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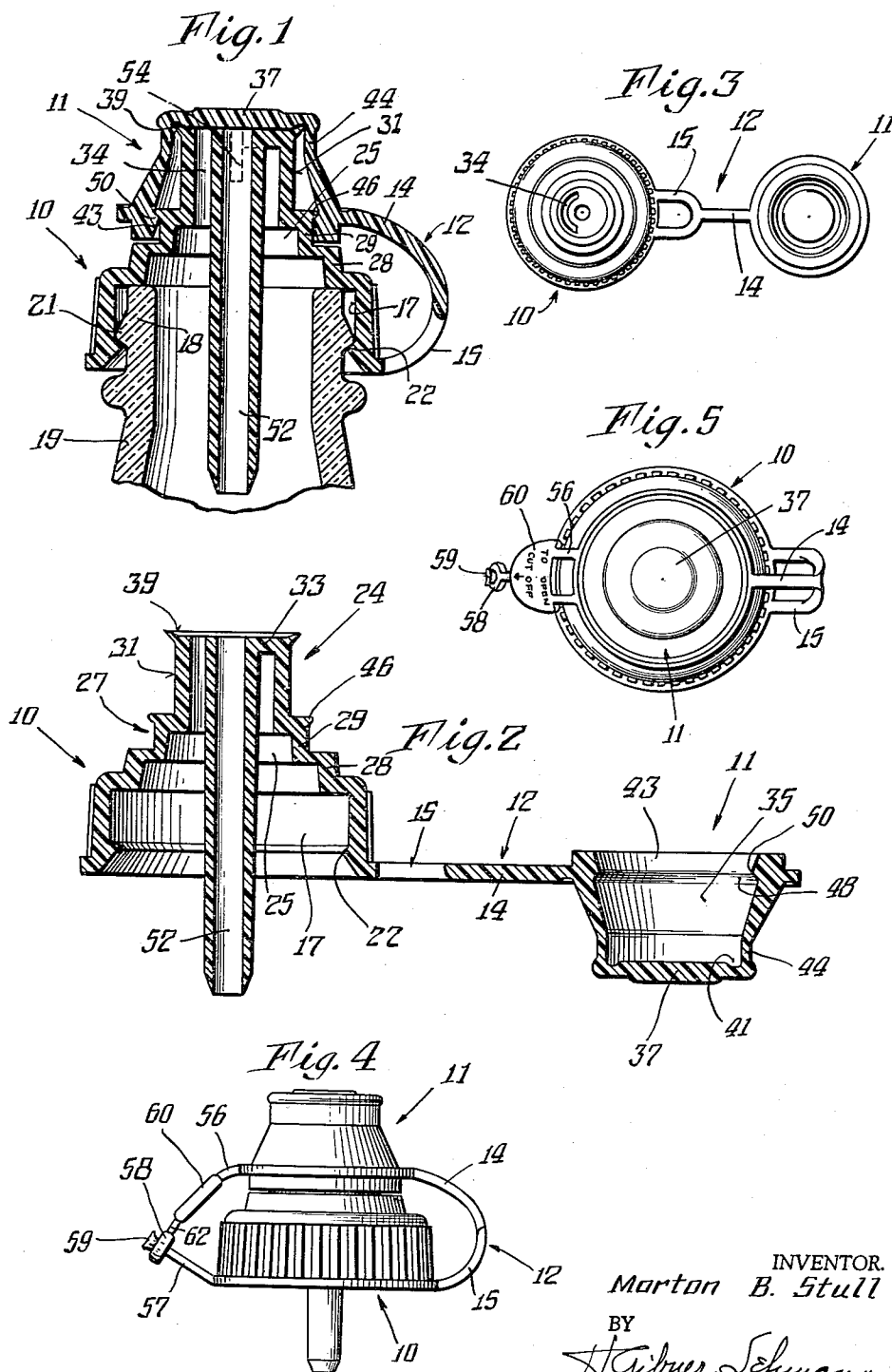
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3,117,701

DISPENSING CLOSURE AND CONTAINER

Filed April 11, 1958

2 Sheets-Sheet 1



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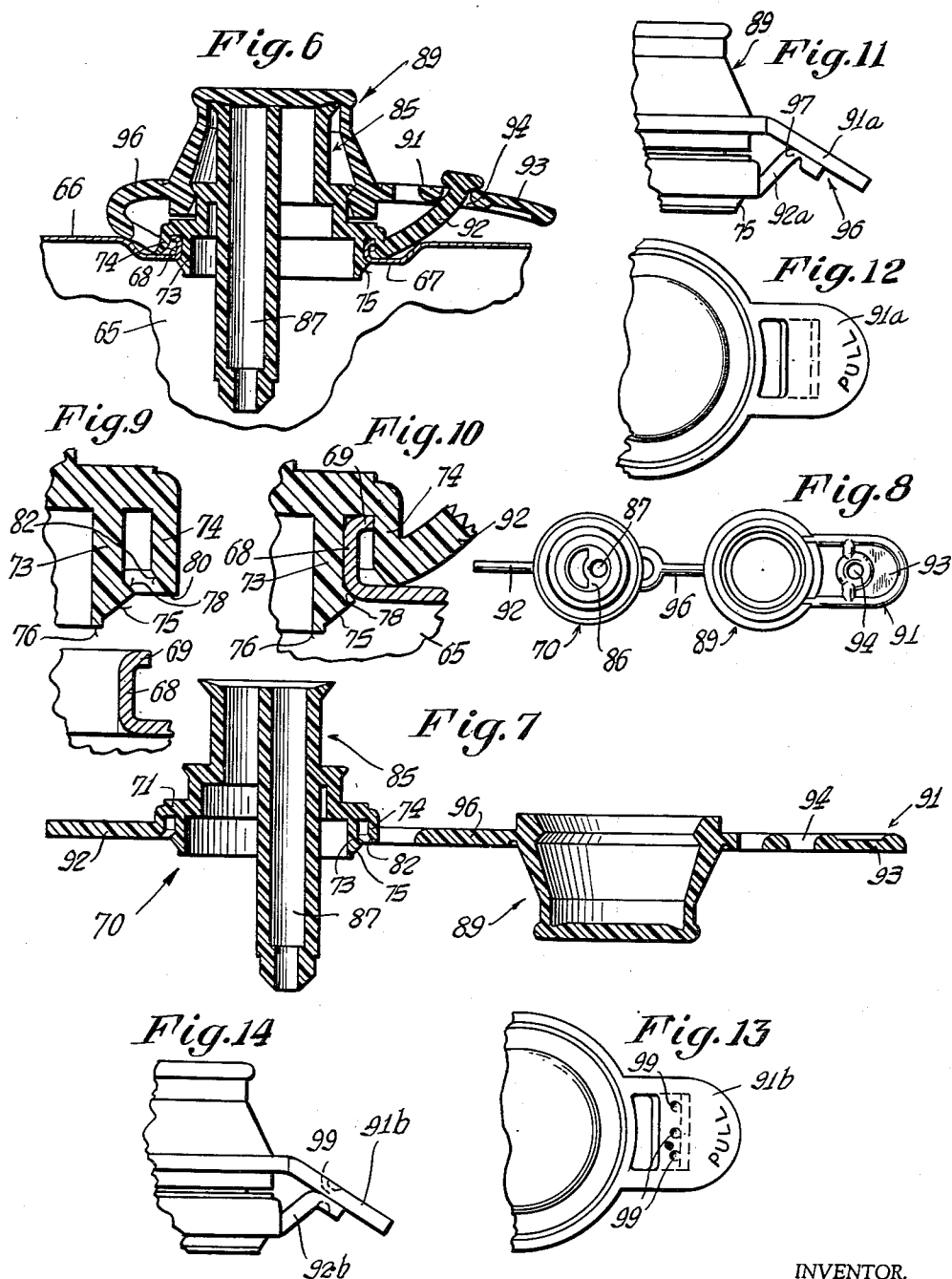
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DISPENSING CLOSURE AND CONTAINER

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2 Sheets-Sheet 2



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1

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DISPENSING CLOSURE AND CONTAINER

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5 Claims. (Cl. 222-543)

This invention relates to dispensing-type caps or closures for use with small containers such as glass and plastic bottles, metal cans, vials, squeeze bottles and the like.

In the past, various types of dispensing cap structures have been proposed and produced to facilitate the pouring or dispensing of liquids from containers, vials, bottles and other containers. In many instances such cap structures have incorporated venting means in addition to the discharge orifices, thereby to promote the influx of air into the containers as the contents thereof are being dispensed. Such arrangement provides for a free flowing of the contents, and hence these caps have been commonly called "free-flow" caps.

By the incorporation of such venting means these prior caps have stimulated sales by making it easier for the consumer to use the goods. However, prior cap constructions of this kind have involved in most instances a plurality of parts or components, which were separately fabricated and finished, and thereafter assembled to produce the final article. This type of construction has thus been costly, not only from the standpoint of fabrication of the parts or components but also since there was involved the assembly of these parts into the final unit.

In addition to the relative complexity and high cost, such caps normally did not prevent persons from tampering with the contents of the containers without detection. Where the caps were made tamper-proof, this involved still more components and assembly operations, further undesirably increasing the cost. In most instances, balancing the increased cost against the advantages or benefits which were to be obtained resulted in a decision on the part of management against the use of tamper-proof caps, and as a consequence these caps or closures did not come into general, widespread use.

The above drawbacks and disadvantages of prior, dispensing-type, tamper-proof caps are obviated by the present invention, and one object of the invention is to provide a novel and improved cap of this type which is so constructed and arranged that the features of free flow and tamper-proof construction are had virtually at no appreciable increase in cost. That is, the overall cost of this type of cap as made in accordance with the invention compares very favorably with the cost of the simplest caps not provided with the free-pouring and tamper-proof features.

A further object of the invention is to provide an improved dispensing-type cap as above set forth, which may be quickly and economically molded as a single unitary piece, thereby at one and the same time providing for simultaneous fabrication of all of the functional portions of the cap structure and eliminating entirely or virtually entirely all assembly operations.

The improved cap of the present invention is intended to be formed of flexible and resilient, yieldable plastic substance and is admirably suited for molding from polyethylene or similar plastic formulations.

A feature of the invention resides in the provision of a novel and improved plastic cap construction in accordance with the foregoing, wherein certain functional portions of the cap structure involve undercut walls in the molding equipment, yet the undercuts required are not so extensive, and are not so arranged as to prevent the finished molded piece from being stripped from mold cavities devoid of movable or retractable wall portions.

2

Another feature of the invention resides in the provision of an improved, plastic one-piece cap structure of the above type, having both free-flowing and tamper-proof functions, wherein all wall thicknesses may be held to a desirable small dimension which facilitates the molding operation and permits an advantageous rapid cure of all sections, thereby resulting in a desirably-short molding cycle and a more uniform structure, minimizing shrinkage variances and simplifying quality control.

Still another feature of the invention resides in the provision of a novel, free-pouring and tamper-proof cap construction as above characterized, which permits of quick application to the container and which enables the user to put the cap into use with a minimum of difficulty and inconvenience.

Another object of the invention is to provide an improved, flexible and yieldable, molded plastic cap construction which is adapted to be passed into and around the dispensing opening and neck respectively of a container, thereby to be securely retained on the container against accidental or unintentional removal.

Yet another object of the invention is to provide a novel and improved combination metal container and flexible, molded plastic cap construction adapted to be pressed onto the container, which organization is characterized by a secure and tamper-proof retention of the cap, requiring destruction or deformation of the cap and container in order to remove the cap body from the container.

Additional features of the invention reside in the provision of novel and simple locking or securing means between the stopper portion and cap body portion of a flexible molded plastic cap construction, whereby the stopper portion is retained in place until intentionally removed by a user for the purpose of dispensing the contents of the container.

Other features and advantages will hereinafter appear.

In the drawings accompanying this specification, similar characters of reference have been used to indicate like components or parts throughout the several views, in which:

FIGURE 1 is an axial sectional view of an improved one-piece molded dispensing-cap construction made in accordance with the invention, mounted on the mouth or neck of a container, the stopper portion of the cap being shown as applied to the cap body so as to seal or close the latter.

FIG. 2 is an axial sectional view of the cap construction of FIG. 1, but with the stopper portion removed from the cap body portion to enable dispensing of the contents of the container. The container is not shown in this figure, and the cap construction appears in the form in which it is molded.

FIG. 3 is a top plan view on a reduced scale, of the cap construction shown in FIG. 2.

FIG. 4 is a side elevational view of a cap construction similar to that of FIG. 1 but illustrating another embodiment of the invention, wherein a frangible seal is provided to render the cap construction tamper-proof.

FIG. 5 is a top plan view of the cap construction shown in FIG. 4.

FIG. 6 is an axial sectional view of a cap construction and metal can type of container, illustrating another embodiment of the invention.

FIG. 7 is an axial sectional view of the cap structure per se, with the stopper portion removed from the cap body portion. In this figure, the cap construction has the various portions thereof disposed in the positions which they occupy after the cap structure is molded and stripped from the mold.

FIG. 8 is a top plan view of the cap construction of FIGS. 6 and 7.

3

FIG. 9 is a fragmentary axial sectional view, greatly enlarged, of cooperable portions of the cap construction and container neck, the cap construction being shown as about to be press-fitted onto the container neck.

FIG. 10 is a view similar to FIG. 9 but showing the cap construction carried by the container neck.

FIG. 11 is a fragmentary, side elevational view of a cap construction illustrating a modified form of tamper-proof connection means between the cap body and the stopper portion.

FIG. 12 is a fragmentary top plan view of the cap structure shown in FIG. 11.

FIG. 13 is a fragmentary top plan view of a cap construction showing still another form of tamper-proof connection means between the cap body portion and stopper portion.

FIG. 14 is a fragmentary side elevational view of the cap construction shown in FIG. 13.

Referring first to FIGS. 1-3, the improved free-pouring, molded, one-piece cap construction shown therein comprises a cap body portion indicated generally by the numeral 10 and a stopper portion indicated generally by the numeral 11, said latter portion being spaced from the cap body portion in the form in which the article is molded. The molded piece further comprises a thin and flexible connecting web means 12 by which the body and stopper portions 10 and 11 are secured to each other and movably joined. This enables the stopper portion to be swung through an arc from the position of FIG. 2 to the position of FIG. 1 wherein it is applied to the body portion 10 for the purpose of closing off the same.

The present molded cap construction may be advantageously constituted of any suitable resilient or flexible and yieldable plastic substance, as for example polyethylene plastic or plastic of similar formulation. It will be understood, however, that the invention is not to be limited to any particular type of plastic or plastic substance since it has utility in connection with the molding of various different moldable materials which are not of a brittle or inflexible nature.

As seen in FIG. 3, the connecting web means 12 may be advantageously constituted of a single thin strip 14 connected to a loop-shaped strip 15, both said strips being integral with each other and with the cap body portion 10 and stopper portion 11.

The body portion 10 has a relatively large bore or recess 17 for receiving and engaging the neck or throat portion 18 of a container 19 whereby the body portion may be secured thereover. The container 19 may be a glass bottle or a metal can or other type of bottle, and the neck portion 18 thereof may have an annular external bead 21 engaging the inside wall of the bore 17 and also engaging an internal bead 22 of said wall, by which an effective retention of the cap body is had on the container 19.

The cap body portion 10 further has a projecting, tubular and hollow dispensing structure 24 enclosing a space 25 which communicates with the bore or recess 17. The dispensing structure 24 preferably comprises a stepped portion 27 having annular walls 28 and 29 of different diameters, smaller than the cap body portion 10. The dispensing structure 24 further comprises an elongate, cylindrical portion or wall 31 extending axially from the annular wall 29 and of still smaller diameter, as shown. At its remote end the cylindrical portion or wall 31 has a transverse end wall 33 in which there is a discharge orifice 34, the latter being semicircular in configuration and communicating with the space 25 within the dispensing structure.

Referring to FIG. 2, the stopper portion 11 of the cap construction is tubular or cup shaped, having a bore 35 for receiving the dispensing structure 24, or to be more exact for receiving a major portion of said dispensing structure comprising the cylindrical wall portion 31 and

4

the annular wall portion 29 thereof. The stopper portion 11 may thus be carried by the body portion 10 on the dispensing structure 24 thereof, as shown in FIG. 1.

The stopper portion 11 also has a transverse end wall 37 adapted to overlies and engage the end wall 33 of the dispensing structure 24 when the stopper portion is in its sealing position. For such position, the connecting web means 12 is made to flex or curve, as clearly shown in FIG. 1, and the length of the said means is made as short as possible while still permitting the positioning of the stopper portion 11 on the cap body portion 10.

In accordance with the present invention, the dispensing structure 24 and the stopper portion 11 of the cap construction are constituted in a novel and advantageous manner to provide for effective and dripless pouring from the dispensing structure and to effect a secure and leak proof seal when the stopper portion 11 is applied to the cap body portion 10, all while still permitting easy and quick removal of the stopper portion when it is desired to dispense the contents of the container 19. As clearly seen in FIG. 2, I provide on the periphery of the end wall 33 of the dispensing structure 24 an annular, outwardly projecting lip 39, said lip being angularly disposed so that it not only has a larger diameter than the cylindrical wall 31, but also so that it projects axially beyond the end wall 33. The lip 39 is preferably of tapered cross section, terminating at a feather edge or an edge which is comparatively sharp.

To accommodate the pouring lip 39 I provide in the end wall 37 of the stopper portion 11 an annular recess 41 which adjoins the inside cylindrical wall of the said stopper portion 11, such wall at points adjacent the recess 41 being cylindrical and then at more remote points flaring outward or diverging toward the rim portion 43 which, in consequence is of larger diameter than the annular recess 41. When the stopper portion 11 is positioned on the dispensing structure 24 the pouring lip 39 will be received in the annular recess 41 of the stopper portion and will constitute therewith an effective seal, supplementing the seal which is established by engagement between the end walls 37 and 33 of the stopper portion and dispensing structure respectively. The sealing lip 39 may be advantageously of slightly larger diameter than the cylindrical wall portion 44 of the stopper whereby it is slightly compressed and deformed, particularly at the sharp or feather edge thereof when the parts are in the positions shown in FIG. 1.

In conjunction with the sealing lip 39 I further provide on the dispensing structure 24 an annular, yieldable, outwardly-projecting external detent shoulder 46 which is spaced axially downward from the end wall 33 of the dispensing structure and axially upward from the larger container-neck engaging part of the cap body portion 10. The detent shoulder 46 may be advantageously provided on the annular wall portion 29 of the dispensing structure 24, said shoulder preferably also having a tapered cross-section and terminating in a relatively sharp edge of small radius, quite similar to that of the pouring lip 39.

The detent shoulder 46 is adapted to be received in an internal annular recess 48 in the stopper portion 11, such recess being relatively shallow and being formed by an internal bead 50 at the mouth of the said stopper portion. The bead or detent shoulder 50 is yieldable, as well as the detent shoulder 46, whereby said shoulders are adapted to be forced one over or past the other when the stopper portion is applied to the cap body portion 10 to attain the positions shown in FIG. 1. The detent shoulders 46 and 50 thus detachably hold the stopper portion 11 on the cap body portion 10, maintaining the transverse end walls 33 and 37 in engagement with each other under pressure, and holding the pouring lip 39 in engagement with the walls in the annular recess 41.

By the above construction I provide not only an effective seal between the end walls 33 and 37, and between the pouring lip 39 and annular recess 41, but also

an effective seal between the detent shoulders 46 and 50. Thus a secure closure is effected by the stopper portion 11 when it is placed on the cap body portion 10. Additionally, a very desirable and smoothly-functioning detent action is provided by the detent shoulders 46 and 50, whereby the stopper portion 11 may be easily and quickly removed from the cap body portion 10 when it is desired to dispense the contents of the container. By the same token, when the stopper portion 11 is being applied to the cap body portion 10 a distinct, effective snap action occurs as the detent shoulder 50 is forced over and past the detent shoulder 46.

An important feature of the invention resides in the relative heights and depths of the interfitting parts comprising the pouring lip 39, annular recess 41, and the detent shoulders 46 and 50. Such shoulders and pouring lip are of relatively small height or depth and accordingly the entire dispensing cap construction of this invention may be molded in one operation in molds which have simple cavities devoid of laterally movable wall portions, the molded piece being readily stripped from the cavities having the undercut portions by which the lip and shoulders are formed, due to the yieldability and resilience of the polyethylene or equivalent molding material. Thus, the tooling cost of the molds for the cap construction may be held to a low figure, and simple molding techniques may be employed, resulting in a product which not only is most effective from a functional standpoint but also extremely economical to fabricate.

In accordance with the invention, for the purpose of providing for free pouring of the contents of the container 19 I provide on the end wall 33 of the dispensing structure 24 an inwardly or downwardly projecting vent tube 52, said tube being centrally disposed on said wall and being concentric with the axis of the cap body portion 10. Preferably, a portion of the wall of the vent tube 52 defines the semicircular discharge orifice 34, the said tube being inwardly uniformly spaced from the cylindrical wall portion 31 of the dispensing structure, as shown.

To effect a reinforcement of the vent tube 52 I provide a pair of webs or connector portions 54, FIG. 1, extending between the walls of the tube and the cylindrical wall 31 of the dispensing structure 24. The bore of the vent tube 52 passes through the end wall 33, as clearly seen in FIG. 3, thereby venting the interior of the container 19 to the atmosphere so as to enable air to pass freely into the container as the contents are poured out through the discharge orifice 34.

As will be clearly seen from an inspection of FIG. 2, the addition of the vent tube 52 does not complicate the moulding procedure nor the cavities of the mold, nor does it appreciably increase the cost of the molds or fabrication of the entire cap construction.

In conjunction with the above structure I further provide a novel tamper-proof feature by which the initial opening of the cap or removal of the stopper portion 11 may not be done without evidence of such act being given. In other words, at the time that the cap structure is applied to the container the stopper portion 11 will be so joined to the cap body portion 10 that it may not be removed therefrom by some unauthorized person without this being evident. In accomplishing this, I provide in conjunction with the connecting web means 12 a novel frangible locking structure or connection comprising as shown in FIGS. 4 and 5 a pair of laterally extending members 56 and 57 disposed respectively on the stopper and cap body portions 11 and 10 at the sides thereof which are opposite to those joined by the web means 12. The members 56 and 57 have their extremities 58 and 59 connected together against casual or accidental separation in a manner that, in conjunction with said two web means, the stopper portion 11 is effectively locked in place. One of the members 56, 57 is preferably slender and readily severable by a cutting instrument such

as a scissors or knife, thereby to permit removal of the stopper portion 11 for dispensing of the contents of the container 19.

As shown in FIGS. 4 and 5, I prefer to form the extremity 58 of the member 56 in the form of a loop or eye, and to make the member 57 in the form of a slender strip the extremity 59 of which may be extended through the loop 58, thereby to provide an interlocking connection. The extremity 59 may then be mushroomed or enlarged, as by the application of heat in any suitable manner whereby the members 56 and 57 will be securely held or connected to each other.

For the purpose of enabling the stopper portion 11 to be easily and quickly manipulated after separation of the members 56 and 57 I provide a wide portion 60 on the member 56, in the form of a tab which may be readily grasped by the fingers. Between the tab 60 and the loop 58 I further provide a slender frangible portion 62 which may be readily cut through, as above mentioned, for the purpose of separating the members 56 and 57 when it is desired to remove the stopper portion 11 for dispensing purposes.

Another embodiment of the invention is shown in FIGS. 6-8. These figures illustrate a novel combination of metal container and flexible molded plastic cap construction press-fitted thereon so as to be not removable without deforming or fracturing the cap structure and/or the container. As shown, the container 65 has a top wall 66 provided with a depressed portion 67 surrounding and defining a relatively large dispensing opening.

The container wall 66 further has an upstanding neck 68 in the form of a short cylinder, said neck having a lip 69 comprising a radially, outwardly extending flange. The flange or lip 69 may be spaced from the wall of the depressed portion 67 any suitable amount, as for example $\frac{1}{16}$ of an inch.

The cap construction comprises a cap body portion 70 having a base 71 which is adapted to be pressed into and around the dispensing opening and neck respectively of the container 65. The base 71 has a pair of concentric, spaced, thin-walled and readily yieldable depending flanges 73 and 74 disposed one inside the other, the inner flange 73 extending below the outer flange and having a sloping annular surface 75 adjacent its bottom edge 76. The inner flange 73 also has an external annular shoulder 78 disposed above the sloping surface 75. As clearly seen in FIGS. 9 and 10, the outer flange 74 is shorter than the inner flange 73 so that the sloping surface 75 of the inner flange is disposed below the bottom edge 80 of the outer flange. The shoulder 78 preferably is also sloping, and is adapted to engage portions of the inside wall of the container 65 which surround the dispensing opening thereof, as clearly seen in FIGS. 6 and 10.

The outer flange 74 has an inner sloping annular surface 82 adapted to be engaged by the flange 69 of the neck 68 when the cap structure is press-fitted on the container. As clearly shown in FIG. 9, the sloping surfaces 78 and 82 are disposed opposite each other and are preferably not quite parallel when seen in cross-section at any point. The surface 82 makes a sharper angle with the axis of the cap structure, as compared with the surface 80.

FIG. 9 shows the cap structure in readiness to be press-fitted onto the neck of the container 65, while FIG. 10 shows the cap structure in place on the neck of the container. These two figures are greatly enlarged for the sake of clarity of illustration.

Referring to FIG. 10 it will be seen that the sloping shoulder surface 78 engages the bottom inside edge of the neck 68 and interlocks therewith whereas the outer flange 74 engages and presses inwardly against the sharp edge of the rim flange 69 of the container neck. It will be understood that due to the yieldable nature of the cap structure and the small angles which the surfaces 75 and 82 make with the axis of the cap, an easy camming and displacing of the inner flange 73 inward and of the outer flange 74

outward takes place when the cap body portion 70 is press-fitted in place. I have found that by such construction the cap body portion 70 is securely retained on the container neck 68 and container wall, and that if subsequently the cap body portion 70 is removed, deformation and destruction of such portion will occur as well as the adjoining parts including the neck 68 of the container 65, before the cap body portion may be freed. Thus, the plastic cap construction is securely attached to the container against unauthorized removal, and constitutes truly a tamper-proof cap.

As seen in FIGS. 6, 7 and 8, the cap body portion 70 has a dispensing structure 85 provided with a transverse top wall 86 from which there depends a vent tube 87. The vent tube 87 is attached to and constitutes a part of the side walls of the dispensing structure 85, as shown.

Further, in accordance with the invention I provide a novel tab and connection means between the cap body portion 70 and the stopper portion 89, said means comprising, in the embodiment of FIGS. 6-10 a pair of laterally projecting members 91 and 92, the latter member being slender and elongate whereas the member 91 is relatively broad and provided with a finger-engageable tab or extremity 93. The member 91 has an aperture 94 through which the member 92 is extended, as shown in FIG. 6, whereupon the top of the member 92 is mushroomed and enlarged into a head, as by the application of heat. Thus, the members 91 and 92 are connected together against casual or unintentional separation, and said members in conjunction with the connecting web portion of the cap construction securely retain the stopper portion 89 on the cap body portion 70, as previously described in connection with FIGS. 1-5.

When the member 92 is severed, as by being cut with a scissors or knife, the tab 93 may be utilized to remove the stopper portion 89 from the cap portion 70 for the purpose of dispensing the contents of the container 65. If this should be done by an unauthorized person it would not be possible to reseal the container without the fact being indicated that the container was already opened, as with the other forms of the invention.

Different types of connections may be established between the members 91 and 92. Referring to FIGS. 11 and 12 a tab member 91a is attached to a member 92a by a fused connection 96, and the member 92a may have a thin frangible portion 97 adapted to be easily torn or ruptured when the member 91a is grasped and pulled with appreciable force.

As shown in FIGS. 13 and 14 a tab member 91b may be connected with a cooperable member 92b by a plurality of small-diameter fused portions 99 formed by heated, opposed prongs of a tool, which prongs are brought to bear against the members 91b and 92b so as to fuse these together. The fused portions 99 may be so constituted that when the tab 91b is subjected to an appreciable pull it will rupture and sever the fused portions, thereby enabling the cap to be opened for dispensing the contents of the container. However, the fused portions 99 are made strong enough so that they resist accidental pressures or forces on the pull-tab 91b without being ruptured. Thus, the cap construction is securely retained in place even when subjected to rough handling, while at the same time being readily removable by a user when the tab 91b is intentionally pulled.

Considering again the construction shown in FIG. 6, the enlargement or head portion of the member 92 may be arranged or controlled as to its size so that an action somewhat similar to that just described is attained. That is, incidental or accidental pulls or pressures on the tab 93 will not separate the members 91 and 92, yet a sufficiently strong pull on the tab 93 will cause the enlarged head of the member 92 to pass entirely through the opening 94, whereupon the closure is released for dispensing of the contents of the container. The enlarged head, for this purpose may be made bulbous, and the portion of the member 91 which surrounds the opening 94 may be

sufficiently thin and yieldable as to permit passage of the head when a sufficiently strong pull is exerted on the tab 93. Such construction still constitutes a tamper-proof cap, in that while there is no permanent severance of the material of one of the members, it will be found extremely difficult to force the enlarged head of the member 92 back through the opening 94 in the member 91. Such act could be made still more difficult if the enlarged head were to have a flat top surface, and were to be made somewhat conical or tapered in its configuration or shape.

By the above construction there is obtained an extremely simple yet effective tamper-proof cap construction which will prevent unauthorized removal of the contents of the container without detection and yet which will permit the rightful consumer or user to initially easily free the stopper portion when desired. The addition of the members 56 and 57 does not appreciably complicate the construction of the molds for the cap construction, and it is still possible to readily mold the entire piece and to strip it from molds which have simple cavities devoid of laterally movable or retractable wall sections.

It will now be understood from the foregoing that there are provided simple and novel, one-piece dispensing cap structures which may be economically molded in simple, relatively inexpensive equipment, said cap structures providing an effective seal of the contents of the containers and permitting free pouring of such contents whenever desired and said cap structures including removable stopper portions which are at all times held captive and which may be initially secured so as to prevent tampering with the contents of the container without detection. The cap constructions are such that free pouring of the contents of the containers is had and that subsequent closing of the dispensing opening may be quickly and effectively accomplished.

Variations and modifications may be made within the scope of the claims, and portions of the improvements may be used without others.

I claim:

1. A new article of manufacture comprising a one-piece dispensing cap construction for attachment to a container, said cap construction being constituted of a unitary, integral, molded plastic piece of resilient and yieldably plastic substance, said piece having a cap body portion and a stopper portion spaced from said body portion when the piece is molded and having a thin and flexible connecting web means by which the body and stopper portions are secured to each other and movably joined to enable the latter portion to be swung through an arc and superposed on the body portion for closing off the same, said cap body portion having attachment means for engaging the neck of the container to secure the body portion thereto, and further having a projecting tubular and hollow, dispensing structure enclosing a space communicating with said bore, said dispensing structure having a transverse end wall in which there is a discharge orifice, and having an annular, outwardly-projecting lip at and surrounding said end wall and constituting a dripless pouring lip for the discharge orifice, said cap body portion having an annular yieldable outwardly projecting external detent shoulder spaced axially from the end wall of the dispensing structure and from the container-neck engaging part of the body portion, said stopper portion having a bore to receive the said dispensing structure whereby it may be carried by the body portion, having a transverse end wall provided with an internal annular recess for receiving the dripless pouring lip, said recessed end wall being adapted to overlie the end wall and the pouring lip of the dispensing structure and close off the discharge orifice thereof, and said stopper portion further having an internal yieldable detent shoulder adapted to be forced over and past the external detent shoulder of the body portion, said shoulders detachably holding the stopper portion on the said body portion and maintaining the said end walls in engagement with each other when the cap construction is in stoppered condition.

2. A new article of manufacture comprising a one-piece dispensing cap construction for attachment to a container, said cap construction being constituted of a unitary, integral, molded plastic piece of resilient and yieldable plastic substance, said piece having a cap body portion and a stopper portion spaced from said body portion when the piece is molded and having a thin and flexible connecting web means by which the body and stopper portions are secured to each other and movably joined to enable the latter portion to be swung through an arc and superposed on the body portion for closing off the same, said cap body portion having attachment means for engaging the neck of the container to secure the body portion thereto, and further having a projecting tubular and hollow, dispensing structure enclosing a space communicating with said bore, said dispensing structure having a transverse end wall in which there is a discharge orifice, and having an annular, outwardly-projecting lip at and surrounding said end wall and constituting a dripless pouring lip for the discharge orifice, said cap body portion having an annular yieldable outwardly projecting external detent shoulder spaced axially from the end wall of the dispensing structure and from the container-neck engaging part of the body portion, said stopper portion having a bore to receive the said dispensing structure whereby it may be carried by the body portion, having a transverse end wall adapted to overlies the end wall and the pouring lip of the dispensing structure and close off the discharge orifice thereof, and said stopper portion further having an internal yieldable detent shoulder adapted to be forced over and past the external detent shoulder of the body portion, said shoulders detachably holding the stopper portion on the said body portion when the cap construction is in stoppered condition, said dispensing structure being substantially cylindrical between the pouring lip and external detent shoulder, and the latter being of larger diameter than said pouring lip.

3. A new article of manufacture comprising a one-piece dispensing cap construction for attachment to a container, said cap construction being constituted of a unitary, integral, molded plastic piece of resilient and yieldable plastic substance, said piece having a cap body portion and a stopper portion spaced from said body portion when the piece is molded and having a thin and flexible connecting web means by which the body and stopper portions are secured to each other and movably joined to enable the latter portion to be swung through an arc and superposed on the body portion for closing off the same, said cap body portion having attachment means for engaging the neck of the container to secure the body portion thereto, and further having a projecting tubular and hollow, dispensing structure enclosing a space communicating with said bore, said dispensing structure having a transverse end wall in which there is a discharge orifice, and having an annular, outwardly-projecting lip at and surrounding said end wall and constituting a dripless pouring lip for the discharge orifice, the stopper portion also having a bore to receive said dispensing structure so that it may be carried thereby and having a transverse end wall to close the said discharge orifice, there being an internal annular corner at the periphery of said end wall of the stopper portion for engagement with the pouring lip to effect a seal therewith.

4. A new article of manufacture comprising a one-piece dispensing cap construction for attachment to a container, said cap construction being constituted of a unitary,

integral, molded plastic piece of resilient and yieldable plastic substance, said piece having a cap body portion and a stopper portion spaced from said body portion when the piece is molded and having a thin and flexible connecting web means by which the body and stopper portions are secured to each other and movably joined to enable the latter portion to be swung through an arc and superposed on the body portion for closing off the same, said cap body portion having attachment means engaging the neck of the container to secure the body portion thereto, and further having a projecting tubular and hollow dispensing structure enclosing a space communicating with said bore, said dispensing structure having a transverse end wall in which there is a discharge orifice, and having an annular, outwardly projecting lip at and surrounding said end wall and constituting a dripless pouring lip for the discharge orifice, the stopper portion also having a bore to receive said dispensing structure so that it may be carried thereby and having a transverse end wall to close the said discharge orifice, there being an internal annular corner at the periphery of said end wall of the stopper portion for engagement with the pouring lip to effect a seal therewith, and the said pouring lip extending axially beyond the end wall of the dispensing structure and having a thin and sharp periphery.

5. A new article of manufacture comprising a one-piece dispensing cap construction for attachment to a container, said cap construction being constituted of a unitary, integral, molded plastic piece of resilient and yieldable plastic substance, said piece having a cap body portion and a stopper portion spaced from said body portion when the piece is molded and having a thin and flexible connecting web means by which the body and stopper portions are secured to each other and movably joined to enable the latter portion to be swung through an arc and superposed on the body portion for closing off the same, said cap body portion having a bore and attachment means for engaging the container-end to secure the body portion thereto, and further having a projecting tubular and hollow, dispensing structure enclosing a space communicating with said bore, said dispensing structure having at its end a discharge orifice, and having an annular, outwardly-projecting lip at and surrounding said discharge orifice and constituting a dripless pouring lip for the discharge orifice, said cap body portion having an annular, yieldable, outwardly-projecting external detent shoulder spaced axially from the end of the dispensing structure and from the container-end engaging part of the body portion, said stopper portion having a bore to receive the said dispensing structure whereby it may be carried by the body portion, having a transverse end wall adapted to overlies the end and the pouring lip of the dispensing structure and close off the discharge orifice thereof, and said stopper portion further having an internal yieldable detent shoulder adapted to be forced over and past the external detent shoulder of the body portion, said shoulders detachably holding the stopper portion on the said body portion when the cap construction is in stoppered condition.

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