Feb. 18, 1958 L. MANDLAK 2,823,487

DISPENSER FOR POWDERED SUBSTANCES

Filed Oct. 31, 1955

Fig. 1.

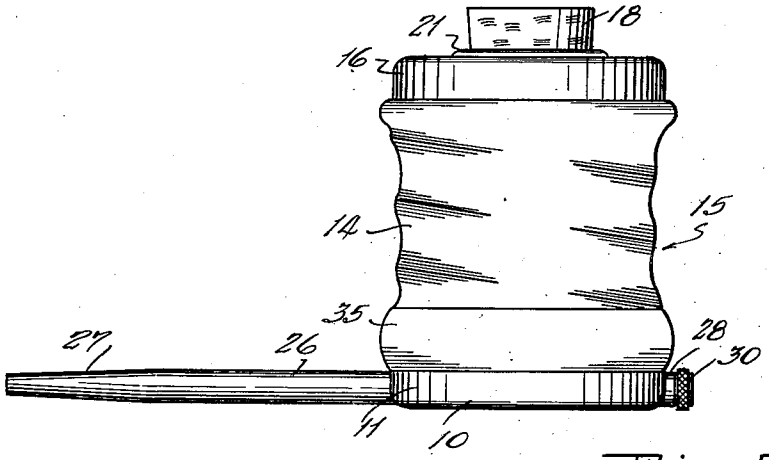


Fig. 3.

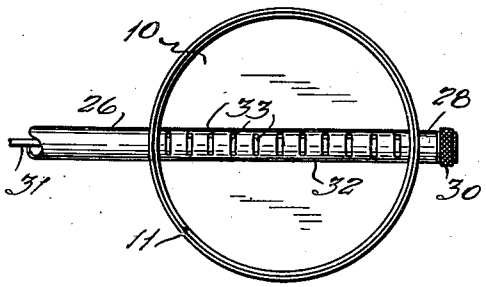
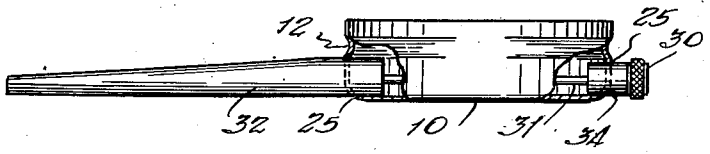


Fig. 2.

Fig. 4.



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DISPENSER FOR POWDERED SUBSTANCES

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7 Claims. (Cl. 43—146)

This invention relates to powder dispensing devices for insecticides in destroying all types of insects, such as flies, ants, roaches, and the like, and it has particular reference to a gun from which the insecticides can be expelled and directed through a spout or nozzle about the areas to be treated, and its primary object resides in the provision of a compressible container, simulating a bellows, as described in Letters Patent No. 2,349,875 issued on May 30, 1944 to Louis Mandlak, but includes certain improvements by which the contents can be maintained in a state enabling it to be readily discharged through the spout.

Another object of the invention resides in the provision of a needle or cleaning rod which is supported in the base of the container and is adapted to be removed, as desired, for use in cleaning or unclogging the discharge spout or nozzle in order that the insecticide can be blown therethrough evenly and properly distributed, since some powdered insecticides have a tendency to lump or adhere to the inner surfaces of the discharge spout, which is tubular, especially in humid or damp atmosphere.

A still further object of the invention is that of providing a discharge spout which extends through the bottom of the container, providing a slotted or perforated intake chamber within the bottom of the dispenser container by which the contents are admitted to the spout in a comminuted state, retarding any lumped or solid materials which would otherwise clog the discharge spout and prevent the free movement of the powder therethrough.

Broadly, the invention contemplates the provision of an insecticide gun or dispenser which can be economically manufactured and operated, and in which is provided means to evenly and properly disseminate the contents to be discharged therefrom, and providing a self-enclosed medium by which the discharge spout can be maintained in open and operative condition at all times.

While the foregoing objects are paramount, other and lesser objects will become manifest as the description proceeds, taken in connection with the appended drawing wherein:

Figure 1 is a side elevational view of the invention, showing the knurled head of the clean-out needle for the discharge spout.

Figure 2 illustrates the invention in vertical section, showing the concentric arrangement of the removable clean-out needle, the head of which is threaded into the base of the container.

Figure 3 is a plan view of the base portion of the invention showing the intake openings in the manifold in the base, and

Figure 4 shows a modified base member and discharge spout, the latter terminating in the front of the base member, as shown in the cutaway portions.

Accordingly, the invention comprises a base member **10** which is preferably cup-shaped, having a circular wall **11** which is formed with a concave recess **12** circumferentially thereof to receive a securing ring **13** for the tubular

flexible closure **14** of the container, which is designated by the numeral **15**, and is shown in vertical section in Figure 2. A top closure member **16**, having a cup-shape but with an annular port or filling opening **17** concentrically thereof which is closed by a stopper or cork plug **18**.

The flexible closure **14** is formed of a pliable material, preferably of rubber, or a plastic material having the characteristics of rubber, capable of expansion and contraction while assuming its normal shape and form under the influence of a coil spring **19** which has a diameter adapted to that of the member **14** to maintain its tubular shape, as shown in Figure 2, the spirally projecting outlines of the spring **19** being shown in Figure 1. The lower end portion of member **19**, as shown in Fig. 2 rests on the discharge member **26**.

The circular or annular opening **17** is defined by a rolled flange **20** which provides a bead **21** about the plug **18**, as illustrated in Figure 1, but extends briefly into the container **15**, as shown in the sectional view of Figure 2. A retainer ring **22** is applied to the top of the flexible closure **14** about the top **16**, which also has a circumferential recess **23** formed in its depending flange **24**.

The circular bottom or base member **10** has circular openings **25** formed in diametrically opposite sides in its circular wall **11** through which a discharge tube **26** is secured, as by soldering, one end of which extends substantially outwardly from the base member **10** and is tapered to provide a nozzle **27** toward its outer end.

The inner end of the tube **26**, which may also be referred to as a discharge spout, extends diametrically through the base member **10**, and the openings **25**, projecting from the rear thereof, as shown in Figures 1, 2 and 3, to provide an interiorly threaded boss **28** to receive the threaded base **29** of the head **30** of a clean-out needle **31** which extends concentrically into the tube **26** toward its tapered discharge end, as illustrated in Figure 2.

The inner portion **32** of the tube **26**, or that portion which is enclosed within the circular base **10**, has a series of spaced slots or perforations **33** in its upper side through which the powdered contents of the container **15** pass thereinto to be blown out through the nozzle **27** which is substantially restricted to insure proper distribution of the insecticide materials.

This structure constitutes desirable improvements over the prior art in that it is more economical in manufacture and affords a collecting manifold which more evenly admits the contents of the device to the discharge tube **26**, rejecting the heavier or lumpy particles which are not readily expelled through the restricted nozzle **27**.

It is expedient that some means be provided, which can be made ever present, to clean out the discharge tube **26**, especially the tapered portion thereof designated as the spout **27**, and the needle **31** is installed in the tube **26** for this purpose. As will be observed, by reference to Figure 2, this member can be easily removed by unthreading the head **30** from the boss **28** so that the needle **31** can be inserted through the discharge end of the nozzle **27** to dislodge any clogged materials therefrom and back into the container base **10**.

In Figure 4 is illustrated a modified form of the base **10** in which the tube **32** terminates a brief distance within the member **10** and a sleeve **34** is integrally secured diametrically opposite thereto to provide an anchor for the threaded portion **29** of the head **30** of the clean-out needle **31**, which is fragmentarily shown through the cutaway sections of Figure 4. The structure there shown eliminates the slotted or perforated portion **32** of the tube **26** which is more economical in design but is more capable of admitting lumps and heavier particles of the powdered materials to the tube **26**.

In order to protect and cover the ring **13** about the bottom of the member **14** a flexible band **35** can be provided, if desirable, as shown in Figures 1 and 2, and such arrangement will afford a better seal for the container.

Manifestly, the structure herein shown and described is capable of certain changes and modifications from time to time, by persons skilled in the art, without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. In a dispenser for powdered insecticides, and the like, having a compressible container operable as a bellows, and having a base portion and a top portion providing a pliable tubular closed structure, a discharge tube having its inner end fixed in said base portion and extending therefrom transverse to the axis of said base portion, and having a tapered nozzle portion formed toward its outer end, a perforated portion of said tube in said base portion, and a cleanout needle removably arranged throughout the length of said tube and securable in the inner end thereof.

2. In a dispenser device for powdered insecticides, and the like, having a main body and container portion formed of a pliable material and compressible to expel powdered materials therefrom, and a base for said body and a top therefor opposing said base, a discharge tube arranged diametrically through said base and extending outwardly therefrom to provide a discharge for the contents of said container, the inner end of said tube being arranged through said base and having perforations therein in the presence of the contents of said container, a portion of the inner end of said tube having interior threads and projecting from said base opposite the said discharge portion of said tube, and a needle member arranged concentrically of said tube and detachably threaded at its inner end to said inner end of said tube.

3. In a dispenser for insecticide powders having a cylindrical compressible container member, a circular base and a circular top opposingly arranged so that the ends of said closure are attached thereto, and a coil spring interposed between said base and top members expanding said closure, a discharge spout arranged diametrically through said base member and having inlet openings in its inner portion in said base member, and having an interiorly threaded portion in said base member, and a clean out needle removably secured in said threaded portion concentrically of said discharge spout.

4. In a dispenser for powdered insecticides having a compressible body and base and top members on said body, and a discharge tube extending laterally from said base member and having an interiorly threaded portion arranged transversely therethrough, a clean out needle removably arranged concentrically of said tube having a head on its outer end, and threaded means formed with said head for securing the same in the said threaded portion of said tube.

5. In a dispensing device for powdered insecticides, and the like, having base and top members and a compressible body providing a container, a discharge tubular spout extending through said base member and having inlet perforations in its inner end in said base member, a needle removably extended throughout the length and arranged concentrically of said spout and having a head member threadedly securable in the inner end of said spout.

6. A powder gun comprising two circular members each having a surrounding side wall, the members being arranged with the edges of the side walls in opposed relation, a flexible tubular side wall extending between and connected at its ends to the side walls of the circular members, the side wall of one circular member having a pair of diametrically opposed openings therein, a tubular discharge spout having a perforated end portion inserted through the openings and disposed across the circular member, a threaded plug received in the adjacent end of the discharge spout, a clean-out needle carried by the plug and disposed concentrically within the discharge spout, and a coiled spring within and extending through the flexible tubular side wall and bearing at one end upon the discharge spout and having its other end engaged in the opposite circular member.

7. A power gun comprising two circular members each having a surrounding side wall, the members being arranged with the edges of the side walls in opposed relation, a flexible tubular side wall extending between and connected at its ends to the side walls of the circular members, the side wall of one circular member having a pair of diametrically opposed openings therein, a tubular discharge spout having an end portion inserted through one of the openings, a sleeve inserted through the opposite opening and aligned with the discharge spout, a threaded plug received in the outer end of the sleeve, a clean-out needle carried by the plug and disposed concentrically within the sleeve and the discharge spout, and a coiled spring within and extending through the flexible tubular side wall and bearing at one end upon the discharge spout and the sleeve and having its other end engaged in the opposite circular member.

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