

DESCRIPTION

POWDER COSMETIC CONTAINER

TECHNICAL FIELD

[0001] The present invention relates to a powder cosmetic container that accommodates powder cosmetics.

BACKGROUND ART

[0002] A container disclosed in Patent Document 1 below has been known as a powder cosmetic container that accommodates powder cosmetics. The powder cosmetic container disclosed in Patent Document 1 includes a container body which accommodates powder therein, a middle plate which is fit into and integrated with an upper portion of the container body and has a first through-hole vertically penetrating therethrough, a puff plate which is rotatably connected to the middle plate, has a second through-hole vertically penetrating therethrough, and accommodates puff, and a cover (cap) which is detachably fit into the puff plate. When the container is used, first, the cover is removed, and then the puff plate is rotated to a position at which the first and second through-holes communicate, and powder is enabled to be sent out to the puff and applied. After the container is used, the puff plate is rotated to a position at which the first and second through-holes do not communicate, a powder room in the container body is sealed, and the cover is closed.

CITATION LIST

PATENT DOCUMENT

[0003] Patent Document 1: JP 2005-21213 A

DISCLOSURE OF THE INVENTION

PROBLEM TO BE SOLVED BY THE INVENTION

[0004] Incidentally, the powder cosmetic container that accommodates powder cosmetics containing a volatile component requires a high airtightness. Here, even though the container disclosed in Patent Document 1 has a configuration in which sealing is performed by surfaces of the middle plate and the puff plate that relatively rotate, it is difficult to sufficiently ensure airtightness.

[0005] In addition, during use, a rotation operation of allowing communication between the through-holes is necessary so that powder can be sent out after the cover is opened. After use, it is necessary to close the cover after performing a rotation operation of disconnecting communication between the through-holes. Therefore, there is a problem of a complicated operation.

[0006] In this regard, an object of the invention is to provide a powder cosmetic container capable of easily ensuring airtightness with respect to powder cosmetics, which require airtightness, including powder cosmetics that contain a volatile component and releasing airtightness to send out the powder cosmetics in conjunction with a series of operations for opening and closing a cap and capable of sufficiently ensuring airtightness.

MEANS FOR SOLVING PROBLEM

[0007] A powder cosmetic container according to the invention includes a base for accommodating powder cosmetics, a base cap which includes a cylindrical

portion protruding upward in an axial direction, having a closed distal end, and having a repulsive force or a restoring force, and is synchronously rotatably connected to the base by including a through-hole allowing the powder cosmetics to pass through in a radial direction of the cylindrical portion, an inner tube fixed on an outside of the cylindrical portion of the base cap to be rotatable around an axis with respect to the base cap, a connection tool which is connected to the inner tube to be synchronously rotatable around the axis, is rotatable around the axis with respect to the base, and includes a male screw on an outer circumferential surface, an application body put on the inner tube, and a cap including a female screw to be screwed with the male screw of the connection tool on an inner circumferential surface, wherein a tube hole of the inner tube includes a closing portion that closes the through-hole of the cylindrical portion and a guide path that allows the powder cosmetics passing through the through-hole to pass to the application body along a circumferential direction, the inner tube synchronously rotates with the connection tool around the axis, and the guide path of the inner tube moves to an open position at which the powder cosmetics passing through the through-hole are allowed to pass to the application body when the connection tool is rotated together with the cap in one direction with respect to the base, and the inner tube synchronously rotates with the connection tool around the axis, and the closing portion of the inner tube moves to a closed position at which the through-hole of the cylindrical portion is closed when the connection tool is rotated together with the cap in another direction opposite to the one direction.

[0008] According to the above-described powder cosmetic container, when the connection tool is rotated together with the cap in one direction with respect to

the base to open the cap, the guide path of the inner tube rotating in the one direction together with the connection tool moves to the open position at which the powder cosmetics passing through the through-hole in the radial direction of the cylindrical portion are allowed to pass to the application body. In this way, airtightness is released to remove the cap and send the powder cosmetics out. In addition, when the connection tool is rotated together with the cap in another direction to close the cap, the closing portion of the inner tube rotating together with the connection tool in another direction moves to the closed position at which the through-hole of the cylindrical portion is closed. In this way, the cap is put on and airtightness is ensured. As described above, it is possible to easily ensure airtightness and release airtightness to send out powder cosmetics in conjunction with a series of operations for opening and closing the cap. In addition, since the cylindrical portion has a repulsive force or a restoring force, a desired surface pressure spreading approximately evenly outward in the radial direction over the whole circumference of the cylindrical portion that forms the closed section may be ensured for the inner tube. As a result, the airtightness may be sufficiently ensured.

[0009] Herein, the cylindrical portion includes an inner cylindrical portion and an outer cylindrical portion, the outer cylindrical portion corresponds to an elastic body, and the through-hole is provided to penetrate the inner cylindrical portion and the outer cylindrical portion in the radial direction. In addition, the elastic body has a higher repulsive force or restoring force. Thus, it is possible to more sufficiently ensure airtightness.

EFFECT OF THE INVENTION

[0010] According to the invention, it is possible to provide a powder cosmetic container capable of easily ensuring airtightness and releasing airtightness to send out powder cosmetics in conjunction with a series of operations for opening and closing a cap and capable of sufficiently ensuring the airtightness.

BRIEF DESCRIPTION OF DRAWINGS

[0011] Fig. 1 is an upper perspective view of a powder cosmetic container according to an embodiment of the invention;

Fig. 2 is an upper perspective view illustrating a state in which a cap is removed from a state of Fig. 1;

Fig. 3 is a vertical cross-sectional view of the powder cosmetic container illustrated in Fig. 1;

Fig. 4 is a vertical cross-sectional view of the powder cosmetic container illustrated in Fig. 2;

Fig. 5 is an upper perspective view of a base;

Fig. 6 is an upper perspective view of a base cap;

Fig. 7 is a plan view of the base cap;

Fig. 8 is a lower perspective view of the base cap;

Fig. 9 is an upper perspective view of a packing;

Fig. 10 is a lower perspective view of the packing;

Fig. 11 is an upper perspective view of a connection tool;

Fig. 12 is a lower perspective view of the connection tool;

Fig. 13 is an upper perspective view of an inner tube;

Fig. 14 is a lower perspective view illustrating the inner tube;

Fig. 15 is an upper perspective view of an elastic portion;

Fig. 16 is a perspective view of an expanded half section in a state in which a closing portion of the inner tube is located at a closed position; and

Fig. 17 is a perspective view of an expanded half section in a state in which a guide path of the inner tube is located at an open position.

MODE(S) FOR CARRYING OUT THE INVENTION

[0012] Hereinafter, a description will be given of preferred embodiments of a powder cosmetic container according to the invention with reference to Figs. 1 to 17.

[0013] Fig. 1 is an upper perspective view of a powder cosmetic container according to an embodiment of the invention, Fig. 2 is an upper perspective view illustrating a state in which a cap is removed from a state of Fig. 1, Fig. 3 is a vertical cross-sectional view of the powder cosmetic container illustrated in Fig. 1, Fig. 4 is a vertical cross-sectional view of the powder cosmetic container illustrated in Fig. 2, Fig. 5 is an upper perspective view of a base, Figs. 6 to 8 are views each of which illustrates a base cap, Figs. 9 and 10 are perspective views each of which illustrates a packing, Figs. 11 and 12 are perspective views each of which illustrates a connection tool, Figs. 13 and 14 are perspective views each of which illustrates an inner tube, Fig. 15 is an upper perspective view of an elastic portion, Fig. 16 is a perspective view of a half section in a state in which a closing portion of the inner tube is located at a closed position, and Fig. 17 is a perspective view of a half section in a state in which a guide path of the inner tube is located at an open position. For example, the powder cosmetic container of the present embodiment is used when a user applies powder cosmetics to a skin, or the like.

[0014] Herein, for example, powder cosmetics A may be preferably applied to the invention as body powder or powder cosmetics for cheeks, or the like. In particular, powder cosmetics containing a volatile component are more preferable.

[0015] As illustrated in Figs. 1 and 3, a powder cosmetic container 100 includes a base 1 which accommodates the powder cosmetics A, a base cap 2 which covers the base 1 from above, has a cylindrical portion 2a protruding upward in an axial direction at a center, and is integrated with the base 1, a connection tool 3 which covers the base cap 2 and the base 1 from above, is rotatable around an axis (in a circumferential direction) with respect to the base 1, and has a tube hole at a center, an inner tube 4 which is integrated with the connection tool 3, is fixed on an outside of the cylindrical portion 2a of the base cap 2 to be rotatable around the axis, and ensures/releases airtightness between the inner tube 4 and the cylindrical portion 2a by being rotated, an application body 10 for applying the powder cosmetics A by being put on an upper portion of the inner tube 4, and a cap 11 serving as a lid which is detachably put on the connection tool 3.

[0016] As illustrated in Figs. 3 and 5, the base 1 is configured in a bottomed cylindrical shape (shape of a cup) to accommodate the powder cosmetics A therein, and includes a protrusion 1a in an upper portion which is thinner than a lower portion and protrudes upward in a cylindrical shape. A roulette 1b having concave and convex portions densely arranged in parallel along a circumferential direction is formed on an inner circumferential surface of the protrusion 1a to allow the base cap 2 to be engaged in the circumferential direction. An inner circumferential surface 1d corresponding to the inner

circumferential surface of the protrusion 1a and positioned below the roulette 1b is used as a fitting surface for preventing the base cap 2 from moving in the axial direction. In addition, a ring-shaped convex portion 1c is provided on an outer circumferential surface of the protrusion 1a to allow the connection tool 3 to be engaged in the axial direction. The base 1 may be partially or entirely transparent such that the powder cosmetics A on the inside are viewed.

[0017] As illustrated in Fig. 3 and Figs. 6 to 8, the base cap 2 includes a circular disk portion 2b forming a shape of a circular disk, the cylindrical portion 2a (see Fig. 3) which has an inner cylindrical portion 2g and an outer cylindrical portion 2h provided at a center of the circular disk portion 2b to protrude upward, and a ring-shaped protrusion 2c formed at an outer circumferential end of the circular disk portion 2b to protrude upward. The base cap 2 is made of a resin such as polypropylene (PP) except for the outer cylindrical portion 2h described below.

[0018] The circular disk portion 2b has a through-hole 2d at a center to allow the powder cosmetics A to pass through. A ring-shaped convex portion 2e protruding upward is provided around the through-hole 2d on an upper surface of the circular disk portion 2b such that the outer cylindrical portion 2h described below is fit thereto immovably in the axial direction. In addition, a pair of rotation stopping ribs 2f, each of which substantially has a shape of a letter "U" in a plan view, are provided to protrude upward on the outside in the radial direction of the ring-shaped convex portion 2e on the upper surface of the circular disk portion 2b. The rotation stopping ribs 2f serve as rotation stoppers of the inner tube 4. In addition, the respective rotation stopping ribs 2f are provided at positions facing each other with an axis interposed

therebetween (positions separated from each other by 180° in the circumferential direction).

[0019] The inner cylindrical portion 2g included in the cylindrical portion 2a is formed to be integrated with the circular disk portion 2b, and provided to protrude upward from a circumferential surface of the through-hole 2d. In addition, a distal end (upper end) of the inner cylindrical portion 2g is closed. A pair of through-holes 2i penetrating a peripheral wall of the inner cylindrical portion 2g in the radial direction are provided to connect the inside and the outside. The through-holes 2i are provided to allow the powder cosmetics A to pass through. The respective through-holes 2i are provided at positions facing each other with the axis interposed therebetween. Here, the positions are shifted in the circumferential direction from positions directly facing each other in contrast with the rotation stopping ribs 2f. In addition, a pair of recessed grooves 2j are provided to vertically extend on an outer circumferential surface of the inner cylindrical portion 2g. The recessed grooves 2j allow the outer cylindrical portion 2h to be engaged in the circumferential direction, and the respective recessed grooves 2j are provided at positions facing each other with the axis interposed therebetween.

[0020] The outer cylindrical portion 2h included in the cylindrical portion 2a is an elastic body such as polyethylene or elastomer, and referred to as a so-called packing. As illustrated in Fig. 3, the outer cylindrical portion 2h covers the inner cylindrical portion 2g. As illustrated in Figs. 3, 9 and 10, a distal end (upper end) of the outer cylindrical portion 2h is closed. A pair of through-holes 2k penetrating a peripheral wall of the outer cylindrical portion 2h in the radial direction are provided to connect the inside and the outside. The

through-holes 2k are provided to allow the powder cosmetics A to pass through. The respective through-holes 2k are provided at positions facing each other with the axis interposed therebetween. Ring-shaped ribs for airtightness 2s are provided around the through-holes 2k on an outer circumferential surface of the outer cylindrical portion 2h to ensure airtightness by being in sliding contact with the inner tube 4.

[0021] In addition, a pair of projections 2p are provided to vertically extend on an inner circumferential surface of the outer cylindrical portion 2h. The projections 2p are provided to be engaged with the recessed grooves 2j of the inner cylindrical portion 2g in the circumferential direction, and provided at positions corresponding to the recessed grooves 2j. A lower portion of the peripheral wall of the outer cylindrical portion 2h is configured as a branching part 2m branching into two legs in shapes of rings, and a fitting surface 2n on an inner circumference side of a ring-shaped concave surface which is included in the branching part 2m and open to a lower side is provided to be fit to the ring-shaped convex portion 2e of the circular disk portion 2b immovably in the axial direction.

[0022] In addition, the outer cylindrical portion 2h illustrated in Figs. 9 and 10 is fixed on an outside of the inner cylindrical portion 2g illustrated in Fig. 6 from above, and the projections 2p thereof are engaged with the recessed grooves 2j of the inner cylindrical portion 2g in the circumferential direction. Moreover, as illustrated in Fig. 3, the fitting surface 2n of the branching part 2m thereof is fit to the convex portion 2e of the circular disk portion 2b by press fitting. In this way, the outer cylindrical portion 2h is put on the circular disk portion 2b non-rotatably around the axis and immovably in the axial direction. In other

words, the inner cylindrical portion 2g and the outer cylindrical portion 2h are integrated with each other, and in this state, the through-holes 2i of the inner cylindrical portion 2g and the through-holes 2k of the outer cylindrical portion 2h communicate with each other.

[0023] As illustrated in Fig. 3 and Figs. 6 to 8, a plurality of vertically extending projections 2q are provided along the circumferential direction with gaps therebetween on the outer circumferential surface of the protrusion 2c so as to be engaged with the roulette 1b of the base 1 in the circumferential direction. In addition, a flange portion 2r protruding in a shape of a ring on an outside in the radial direction is provided on an upper portion of the protrusion 2c to come into contact with an upper surface of the protrusion 1a of the base 1.

[0024] The base cap 2 having the above-described configuration covers the base 1 from above. In addition, as illustrated in Fig. 3, the flange portion 2r of the protrusion 2c thereof comes into contact with the upper surface of the protrusion 1a of the base 1, a lower portion of an outer circumferential surface of the circular disk portion 2b thereof is fit to the fitting surface 1d of the base 1 by press fitting, and the projections 2q of the protrusion 2c thereof is engaged with the roulette 1b of the base 1 in the circumferential direction. In this way, the base cap 2 is put on and integrated with the base 1 immovably in the axial direction and synchronously rotatably.

[0025] As illustrated in Fig. 3 and Figs. 11 and 12, the connection tool 3 is formed by connecting an outer circumference side cylindrical portion 3a and an inner circumference side cylindrical portion 3b positioned on the same axis using a ring-shaped and flat plate-shaped connecting portion 3c.

[0026] The outer circumference side cylindrical portion 3a includes a lower side

cylindrical portion 3d and an upper side cylindrical portion 3e having a smaller diameter than that of the lower side cylindrical portion 3d. A ring-shaped depressed portion 3t is provided on an inner circumferential surface of the lower side cylindrical portion 3d so as to be engaged with the ring-shaped convex portion 1c of the protrusion 1a of the base 1 in the axial direction, and a male screw 3f extending in the axial direction is provided on an outer circumferential surface of the upper side cylindrical portion 3e such that the cap 11 is detachably put thereon.

[0027] The connecting portion 3c has a ring-shaped convex portion 3g protruding downward on a lower surface thereof. The ring-shaped convex portion 3g is provided to hold an O-ring 5 between the ring-shaped convex portion 3g and an inner circumferential surface of the upper portion of the protrusion 2c of the base cap 2.

[0028] A roulette 3p having concave and convex portions densely arranged in parallel along the circumferential direction is provided on an upper portion side of an inner circumferential surface of the inner circumference side cylindrical portion 3b to allow the inner tube 4 to be engaged in the circumferential direction, and a ring-shaped convex portion 3i is provided on a lower portion side of the inner circumferential surface to allow the inner tube 4 to be engaged in the axial direction.

[0029] For example, the inner tube 4 is made of a resin such as PP. In addition, as illustrated in Fig. 3 and Figs. 13 and 14, the inner tube 4 includes an inner tube body 4a substantially formed in a cylindrical shape and a ring-shaped flange portion 4b provided on an upper portion of the inner tube body 4a in a linked manner.

[0030] A lower portion of a tube hole of the inner tube body 4a is configured as a large diameter-tube hole 4c having a large diameter, and an upper side of the large diameter-tube hole 4c is configured as a main tube hole 4d having a smaller diameter than that of the large diameter-tube hole 4c. In addition, the large diameter-tube hole 4c and a ring-shaped stepped surface 4e formed between the main tube hole 4d and the large diameter-tube hole 4c are provided as a depressed portion which is caved in response to a branching portion of the branching part 2m of the outer cylindrical portion 2h.

[0031] The main tube hole 4d is a circumferential surface that faces the outer circumferential surface of the outer cylindrical portion 2h. When a depressed portion 4f having a diameter enlarged outward in the radial direction is provided at each of positions facing each other with an axis of the circumferential surface interposed therebetween, an arc surface 4g and the depressed portion 4f (see Fig. 4) are alternately arranged every 90° along the circumferential direction, the arc surfaces 4g and 4g face each other, and the depressed portion 4f and 4f orthogonal to the arc surfaces 4g and 4g face each other.

[0032] The arc surface 4g of the inner tube body 4a extends up to an upper portion of the main tube hole 4d, and an arc flange portion 4h projecting inward with respect to the arc surface 4g to form an arc shape is provided on the upper portion of the main tube hole 4d. In addition, the depressed portion 4f of the inner tube body 4a is open to an upper side.

[0033] In addition, a lower portion 4i of the inner tube body 4a is positioned between an outer circumferential surface of the branching part 2m of the outer cylindrical portion 2h of the base cap 2 and a surface on an inner

circumference side of the rotation stopping ribs 2f, and a rotation thereof is guided. Further, a pair of rotation stoppers 4j protruding outward in the radial direction to form an arc shape in a plan view are provided in a portion of an outer circumferential surface of the lower portion 4i. The rotation stoppers 4j are used to stop rotation of the inner tube 2 by being coming into contact with the rotation stopping ribs 2f of the base cap 2 (see Figs. 6 and 7). The respective rotation stoppers 4j are provided at positions facing each other with the axis interposed therebetween, and positions on the outside in the radial direction of the depressed portion 4f.

[0034] Each of arc shapes of the rotation stoppers 4j extends upward without changing the shape. Here, a plurality of projections 4k are provided to vertically extend along the circumferential direction with gaps therebetween on an upper portion side of an outer circumferential surface of each of portions formed by extending upward so as to be engaged with the roulette 3p of the connection tool 3 in the circumferential direction, and an arc-shaped depressed portion 4m is provided between each of the rotation stoppers 4j and the projections 4k on the outer circumferential surface of each of portions formed by extending upward so as to be engaged with the ring-shaped convex portion 3i of the inner circumference side cylindrical portion 3b of the connection tool 3 in the axial direction.

[0035] The flange portion 4b is a large-diameter flange portion protruding outward in the radial direction, and a substantially ring-shaped recessed groove 4n is provided on an upper surface thereof. In addition, a plurality of protruding portions 4p protruding outward in the radial direction are provided in a separated manner along the circumferential direction on an outer

circumferential surface of the flange portion 4b so as to hook an applicator 10a described below which is included in the application body 10.

[0036] As illustrated in Fig. 4, the inner tube 4 having the above-described configuration is put on the connection tool 3 immovably in the axial direction and synchronously rotatably when the inner tube body 4a thereof is fixed on an inside of the inner circumference side cylindrical portion 3b of the connection tool 3, the depressed portion 4m thereof is engaged with the convex portion 3i of the inner circumference side cylindrical portion 3b of the connection tool 3 in the axial direction, and the projections 4k thereof is engaged with the roulette 3p of the connection tool 3 in the circumferential direction.

[0037] In addition, as illustrated in Figs. 3 and 4, the connection tool 3 and the inner tube 4 cover the base 1 and the base cap 2 from above such that the inner tube body 4a of the inner tube 4 is fixed on an outside of the outer cylindrical portion 2h. Here, the connection tool 3 and the inner tube 4 are put on the base 1 and the base cap 2 non-rotatably around the axis and immovably in the axial direction when the lower portion 4i of the inner tube 4 is positioned between the outer circumferential surface of the branching part 2m of the outer cylindrical portion 2h of the base cap 2 and the surface on the inner circumference side of the rotation stopping ribs 2f (see Fig. 3), and the depressed portion 3t of the lower side cylindrical portion 3d of the connection tool 3 is engaged with the convex portion 1c of the protrusion 1a of the base 1 in the axial direction.

[0038] As illustrated in Figs. 3 and 16, when one of the rotation stoppers 4j of the inner tube 4 comes into contact with one of the rotation stopping ribs 2f of the base cap 2 (when the other one of the rotation stoppers 4j of the inner tube

4 comes into contact with the other one of the rotation stopping ribs 2f of the base cap 2), the arc surface 4g of the inner tube 4 directly faces the through-holes 2k of the outer cylindrical portion 2h. In this way, the arc surface 4g of the inner tube 4 closes the through-holes 2k and ensures airtightness, and thus is regarded as a closing portion (sealing surface).

[0039] In addition, as illustrated in Figs. 4 and 17, when the inner tube 4 rotates and one of the rotation stoppers 4j thereof comes into contact with the other one of the rotation stopping ribs 2f of the base cap 2 (the other one of the rotation stoppers 4j of the inner tube 4 comes into contact with one of the rotation stopping ribs 2f of the base cap 2), the depressed portion 4f of the inner tube 4 directly faces the through-holes 2k of the outer cylindrical portion 2h. In this way, the depressed portion 4f of the inner tube 4 forms a guide path that allows the powder cosmetics A passing through the through-holes 2k to pass to the application body 10.

[0040] As illustrated in Fig. 3, the O-ring 5 for airtightness is sandwiched between the inner circumferential surface of the upper portion of the protrusion 2c of the base cap 2 and an outer circumferential surface of the convex portion 3g of the connecting portion 3c of the connection tool 3.

[0041] The application body 10 includes the applicator 10a and an elastic portion 10b. As illustrated in Figs. 3 and 15, the elastic portion 10b substantially has a shape of a circular disc and is arranged at a predetermined position on the flange portion 4b of the inner tube 4. The elastic portion 10b includes an elastic body that contains a porous material such as urethane foam or acrylonitrile-butadiene rubber (NBR) to allow the powder cosmetics A to pass through. A plurality of outflow ports 10c that allow the powder

cosmetics A to circulate are provided nearly at a center of the elastic portion 10b to serve as a main path for allowing the powder cosmetics A to flow out.

[0042] As illustrated in Fig. 3, the applicator 10a is arranged at a predetermined position on the elastic portion 10b, and used to apply the powder cosmetics A that flow out through the elastic portion 10b to, for example, a skin, or the like with excellent application feeling. In addition, the applicator 10a is configured by implanting hair on the elastic body that contains the porous material such as urethane foam, or NBR to allow the powder cosmetics A to pass through. The applicator 10a is put on the inner tube 4 in a state in which the elastic portion 10b is sandwiched between the applicator 10a and the upper portion of the inner tube 4 when an outer circumference side thereof is pulled downward by wrapping the elastic portion 10b from an outer side and hooked to the protruding portions 4p of the inner tube 4.

[0043] As illustrated in Figs. 1 and 3, the cap 11 is a domed cover curved to protrude upward, has a female screw 11a to be screwed with the male screw 3f of the upper side cylindrical portion 3e of the connection tool 3 on an inner circumferential surface thereof, and is put on the connection tool 3 when the female screw 11a is screwed with the male screw 3f.

[0044] Next, a description will be given of the powder cosmetic container 100 having the above-described configuration. First, a description will be given of a state in which the cap 11 is put on the connection tool 3 by fully screwing the female screw 11a of the cap 11 with the male screw 3f of the connection tool 3 as illustrated in Figs. 1 and 3. In this state, as described in the foregoing, one of the rotation stoppers 4j of the inner tube 4 comes into contact with one of the rotation stopping ribs 2f of the base cap 2 (the other one of the rotation

stoppers 4j of the inner tube 4 comes into contact with the other one of the rotation stopping ribs 2f of the base cap 2), and the closing portion 4g corresponding to the arc surface of the inner tube 4 is located at the closed position that closes the through-holes 2k in the radial direction of the outer cylindrical portion 2h (a position at which the closing portion 4g of the inner tube 4 directly faces the through-holes 2k) as illustrated in Figs. 3 and 16.

[0045] Herein, the outer cylindrical portion 2h has a high repulsive force or restoring force due to the elastic body. For this reason, a desired surface pressure spreading approximately evenly outward in the radial direction over the whole circumference of the cylindrical portion 2h that forms the closed section is ensured for the closing portion 4g of the inner tube 4. As a result, the airtightness is sufficiently ensured. Therefore, when powder cosmetics containing a volatile component are accommodated, vaporization of the volatile component is prevented.

[0046] When the container is used in this state, the user turns the cap 11 in a direction in which the cap 11 is unfastened (unscrewing direction, that is, one direction) to open the cap 11. Then, since the female screw 11a of the cap 11 is fully screwed with the male screw 3f of the connection tool 3, the cap 11 and the connection tool 3 are integrated with each other, and the connection tool 3 and the inner tube 4 together with the cap 11 are rotated in an integrated manner around the axis in the unscrewing direction with respect to the base 1 and the base cap 2. In addition, the closing portion 4g of the inner tube 4 directly facing the through-holes 2k of the outer cylindrical portion 2h of the base cap 2 moves along the circumferential direction. At the same time, the guide path (depressed portion) 4f of the inner tube 4 moves along the

circumferential direction to directly face the through-holes 2k.

[0047] Then, when the cap is rotated 90° and one of the rotation stoppers 4j of the inner tube 4 comes into contact with the other one of the rotation stopping ribs 2f of the base cap 2 (the other one of the rotation stoppers 4j of the inner tube 4 comes into contact with one of the rotation stopping ribs 2f of the base cap 2), rotation of the connection tool 3 and the inner tube 4 together with the cap 11 in the unscrewing direction is temporarily suspended. In this state, as illustrated in Figs. 4 and 17, the guide path 4f of the inner tube 4 is located at an open position (position at which the guide path 4f of the inner tube 4 directly faces the through-holes 2k) at which the powder cosmetics A passing through the through-holes 2i of the inner cylindrical portion 2g and the through-holes 2k of the outer cylindrical portion 2h are allowed to pass to the application body 10.

[0048] In this state, when the user further turns the cap 11 in the unscrewing direction, rotation of the inner tube 4 and the connection tool 3 in the same direction is stopped by the rotation stopping ribs 2f of the base cap 2. Thus, only the cap 11 is rotated in the unscrewing direction, the female screw 11a of the cap 11 is unscrewed from the male screw 3f of the connection tool 3, and the cap 11 is removed. As a result, the state illustrated in Fig. 2 is obtained. In other words, the cap 11 is removed and airtightness is released to send the powder cosmetics A out.

[0049] Then, when the application body 10 is softly hit and pressed against, for example, a skin, or the like of the user during use, the powder cosmetics A in the base 1 flow out through the cylindrical portion 2a and the through-holes 2i and 2k of the base cap 2, the guide path 4f of the inner tube 4, and the

application body 10 as indicated by an arrow to be applied.

[0050] After use, the user turns the cap 11 in a direction in which the cap 11 is tightened (screwing direction, another direction opposite to the one direction) to close the cap 11. Then, the female screw 11a of the cap 11 is screwed with the male screw 3f of the connection tool 3. When the female screw 11a is fully screwed, the cap 11 and the connection tool 3 are integrated with each other, and the connection tool 3 and the inner tube 4 together with the cap 11 are rotated around the axis in an integrated manner in the screwing direction with respect to the base 1 and the base cap 2. In addition, the guide path 4f directly facing the through-holes 2k of the outer cylindrical portion 2h of the base cap 2 moves along the circumferential direction. As the same time, the closing portion 4g of the inner tube 4 moves along the circumferential direction to directly face the through-holes 2k.

[0051] Then, when the cap is rotated 90° and one of the rotation stoppers 4j of the inner tube 4 comes into contact with one of the rotation stopping ribs 2f of the base cap 2 (the other one of the rotation stoppers 4j of the inner tube 4 comes into contact with the other one of the rotation stopping ribs 2f of the base cap 2), rotation of the connection tool 3 and the inner tube 4 together with the cap 11 in the screwing direction is suspended. In this state, as illustrated in Figs. 3 and 16, the closing portion 4g of the inner tube 4 is located at the closed position at which the through-holes 2k of the outer cylindrical portion 2h are closed and returns to an initial position. In other words, the cap 11 is put on, and airtightness is sufficiently ensured.

[0052] In this way, in the present embodiment, it is possible to easily ensure airtightness and release airtightness to send out the powder cosmetics A in

conjunction with a series of operations for opening and closing the cap 11, and the outer cylindrical portion 2h has a repulsive force or a restoring force. For this reason, a desired surface pressure spreading approximately evenly outward in the radial direction over the whole circumference of the cylindrical portion 2h that forms the closed section is ensured for the inner tube 4. As a result, the airtightness is sufficiently ensured.

[0053] In addition, in the present embodiment, the cylindrical portion 2a has the inner cylindrical portion 2g and the outer cylindrical portion 2h, the outer cylindrical portion 2h is configured as the elastic body (packing), the through-holes 2i and 2k are provided to penetrate the inner cylindrical portion 2g and the outer cylindrical portion 2h in the radial direction, and the elastic body has a higher repulsive force or restoring force. Thus, it is possible to more sufficiently ensure airtightness.

[0054] In addition, since airtightness may be ensured in conjunction with a series of operations for opening and closing the cap 11 as described above, it is possible to ensure double airtightness of airtightness obtained by closing the through-holes 2k in the radial direction and airtightness obtained by the cap 11 only by performing an operation of closing the cap 11.

[0055] When airtightness may be ensured between the closing portion (arc surface) 4g of the inner tube 4 and the through-holes 2k without the ribs for airtightness 2s of the outer cylindrical portion 2h, the ribs for airtightness 2s may be excluded.

[0056] In addition, in a method of assembling the powder cosmetic container 100 described above, first, components except for the base 1 (the base cap 2, the connection tool 3, the inner tube 4, the O-ring 5, the application body 10

and the cap 11) are assembled in advance. In this instance, airtightness is ensured by putting the closing portion 4g of the inner tube 4 at the closed position that closes the through-holes 2k of the outer cylindrical portion 2h of the base cap 2. Then, after the base 1 is filled with the powder cosmetics A, the assembled components except for the base 1 are inserted from the axial direction of the base 1, thereby finishing assembly of the powder cosmetic container 100.

During the assembly, as described in the foregoing, when the lower portion of the outer circumferential surface of the circular disk portion 2b of the base cap 2 is fit to the fitting surface 1d of the base 1 by press fitting, airtightness is ensured between the base 1 and the base cap 2. Accordingly, in addition to airtightness between the base cap 2 and the inner tube 4 described above, airtightness of an inside of the powder cosmetic container 100 is ensured.

[0057] The invention has been described in detail based on the embodiments. However, the invention is not limited to the embodiments. For example, in the α embodiments, the cylindrical portion 2a especially preferably includes the inner cylindrical portion 2g and the outer cylindrical portion 2h, and the outer cylindrical portion 2h is especially preferably configured as the elastic body such as polyethylene or elastomer. However, without dividing the cylindrical portion 2a into the inner and outer portions, for example, the cylindrical portion 2a may only include the elastic body such as polyethylene or elastomer, and a desired surface pressure may be ensured for the inner tube 4 by an outer circumferential surface of a cylindrical portion of the elastic body. Alternatively, similarly, without dividing the cylindrical portion 2a into the inner and outer

portions, for example, the cylindrical portion 2a may only include a material such as PP having a repulsive force or a restoring force, and a desired surface pressured may be ensured for the inner tube 4 by an outer circumferential surface of a cylindrical portion thereof. In either case, the cylindrical portion 2a has a repulsive force or a restoring force, and thus airtightness may be sufficiently ensured. In particular, when only the elastic body is included, a higher repulsive force or restoring force is obtained, and thus airtightness may be more sufficiently ensured. In addition, when different materials are used for the inner cylindrical portion 2g and the outer cylindrical portion 2f, two colors may be used.

[0058] In addition, in the embodiments, the two through-holes 2i especially preferably face each other, and the two through-holes 2k especially preferably face each other. However, one through-hole 2i and one through-hole 2k, or three or more through-holes 2i and three or more through-holes 2k may be formed.

[0059] In addition, in the embodiments, the powder cosmetics A especially preferably contain the volatile component. However, for example, the invention is applicable to powder cosmetics requiring airtightness such as powder cosmetics containing a component which is unstable to water, or powder cosmetics containing a deliquescent component.

[0060] In addition, in the embodiments, a position at which the guide path 4f of the inner tube 4 directly faces the through-holes 2k is especially preferably set to the open position at which the powder cosmetics A passing through the through-holes 2k are allowed to pass to the application body 10 (a position at which the through-holes 2k are fully opened is especially preferably set to the

open position). However, a position, at which the guide path 4f directly facing the through-holes 2k is shifted in the circumferential direction such that the through-holes 2k is half open or slightly open, may be included in the open position. In this way, it is possible to release airtightness to send the powder cosmetics A out in conjunction with a series of operations for opening the cap 11 by rotating the cap 11 such that the through-holes 2k are, for example, half open or slightly open, and then further rotating only the cap 11 to remove the cap 11. The through-holes 2k may be, for example, half open or slightly open during use.

[0061] Furthermore, in another embodiment of the invention, when a degree of screwing the female screw 11a of the cap 11 with the male screw 3f of the connection tool 3 is adjusted, the cap 11, the connection tool 3 and the inner tube 4 may not be simultaneously rotated in the unscrewing direction. Instead, it is possible to configure the powder cosmetic container 100 such that only the cap 11 is first rotated in the unscrewing direction, the cap 11 is removed, and then the connection tool 3 is rotated in the unscrewing direction such that the guide path 4f of the inner tube 4 moves along the circumferential direction to directly face the through-holes 2k. In this case, a degree of opening the through-holes 2k may be adjusted to, for example, fully open, half open, or the like, and thus it is possible to send the powder cosmetics A out according to a preference of the user.

EXPLANATIONS OF LETTERS OR NUMERALS

[0062] 1... Base, 2... Base cap, 2a... Cylindrical portion, 2g... Inner cylindrical portion, 2h... Outer cylindrical portion, 2i... Through-holes of inner cylindrical

portion, 2k... Through-holes of outer cylindrical portion, 3... Connection tool,
3f... Male screw, 4... Inner tube, 4g... Arc surface (closing portion) of inner
tube, 4f... Depressed portion (guide path) of inner tube, 10... Application body,
11... Cap, 11a... Female screw, 100... Powder cosmetic container, A...
Powder cosmetics.

CLAIMS

1. A powder cosmetic container comprising:
 - a base for accommodating powder cosmetics;
 - a base cap which includes a cylindrical portion protruding upward in an axial direction, having a closed distal end, and having a repulsive force or a restoring force, and is synchronously rotatably connected to the base by including a through-hole allowing the powder cosmetics to pass through in a radial direction of the cylindrical portion;
 - an inner tube fixed on an outside of the cylindrical portion of the base cap to be rotatable around an axis with respect to the base cap;
 - a connection tool which is connected to the inner tube to be synchronously rotatable around the axis, is rotatable around the axis with respect to the base, and includes a male screw on an outer circumferential surface;
 - an application body put on the inner tube; and
 - a cap including a female screw to be screwed with the male screw of the connection tool on an inner circumferential surface,
- wherein a tube hole of the inner tube includes a closing portion that closes the through-hole of the cylindrical portion and a guide path that allows the powder cosmetics passing through the through-hole to pass to the application body along a circumferential direction,
- the inner tube synchronously rotates with the connection tool around the axis, and the guide path of the inner tube moves to an open position at which the powder cosmetics passing through the through-hole are allowed to pass to

the application body when the connection tool is rotated together with the cap in one direction with respect to the base, and

the inner tube synchronously rotates with the connection tool around the axis, and the closing portion of the inner tube moves to a closed position at which the through-hole of the cylindrical portion is closed when the connection tool is rotated together with the cap in another direction opposite to the one direction.

2. The powder cosmetic container according to claim 1,

wherein the cylindrical portion includes an inner cylindrical portion and an outer cylindrical portion,

the outer cylindrical portion corresponds to an elastic body, and

the through-hole is provided to penetrate the inner cylindrical portion and the outer cylindrical portion in the radial direction.