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E. DÜNFRÜND
SPRINKLING BOTTLE OR SPRAY
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Fig. 1

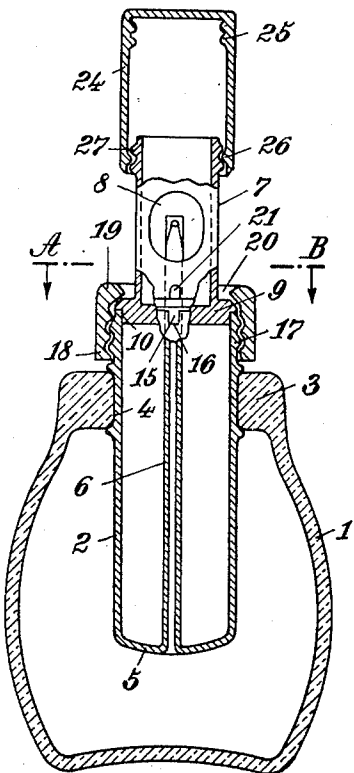


Fig. 2

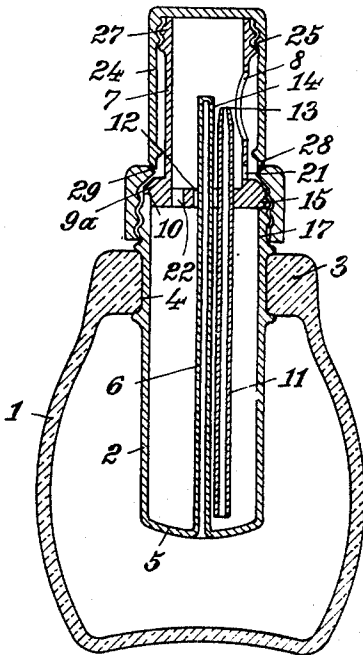
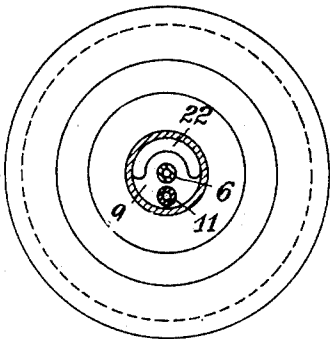


Fig. 3



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2,596,097

SPRINKLING BOTTLE OR SPRAY

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5 Claims. (Cl. 299—88)

1

The present invention relates to a sprinkling bottle or spray and in particular to a spray of which all the parts are easily accessible and which accordingly can be cleaned rapidly and well.

A sprinkling bottle or spray according to this invention has mounted in an air bulb a liquid container to which is attached a sleeve member carrying a dip tube, the said liquid container having an attached air tube which passes through it and into the sleeve member from the air bulb to a point adjacent to the exposed end of the dip tube and the sleeve member having an opening for the sprayed liquid suitably located with respect to the air and dip tubes.

In its preferred form the spray has a cap on the sleeve member for covering the opening for the sprayed liquid when the spray is not in use.

The sleeve member is suitably provided at the base with a flanged portion and a plug portion for fitting the mouth of the liquid container.

The plug portion and the mouth of the liquid container may be provided with a key and keyway for positioning the sleeve member with respect to the liquid container.

The neck of the liquid container may be provided with a screwed-on ring having an intumed portion engaging a flange at the base of the sleeve member to attach the sleeve member to the liquid container.

An annular channel may be provided between the intumed portion of the ring and the wall of the sleeve member, a drain opening may be provided in the said wall within the said channel and a drain hole may be provided at the base of the sleeve member draining into the liquid container.

The cap may have two spaced internal screw threads for engaging an external screw thread on the sleeve member, the cap moving freely between the two engaged positions, in one of which the opening for the sprayed liquid is covered and in the other of which it is exposed.

The invention is illustrated in the accompanying drawing.

Figure 1 of the drawing shows a sprinkling bottle or spray according to the invention in longitudinal section, partly in elevation,

Figure 2 shows a longitudinal section at right angles to the section of Figure 1 and

Figure 3 a section on the line A—B of Figure 1.

In the drawing an air bulb is indicated by 1 and a liquid container by 2. As shown in the drawing the mouth 3 of the bulb engages, in a manner already proposed, in an annular groove

2

4 of the liquid container 2. Through the base 5 of the container 2 there passes in known manner an air tube 6 which penetrates into a sleeve member 7 located on the container 2, extending to a height corresponding to an opening 8 provided in the wall of the sleeve member 7. The sleeve member has a base 9 which is provided with a flange 9a. The flange 9a has a plug portion 10 which fits into the mouth of the liquid container 2. A dip tube 11 passes through the base 9 of the sleeve member 7 almost to the bottom 5 of the liquid container 2. The dip tube 11 is rigidly attached to the base 9 so that it is carried thereby. In the base 9 is provided an opening 12 through which passes the air tube 6. The exposed end 13 of the dip tube 11 is located immediately under an upper opening 14 of the air tube 6. In order to ensure that in fitting the sleeve member 7 on the liquid container 2 the opening 14 is always opposite the opening 8 of the sleeve member 7 so that the atomised liquid can pass unhindered out of the spray, a key 15 is provided at a point on the plug portion 10 and a keyway 16 on the mouth of the liquid container 2 corresponding to this key. By virtue of this arrangement of a key and keyway the sleeve member with its opening 8 and the liquid container 2 with the air tube 6 which cannot be displaced with respect thereto, are always in the same position relatively to one another.

In order to prevent displacement of the sleeve member 7 from the liquid container 2, a screw thread is provided on the neck 17 of the liquid container 2 to receive a ring 18, the intumed edge 19 of which becomes rigidly positioned on the flange 9a of the base 9 of the sleeve member 7.

Between the intumed edge 19 of the ring 18 and the wall of the sleeve member 7 there is an annular channel 20. Within this annular channel the wall of the sleeve member 7 has an opening 21. Since an opening 22 is likewise provided in the base 9 any liquid droplets which are formed in the spraying of liquid can drain down the wall of the sleeve member 7 into the annular channel 20 and from there through the openings 21 and 22 back into the liquid container.

As is seen from the drawings the spray has a cap 24 which serves for covering the opening 8 of the sleeve member 7. In order that the cap shall not interfere with the manipulation of the spray and in order further to prevent the cap from being mislaid when the spray is in use, screw threads are provided on the inner surface of the cap at each of the upper and lower rims, which are indicated in the drawing by 25 and 26.

3

The sleeve member 7 has at its upper rim a screw thread 27 corresponding to the screw threads 25 and 26. As shown in Figure 1 the cap 24 is screwed with its lower thread 26 on the thread 27 of the sleeve member 7; in this case the opening 8 is exposed. According to Figure 2 the cap 24 is located with its upper thread 25 on the thread 27 of the sleeve member 7 so that the spray is closed. In order to achieve a good air-tight closure the lower rim 28 of the cap 24 and the upper rim 29 of the inturned portion 19 of the ring 18 are correspondingly inclined with respect to one another so that the cap 24 fits with its rim 28 closely contacting the rim 29 of the inturned portion 19.

An advantage of the sprinkling bottle or spray according to the invention lies in the fact that with little handling it can be dismantled so that each part becomes easily accessible and can be cleaned. This is of particular importance as regards the dip tube 11 which may become blocked up. In order to be able to clean the dip tube, first the cap 24 is completely unscrewed from the sleeve member, then the ring 18 is unscrewed and the sleeve member 7 together with the dip tube 11 can then be withdrawn from the liquid container 2. The dip tube may be probed by means of a thin wire from the lower end towards the top; such a wire can be fitted into the bottom of the liquid container 2.

In order to carry the invention into effect no special materials are necessary. For the liquid container and the sleeve member a transparent plastic is suitable for example.

What I claim is:

1. A sprinkling bottle or spray comprising an air bulb, a liquid container mounted in said air bulb, said container having a mouth, a sleeve member attached to said container, said sleeve member having a base providing a flanged portion and a plug portion fitting said mouth, said plug portion and said mouth providing a key and keyway for positioning said sleeve member with respect to said container, a dip tube having an exposed end carried by said sleeve member, and an air tube attached to and passing through said container and into said sleeve member from said air bulb to a point adjacent to the exposed end of said dip tube, said sleeve member having an opening for the sprayed liquid suitably located with respect to said air and dip tubes, said sleeve member having an external screw thread formed thereon, and a cap carried by said sleeve member for covering said opening when the spray is not in use, said cap having two spaced internal screw threads for engaging said external thread, said cap moving freely between the two said engaging conditions, in one of which said opening is covered and in the other of which said opening is exposed.

2. A sprinkling bottle or spray comprising an air bulb, a liquid container in said air bulb, said container having a mouth, a sleeve member having a wall and a base providing a flange and a plug portion, said plug portion fitting said mouth, said plug portion and said mouth providing a key and keyway for positioning said sleeve member with respect to said container, a ring screwed on the neck of said liquid container, said ring having an inturned portion for engaging said flange to attach said sleeve member to said liquid container, a dip tube carried by said sleeve member and having an exposed end, an air tube attached to said container passing therethrough and into said sleeve member from

4

said air bulb to a point adjacent to the exposed end of said dip tube, said sleeve member having an opening for the sprayed liquid suitably located with respect to said air and dip tubes, and a cap carried by said sleeve member for covering said opening when the spray is not in use, said wall and inturned portion of said ring defining an annular channel, said wall containing a drain opening within said channel, and said base containing a drain aperture opening into said container.

3. A sprinkling bottle or spray comprising an air bulb, a liquid container in said air bulb, said container having a mouth, a sleeve member having a wall and a base providing a flange and a plug portion, said plug portion fitting said mouth, said plug portion and said mouth providing a key and keyway for positioning said sleeve member with respect to said container, a ring screwed on the neck of said liquid container, said ring having an inturned portion for engaging said flange to attach said sleeve member to said liquid container, a dip tube carried by said sleeve member and having an exposed end, an air tube attached to said container passing therethrough and into said sleeve member from said air bulb to a point adjacent to the exposed end of said dip tube, said sleeve member having an opening for the sprayed liquid suitably located with respect to said air and dip tubes, and a cap carried by said sleeve member for covering said opening when the spray is not in use, said wall and inturned portion of said ring defining an annular channel, said wall containing a drain opening within said channel, and said base containing a drain aperture opening into said container, said sleeve member having an external thread, said cap having two internal screw threads for engaging said external thread, said cap moving freely between the two said engaging conditions, in one of which said opening is covered and in the other of which said opening is exposed.

4. A spray device comprising an air bulb, a liquid container supported in said air bulb and having an open end extending therebeyond, a sleeve member having a lower end attached to the open end of said container and an upper end carrying an external thread, a dip tube extending from said container terminating in an open end within said sleeve member, and an air tube passing from said bulb through said container into said sleeve member to a point adjacent the exposed end of said dip tube, said sleeve member having an opening for the sprayed liquid intermediate its said ends in registry with the open end of said dip tube, and a cap carried by said sleeve member, said cap having two spaced internal threads selectively engageable with said external thread, said cap being freely movable between the two selective positions to cover and expose said sleeve member opening.

5. A spray device comprising an air bulb, a liquid container supported in said air bulb and having an open end extending therebeyond, a sleeve member having a wall and a base, a joint member securing said sleeve member to said container, a dip tube extending from said container terminating in an open end within said sleeve member, and an air tube passing from said bulb through said container into said sleeve member to a point adjacent the exposed end of said dip tube, said sleeve member having an opening through said wall adjacent said base and an aperture through said base opening into

2,596,097

5

said container, and a cap carried by said sleeve member for covering said opening for the sprayed liquid when the spray is not in use, said wall and joint member defining an annular channel communicating with said aperture.

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