

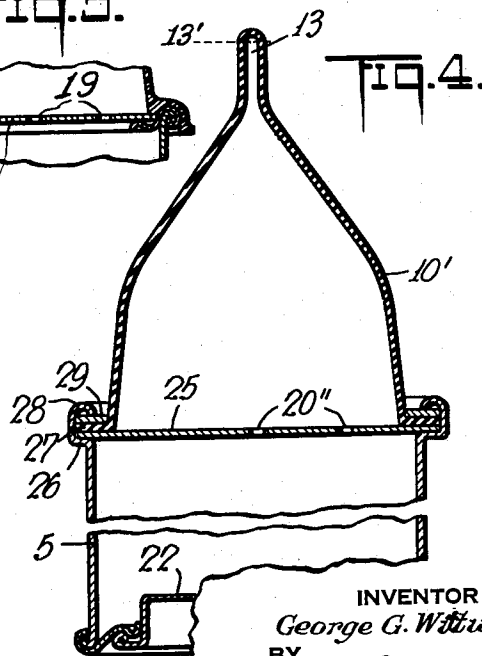
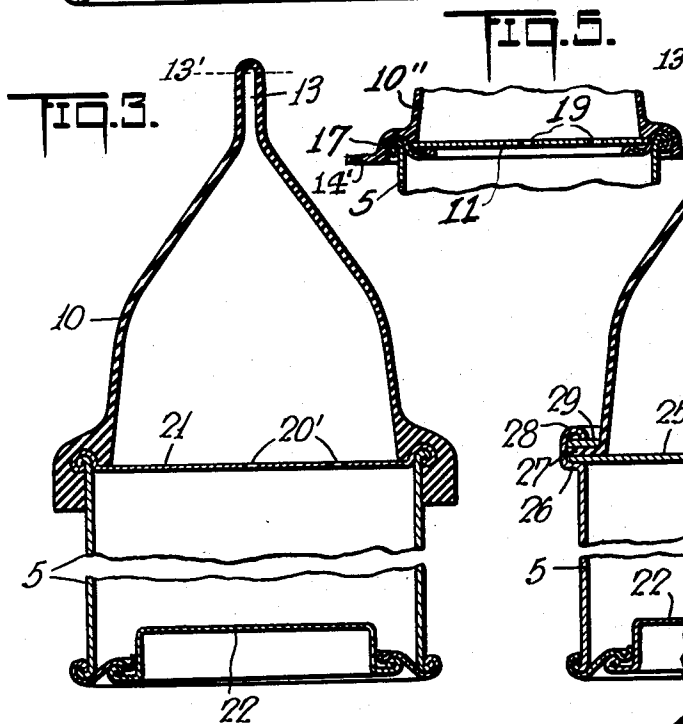
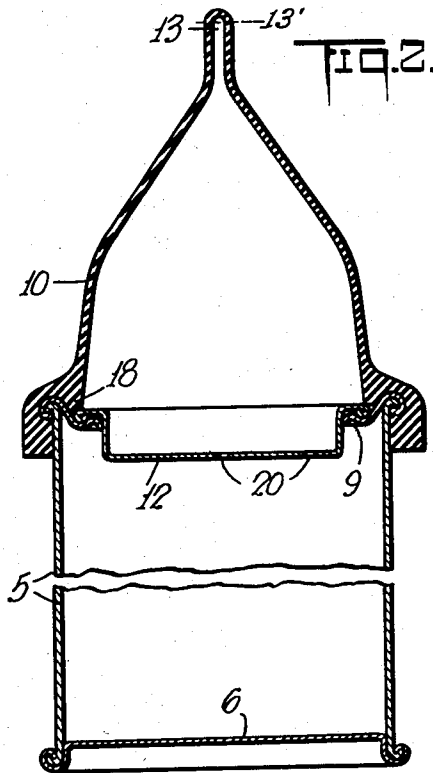
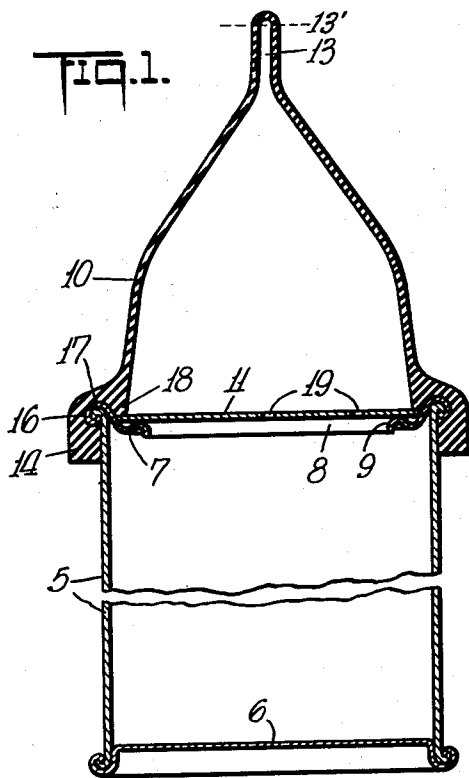
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POWDER DISPENSER

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POWDER DISPENSER

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My invention relates to a powder dispenser, and, more particularly, to a powder dispenser for holding and dispensing insect powder or the like.

It is a principal object of my invention to provide insect powder dispensing means simple in construction, easy to manipulate, and relatively inexpensive to manufacture.

It is another object to provide a powder dispensing device which may be readily filled and refilled.

Another object is to provide a powder dispensing bulb with simple means for holding the same in place and which itself may have means for holding a closure or division sheet in place between the body of a can and the bulb.

It is another object to provide a powder dispensing can of more or less conventional construction and to provide a novel dispensing bulb which may be secured to the can over either the normal bottom or the normal top, so that the can may be filled or refilled through the top or the bottom.

Other objects and various features of novelty and invention will hereinafter be pointed out or will become apparent to those skilled in the art.

In the drawings which show, for illustrative purposes only, preferred forms of the invention:

Fig. 1 is a central, vertical, sectional view through a powder dispenser illustrating features of the invention;

Figs. 2, 3, and 4 are views similar to Fig. 1, but each illustrating a slightly modified form of the invention;

Fig. 5 is a fragmentary sectional view illustrating still another modification.

In said drawings, I have illustrated a can or container for holding insect powders or powders of any character that it is desired to dispense. The container in the form shown in Figs. 1 and 2 comprise a cylindrical can which may be formed of metal, paper, fibre, plastic, or the like, and provided with a bottom closure 6 which is crimped over in the normal fashion so as to form a permanent bottom closure for the can. Such a bottom closure may be formed of the same material as the can or of a different material, as desired. The top of the can shown in Figs. 1 and 2 includes a top member 7 which is crimped in the normal and usual manner over the top of the body of the can so as to be permanently secured thereto. The top member 7 is provided with a large opening 8 defined peripherally by an inturned flange 9.

In the form shown in Figs. 1 and 2, there is a loose division sheet between the top of the can and a dispensing bulb 10 secured to the top of the can. In the form shown in Fig. 1, the division sheet or closure is a sheet or disc 11 which rests on the top member or annulus 7, while in Fig. 2, the division sheet 12 is a more or less standard friction closure plug or closure cover fitting friction-tight within the annular flange 9. The division sheet 11 normally rests directly on the top closure 7 and is held in place by the dispensing bulb 10. The division sheet 12 in Fig. 2 is held in place by a friction-fit between the division sheet 12, and flange 9, as is common with closure tops of the sort shown. The bulb in Fig. 2 may

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or may not engage the friction closure or division sheet 12, but, as will be later described, the bulb preferably acts as a complete peripheral seal in both of the forms of Figs. 1 and 2.

The bulb 10 is, in the preferred form, a more or less nipple-like bulb formed of some resilient material, such as natural or synthetic rubber, plastic, or the like. The bulb itself may have an extended dispensing nipple 13, and such a nipple is usually molded in place and is completely closed until the ultimately user snips off the end of the nipple, say along the line 13', so as to provide a discharge opening for the bulb. The base of the bulb, in the form shown, is considerably thickened and includes an outer peripheral flange 14 which is stretched and applied over the outside of the body 5 of the can, so as to tightly hug the outside of the can body. The thickened base 14 of the bulb is preferably provided with an annular channel 16 to fit over and rather tightly embrace the bead 17, as will be clear from the drawings. The thickened base is preferably further provided with a second annular flange or bead 18, which is located inwardly of the edge and in position to bear down upon the outer peripheral edge of the division sheet 11, in Fig. 1, and thereby serve to securely hold the division sheet 11 to the can top.

In the form shown in Fig. 2, the parts of the nipple are the same as shown in Fig. 1, and the internal flange 18 preferably does engage the outer periphery of the division sheet or friction closure 12, so as to act as an additional powder seal, even though the division sheet 12, in Fig. 2, is in the form of a more or less tight closure or plug.

The division sheet 11 of Fig. 1 is provided with one or more small apertures 19, to permit small amounts or charges of powder to pass from the body of the can 5 into the bulb 10 when the dispenser is inverted or tilted from the position shown in the drawings. In the form shown in Fig. 2, the friction closure or division sheet 12 is provided with small apertures 20, corresponding to the like apertures in the disc 11 and for the same purpose. Thus, in the forms shown in Figs. 1 and 2, the dispensing bulbs may be removed and the disc 11 lifted off or the closure 12 pried out, after which the cans may be filled or refilled with powder to be dispensed. When the cans are filled, the division sheet 11 is simply laid in place, or, if a closure 12 is employed, it is preferably forced down friction-tight, after which the thickened base of the bulb is stretched, as heretofore described, over the top of the can and the can bead, and the annular bead 18 on the bulb normally rests on and securely holds the division sheet 11 in place and acts as a seal or further seal in both the forms shown in Figs. 1 and 2.

In the form shown in Fig. 3, the can parts and bulb parts are the same as corresponding parts in Fig. 2, but in Fig. 3 the can has been inverted and the bulb 10 has been fitted and secured over what was termed the bottom of the can of Fig. 2. While the bottom 6 of the can of Fig. 2 is solid, or imperforate, the part 21 of the can of Fig. 3 is now the top and is provided with one or more small apertures 20'. The closure 22 of Fig. 3 is the same as, and corresponds exactly to, the division sheet or member 12 of Fig. 2, but, in the form shown in Fig. 3, the closure 22 is imperforate, while, as heretofore stated, the member 21 corresponding to the bottom 6 of Fig. 2 is perforated. Thus, in the form shown in Fig. 3, the can may be filled and refilled by removing the friction-tight closure plug 22, and without disturbing the relationship between the can and the dispensing bulb 10.

In the form shown in Fig. 4, the parts of the can are the same as in Fig. 3, except that the top 25 and bulb 10' are not crimped or secured to the can body in precisely the same fashion as shown in Fig. 3. In Fig. 4, the division sheet or top of the can simply rests on the outwardly directed shelf 26, and the bulb 10' has an out-

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wardly directed bead or foot flange 27 resting on top of the top member or division sheet 25. The can body is beaded over as indicated at 28 so as to rigidly hold the top member 25, and the bead or flange 27, securely and permanently in place on the top of the can. In the form illustrated, I employ an annular washer 29, preferably of metal, over the top of the flange 27, so that bead 23 engages the metal washer 29 rather than the soft flange, which might be injured. The division sheet or top 25, shown in Fig. 4, is provided with one or more apertures 20 which serve the same purpose as the corresponding apertures previously described. The bottom of the can in Fig. 4 is or may be exactly the same as the bottom in Fig. 3, wherein the bottom friction cap or closure plug 22 closes the large filler aperture in the bottom of the can. Thus, in the forms shown in Figs. 3 and 4, the bottom closures 22 may be removed and the cans filled or refilled without in anywise disturbing the relationship between the cans and the bulbs.

In Fig. 5, the parts are shown as in Fig. 1, except that the bulb 10' does not have such a pronounced thickened portion fitting the can body. The form shown in Fig. 5 contemplates a bulb made of plastic, which is not as elastic as rubber and therefore is not stretched to the same extent to go over the can bead. The plastic bulb has a groove to fit the bead 17 and holds securely. The plastic bulb is readily removed or replaced without as much stretching as in the other forms, and a finger tab 14' is helpful in removing or replacing the bulb. It is understood that any of the bulbs shown in Figs. 1, 2, 3, or 4 could be made of plastic or the like.

Various devices have been illustrated for permitting a flow of powder from the main storage body of the can into the bulb, and, when the nipples are clipped, apertures are provided for the dispensing of the powder from the bulb to the place desired, such as an ant nest, cracks in the walls, etc. In use the can is simply inverted so that the nipple 13 is extended generally downwardly and the bulb is compressed, as between the thumb and the first finger. A considerable draft is thus produced through the nipple 13 and powder from the inside of the bulb is ejected from the nipple 13, and, it is believed, at the same time some of the air in the bulb when compressed passes through the holes such as 19-20 so as to stir up the powder directly over the holes and facilitate the discharge of small quantities of powder from the body of the can into the bulb.

When the bulb is compressed to dispense powder, the air rushes out of the nipple 13 and powder is entrained and the result is a cloud of powder rather than wasteful, intermittent slugs. The division sheets between the can bodies and bulbs are very important in feeding the powder from the cans to the bulbs in the proper quanti-

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ties. Any means for adjusting the passages between the body and bulb may be employed but the adjustment provided by varying the number of apertures through the division sheets is very satisfactory.

The cans and bulbs are very simple in construction and are therefore relatively cheap to produce, and the dispenser has been found to be very versatile and is effective in the dispensing of powders such as insect powders and the like.

While the invention has been described in considerable detail and preferred forms illustrated, it is to be understood that various changes may be made within the scope of the invention as defined in the appended claims.

I claim:

1. In a powder dispenser, a can having an upstanding bead about the top edge, a cover part at the top to close the top of said can, said cover part having one or more small apertures for passage of small amounts of powder from said can, a dispensing bulb of elastic material on said can, said dispensing bulb having a small aperture for dispensing powder, said elastic bulb having a thickened bottom edge sprung over the top of said upstanding bead on said can and holding thereon by its inherent resiliency, said bulb having an integral elastic bead at the inside within said upstanding bead on said can and resting on said cover part, whereby said elastic bead at the inside of said upstanding bead and said thickened edge at the outside of and sprung over said upstanding bead on said can form a double seal against loss of powder.

2. In the combination defined in claim 1, said cover part being removable from said can, and said elastic bead on the inside of said elastic bulb resting on said cover part and assisting in holding the latter in place on said can.

3. In the combination defined in claim 1, an elongated generally radial finger tab projecting from said thickened edge on said bulb to assist in removing and replacing said bulb on said can.

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