Sept. 4, 1945. A. E. VAUGHN 2,384,219

METHOD OF ASSEMBLING DISPENSING DEVICE

Filed Aug. 28, 1943

Fig. 1

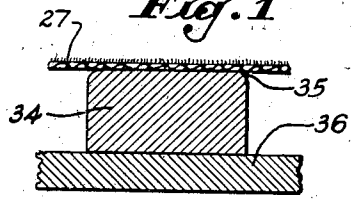


Fig. 2

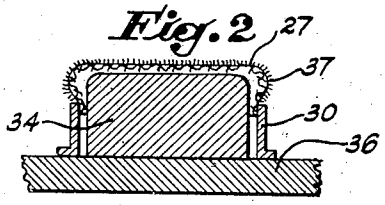


Fig. 3

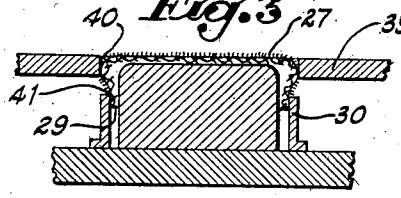


Fig. 4

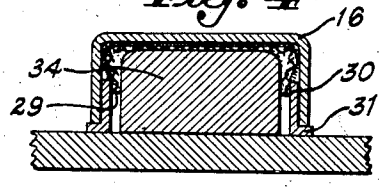


Fig. 5

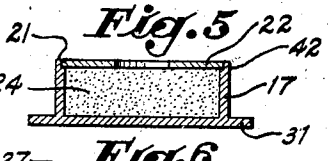


Fig. 6

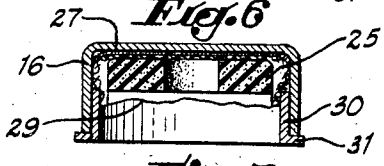


Fig. 7

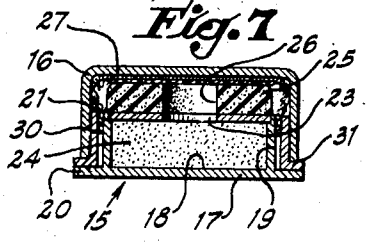


Fig. 8

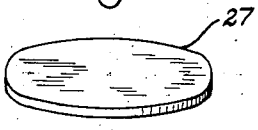


Fig. 9

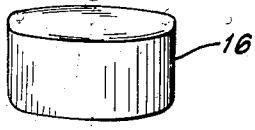


Fig. 10

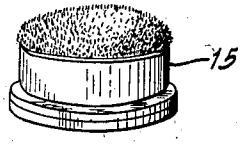
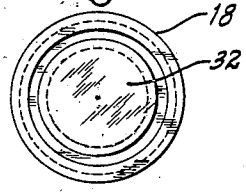


Fig. 11



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METHOD OF ASSEMBLING DISPENSING DEVICES

Albert E. Vaughn, Orange, N. J.

Application August 28, 1943, Serial No. 500,319

8 Claims. (Cl. 154—41)

My invention relates to the dispensing device art, and more particularly to a rouge or powder applicator and a novel method of assembling it.

The rouge applicator of my present invention is an improvement on that disclosed in my earlier application, Serial No. 416,326, filed October 24, 1941, which has matured into Patent No. 2,365,921 of December 26, 1944. The method of assembly of my present invention is entirely novel, so far as I am aware.

A chief object of my invention is to provide a dispensing device which will largely appear to be made of opaque material, but which is provided with a transparent window through which the contents may be viewed. I prefer to accomplish this by providing an inner transparent member adapted to contain a material to be dispensed, such as cosmetic rouge or powder, and an outer retaining ring of opaque material adapted to hold on the inner member a sheet of dispensing fabric, the opaque ring effectively concealing the edges of the fabric sheet and all but the bottom of the inner member.

A second chief object of my invention is to provide a novel method of assembling such a dispensing device which is simple to carry out and which provides a substantially improved product.

Other objects and advantages of my invention will be apparent from the following specification and the drawing, which are for the purpose of illustration only, and in which:

Fig. 1 is a diagrammatic view illustrating one step in the assembly of the top element of my invention.

Fig. 2 is a diagrammatic view illustrating another step in the assembly of the top element of my invention.

Fig. 3 is a diagrammatic view illustrating another step in the assembly of the top element of my invention.

Fig. 4 is a diagrammatic view illustrating another step in the assembly of the top element of my invention.

Fig. 5 is a sectional view through the bottom element of my invention, illustrating its assembly.

Fig. 6 is a view illustrating another step in the assembly of the top element of my invention.

Fig. 7 is a sectional view through my invention when completely assembled.

Fig. 8 is a perspective view of the fabric disk of my invention.

Fig. 9 is a perspective view of the removable cap of my invention.

Fig. 10 is a perspective view of the dispensing portion of my invention.

Fig. 11 is a bottom view of the device illustrated in Fig. 7.

As illustrated in Figs. 9 and 10 of the drawing, my finished product comprises a dispensing member 15 and a removable cap member 16 adapted to be telescoped over the dispensing member to the position illustrated in Fig. 7. The dispensing member 15, as best shown in Fig. 7, includes a cup-shaped cylindrical receptacle member 17 having a bottom 18 and an annular side wall 19, the bottom projecting outwardly past the side wall to form an annular flange 20. The receptacle member 17 is formed of transparent material, such as a suitable plastic, and this is an important feature of the invention as will be disclosed hereinafter. The annular side wall 19 is provided at its upper end with a counterbored shoulder 21 which is annular in form and which supports a circular washer element 22 having a central circular aperture 23. The receptacle member 17 is filled with cosmetic powder, rouge, or any other desired cosmetic material to be dispensed and indicated at 24.

Supported on the washer element 22 is an annular fabric-supporting element 25 which is preferably, but not necessarily, formed of a resilient material, such as sponge rubber, and which has a central aperture 26 registering with the aperture 23 in the washer element 22. Covering the supporting element 25 and extending downwardly around the upper rim of the side wall 19 of the receptacle member 17 is a porous dispensing sheet 27 which serves to retain the powder 24 in the receptacle member 17 and yet which is pervious enough to the powder to permit it to filter out of the receptacle through the sheet. The sheet 27 may be silken velour, or other velvet-like fabric, the pile of the fabric being turned outward. I prefer a fabric having a rayon pile, since rayon fibers are peculiar in having what may be termed a "self-cleaning" character, especially with respect to contamination by oily substances. The lower edge 29 of the dispensing sheet 27 is usually rough and irregular, as illustrated in Fig. 6, and a ring element 30 is provided which surrounds the side wall 19 of the receptacle member 17 and covers the irregular lower edge 29 of the dispensing sheet 27. This ring element 30 is formed of an opaque material, such as, for example, a suitable plastic, and this cooperation between the opaque ring element and the transparent receptacle member 17 is an important feature of the invention, as it effectively hides the irregular lower edge 29 of the dispensing sheet 27. The ring element 30 is also provided with an annular base flange 31 which engages the annular flange 20 of the bottom 18 and is of substantially the same diameter.

As indicated above, the cap member 16 telescopes onto the ring element 30 to engage the base flange 31 thereof, the cap member being of slightly smaller external diameter than that of the flange 31 so that the flange may be gripped readily by the fingers to retain it while the cap member is slipped off. It is also to be noted that when the cap member 16 is in its closed position, as illus-

trated in Fig. 7, it presses down on the upper face of the dispensing sheet 27 to securely hold the dispensing sheet against the fabric supporting element 25, thus reducing the leakage of powder 24 from the receptacle member 17 when the device is being carried in a purse or pocket.

By forming the ring element 30 of an opaque material and forming the receptacle member 17 of a transparent material, the side wall of the dispensing member 15, as shown in Fig. 10, will be wholly opaque, but upon viewing the dispensing member from the bottom, as illustrated in Fig. 11, it will appear to have a transparent window 32 therein through which inspection may be made of the powder 24 by a prospective purchaser or by a user.

In assembling my device in accordance with my invention, the first step is illustrated in Fig. 1, which shows a cylindrical form 34 having a rounded upper edge 35, the form being suitably secured to a base plate 36. A dispensing sheet 27, which is circular in form as illustrated in Fig. 8, is placed on the top of the cylindrical form 34 with the pile thereof faced upwardly. The ring element 30 is then telescoped downwardly over the dispensing sheet 27 and the cylindrical form 34 into engagement with the base plate 36 to the position illustrated in Fig. 2. Since the dispensing sheet has a resilient pile, the lower edges of the sheet will be somewhat crimped in, as illustrated in Fig. 2, and the rounded corners 37 thereof will be bulged slightly outwardly.

As illustrated in Fig. 3, a template 39 having a circular aperture 40 therein, which is of substantially the same diameter as the diameter of the rounded corner 37 of the dispensing sheet 27, is then positioned substantially as shown in Fig. 3 so that only the top of the dispensing sheet 27 projects through the aperture 40 of the template. A fluid solvent is then applied to the upper face of the dispensing sheet 27 which projects through the aperture 40 of the template 39, by hand brushing, by a roller, or otherwise, so as to wet the dispensing sheet with the solvent. The solvent used should be one which will tend to dissolve the plastic material of which the ring element 30 is formed, and the solvent should also be volatile and non-injurious to the fabric material of which the dispensing sheet 27 is made. Thus, for example, if the ring element 30 is made of a cellulose acetate, the solvent applied to the dispensing sheet 27 may be a volatile solvent such as acetone, ethylene glycol monomethyl ether, or a similar substance, which will rapidly penetrate through the dispensing sheet by absorption but which will finally evaporate from the dispensing sheet without injuring it. Similarly, carbon tetrachloride may be used as a suitable solvent for most of the thermo-plastics. The solvent penetrates downwardly to the lower edge 29 of the dispensing sheet 27 and wets the inner surface 41 of the ring element 30, which is engaged by the dispensing sheet, causing this portion of the inner surface of the ring element to become tacky and adhere to the dispensing sheet. Due to its volatile nature, the solvent quickly dries, and the tacky portion of the inner surface 41 of the ring element 30 also dries to form a permanent and strong bond with the lower edge 29 of the dispensing sheet 27.

The template 39 is then removed, and the cap member 16 is telescoped downwardly onto the ring element 30, as illustrated in Fig. 4, to engage the base flange 31 of the ring element. The cap member 16 thus forms a protective enclosure over the upper end of the dispensing sheet 27. As soon as the bond between the inner surface 41 of the ring element 30 and the lower edge 29 of the dispensing sheet 27 has fully set, the ring element with the cap member 16 enclosing it, as shown in Fig. 4, may be withdrawn from the form 34 without distortion or disarrangement of its parts.

The cup-shaped receptacle member 17 is then filled with powder 24, and the circular washer element 22, which may be of cardboard or any other suitable material, is pressed downwardly into the receptacle member against the counterbored shoulder 21 thereof, as illustrated in Fig. 5.

Either before or after the receptacle member 17 is filled with powder as illustrated in Fig. 5, the fabric supporting element 25 is pressed into supporting position as illustrated in Fig. 6 within the dispensing sheet 27, thus completing the assembly of the top element of the invention illustrated in Fig. 6. The bottom element of the invention is illustrated in Fig. 5 and comprises the receptacle member 17 having powder 24 therein and the washer element 22 secured therein as shown.

The upper peripheral edge 42 of the receptacle member 17 is then lightly coated with a solvent adapted to soften and tending to dissolve the edge, and which may be the same solvent previously described if the receptacle member is formed of cellulose acetate or a similar substance. When the peripheral edge 42 is softened by the solvent sufficiently to become tacky, the receptacle member 17 is pressed into the ring element 30 to the position illustrated in Fig. 7, which completes the assembly of the device. The solvent applied to the upper peripheral edge 42 of the receptacle member 17 quickly dries, as does the tacky plastic in contact with the lower inner edge of the dispensing sheet 27, to form a secure bond therewith. As soon as this bond has been completed by drying, the device is ready for use. In some cases, I have found it desirable to apply the solvent to the lower surface of the base flange 31 of the ring 30, instead of the upper peripheral edge 42 thereof, in which case the fused bond is formed between the flange 31 and the annular flange 20 of the bottom 18, which method of bonding, I have found, is sometimes faster in practice than that just previously described.

By use of my foregoing described method, I greatly increase the output of such dispensing devices and materially reduce the breakage and injury of parts attendant on other methods of assembly. It will also be apparent that while I have described the top element illustrated in Fig. 6 as being assembled first, the bottom element illustrated in Fig. 5 may be assembled first if desired without departing from my invention. Furthermore, although I have described the fabric-supporting element 25 as being pressed into the top element before the bottom element is pressed thereinto, which I prefer as it prevents possible distortion of the supporting element, obviously, if desired, the fabric-supporting element may be merely positioned on the bottom element illustrated in Fig. 5 and, as so positioned, moved into the top element with the bottom element. Other simple variations which do not depart from the spirit of the invention will readily occur to those skilled in the art, and, consequently, I do not intend to be limited to the specific method described, but desire to be afforded the full scope of the following claims.

I claim as my invention:

1. A method of using a cylindrical form to

make an element, including the steps of: placing a sheet of fabric on one end of the form, the shortest dimension of the sheet being substantially greater than the external diameter of the form; moving a ring element relative to the form to draw the margin of said sheet downwardly over the form and retain it relative thereto, the ring element fitting snugly over the sheet and form; moistening a portion of said sheet projecting from the ring element with a fluid that will penetrate the sheet and soften the inner surface of the ring element; and hardening said softened inner surface of the ring element to bond said margin to the inner wall of the ring element.

2. A method of using a cylindrical form to make an element, including the steps of: placing a sheet of fabric on one end of the form, the shortest dimension of the sheet being substantially greater than the external diameter of the form; moving a ring element relative to the form to draw the margin of said sheet downwardly over the form and retain it relative thereto, the ring element fitting snugly over the sheet and form; moistening a portion of said sheet projecting from the ring element with a fluid that will penetrate the sheet and soften the inner surface of the ring element; hardening said softened inner surface of the ring element to bond said margin to the inner wall of the ring element; placing a protective cap over said ring element and the portion of the sheet projecting therefrom; and withdrawing said ring element, having said sheet bonded thereto and said cap thereon, from the form.

3. A method of using a cylindrical form to make an element, including the steps of: placing a sheet of fabric on one end of the form, the shortest dimension of the sheet being substantially greater than the external diameter of the form; moving a ring element relative to the form to draw the margin of said sheet downwardly over the form and retain it relative thereto, the ring element fitting snugly over the sheet and form; placing a template having a circular opening therein over the form so as to mask off said ring element and leaving a projecting portion of the sheet exposed through the template; applying a fluid to said projecting portion through the opening in the template, said fluid penetrating the sheet to soften the inner surface of the ring element; and hardening said softened inner surface of the ring element to bond said margin to the inner wall of the ring element.

4. A method of making a dispensing device, including the steps of: forming a first member including a ring element having a porous top sheet the margin of which is secured to the inner wall of the ring element; forming a second member including a cylindrical member having an external diameter slightly smaller than the internal diameter of said ring element, said cylindrical member having therein a material adapted to be dispensed through said top sheet; moistening the periphery of said cylindrical member with a substance adapted to bond said cylindrical member to said margin; and telescoping said second member into said first member so that a portion of the periphery of said cylindrical member engages the internal surface of said margin and is bonded thereto.

5. A method of making a dispensing device, including the steps of: forming a first member including a ring element having a porous top sheet the margin of which is secured to the inner wall of the ring element; forming a second member including a cylindrical member having an external diameter slightly smaller than the internal diameter of said ring element, said cylindrical member having therein a material adapted to be dispensed through said top sheet; inserting a cushion element between said first and second members; moistening the periphery of said cylindrical member with a substance adapted to bond said cylindrical member to said margin; and telescoping said second member into said first member so that a portion of the periphery of said cylindrical member engages the internal surface of said margin and is bonded thereto, and so that said cushion element engages and supports said top sheet.

6. A method of making a dispensing device, including the steps of: forming a first member by placing a sheet of fabric on one end of a form and having a margin overlapping the edge of the form, moving a ring element relative to the form to draw the margin downwardly over the form and retain it relative thereto, moistening a portion of said sheet projecting from the ring element with a fluid that will penetrate the sheet to bond it to the ring element, and removing said ring element with said sheet bonded thereto from the form; forming a second member by placing in a cup-shaped member a quantity of a material to be dispensed through said sheet; inserting a cushion element into said first member so as to engage within said sheet; and telescoping said second member into said first member so that the periphery of said cup-shaped member frictionally engages the internal surface of said margin, and so that said cushion element engages and supports said sheet.

7. A method of making a dispensing device, including the steps of: forming a first member including a ring element having a porous top sheet the margin of which is secured to the inner wall of the ring element; forming a second member including a cylindrical member having an external diameter slightly smaller than the internal diameter of said ring element; applying a bonding substance to the periphery of said cylindrical member, said substance being adapted to bond said cylindrical member relative to said ring element; and telescoping said second member into said first member to bond said cylindrical member relative to said ring element.

8. A method of using a cylindrical form to make an element, including the steps of: placing a sheet of fabric on one end of the form, the shortest dimension of the sheet being substantially greater than the external diameter of the form; moving a ring element relative to the form to draw the margin of said sheet downwardly and to retain it relative to the form, the ring element fitting snugly over said sheet and said form; and moistening a portion of said sheet projecting from the ring element with a fluid that will penetrate the sheet and bond said margin to the inner surface of the ring element, said fluid being such that it will not injure said portion of said sheet projecting from said ring element.

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