

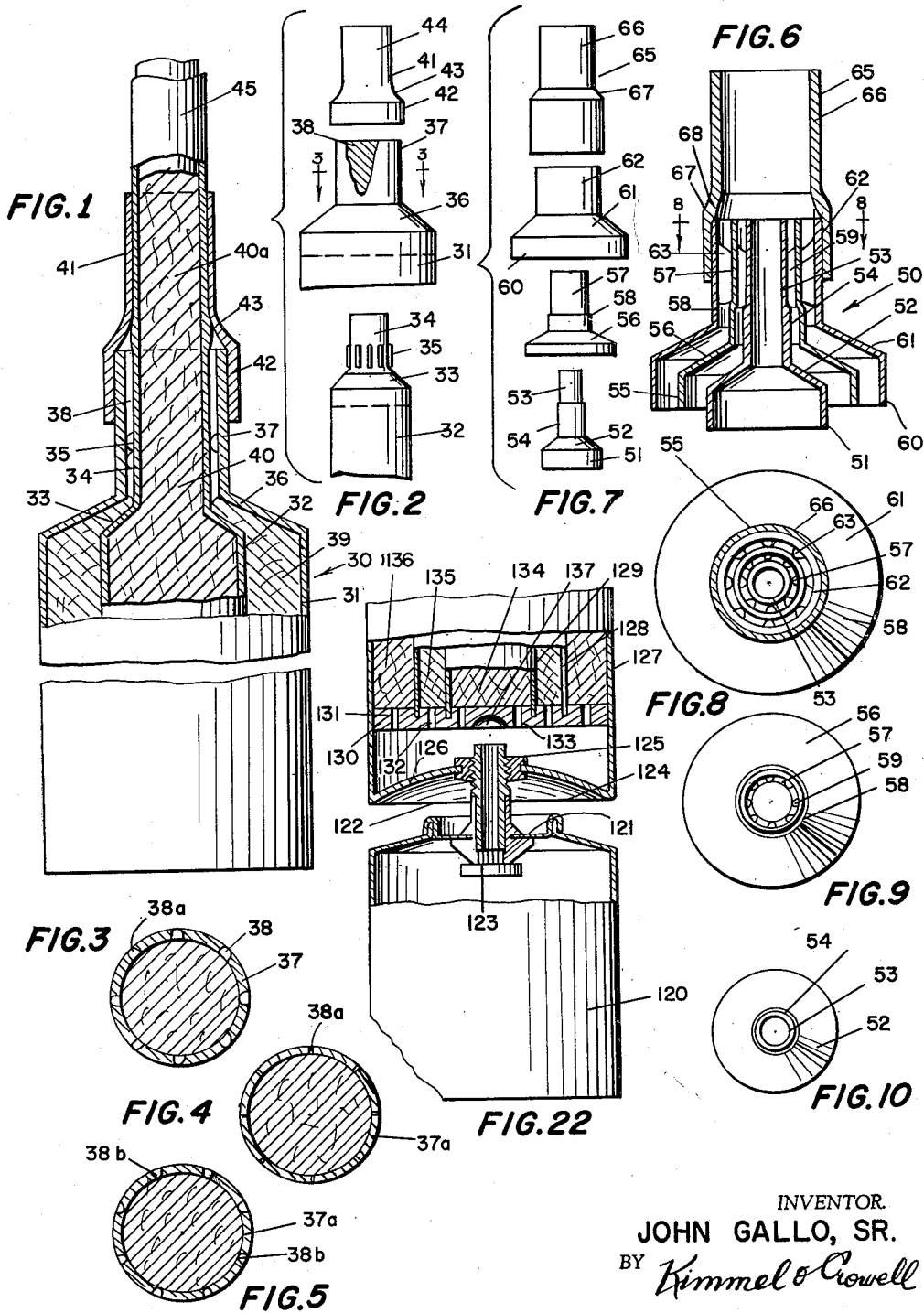
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J. GALLO, SR
DISPENSING DEVICE

3,135,428

Filed Feb. 18, 1963

2 Sheets-Sheet 1



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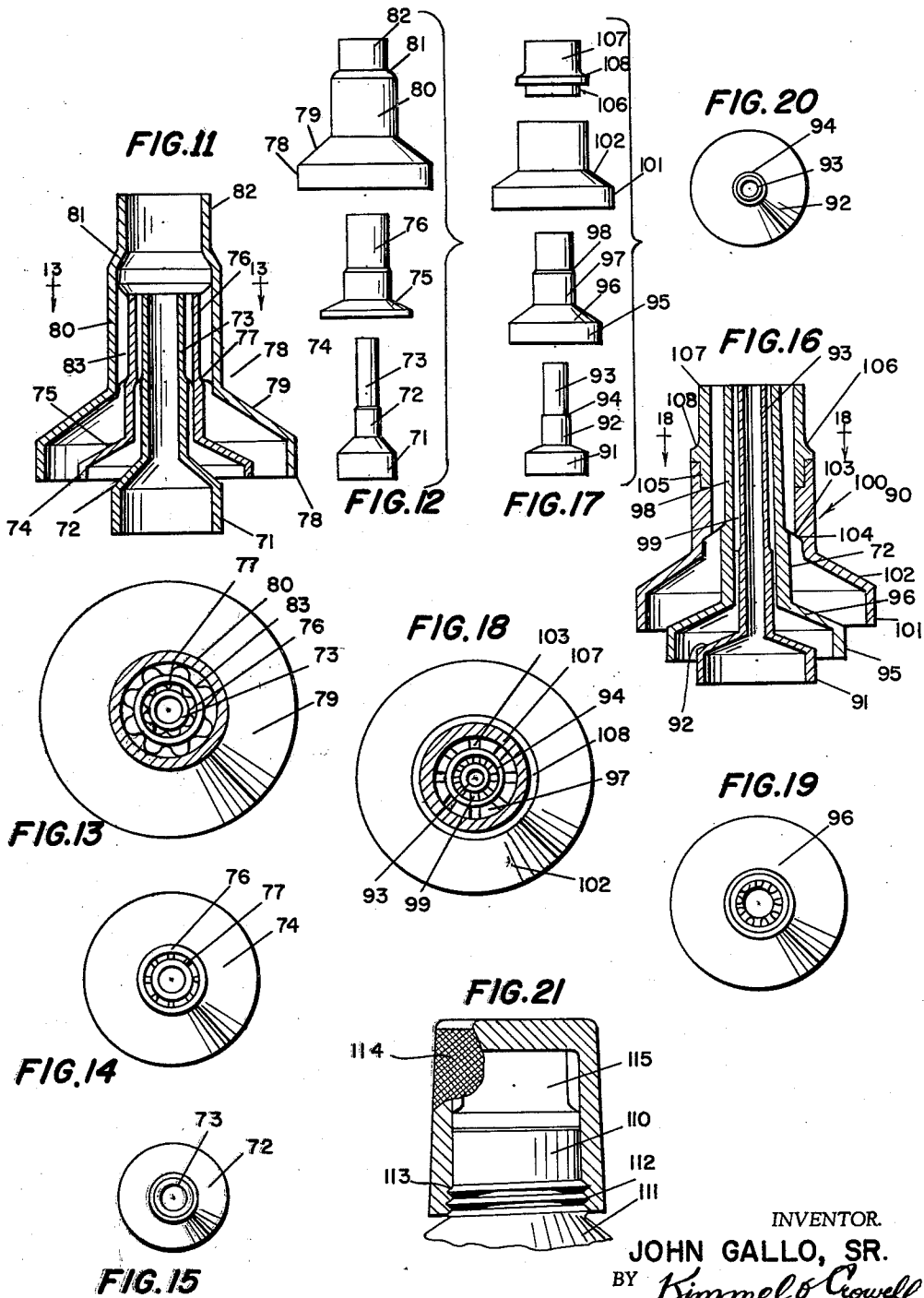
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DISPENSING DEVICE

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12 Claims. (Cl. 222-94)

This invention relates to a dispensing device and has as its primary object the provision of a nozzle for dispensing multi-colored pastelike substances in predetermined arrangements or designs simultaneously and from common or concentric containers.

An additional object of the invention is the provision of a device of this character which may be adapted for use with collapsible tubes, pressurized cans, or similar receptacles wherein material of semi-solid or pastelike material, such as toothpaste, creams, foodstuffs, chemicals, epoxy adhesives, or other materials of similar consistency may be dispensed in multi-colored stripes, such as a core of one color provided with longitudinal or spiral stripes of another color, a core of one color and an outer shell of a different color, concentric multiple colors, vari-colored stripes or stripes either raised or flush with the surface of the main body of the semi-solid, or another appropriate analogous design to lend an enhanced ornamental appearance to the dispensed material.

A further object of the invention is the provision of a device of this character which may be employed in conjunction with multi-colored or collapsible tubes including inner, outer, and on occasion, intermediate concentric receptacles containing different colored materials.

Still another object is the provision of an adaptor having a plurality of concentric chambers containing various colors of semi-solid materials, which is adapted to be secured to the nozzle of a pressurized can whereby the material may be dispensed in the above-mentioned manner.

A still further object of the invention is the provision of a device of this character which may be provided with an adaptor wherein either straight or spiral stripes may be either impressed into the material of a semi-solid core, or alternatively, may be spread over the outer surface thereof to provide an outer covering.

Still other objects of the invention reside in the combinations of elements, arrangements of parts, and features of construction, all as will be more fully pointed out hereinafter and disclosed in the accompanying drawings wherein there are shown preferred embodiments of this inventive concept.

In the drawings:

FIGURE 1 is a longitudinal view partially in section and partially in elevation through a bicameral collapsible tube having a dispensing nozzle for dispensing two colors and an adaptor fitted thereon.

FIGURE 2 is an exploded fragmentary, elevational view showing several of the components of the device, parts thereof being broken away.

FIGURE 3 is a sectional view taken substantially along the line 3-3 of FIGURE 2 showing one form of internal groove arrangement.

FIGURE 4 is a view similar to FIGURE 3 but showing a different type of grooving.

FIGURE 5 is a view similar to FIGURES 3 and 4, but showing a still different type of groove.

FIGURE 6 is a vertical sectional view through a modified form of construction.

FIGURE 7 is an exploded side elevational view of the components of FIGURE 6 disassembled.

FIGURE 8 is a sectional view taken substantially along the line 8-8 of FIGURE 6 as viewed in the direction indicated by the arrows.

FIGURE 9 is a top plan view of one of the elements shown in FIGURE 7.

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FIGURE 10 is a top plan view of another of the elements shown in FIGURE 7.

FIGURE 11 is a vertical sectional view taken substantially along the center line of a still further modified form of the apparatus.

FIGURE 12 is an exploded side elevational view of the component parts of FIGURE 11 shown disassembled.

FIGURE 13 is a sectional view taken substantially along the line 13-13 of FIGURE 11 as viewed in the direction indicated by the arrows.

FIGURE 14 is a top plan view of one of the components of FIGURE 12.

FIGURE 15 is a top plan view of another of the components of FIGURE 12.

FIGURE 16 is a view similar to FIGURES 6 and 11 showing a further modified form of construction.

FIGURE 17 is an exploded side elevational view of the components of FIGURE 16 shown in disassembled relation.

FIGURE 18 is a sectional view taken substantially along the line 18-18 of FIGURE 16 as viewed in the direction indicated by the arrows.

FIGURE 19 is a top plan view of one of the elements shown in FIGURE 16.

FIGURE 20 is a top plan view of another of the elements shown in FIGURE 16.

FIGURE 21 is a fragmentary view partially in elevation and partially in section showing a cover as applied to any of the devices previously disclosed; and

FIGURE 22 is a fragmentary sectional view of a dispensing container comprising three concentric chambers containing different color semi-solid material showing a means for attaching the same to a pressurized can for diffusion by the pressurized fluid within the can.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Having reference now to the drawings, and more particularly to FIGURES 1 to 5, inclusive, one form of device incorporating features of the instant invention is generally indicated at 30 and comprises an outer collapsible tube 31 which is basically concentric with an inner collapsible tube 32. Inner tube 32 has a frusto-conical upper portion 33 which terminates in a cylindrical mouth 34 around which are spaced longitudinal ribs 35. The outer tube 31 has a frusto-conical portion 36 which terminates in a tubelike nozzle 37, on the inner side of which are a plurality of veins or grooves 38 which define channels. In the modification shown in FIGURE 2, the grooves are helically or spirally arranged, and of generally rectangular cross-section as shown in FIGURE 3. The grooves may be relatively narrow and straight as indicated at 38a in FIGURE 4 contained within a nozzle 37a substantially identical otherwise with the tube or nozzle 37, or may be rectangular and straight as shown at 38b in FIGURE 5. Other suitable shapes may be employed so that when material of different colors such as indicated at 39 and 40 contained in the outer and inner tubes, respectively, is extruded, there will be a core 40a of one color, which in the absence of elements to be described hereinafter, will be striped with stripes of a different color, that of the material 39, the stripes being either straight or helical in accordance with the grooving, and of a variety of sizes.

An adaptor 41 having a skirt 42, a frusto-conical portion 43, and a nozzle or tube 44 may overlap the nozzle 37. When this is employed, since the nozzle 44 is substantially the same diameter as the inner diameter of nozzle or tube 34, a core 40a comprised of the contents 40 of the tube 32 will be extruded which will be completely coated by a coating 45 of a different color which will be extruded from the contents 39 of tube 31, the coating being effected by the meshing and diffusing of the

raised stripes caused by the grooves 38, 38a, or 38b into and around the core material 40a.

Obviously, the grooves 38 may be of any desired shape, either half round, square, or rectangular, or triangular, the interior of the adaptor although normally smooth may be arranged with additional grooves to provide a diffusion of patterns if desired.

FIGURES 6 to 10, inclusive, show a further modified form of the invention which is generally indicated at 50, and comprises a first or inner tube 51 which includes a frusto-conical portion 52 and a nozzle 53 of tubular construction provided at an intermediate point with an external shoulder 54. A second tube 55 surrounds tube 51 and includes a frusto-conical portion 56 terminating in a nozzle 57 of tubular construction which is also provided with a shoulder 58, both externally and internally. The internal shoulder 58 seats on the shoulder 54. The inner surface of nozzle 57 may be provided with ribs or grooves 58, which will impart a design of pastelike material within the tube 55 to the exterior of a core comprised of pastelike material extruded from tube 51.

An outer tube 60 has a frusto-conical top section 61 and a tubular nozzle 62, the interior of which is provided with ribs 63, the lower extremities of which seat on the external portion of the shoulder 58, the ribs 63 defining grooves or veins through which a still different color of pastelike material contained within the outer tube 60 may be extruded. It will be seen that a wide variety of designs may be achieved, since the grooves or veins of this modification may take any of the shapes of the previous modification. An adaptor 65 similar to the previously described adaptor 41 may also be employed and includes an outer shell 66 having an offset portion 67 with an internal shoulder 68, the latter seating on the top of shell or nozzle 62. Adaptor 65 may be employed in exactly the same way as the adaptor 41 of the previously described modification. The use and operation of this device is the same as that previously described except that there are here three tubes having three different colors of material rather than the two previously described.

Still another form of the invention is shown in FIGURES 11 to 15, inclusive, and is generally indicated at 70. This form includes an inner tube 71 having a frusto-conical top 72 and a tubular nozzle 73. An outer tube 74 has a frusto-conical portion 75 and a nozzle portion 76 concentric with and of the same length as the nozzle 73, the inner surface of which is squared and provided with vanes or grooves 77. An outer tube 78 has a frusto-conical portion 79 which terminates in a tubular section 80 which is reduced in diameter as at 81 and has a plain external reducing spout or nozzle 82. Interiorly of the portion 80 a plurality of grooves or vanes 83 are provided which again may be of any desired shape as in the previous modification. A wide variety of stripings may similarly be produced with this form of the invention, and if desired, an outer adaptor may similarly be employed over the reducing nozzle 82.

In the form of the invention disclosed in FIGURES 16 to 20, there is generally indicated at 90 a device constructed in accordance with this modification comprised of an inner tube 91 having a tapered or frusto-conical portion 92 terminating in a tubular nozzle 93 which is provided with an external shoulder 94. A second tube 95 is concentrically positioned relative to tube 91 and has a frusto-conical top 96 which terminates in an upright portion 97 having a tubular nozzle 98. Interior ribs or vanes 99 seat on shoulder 94 while an external shoulder 100 is also provided. An outer tube 101 has a frusto-conical portion 102 which terminates in an upwardly extending nozzle 103 having internal ribs or vanes 104 which rest on shoulder 100. The top of nozzle 103 is recessed as at 105 to accommodate the internal flange 106 of an adaptor or outer nozzle 107 which is provided with an annular shoulder 108 which seats on the top of member

103 with the depending skirt portion 106 seating in the recess 105. Any desired arrangement of internal grooves, of any of the shapes previously described in either helical or straight may similarly be employed with this modification of the invention, so that a wide variety in diffusion, shapes and sizes and colorings of semi-solid material may be extruded from two, three, or more concentric tubes or the like.

Obviously, any desired arrangement of grooves or ribs in accordance with the preceding modifications may herein be employed also.

In FIGURE 21 there is shown a neck 110 of an external tube 111, which may comprise the outermost of a series of concentric tubes of any of the forms previously described, which is provided with a plurality of threads 112 adapted to engage corresponding internal threads 113 on a closure cap 114 which simultaneously closes all of the exit tubes. A space is provided for an adaptor 115 which may be similar to any of the previously described forms of adaptors.

In the foregoing the several nozzles have been described as integral with related concentric tubes. It will, however, be understood that they may be detachably applied to individual tubes during manufacture, or under other such conditions as may be desirable.

FIGURE 22 discloses a concept of this invention which may be employed with pressurized cans. In this form of the invention a conventional pressurized can is indicated at 120 provided with a sealed top 121 and a tiltable nozzle 122 having an internal valve 123 which, when the nozzle or stem 122 is tilted, serves to release the pressurized contents of the container 120. A threaded extremity 124 is provided on the stem 122 which is adapted to engage in a threaded nut 125 in the concaved bottom 126 of a container 127. Container 127 has two or more internal concentric chambers 128 and 129 formed therein, the bottoms of which are closed by a horizontal baffle 130 which extends transversely across the container above the nozzle 122.

The annular baffle 30 is provided with a series of annular rings or perforations 131, 132, and 133 which extend respectively into the chambers formed by the interior walls. Each of the chambers defined by the interior walls contains a semi-solid medium respectively designated as 134, 135, and 136, each of which is of a different color. A concaved reversed depression 137 is positioned centrally of baffle 131 directly above the outlet of nozzle or tube 122 so that gas under pressure from container 120 is distributed evenly and enters all of the chambers defined by the walls 127, 128, and 129 equally. Any of the nozzles described in any of the foregoing types of construction may be employed in conjunction with the containers 127, 128, and 129 to provide any of the diffused patterns of the previously disclosed modifications.

From the foregoing it will now be seen that there is herein provided an improved dispensing device which accomplishes all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiments hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted as illustrative, and not in a limiting sense.

I claim:

1. A dispensing device for pastelike material comprising a pair of coaxial nozzles adapted to be applied to coaxial tubes containing different colored pastelike material to be dispensed, one of said nozzles having grooves on a face thereof confronting the other nozzle whereby a core of one color material is provided striped with material of another color, a tubular adaptor being fitted over the outer nozzle and provided with an extended bore of the same diameter as the core whereby the stripes are diffused to form a solid color outer shell.

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2. A dispensing device for pastelike material comprising a pair of coaxial nozzles adapted to be applied to coaxial tubes containing different colored pastelike material to be dispensed, one of said nozzles having grooves on a face thereof confronting the other nozzle whereby a core of one color material is provided striped with material of another color, at least one additional color nozzle being provided and grooves being formed between each nozzle and the adjacent nozzle to provide a multiplicity of different colored stripes.

3. The structure of claim 2 wherein said grooves are straight.

4. The structure of claim 2 wherein said grooves are spiral.

5. The structure of claim 2 wherein said grooves are located on the exterior of an inner nozzle.

6. The structure of claim 2 wherein said grooves are on the interior of an outer nozzle.

7. The structure of claim 2 wherein said grooves are rectangular in cross section.

8. The structure of claim 2 wherein said grooves are arcuate in cross section.

9. The structure of claim 2 wherein a tubular adaptor is fitted over the outer nozzle and provided with an extended bore of the same diameter as the core whereby the stripes are diffused to form a solid color outer shell.

10. A dispensing device for pastelike substances comprising at least two coaxial nozzles communicating with coaxial tubes containing different colored pastelike material, a baffle plate beneath said tubes, annular openings through said baffle into each tube, a pressurized container having an outlet nozzle, means defining a pressure chamber beneath said baffle, said last-mentioned means having said outlet nozzle connected substantially centrally thereto, a depression defined in said baffle in confronting relationship to said outlet nozzle whereby the pressure from said container is distributed substantially evenly in said container and means forming grooves between the con-

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fronting faces of the nozzles to produce a core of one color pastelike substance striped with pastelike substance of another color.

11. A dispensing device for pastelike substances comprising at least two coaxial nozzles communicated with tubes containing different colored pastelike material, a baffle plate beneath said tube having annular openings into each tube and means for connecting the outermost tube to a pressurized container to apply pressure to the pastelike substance in each tube, and means forming grooves between the confronting faces of the nozzles to produce a core of one color pastelike substance striped with pastelike substance of another color, a tubular adaptor being fitted over the outer nozzle and being provided with an extended bore of the same diameter as the core whereby the stripes are diffused to form a solid color outer shell.

12. A dispensing device for pastelike substances comprising at least two coaxial nozzles communicated with tubes containing different colored pastelike material, a baffle plate beneath said tube having annular openings into each tube and means for connecting the outermost tube to a pressurized container to apply pressure to the pastelike substance in each tube, and means forming grooves between the confronting faces of the nozzles to produce a core of one color pastelike substance striped with pastelike substance of another color, the outer nozzle being threaded and being provided with an internally threaded closure cap.

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