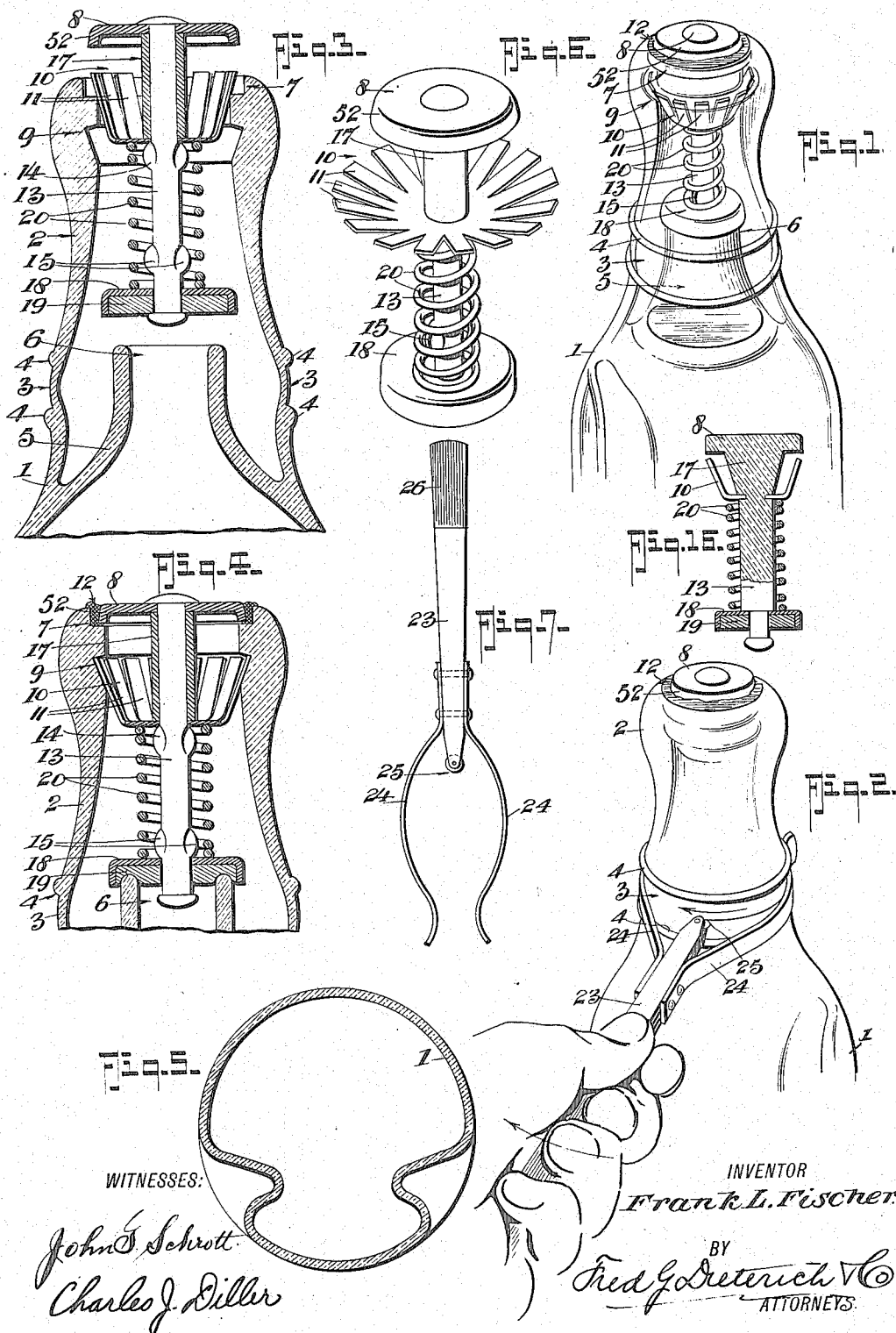


1,129,283.

3 SHEETS—SHEET 1.

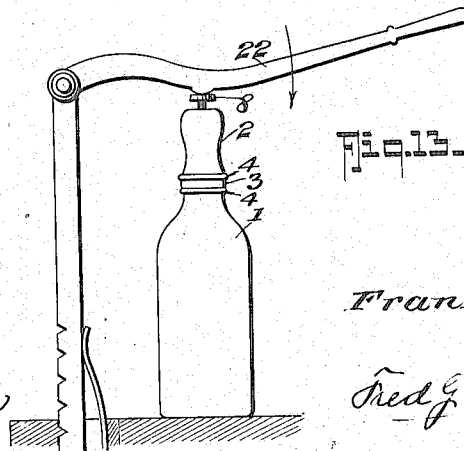
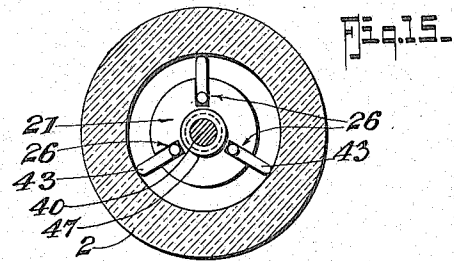
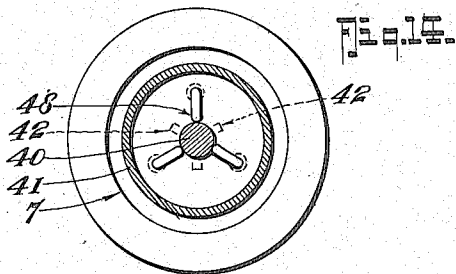
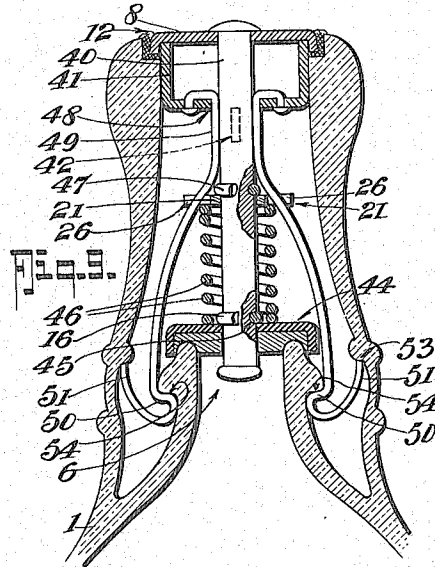
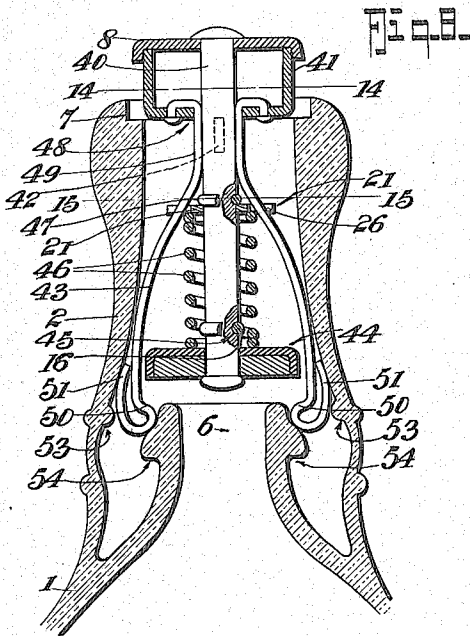


F. L. FISCHER.
BOTTLE AND CLOSURE MEANS THEREFOR.
APPLICATION FILED MAY 14, 1914.

1,129,283.

Patented Feb. 23, 1915

3 SHEETS-SHEET 2.



WITNESSES:
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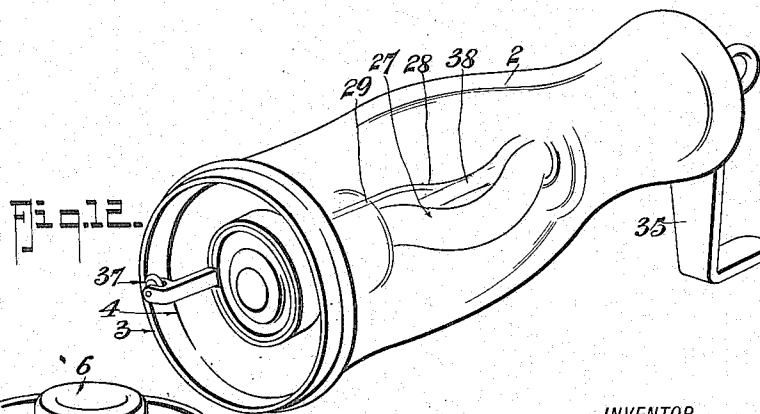
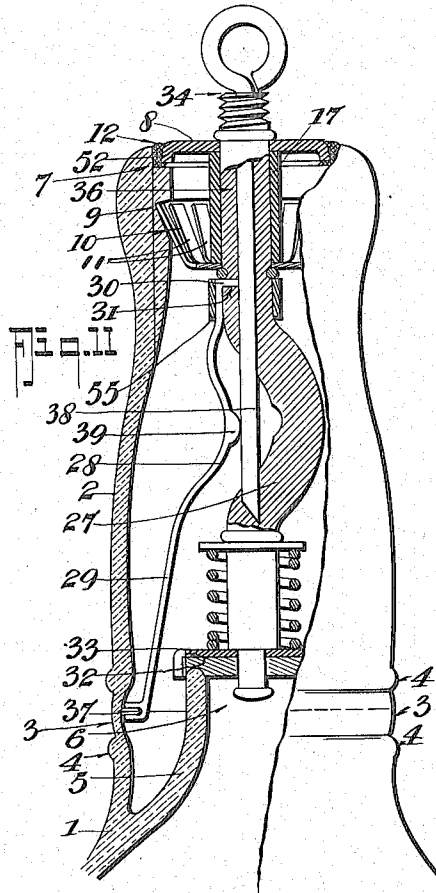
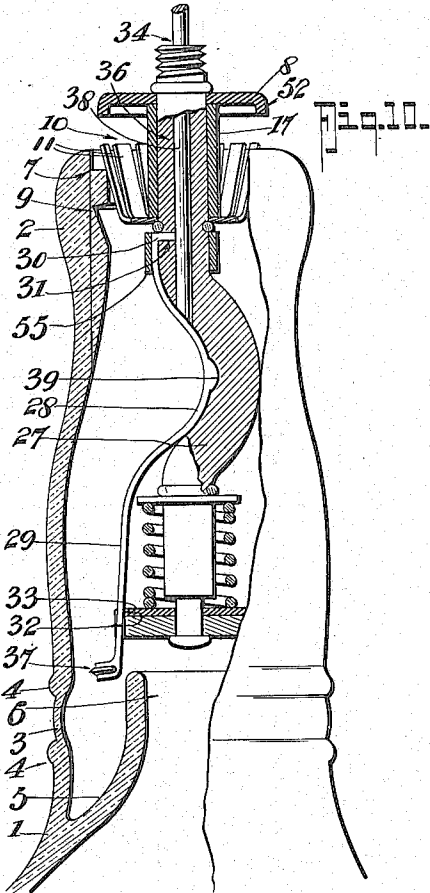
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Fred G. Dietrich & Co
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3 SHEETS—SHEET 3.



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BOTTLE AND CLOSURE MEANS THEREFOR.

1,129,283.

Specification of Letters Patent.

Patented Feb. 23, 1915.

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To all whom it may concern:

Be it known that I, FRANK L. FISCHER, a citizen of the United States, residing at South Superior, in the county of Douglas and State of Wisconsin, have invented a new and Improved Bottle and Closure Means Therefor, of which the following is a specification.

My invention, which generally relates to non-refillable bottles, more particularly comprehends a new and improved bottle and closure means therefor, in which the several parts are so designed and cooperate to produce, as it were, a twin cork and automatically sealed bottle.

Among other objects, my invention has for its purpose to provide an improved bottle and closure means therefor of the character stated in which the closure devices are such that after the bottle is sealed, the said closure devices cannot be withdrawn without destroying the bottle.

With other objects in view, and herein-after explained, my invention consists in the peculiar combination and novel arrangement of the parts, hereinafter described in detail, specifically pointed out in the appended claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of my improved bottle and closure means therefor, and illustrating the preferred form of my invention. Fig. 2 is a similar view that illustrates the manner in which the bottle neck together with the closure devices may be severed from the body of the bottle. Fig. 3 is a vertical section of the upper or neck end of the bottle, the "twin cork and automatic sealing closure devices" being shown in the position of being forced into operative connection with the bottle neck. Fig. 4 is a similar view, the parts being shown at their operative or "closure" position. Fig. 5 is a horizontal section of the bottle body. Fig. 6 is a perspective view of the several parts that constitute the combined twin cork and automatic sealing closure devices shown in Figs. 3 and 4. Fig. 7 is a plan view of the cutting implement used for severing the bottle neck, as shown in Fig. 2. Fig. 8 is a vertical section of the upper or neck end of a slightly modified form of bottle neck and

the automatic sealing devices, the parts being shown in the position of being forced into the bottle neck. Fig. 9 is a similar view the several parts being shown at their "bottle closure" position. Fig. 10 is a vertical section of the bottle neck construction shown in Figs. 3 and 4, and shows the twin cork and sealing devices combined with a cutting element adapted for severing the bottle neck from the inside and formed as a fixed part of the said twin cork and sealing devices, the said cutting element being shown at its held back or inoperative position, and the closure devices shown in position for being forced down into the bottle neck to their operative position. Fig. 11 is a similar view, the closure devices being down at their operative position, and the cutter devices shown as released for engaging a fragile portion of the bottle neck. Fig. 12 is a perspective view that shows the bottle neck in Fig. 11 as severed from the bottle body. Fig. 13 is a diagrammatic side elevation that indicates a means for moving the closure devices to their "sealing" position. Figs. 14 and 15 are detail cross sections on the lines 14-14 and 15-15, respectively on Fig. 8. Fig. 16 is a detail section of a further modification of closure construction.

In carrying out the preferred or simplest form of my invention, the bottle is shaped as is best shown in Figs. 3, 4 and 5, by reference to which it will be noticed at the juncture of the main neck portion 2, with the bottle body 1, the said bottle has an annular fragile portion 3, formed between the beads 4, and at a point below the said fragile portion, the bottle body is also formed with a supplemental internal neck 5, that terminates in a contracted pouring mouth 6, presently again referred to. At the upper end, the main neck portion 2 has an annular-depression 7 that forms a seat for an upper closure or cork member 8 and at a point below the said seat the said neck has an annular undercut flanged recess 9, the side wall of which tapers downwardly and inwardly to the throat of the said neck for reasons present explained.

The closure or cork member 8 is in the nature of a metal cap plate having a pendant flange 52 that fits within the depression

7, and it serves as a sealing means for the throat of the main neck portion 2, and for effecting a positive air-tight closure, a cement filling, (indicated by 12,) may be poured into the recess 7 to embed the flanged portion 52 of the member 8, as shown.

10 designates what I term "the automatic sealer", since it is this element that locks or seals the closure devices within the main bottle neck, and holds them from being in any manner removed from the said bottle neck without separating the said neck from the bottle body. The automatic sealer 10, consists of a cup shaped body formed of thin spring metal whose flange is cut to produce a plurality of spring fingers 11, the said fingers and the size of the cup being such, relatively to the mouth of the main neck, that in passing the said member 10 down through the said neck mouth, the fingers 11 compress, and when passed through the said throat recess 9 and are thereby held locked from withdrawal. Member 10 has an axial opening to fit on a spindle 13 of suitable length provided with an upper and lower set of spaced, laterally projected lugs 14-15, the upper ones 14 of which serve to hold the member 10 in proper position upon the said spindle, and the other set 15 serve as stops to prevent the spindle, that carries the upper cork or closure member 8 from being forced down too far in the recess 7, they also aiding in holding a lower cork or closure member over the pouring throat of the inner or supplemental neck of the bottle.

17 designates a spacing sleeve on the spindle for holding the members 8 and 10 properly spaced apart.

By referring now more particularly to Fig. 3, it will be noticed the lower cork or closure member consists of an inverted cup shaped metal member 18 and a cork or other yieldable filler disk 19; both of which are axially apertured to slide upon the lower end of the spindle, which end is upset to form a rivet to hold the parts in place.

20 designates a stout coiled spring that takes around the spindle and fits between the upper and lower sealing elements.

By reason of the peculiar construction of the bottle neck and the closure means therefore, as shown and described, it follows that to apply the closure means, it is only necessary to slip the lower closure member through the mouth of the main neck until the upper sealer becomes wedged within the said mouth. Now by applying force against the upper end of the spindle, which may be done in any suitable way, preferably by a sealing device such as is shown in Fig. 13, from which it is apparent when the parts are arranged as shown in the said figure by swinging the lever 22 down, the closure devices will be forced down to the position

shown in Fig. 4, which shows the lower set of lugs on the spindle as down against the lower sealer, and the upper sealer with its fingers spread and interlocked with the recess flange 9. Thus, the contents of the bottle are securely held from being discharged so long as the main neck remains a part of the bottle, the said contents being doubly corked by reason of the lower member that fits over the throat of the inside neck, and the cap at the top whose rim or flange is sealed in the recess 7, the latter making a positive air-tight closure, and as the spreader fingers 11 engage the flange 9, the entire closure means is held locked in place against any possibility of removing them without breaking the bottle.

To gain access to the bottle, the main bottle neck with the closure means is separated from the body of the bottle and to provide for such separation in a practical and expeditious manner, I provide a special form of cutter device adapted for use with the preferred or simplest form of my invention as hereinbefore described. The said cutter, which is shown in detail in Fig. 7 comprises a wooden handle 23 to which a pair of oppositely disposed and forwardly extended bowed spring clamps 24 are connected. designates a cutter disk mounted in the outer end of the handle 23 and 26 designates a solid metal head on the outer end of the handle.

When it is desired to gain access to a bottle constructed in accordance with my invention, as aforesaid, the user grasps the bottle with one hand and applies the cutter devices with the other hand in the manner clearly shown in Fig. 2, it being understood that the cutter disk is caused to engage the fragile portion of the main bottle neck, the latter, when cut as stated with the closure devices, being bodily separated from the main bottle, and should the neck have a tendency to "hang" on the bottle body, a few taps with the heavy head end of the cutter device will effect the desired separation of the parts.

In Figs. 10, 11 and 12 of the drawing I have shown a somewhat modified form of my invention, and in this form the same general arrangement of the main neck, and the supplemental neck portion shown in the other preferred portion described appear, the main distinctive feature being the manner in which the spindle that carries the upper and lower closure members and the sealing or locking member 8 is formed, and the cutting device for severing the bottle which, in the said modified form, is fixedly connected with the closure devices and positioned for being readily operated from the outside of the bottle when it is desired to gain access to the contents of the bottle. In the said modified form, the main neck is

somewhat longer than the main neck in the main form, to provide for a longer spindle which, in the present form, is formed with a laterally bowed portion 27 that forms a concaved seat for a convexed portion 28 of a stout spring arm 29, the upper end of which has an angle portion 30 for fitting a recess 31 in one side of the spindle, with which it is firmly held in place by a sleeve 55. The lower end of the arm extends down to a short distance below the lower closure member and is normally held in a radial slot 32 in a disk 33 that is slidably held on the spindle and which forms the lower abutment for the spindle spring. The upper end of the spindle in my said modified form extends above the upper cap, as at 34, and is threaded for receiving the threaded hub of a crank handle 35 and the said spindle has a deep central socket 36, the reason for which will presently appear.

37 designates the rotary cutter disk mounted in the lower end of the arm 29 and 38 is a combined push and lock pin that is insertible in the socket 36 and which, when pushed down, engages the bowed part of the arm 29, forces it outwardly to bring its cutter disk against the fragile part of the main neck portion 2 and to hold it locked to such position.

39 designates a lug on the arm 29 for facilitating the outward pushing of such arm when the pin 38 is pushed down.

By reason of arranging the cutter device as described, it is obvious that when the crank handle 35 is applied and the cutter is held out by the pin 38, a single turn of the crank handle will cause the cutter to sever the neck at the fragile portion thereof, as is clearly indicated in Fig. 12.

In Figs. 8, 9, 14 and 15, I have illustrated a further modification of my invention and in the said last form the main neck has a comparatively straight internal bore down to the fragile portion, at which point it is formed with an undercut flanged recess 53. In the said modified form, the spindle 40 carries the cap or closure member 8 and a cup shaped plug 41 that is held on the spindle up against the member 7 by the lugs 42 that project laterally from the said spindle and which also form guides for the sealing members 43, presently again referred to.

44 indicates the lower closure member for fitting over the pouring mouth of the main bottle body and which has a limited sliding movement with said spindle between the lower or upset head and a stop ring 16 that seats in a lower annular groove 45 in the spindle, as shown.

46 designates a coiled tension spring that coils about the spindle and is held between the bottom closure member 44 and a combined stop and guide disk 21 that is held down against the spring by reason of a ring

47 held on the spindle and normally such that it holds the spring 46 to its proper or desired position.

In the drawing, I have shown three sealing members 43, but a greater or lesser number may be used according to the character of the bottle on which my invention may be applied. Each of the sealing members is in the nature of a spring rod whose upper end is bent to pass down through a pair of radially positioned apertures 48 in the plug 41, from which it extends as a vertical member 49 between the guide lugs on the spindle down to the disk 21 from which point it is bent outwardly, passing through peripheral slots 26^b in the disk 21 and extended down a sufficient distance below the lower closure member to provide for bending the lower end back upon itself to form a locking heel 50 and a spring lock finger 51, the latter being adapted for springing out to interlock with the undercut flange 53 at the fragile portion of the neck, as the heel engages an undercut flange 91 on the pouring nozzle or neck of the main bottle portion, as shown.

By reason of arranging the several parts of the last mentioned modified form of my invention as shown and described, when the closure devices are entered into the main neck portion as shown in Fig. 8, to effect a perfect closure and sealing of the bottle, it is only necessary to push the said closure devices down until the upper and lower stopper or closure members reach their sealing positions, which occurs as the lower ends of the sealing rods slip down into a locked engagement with the undercut flanges on the inner neck and the fragile portion of the outer neck, (see Fig. 9).

In the last named form, the severing device shown in Fig. 7, is used for separating the main neck 2 from the bottle portion.

From the foregoing description, taken in connection with the accompanying drawings, the complete construction of the different forms of my invention will be readily understood by those skilled in the art to which my invention relates.

In Fig. 16, I have shown a further modification of closure device which is intended to be cast either of metal or glass the device 10 being positioned in the mold so as that it may be formed practically integral with the body of the object. The cup 18 may be fitted in place later and the end of the receiving stem may be upset so as to retain the sealing cup 18. The reference numerals in this figure relate to parts similar to those of the other figures, in which similar numerals are attached.

What I claim is:

1. The combination with a bottle having a main neck and a supplemental neck that extends up into the bottom of the main neck, of a closure means comprising a stem, a mem-

ber fixedly held on the upper end of the stem for closing the mouth of the main neck, a member on the lower end of the said stem for closing the mouth of the inner neck, and expandible sealing means on the stem, the said means being compressible when the closure means is forced into the bottle neck, the said bottle neck having a flange portion with which the said sealing means interlocks when at its expandible position within the bottle neck.

2. The combination with a bottle having a main neck and a supplemental neck that extends up into the bottom of the main neck; of a closure means comprising a stem, a member fixedly held on the upper end of the stem for closing the mouth of the main neck, a member on the lower end of the said stem for closing the mouth of the inner neck, and expandible sealing means on the stem, the said means being compressible when the closure means is forced into the bottle neck, the said bottle neck having a flange portion with which the said sealing means interlocks when at its expandible position within the bottle neck, the main neck of the bottle having an annular fragile portion at the base thereof and means for severing the said neck at such fragile portion.

3. The combination with a bottle having a main neck and a supplemental neck that extends up into the bottom of the main neck; of a closure means comprising a stem, a member on the upper end of the stem for closing the mouth of the main neck, a member on the lower neck, and expandible sealing means on the stem, the said means being compressible when the closure means is forced into the bottle neck, the said bottle neck having a flange portion with which the said sealing means interlocks when at its expandible position within the bottle neck, the main neck of the bottle having an annular fragile portion at the base thereof and means for severing the said neck at such fragile portion, the said severing means including a cutter device insertible into the bottle neck with the closure means, the said device including a spring arm secured at its upper end to the stem of the closure means, a cutter disk on the lower end of the arm adapted for engaging the fragile portion on the bottle neck when the arm is moved out to its operative position, means for moving the said arm and holding it at its operative position and other means for rotating the entire closure device whereby to carry the cutter device around over the fragile part of the bottle neck for severing the said neck.

4. The combination with a bottle having a main or outer neck and an inner neck that opens into the outer neck, one of the said necks having an under-cut flange; of a closure means that includes a stem, a disk slidably mounted on the lower end thereof to

close down onto the inner neck, a spring on the stem for normally forcing the said disk down, a disk on the upper end of the stem for closing the outer neck when the closure means is forced into the said outer neck, a sealing device carried by the stem, and which comprises a series of radially expandible spring fingers adapted for interlocking with the under-cut flange in the bottle neck.

5. The combination with a bottle having a main or outer neck and an inner neck that opens into the outer neck, one of the said necks having an under-cut flange; of a closure means that includes a stem, a disk slidably mounted on the lower end thereof to close down onto the inner neck, a spring on the stem for normally forcing the said disk down, a disk on the upper end of the stem for closing the outer neck when the closure means is forced into the said outer neck, a sealing device carried by the stem, and which comprises a series of radially expandible spring fingers adapted for interlocking with the under-cut flange in the bottle neck, the said bottle neck including an annular fragile portion, a spring arm secured to the closure stem, whose lower end projects down in line with the fragile portion of the bottle neck when the closure means is operatively positioned within the bottle neck, a cutter disk carried upon the lower end of the said arm, the stem of the closure member having a crank receiving portion, and having that portion between the upper and lower closure disks bowed, the said stem being also provided with a deep socket in the upper end that opens into the bowed portion of the stem, the cutter carrying arm having a bowed portion that normally fits in the bowed part of the stem and a pin insertible into the socket of the closure stem for engaging the bowed portion of the cutter carrying arm to force and hold its cutter carrying end swung outwardly with the cutter disk engaging the bottle neck.

6. The combination with a bottle having a main neck and a supplemental neck that projects up into the main neck, the said main neck having an undercut flange and an annular flange portion; of a closure means comprising a stem, a sealing device mounted on the upper end of the stem, that includes radially expansible spring fingers for interlocking with the undercut flanges on the neck, and a cap for closing the mouth of the main neck as the sealing device interlocks with the said undercut flange, a member mounted on the lower end of the stem for closing the mouth of the inner neck, said member being vertically slidable on the said stem, a spring on the stem for normally forcing the said member down to its closing position, a spring arm carried by the stem, a cutter on the arm for engaging the fragile

portion of the main neck, said spring arm
being normally held with the cutter end out
of operative position, the said stem and
spring arm being rotatable within the bottle
5 neck and a means mounted on the stem and
including a handle member for engaging the
said spring arm to move it to bring the

cutter into engagement with the fragile por-
tion of the bottle.

FRANK L. FISCHER.

Witnesses:

WM. NOAIDE,
R. BRUNE.