

Nov. 22, 1960

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DISPENSER CLOSURES

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2 Sheets-Sheet 1

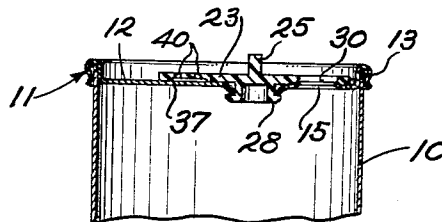
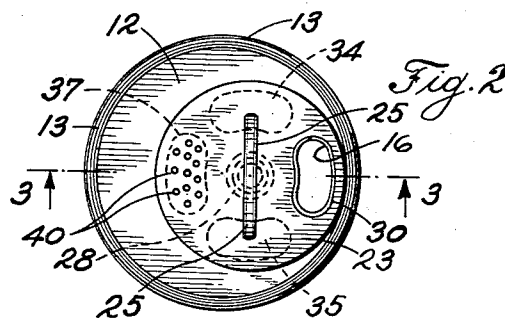
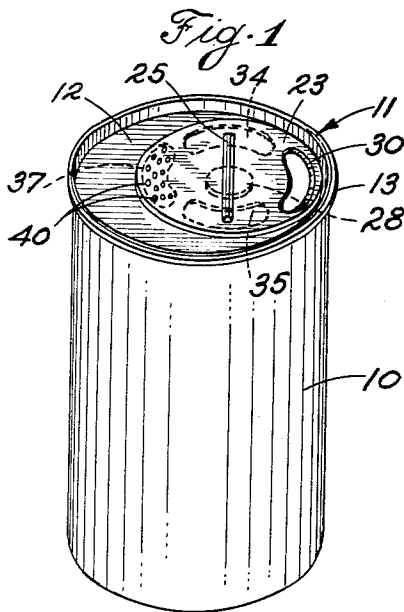


Fig. 3

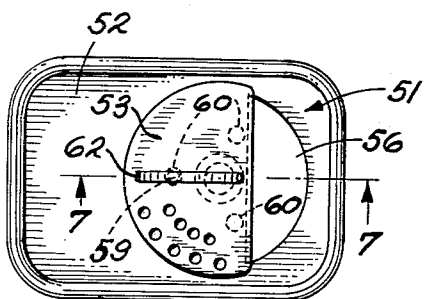


Fig. 6

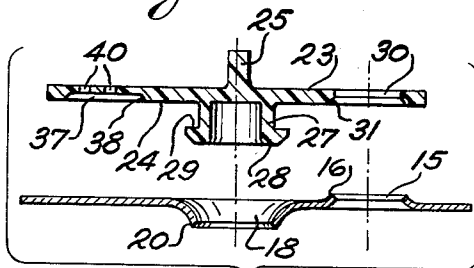


Fig. 4

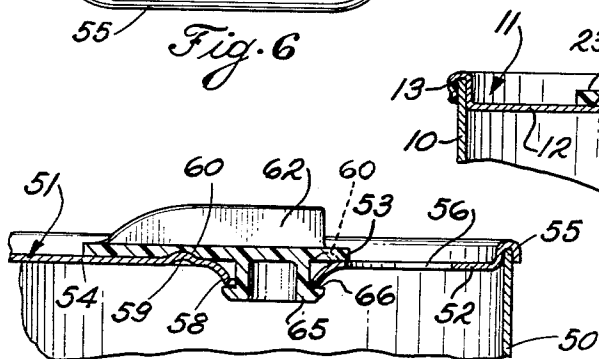


Fig. 7

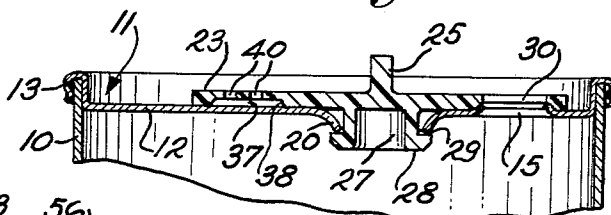


Fig. 5

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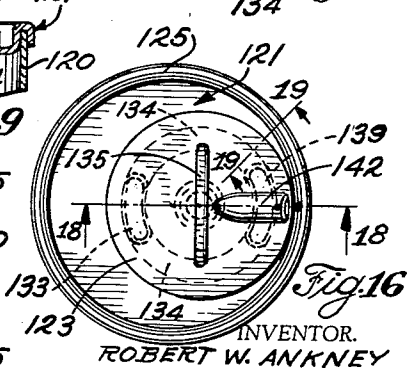
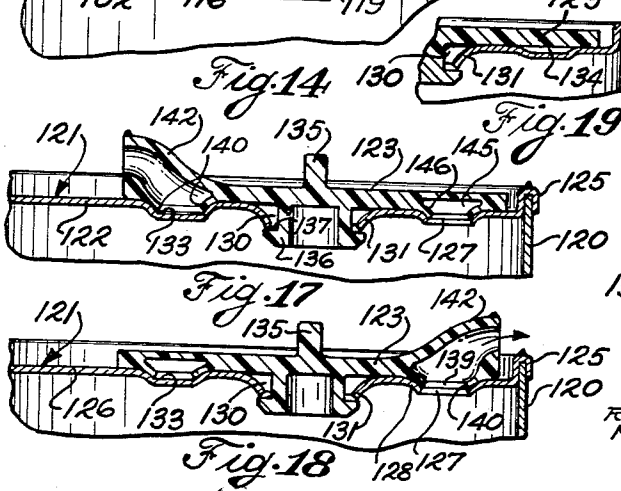
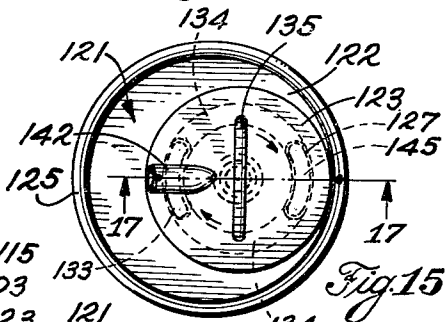
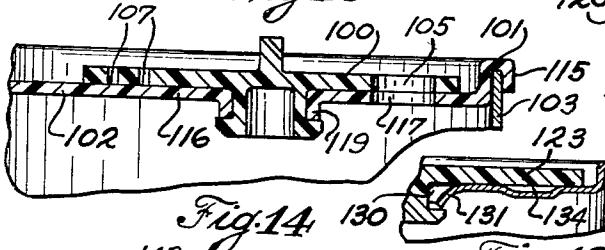
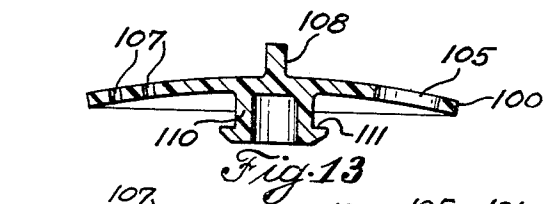
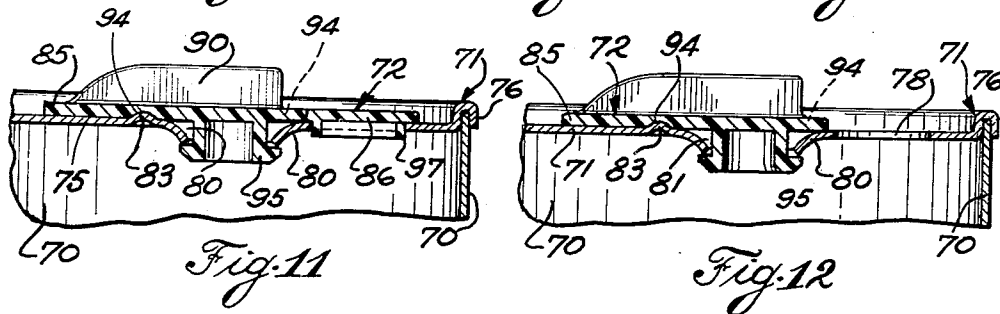
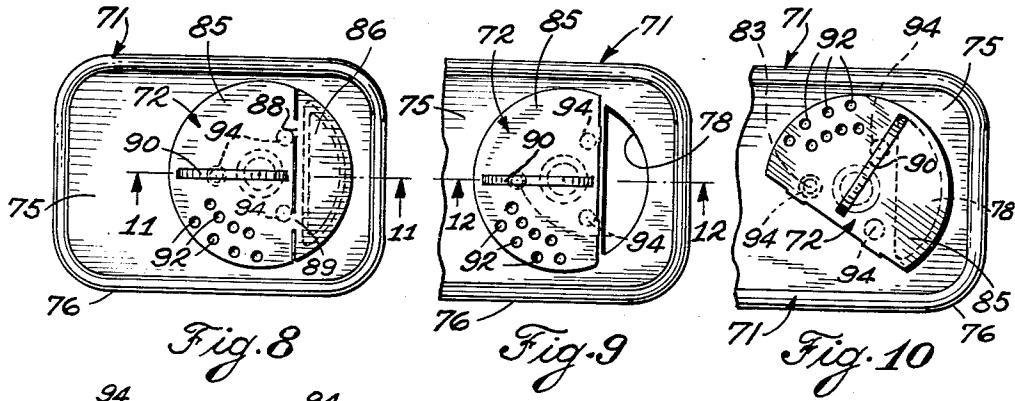
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DISPENSER CLOSURES

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4 Claims. (Cl. 222—548)

The present invention relates generally to the domestic container art and is more particularly concerned with a novel top assembly for a dispensing container.

Dispensing containers such as condiment holders and shakers are conventionally provided with closure means of various types so that the contents of the individual container can be protected from the atmosphere when it is not desired to dispense or discharge any of the container material. The closure means are of a wide variety of designs and one of the more popular forms is provided with plural openings so that the container contents can be poured in bulk, sealed from the atmosphere or sprinkled, according to the desires of the user. However, there has been a persistent demand for a shaker top assembly which would afford all the desirable functions and advantages of the prior devices and at the same time would avoid the important shortcomings and derelictions of those devices.

In accordance with the present invention not only are the advantages of prior dispensing devices all secured, but the disadvantages inherent in them are eliminated and additional valuable features are obtained. Thus these new containers, shakers, or dispensers can be tightly closed between uses. Also the container contents can be dispensed in a free-flowing form through a relatively large opening or a sprinkling effect can be obtained simply by manipulating the closure element of the devices of the present invention. At the same time, leakage or entrapment of container contents in the space between the elements of the top assembly can be prevented by the present invention.

A further important advantage of the present invention is the ease with which the devices of this invention may be used. Also, they readily adapt themselves to mass production techniques and accordingly afford the important advantage of minimum cost. They consist of but two parts, at least one of which can be of plastic material and formed in a molding operation. If the other part is of light sheet metal, it can be turned out by machine at a high rate of production. Assembly of these two parts together can likewise be a machine operation and the attachment of these top assemblies to containers can be mechanized to a large extent using equipment which is conventional in this general field.

The common drawbacks of dispenser top assemblies of the prior art such as breakage or corrosion damage rendering the devices inoperative for all practical purposes, are eliminated in accordance with this invention. In other words, my new top assemblies are so designed and constructed that they can be used with ease over long service periods even where the container contents are of the corrosive type that would render the ordinary top assembly inoperative in a relatively brief period. Also, these new devices are sufficiently rugged that they will withstand abuse which would destroy prior devices of this type and in fact they are virtually indestructible by use alone.

Other advantages of this invention include its special utility as applied to liquid containers and a combination sealing and locking effect which simplifies packaging and opening domestic dispensing containers of all types.

5 Described in the broadest and most general terms, a top assembly of this invention comprises a cap which is adapted for attachment to a domestic container such as a shaker and it also comprises a closure member secured to the cap for rotation relative thereto. This closure member has an opening for registry with a discharge opening in the cap and it has a lower surface portion bearing firmly against the upper surface of the cap around the closure member opening.

15 Within the foregoing broad definition there are three general forms or types of these new devices. The first of these in general is characterized by the special relationship between the cap and the closure member when the closure member is disposed in position for use of the container. The cap thus is provided with a locating means comprising a boss or projection extending upwardly from its top surface, and the closure member has a recess formed in its lower surface to receive the boss.

20 The second type of device is specially adapted for use in dispensing liquids and is characterized by the cap having an inwardly or downwardly directed lip and the closure member having a lip to be received in the cap discharge opening in sealing engagement with the said cap lip when the closure member is disposed in open or dispensing position.

30 The third species is the locked type and it differs principally from the others in that as initially assembled the closure member has a detachable portion closing the cap discharge opening and having a downwardly or inwardly projecting wall disposed in and bearing sealingly against the cap around the entire periphery of the cap discharge opening.

35 Specific embodiments of the present invention representing preferred forms are set forth in the drawings accompanying and forming a part of this specification, in which:

40 Fig. 1 is a perspective view of a table shaker provided with one of these new top assemblies;

Fig. 2 is a top plan view of the top assembly of Fig. 1;

45 Fig. 3 is a fragmentary, vertical sectional view of the container of Fig. 1 taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged, fragmentary, exploded, vertical sectional view of the top assembly of the foregoing figures;

50 Fig. 5 is an enlarged, fragmentary, vertical sectional view of the container of Fig. 1, showing how the cap and closure member of the assembly are secured together to provide the advantages of this invention;

Fig. 6 is a top plan view of another dispensing container top assembly of this invention;

55 Fig. 7 is a fragmentary, vertical sectional view of a container equipped with the top assembly of Fig. 6;

Fig. 8 is a top plan view of a dispensing container equipped with a locked-type top assembly of the present invention;

60 Fig. 9 is a fragmentary, top plan view of the Fig. 8 device after removal of the detachable locking portion;

Fig. 10 is a view like Fig. 9, showing the closure member in closed position;

65 Fig. 11 is a fragmentary, vertical, sectional view of the device of Fig. 8 taken on line 11—11 thereof;

Fig. 12 is a view similar to Fig. 11 taken on line 12—12 of Fig. 9;

70 Fig. 13 is a transverse sectional view of a closure member of this invention;

Fig. 14 is a fragmentary, vertical sectional view of a container equipped with a top assembly including the

closure member of Fig. 13 and a specially formed plastic cap;

Fig. 15 is a top plan view of a liquid container provided with a liquid-dispensing top assembly of any present invention;

Fig. 16 is a view like Fig. 15 but showing the closure member disposed in open position;

Fig. 17 is a fragmentary sectional view taken on line 17—17 of Fig. 15;

Fig. 18 is a fragmentary sectional view taken on line 18—18 of Fig. 16; and,

Fig. 19 is a fragmentary sectional view taken on line 19—19 of Fig. 16.

Referring to Fig. 1, 10 represents a table-size generally cylindrical shaker of the type used to dispense various condiments or seasonings in the form of finely-divided solids. This container may be of any suitable material such as light sheet metal, molded plastic, paper or fiber as those skilled in the art will understand. Top assembly 11 closes the top of container 10 and is secured to the top edge of the container around its periphery as by crimping, as indicated in Fig. 3. This attachment is such that contents of the container will not leak out around the junction of the container and top assembly 11 and in the usual case the top assembly is not removable from the container without destroying one or both of these elements.

Top assembly 11 comprises a cap 12 suitably of thin sheet metal. Cap 12 is provided with an outer peripheral flange portion 13 for crimping attachment to the top of container 10. The cap has a central portion which is dropped or stepped from the flange part so that this central portion will be disposed within the upper end of container 10, as indicated in Figs. 1, 3 and 5. A discharge opening 15 generally of kidney shape is formed in the drop center portion of the cap adjacent to flange 13. This opening is relatively small and is surrounded by a lip 16 which in fact defines opening 15 and projects upwardly slightly from the drop center section top surface, as seen to best advantage in Fig. 4. Cap 12 has in addition an aperture 18 formed in the aforesaid drop center section and spaced from opening 15 and located so that opening 15 is between aperture 18 and the nearest part of flange 13. An elongated lip or sleeve 20 extending downwardly from the drop center section surrounds aperture 18 and in fact defines it, as in the case of opening 15 and lip 16. Thus in the manufacture of cap 12, where this part is made of thin metal stock it is desirable to form opening 15 and aperture 18 by punching operations suitably carried out simultaneously by means of punches working from opposite sides of the cap. In each instance the punch is formed and operated in such a manner as to raise the portion of cap 12 surrounding the opening or aperture to provide lip 16 and sleeve 20 in desirable dimensions as well as shape, particularly in respect to the relief or height of the projection in each instance. The important of these factors and the functions of opening 15, aperture 18, lip 16, and sleeve 20 will become apparent in connection with the description of the closure member and the operation of the closure member and cap assembled together.

Closure member 23 is a disc-like, thin, plastic body preferably of polyethylene or similar composition which is both corrosion resistant and of superior wearing qualities as well as flexible and resilient to a substantial degree. In any event, this member is preferably a molded article as illustrated and it has a flat under surface 24 to bear against the top surface of cap 12 and in addition has a rib-like projection extending upwardly to provide a handle means 25 so that closure member can readily be turned to a selected position with respect to discharge opening 15 in the cap. A downwardly extending projection or hub 27 having an enlarged free end portion 28 is integrally formed with closure member 23 and is coaxial therewith, providing the means by which the closure member and

cap are secured together. An annular abutment 29 is formed on the under surface of end portion 28 for engagement with the end of sleeve 20.

Kidney-shaped opening 30 of substantially the same size as opening 15 is formed in closure member 23 for registry with opening 15, as illustrated in Figs. 1, 3 and 5. Opening 30 is defined in part by a tapering wall portion 31 which is formed to bear against the outer surface of lip 16 around opening 15 when openings 15 and 30 are in register and lip 16 is received in the lower end of opening 30 as shown in Fig. 5.

Two kidney-shaped recesses 34 and 35 (Figs. 1 and 2) are formed in the under surface of member 23 and located diametrically opposite each other and 90 degrees removed from opening 30. The walls defining recesses 34 and 35 are similar to wall 31 in that they are tapered and formed to bear sealingly against the outer surface of lip 16 around opening 15 when these recessed portions of the closure member are brought into register with opening 30. It will accordingly be understood that recess 34 or recess 35 will be disposed in register in opening 30 when it is desired to close the container.

A recess 37 of generally kidney shape, the same size as recesses 34 and 35, is provided in the lower surface of member 23 in a position diametrically opposed to opening 30. Here again, a wall 38 defining this recess is tapered outwardly to bear firmly and sealingly against the outer surface of lip 16 around opening 15 when recess 37 is brought into register with the discharge opening of the cap. However, in the case of recess 37 there are provided a plurality of small openings 40 through closure member 23 so that container 10 may be used as a shaker.

From the foregoing description it will be understood that closure member 23 is assembled with cap 12 to provide the top assemblies of Fig. 1 by inserting hub 27 into opening 18 and forcing end portion 28 through the opening so as to bring the end of sleeve 20 into engagement with abutment 29. Sleeve 20 and hub 27 are so dimensioned and related that when the parts are assembled as illustrated to best advantage in Fig. 5 closure member 23 is at all times firmly and resiliently held with its under surface engaged with the top surface of cap 12. The inherent characteristics of resiliency and flexibility of the polyethylene material of the closure member and the thin sheet metal of the cap assure retention of these parts in their assembled relation, but at the same time despite the close-fitting engagement of the closure member and cap the closure member may be rotated to open or close the container or to convert the shaker to a pouring device by bringing it to appropriate position with respect to discharge opening 15. Furthermore, when the closure member is brought into position so that one of the recesses therein or opening 30 is registered with discharge opening 15 a positive although resilient locking effect will be obtained. Actually, it is not necessary in order to ascertain when such registration is affected to look at the top assembly since snapping of the closure member into registered position can be felt through handle 25. This is an important advantage of the novel relationship between the cap and closure member and particularly the resilient quality of the connection between them and the telescoping and sealing effect obtained between the lip 16 and opening 30 or recess 34, 35, or 37 and the specially-formed flared wall portions of the closure member engaging the lip. The combination of resiliency and flexibility which accounts for these desirable results and effects is in the Fig. 1 device mainly centered in the portion of closure member 23 extending between hub 27 and the outer periphery of the closure member. In this instance the hub is of such radius and relative thickness compared to its length that primarily it performs the function of locating the closure member relative to the cap and the function of a bearing for relative rotation of the closure member. To a larger but nevertheless limited extent compared to the outer portion of closure member 23 the cap sleeve por-

tion and adjacent parts display flexibility and resiliency characteristics contributing to the sealing and indexing results described just above.

In regard to Figs. 6 and 7 a container 50 suitably of the same construction as container 10 is provided with a top assembly 51 including a generally rectangular, thin metal cap 52 and a molded polyethylene closure member 53 mounted on cap 52 for rotation relative thereto.

Cap 52 has a drop center portion 54 and an outer flange portion 55 which is secured by means of an adhesive to the upper end of container 50. A discharge opening 56 in the form of a circle segment is provided in cap 52 near one end thereof and adjacent thereto an aperture is formed through an integral sleeve portion 58 which extends downwardly from the lower surface of the cap. A small projection 59 extending upwardly from the upper surface of cap 52 is provided for purposes of indexing closure member 53 as will subsequently be described.

The closure member is formed in the shape of a circle segment complementary to and larger than opening 56 so that the discharge opening can be fully closed by member 53. The under surface of the closure member is formed to engage the top surface of cap 52 and is provided with three small recesses or dimples 60 spaced to receive projection 59 and thereby locate the closure member relative to the cap discharge opening.

A handle 62 is formed integrally with closure member 53 and projects upwardly from the top surface, as shown in Fig. 7. An attaching means similar to that described above is provided on the closure member in the form of a projection or hollow hub 65 having an annular abutment 66 to bear against the end of sleeve 58 when the parts are assembled together. By virtue of the nature of the conformation of the cap and member 53 and the manner of their connection together, the closure member can readily be rotated through a plurality of selected positions for use of the container as a pouring vessel or as a shaker or as a sealed storage vessel.

In the manufacture of the top assembly of Figs. 6 and 7 the cap and closure member will be separately made and then brought together with the parts in the position illustrated in Fig. 7, hub 65 being forced through sleeve 58 until a locking but rotatable engagement is established. As thus assembled, the device is ready for attachment to a container and for use as described in detail in reference to Fig. 1.

In the embodiment of the invention illustrated in Figs. 8 to 12, inclusive, 70 designates a container open at its top and of generally rectangular cross section and suitably of conventional size and construction, 71 designates a cap for the container and 72 represents the closure member. Cap 71, again, is made of light or thin sheet metal in a single piece having a drop center portion 75 and a flanged peripheral portion 76 defining an annular channel in which to receive the upper end of container 70. The attachment of the cap to the container may be by generally conventional means such as an adhesive material or it may be by means of crimping of the cap flange to lock the cap and container together and seal the parts against leakage around the cap flange. The cap is provided in addition with a discharge opening 78 appearing as a minor disc segment in plan view. Opening 78 is located adjacent to one end of cap 71 and adjacent to the base or chord of the aforesaid disc segment the cap is formed to provide an inwardly-turned sleeve 80 which defines an opening 81 to receive a portion of closure member 72. Still further, cap 71 has a small projection 83 formed in its upper surface as a locating means for cap 72, as will be described.

Cap 72 is a molded polyethylene body formed in two parts, i.e., a major portion 85 and a minor portion 86 connected to the major portion by means of two narrow, readily severed, integral tabs 88 and 89. Major portion 85 of the cap has an upstanding integral rib 90 which serves as a grip or handle means for use in turning the

cap to open and close the container. This major portion constitutes a major disc segment which is generally complementary to discharge opening 78. Actually, the said major portion is of such size relative to the discharge opening of the cap that, as indicated in Fig. 10, the discharge opening may be either fully exposed or fully closed by member 72, or it may be exposed through a plurality of small openings 92 formed in closure member 72 when the dispenser is to be used as a shaker. Three recesses 94 are formed in the under surface of member 72 to receive projection 83 and are located so as to index major portion 85 in one of the three alternative positions mentioned just above.

Closure member 72 is in addition provided with a hub-like projection 95 integrally formed with major portion 85 and extending downwardly from the closure member for receipt in opening 81 of the cap. As shown in Figs. 11 and 12, hub 95 has an annular, upwardly-facing abutment formed near its lower or free end against which the annular end of sleeve 80 bears to retain the closure member and cap in assembled, but relatively rotatable, relation. As thus assembled, a large proportion of the under surface of the closure member is firmly but resiliently held against the upper surface of the cap and leakage of container contents between the closure member and cap is at all times thus effectively prevented.

Minor portion 86 of closure member 72 has a flange portion 97 designed to be received in opening 78 so as to seal the cap around that opening. This relationship is seen to best advantage in Fig. 11, the under surface of portion 86 of the closure member around flange 97 being held firmly but resiliently in engagement with the opposed upper surface of the cap around opening 78. This represents the initial relationship between the closure member and its two parts and the cap, the container cap assembly being located in closed position until portion 86 of the closure member is released from portion 85 as by breaking or cutting tabs 88 and 89 and lifting portion 86 from the cap to open the container. Thus Figs. 8 and 11 illustrate the container as stands on the grocer's shelf and Figs. 9, 10 and 12 show the container after it has been opened for use of its contents, the minor member 86 or lock closure element having been severed from the remainder of the closure member and lifted out of cap discharge opening 78.

In Figs. 13 and 14 a plastic, suitably polyethylene, closure member 100 and cap assembly 101 including this closure member are illustrated. Cap 102 of this assembly is likewise of molded polyethylene construction and as shown here it is assembled in a preferred manner with a container 103.

Closure member 100 is preferably formed by a molding operation so that it is slightly bowed downwardly from its central section toward its periphery to provide superior sealing effects when it is assembled with cap 102. Member 100 has an opening 105 for registry with the discharge opening in the cap and has a portion provided with a plurality of small openings 107 diametrically opposite opening 105 so that the container can be used as a shaker by bringing this part of the closure member into register with the discharge opening in the cap. An upstanding, integral, radially-extending rib 108 is provided as a handle means for the closure member to facilitate turning member 100 to select the desired position of the assembly components. Again, member 100 is provided with an integral, hub-like portion which is coaxial with the closure member and extends downwardly therefrom. An annular, upwardly-facing abutment 111 is formed on the free end of hub 110 to bear against a sleeve element of the cap so that the parts will be retained in position with the closure member being rotatable on the cap.

Cap 102 has an annular flange portion 115 defining an inverted channel in which to receive the upper end of container 103 and has a drop center section 116 wherein closure member 100 is disposed. A discharge

opening 117 is formed in cap 102 and an opening is provided to receive hub 110. A sleeve 119 defines this hub-receiving opening and has an annular, lower free end portion bearing against abutment 111 when the parts are assembled together as are shown in Fig. 14. As indicated above, because of the shape of closure member 100 and particularly its partially domed or bowed form and because of the inherent resiliency and flexibility of the polyethylene material from which the closure member is made, a close-fitting engagement is maintained at all times around discharge opening 117 and there is no tendency for container contents or other material to work its way between the cap and its closure member. Also, when closure member is in closed position, the container is tightly sealed and is suitable for storage over long periods of time.

The form of the invention illustrated in Figs. 15 to 19, inclusive, is especially designed for liquid containers and for the dispensing of liquids therefrom. In this instance, 120 designates a container of any suitable conventional construction and having its upper end open to receive cap assembly 121 which is fluid-tightly attached by any suitable means to container 120.

Cap assembly 121 comprises cap 122 of thin sheet metal construction and closure member 123 which is a molded polyethylene body.

Cap 122, like the metal caps described above, has an annular peripheral flange portion 125 defining an inverted channel to receive the upper end of container 120 and has a drop center section 126 in which a kidney-shaped discharge opening 127 is formed adjacent to flange 125. Opening 127 is actually defined by a downwardly projecting lip portion 128 which, as will be described, is contoured for liquid-tight, sealing engagement of cap member 123 both when the closure member is disposed in open position and in closed position. Also, as in the case of a number of the caps described above, this one has an opening 130 to receive a portion of closure member 123. Opening 130 is defined by a sleeve 131 which extends inwardly or downwardly to bear against an abutment formed on a portion of the closure member projecting through opening 130. At a position diametrically opposed to discharge opening 127, cap 122 has a recess 133 of the same size and shape as said opening 127 for a purpose subsequently to be described. A shallower recess 134 is formed in the upper surface of cap 122 in the arcuate portions connecting the ends of opening 127 and to the ends of recess 133, as seen in Figs. 15, 16 and 19.

Closure member 123 has an integrally-formed, up-standing, radially-extending handle 135 and a coaxially-disposed, integrally-formed, hollow hub 136 which is received in opening 130 of the cap so that the upper surface of an annular abutment 137 formed on hub 136 bears against the end of sleeve 131 when the parts are assembled together, as illustrated in Figs. 17 and 18. In addition, closure member 123 has an opening 139 of the same size and shape as discharge opening 127 and a lip 140 which surrounds and in fact defines opening 139 and bears liquid-tightly against the inner portion of lip 128 of the cap when openings 127 and 139 are in register. A spout 142 is integrally formed on cap 123 and serves to conduct liquid being discharged from the container through opening 127 to a location above the top of flange 125. The closure member has in addition a recess 145 located diametrically opposite to opening 139 and a lip 146 surrounds this recess to bear liquid-tightly against lip 128 of the cap when the closure member is in the position illustrated in Fig. 17.

In using a container with this liquid dispensing cap assembly it will be understood that when the closure member is disposed in a position illustrated in Fig. 17, the container is tightly closed against the escape of liquid contents and in order to open the container and pour liquid therefrom it is only necessary to turn closure member 123 through 180 degrees on its hub to the Fig. 18

position. The two extreme positions thus illustrated are actually indexed and full opening and full closing of the cap assembly can be sensed without close inspection of the relative positions of the parts. The lips defining the recess end of the spout opening in closure member 123, due to the confirmation of the closure member and the discharge opening and recess 133 of the cap, are such that the closure member snaps into position when the parts are in register. Shallow recess 134 in the cap serves to receive lips 140 and 146 when the closure member is between full open and full closed positions so that tendency for lips to pry up the closure member and permit escape of liquid contents of the container is eliminated.

Having thus described this invention in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains to make and use the same, and having set forth the best mode contemplated of carrying out this invention, I state that the subject matter which I regard as being my invention is particularly pointed out and distinctly claimed in what is claimed, it being understood that equivalents or modifications of, or substitutions for, parts of the above specifically described embodiment of the invention may be made without departing from the scope of the invention as set forth in what is claimed.

What is claimed is:

1. A dispensing container top comprising a cap for attachment to a domestic container, said cap having a discharge opening and a lip projecting upwardly from the upper surface of the cap around the discharge opening, said lip having an outer annular surface inclined upwardly and inwardly toward said opening, and a disc-shaped closure member secured to the cap for rotation relative thereto and having an annular planar lower surface adjacent to its outer edge and bearing firmly throughout substantially its entire circumferential length against the upper face of the cap and radially outside of said discharge opening, said closure member having at least one opening to receive the cap lip and to register with the discharge opening in the cap, and having at least one recess to receive the cap lip and to cover the discharge opening in the cap, said opening in the closure member and said recess each being partly defined by an annular downwardly and outwardly inclined surface to receive and engage the said outer inclined surface of the lip.

2. A dispensing container top assembly comprising a cap for attachment to a domestic container, said cap having a discharge opening and a lip projecting upwardly from the upper surface of the cap around said discharge opening, said lip having an outer annular surface inclined upwardly and inwardly toward said opening, and a disc-shaped closure member secured to the cap for rotation relative thereto, said closure being disc-shaped and having an annular planar lower surface adjacent to its outer edge and bearing firmly through substantially its entire circumferential length against the upper surface of the cap radially outside of said discharge opening, said closure member having at least one opening to receive the cap lip and to register with the discharge opening in the cap, and having at least one recess to receive the cap lip and to cover the discharge opening of the cap, said opening in the closure member and said recess each being partly defined by an annular downwardly and outwardly inclined surface to receive and engage the said outer inclined surface of the lip, said closure member having a projection provided with a free end portion of enlarged cross section spaced from the lower surface of the said member and said cap additionally having an aperture to receive the closure member projection and having a sleeve like portion extending downwardly from the lower surface of the cap and disposed co-axially with said aperture and surrounding and engaging the closure member projection and bearing against the enlarged portion of said projection and thereby maintaining the cap and closure member in assembled relation.

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3. A dispensing container top comprising a cap member for attachment to a domestic container and a disc-shaped closure member secured to the cap member for rotation relative thereto and having an annular planar surface adjacent to its outer edge and bearing throughout substantially its entire circumferential length firmly and resiliently against the outer face of said cap member, the cap member having an opening therethrough and a recess in the outer surface thereof and inclined inner surfaces around said opening and around said recess, respectively, the closure member having an opening therethrough alignable with either the opening or the recess of the cap member and an annular lip extending around said opening and projecting toward said cap member and having an annular inclined surface adapted to bear sealingly against either of said annular inclined surfaces of the cap member.

4. A dispensing container top comprising a cap member for attachment to a domestic container, and a disc-shaped closure member secured to the cap member for rotation relative thereto and having an annular planar surface adjacent to its outer edge and bearing throughout substantially its entire circumferential length firmly and

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resiliently against the outer face of said cap member, one of said members having an opening therethrough and a recess therein and annular inclined surfaces around said opening and around said recess respectively, the other of said members having an opening therethrough alignable with either the opening or the recess of the first said member and an annular lip extending around said opening and projecting toward the other member and having an annular inclined surface adapted to bear sealingly against either of the said annular inclined surfaces of the first said member.

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