

Oct. 17, 1950

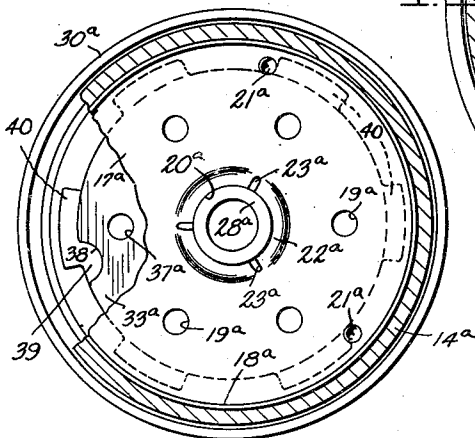
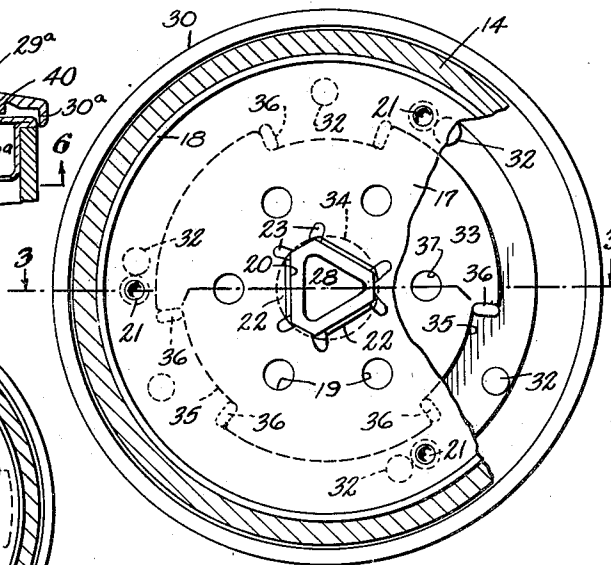
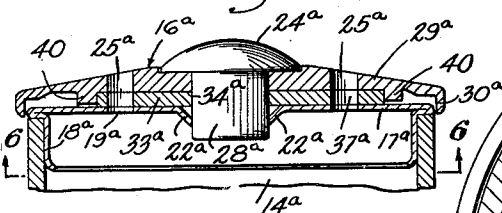
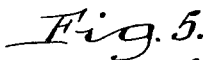
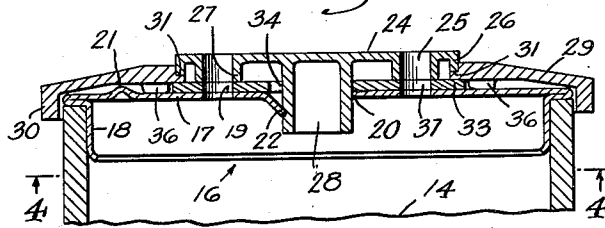
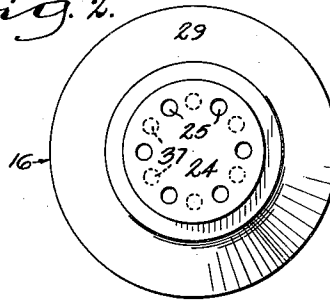
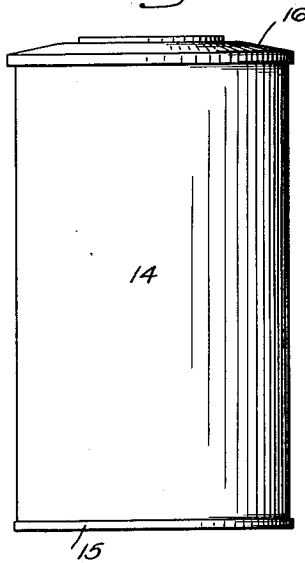
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2,526,397

SIFTER CLOSURE FOR POWDER BOXES

Filed July 6, 1945

2 Sheets-Sheet 1



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SIFTER CLOSURE FOR POWDER BOXES

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2 Sheets-Sheet 2

Fig. 1.

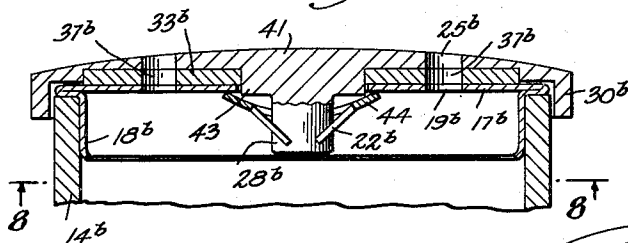


Fig. 8.

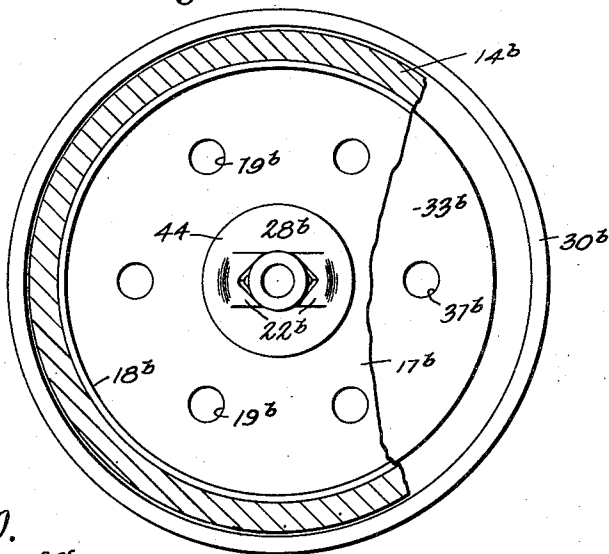


Fig. 9.

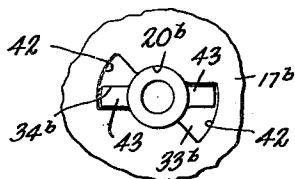


Fig. 10.

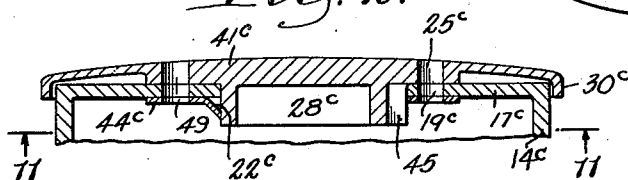


Fig. 12.

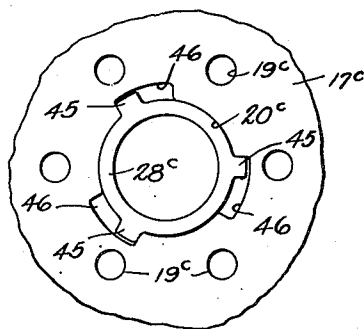
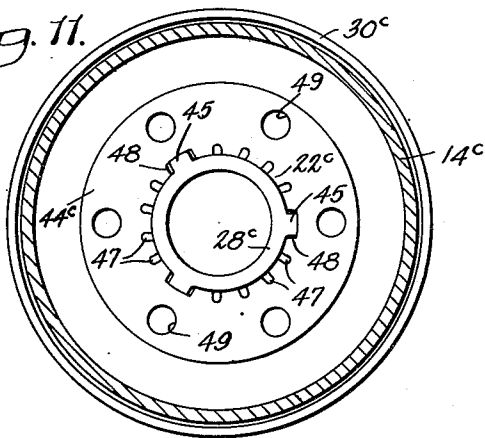


Fig. 11.



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SIFTER CLOSURE FOR POWDER BOXES

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Application July 6, 1945, Serial No. 603,418

12 Claims. (Cl. 222—548)

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This invention relates to improvements in containers or boxes of the type usually having their main body parts constructed of paper, paperboard, cardboard, fiberboard, plastic, and similar non-metallic materials, and more particularly to improvements in sifter closures for containers of this class adapted to dispense the container contents usually in the form of dry powder or comminuted material, such as cosmetic powders and the like.

It is a general object of the invention to provide for containers of the class mentioned, an improved sifter closure for controlling dispensing of the container contents which, while being capable of manufacture in large quantities by factory methods and at low production costs, is well adapted to make a tight anti-sift sealing closure readily adjustable into opening and closing positions, and also presenting an attractive appearance appealing to a discriminating class of users.

Another object of the invention is to provide for containers of the class mentioned a dispensing device having an improved attaching means for attaching the parts together in operative position and permitting the parts to be rapidly assembled and permanently maintained in tight anti-sift condition.

A further object of the invention is to provide for containers of the class mentioned, an improved dispensing or sifter closure that can be manufactured in a large degree from non-metallic materials, but also combining metallic and plastic materials which are well adapted for making a tight anti-sift dispensing closure.

Still another object of the invention is to provide for containers of the class mentioned, a dispensing closure device with improved means for attaching the parts thereof together and for facilitating assembly in placing the parts in correct relative positions so as to speed up production and to avoid errors in assembly.

Other objects of the invention will be in part pointed out in the following detailed disclosure of certain illustrative but preferred embodiments of the invention, and will be in part obvious as the disclosure proceeds.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a more comprehensive disclosure of the nature, objects and advantages of the invention, reference is had to the following detailed de-

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scription and to the accompanying drawing in which:

Fig. 1 is a side elevation of a powder can or container embodying the invention;

Fig. 2 is a top plan view thereof;

Fig. 3 is an enlarged central vertical section taken substantially on the line 3—3 of Fig. 4;

Fig. 4 is an enlarged horizontal section and inverted plan taken substantially on the line 4—4 of Fig. 3 looking in the direction of the arrows, parts being broken away to disclose the structure more clearly;

Fig. 5 is a central vertical section similar to that of Fig. 3, but showing a modified embodiment of the sifter closure;

Fig. 6 is a horizontal sectional and inverted plan view similar to that of Fig. 4, taken substantially on the line 6—6 of Fig. 5 looking in the direction of the arrows, parts being broken away to disclose the structure more clearly;

Fig. 7 is an enlarged central vertical sectional view similar to Fig. 3 but disclosing a further modification;

Fig. 8 is a horizontal sectional and inverted plan view taken substantially on the line 8—8 of Fig. 7, parts being broken away;

Fig. 9 is a fragmentary detail view showing the connection of the plastic cap of Fig. 7 with the end closure plate;

Fig. 10 is a central vertical sectional view similar to that of Fig. 3 but showing a still further modified embodiment of the improved sifter closure;

Fig. 11 is a horizontal sectional and inverted plan view taken substantially on the line 11—11 of Fig. 10 looking in the direction of the arrows; and

Fig. 12 is a fragmentary detail view of the embodiment of Figs. 10 and 11 showing the connection of the plastic cap with the head of the container.

Referring to the drawing for a detailed description of the illustrative embodiments of the invention there shown, and first to the preferred embodiment shown in Figs. 1, 2, 3 and 4, the improved dispensing closure is illustrated as being applied to a container or powder can having a body part 14 with side walls ordinarily constructed of paper or fibrous stock as above mentioned. While the container is shown as being circular in cross-section, it will be understood that it may be of other cross-sectional shapes such as square, rectangular, triangular, polygonal, etc. At its bottom end the container is closed by a bottom closure or plate 15 which

may be of metal and of any well-known preferred structure. The upper end of the container is fitted with the improved dispensing closure indicated generally at 16.

As best shown in Figs. 3 and 4, the improved dispensing closure 16 embodies an end plate or wall 17 forming the end or top wall of the container and preferably constructed of sheet metal which may be tinned or otherwise treated to prevent rust or corrosion. As shown, the end plate or wall has a depending marginal or skirt flange 18 sized and proportioned to fit closely in telescoping relation within the end of the tubular body 14. Also, the skirt flange 18 may be specially formed so as to provide a firm anti-sift attachment to the body 14 when the flange is inserted into its final operative position in the end of the container. Also, in some cases, the upper end of the body 14 may be provided with a reinforcing piece or ring for receiving the skirt flange 18. Since the particular attachment of the end wall 17 to the body 14 of the container does not form a part of the present invention, it is deemed unnecessary to disclose it herein, and for this reason the present showing of the attachment of the end plate 17 with its skirt flange 18 to the body 14, may be regarded as being merely diagrammatical.

Although the plate 17 is shown as being of substantially the same size as the end of the body 14, it is not necessarily so. It is formed with a plurality of dispensing openings 19 which may be arranged in any desired form for dispensing or sifting the container contents, and any desired number of dispensing openings may be provided. Also, the end plate or wall 17 is provided with a centrally disposed attaching opening 20 through which attaching means is extended for attaching the outside container cap or dispensing controlling structure in operative position outside of the end plate 17. As shown in Figs. 3 and 4, this attaching opening 20 is substantially triangular in shape, the purpose of which is fully described below. Also, the end wall or plate 17 is provided with three lugs or offset portions 21 arranged substantially 120° apart and which may be conveniently formed as shown by offsetting the metal slightly. These lugs cooperate in limiting the opening and closing movements of the cap or sifter closure structure as later described.

Integral resilient attaching tongues 22 are formed at the edge portion of the central opening 20 of the end plate or wall 17, preferably one such tongue being positioned at each of the sides of the triangular opening. These attaching tongues 22 may be deflected or swung inwardly and slots 23 are formed in the plate at the attached ends of the tongues so as to provide sufficient amplitude of swinging movement therefor. The tongues 22 have free swinging end portions with sharp corners or points adapted to be embedded or to bite into adjacent surfaces of the cap structure for retaining the parts in assembled relation.

In the embodiment particularly shown in Figs. 3 and 4, the outer cap or dispensing closure structure embodies a central stationary part or member 24 which may be conveniently constructed of any of the well-known plastic materials, and in the embodiment shown is in the form of a circular disc provided with dispensing openings 25 and a marginal bearing surface or flange 26. Each dispensing opening 25 may be surrounded by an interior reinforcing thickening or flange

27. The stationary part 24 is formed at its inner side with an integral attaching stem or stub shaft 28 which in this embodiment is substantially triangular in cross-section to conform approximately to the shape of the triangular attaching opening 20.

An annular part or annulus 29 comprises the outer or movable part of the cap or dispensing closure structure, being also preferably constructed of plastic and having an outer depending skirt flange 30 adapted to engage closely with the outer surface of the upper end of the body 14. At its inner margin the rotary annulus 29 has a bearing seat 31 in which the marginal bearing flange 26 of the stationary center part 24 engages in supporting relation. This structure provides a support for rotary movement of the annulus 29 to open and close the dispensing openings. At its inner surface the annulus 29 is formed with six integral lugs 32 spaced for contacting respectively with the lugs 21 on the plate 17 for limiting the movement of the annulus 29 both in its open and closed positions.

A sealing washer or disc 33 preferably constructed of paperboard, cardboard, fiberboard, or similar material is centrally positioned on the inner surface of the annulus 29, and overlapping the inner surface of the stationary central part 24 of the cap. The sealing disc 33 has a circular central aperture 34 receiving the stem or stub shaft 28, and its margin is formed with depressed seats or cut-away parts 35 equally spaced along the margin of the sealing disc in which are received integral lugs 36 projecting from the inner surface of the annulus 29. Two of these lugs 36 are received in each of the depressed seats 35 of the sealing disc substantially at the opposite extremities thereof so as to operatively connect the sealing disc to the annulus 29 for rotary movements during opening and closing of the dispensing openings. The sealing disc is also formed with dispensing openings 37 spaced to align respectively with the dispensing openings 19 of the plate or wall 17 and with the openings 25 of the stationary or central cap part 24.

When the plate or end wall part 17 and the cap or dispensing controlling structure have been formed substantially as described above, it is a very simple matter to assemble these parts in their operative position to form the complete dispensing closure 16 as shown in Figs. 3 and 4. The stationary central part 24 of the cap is assembled with the marginal bearing flange 26 thereof in engagement with the bearing seat 31 of the outer rotary annulus 29, and the sealing disc 33 is placed in position on the inner surface of the parts 24 and 29 in engagement with the positioning lugs 36. The attaching stem or stub shaft 28 is then forced into position through the central opening 20 of the end plate 17 while at the same time the resilient attaching tongues 22 engage at their free ends or edge portions with the corresponding adjacent flat surfaces of the triangular attaching stem 28, it being understood that the tongues are normally initially positioned so that their free ends define the opening 20 somewhat smaller than the stem. This operation will deflect the tongues inwardly slightly and cause the free ends thereof to engage yieldingly with the plastic material of the attaching stem, and when the parts are in fully assembled position the ends of the attaching tongues will be embedded or will bite to some extent into the adjacent surfaces of the stem, thus holding the parts firmly in permanently

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assembled relation. Any movement tending to separate the parts from this fully assembled position will cause the attaching tongues 22 to be embedded more firmly in the surface of the plastic stem 28 and accidental disassembly or loosening is thus positively resisted, and the parts are maintained permanently in tight anti-sift condition. The sealing disc 33 cooperates in contacting relation with the upper surface of the end plate 17 and with the inner surfaces of the central stationary part 24 of the cap and of the annulus 29 so as to assure a tight sealing connection.

Assembly of the parts in their correct operative position is facilitated by means of the triangular stub shaft or stem 28 in cooperation with the triangular opening 20 in the end plate 17, and when the parts are thus assembled the dispensing openings 19 of the plate 17 and the dispensing openings 25 of the stationary part 24 are respectively in correctly aligned positions. The parts of the sifter closure structure having thus been completely assembled as described, the complete sifter unit can be quickly and easily installed at the upper end of the container body 14 after the container has been filled with powder.

In the modified embodiment of the improved sifter closure shown in Figs. 5 and 6 of the drawing, the general structure and arrangement are similar to those above described in connection with Figs. 1 to 4 inclusive and corresponding parts are designated by the same reference numerals with the addition of the index *a*. The end plate or wall part 17*a* is constructed and arranged substantially the same as the plate 17 with the exception that the central attaching opening 20*a* is substantially circular instead of triangular. Also, the integral attaching flanges 22*a* are formed on the arc of a circle instead of being straight as in the first embodiment, having circular edge portions for engagement in embedded relation with the outer surface of the stub shaft or stem 28*a* which is also circular in cross-section.

The cap or sifter closure structure of the embodiment of Figs. 5 and 6 has an annulus or rotary part 29*a* similar to the corresponding part 29 of Figs. 3 and 4, but the dispensing openings 25*a* are positioned in this rotary part rather than in the central part 24*a*. The central part 24*a* overlies and engages in a circular depressed central seat in the outer surface of the rotary part 29*a* and has a circular attaching stem or stub shaft 28*a* extending through a central opening in the part 29*a* and through the central opening 20*a* of the end plate 17*a*. The sealing disc 33*a* may be constructed of the same material as described for the sealing disc 33 and is provided with a central opening for receiving the attaching stem 28*a* and provided with dispensing openings 37*a* aligning respectively with the dispensing openings 25*a*.

The sealing disc 33*a* is shown as being circular having a marginal notch or seat 38 for receiving a positioning lug 39 projecting from the inner surface of the rotary member 29*a* and integral therewith. Also, the outer edge of the circular sealing disc 33*a* is received closely within the integral positioning and stop lugs 40 which are integral with the inner surface of the rotary cap 29*a*. The sealing disc is thus accurately supported and positioned for rotation with the cap member 29*a*. The positioning lugs 40 for the sealing disc 33*a* also serve as stop lugs co-

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operating with the offset lugs 21*a* of the end plate 17*a* for limiting the rotary movements of the cap 29*a* in its opening and closing positions. In this embodiment the parts of the sifter closure may be assembled substantially as described above in connection with the embodiment of Figs. 1 to 4 inclusive, and the operation and advantages of the same are substantially similar. In this embodiment as in that previously described, the cap parts 24*a* and 29*a* are preferably constructed of plastic material, two plastic parts being employed for each cap in both of these embodiments.

Referring to the modified embodiment disclosed in Figs. 7, 8 and 9, corresponding parts are designated by the same reference numeral with the addition of the index *b*. In this embodiment the cap structure or cap 41 is preferably made of plastic material and is made in a single integral plastic piece, as distinguished from the two-part plastic cap structure disclosed in Figs. 1 to 6 inclusive. The cap 41 is also preferably provided with an integral depending skirt flange 30*b* and is formed with sifter or dispensing openings 25*b*.

As in the embodiments previously described, the end closure plate or wall 17*b* shown in Fig. 7 has a depending skirt flange 18*b* telescoping with the upper end of the body part 14*b* of the container. This skirt flange may be attached with the wall of the body portion in any desired manner as suggested above in connection with the embodiment of Figs. 1 to 4 inclusive. Also, the end wall portion 17*b* is formed with sifter or dispensing openings 19*b* adapted to align respectively with the openings 25*b* in the cap. The end wall or plate 17*b* is further provided with a centrally disposed attaching opening 20*b*, which as particularly shown in Fig. 9 has oppositely disposed sector shaped extensions 42 for receiving parts of the plastic cap 41 as later described.

At its inner side the cap 41 is provided with an integral attaching stem or stub shaft 28*b* which, as shown, is preferably circular in cross-section engaging closely in the attaching opening 20*b* of the plate 17*b*. At its base portion the attaching stem 28*b* is formed with oppositely disposed enlargements forming stop lugs 43 integral with the cap 41 and positioned for reception in the slots 42 formed in the end plate 17*b*. The cap structure 41 is held securely in assembled relation on the top of the container by means of a steel attaching washer 44 having one or more integral swingable attaching tongues 22*b* deflected downwardly or inwardly at the underside of the attaching washer, and having end edge portions provided with sharp corners or points adapted to be embedded in securing relation into the surface of the attaching stem 28*b*. The attaching washer 44 may be dish or convexed downwardly or inwardly as shown in Fig. 7 engaging at its outer rim with the inner surface of the end plate 17*b* so as to slide over the latter when the cap is rotated to open and close the dispensing openings. As in the case of the attaching tongues described in the other embodiments, it will be understood that these tongues 22*b* are initially positioned so that the space between the free ends is somewhat less than the size of the attaching stem. Thus, when the attaching washer is forced in its normal holding position onto the attaching stem, the tongues will be caused to be deflected or swung slightly on their attaching ends as pivots. In this manner the attaching tongues are yieldingly

urged due to the resiliency of the washer material into engaging position against the attaching stem and the free ends are caused to be embedded or to bite into the surface of the stem, thus holding the parts securely together in assembled relation.

Interposed between the end plate 17b and the plastic cap 41 within an appropriate recess formed in the inner surface of the cap is a sealing disc or washer 33b preferably of some appropriate sealing material, such for example, as paperboard, fiberboard, or the like. The sealing disc is also provided with dispensing openings 37b spaced for alignment respectively with the openings in the cap and end plate, and has a central opening 34b for closely receiving and conforming to the inner or base portion of the attaching stem 28b together with the opposite extensions or enlargements 43 thereof, thus non-rotatably attaching the sealing disc to the under-surface of the cap 41.

It will be understood from the foregoing description that the embodiment of the improved sifter closure of Figs. 7, 8 and 9 will have the advantages above described in connection with the other embodiments both during assembly and in operation. In order to open or close the dispensing openings, the closure cap 41 may be rotated by engagement thereof by the user, and as in the other embodiments, the cap may be conveniently grasped at the outer edge or depending skirt flange which, if desired, may be serrated or roughened to form a good friction grip. It will be seen that the sealing disc 33b is rotated with the cap 41 and when the dispensing openings in the end plate and cap have been moved into aligning position as shown in Fig. 7, the integral stop lugs 43 of the cap will engage in limiting relation with the adjacent edges of the sector openings or slots 42 in the plate 17b. Similarly, when the cap is rotated in the opposite direction to close the dispensing openings, these stop lugs will engage in limiting relation with the opposite edges of the openings 42.

In the further modified embodiment of Figs. 10, 11 and 12, a one-piece plastic cap structure is used as in the embodiment of Figs. 7, 8 and 9, and other structural features are also similar and corresponding parts are designated by the same reference numerals with the addition of the index c. In this embodiment, however, the top or end wall structure 17c of the container body 14c is made of paper or fibrous stock the same as the body 14c and may be attached to the body in any desired well-known manner. Since the attachment of the end 17c to the body 14c may be of any desired known structure and does not form a part of the present invention, it is deemed unnecessary to disclose it in detail.

As in the embodiment of Figs. 7, 8 and 9, the plastic cap structure 41c is provided with an inner integral attaching stem or stub shaft 22c preferably substantially circular in cross-section as shown, and provided with one or more exterior longitudinal ribs 45, three being shown spaced substantially 120° apart. These ribs as shown may extend substantially for the full length of the attaching stem 22c. This attaching stem 22c, as best shown in Fig. 12, is received within the central attaching opening 26c in the end wall 17c, said opening being provided with cut-away marginal slots or seats 46 adapted respectively to receive the ribs or stop lugs 45 to limit rotative movements of the cap 41c. The slots or seats 46 are each of sufficient length to

permit sufficient amplitude of rotation of the cap to position the same for dispensing the container contents when the dispensing openings 25c and 19c in the cap and wall structure are respectively in alignment as shown in Fig. 10, and when these dispensing openings have been disaligned when the cap is closed.

As in the embodiment of Figs. 7, 8 and 9 above described, an inner separate attaching washer 44c is employed as shown in Figs. 10 and 11 having integral attaching tongues 22c deflectable inwardly and engageable at their free ends in securing relation with the attaching stem as described above in connection with the other embodiments. In this case, however, there are a series of attaching tongues 22c extending substantially around the inner opening of the attaching washer 44c and formed by cutting small radial slots 47 in the washer. Also, the washer 44c is formed at the margin of its central receiving opening with three seats or pockets 48 spaced for receiving respectively the ribs 45 of the attaching stem whereby the washer is constrained to rotate with the stem and the cap 41c. Also, in this embodiment the attaching washer 44c preferably has a flat inner marginal surface engaging in close sealing relation with the inner surface of the end wall or head 17c so as to improve the anti-sift qualities of the dispensing closure. The washer is also formed with dispensing openings 49 respectively aligning with the dispensing openings 25c of the cap 41c.

From the foregoing description it will be understood that the dispensing cap 41c may be rotated by grasping the skirt flange 30c so as to bring the dispensing openings in the cap and washer 44c into alignment respectively with the dispensing openings in the head 17c as shown in Fig. 10, in which position the rotative movement of the cap will be stopped by engagement of the ribs or lugs 45 with the respective adjacent ends of the slots 46 of the end wall 17c. Similarly, when the cap 41c is rotated in the opposite direction to close the dispensing openings, the movement will be stopped by engagement of the ribs 45 with the opposite terminals of the slots 46.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

The invention having thus been fully described, the following is claimed:

1. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a dispensing controlling structure mounted on said wall portion, said controlling structure having a movable part operable for opening and closing said dispensing opening and having an attaching extension or stub shaft extending through said attaching opening, said controlling structure also having a sealing closure disc for said dispensing opening interposed between the outer side of said wall portion and the inner side of an outer part of said controlling structure, lugs angularly spaced on said sealing closure disc, lugs angularly spaced on said movable part of the controlling structure and respectively engaging with said lugs on the sealing disc to rotatively position the latter in operative position and to cause it to move with said movable part and open and close

the dispensing opening, securing means engaging said stub shaft at the inside of said wall portion for securing the parts in assembled relation, and cooperating limiting lugs on said wall portion and said movable part of the dispensing controlling structure for checking the latter in its opening and closing positions.

2. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a dispensing controlling structure mounted on said wall portion and having an attaching extension or stem extending through said attaching opening, and having a stationary part provided with a dispensing opening, said stationary part having at least one flattened side engaging in said attaching opening which has a complementary formation cooperating to avoid relative rotation between said wall portion and said stationary part and to maintain the said dispensing openings of said wall part and said stationary part in alignment, and securing means including a resilient deflectable retaining tongue having its ends portion engaging in securing relation with said flattened side of said stem at the inside of said wall portion for securing the parts in assembled relation.

3. In a container closure, in combination, a wall portion having one or more dispensing openings and having also a substantially triangular attaching opening, a dispensing controlling structure mounted on said wall portion and having a stationary part provided with a dispensing opening, said stationary part having an attaching extension or stub shaft extending through said attaching opening and being substantially triangular in cross-section to conform to said triangular attaching opening in which it is closely received to maintain the said dispensing openings of said wall portion and said stationary part in alignment, and deflectable attaching tongues integral with said wall portion respectively substantially at edges of said triangular opening for engagement respectively with different surfaces of said triangular stub shaft at the inside of said wall portion for securing the parts in assembled relation.

4. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a dispensing controlling structure mounted on said wall portion, said controlling structure having a rotary part with a closure member operatively connected thereto for opening and closing said dispensing opening upon rotation of said rotary part, said controlling structure also having a stationary part with one or more dispensing openings and with a stem or stub shaft extending through said attaching opening, and securing means engaging said stub shaft at the inside of said wall portion for securing the parts in assembled relation and for holding said stationary part of the controlling member in position with the dispensing opening thereof in substantial alignment with the dispensing opening in said wall portion.

5. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a dispensing controlling structure mounted on said wall portion, said controlling structure having a rotary part rotatable for effecting opening and closing said dispensing opening and having a stationary part with one or more dispensing openings and with an attaching stem extending

through said attaching opening, securing means engaging said stem at the inside of said wall portion for securing the parts in assembled relation and for holding said stationary part of the controlling structure in position with the dispensing opening thereof in substantial alignment with the dispensing opening in said wall portion, said rotary part of the controlling structure being in the form of an annulus surrounding said stationary part, and a sealing closure disc operatively connected to and rotatable with said rotary part.

6. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a dispensing controlling structure or cap mounted on said wall portion, said controlling structure having a rotary part rotatable for effecting opening and closing said dispensing opening and having a stationary part with one or more dispensing openings and with an attaching stem extending through said attaching opening, securing means engaging said stem at the inside of said wall portion for securing the parts in assembled relation and for holding said stationary part of the controlling structure in position with the dispensing opening thereof in substantial alignment with the dispensing opening in said wall portion, said rotary part of the controlling structure being in the form of an annulus surrounding said stationary part, and said controlling structure having a sealing closure disc interposed between said wall portion and an outer part of said controlling structure and having an opening through which said attaching stem extends, said sealing disc having operative connection with said rotary part for rotation therewith into opening and closing positions.

7. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a dispensing controlling structure or cap mounted on said wall portion, said controlling structure having a rotary part rotatable for effecting opening and closing said dispensing opening and having a stationary part with one or more dispensing openings and with an attaching stem extending through said attaching opening, securing means engaging said stem at the inside of said wall portion for securing the parts in assembled relation and for holding said stationary part of the controlling structure in position with the dispensing aperture thereof in substantial alignment with the dispensing opening in said wall portion, said rotary part of the controlling structure being in the form of an annulus surrounding said stationary part, and said controlling structure having a sealing closure disc interposed between said wall portion and an outer part of said controlling structure and having an opening through which said attaching stem extends, said sealing disc having operative connection with said rotary part for rotation therewith into opening and closing positions, said stationary part of the controlling structure having a peripheral bearing surface rotatably supporting the rotary part thereof.

8. In a container closure, in combination, a wall portion having one or more dispensing openings and having a substantially triangular attaching opening, a dispensing controlling structure or cap mounted on said wall portion, said controlling structure having a rotary part with a closure member operatively connected thereto for opening and closing said dispensing opening and having a stationary part with one or more dispensing openings and with a substantially tri-

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angular attaching stem or stub shaft extending through said triangular opening so as to position said dispensing openings in the wall portion and stationary part in alignment with each other, and resilient deflectable tongues integral with said wall portion positioned respectively at the sides of said triangular opening and having their free ends respectively engaging in holding relation with the triangular faces of said triangular stub shaft for retaining the parts in assembled relation.

9. In a container closure, in combination, a wall portion having one or more dispensing openings and having a substantially triangular attaching opening, a dispensing controlling structure or cap mounted on said wall portion, said controlling structure having a rotary part rotatable for effecting opening and closing said dispensing opening and having a stationary part with one or more dispensing openings and with a substantially triangular extension or stub shaft extending through said triangular opening so as to position said dispensing openings in the wall portion and stationary part in alignment with each other, resilient deflectable tongues integral with said wall portion positioned respectively at the sides of said triangular opening and having their free ends respectively engaging in holding relation with the triangular faces of said triangular stub shaft for retaining the parts in assembled relation, said rotary part of the controlling structure being in the form of an annulus surrounding said stationary part, and said controlling structure having a sealing closure disc interposed in sealing relation between said wall portion and an outer part of said controlling structure and operatively connected to and rotatable with said rotary part.

10. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a dispensing controlling structure mounted on said wall portion, said controlling structure having a rotary part with a closure member operatively connected thereto for opening and closing said dispensing opening upon rotation of said rotary part, said controlling structure also having a stationary part with one or more dispensing openings and with a stem or stub shaft extending through said attaching opening, said rotary and stationary parts having slidably inter-engaging bearing surfaces rotatably supporting the rotary part in operative position, and securing means engaging said stub shaft at the inside of said wall portion for securing the parts in assembled relation and for holding said stationary part of the controlling structure in position with the dispensing opening thereof in substantial alignment with the dispensing opening in said wall portion.

11. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a

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dispensing controlling structure mounted on said wall portion, said controlling structure having a rotary part with a closure member operatively connected thereto for opening and closing said dispensing opening upon rotation of said rotary part, said controlling structure also having a stationary part with one or more dispensing openings and with a stem or stub shaft extending through said attaching opening, said rotary and stationary parts being concentrically mounted with reference to each other and said stationary part having a marginal bearing surface slidably engaging said rotary part to hold the latter in operative position, and securing means engaging said stub shaft at the inside of said wall portion for securing the parts in assembled relation and for holding said stationary part of the controlling structure in position with the dispensing opening thereof in substantial alignment with the dispensing opening in said wall portion.

12. In a container closure, in combination, a wall portion having one or more dispensing openings and having also an attaching opening, a dispensing controlling structure mounted on said wall portion, said controlling structure having a rotary part operable for opening and closing said dispensing opening and having an attaching extension or stem extending through said attaching opening, said controlling structure also having a rotary sealing closure disc for said dispensing opening interposed between the outer side of said wall portion and the inner side of an outer part of said controlling structure, angularly spaced lug formations at the outer margin of said closure disc, angularly spaced lug formations on said rotary part of the controlling structure and respectively engaging with said lug formations on the sealing disc to rotatively position the latter in operative position and to cause it to rotate with said rotary part to open and close the dispensing opening, and securing means including a resilient deflectable tongue at the inside of said wall portion and having its end portion yieldingly engaging and biting into said attaching extension or stem.

ROBERT NYDEN.

HARRY K. DICKERMAN.

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The following references are of record in the file of this patent:

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Certificate of Correction

October 17, 1950

Patent No. 2,526,397

ROBERT NYDEN ET AL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows:

Column 9, lines 14 and 15, strike out "having a stationary part provided with a dispensing opening, said stationary part" and insert the same after "and" in line 12, same column;

and that the said Letters Patent should be read as corrected above, so that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 3rd day of April, A. D. 1951.

[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.