure 2 is a top plan view of the device,

Figure 3 is an enlarged vertical sectional view showing the triple nozzle employed.

Referring now more particularly to the accompanying drawing, in which similar reference numerals designate similar parts throughout the various views, the numeral 1 indicates the barrel of my gun. The barrel 1 is formed with a threaded inner end portion 2 on which is adapted to be mounted a hose coupling 3, for connecting a hose 4, of conventional construction, said hose leading to a source of water under pressure. A gasket 5 is mounted in the coupling and serves to prevent leakage from between the meeting ends of the barrel 1 and the hose 4.

The barrel 1 has mounted thereon a cap 6, said barrel extending diametrically of said cap and having an opening 7 which is disposed within the area of said cap. It should be understood that the cap 6 may be welded, soldered, or otherwise suitably secured to the barrel. The cap 6 is internally threaded, as shown at 8.

Mounted in the barrel 1 is a plug valve 9, said plug valve being located so that its lower end extends diametrically through the barrel within the area of the cap 6. The valve 9 includes a port 10 and a lever 11, said lever extending laterally above the pipe to cooperate with a scale plate 12, said scale plate being mounted on the top of said barrel 1. The scale plate is marked off, preferably, to indicate ratios so that it will be possible for an operator to learn, by referring to the scale, the ratio between water and spraying compound at the nozzle. In other words, it will be possible for the operator to regulate the amount of water to be mixed with spraying compound in accordance with predetermined ratios.

The spraying compound or solution is to be carried in a container 13 which is preferably formed of transparent material and is provided with a slightly constricted threaded neck 14, said neck to be screwed into the cap 6. The container 13 has a removable concave bottom 15 which is formed with a filler opening 16, said opening normally being closed by a filler plug 17. Spanner openings 18 are formed in the bottom 15 for permitting engagement with a spanner wrench when it is desired to remove the bottom to permit removal of the piston presently to be described.

Slidably mounted within the container 13 is a piston 19 which includes upper and lower sections 20 and 21. The upper section is formed of lead or other suitable heavy metal while the lower section is formed of rubber and is in the shape of an inverted cup washer. It should be understood that, while the piston is slidably mounted in the cylinder, said piston is engaged in said cylinder with sufficient tightness to prevent escape of water about its edges.

There is formed in the lower end of the side wall of the container a discharge opening 22, and extending between said discharge opening and the forward end of the barrel 1 is a discharge pipe 23. In the discharge pipe, near its upper end, is a valve 24 which may be adjusted for regulating flow of liquid through the pipe 23. Near the upper end, the pipe 23 is broken, as shown at 25, and the end portions are connected by means of a coupling 26. The purpose of breaking the pipes 23 and 25 and employing the coupling 26 is to permit separation of the ends of the pipe 23 when it is desired to remove the container 13 from the cap 6.

Positioned near the forward end of the barrel 1 is a mixing element 27 which is preferably in the form of a wad or mass of non-rusting metal.

It has been found that brass wool serves the pur-

pose effectively. The purpose of the mixing element will be set forth hereinafter.

The forward end of the barrel 1 is internally threaded to receive the nozzle coupling 28, said nozzle coupling, as shown in Figure 3, being formed with a reduced threaded nipple 29. The nipple 29 is adapted to have screwed thereon one of the nozzles of a triple nozzle unit 30. It should be understood that the unit 30 is shown by way of example only and that single nozzles may be substituted if desired. The use of the triple nozzle unit 30 assures maximum versatility for the spray gun, as by substituting nozzle units, streams of various sizes may be sprayed.

While the operation of the invention will probably be understood from the foregoing, it is thought that a brief description thereof is desirable.

After the hose 4 has been connected to the barrel 1, and spraying compound has been placed within the container 13, below the piston 19, the device is ready for use. In this connection, however, it should be understood that the container may be positioned on a flat surface, for example, the ground, and the nozzle 30 and nozzle coupling 28 connected to the forward end of the barrel 1 by means of a flexible pipe or tube of any suitable length. Water under pressure is turned into the pipe 4 and will pass therefrom into the barrel 1. The flow of water will pass through the opening 7 and flow against the section 20 of the piston 19, for forcing said piston downwardly whereby the spraying compound will be forced through the opening 22 and upwardly through the pipe 23 into the forward end portion of the barrel 1, forwardly of the valve 9, it being presumed that the valve 24 is in open position. The valve 9 is adjusted for permitting flow of water from the rear end of said barrel to its forward end, to mix with the spraying compound in said forward end of the barrel. The mixing element 27 will be effective for assuring that the spraying compound will be thoroughly mixed with water coming through the port 10 of the valve 9, as explained hereinbefore. The valve lever 11 is adjustable on the plate 12 for controlling the flow of water so that the ratio of water to spraying compound may be varied to suit specific requirements. After passing through the mixing element 27, the mixed spraying composition and water will flow through the nozzle coupling 28

to the nozzle unit 30, where it will flow through the nozzle, to be sprayed on trees, bushes, or the like, for killing insects. As stated heretofore, a flexible tube of any length may be positioned between the forward end of the barrel 1 and the coupling 28 so that the container may be mounted in a stationary position.

Attention is called to the fact that, inasmuch as the container 13 is of transparent material, it will always be possible for an operator to know just how much spraying compound remains within said container. The spraying compound may be easily placed within the container by removal of the plug 17. When it is desired to remove the piston for cleaning, repair, or any other reason, it is only necessary to remove the bottom wall 15. Of course, the entire container may be removed from the barrel by unscrewing the neck 14 of said container from the cap 6, after loosening the coupling 25.

If, for any reason, it should be desired to spray water alone, as, for example, for effecting a cleaning operation, the valve 24 may be closed and the valve 9 moved to full open position. Flow of spraying compound from the container 13 will thus be stopped and water will be permitted to flow through the valve.

Having thus described the invention, what is claimed as new is:

In a spray gun, a barrel having a connection for a fluid source, a container associated with the barrel, a piston slidable in the container, said container adapted to contain a chemical, a pipe connecting the container, below the piston, with the barrel, a valve in the barrel for controlling fluid flow therethrough, a mixing element carried by the barrel near its forward end, said barrel having an opening between the valve and the connection, and means connecting said barrel to said container, said opening being adapted to admit fluid under pressure to the container above the piston and to force the piston to move within said container whereby the chemical will be forced through the pipe and into the barrel at the other side of the valve, said mixing element effecting mixing of said chemical and fluid passing through the valve for forming a spraying solution, said mixing element comprising a wad of brass wool.

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