Oct. 8, 1940. G. WENZELMANN 2,217,577

DUSTING PUMP

Filed Feb. 4, 1939

Fig. 1

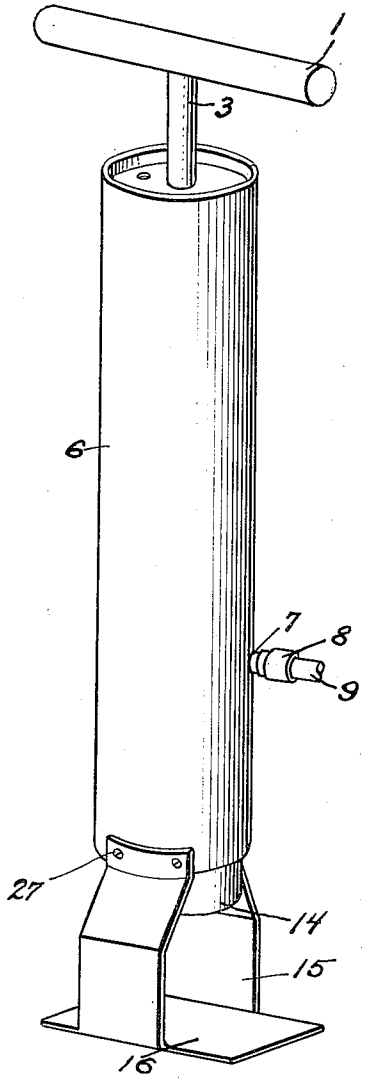
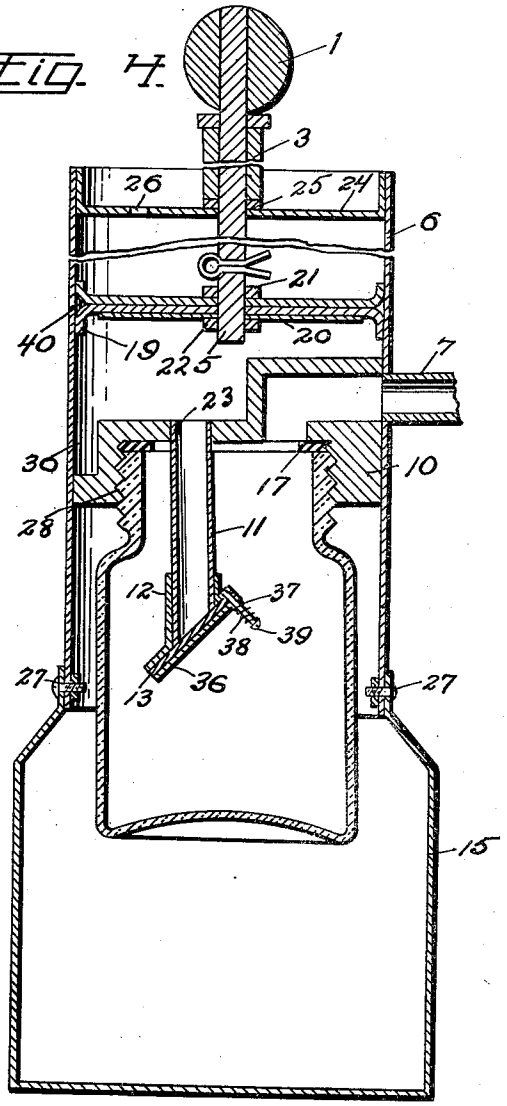


Fig. 4



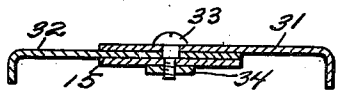
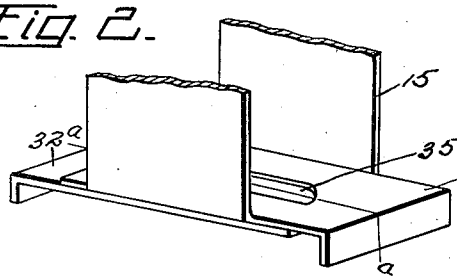


Fig. 3

Fig. 2



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DUSTING PUMP

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Application February 4, 1939, Serial No. 254,635

6 Claims. (Cl. 43—147)

This invention relates to dusting pumps using fumigants or insecticide powder for the control of rodents, pests and parasites.

The objects of this invention are to provide simple parts so arranged that the dusting pump may be easily operated as well as manufactured.

The customary form of a pump with a cylinder and a plunger therein is used for a source of air supply. The cylinder is made long enough so the assembly member of inlet, outlet and threaded sleeve, is mounted far enough inside so that the extended cylinder wall forms a shield and is a protection to the glass dust chamber which is screwed in the assembly member. On the bottom of this cylinder wall is attached the stirrup or foot, the base of which is so formed as to provide sufficient area to maintain the pump in a vertical position.

It has been found in practice that the inlet tube with the valve member mounted on the end thereof functions better if the inlet tube extends into the dusting chamber and the valve is mounted at a certain angle thereto. This angularly mounted valve causes the air passing through to produce greater turbulence thereby causing a proper amount of dusting material to be ejected through the outlet and hose attached thereon and is then directed by the operator to the desired point.

The invention further contemplates refinement in construction of the plunger. A flanged metal disc with the rounded flanged edge extending upward is mounted next above the customary leather whose flange extends downward. The leather is forced into the recessed space formed by the metal disc just above and grips the cylinder wall and thereby holds the air from leaking by. At the upper end of the piston rod is mounted a combination stop and name plate. This stop limits the travel of the piston, saves damaging the leather and maintains sufficient space between the handle and upper end of cylinder so as not to injure the operator's fingers.

The invention further consists in the novel arrangement, combination and construction of parts more fully hereinafter described and shown in the accompanying drawing, in which, Figure 1 is a perspective view of the duster standing in a vertical position on its base. Figure 2 is a perspective view of an alternate form of a stirrup. Figure 3 is a vertical section through 3—3 of Figure 2. Figure 4 is a vertical section in a plane suitable to show both inlet and outlet tubes.

Similar numerals refer to similar parts throughout the drawing.

1 is the handle, in Figure 1 it is a longitudinal view while in Figure 4 it is a cross section at a point where it is pierced by the piston rod. 2 is an imbedded nut which holds on the handle. 3 is a die casting which serves as a combination stop and name plate 4, when the member 3 reaches the washer 25 it is at its extreme lower travel and the leather 19 is so positioned that it can not touch the assembly 10, which would injure it. The length of the part 3 also provides clearance for the fingers when grasping the handle 1. 5 is the piston rod, 6 is the cylinder, 7 is the outlet tube, 8 is the hose clip, 9 is the rubber hose, 10 is the support by which the outlet tube 7, the inlet tube 11 and the threaded insert 28, are all held in rigid relation. 12 is the die cast valve member, 13 is the rubber valve flapper, 36 is the metal backing plate held against the rubber flapper 13, by means of washer 37, spring 33 and screw 39. 14 is the glass jar dust container, 15 is the stirrup, 16 is the large base of the stirrup, 17 is the rubber gasket, 18 is the flanged metal disc whose rounded edge is upturned and with the container wall forms the space 40 into which the leather 19, is forced to form a better seat. 20 is a large metal disc, which, with nuts 21 and 22 holds the plunger assembly firmly on end of the piston rod 5. 23 shows how the end of the tube is raised above the surface of the assembly member 10. This helps to obstruct any oil which may be used to lubricate the piston or condensation of moisture from the air from being forced into the dust chamber. 24 is a metal cap or lid of the cylinder, 25 is a heavy washer that is welded on cap 24 through which the piston travels, 26 is a hole piercing cap 24 to relieve air above the plunger. 27 are the bolts that hold on the stirrup, 28 is the threaded metal sleeve to receive the mouth of the glass jar. 29 is a cotter key so positioned as to limit the upward stroke of the piston. 30 is a channel that surrounds the assembly member 10, except that portion, that is elevated for the outlet. This channel furnishes a place for excess oil or condensation to gather, thus prohibiting its entrance into the dust chamber. 31 and 32 are slidable foot plates with slot 35 which permit them to slide, and are locked in position by screw or bolt 33 and nut 34.

To operate one places his foot into the stirrup 15, and grasping the handle 1, pulls up the piston as far as it will go, then pushes it down as far as the stop 3 will permit. On the down stroke the air is forced down through the inlet 11, valve 12, and flapper 13, into the dust container 14, due to the position of the valve, the force of the air is

changed into a whirling, turbulent force that causes the proper amount of dusting material to be picked up with the air and ejected through the outlet tube 7; the hose 9, being attached to the outlet tube 7, by the clip 8, is used to direct the dust as the operator desires.

It is obvious that any kind of a dust container could be used but at the present state of the art, glass seems to be the preferred material.

Having thus described in detail my invention, I now enumerate my claims.

I claim:

1. A dusting device comprising a pump casing, a piston operable in said casing, a support carried in said casing below the level of the piston travel, and a glass dust container removably carried by said support, the pump casing depending below the support to serve as a protective medium for the glass dust container, said casing being fully open at its lower end to provide for convenient removal and replacement of the dust container.

2. A dusting device comprising a pump assembly consisting in a pump casing, a piston operable in said casing, a support in said casing adjacent the bottom thereof and below the level of the travel of the piston, means for limiting the travel of said piston and a frangible dust container carried by said support, the pump casing depending below the support to serve as a protective medium for said container, the pump casing having a lower open end through which the dust container may be freely removed and replaced.

3. A dusting device comprising a pump casing, a support formed with a substantially central opening and a lateral opening carried adjacent the bottom of said casing, a piston operable in said casing, means for limiting the travel of the piston to a point above the support, a frangible dust container removably carried by said support, said casing depending below the support and serving as a protective medium for the frangible dust container, said casing being fully open at the lower end to permit convenient removal and replacement of the dust container, tubes carried in the openings in said support serving as air passages from said casing to said container and from said container to the air, a valve on the tube between the casing and the container and means for supporting said pump casing.

4. A device as claimed in claim 3 wherein the valve is set at an acute angle to said air entering tube to create disturbing air currents in the air entering the container.

5. A device as claimed in claim 3 wherein said supporting means for the pump casing consists of a stirrup having a base portion extended beyond the diameter of said pump casing.

6. A device as claimed in claim 3 wherein said supporting means for the pump casing consists of a stirrup having an extensible base portion.

GUSTAVE WENZELMANN.