



(11)

EP 4 555 894 A1

(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication:
21.05.2025 Bulletin 2025/21

(21) Application number: **22950479.0**

(22) Date of filing: **11.07.2022**

(51) International Patent Classification (IPC):
A45D 40/16 ^(2006.01) **A45D 40/06** ^(2006.01)
A45D 40/00 ^(2006.01)

(52) Cooperative Patent Classification (CPC):
A45D 40/00; A45D 40/06; A45D 40/16

(86) International application number:
PCT/CN2022/104833

(87) International publication number:
WO 2024/011340 (18.01.2024 Gazette 2024/03)

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(71) Applicant: **Zhuhai Ding Rong Plastic Products
Co., Ltd**
Zhuhai, Guangdong 519090 (CN)

(72) Inventor: **LIU, Ting-Nan**
New Taipei City, Taiwan 221026 (CN)

(74) Representative: **Hellmich, Wolfgang**
European Patent and Trademark Attorney
Lortzingstrasse 9 / 2. Stock
81241 München (DE)

(54) **ENVIRONMENT-FRIENDLY CONTAINER HAVING REPLACEABLE LIPSTICK CORE**

(57) An environmentally-friendly container (100) having a lipstick carrier replacement mechanism comprises a cap (10), a lipstick carrier (20), a coupling member (30), and a base (40). The lipstick carrier (20) includes a fitting section (24) disposed at an end. The coupling member (30) includes a rim (33) disposed at the other end, two opposite latches (35) extending from an inner surface of the rim (33) toward inside, and two inclined surfaces (356) each disposed on an outer surface of the latch (35) and urging against the fitting section (24). When the base (40) is rotated, a friction between the coupling member (30) and the lipstick carrier (20) is avoided and the inclined surfaces (356) are disengaged from the fitting section (24) due to flexibility of the latches (35). As such, the lipstick carrier (20) can be detached for an increased number of times for lipstick carrier replacement, thereby increasing a useful life of the container (100). After the base (40) has been rotated, the lipstick carrier (20) can be pulled to disengage from both the coupling member (30) and the base (40). Thereafter, a consumed lipstick carrier (20) can be replaced with a new one. Therefore, the container (100) is environmentally friendly.

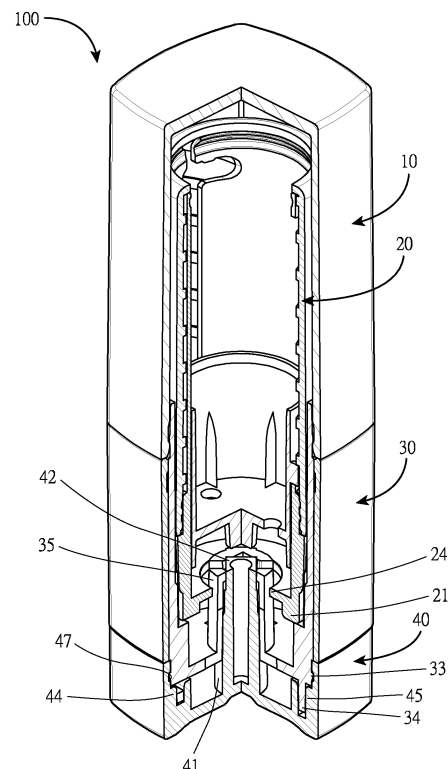


FIG. 1

Description

FIELD OF THE INVENTION

[0001] The invention relates to containers and more particularly to an environmentally-friendly container having a lipstick carrier replacement mechanism.

BACKGROUND OF THE INVENTION

[0002] Conventional containers are intended to be thrown away after the lipstick has been consumed. However, this is not environment friendly and may harm the environment.

[0003] For overcoming the drawbacks, the present inventor has invented a container having a replaceable lipstick carrier. In detail, the container comprises a cover, a lipstick carrier, a coupling member, and a base. A fitting hole is provided at one end of the lipstick carrier. Two cavities are provided at two opposite portions of the fitting hole respectively. Two raised members are provided on an inner surface of the lipstick carrier and are away from the cavities. A shaft is provided on a bottom of the lipstick carrier. A flange is provided at either end of the shaft and extends radially. The flanges urge against the raised members respectively in a locked position. A rotation of the base can disengage the shaft from the lipstick carrier prior to replacing a consumed lipstick with a new one.

[0004] However, the container has the following disadvantages: the flanges may wear after a period of time of use since they urge against the raised members. And in turn, it may loosen the lipstick carrier.

[0005] Thus, the need for improvement still exists.

SUMMARY OF THE INVENTION

[0006] An object of the invention is to provide an environmentally-friendly container having a lipstick carrier replacement mechanism. The container has a simple structure and is convenient in use. The container can overcome disadvantages associated with the conventional art, avoid friction, increase the number of lipstick carrier replacements, and increase a useful life, and is environmentally-friendly.

[0007] In order to achieve the above object, the invention provides an environmentally-friendly container having a lipstick carrier replacement mechanism, characterized by comprising a cap including an internal space; a lipstick carrier having one end disposed in the internal space and including a rotation member at the other end, a fitting hole axially disposed through the rotation member, and a fitting section disposed on an inner surface of the fitting hole adjacent to the rotation member; a coupling member including an axial channel for receiving the other end of the lipstick carrier, a rim disposed at the other end of the coupling member, an annular extension lengthwise extending out of the rim and including two

opposite notches having a cavity at one end, two opposite latches extending from an inner surface of the rim toward the axial channel, the latch having a first cut at an intermediate portion of a top, a second cut at one end of the top, and a third cut at the other end of the top, a protuberance disposed on an outer surface of the latch adjacent to the first cut, the protuberance having an inclined surface extending downward, the inclined surfaces urging against the fitting section of the lipstick carrier; and a base including an axial shaft on a bottom of an inner surface, a positioning block disposed at an end of the axial shaft, four fitting members disposed at four corners of the positioning block respectively, the fitting members disposed in the second cuts and the third cuts respectively, two opposite first rib members disposed on two sides of the inner surface respectively, each first rib member disposed in the notch and being moveable therein, and two positioning members formed with the first rib members respectively, each of the positioning members disposed in the cavity.

[0008] Preferably, the cap further comprises a plurality of recesses disposed in an inner surface, and the coupling member further comprises a plurality of projections disposed on an outer surface of one end, the projections being configured to dispose in the recesses respectively.

[0009] Preferably, further comprises a plurality of spaced ribs disposed on an outer surface of the rotation member, and a plurality of raised members disposed on an inner surface of the rim, each of the raised members being disposed between the two adjacent ribs.

[0010] Preferably, further comprising two opposite second rib members disposed on the other two sides of the inner surface of the base respectively, the second rib members urging against an outer surface of the annular extension.

[0011] Preferably, further comprises four troughs disposed on the four sides of the inner surface of the base respectively, each of the troughs being adjacent to the first rib member or the second rib member and urging against the rim.

[0012] Preferably, each of the notches further comprise a protrusion at the other end opposing the cavity.

[0013] Preferably, the latches are spaced by a predetermined distance with two gaps formed between the latches.

[0014] Preferably, each of the first cut, the second cut, and the third cut have an angle of 90-degree.

[0015] Preferably, an opening of the first cut is larger than that of the second cut and an opening of the second cut is larger than that of the third cut.

[0016] Preferably, the positioning block is a parallelepiped.

[0017] With the above structures, the invention has the following advantages:

Less friction and increasing useful life. The inclined surfaces of the latches are urged against the fitting section of the lipstick carrier. When the base is rotated, a friction between the coupling member and the lipstick carrier is

avoided due to flexibility of the latches. As such, the lipstick carrier can be detached for an increased number of times for lipstick carrier replacement, thereby increasing a useful life of the container.

[0018] Easy replacement and environment friendly. The base is clockwise rotated by 45 degrees so that the first rib members may move in the notches to urge the positioning members against the protrusions. The positioning block also clockwise rotates 45-degrees so that the fitting members are disposed in the gaps and the first cuts respectively. Thus, the latches return to unfastened positions and in turn the inclined surfaces are disengaged from the fitting section. As a result, the lipstick carrier can be pulled to disengage from both the coupling member and the base. It is environmentally friendly with the container being reused because only the consumed lipstick carrier is replaced with a new one and the container is not discarded.

[0019] Easy positioning. The fitting members are disposed in the gaps and the first cuts respectively, and the fitting section is circular so that a new lipstick carrier can be easily mounted in the axial channel of the coupling member without being limited by a mounting angle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020]

FIG. 1 is a perspective view in a quarter section of a container according to a preferred embodiment of the invention.

FIG. 2 is an exploded view of the container according to the preferred embodiment of the invention.

FIG. 3 is another perspective view of the base according to the preferred embodiment of the invention.

FIG. 4 is a longitudinal sectional view of the coupling member according to the preferred embodiment of the invention;

FIG. 5 schematically depicts opening the cap and rotating the base according to the preferred embodiment of the invention.

FIG. 6 is a sectional view taken along line 6-6 of FIG. 5.

FIG. 7 is a partial, longitudinal sectional view of the container according to the preferred embodiment of the invention, schematically depicting the inclined surface being disengaged from the fitting section.

FIG. 8 is a detailed view of the area in circle A of FIG. 7.

FIG. 9 schematically depicts separating the lipstick carrier from the coupling member according to the preferred embodiment of the invention.

FIG. 10 schematically depicts a new lipstick carrier as a replacement which is to be fitted together with the coupling member, the base, and the cap according to the preferred embodiment of the invention.

FIG. 11 schematically depicts opening the cap to expose the new lipstick carrier and rotating the base according to the preferred embodiment of the invention.

FIG. 12 is a sectional view taken along line 12-12 of FIG. 11.

FIG. 13 is a partial, longitudinal sectional view of the container according to the preferred embodiment of the invention, schematically depicting the inclined surface being urged by the fitting section.

FIG. 14 is a detailed view of the area in circle A of FIG. 13.

DETAILED DESCRIPTION OF THE INVENTION

[0021] Referring to FIGS. 1 to 3, an environmentally-friendly container 100 having a lipstick carrier replacement mechanism according to the invention is shown. The container 100 comprises the following components: A cap 10 includes an internal space 11 and a plurality of recesses 12 provided in an inner surface of the cap 10.

[0022] A lipstick carrier 20 has one end disposed in the internal space 11 and includes a rotation member 21 at the other end, a plurality of grooves 22 provided in the rotation member 21, a fitting hole 23 axially provided through the rotation member 21, a fitting section 24 provided on an inner surface of the fitting hole 23 adjacent to the rotation member 21, and a plurality of spaced ribs 25 provided on an outer surface of the rotation member 21.

[0023] In conjunction with FIGS. 4 and 6, a coupling member 30 includes an axial channel 31 for receiving the other end of the lipstick carrier 20, a plurality of projections 32 provided on an outer surface of one end of the coupling member 30 and configured to dispose in the recesses 12 respectively, a rim 33 provided at the other end of the coupling member 30 distal the projections 32, an annular extension 34 lengthwise extending out of the rim 33 and including two opposite notches 341 having a cavity 342 at one end and a protrusion 343 at the other end opposing the cavity 342, two opposite latches 35 extending from an inner surface of the rim 33 toward the axial channel 31, two spaced gaps 351 formed between the latches 35, the latch 35 having a first cut 352 at an intermediate portion of a top, a second cut 353 at one end of the top, and a third cut 354 at the other end of the top,

each of the first cut 352, the second cut 353, and the third cut 354 having an angle of 90-degree, an opening of the first cut 352 being larger than that of the second cut 353, an opening of the second cut 353 being larger than that of the third cut 354, a protuberance 355 provided on an outer surface of the latch 35 adjacent to the first cut 352, the protuberance 355 having an inclined surface 356 extending downward, the inclined surfaces 356 urging against the fitting section 24 of the lipstick carrier 20, and a plurality of raised members 36 provided on an inner surface of the rim 33, each raised member 36 being disposed between the two adjacent ribs 25.

[0024] A base 40 includes an axial shaft 41 on a bottom of an inner surface, a positioning block 42 provided at an end of the axial shaft 41 and shaped as a parallelepiped, four fitting members 43 provided at four corners of the positioning block 42 respectively, the fitting members 43 disposed in the second cuts 353 and the third cuts 354 respectively, two opposite first rib members 44 provided on two sides of the inner surface respectively, each first rib member 44 moveably disposed in the notch 341, two positioning members 46 formed with the first rib members 44 respectively, each of the positioning members 46 disposed in the cavity 342, two opposite second rib members 45 provided on the other two sides of the inner surface respectively, the second rib members 45 urging against an outer surface of the annular extension 34, and four troughs 47 provided on the four sides of the inner surface respectively, the trough 47 being adjacent to the first rib member 44 or the second rib member 45, the troughs 47 urging against the rim 33.

[0025] Referring to FIGS. 5 to 9 in conjunction with FIG. 2, steps of detaching the lipstick carrier 20 of the container are illustrated. The cap 10 is separated from the coupling member 30. A consumed lipstick 50 is mounted in the lipstick carrier 20. In a preferred embodiment of the invention, the base 40 is clockwise rotated by 45 degrees so that the first rib members 44 may move in the notches 341 to urge the positioning members 46 against the protrusions 343. The positioning block 42 also clockwise rotates 45-degrees so that the fitting members 43 are disposed in the gaps 351 and the first cuts 352 respectively. Thus, the latches 35 return to unfastened positions and in turn the inclined surfaces 356 are disengaged from the fitting section 24. As a result, the lipstick carrier 20 can be pulled to disengage from both the coupling member 30 and the base 40.

[0026] Referring to FIGS. 10 to 14 in conjunction with FIG. 2, steps of replacing a new lipstick 60 are illustrated. The lipstick carrier 20 having the new lipstick 60 is mounted in the axial channel 31 of the coupling member 30 with the latches 35 partially disposed in the fitting hole 23 and the positioning block 42 fastened by the latches 35. Next, the base 40 is counterclockwise rotated by 45 degrees so that the first rib members 44 may move in the notches 341 to urge the positioning members 46 against the cavities 342. The positioning block 42 also rotates 45-degrees so that the fitting members 43 are disposed in

the second cuts 353 and the third cuts 354 respectively. Thus, the latches 35 radially expand to energized positions and in turn the inclined surfaces 356 are urged against the fitting section 24 of the lipstick carrier 20. The lipstick carrier 20 and the coupling member 30 are assembled. Finally, the cap 10 is put on the coupling member 30 and this completes a replacement of the new lipstick 60. It is environmentally friendly with the container being reused because only the consumed lipstick carrier 20 is replaced with a new one and the container is not discarded.

[0027] It is noted that the inclined surfaces 356 of the latches 35 are urged against the fitting section 24 of the lipstick carrier 20. When the base 40 is rotated, a friction between the coupling member 30 and the lipstick carrier 20 is avoided due to flexibility of the latches 35. As such, the lipstick carrier 20 can be detached for an increased number of times for lipstick carrier replacement, thereby increasing a useful life of the container.

[0028] Referring to FIGS. 6 to 8 in conjunction with FIGS. 2 and 10 again, the fitting members 43 are disposed in the gaps 351 and the first cuts 352 of the latches 35 respectively. Thus, the latches 35 return to unfastened positions and in turn the inclined surfaces 356 are disengaged from the fitting section 24 of the lipstick carrier 20. As a result, the lipstick carrier 20 can be pulled to disengage from both the coupling member 30 and the base 40. Further, the fitting section 24 is circular so that a new lipstick carrier 20 can be easily mounted in the axial channel 31 of the coupling member 30 without being limited by a mounting angle.

Claims

1. An environmentally-friendly container having a lipstick carrier replacement mechanism, **characterized by** comprising:

a cap including an internal space;
a lipstick carrier having has one end disposed in the internal space and including a rotation member at the other end, a fitting hole axially disposed through the rotation member, and a fitting section disposed on an inner surface of the fitting hole adjacent to the rotation member;
a coupling member including an axial channel for receiving the other end of the lipstick carrier, a rim disposed at the other end of the coupling member, an annular extension lengthwise extending out of the rim and including two opposite notches having a cavity at one end, two opposite latches extending from an inner surface of the rim toward the axial channel, the latch having a first cut at an intermediate portion of a top, a second cut at one end of the top, and a third cut at the other end of the top, a protuberance disposed on an outer surface of the latch adjacent

- to the first cut, and an inclined surface urging against the fitting section of the lipstick carrier; and
 a base including an axial shaft on a bottom of an inner surface, a positioning block disposed at an end of the axial shaft, four fitting members disposed at four corners of the positioning block respectively, the fitting members disposed in the second cuts and the third cuts respectively, two opposite first rib members disposed on two sides of the inner surface respectively, each first rib member disposed in the notch and being moveable therein, and two positioning members formed with the first rib members respectively, each of the positioning members disposed in the cavity. 5
2. The environmentally-friendly container having a lipstick carrier replacement mechanism of claim 1, **characterized in that** the cap further comprises a plurality of recesses disposed in an inner surface, and the coupling member further comprises a plurality of projections disposed on an outer surface of one end, the projections being configured to dispose in the recesses respectively. 10 25
 3. The environmentally-friendly container having a lipstick carrier replacement mechanism of claim 1, **characterized by** further comprising a plurality of spaced ribs disposed on an outer surface of the rotation member, and a plurality of raised members disposed on an inner surface of the rim, each of the raised members being disposed between the two adjacent ribs. 30 35
 4. The environmentally-friendly container having a lipstick carrier replacement mechanism of claim 1, **characterized by** further comprising two opposite second rib members disposed on the other two sides of the inner surface of the base respectively, the second rib members urging against an outer surface of the annular extension. 40
 5. The environmentally-friendly container having a lipstick carrier replacement mechanism of claim 4, **characterized by** further comprising four troughs disposed on the four sides of the inner surface of the base respectively, each of the troughs being adjacent to the first rib member or the second rib member and urging against the rim. 45 50
 6. The environmentally-friendly container having a lipstick carrier replacement mechanism of claim 1, **characterized in that** each of the notches further comprise a protrusion at the other end opposing the cavity. 55
 7. The environmentally-friendly container having a lip- stick carrier replacement mechanism of claim 1, **characterized in that** the latches are spaced by a predetermined distance with two gaps formed between the latches.
 8. The environmentally-friendly container having a lipstick carrier replacement mechanism of claim 1, **characterized in that** each of the first cut, the second cut, and the third cut have an angle of 90-degree.
 9. The environmentally-friendly container having a lipstick carrier replacement mechanism of claim 1, **characterized in that** an opening of the first cut is larger than that of the second cut and an opening of the second cut is larger than that of the third cut.
 10. The environmentally-friendly container having a lipstick carrier replacement mechanism of claim 1, **characterized in that** the positioning block is a parallelepiped.

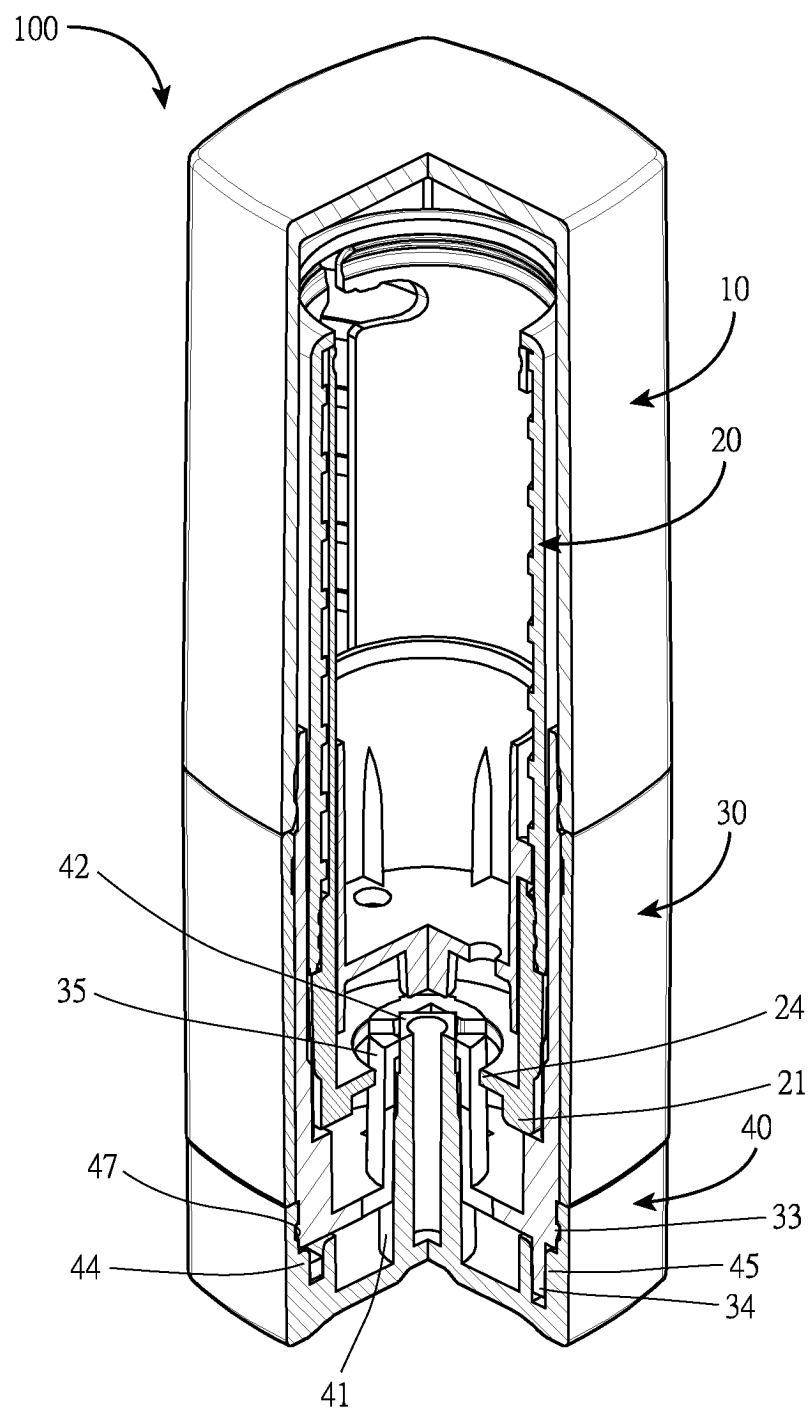


FIG. 1

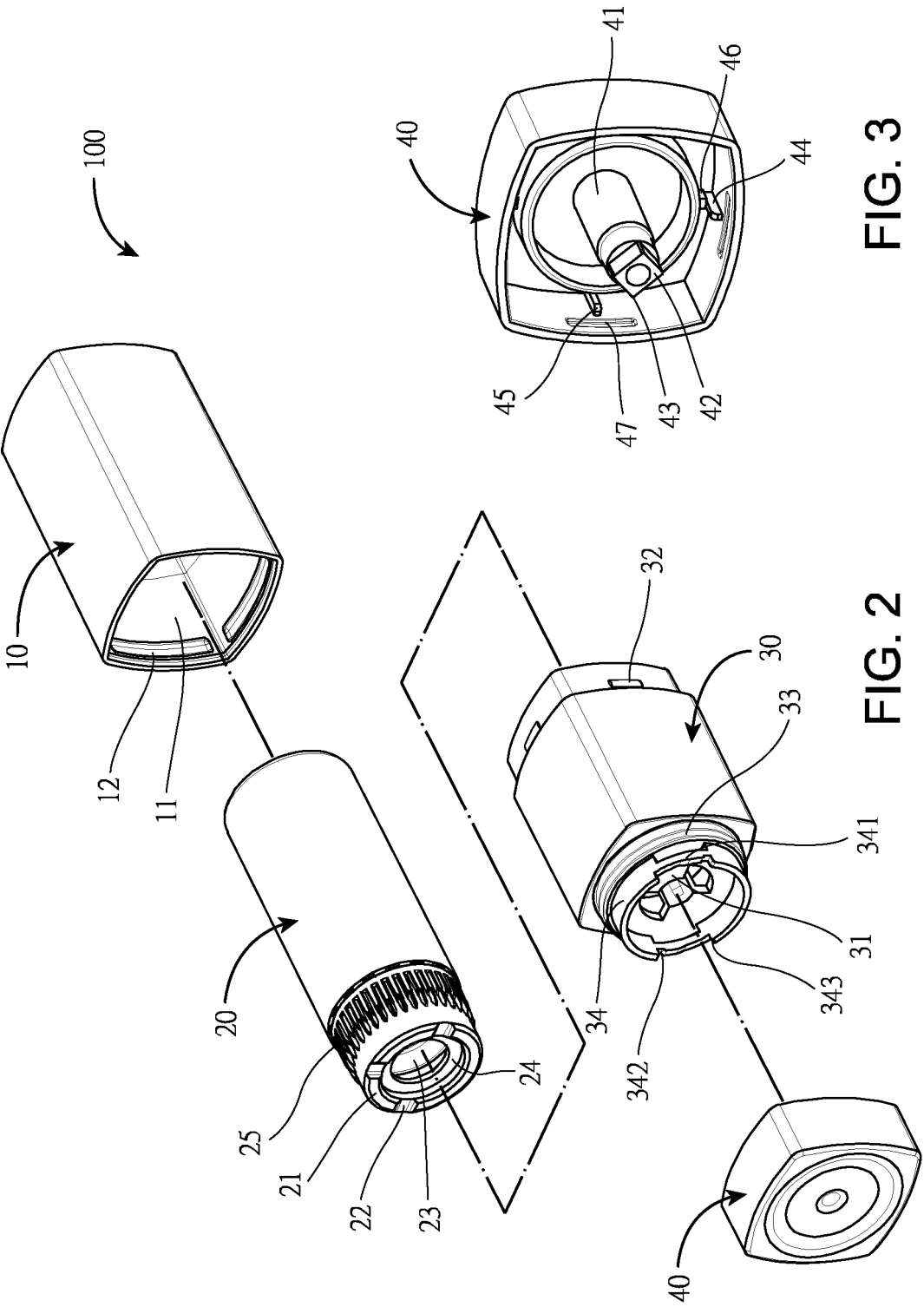


FIG. 2

FIG. 3

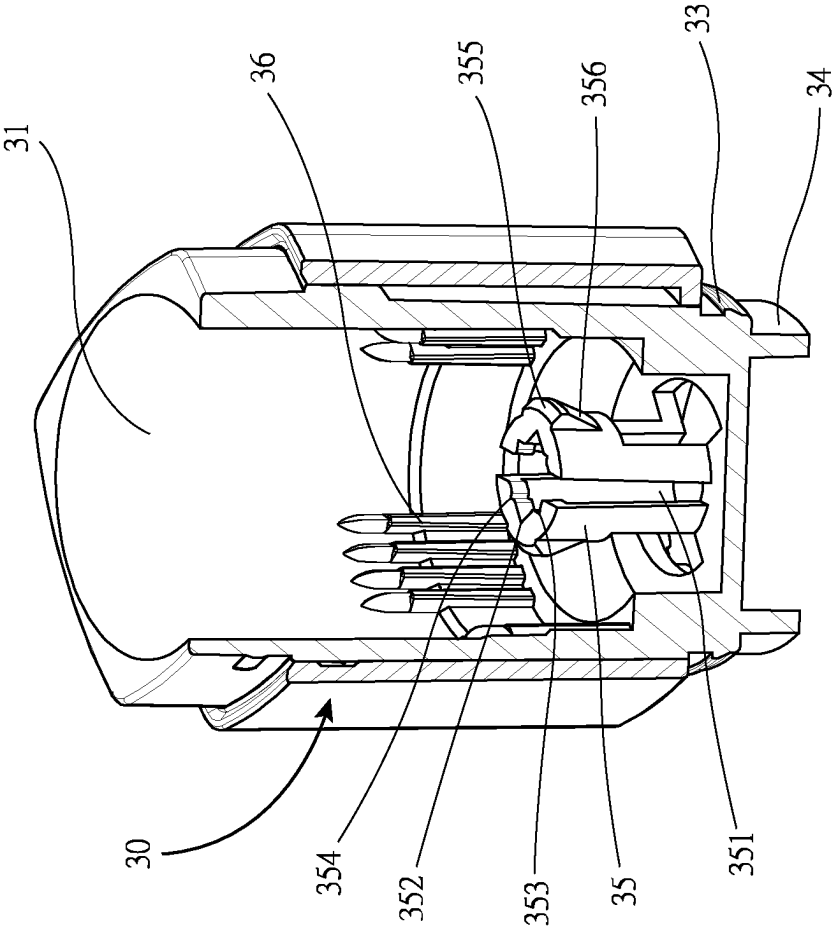


FIG. 4

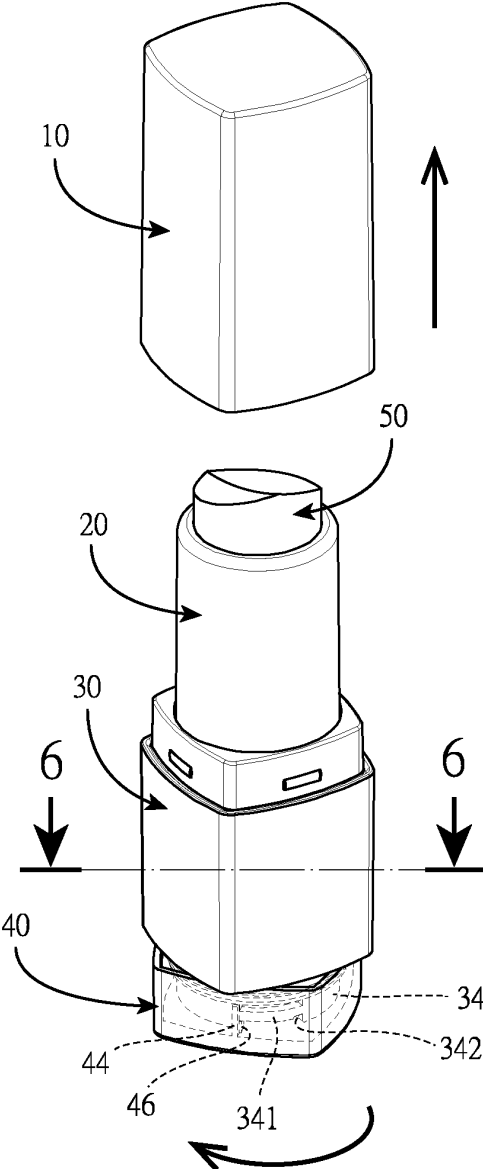


FIG. 5

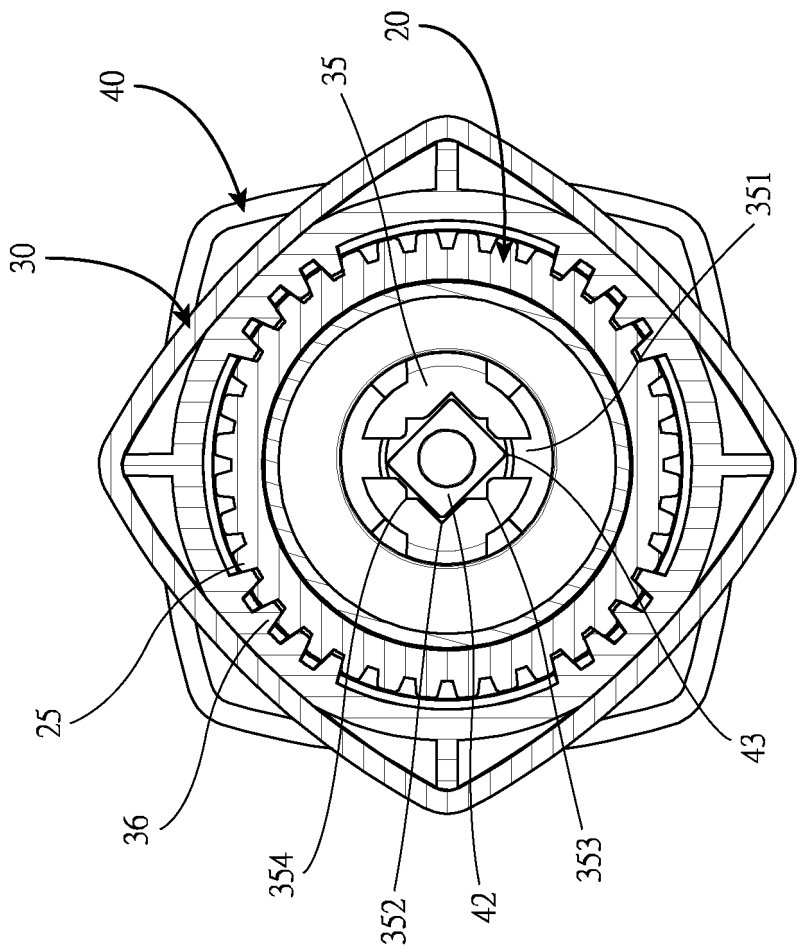


FIG. 6

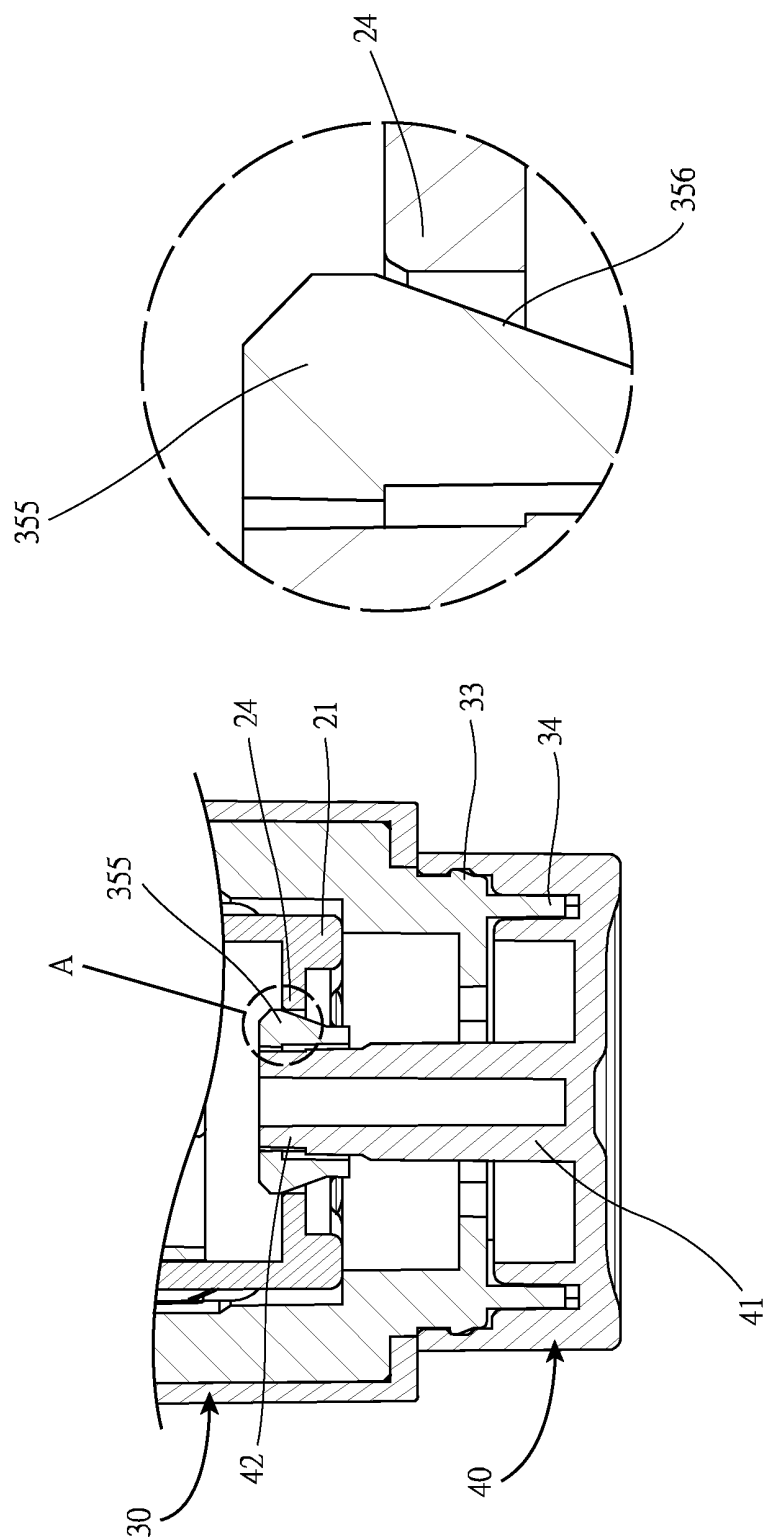


FIG. 8

FIG. 7

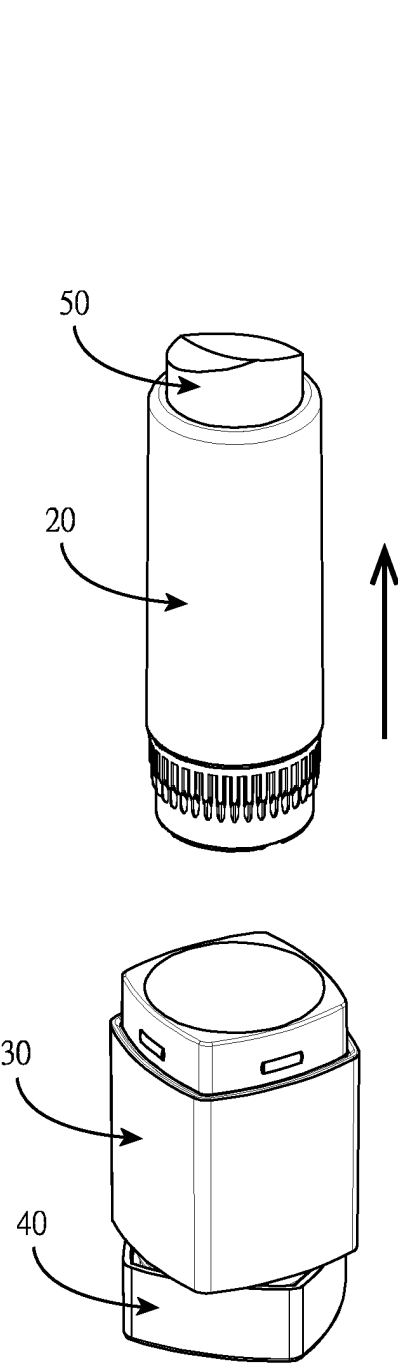


FIG. 9

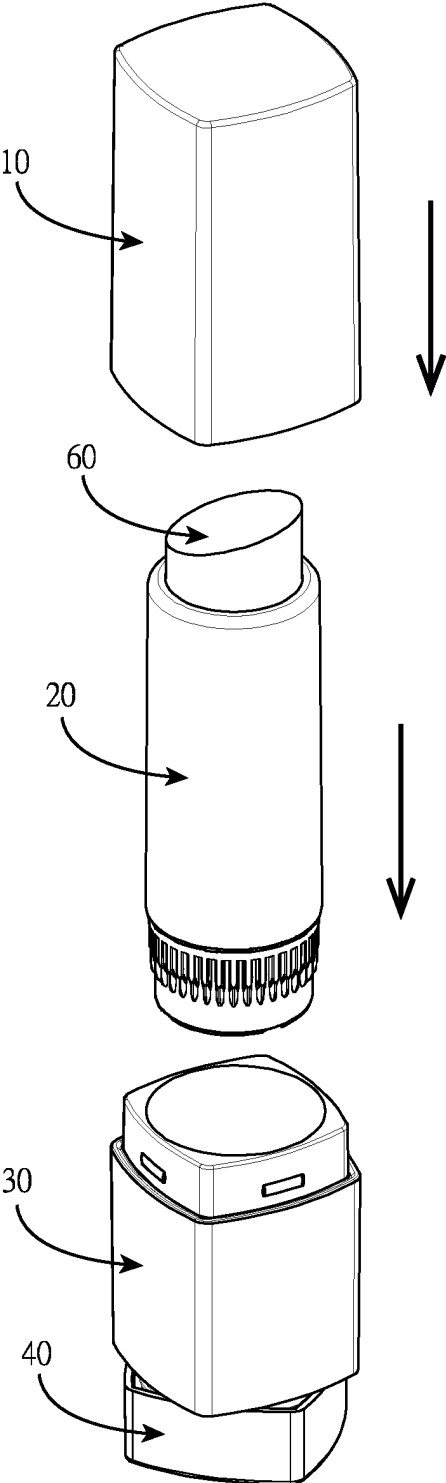


FIG. 10

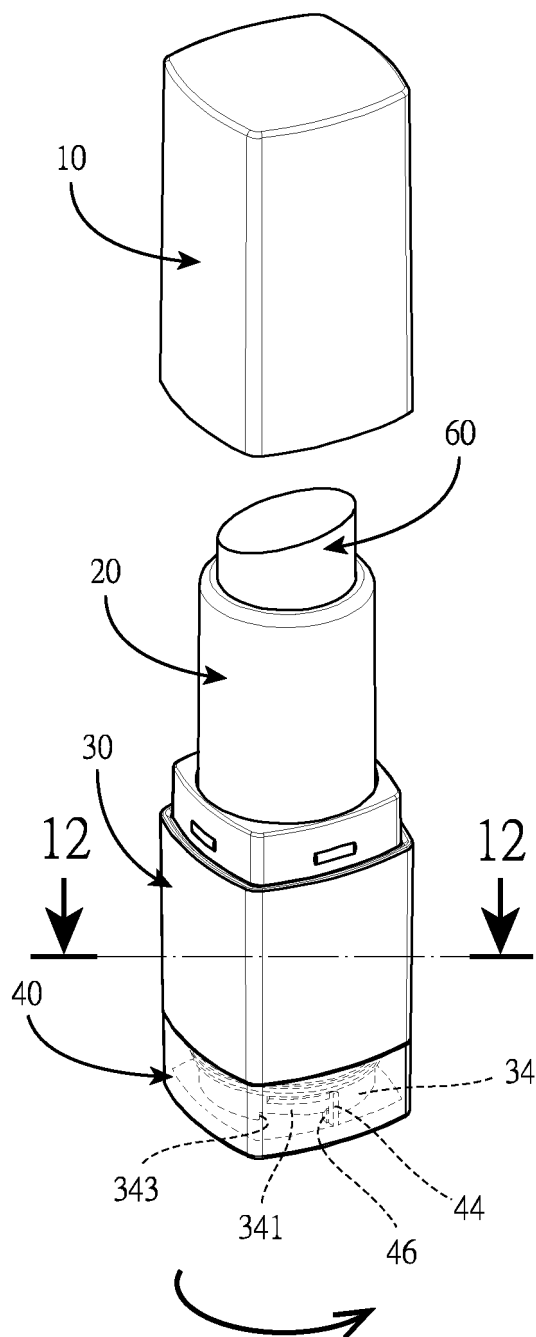


FIG. 11

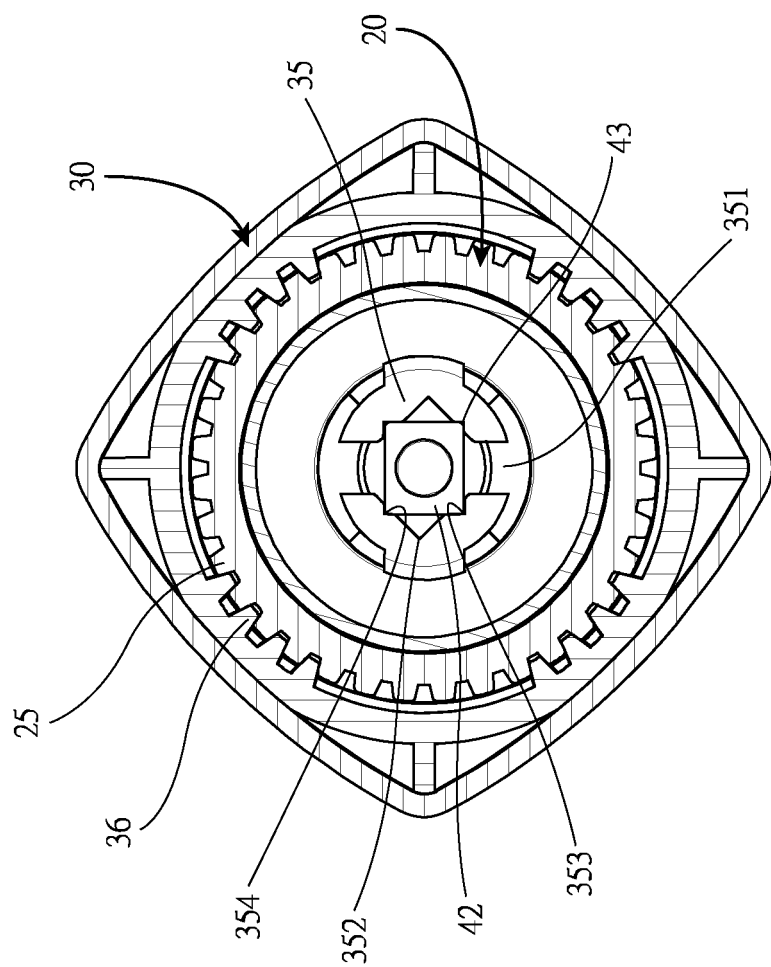


FIG. 12

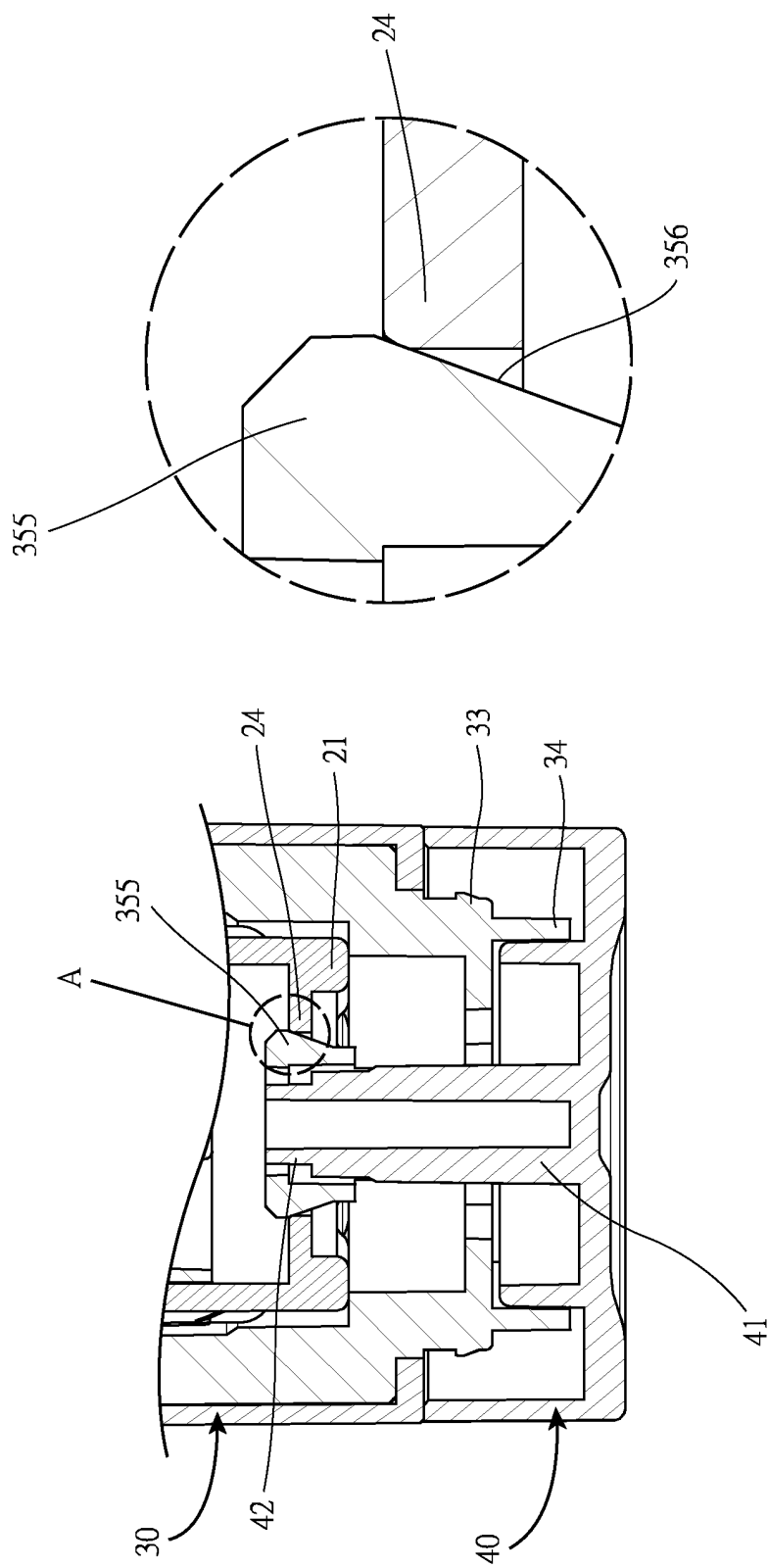


FIG. 13

FIG. 14

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/104833

A. CLASSIFICATION OF SUBJECT MATTER

A45D40/16(2006.01);A45D40/06(2006.01);A45D40/00(2006.01);

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)

IPC A45D

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)

CNTXT ENTXTC: 更换 替换 拆卸 弹性臂 卡合 replace+ flexible elastic clamp+ lock+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 214803025 U (HUHAI DINGRONG PLASTIC PRODUCTS CO., LTD.) 23 November 2021 (2021-11-23) description, paragraphs 27-34, and figures 1-10	1-10
A	CN 114052378 A (AXILONE PLASTIQUE) 18 February 2022 (2022-02-18) entire document	1-10
A	CN 101095565 A (HIDAN CO., LTD.) 02 January 2008 (2008-01-02) entire document	1-10
A	CN 211483321 U (ZHEJIANG AXILONE SHUNHUA ALUMINUM INDUSTRY CO., LTD.) 15 September 2020 (2020-09-15) entire document	1-10
A	CN 212165193 U (YIZHEN PACKAGING TECHNOLOGY (SUZHOU) CO., LTD.) 18 December 2020 (2020-12-18) entire document	1-10
A	JP 2003033224 A (SUZUNO KASEI K.K.) 04 February 2003 (2003-02-04) entire document	1-10

☐ Further documents are listed in the continuation of Box C.
☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"D" document cited by the applicant in the international application	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"E" earlier application or patent but published on or after the international filing date	"&" document member of the same patent family
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 22 March 2023	Date of mailing of the international search report 23 March 2023
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088	Authorized officer
Facsimile No. (86-10)62019451	Telephone No.

Form PCT/ISA/210 (second sheet) (July 2022)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2022/104833

Patent document cited in search report			Publication date (day/month/year)		Patent family member(s)		Publication date (day/month/year)
CN	214803025	U	23 November 2021		None		
CN	114052378	A	18 February 2022		JP	2022027595	10 February 2022
					FR	3112929	04 February 2022
					FR	3112929	11 November 2022
					KR	20220014857	07 February 2022
					EP	3944785	02 February 2022
					US	2022031045	03 February 2022
CN	101095565	A	02 January 2008		EP	1867249	19 December 2007
					EP	1867249	13 June 2012
					JP	2007330326	27 December 2007
					JP	4933163	16 May 2012
					US	2008041747	21 February 2008
					US	7866905	11 January 2011
CN	211483321	U	15 September 2020		None		
CN	212165193	U	18 December 2020		None		
JP	2003033224	A	04 February 2003		None		

Form PCT/ISA/210 (patent family annex) (July 2022)