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WEED-KILLER APPLICATOR

Filed Nov. 16, 1959

FIG. 1

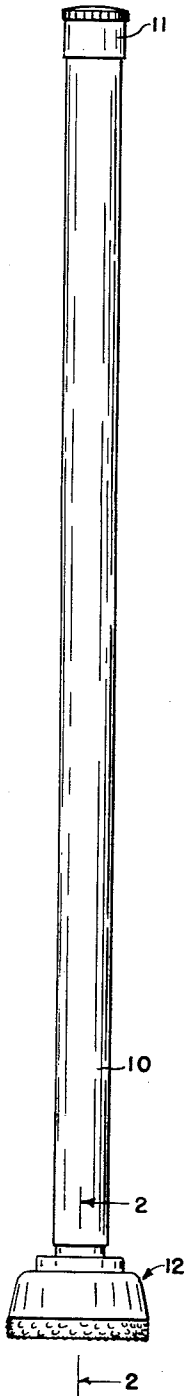


FIG. 2

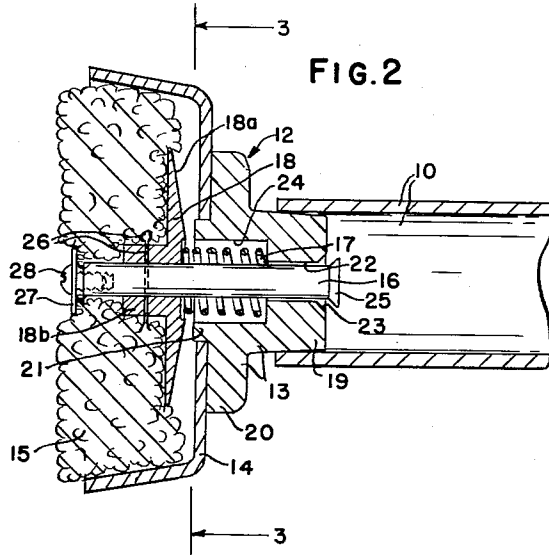
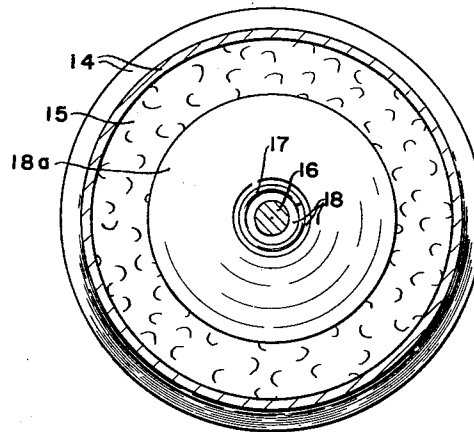


FIG. 3



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WEED-KILLER APPLICATOR

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1 Claim. (Cl. 15—569)

This invention relates to an improved weed-killer applicator of the cane type.

The principal object of the invention is to provide a weed-killer applicator whereby liquid weed-killer of the 2, 4-d, type may be applied to so-called "broad leaf" lawn weeds over a sufficiently large portion of their leaf system as to kill the weed with minimum exposure of the surrounding grass to the weed killer.

Other objects and advantages will be apparent from the following description taken in conjunction with the accompanying drawing, in which:

Figure 1 is a side elevational view of an embodiment of the invention;

Figure 2 is an enlarged sectional view on the line 2—2 of Figure 1; and,

Figure 3 is a sectional view on the line 3—3 of Figure 2.

In the drawing a hollow tubular reservoir 10 has a removable cap 11 whereby the reservoir may be conveniently filled with 2, 4-d, or any other liquid weed-killer, the reservoir acting as a handle, in the usual manner, for the applicator assembly 12 which fits, plug-like, in the lower end of the reservoir.

The applicator assembly 12 comprises an applicator plug and valve body 13, a cup-shaped sponge cover 14, a sponge 15, a sliding valve plunger 16, a valve spring 17, a distributor member 18, and associated parts hereinafter enumerated.

The body 13 is provided at one end with a tapered plug-portion 19 for firm, cork-like, reservoir-sealing fit with the reservoir tube 10 in the usual manner, and, at the other end, with an annular flange 20. Flange 20 has on its outside or bottom face a projecting boss 21 of reduced diameter for engagement with a cooperating, centrally-located hole in the top of the inverted cup-shaped sponge cover 14. Cover 14 also may be secured to the outside face of the flange 20 by adhesive, or in any other convenient manner.

Axially of the applicator body 13 a cylindrical valve 22 is provided to accommodate the valve plunger 16 which is of a smaller diameter than the passage 22 so that the weed-killer may flow through the passage and around the plunger when the valve is open. The upper end of passage 22, opening into the interior of reservoir 10, is provided with a chamfer or valve seat 23 as shown. The lower end 24 of the passage 22 is of enlarged diameter to accommodate the upper portion of the valve return coil spring 17, encircling plunger 16.

The upper end of the valve plunger 16 is provided with an outwardly-tapered, enlarged head to form a valve 25 adapted to cooperate with seat 23 to close passage 22. Toward the lower end of plunger 16, an annular distributor member 18, closely fitting around the plunger, is secured thereto by a cotter pin 26 so that spring 17 is partially compressed between the distributor member 18 and the plug 13.

The distributor member 18 has a circular head portion 18a and a smaller hub portion 18b through which the

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cotter pin 26 is adapted to pass. The upper surface of head 18a is spherically curved to promote the flow of weed-killer liquid from passage 22 downward and radially outward away from the plunger 16, the diameter of the head portion 18a being preferably approximately two-thirds the diameter of the sponge cover 14, for a purpose to be described later.

An annular sponge 15, preferably of synthetic sponge rubber to give maximum saturation with weed-killer liquid when released from compression, is secured on the lower end of the plunger 16 by means of a washer 27 and screw 28 which is screwed into an axially-tapped hole in the bottom end of the plunger 16. The screw 28, when tightened, holds the sponge slightly compressed against the underside of the head 18a of the distributor member 18, a portion of the sponge being tightly compressed by the washer 27 and the end of the plunger 16. The sponge 15 is of a diameter to fill the interior of the cover 14 and of a sufficient thickness to project at all times below the bottom rim of the cover. The sponge is of the order of three to five inches in diameter in order to obtain maximum foliage saturation of the commonest "broad-leaf" weeds.

In Figure 2, valve 25 is shown partially open and it may be seen that screw 28 and sponge 15 project below the bottom rim of the sponge cover 14. When the applicator is pressed down upon the ground, plunger 16 is free to move upward until the upper surface of the distributor member 18 strikes the boss 21 of the body 13 and, when the applicator is raised from the ground, plunger 16 is returned downward by spring 17 until valve 25 seats on the valve seat 23.

The operation of the applicator will now be apparent. The reservoir 10 being filled with weed-killer, the applicator is pressed downward upon a weed which it is desired to kill. As the screw 28 and sponge 15 meet the weed upon the ground, plunger 16 is moved upward, with respect to body 13 and cover 14, carrying the distributor member 18 upward until it strikes the flange 21 of the valve body. Valve 25 is unseated and the liquid weed-killer is allowed to run down through the passage 22 and over the upper surface of the distributor head 18a which distributes the liquid over the entire sponge, the periphery of head 18a being approximately over the circular center of mass of the sponge. As the sponge 15 is pressed down on the weed, the sponge is compressed between the ground and head 18a and cover 14, squeezing out weed-killer which has saturated the sponge. It will be noted that, in the preferred form, the side walls of the sponge cover 14 are slanted divergently downward so that, as the sponge is compressed upward in the cover, it is also compressed inward by the side walls. At the same time, and until the applicator is raised, more weed-killer liquid is allowed to run down passage 22 to re-saturate the sponge for application to another weed.

It will now be apparent that there is thus provided an improved weed-killer applicator adapted to adequately spread liquid weed-killer of the newer types which require maximum foliage coverage to be effective.

I claim:

In a liquid weed-killer applicator of the type having work-operated valve means for releasing liquid weed-killer from a reservoir, the combination, with a tubular reservoir, of a valve body adapted for close-fitting plug-engagement with the lower end of said reservoir, and having a vertically extending passage therethrough, a valve plunger loosely slidable in said passage, valve means on said plunger at its upper end adapted to close said passage, a sponge of sufficient size to contact the major portion of the foliage of any common broad-leaf lawn weed, means for securing the central portion of said sponge to the lower end of said plunger, an annular distributor

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member secured to said plunger above said sponge, having a convex upper surface inclined toward said sponge and extending in all directions at least half the distance from said plunger toward the periphery of said sponge, spring means between said valve body and said distributor member adapted to bias said plunger to passage-closed position, and a cup-shaped sponge cover joined to said valve body for closely housing the top and upper side portions of said sponge, said sponge cover having downwardly divergent sides, whereby, when said applicator is pressed down on a weed, said valve is opened, the weed-killer flows down said passage over said distributor member to the outer portions of the sponge and said sponge is

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squeezed against said sponge cover to apply the weed-killer evenly over the foliage of the weed.

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