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(54) **AIRTIGHT STRUCTURE OF AIRTIGHT POWDER BOX**

(57) The utility model provides an airtight structure of an airtight powder case, including a powder tray and an inner lid, where the inner lid is hinged to one side of the powder tray through a rotating shaft; the inner lid is configured to open and close the powder tray; an aperture of the powder tray is provided with a seal ring; the seal ring includes a first seal ring and a second seal ring; a lower side of the second seal ring is located at the aperture of the powder tray; a lower side of the first seal ring is connected to an upper side of the second seal ring (a die may be used for integral injection molding); the second seal ring is hard, while the first seal ring is soft; an upper side of the first seal ring is shaped as a downward flanging, and the flanging forms a top; and a bottom of the inner lid is configured to abut against the top of the flanging. The bottom of the inner lid squeezes the top of the flanging, such that the flanging of the first seal ring further deforms to effectively enhance airtightness. The utility model achieves desirable airtightness, can protect a cosmetic in the powder case from moisture, and can prolong the service life of the cosmetic.

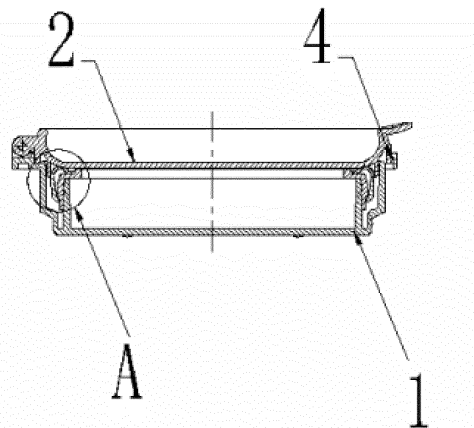


Fig. 1

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Description

TECHNICAL FIELD

[0001] The utility model relates to the technical field of cosmetics, and in particular to an airtight powder case.

BACKGROUND

[0002] Usually, a powder case refers to a portable container used by the female to carry and store a facial toning cosmetic. It has become one of indispensable articles for daily use. The existing powder case includes a case body and a lid. The lid is opened and closed through a rotating shaft. For ease of applying makeup, a powder puff is provided between the case body and the lid. However, the powder case with such a structure has poor airtightness. Not only does a puff cake in the powder case absorb moisture easily to affect service life, but also powder on the puff cake falls out of the powder case.

SUMMARY

[0003] The utility model provides an airtight structure of an airtight powder case to overcome the above defects. The airtight structure of an airtight powder case achieves desirable airtightness, can protect a cosmetic in the powder case from moisture, and can prolong the service life of the cosmetic.

[0004] To solve the technical problem, the utility model adopts the following technical solutions: an airtight structure of an airtight powder case includes a powder tray and an inner lid, where the inner lid is hinged to one side of the powder tray through a rotating shaft; the inner lid is configured to open and close the powder tray; an aperture of the powder tray is provided with a seal ring; the seal ring includes a first seal ring and a second seal ring; a lower side of the second seal ring is located at the aperture of the powder tray; a lower side of the first seal ring is connected to an upper side of the second seal ring (a die may be used for integral injection molding); the second seal ring is hard, while the first seal ring is soft; an upper side of the first seal ring is shaped as a downward flanging; the flanging forms a top; and a bottom of the inner lid is configured to abut against the top of the flanging.

[0005] As a further technical solution of the utility model, an edge of the flanging formed on the first seal ring compresses an outer side of the second seal ring.

[0006] As a further technical solution of the utility model, a circle of first rabbet is formed at the aperture of the powder tray; and the first seal ring and the second seal ring are located in the first rabbet.

[0007] As a further technical solution of the utility model, the flanging at the upper side of the first seal ring forms the arched top.

[0008] As a further technical solution of the utility model, a circle of second rabbet is formed in the bottom of

the inner lid; an inner side of the second rabbet serves as a first rabbet edge; an outer side of the second rabbet serves as a second rabbet edge; the seal ring is located in an inner ring formed by the first rabbet edge; a circle of shoulder is provided on an inner wall of the aperture of the powder tray; and a lower end of the second rabbet edge is configured to abut against the shoulder, thereby further keeping airtightness.

[0009] As a further technical solution of the utility model, the inner lid is buckled with the other side of the powder tray through a fastener (this is the general technology. For example, the inner lid is provided with a hook. The hook is elastic. A clamping groove is formed in the powder tray. The hook can be buckled with the clamping groove. This is not repeated herein).

[0010] The utility model has the following beneficial effects: an aperture of the powder tray is provided with a seal ring. The seal ring includes a first seal ring and a second seal ring. A lower side of the second seal ring is located at the aperture of the powder tray. A lower side of the first seal ring is connected to an upper side of the second seal ring (the lower side of the first seal ring may be integrally formed with the upper side of the second seal ring). The second seal ring is hard, while the first seal ring is soft. An upper side of the first seal ring is shaped as a downward flanging. The flanging forms a top. A bottom of the inner lid is configured to abut against the top of the flanging. In this way, the bottom of the inner lid squeezes the top of the flanging, such that the flanging of the first seal ring further deforms to effectively enhance airtightness. The utility model achieves desirable airtightness, can protect a cosmetic in the powder case from moisture, and can prolong the service life of the cosmetic.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011]

FIG. 1 is an axial sectional view according to the utility model;

FIG. 2 is a schematic view of A shown in FIG. 1;

FIG. 3 is an assembly view of an inner lid and a powder case according to the utility model (in response to an open state of the inner lid);

FIG. 4 is an assembly view of an inner lid, a powder case and a seal ring according to the utility model (in response to an open state of the inner lid); and

FIG. 5 is a schematic view of a seal ring according to the utility model (an upper side of a first seal ring is not flanged downward).

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0012] The technical solutions in embodiments of the utility model will be described below clearly and completely with reference to the embodiments of the utility model. Apparently, the described embodiments are merely a part, rather than all of the embodiments of the

utility model. All other embodiments derived from the embodiments in the utility model by those of ordinary skill in the art without creative efforts shall fall within the protection scope of the utility model.

[0013] It is to be noted that for ease of description, the spatially relative terms in actual use, such as "on" and "under", can be used to describe the spatial positional relationship between one component or feature and another component or feature shown in the drawings. It is to be understood that if the component or the feature is positioned in other different ways (rotated by 90 degrees or 180 degrees or in other orientations), spatially relative descriptions used shall be correspondingly explained and fall into the scope of protection of the utility model.

[0014] Embodiment: An airtight structure of an airtight powder case includes powder tray 1 and inner lid 2. The inner lid is hinged to one side of the powder tray through a rotating shaft. The inner lid is configured to open and close the powder tray. An aperture of the powder tray is provided with a seal ring. The seal ring includes first seal ring 31 and second seal ring 32. A lower side of the second seal ring is located at the aperture of the powder tray. A lower side of the first seal ring is connected to an upper side of the second seal ring (a die may be used for integral injection molding). The second seal ring is hard, while the first seal ring is soft. An upper side of the first seal ring is shaped as a downward flanging. The flanging forms top 34. A bottom of the inner lid is configured to abut against the top 34 of the flanging.

[0015] An edge of the flanging formed on the first seal ring compresses an outer side of the second seal ring.

[0016] A circle of first rabbet 11 is formed at the aperture of the powder tray. The first seal ring and the second seal ring are located in the first rabbet.

[0017] The flanging at the upper side of the first seal ring forms the arched top 34.

[0018] A circle of second rabbet 21 is formed in the bottom of the inner lid. An inner side of the second rabbet serves as first rabbet edge 201. An outer side of the second rabbet serves as second rabbet edge 202. The seal ring is located in an inner ring formed by the first rabbet edge. A circle of shoulder 12 is provided on an inner wall of the aperture of the powder tray. A lower end of the second rabbet edge is configured to abut against the shoulder, thereby further ensuring airtightness.

[0019] The inner lid is buckled with the other side of the powder tray through fastener 4 (this is the general technology. For example, the inner lid is provided with a hook. The hook is elastic. A clamping groove is formed in the powder tray. The hook can be buckled with the clamping groove. This is not repeated herein).

[0020] The bottom of the inner lid squeezes the top of the flanging in use, such that the flanging of the first seal ring further deforms to effectively enhance airtightness. The utility model achieves desirable airtightness, can protect a cosmetic in the powder case from moisture, and can prolong the service life of the cosmetic.

Claims

1. An airtight structure of an airtight powder case, comprising a powder tray (1) and an inner lid (2), wherein the inner lid is hinged to one side of the powder tray through a rotating shaft; the inner lid is configured to open and close the powder tray; an aperture of the powder tray is provided with a seal ring; the seal ring comprises a first seal ring (31) and a second seal ring (32); a lower side of the second seal ring is located at the aperture of the powder tray; a lower side of the first seal ring is connected to an upper side of the second seal ring; the second seal ring is hard, while the first seal ring is soft; an upper side of the first seal ring is shaped as a downward flanging; the flanging forms a top (34); and a bottom of the inner lid is configured to abut against the top (34) of the flanging.
2. The airtight structure of the airtight powder case according to claim 1, wherein an edge of the flanging formed on the first seal ring compresses an outer side of the second seal ring.
3. The airtight structure of the airtight powder case according to claim 1, wherein a circle of first rabbet (11) is formed at the aperture of the powder tray; and the first seal ring and the second seal ring are located in the first rabbet.
4. The airtight structure of the airtight powder case according to claim 1, wherein the flanging at the upper side of the first seal ring forms an arched top (34).
5. The airtight structure of the airtight powder case according to claim 1, wherein a circle of second rabbet (21) is formed in the bottom of the inner lid; an inner side of the second rabbet serves as a first rabbet edge (201); an outer side of the second rabbet serves as a second rabbet edge (202); the seal ring is located in an inner ring formed by the first rabbet edge; a circle of shoulder (12) is provided on an inner wall of the aperture of the powder tray; and a lower end of the second rabbet edge is configured to abut against the shoulder.
6. The airtight structure of the airtight powder case according to claim 1, wherein the inner lid is buckled with the other side of the powder tray through a fastener (4).

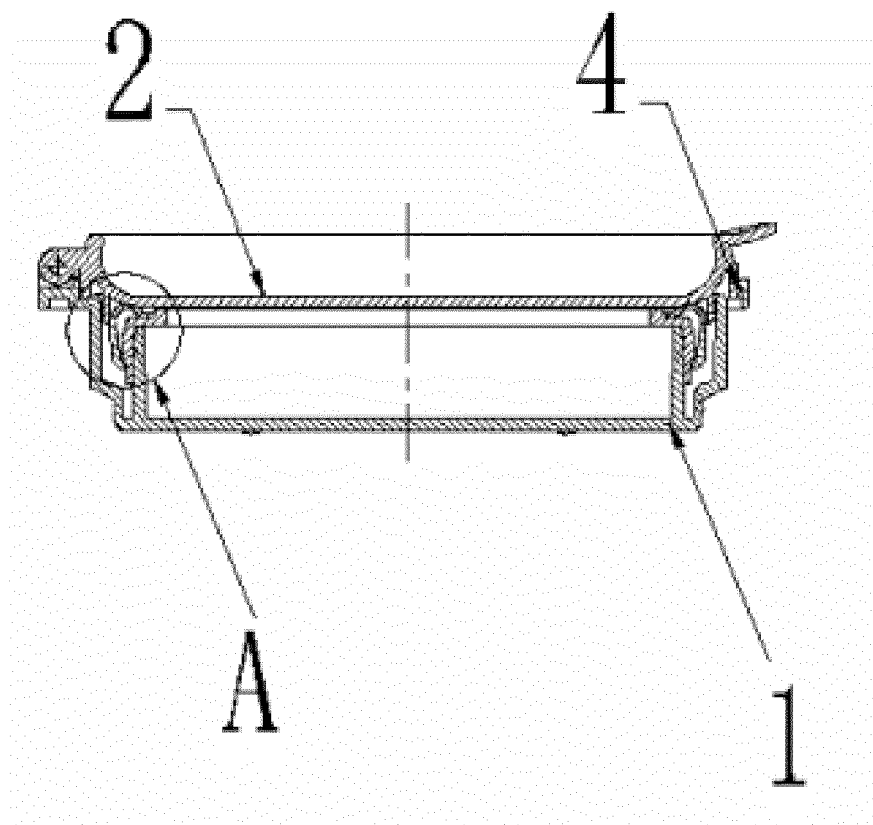


Fig. 1

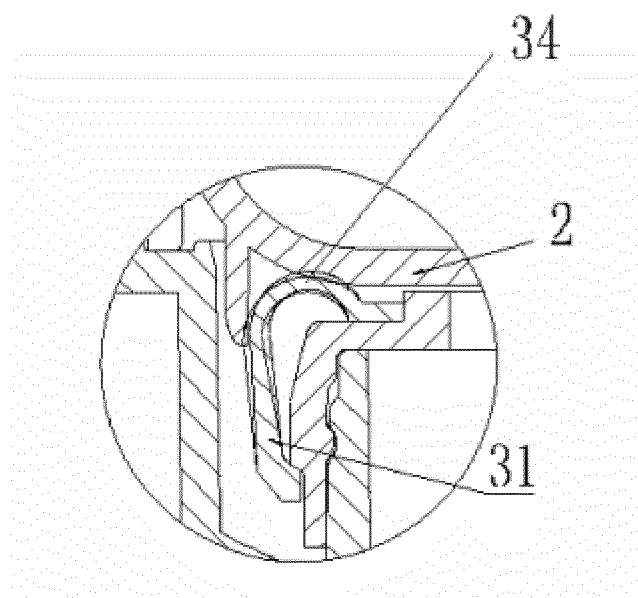


Fig. 2

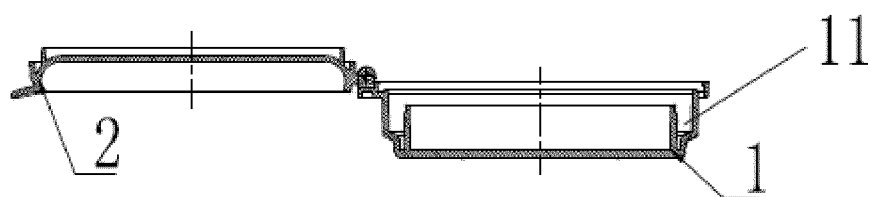


Fig. 3

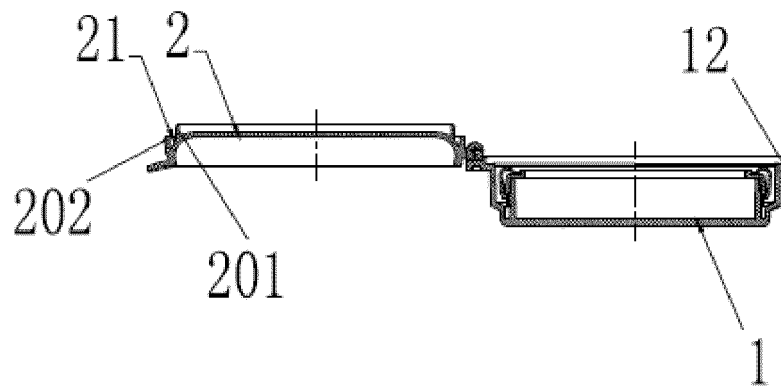


Fig. 4

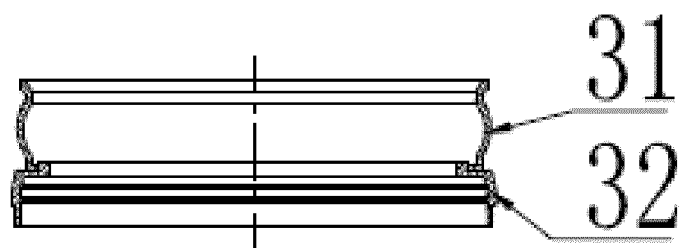


Fig. 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/115319

A. CLASSIFICATION OF SUBJECT MATTER A45D 33/22(2006.01)i; A45D 33/34(2006.01)i According to International Patent Classification (IPC) or to both national classification and IPC																		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) A45D33/- Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched																		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNABS, CNTXT, VEN, USTXT, EPTXT, WOTXT, CNKI: 密封, 气密, 环, 圈, 筋, 翻边, 下翻, 外翻, 翻折, 弯折, 翻转, 变形, 形变, 弹性, 拱形, 弧形, 顶面, 拱, 弧, 卷, 曲, 面, 二, airtight, air tightness, powder box, inner, outer, cover, powder, open+, clos+, seal+, ring, second, hard, soft, downward?, flange?, edge, top, surface, bottom, extrude?, cosmetic, flanging																		
C. DOCUMENTS CONSIDERED TO BE RELEVANT																		
<table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>PX</td> <td>CN 216316160 U (SHYAHSIN PACKAGING (CHINA) CO., LTD.) 19 April 2022 (2022-04-19) description, paragraphs [0003]-[0010]</td> <td>1-6</td> </tr> <tr> <td>Y</td> <td>CN 205207670 U (GUANGZHOU COMPLACENT INDUSTRIAL CO., LTD.) 04 May 2016 (2016-05-04) description, paragraphs [0042]-[0050], and figures 10-18</td> <td>1-6</td> </tr> <tr> <td>Y</td> <td>CN 214017270 U (HANGZHOU KITCHEN IDEA SCIENCE & TECHNOLOGY CO. LTD.) 24 August 2021 (2021-08-24) description, paragraph [0030], and figures 1-4</td> <td>1-6</td> </tr> <tr> <td>A</td> <td>CN 206342087 U (SHYAHSIN PACKAGING (CHINA) CO., LTD.) 21 July 2017 (2017-07-21) entire document</td> <td>1-6</td> </tr> <tr> <td>A</td> <td>CN 206462588 U (SHYAHSIN PACKAGING (CHINA) CO., LTD.) 05 September 2017 (2017-09-05) entire document</td> <td>1-6</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 216316160 U (SHYAHSIN PACKAGING (CHINA) CO., LTD.) 19 April 2022 (2022-04-19) description, paragraphs [0003]-[0010]	1-6	Y	CN 205207670 U (GUANGZHOU COMPLACENT INDUSTRIAL CO., LTD.) 04 May 2016 (2016-05-04) description, paragraphs [0042]-[0050], and figures 10-18	1-6	Y	CN 214017270 U (HANGZHOU KITCHEN IDEA SCIENCE & TECHNOLOGY CO. LTD.) 24 August 2021 (2021-08-24) description, paragraph [0030], and figures 1-4	1-6	A	CN 206342087 U (SHYAHSIN PACKAGING (CHINA) CO., LTD.) 21 July 2017 (2017-07-21) entire document	1-6	A	CN 206462588 U (SHYAHSIN PACKAGING (CHINA) CO., LTD.) 05 September 2017 (2017-09-05) entire document	1-6
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Date of the actual completion of the international search 13 October 2022	Date of mailing of the international search report 22 November 2022																	
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088, China Facsimile No. (86-10)62019451	Authorized officer Telephone No.																	

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INTERNATIONAL SEARCH REPORT

International application No. PCT/CN2022/115319

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 210124623 U (HANGZHOU ROBAM APPLIANCES CO., LTD.) 06 March 2020 (2020-03-06) entire document	1-6
A	CN 212213499 U (JOYOUNG CO., LTD.) 25 December 2020 (2020-12-25) entire document	1-6
A	CN 213524222 U (KUNSHAN YUANRUI PLASTIC TECHNOLOGY CO. LTD.) 25 June 2021 (2021-06-25) entire document	1-6
A	JP 2003172454 A (NOK CORP.) 20 June 2003 (2003-06-20) entire document	1-6

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2022/115319

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Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 216316160 U	19 April 2022	None	
CN 205207670 U	04 May 2016	None	
CN 214017270 U	24 August 2021	None	
CN 206342087 U	21 July 2017	None	
CN 206462588 U	05 September 2017	None	
CN 210124623 U	06 March 2020	None	
CN 212213499 U	25 December 2020	None	
CN 213524222 U	25 June 2021	None	
JP 2003172454 A	20 June 2003	None	

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