March 2, 1937. B. B. LEUSTIG 2,072,506

DISPENSING RECEPTACLE

Filed Dec. 30, 1935 2 Sheets-Sheet 1

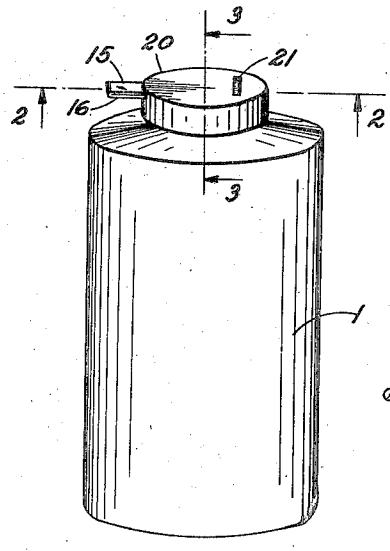
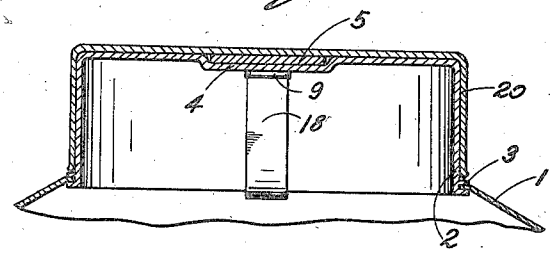


Fig. 1

Fig. 3



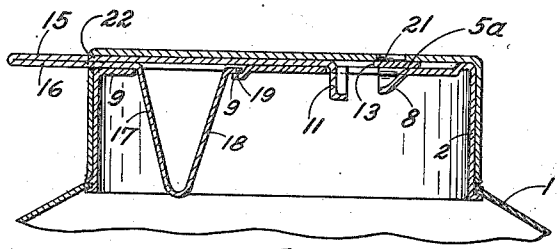


Fig. 2

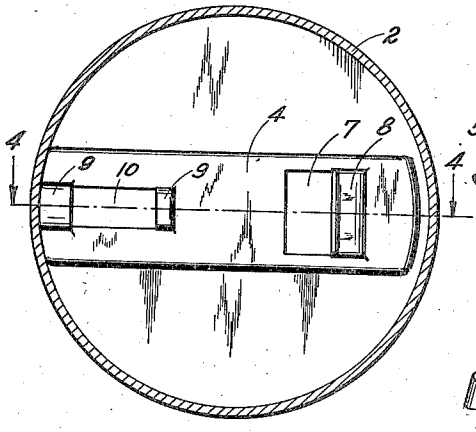


Fig. 5

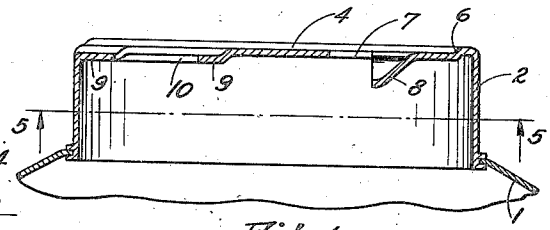


Fig. 4

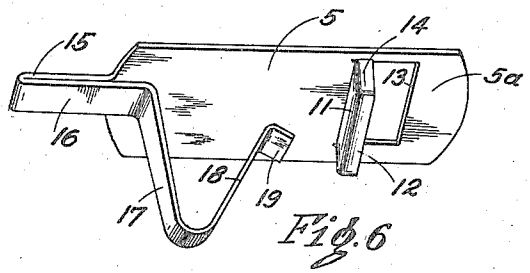


Fig. 6

Inventor

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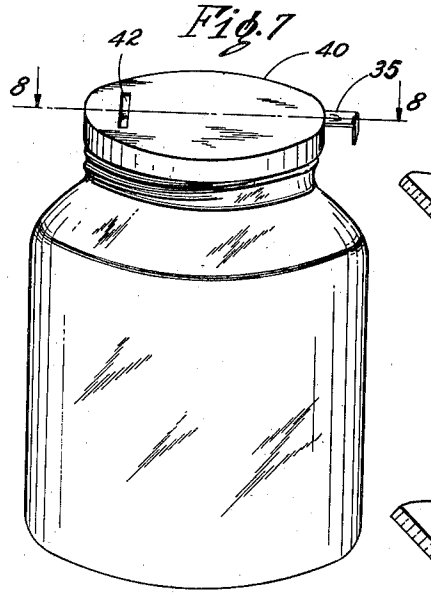
Attorneys

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DISPENSING RECEPTACLE

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Fig. 7



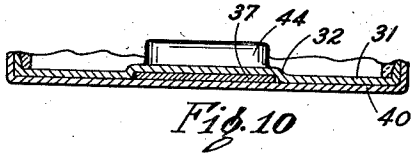


Fig. 10

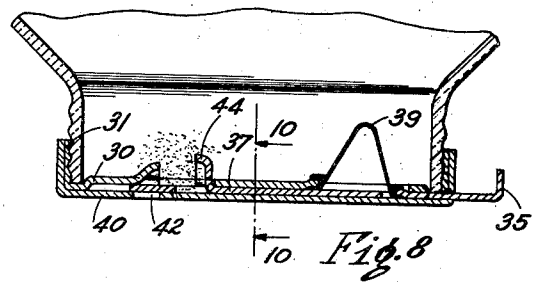


Fig. 8

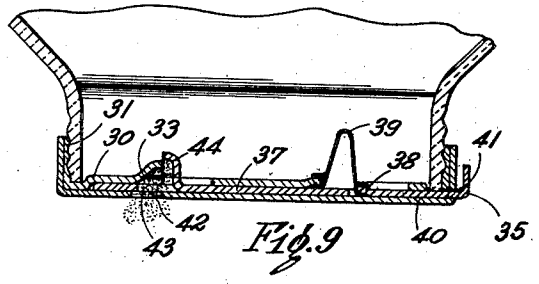


Fig. 9

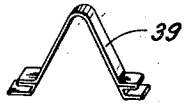


Fig. 13

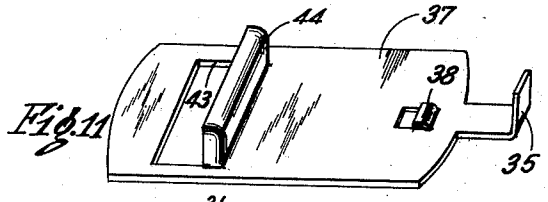


Fig. 11

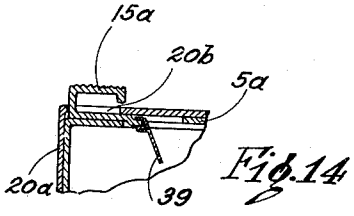


Fig. 14

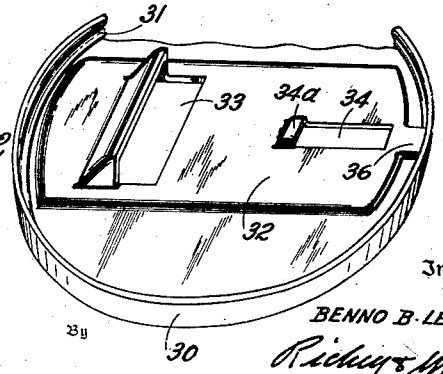


Fig. 12

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UNITED STATES PATENT OFFICE

2,072,506

DISPENSING RECEPTACLE

Benno B. Leustig, Cleveland, Ohio

Application December 30, 1935, Serial No. 56,650

9 Claims. (Cl. 221—98)

This invention relates to receptacles and more particularly to receptacles adapted to contain and dispense powdered or granulated material such as tooth powder, sugar and the like.

For reasons related to sanitation and economy it is extremely desirable that certain products such as sugar, tooth powder, condiments and the like should be available in small, easily handled metal or cardboard containers which will accurately measure and dispense a quantity of the material upon manipulation by the person using the product. Heretofore various types of receptacles have been fitted with special dispensing caps or measuring devices designed to accomplish the above desired action. Many of said dispensing or measuring devices, however, have necessitated such involved or complicated mechanism that the cost of the receptacle fitted with such mechanisms is out of proportion with the cost of the material or the use to which it is put. In receptacles not supplied with measuring or dispensing devices the removal of the receptacle closure usually renders the entire contents susceptible of discharge through the opening and a costly, uncertain and unsatisfactory use of the material and receptacle often results.

It is among the objects of this invention to provide a receptacle and closure therefor which will automatically measure and discharge a quantity of the receptacle contents upon manipulation by the operator. A further object of the invention is to provide a receptacle and closure therefor which will automatically agitate the contents of the receptacle adjacent the closure, measure a quantity of said receptacle content and discharge same and which will automatically close the receptacle in response to a single manual movement by the user. A further object of the invention is to provide a receptacle and closure therefor in which the closure is normally urged to a sealing or closing position and which in response to actuation by the user may be moved to effect an agitating, measuring and discharging action. A further object of the invention is to provide a receptacle and sliding closure device which will efficiently retain the receptacle contents in absence of operator actuation and which will be simple in construction, economical of manufacture and well adapted to dispense a variety of materials.

Other objects and advantages will appear from the following description and drawings wherein:

Figure 1 is a perspective view of a container having a generally oval cross section and a round dispensing closure constructed according to my invention;

Figure 2 is an enlarged sectional view taken on a plane along the line 2—2 of Figure 1;

Figure 3 is an enlarged transverse sectional view taken on a plane along the line 3—3 of Figure 1;

Figure 4 is a sectional view corresponding to Figure 2, portions of the closure means being omitted;

Figure 5 is a sectional view taken along the line 5—5 of Figure 4;

Figure 6 is a perspective view of the closure slide employed in conjunction with the device of Figures 1 to 3;

Figure 7 is a perspective view of an alternative form of my invention;

Figure 8 is a sectional view taken on the plane of line 8—8 of Figure 7 with the receptacle in an inverted position;

Figure 9 is a view corresponding to Figure 8 wherein the apertures in the slide and closure walls are in alignment;

Figure 10 is a sectional view at right angles to the view of Figure 8 corresponding to a section on line 10—10 of Figure 8;

Figure 11 is a perspective showing of the closure slide element employed in conjunction with this form of my invention;

Figure 12 is a perspective showing with parts broken away of an element of the closure employed in this embodiment of my invention;

Figure 13 is a perspective view of a spring device employed in that form of my invention illustrated in Figures 7 to 12;

Figure 14 is a sectional view of a modified form of my invention.

Generally speaking, my invention corresponding to the foregoing objects embodies a receptacle closure having a pair of spaced parallel wall portions with aligned apertures and a closure slide arranged between said walls having an aperture which is adapted to be moved into and out of alignment with the wall apertures. The agitating and measuring functions are preferably carried out by inwardly extending portions arranged on adjacent slide and wall parts and the slide is normally urged through a spring means to a position where its aperture is out of alignment with the wall apertures to maintain the slide in an effective closing position.

In a preferred form of my invention a container 1 preferably formed of metal and having an oval cross-section is provided with a circular top or inner cap portion 2. In this embodiment of my

invention the member 2 is preferably interlocked and secured to the container 1 as at 3, and although it thus becomes substantially a part of the container, for the sake of convenience it will be referred to hereafter as the inner cap member. To receive and guide a closure slide member 5 the inner cap member is preferably depressed or grooved substantially throughout the diameter of the cap as at 4. Adjacent the terminus 6 of the depressed or grooved portion an aperture 7 is formed in the cap and a flare or pocket 8 is struck inwardly to cooperate with a closure slide element in a manner to be more fully described hereinafter. The depressed cap portion 4 is further depressed or grooved as at 9 and said last named depression is apertured longitudinally as at 10 to receive a coacting closure slide element. The closure slide element 5 (see Figure 6) preferably comprises a generally flat plate proportioned transversely to fit snugly within the depression or guide 4 and longitudinally is of slightly lesser extent than the depression 4 so as to permit a longitudinal movement of the slide closure within the groove. Adjacent one end of the closure slide a tongue 11 is struck downwardly to form an aperture 13 in the closure slide plate and also form an agitating and measuring pocket having a lower wall 12 generally parallel to the closure slide and integral end walls 14 normal thereto. A portion of the closure slide is preferably extended at the end remote from said aperture 13 as at 15 to provide a manipulating or actuating handle and a portion thereof is folded inwardly therefrom as at 16 to provide an integrally formed spring unit 17—18.

A supplementary or outer closure cap member 20 is contoured and proportioned to frictionally engage the outer walls of the cap 2 and said cap 20 is preferably apertured as at 21 on its top surface and is apertured as at 22 on the side wall surface to receive the handle portions 15 and 16 of the closure slide. The aperture 21 is preferably offset with respect to the aperture 7 in the inner cap member (see Figure 2) and the assembly of the closure unit is preferably effected by sliding the handle portions 15 and 16 laterally through the aperture 22 in the outer cap member 20. The outer cap member 20 carrying the slide is then lowered into position upon the inner cap member. This lowering and positioning of the outer cap member requires an alignment of the spring members 17—18 with the aperture 10 and positions the flanged end 19 of the spring 18 at the terminus of the depressed portion 9. The slide 5 is restrained against lateral movement by the side walls of the depression 4 and is urged to a position as shown in Figure 2 where the slide portion 5a effectively closes the aperture 21 with respect to the interior of the receptacle.

Although I have found the handle arrangement above described satisfactory for most types of receptacles, I appreciate that certain types of packages are better adapted for use and packaging with other types of handles. Accordingly I have shown in Figure 14 a modified form of handle or actuating device wherein the outer cap member 20a is un-slotted in its periphery and presents a smooth circular contour. The flat top wall of the closure cap 20a is preferably slotted as at 20b in the direction of the slide movement, and a handle 15a integrally formed with the closure slide 5a is bent back longitudinally upon the slide to provide a portion adapted to receive the thumb of the person using the receptacle. The portion 15a may be roughened somewhat as shown to improve the frictional characteristics of the slide actuating handle 15a with respect to the thumb of the user.

With the parts assembled as outlined above the receptacle is ready for use and it will be observed that upon inversion of the receptacle the powdered or granulated material adjacent the flat wall of the cap 2 is subjected to agitation by the member 12 in response to manual movements of the handle 15 by an operator. The handle 15 may be urged inwardly against the action of springs 17—18 and during this inward movement material is gathered and forced into a measuring compartment defined by the walls 12—14 and 8. Simultaneously with the measuring and positioning of the material within the compartment formed by members 11 and 8 the aperture 13 of the closure slide is moved into alignment with the aperture 21 of the outer cap member 20 and thus this measured quantity of material is discharged by gravity through the aperture 21. It will be observed that regardless of the position of the handle 15 further flow of material from the interior of the receptacle is prevented by the abutment of portions 11 and 8 and that additional material is only obtainable by further complete reciprocation of the closure slide member. Release of the handle 15 by the user of the receptacle merely repositions the closure slide in response to the action of springs 17—18 and brings the closure slide portion 5a into alignment with the aperture 21.

A modified form of my invention adapted for the utilization of the glass jar type of receptacle is illustrated in Figure 7. In this form of my invention an inner cap member 30 is preferably interiorly threaded as at 31 to cooperate with the threaded portion of a conventional glass jar. The inner cap portion is depressed as at 32, 36 and apertured as at 33 and 34 in the manner and for the reasons described in connection with the description of the preferred embodiment. This form of my invention contemplates the use of an independent spring means in conjunction with the closure slide actuation and thus the closure slide 37 is preferably provided with an off struck tab 38 to receive the flanged end of a V-shaped spring 39. The other flanged end of said V-shaped spring 39 may be received in a struck out tongue such as 34a substantially as in the preferred embodiment. To assemble this form of my invention the slide 37 is provided with an L-shaped handle portion 35 adapted to be received within a slot 41 of an outer cap member 40 and said outer cap member and slide thereafter positioned upon the inner cap member 30 with the depressed and apertured portions aligned as in the preferred embodiment. The spring member 39 may be conveniently inserted subsequent to the assembly of the inner and outer cap members with the closure slide by compressing the legs of the spring toward each other and inserting the flanged ends thereof beneath the co-operating struck out portions 34a and 36 of the inner cover and the slide respectively. The closure slide in this embodiment is apertured as at 43 to co-operate with apertures 33 and 42 and the slide may be provided with an agitating and measuring member 44 which functions and co-operates with the cap members substantially as described in connection with the preferred embodiment.

Among the advantages of the form of my invention illustrated in Figure 7 is that the slide portion may be made of relatively thin, non-re-

silient, inexpensive material and yet be efficiently actuated by a small spring formed of highly resilient material.

While I have illustrated and described certain embodiments of my invention in considerable detail, it is obvious that many minor changes may be made therein without departing from the spirit of the invention, and therefore I do not wish to be limited to the details and arrangements shown, but rather by the appended claims.

I claim:

1. In combination a receptacle having a closure member provided with an apertured wall, means extending laterally from said wall inwardly of the receptacle adjacent said aperture, an apertured closure slide positioned adjacent said apertured wall, means extending laterally of said closure slide inwardly of the receptacle adjacent the aperture of said closure member, said last named means and said first named means cooperating to discharge a measured quantity of said receptacle contents through said slide and closure member apertures.

2. In combination a receptacle, a closure assembly therefor comprising an inner closure cap provided with an aperture and an inwardly offset depression adjacent said aperture, an outer cap member having an apertured wall arranged generally parallel to and spaced from the apertured wall of said inner cap member, a closure slide arranged intermediate said inner and outer cap members, said slide provided with an aperture adapted to be alternatively aligned with said inner cap member aperture and said outer cap member aperture, an offset depression formed on said slide adjacent said aperture cooperating with said first named offset depression to measure and discharge a quantity of said receptacle contents through said apertures during the aligning of said slide apertures with said inner and outer cap apertures.

3. In combination a receptacle, a closure assembly therefor comprising an inner closure cap provided with an aperture and an inwardly offset depression adjacent said aperture, an outer cap member having an apertured wall arranged generally parallel to and spaced from the apertured wall of said inner cap member, a closure slide arranged intermediate said inner and outer cap members, said slide provided with an aperture adapted to be alternatively aligned with said inner cap member aperture and said outer cap member aperture, an offset depression formed on said slide adjacent said aperture cooperating with said first named offset depression to measure and discharge a quantity of said receptacle contents through said apertures during the aligning of said slide apertures with said inner and outer cap apertures, spring means connected to said slide normally urging said slide laterally with respect to said cap members to position said slide aperture in alignment with said inner cap member aperture.

4. In combination a receptacle, a closure assembly therefor comprising an inner closure cap provided with an aperture and an inwardly offset depression adjacent said aperture, an outer cap member having an apertured wall arranged generally parallel to and spaced from the apertured wall of said inner cap member, a closure slide arranged intermediate said inner and outer cap members, said slide provided with an aperture adapted to be alternatively aligned with said inner cap member aperture and said outer cap member aperture, an offset depression formed on said slide adjacent said aperture cooperating with said first named offset depression to measure and discharge a quantity of said receptacle contents through said apertures during the aligning of said slide apertures with said inner and outer cap apertures, spring means interposed between said inner cap member and said slide, normally urging said slide laterally with respect to said cap members to position said slide aperture in alignment with said inner cap member aperture and out of alignment with said outer cap member aperture.

5. In combination a receptacle, a closure assembly therefor comprising an inner closure cap provided with an aperture and an inwardly offset depression adjacent said aperture, an outer cap member having an apertured wall arranged generally parallel to and spaced from the apertured wall of said inner cap member, a closure slide arranged intermediate said inner and outer cap members, said slide provided with an aperture adapted to be alternatively aligned with said inner cap member aperture and said outer cap member aperture, an offset depression formed on said slide adjacent said aperture cooperating with said first named offset depression to measure and discharge a quantity of said receptacle contents through said apertures during the aligning of said slide apertures with said inner and outer cap apertures, spring means interposed between said inner cap member and said slide, normally urging said slide laterally with respect to said cap members to position said slide aperture in alignment with said inner cap member aperture and out of alignment with said outer cap member aperture, actuating means carried by said slide and projecting exteriorly of said cap members into a position conveniently accessible to the receptacle user.

6. In combination a receptacle having a closure comprising inner and outer cap members, said cap members having wall portions spaced with respect to each other, and apertures offset laterally with respect to each other, a closure slide comprising a single flat strip arranged between and bearing against said cap members provided with an aperture adapted to be moved into alignment with either of said cap member apertures, means integrally formed with said slide to provide a spring normally urging said slide into alignment with one of said cap member apertures.

7. In combination a receptacle having a closure assembly comprising a cap member, an aperture formed in said cap member and a depressed cup portion formed adjacent said aperture, a movable closure slide provided with an aperture adapted to be moved into alignment with said cap aperture, a depressed cup formed adjacent said slide aperture extending in the same direction as said cap member cup and arranged to cooperate therewith during movement of said slide to measure and discharge a quantity of said receptacle contents through said apertures during movement of said slide.

8. In combination a receptacle having a closure assembly comprising a cap member, an aperture formed in said cap member and a depressed cup portion formed adjacent said aperture, a movable closure slide provided with an aperture adapted to be moved into alignment with said cap aperture, a depressed cup formed adjacent said slide aperture extending in the same direction as said cap member cup and arranged to cooperate therewith during movement of said slide to measure and discharge a quantity of said receptacle contents through said apertures during movement of

said slide, spring means normally urging said cups away from each other to facilitate the positioning of receptacle contents intermediate said cups prior to slide movement.

9. In combination a receptacle having a closure assembly comprising a cap member, an aperture formed in said cap member and a depressed cup portion formed adjacent said aperture, a movable closure slide provided with an aperture adapted to be moved into alignment with said cap aperture, a depressed cup formed adjacent said slide aperture and extending laterally therefrom in the same direction as said cap member cup and arranged to cooperate therewith during movement of said slide to measure and discharge a quantity of said receptacle contents through said apertures during movement of said slide, spring means normally urging said cups away from each other to facilitate the positioning of receptacle contents intermediate said cups prior to slide movement, manually actuable means connected to said slide and adapted upon actuation to move said slide against the urging of said spring means to move said cups into engagement with each other to effectively seal the major portion of the contents of said receptacle with respect to said aperture.

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