

PATENT SPECIFICATION

DRAWINGS ATTACHED

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International Classification:—F05b.

COMPLETE SPECIFICATION

Improvements in or relating to Dispensers for Cream-like Substances

5 We, THE METAL BOX COMPANY LIMITED, a Company incorporated under the laws of Great Britain, of 37, Baker Street, London, W.1, England, do hereby declare the invention, for which we pray that a patent may be granted to us, to be particularly described in and by the following statement:—

10 This invention relates to dispensers for cream-like substances of a slow-flowing nature. According to the invention there is provided a dispenser for cream-like substances comprising a cover for fitment to a container, a tube supported by said cover for axial movement relative thereto against the action of a spring, a hollow member the interior of which communicates with the interior of the tube, which has dispensing orifice and is movable with the outer end of the tube, a sleeve connected with the inner end of the tube for movement therewith and relative thereto, and a piston freely surrounding the sleeve, the arrangement being such that when the dispenser is fitted to a container the piston adheres to the upper surface of cream in the container and on axial movement of the tube towards the bottom of the container the sleeve moves therewith until arrested by the bottom of the container whereafter axial movement of the tube relative to the sleeve reduces the total internal volume of the tube and sleeve to cause cream to be forced through the tube and out of the dispensing orifice and return movement of the tube and sleeve under the influence of the spring causes cream to be drawn into the sleeve.

35 In order that the invention may be clearly understood one embodiment thereof will now be described, by way of example, with reference to the drawing accompanying the Provisional Specification and which illustrates, in section, a dispenser according to the invention fitted to a container.

Referring to the drawing, the dispenser [Price 4s. 6d.]

comprises a cover 1 adapted to be fitted to a container 2 such as a glass jar. The cover may be made of a moulded synthetic thermoplastic material, such as polyethylene, and is provided with internal screw threads by which it is fitted and secured to the container 2. The cover also has a central hollow spigot 3 which when the cover is fitted to the container 2 is directed towards the bottom 4 thereof.

The inner end of the spigot 3 is provided with a flange portion 5 which partly obstructs the throughway of the spigot. A tube 6 is located in the spigot and is supported for axial movement relative thereto against the action of a spring 7 which extends between the flange portion 5 and the underside of the stem 8 of a hollow member which is connected, as shown in the drawing, to the outer end of the tube 6 for movement therewith. The outer end of the stem 8 is formed as a delivery portion 9 closed by a cap 10 and provided with a delivery orifice 11 the axis of which is substantially at right angles to the axis of the tube 6. The throughway of the stem 8 communicates with the throughway of the tube 6.

A sleeve 12 is connected with the inner end of the tube 6 for axial movement therewith and relative thereto. As shown in the drawing, the outer end of the sleeve 12 is provided with a flange 13 which extends partly over the throughway of the sleeve and frictionally engages the outer sides of the tube 6. The flange 13 is also engageable by a lateral projection 14 provided on the tube 6 and which is located in the sleeve beneath the flange 13. The tube 6, hollow member 8, 9, 10 and sleeve 12 may be made of a synthetic thermoplastic material as may a piston 15 which freely surrounds the sleeve 12.

When the dispenser is fitted to a container, as shown in the drawing, and cream is housed in the container the piston adheres to the

upper surface of the cream and moves downwards therewith as the cream is dispensed from the container.

5 Cream is dispensed from the container by pressing the hollow member 8, 9, 10 downwards against the action of spring 7 so that the tube 6 and sleeve 12 move together axially until the inner end of the sleeve is arrested by the bottom 4 of the container. The tube 10 6 then moves axially relative to the sleeve 12 thus telescoping and reducing the total internal volume of the tubular members 6, 12 thus dispensing cream which emerges from the delivery orifice 11. When the pressure is released from the hollow member the spring 15 7 returns the parts to the positions thereof shown in the drawing and during this return movement some cream from stem 8 tends to return to the tube 6 while some is drawn into sleeve 12 through the inner end thereof. The resistance to the movement of cream between the stem 8 and tube 6 is much greater than that to the entry of cream into sleeve 12 and so the supply of cream in sleeve 12 is replenished. The piston 15 is provided to ensure that any local reduction in pressure in the cream is spread over the whole surface of the cream and thus ensures that the cream falls uniformly as it is dispensed.

30 It is found that with a dispensing device as above described if the rate of dispensation is not unduly fast, the sides of the container are left substantially free of cream, and it is self-priming. Further, the device operates without the provision of a non-return valve which permits of a simplified design as compared with known forms of dispensing devices used for a similar purpose.

WHAT WE CLAIM IS:—

40 1. A dispenser for cream-like substances comprising a cover for fitment to a container, a tube supported by said cover for axial movement relative thereto against the action of a spring, a hollow member the interior of which communicates with the interior of the tube, which has a dispensing orifice and is movable with the outer end of the tube, a sleeve connected with the inner end of the tube for move-

ment therewith and relative thereto, and a piston freely surrounding the sleeve, the arrangement being such that when the dispenser is fitted to a container the piston adheres to the upper surface of cream in the container and on axial movement of the tube towards the bottom of the container the sleeve moves therewith until arrested by the bottom of the container whereafter axial movement of the tube relative to the sleeve reduces the total internal volume of the tube and sleeve to cause cream to be forced through the tube and out of the dispensing orifice and return movement of the tube and sleeve under the influence of the spring causes cream to be drawn into the sleeve.

2. A dispenser according to Claim 1, wherein the outer end of the sleeve is provided with a flange which extends partly over the throughway of the sleeve and frictionally engages the outer sides of the tube and which is engageable by a lateral projection provided on the tube and located in the sleeve beneath the flange.

3. A dispenser according to Claim 1 or Claim 2, wherein the axis of the dispensing orifice is substantially at right angles to the axis of the tube.

4. A dispenser according to Claim 3, wherein the hollow member comprises a stem connected to the tube and having at its outer end a delivery portion directed away from the axis of the tube.

5. A dispenser according to any of Claims 1 to 4 fitted to a container, for example a glass jar.

6. A dispenser for cream-like substances substantially as herein described with reference to and as illustrated in the drawing accompanying the Provisional Specification.

7. A container and dispenser for cream-like substances substantially as herein described with reference to the drawing accompanying the Provisional Specification.

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- 30 It is found that with a dispensing device as above described if the rate of dispensation is not unduly fast, the sides of the container are left substantially free of cream, and it is self-priming. Further, the device operates without the provision of a non-return valve which 35 permits of a simplified design as compared with known forms of dispensing devices used for a similar purpose.

WHAT WE CLAIM IS:—

- 40 1. A dispenser for cream-like substances comprising a cover for fitment to a container, a tube supported by said cover for axial movement relative thereto against the action of a spring, a hollow member the interior of which 45 communicates with the interior of the tube, which has a dispensing orifice and is movable with the outer end of the tube, a sleeve connected with the inner end of the tube for move-

ment therewith and relative thereto, and a piston freely surrounding the sleeve, the 50 arrangement being such that when the dispenser is fitted to a container the piston adheres to the upper surface of cream in the container and on axial movement of the tube towards the bottom of the container the sleeve 55 moves therewith until arrested by the bottom of the container whereafter axial movement of the tube relative to the sleeve reduces the total internal volume of the tube and sleeve to cause cream to be forced through the tube 60 and out of the dispensing orifice and return movement of the tube and sleeve under the influence of the spring causes cream to be drawn into the sleeve.

2. A dispenser according to Claim 1, wherein the outer end of the sleeve is provided with a flange which extends partly over the 65 throughway of the sleeve and frictionally engages the outer sides of the tube and which is engageable by a lateral projection provided on the tube and located in the sleeve beneath the flange. 70

3. A dispenser according to Claim 1 or Claim 2, wherein the axis of the dispensing orifice is substantially at right angles to the 75 axis of the tube.

4. A dispenser according to Claim 3, wherein the hollow member comprises a stem connected to the tube and having at its outer end a delivery portion directed away from the 80 axis of the tube.

5. A dispenser according to any of Claims 1 to 4 fitted to a container, for example a glass jar.

6. A dispenser for cream-like substances 85 substantially as herein described with reference to and as illustrated in the drawing accompanying the Provisional Specification.

7. A container and dispenser for cream-like substances substantially as herein described with reference to the drawing accom- 90 panying the Provisional Specification.

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