1111

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

June 24, 2022

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: ***17/381,765***
FILING DATE: ***July 21, 2021***

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS ***US17/381,765***

Certified by

Kathi

Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office

PTO/AIA/80 (07-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office; U.S DEPARTMENT OF COMMERCE

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒ Practitioners associated with Customer Number: 20094

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☐ The address associated with Customer Number:

OR

☐	Firm or Individual Name			
	Address			
	City		State	Zip
	Country			
	Telephone		Email	

Assignee Name and Address: Dart Industries Inc.
14901 S. Orange Blossom Trail, Orlando, Florida 32837

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	/Taylor J. Ross/	Date	2021-07-21
Name	Taylor J. Ross	Telephone	407-721-9267
Title	Vice President		

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	43309864
Application Number:	17381765
International Application Number:	
Confirmation Number:	9532
Title of Invention:	PORTION DISPENSING CONTAINER
First Named Inventor/Applicant Name:	Alec Vercruyssen
Customer Number:	20094
Filer:	Taylor J. Ross/Nancy Klug
Filer Authorized By:	Taylor J. Ross
Attorney Docket Number:	132123-M200
Receipt Date:	21-JUL-2021
Filing Date:	
Time Stamp:	15:22:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1820
RAM confirmation Number	E20217KF22230036
Deposit Account	040120
Authorized User	Nancy Klug

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	ADS2123.pdf	94477 b4d3fb26d4236f7da3290477b1d2ed04f9457a5a	no	6
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
2	Drawings-other than black and white line drawings	InformalDrawings2123.pdf	3390812 f176228cc48e977a7a61a3b4d0d4956aa2c76b89	no	11
Warnings:					
Information:					
3	Power of Attorney	Power2123.pdf	74639 aab0ef4e3a0b45917f097d1e1ae3fa4189bea854	no	2
Warnings:					
Information:					
4	Specification	Specification2123.pdf	72685 29465ee9185a476003915f61aec3beb2e00900d5	no	15
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	34693 33d21575e1690828f31d580e7789cfca20cca69d	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	3667306		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/14 (08-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	132123-M200
	Application Number	
Title of Invention	PORTION DISPENSING CONTAINER	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Alec		Vercruyssen	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Aalst	Country of Residence i	BE

Mailing Address of Inventor:

Address 1	14901 S. Orange Blossom Trail		
Address 2			
City	Orlando	**State/Province**	FL
Postal Code	32837	**Country** i	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. — Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	20094		
Email Address	patent@tupperware.com	Add Email	Remove Email

PTO/AIA/14 (08-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	132123-M200
	Application Number	
Title of Invention	PORTION DISPENSING CONTAINER	

Application Information:

Title of the Invention	PORTION DISPENSING CONTAINER		
Attorney Docket Number	132123-M200	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		**Sub Class (if any)**	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)		**Suggested Figure for Publication (if any)**	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	20094		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

PTO/AIA/14 (08-12)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	132123-M200
	Application Number	
Title of Invention	PORTION DISPENSING CONTAINER	

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country[1]	Filing Date (YYYY-MM-DD)	Priority Claimed
			◉ Yes ○ No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (08-12)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	132123-M200
	Application Number	
Title of Invention	PORTION DISPENSING CONTAINER	

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

◉ Assignee	○ Legal Representative under 35 U.S.C. 117
○ Person to whom the inventor is obligated to assign.	○ Person who shows sufficient proprietary interest

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor :

If the Assignee is an Organization check here. ☒

Organization Name	Dart Industries Inc.

Mailing Address Information:

Address 1	14901 S. Orange Blossom Trail		
Address 2			
City	Orlando	**State/Province**	FL
Country	US	Postal Code	32837
Phone Number	407-721-9267	Fax Number	
Email Address	patent@tupperware.com		

Additional Applicant Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications

Signature	/Taylor J. Ross/			Date (YYYY-MM-DD)	2021-07-21
First Name	Taylor	Last Name	Ross	Registration Number	33342

Additional Signature may be generated within this form by selecting the Add button.

PTO/AIA/14 (08-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	132123-M200
	Application Number	
Title of Invention	PORTION DISPENSING CONTAINER	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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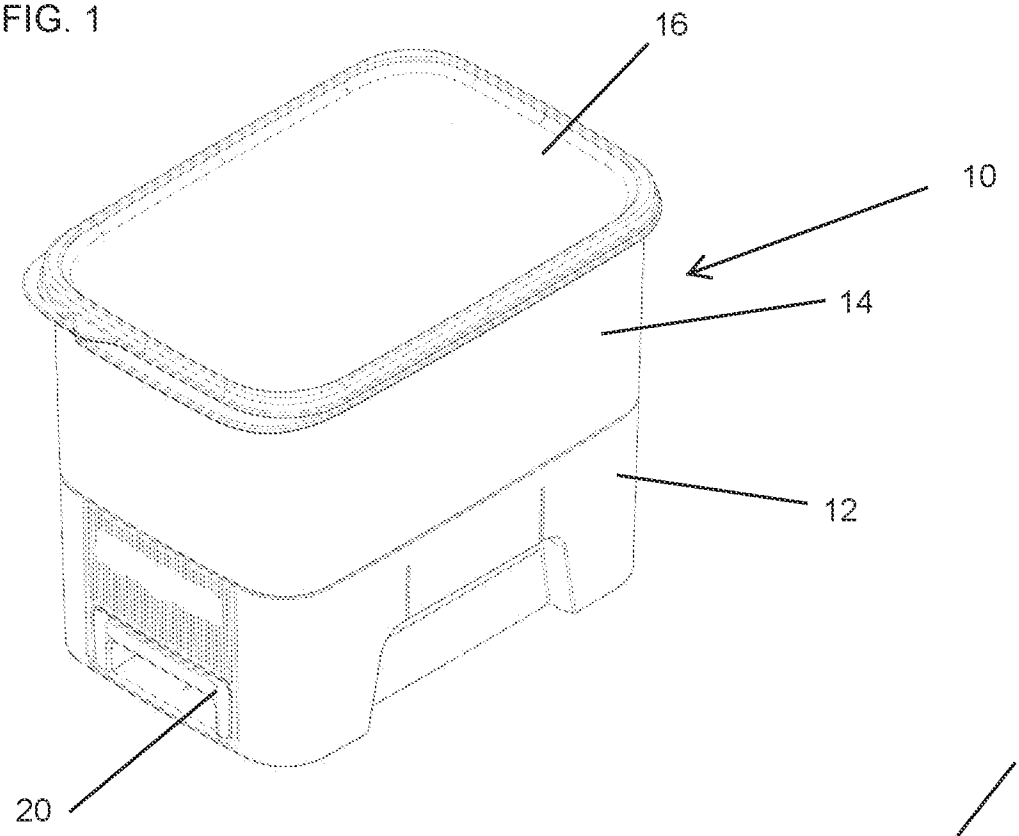
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

FIG. 1



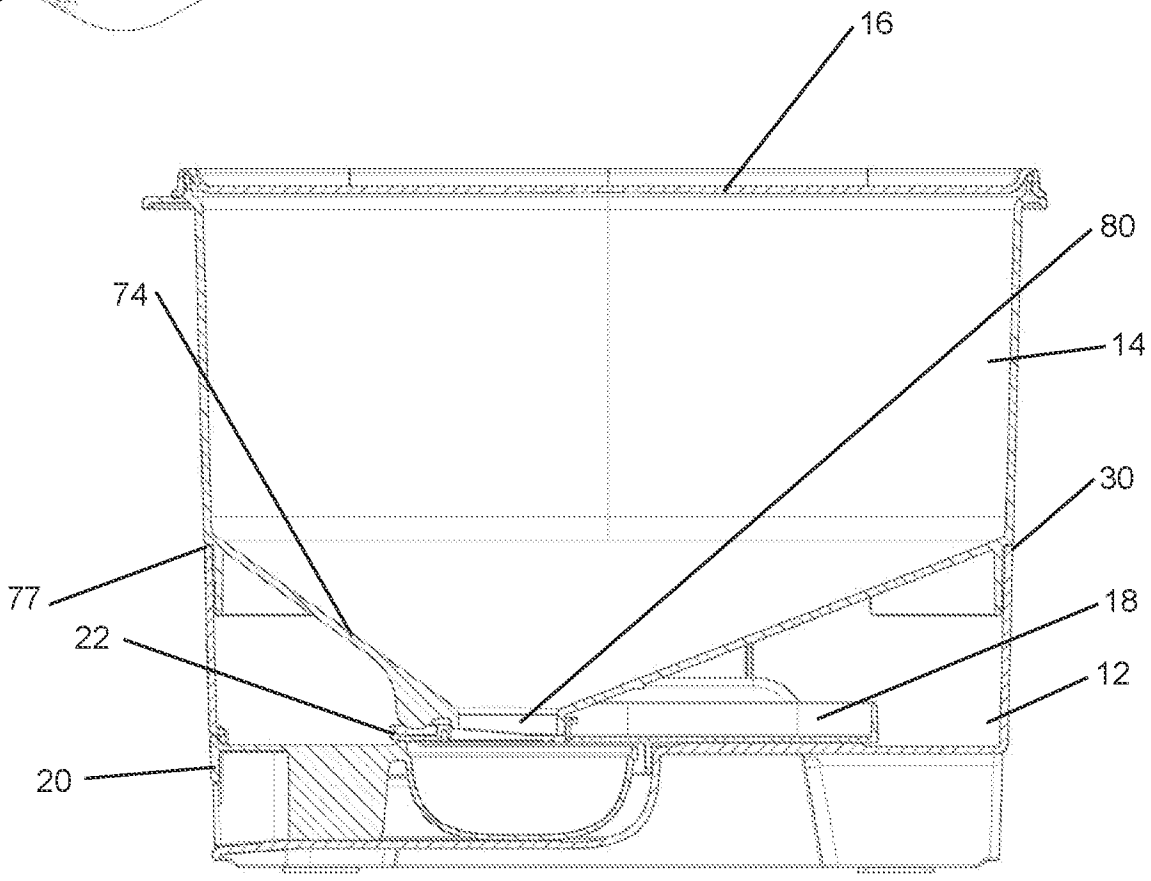
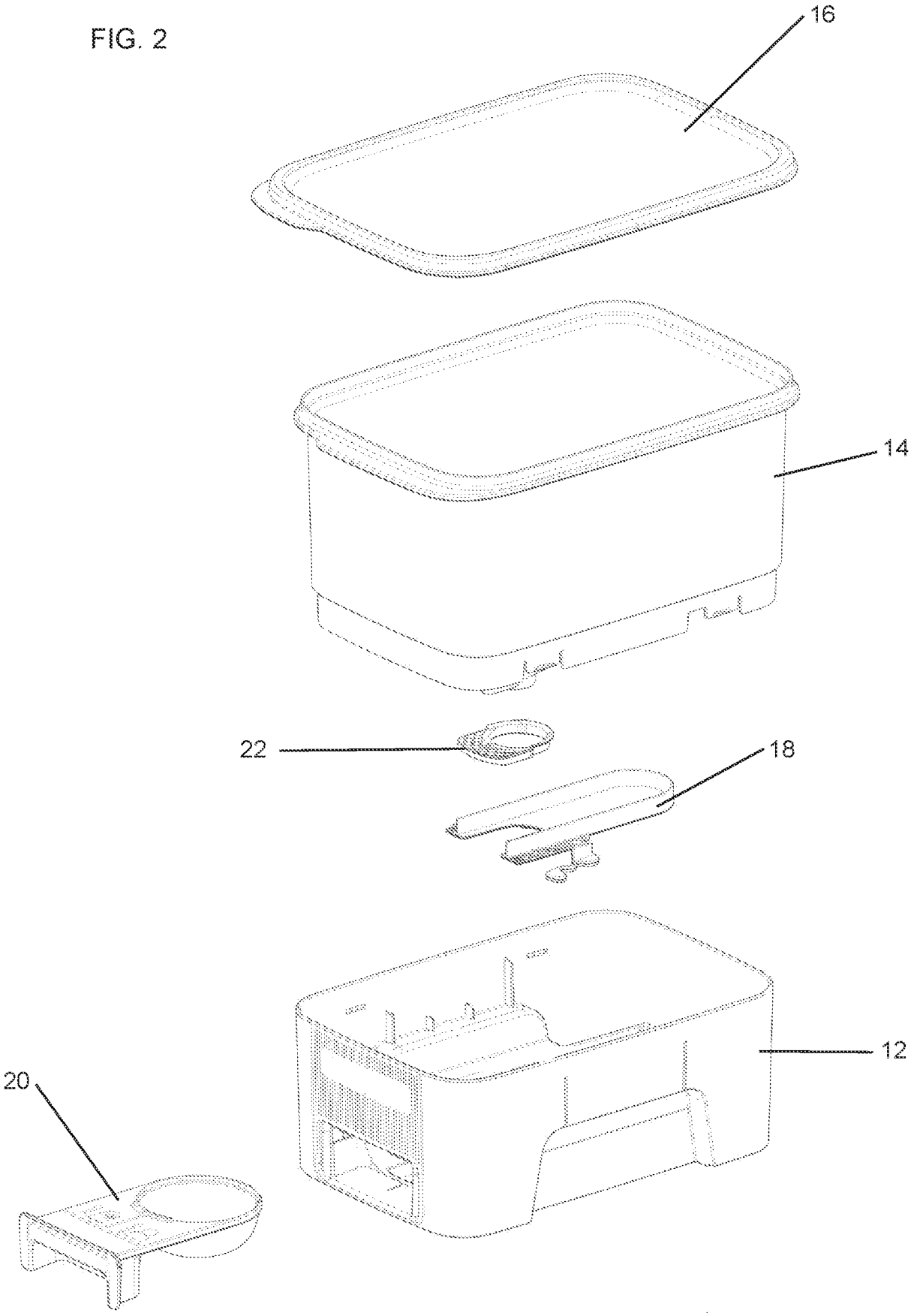


FIG. 3

FIG. 2



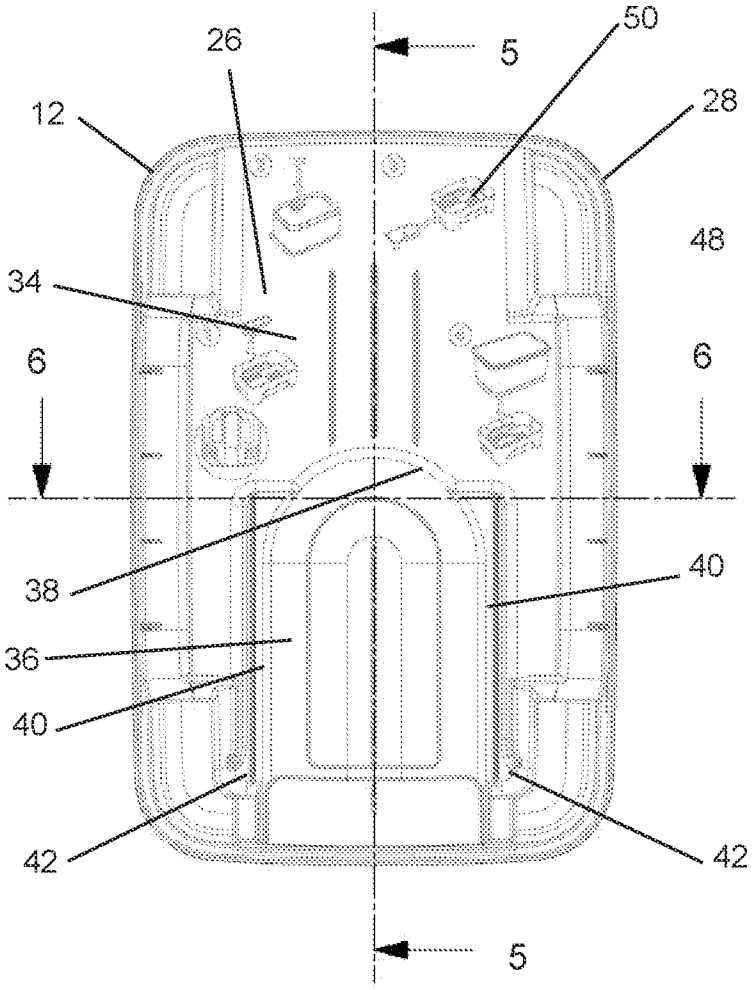


FIG. 4

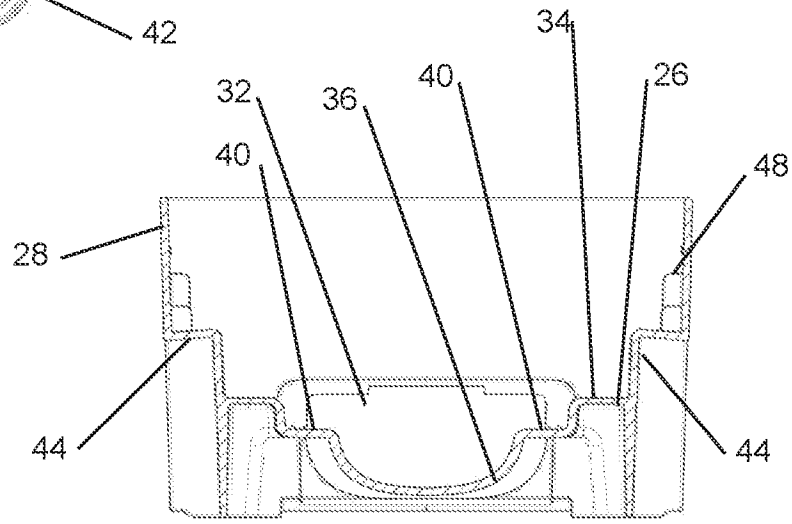


FIG. 6

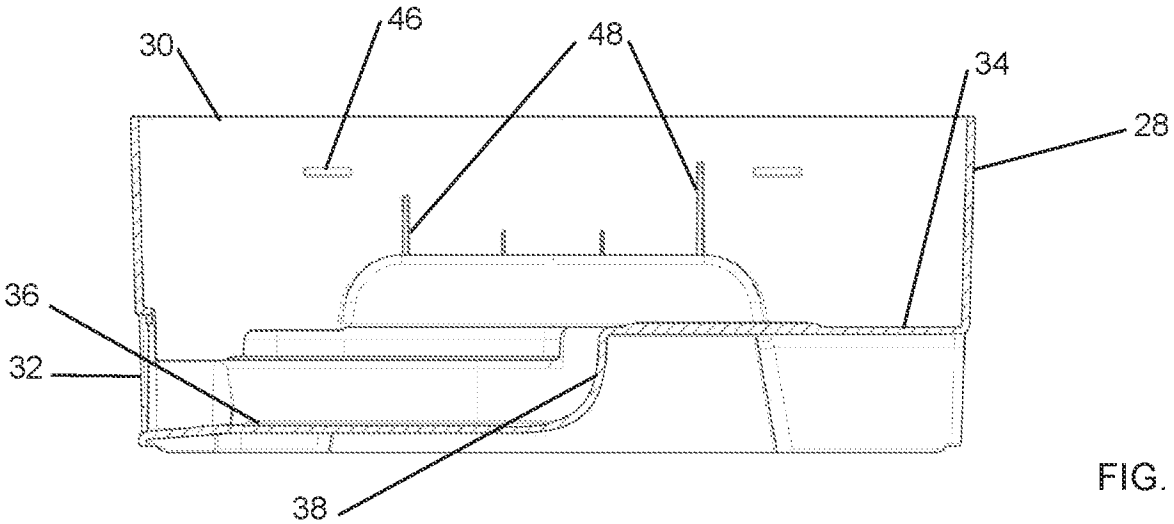


FIG. 5

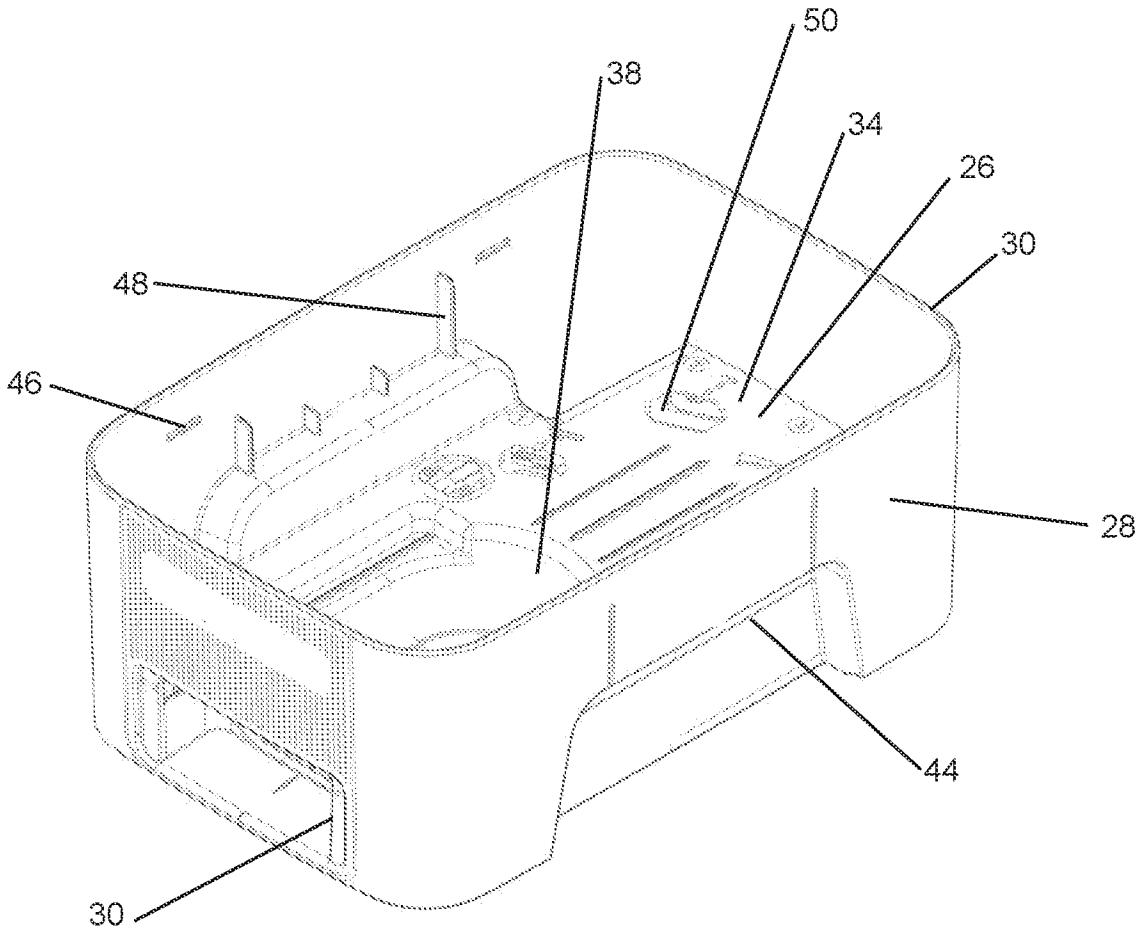


FIG. 7

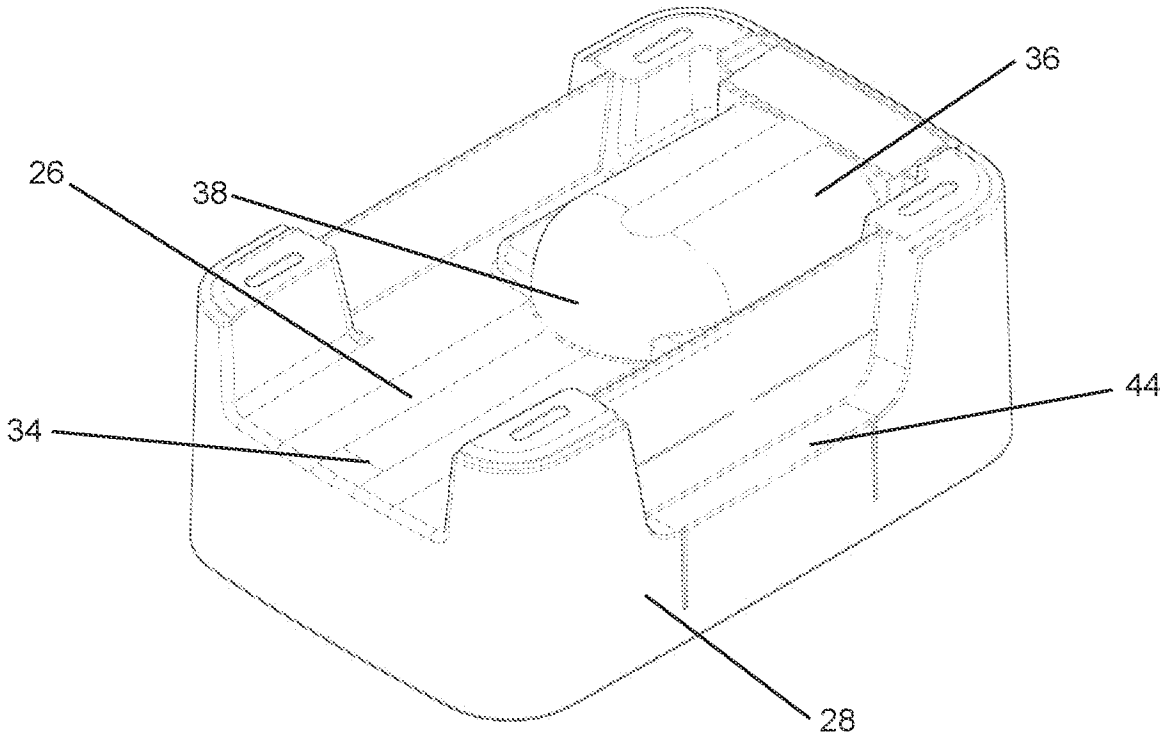
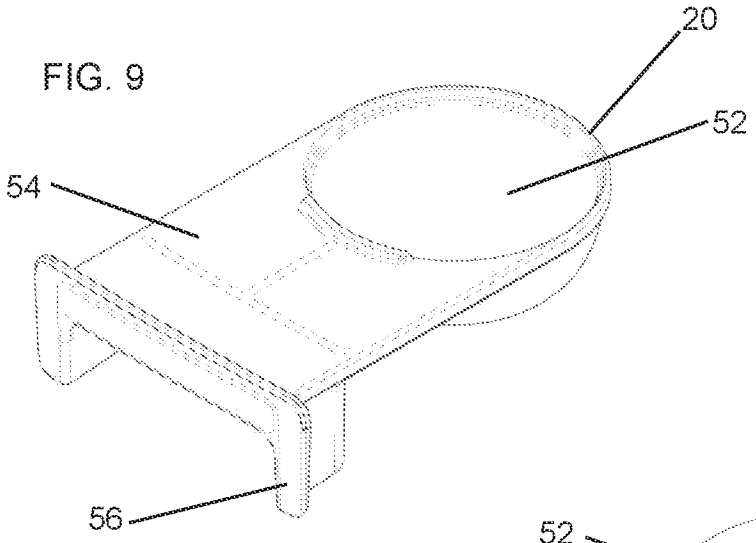


FIG. 8

FIG. 9



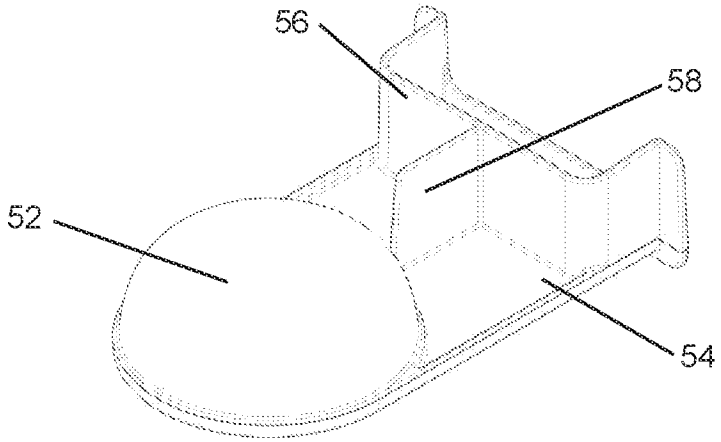


FIG. 10

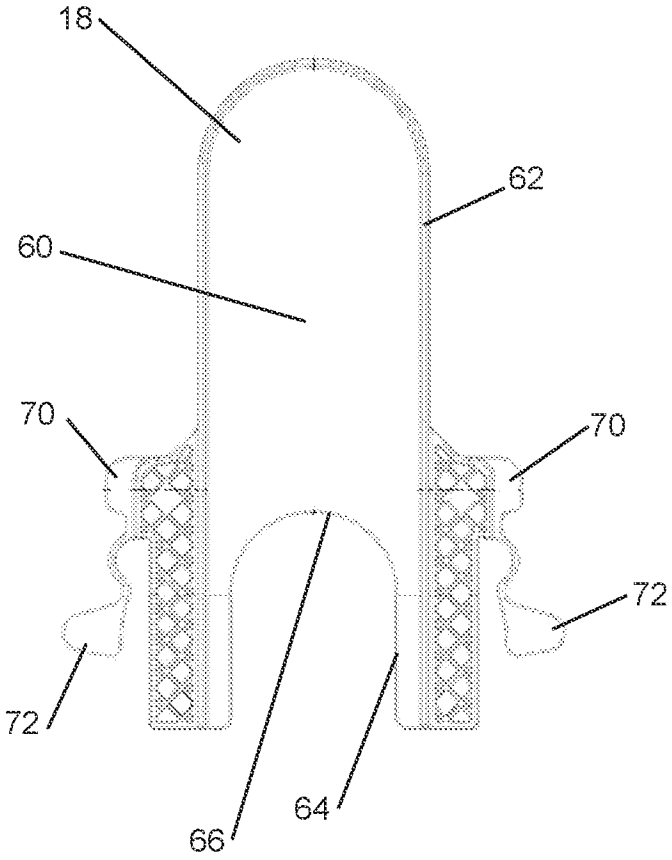
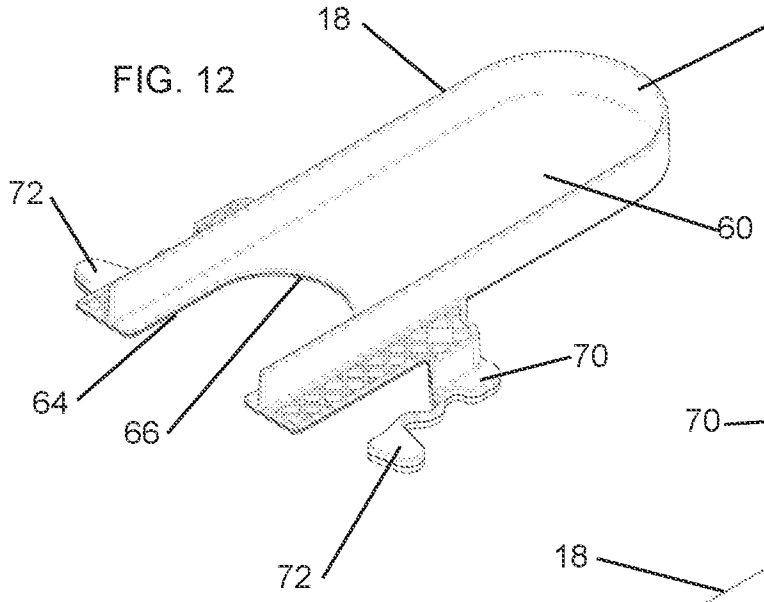


FIG. 11

FIG. 12



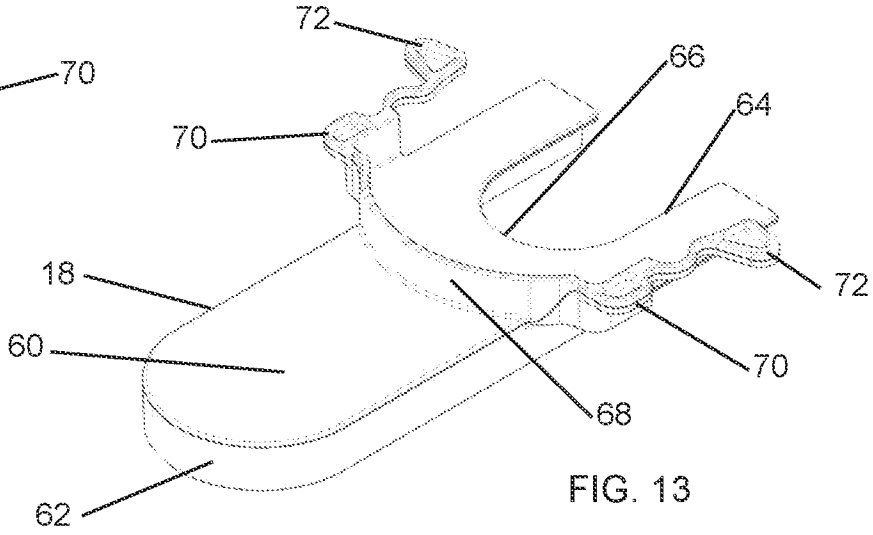


FIG. 13

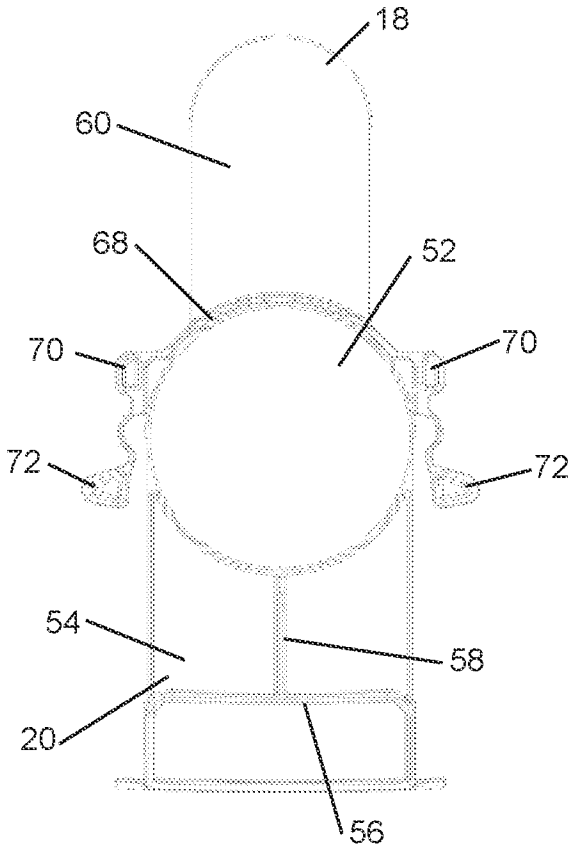


FIG. 14

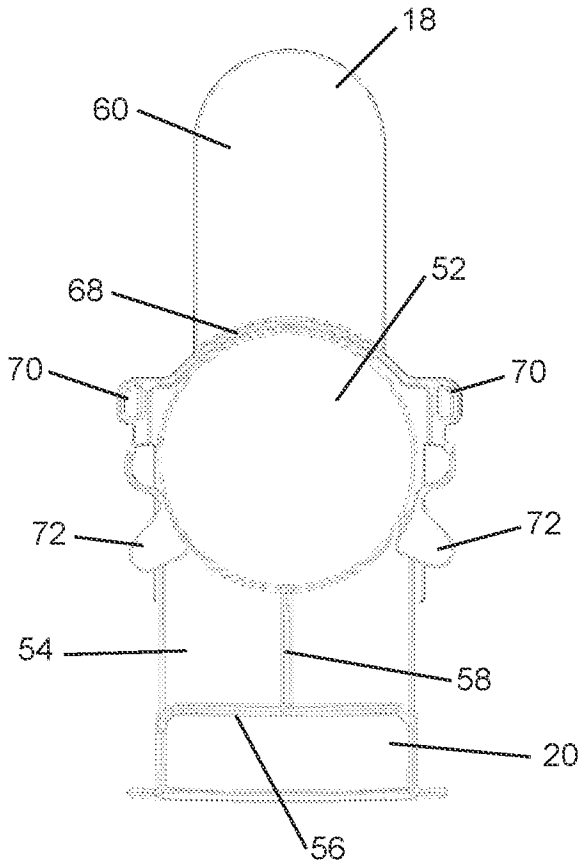


FIG. 15

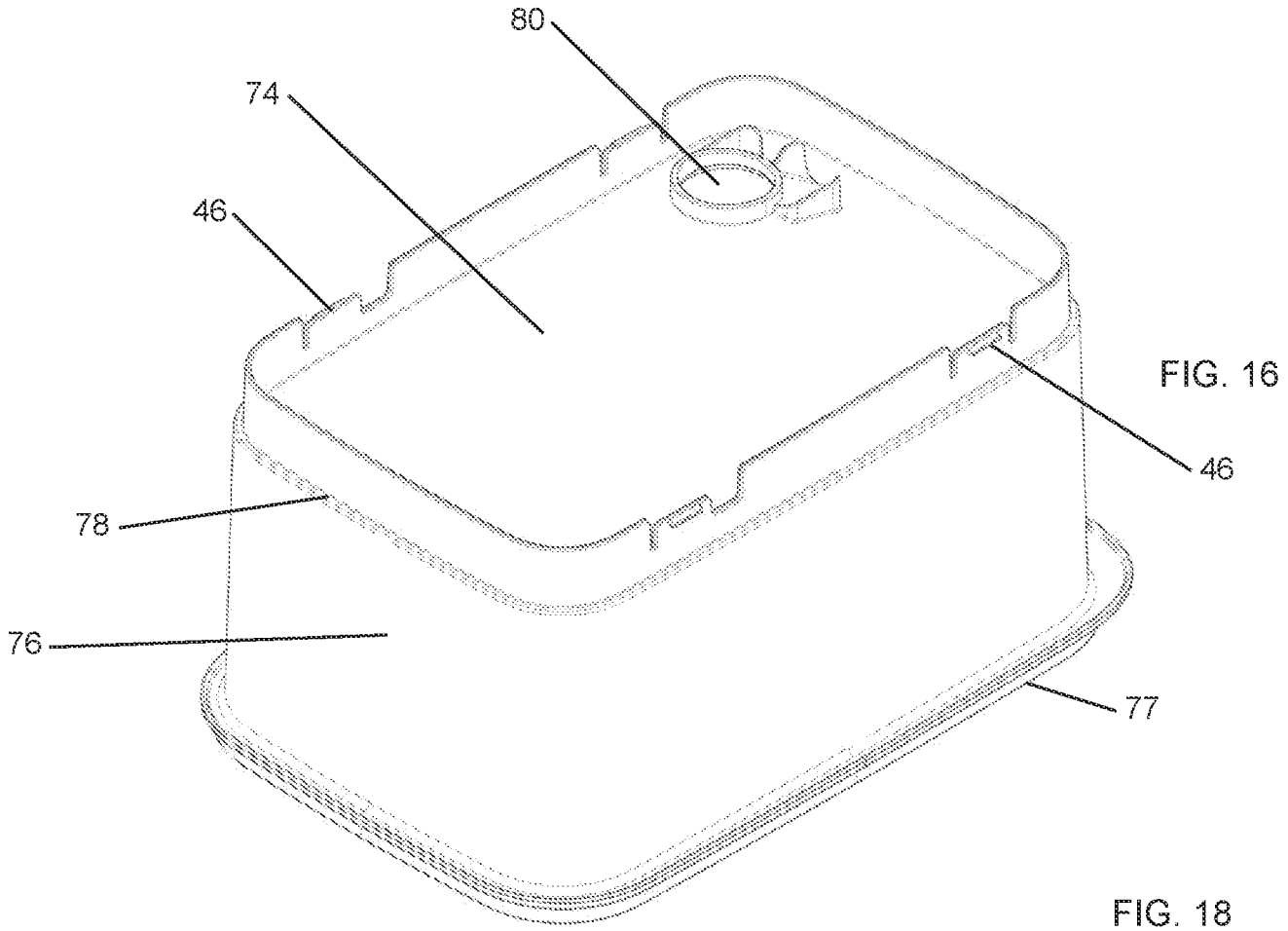


FIG. 16

FIG. 18

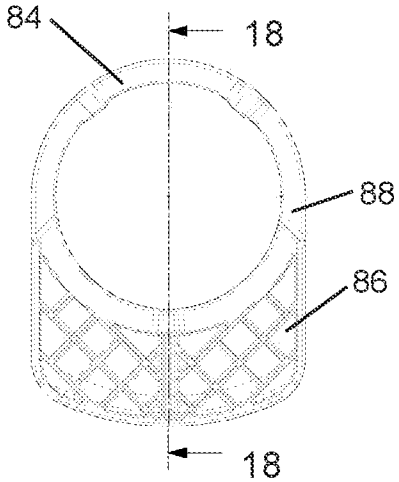


FIG. 17

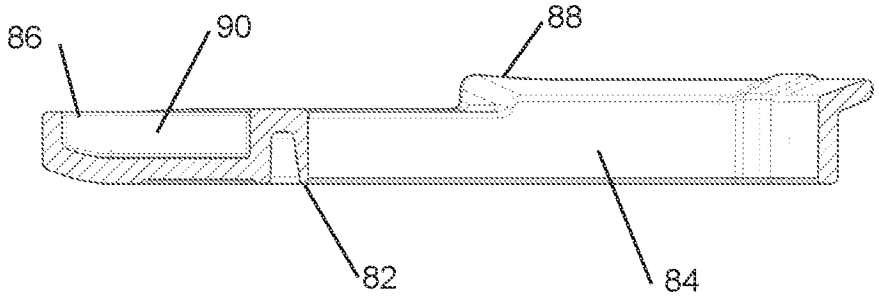


FIG. 20

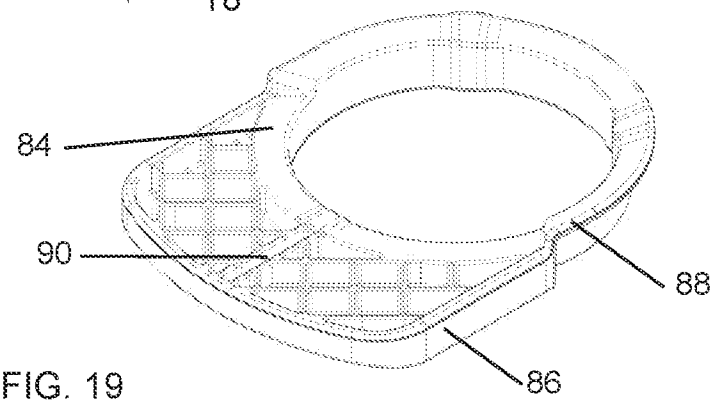


FIG. 19

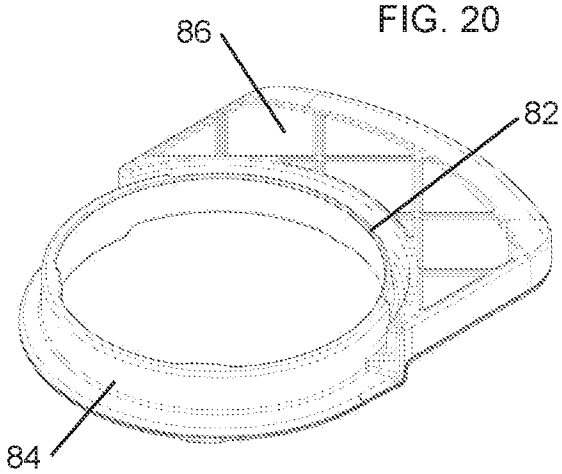
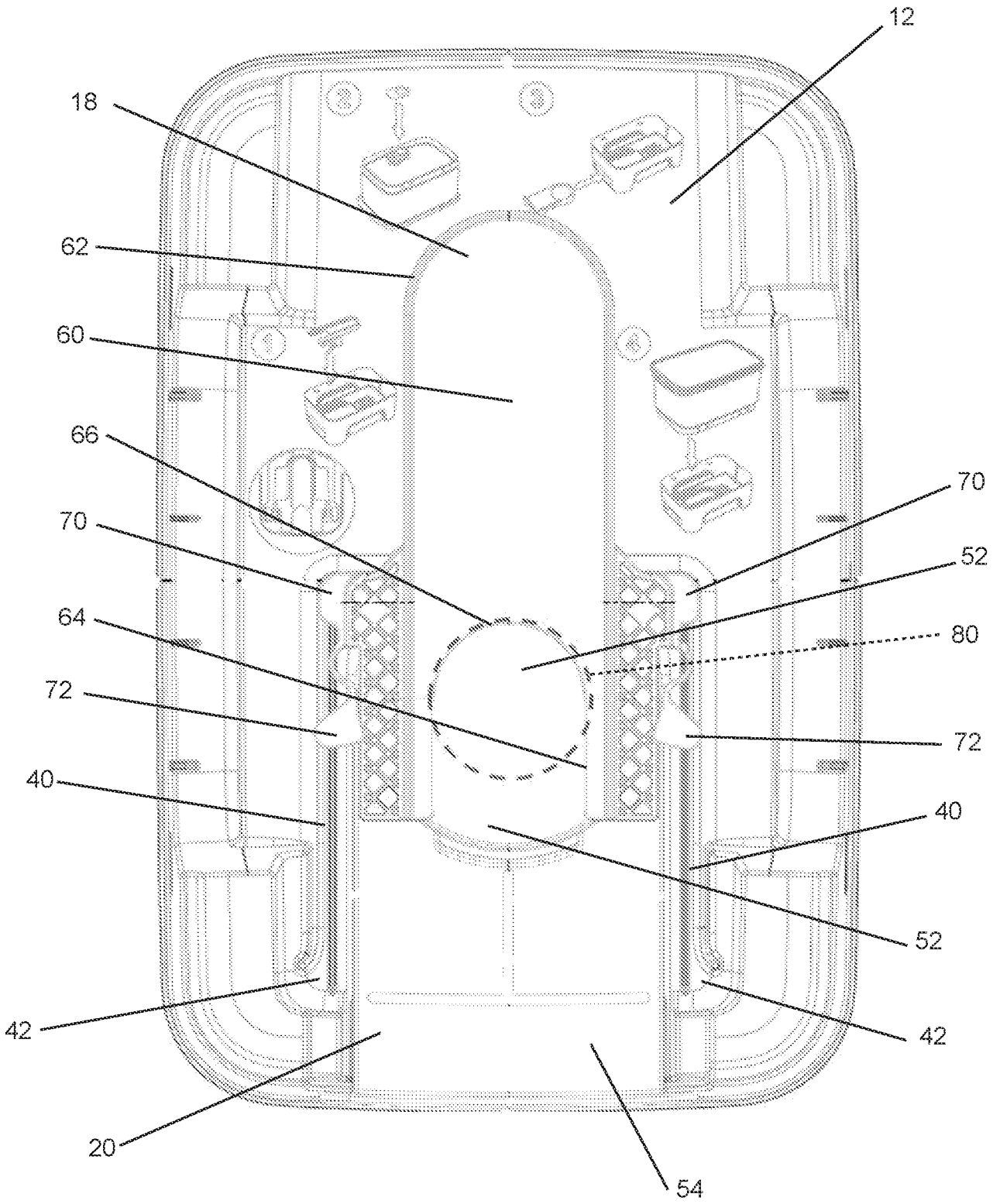


FIG. 21



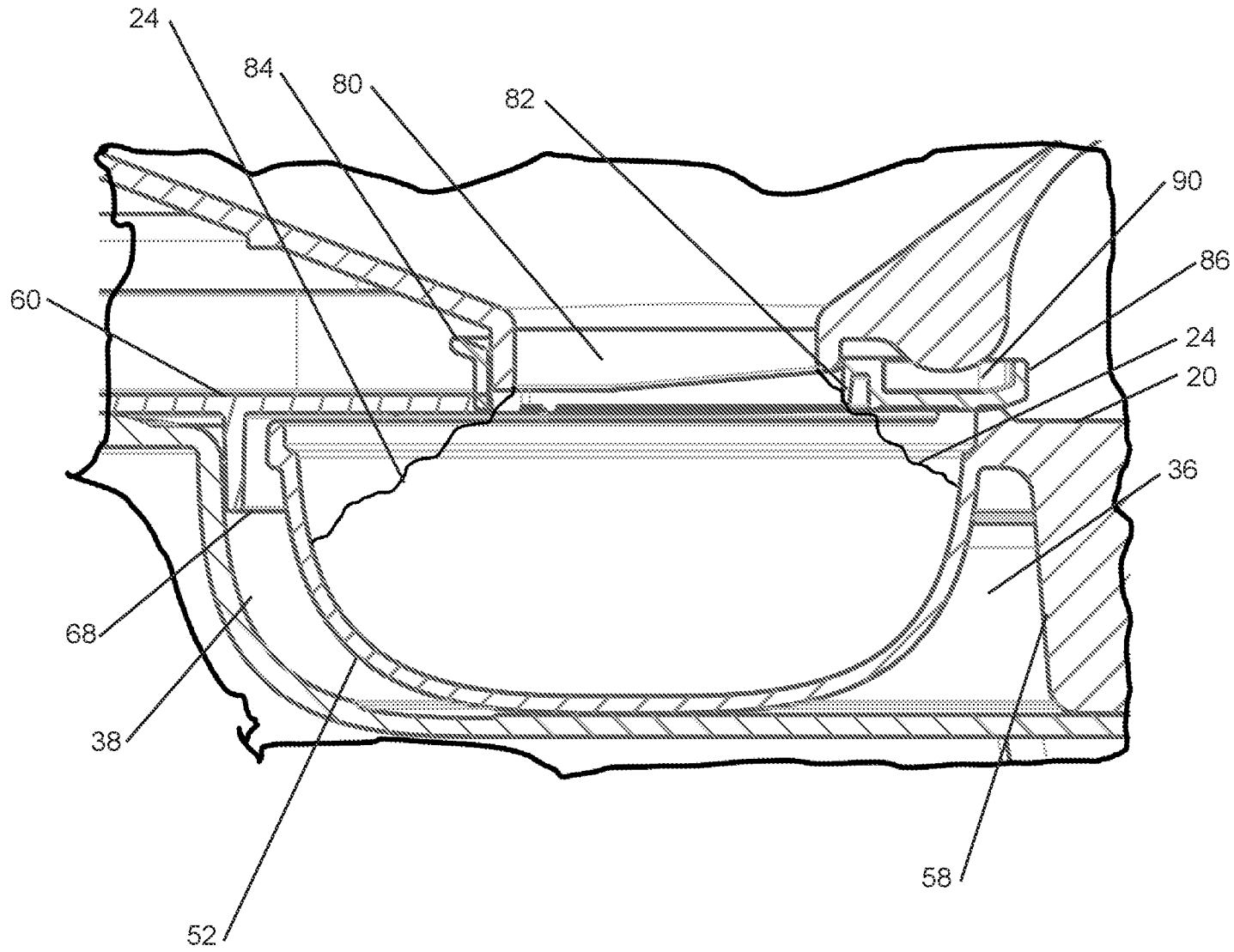


FIG. 22

FIG. 23

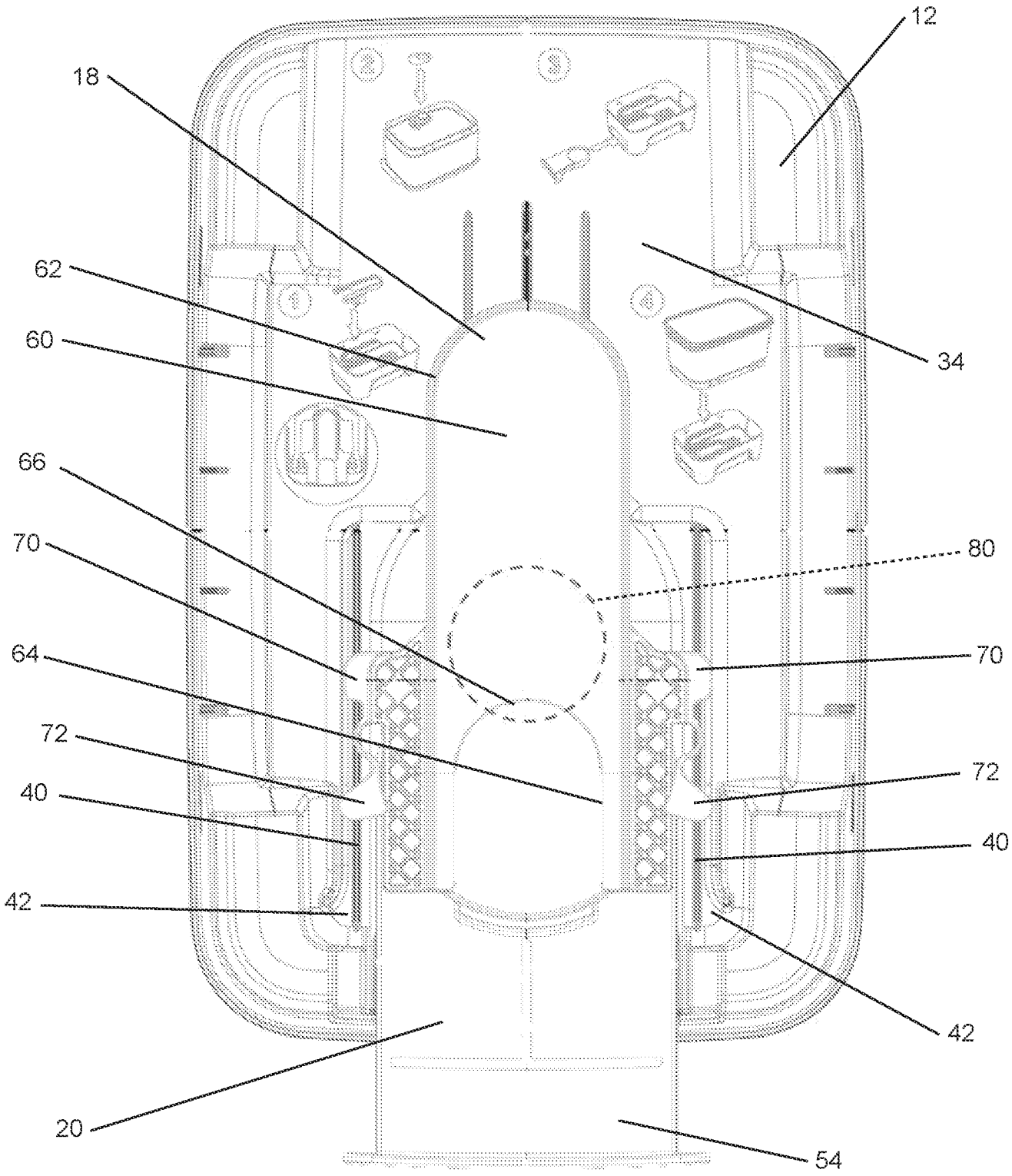
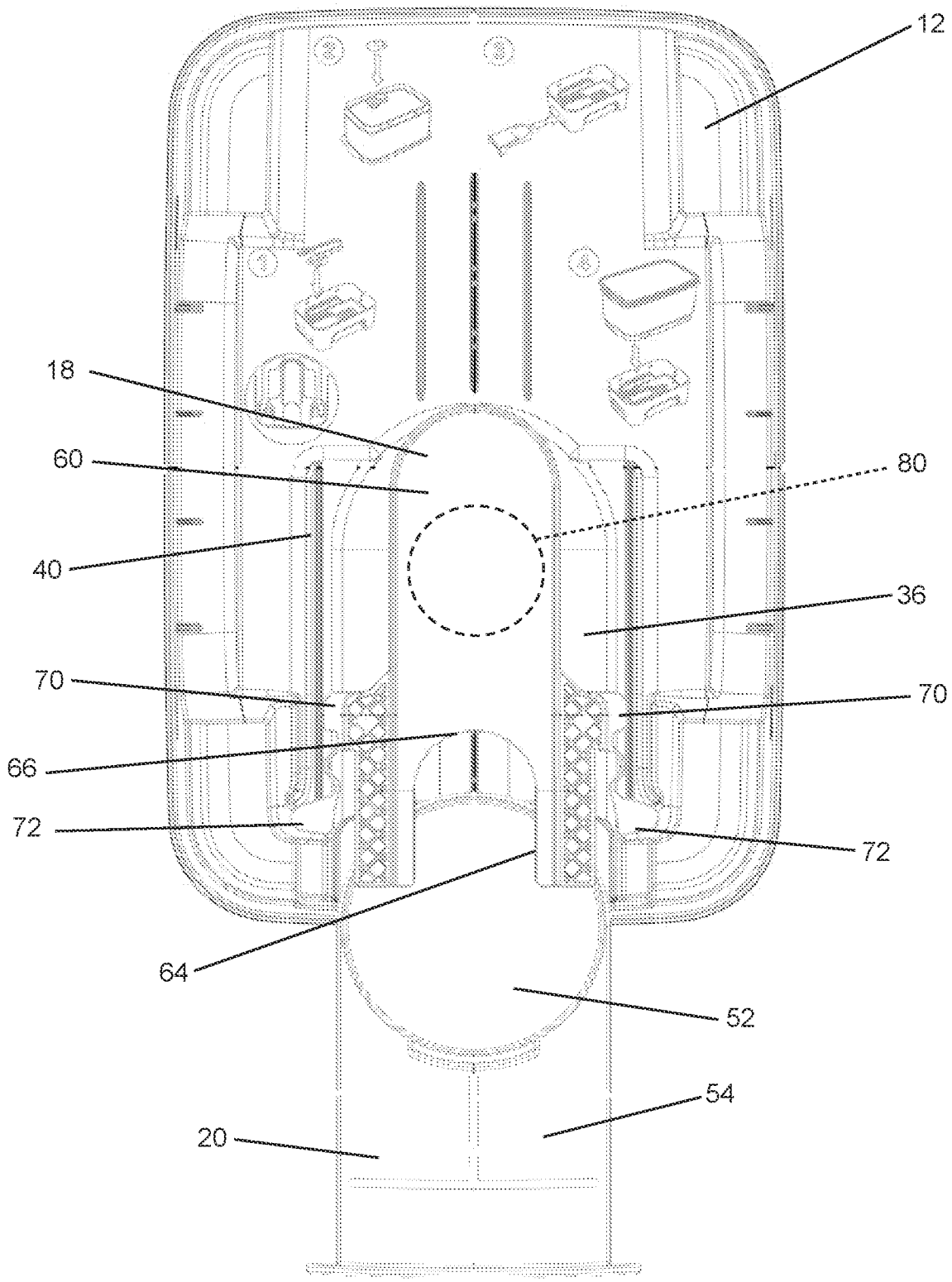


FIG. 24



PORTION DISPENSING CONTAINER

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is related to co-pending attorney reference number 132122–D200, which is incorporated by reference herein.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH

[0002] Not applicable.

BACKGROUND OF THE INVENTION

[0003] The present invention relates in general to portion dispensing containers for dry food, commonly known as dispensers, and in particular dispensers for granular dried foods such as rice.

[0004] It is common for households to store dry foods in quantity for consumption over time. For this purpose, it is known to provide storage containers. For many such foods, it is also preferred to remove the food from storage in specific increments, such as pre-set servings.

SUMMARY OF THE INVENTION

[0005] An object of the present invention is to provide a dry food storage dispenser.

[0006] Another object of the present invention is to provide a dry food storage dispenser which dispenses the food in preset increments.

[0007] A further object of the present invention is to provide a dry food storage dispenser easily manufactured using injection molding.

[0008] These and other objects are achieved by a dry food storage dispenser. The dispenser includes a base supporting a hopper to store the food, with a cover sealing the hopper. A cup may be inserted into and removed from the base, and interacts with a slider to dispense a

predetermined quantity of food into the cup upon each insertion. The hopper may include a scraper portion to assist in closing off the flow of food from the hopper during dispensing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The objects and features of the invention noted above are explained in more detail with reference to the drawings, in which like reference numerals denote like elements, and in which:

[0010] FIG. 1 is a top perspective view of the portion dispensing container according to the present invention in the operative configuration;

[0011] FIG. 2 is an exploded top perspective view thereof;

[0012] FIG. 3 is a side cross-sectional view along line 3 –3 of figure 1;

[0013] FIG. 4 is a top view of the base;

[0014] FIG. 5 is a cross-sectional view a long line 5 – 5 of Fig. 4;

[0015] FIG. 6 is a cross-sectional view a long line 6 – 6 of Fig. 4;

[0016] FIG. 7 is a top perspective view of the base;

[0017] FIG. 8 is a bottom perspective view of the base;

[0018] FIG. 9 is a top perspective view of the cup;

[0019] FIG. 10 is a bottom perspective view the cup;

[0020] FIG. 11 is a top view the slider;

[0021] FIG. 12 is a top perspective view thereof;

[0022] FIG. 13 is a bottom perspective view thereof;

[0023] FIG. 14 is a detail bottom view of slider and cup unengaged;

[0024] FIG. 15 is a detail bottom view of slider and cup engaged;

[0025] FIG. 16 is a bottom perspective view of the hopper;

[0026] FIG. 17 is a top view of the scraper;

[0027] FIG. 18 is a cross-sectional view a long line 18 – 18 of Fig. 17;

[0028] FIG. 19 is a top perspective view of the scraper;

[0029] FIG. 20 is a bottom perspective view of the scraper;

[0030] FIG. 21 is a detail top view of slider and cup in the storage position;

[0031] FIG. 22 is a detail cross-sectional view illustrating the scraper in the storage position;

[0032] FIG. 23 is a detail top view of slider and cup in partially open position; and

[0033] FIG. 24 is a detail top view of slider and cup in the dispensing position.

DETAILED DESCRIPTION OF THE INVENTION

[0034] With reference to Fig. 1, a portion dispensing container (also referred to herein as a "dispenser" for brevity) according to the present invention is generally designated by reference numeral 10. With reference also to Fig. 3, the dispenser 10 generally includes a base 12, hopper 14 with cover 16, as well as a slider 18, cup 20 and scraper 22. These elements work together to safely store, as well as dispense, dry food 24 (Fig. 24). In general, the dry food 24 will be stored within the hopper 14 with the cover 16 preventing contamination. The hopper 14 is supported by the base 12, but the base 12 also works with the slider 18, cup 20 and scraper 22 to dispense set quantities of dry food 24 from the hopper 14.

[0035] With reference to Figs. 7 and 8, the base 12 include a bottom wall 26 and at least one side wall 28 extending up from the periphery of the bottom wall 26. The side wall 28 extends upward to a rim 30, and the side wall 28 also includes an aperture in the form of a cup opening 32. While various shapes are possible, the preferred form of base 12 is shown as a generally rectangular bottom wall 26 with four side walls 28 and the cup opening 32 extending through one of the longitudinal end walls.

[0036] The interior of the base 12 cooperates with the slider 18 and cup 20 for operation of the dispenser 10. This interior of base 12 includes a platform 34 at near the same height as the upper edge of the cup opening 32. Taking the cup opening 32 as the starting point, and moving inward of base 12 from the cup opening 32, there is a cup slot 36 sized to receive the cup 20 when cup 20 is inserted through the cup opening 32. The cup slot 36 therefore has its lower extremity near the same height as the bottom edge of cup opening 32. The cup slot 36 also has an inner closed end 38 positioned such that a significant portion (and preferably essentially the entirety) of the cup 20 may be received and stored within the cup slot 36. In the preferred embodiment shown the cup slot includes a semi-circular bottom and the closed end 38 is semi-circular as well, so as to closely receive the similarly shaped cup 20 (described more fully below).

[0037] On at least one side of the cup slot 36, at the intersection of the cup slot 36 and platform 34, there is formed a cam ledge 40. In the preferred embodiment shown, there are two cam ledges 40, one on each side of the cup slot 36. Further, in the preferred embodiment shown the cam ledges extend downward from the platform 34 but other arrangements are possible. As is best shown in Figs. 4 and 5, the at least one cam ledge 40 extends from near the closed end 38 of cup slot 36 towards the cup opening 32. However, the at least one cam ledge terminates prior to the cup opening 20 by opening outward at a free end 42. In the embodiment shown, the free end 42 is formed by a lateral opening of the vertical walls of the cam ledges 40, but other arrangements such as a vertical opening of a horizontal wall of the cam ledges could be used alternatively or additionally.

[0038] Various other details or options for the base 12 are possible. The base 12 may include one or more handles 44 to allow a user to manually lift the entire dispenser 10. The base 12 (and

hopper 14) may include several mating slots and detents 46 to allow the hopper 14 to be releasably latched to the base 12 to reduce the possibility of tipping over. The base 12 may include various alignment ribs 48 which are arranged so as to require proper alignment of the hopper 14 to the base 12 to ensure proper assembly. Similarly, the base 12 (or other components such as the hopper 14) may include indicia 50 illustrating proper assembly. Finally, in the preferred form the base 12 including all its features such as platform 34, cup slot 36, cam ledges 40, handles 44, etc. are all formed monolithically via injection molding, with this being best illustrated in Figs. 5, 6 and 8. While this is preferred it is not required, and the platform 34, cup slot 36, etc. could be formed as one or more separate elements held to or within the base 12.

[0039] With reference to Figs. 9 and 10 the cup 20 will be described. The cup 20 includes an upwardly opening cavity 52, and a handle 54 extending from the cavity 52. As may be envisioned, the cavity 52 will receive a quantity of the dry food 24, and the handle 54 will allow the user to grasp and manipulate the cup 20. For stability it is preferred (but not required) that handle 54 include a foot 56 spaced from the cavity 52 to help support the cup 20 to rest upon a flat surface without tipping. In the preferred embodiment shown, the foot 56 further includes a slide rib 58 to help maintain the cup in the upright position during movement into and out of the cup slot 36. As noted, in the preferred form the cavity 52 is semi-hemispherical as shown, and thus cup slot 36 and closed end 38 take their mating semi-circular shapes. The cavity 52 (and thus cup slot 36 and closed end 38) may take other shapes such as rectangular, trapezoidal, etc.

[0040] The slider 18 will be described in detail with reference to Figs. 11-13. Slider 18 includes a blocking plate 60 in the form of an elongated plane. A guide wall 62 extends upward from the longitudinal sides, and from the rear end of the blocking plate 60. The front end of blocking plate 60 includes a slide notch 64 extending inwardly to a closed end 66. A cup stop 68

extends downwardly from the blocking plate 60 at a position spaced inwardly of the closed end 66 of slide notch 64. The slider 18 further includes at least one guide block 70 extending from a lateral side of blocking plate 60. The guide block 70 mounts a biased cam clamp 72 extending forwardly of the cup stop 68, and the guide block 70 is extending below the blocking plate 60 similar to the cup stop 68.

[0041] In the preferred embodiment shown, the at least one guide block 70 is a pair of guide blocks 70 extending from each lateral side of blocking plate 60, and are guide blocks 70 are sized and positioned such that the guide blocks 70 will be received in the cam ledges 40 for sliding reciprocation within and along the cam ledges 40 as the slider 18 moves toward and away from the cup opening 32 between storage and dispensing positions. The biased cam clamps 72 are formed such that in their relaxed state (Figs. 11-14) they extend laterally outward, but may be elastically biased laterally inward to a compressed state (Fig. 15). In the preferred embodiment shown, the slider 18 is formed as a monolithic injection-molded piece, and the elastic nature of the plastic used to form slider 18 creates a biased living hinge between slide block 70 and cam clamp 72. As illustrated by comparison of Figs. 14 and 15, the cup stop 68 and cam clams 72 are arranged such with the cavity 52 abutting the cup stop 68, the cam clamps 72 may partially surround the cavity 52 of cup 20 (Fig. 15).

[0042] The hopper 14 is best shown in Figs. 2, 3 and 16. The hopper 14 is generally a concave storage bin including a bottom wall 74 and one or more side walls 76 extending upward from the bottom wall, with the side walls 76 ending in a rim 78. The cover 16 will rest upon (or more preferably be releasably sealed to) this rim 77. As with the base 12, in the preferred form the bottom wall 74 has a generally rectangular periphery, and there are four side walls 76, but other

arrangements are possible. At least a portion of the side wall 76 may include a ledge 78 to engage the rim 30 of base 12 to support the hopper 14 on base 12 as shown in Figs. 1 and 3.

[0043] As best shown in Figs. 3 and 18, the bottom wall 74 is formed as funnel leading downward to an aperture 80, with the aperture 80 being sized to adequately allow the dry food 24 to flow through by gravity. The funnel depth of the bottom wall 74 is set such when assembled (as in Figs. 1 and 3) the aperture 80 will have a close sliding fit against the blocking plate 60 of slider 18 which may fully block aperture 80. In particular, this fit is intended to substantially prevent dry food 24 from exiting the aperture 80 when fully blocked by blocking plate 60. The aperture 80 is also formed to overlie the cavity 52 of cup 20 when cup 20 is operatively inserted into the base 20 at its storage position (Figs. 3, 21 and 22). Similarly, the slide notch 64 of slider 18 has a width closely similar to that of aperture 80, and this slide notch 64 is placed on blocking plate 60 at a location to underly the aperture 80 when of the slider 18 is at the storage position. As best illustrated in Fig. 21, the closed end 66 of the slide notch 64 is also located adjacent the aperture 80 when the slide 18 is in the storage position.

[0044] The operation of dispenser 10 will be described with reference to Figs. 3 and 21-24. The storage position of dispenser 10 and its components is shown in Figs. 3, 21 and 22. In this storage position the slider 18 is fully inserted within the base 12, with the guide blocks 70 and cam clamps 72 received in their associate cam ledges 40, and the cup stop 68 at or near the closed end 38 of cup slot 36. While other components could be used, it is preferred that the slider 18 is prevented from further inward movement (and thus stopped in the storage position) by 1) abutment of the guide blocks 70 against the ends of the cam ledges 40; 2) abutment of the cup stop 68 against the closed end 38; or 3) both 1 and 2. The slide notch 64 and closed end are closely surrounding, but not substantially blocking, the aperture 80 of hopper 14.

[0045] The cup 20 is also at its maximum insertion into cup slot 36 in this storage position. In the preferred embodiment shown, the length of handle 54 of cup 20 is sized to align with cup opening 32 in this storage position for aesthetic purposes. The cavity 52 of cup 20 is located beneath the aperture 80. As such, and as illustrated in Fig. 22, the dry food 24 may freely flow from the hopper 14 through the slide notch 64 and into the cavity 52 of cup 20. As the cavity 52 is filled with the dry food 24, the dry food 24 already dispensed into cup 20 will serve to block further flow of dry food 24 through the aperture 80. As such, when in the storage position the dry food 24 will fill the cavity 52 only partially as illustrated in Fig. 22.

[0046] As shown in Fig. 3, the cup 20 is abutting against or closely adjacent to the cup stop 68 of slider 18. With this position relative to slider 18, and with the cam clamps 72 in their compressed state due to cam ledges 40, the cup 20 will be retained by slider 18 as shown in Fig. 15. In particular, inward movement of cup 20 relative to slider 18 is blocked due to cup stop 68, and outward movement of cup 20 relative to slider 18 is blocked due to cam clamps 72. As such, cup 20 and slider 18 will move together as a unit at this position. When the user manually pulls outward upon handle 54, the cup 20 and slider 18 will both slide outward together as a unit. In particular, the cup 20 will abut against the cam clamps 72 and outward motion of the cup 20 will similarly force the cam clamps 72 (and thus the slider 18) outward.

[0047] An intermediate position during this sliding outward is shown in Fig. 23. Here, the cup 20 is still retained by slider 18, as the cam clamps 72 are still positioned within the cam ledges 40 and are thus forced into their compressed state about the cavity 52. The handle 54 of cup 20 extends partially from the cup opening 32. With movement of slider 18, the closed end 66 of slide notch 64 has moved within the periphery of aperture 80, and as such the blocking plate 60 is partially closing the aperture 80. As may be envisioned, with further outward movement the

closed end 66 will approach the opposite periphery of the aperture 80 closer and closer, until the closed end 66 passes beyond the periphery of aperture 80 and the blocking plate 60 fully closes the aperture 80 of hopper 14 and prevents dispensing from the hopper.

[0048] The dispensing position is shown in Fig. 24. With further manual movement of the cup 20 outward, the cup 20 will eventually draw the slider 18 out to the point that the cam clamps 72 enter the free end 42 of the cam ledges 40, and the cam clamps 72 expand to their relaxed state (Fig. 14). With the cam clamps 72 relaxed and expanding outward, they no longer abut the cup 20 and the cup 20 is no longer connected to slider 18 as a unit. As shown in Fig. 24, the slider 18 will thus cease outward movement. At this dispensing position of the slider 18, the blocking plate 60 fully closes the aperture 80 of hopper 18 preventing flow of dry food 24. Any dry food 24 which has inadvertently escaped onto the surface of blocking plate 60 will be contained by the guide wall 62. Further manual movement of the handle 54 will thus draw the cup 20 outward by itself, as shown in Fig. 24. Continued manual movement will result in the cup 20 being fully removed from the base 12, with the cavity 52 filled with dry food 24. At this point the user may manually pour the dry food into a cooking pot, mixing bowl, serving bowl, etc.

[0049] Movement from the dispensing position back into the storage position is generally the opposite of that described above. The user will manually insert the cup 20 into the cup slot 32 and begin sliding the cup 20 into cup slot 36, corresponding to Fig. 24. Continued insertion will eventually result in the cup 20 abutting the cup stop 68 on slider 18. From this point on, further manual insertion of the cup 20 will also push the slider 18 inward. As the slider 18 moves inward, the cam clamps 72 will exit the free ends 42 and enter the cam ledges 40. This will cause the cam clamps to move from the relaxed state to the compressed state, as illustrated in Fig. 23. During this movement of the slider 18 the blocking plate 60 has been sliding beneath

the aperture 80. Eventually the closed end 66 of slide notch 64 will cross the periphery of the aperture 18 and the aperture 18 will begin to be opened, again as illustrated in Fig. 23. The cavity 52 of cup 20 is already positioned below aperture 80 at this point, and as such the dry food 24 will begin flowing once again into the empty cavity 52.

[0050] Continued insertion of the cup 20 and slider 18 combined unit will eventually cause the slider 18 or cup 20 to engage with an abutment preventing further insertion. As noted, this could be the cup stop 68 abutting the closed end 38 of cup slot 34, or the guide blocks 70 abutting the closed end of the cam ledges 40, or the cup 20 itself engaging the base 12 in some manner (such as by foot 56 abutting a mating section of cup slot 36). At this point the slider 18 will be fully inserted into the storage position, and as such the closed end 66 will have passed beyond the aperture 80 and the aperture 80 will be fully surrounded by slide notch 63 and thus fully open for dispensing. As noted before, this flow of dry food 24 into the cup 20 will eventually be blocked by the accumulation of dry food itself. In this manner a repeatable quantity of dry food 24 may be dispensed via cup 20.

[0051] While this description provides a working example, there are certain improvements to this basic invention which may be desirable. A first is the shape for the aperture 80 and closed end 66 of the slide notch 64. As generally described, the aperture could take various shapes including square, hexagonal, etc. Envision the aperture 80 is formed as a square, and closed end 66 is a matching flat wall perpendicular to the slide notch 64. As the closed end 66 moves toward the dispensing position and to close the aperture 80, the two flat edges of these elements coming together may be prone to clamping dry food 24 between themselves. This could block closing, or cause breakage of the dry food 24 to force further movement of the slide 18. The preferred embodiment, however, is that shown and in particular for the aperture 80 to be circular,

and the closed end 66 to be semi-circular. Forming the aperture 80 and closed end 66 in this manner causes the two elements to create a lens shape during closing of aperture 80, as illustrated in Fig. 23. The angular and curved meeting points between these elements as the aperture 80 is being closed can serve to lead granules of dry food 24 toward either hopper 14 or cup 20 and provide smoother closing. As such, these circular forms are preferred.

[0052] Another potential improvement is to provide aperture 80 with a scraper portion 82. The scraper portion 82 will take the form of a section of reduced thickness and increased flexibility, similar to a wiper blade. This scraper portion will be located adjacent the cup opening 32, such that the scraper portion 82 is the final portion of aperture 80 encountered by the closed end 66 as slider 18 moves from the storage to the dispensing positions. The scraper portion may be formed monolithically with the hopper 14 (not shown). In the preferred embodiment, the scraper portion 82 is created by a hopper cap 84 secured to hopper 14 at the aperture 80. The hopper cap 84 may thus be formed of a different, more pliable material than that used for hopper 14, such as silicone or a flexible polypropylene. As shown in Figs. 17-20 and 22, the hopper cap 84 has a shape to closely receive and form a secure fit to hopper 14, such as by threading (not shown) or a press friction fit.

[0052] The hopper cap 84 may include various features for ease of use, such as a tab 86 to easily remove the hopper cap 84 for cleaning. The hopper cap 84 may also include areas 88 of increased height and/or various mating tab/slot combinations 90 to ensure the hopper cap 84 may be mounted only in the proper position. In this preferred form of circular aperture 80, the scraper portion covers approximately 60 degrees, and with comparison to the lens area of closing aperture 80 in Fig. 23, it may be seen that scraper portion 84 will be the last portion of aperture 80 to interact with the closed end 66 during closing of the aperture. The increased flexibility and

reduced thickness of the scraper portion 84 will assist in moving dry food 24 out of the way to improve closing of aperture 80. Given that the scraper portion 82 and hopper cap 84 are each independently optional, the term "aperture means" shall be used to refer to this generally. In particular, the term "aperture means" is intended to encompass: an aperture 80 with or without a scraper portion 82; an aperture 80 without a hopper cap 84, or a hopper cap 84 mounted to the aperture 80; as well as the hopper cap 84 with or without a scraper portion 82.

[0054] From the foregoing it will be seen that this invention is one well adapted to attain all ends and objects set forth above together with the other advantages which are inherent within its structure.

[0055] It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

[0056] Since many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth of shown in the accompanying drawings is to be interpreted as illustrative, and not in a limiting sense.

What is claimed is:

1. A portion dispensing container, comprising:

a base having a platform, a cup slot extending below said platform and said ending in a closed end, and at least one cam ledge having a free end;

a hopper supported upon said base, said hopper adapted to hold dry food for storage and dispensing, said hopper including a bottom wall formed as a funnel leading toward an aperture means for dispensing said dry food;

A slider including a blocking plate having a slide notch extending towards a closed end of said slide notch, a cup stop extending from said blocking plate, and at least one guide block having a cam clamp for biased movement between relaxed and compressed positions, said slider being mounted within said base for reciprocation between a storage position and a dispensing position with said blocking plate sliding upon said platform, and said guide block received in said cam ledge, and said aperture means located above said cup slot in said storage position, and said blocking plate closing said aperture means in said dispensing position; and

A cup sized to be received within said cup slot for reciprocation between said storage and dispensing positions, said cup including a cavity to receive said dry food, said cavity being located below said aperture means in said storage position.

2. A container as in Claim 1, wherein said aperture means is circular, and said closed end of said slide notch is semi-circular.

3. A container as in Claim 1, wherein said cam clamp is located within said cam ledge at said storage position and is biased to said compressed position by said cam ledge, and wherein said cam clamp is located beyond said free end of said cam ledge at said dispensing position and is released to said relaxed position.

4. A container as in Claim 3, wherein said cam clamp in said compressed position is located to secure said cup cavity between said cam clamp and said cup stop.

5. A container as in Claim 4 wherein said at least one cam ledge comprises two said cam ledges, and said at least one guide block and cam clamp comprise two said guide blocks and cam clamps.

6. A container as in Claim 1, wherein said aperture means includes a scraper portion having reduced thickness and increased flexibility, positioned to interact with said closed end of said slide notch as said aperture means is being fully closed by said blocking plate.

7. A container as in Claim 6, wherein said aperture means further includes a hopper cap secured to said hopper.

8. A container as in Claim 7, wherein said cam clamp is located within said cam ledge at said storage position and is biased to said compressed position by said cam ledge, and wherein said cam clamp is located beyond said free end of said cam ledge at said dispensing position and is released to said relaxed position.

9. A container as in Claim 8, wherein said cam clamp in said compressed position is located to secure said cup cavity between said cam clamp and said cup stop.

10. A container as in Claim 9 wherein said at least one cam ledge comprises two said cam ledges, and said at least one guide block and cam clamp comprise two said guide blocks and cam clamps.

ABSTRACT OF THE DISCLOSURE

A portion dispensing container. The container includes a base supporting a hopper to store the food, with a cover sealing the hopper. A cup may be inserted into and removed from the base, and interacts with a slider to dispense a predetermined quantity of food into the cup upon each insertion. The hopper may include a scraper portion to assist in closing off the flow of food from the hopper during dispensing.

DocCode – SCORE

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Application Number: 17381765 Document Date: 07/21/2021

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