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3,059,801

BOTTLE TOP CLOSURE WITH COMBINATION LOCK

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2 Sheets-Sheet 1

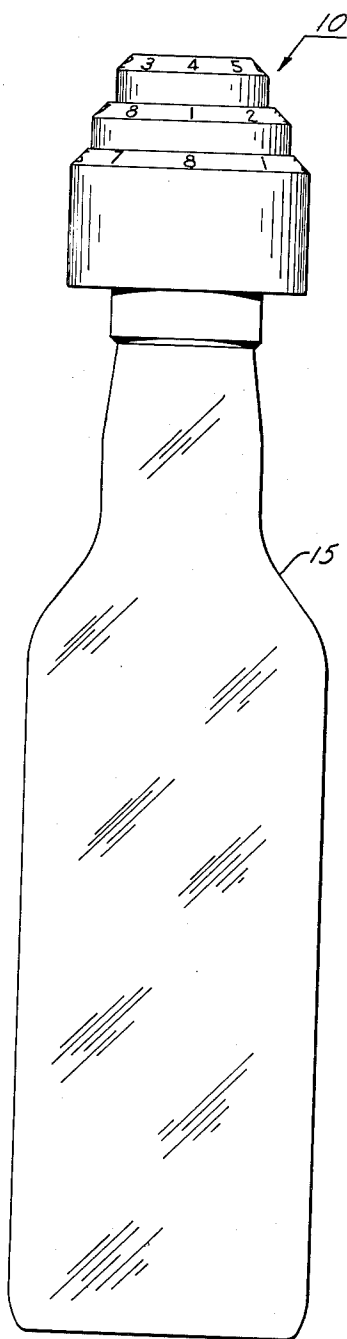


FIG. 1.

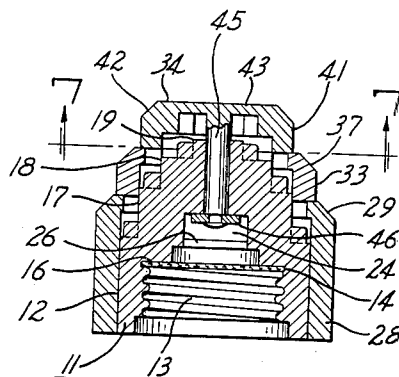


FIG. 2.

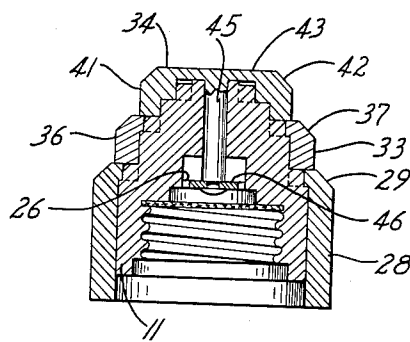


FIG. 3.

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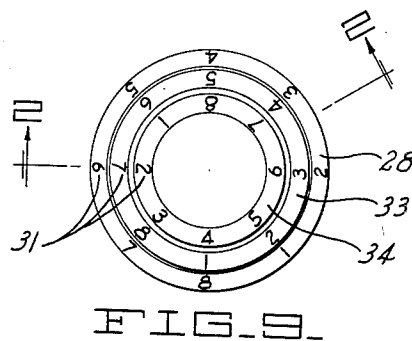
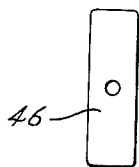
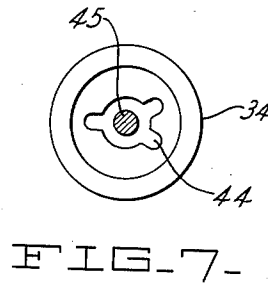
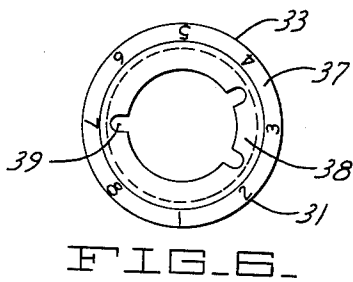
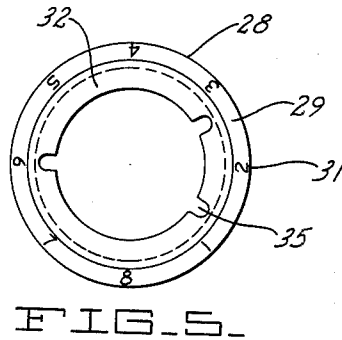
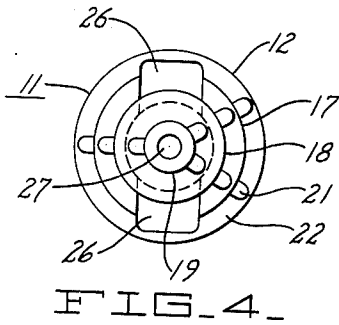
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BOTTLE TOP CLOSURE WITH COMBINATION LOCK

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2 Sheets-Sheet 2



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BOTTLE TOP CLOSURE WITH COMBINATION LOCK

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7 Claims. (Cl. 215—98)

This invention relates to a bottle top closure and more particularly to a bottle top closure which incorporates a combination lock.

There is a need for a bottle top closure which can be utilized on bottles for locking the bottles to prevent unauthorized use of the contents in the bottle. There is also a need for such a device to prevent children from opening the bottles and coming in contact with poisons or other harmful substances within the bottles.

In general, it is an object of the present invention to provide a bottle top closure which makes it possible to readily lock the bottle closure in place so that it cannot be removed by unauthorized individuals.

Another object of the invention is to provide a bottle top closure of the above character in which a combination lock is utilized.

Another object of the invention is to provide a bottle closure of the above character which can be readily operated.

Another object of the invention is to provide a bottle top closure of the above character in which the closure cannot be removed without knowledge of the proper combination.

Another object of the invention is to provide a bottle top closure of the above character which can be economically manufactured and assembled.

Another object of the invention is to provide a bottle top closure of the above character which is attractive in appearance.

Additional objects and features of the invention will appear from the following description in which the preferred embodiment is set forth in detail in connection with the accompanying drawings.

Referring to the drawings:

FIGURE 1 is a side elevational view of my bottle top closure screwed on a bottle top.

FIGURE 2 is a cross-sectional view of my bottle top closure taken along the line 2—2 of FIGURE 9.

FIGURE 3 is a cross-sectional view similar to FIGURE 2 showing the bottle closure in a position in which the bottle closure can be unthreaded from the bottle top.

FIGURE 4 is a plan view of the body.

FIGURE 5 is a plan view of the bottom dial.

FIGURE 6 is a plan view of the middle dial.

FIGURE 7 is a cross-sectional view taken along the line 7—7 of FIGURE 2.

FIGURE 8 is a plan view of the cross bar.

FIGURE 9 is a plan view of my bottle top closure.

In general, my bottle top closure incorporating a combination lock includes a main body having a threaded central recess adapted to be threaded onto the bottle top. A bottom dial encloses the outer surface of the main body to prevent contact with the main body and to prevent rotation of the main body independent of rotation of the bottom dial when the bottom dial is not in an engaged position with the main body. An additional dial is disposed above the bottom dial and means is pro-

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vided for securing the body, the bottom dial, and the additional dial into a unitary assembly to permit rotation of the body, the bottom dial and the additional dial independently of each other. Cooperative means is carried by the body and each of the dials and is moved into engagement to interlock the body and the dials when the dials and the body are in a predetermined position so that the body can be rotated by rotation of the dials.

More specifically my bottle top closure 10 as shown in the drawings consists of a main body 11 which has an outer cylindrical surface 12 and an internally threaded recess 13 adapted to be threaded on the top of a bottle 15. The body 11 is formed with an annular seat 14 in the upper part of the recess 13 against which a gasket 16 of suitable material is seated.

The body 11 is also provided with cylindrical portions 17 and 18 with the cylindrical portion 17 having a diameter which is less than the diameter of the cylindrical portion 12 and with the cylindrical portion 18 having a diameter which is less than the diameter of cylindrical portion 17. A cylindrical portion 19 of still smaller diameter is provided above the portion 17. As will be particularly noted from FIGURE 2, the cylindrical portions 12, 17 and 19 of decreasing diameters give a stepped effect.

A plurality of male lugs 21 are provided on the upper surfaces 22 of each of the cylindrical portions 12, 17 and 18. As shown in the drawings, three such male lugs have been provided on each of the portions. The lugs as shown are arranged approximately 120° apart. It however, should be pointed out that any number of lugs can be utilized and that the lugs can be positioned in any desired manner.

The main body 11 is also provided with a hole 24 which extends diametrically of the body and generally through the cylindrical portion 17. The main body 11 is also formed with recesses 26 in the upper surface 22 of the cylindrical portion 12 and extend into the hole 24 for a purpose hereinafter described. The main body 11 is also provided with a central bore 27 also for a purpose hereinafter described.

A bottom dial 28 serves to enclose the outer cylindrical surface 12 of the main body 11. As shown particularly in FIGURES 2 and 5, the dial 28 is generally in the form of a hollow cylinder which has an inside diameter which is slightly greater than the outside diameter of the cylindrical portion 12 of the main body 11 so that it can be rotated with respect to the cylindrical portion 12. The bottom dial 28 is provided with an inwardly inclined portion 29 which carries a plurality of numerals 31 evenly spaced around the annular inclined portion 29. The bottom dial 28 is also provided with an inwardly extending horizontal portion 32 which is adapted to overlie the surface 22 of the bottom cylindrical portion 12. This horizontal portion is formed with female slots or notches 35 which are arranged in generally the same manner as the male lugs provided on the cylindrical portions 12.

One or more additional dials are provided as a part of the bottle top closure. In the embodiment shown in the drawings I have provided two additional dials, a middle dial 33 and a top dial 34. The middle dial 33 is in the form of an annular ring which is provided with a vertical portion 36, an inclined portion 37, and a horizontal portion 38. The inside diameter of the vertical

portion 36 is such that it fits over the cylindrical portion 17 of the main body 11 and can be rotated with respect thereto. The inclined portion 37 is provided with numerals 31 arranged in the same general manner as the numerals on the bottom dial 28. The horizontal portion 38 overlies the top surface 22 of the cylindrical portion 17 and is formed with female slots or notches 39 which are adapted to engage the male lugs provided on the top of the cylindrical member 17.

The top dial 34 serves as a cap. It is provided with a vertical portion 41, the inside diameter of which is slightly greater than the outside diameter of the cylindrical portion 18 so that it will fit over the cylindrical portion 18 and rotate with respect thereto. It is also provided with an inclined portion 42 which carries numerals 31 and a horizontal top portion 43. The top portion 43 is formed with female slots or notches 44 which are adapted to engage the male lugs provided on the top surface of the cylindrical portion 18 of the main body 11. The top cap 34 is also provided with a vertical stem 45 which extends through the bore 27 provided in the main body 11. A retaining cross bar 46 is disposed within the hole 24 provided in the main body and is secured to the bottom portion of the stem 45. It serves to tie the main body 11, the bottom dial 28, the middle dial 33 and the top dial 34 into a unitary assembly and permits rotation of each of the members with respect to each other when the cooperative means consisting of the male lugs and the female slots or notches provided on the separate parts are out of engagement with each other.

Operation of my bottle top closure may now be briefly described as follows: Let it be assumed that my bottle top closure is mounted on a bottle and that it is in the position shown in FIGURE 2. When the bottle top closure is in this position, any of the dials 28, 33 and 34 may be rotated with respect to each other because as can be seen in the drawing, the male lugs are out of engagement with the female slots. When such is the case, the main body 11, which is threaded onto the bottle top cannot be rotated. Any attempt to rotate the outer dials will merely cause rotation of the dials but not rotation of the main body 11. The main body 11 cannot be grasped separately because it is enclosed by the dials. For that reason the bottle cannot be opened with the bottle top closure in this position.

Now, let it be assumed that it is desirable to open the bottle and that the user knows the combination. For example, let it be assumed that the combination is 4-1-8 as shown in the drawing. The dials are then rotated so that the numbers 4-1-8 are in alignment from top to bottom as shown in FIGURE 1 with the first number being for the top dial, the second number for the middle dial and the last number for the bottom dial. Movement of the dials to these predetermined positions, places the female slots or notches above the corresponding male lugs.

After the dials have been aligned from top to bottom as shown in FIGURE 1, the three dials are held in this position by the hand while at the same time applying a slight downward pressure and a twisting in a clockwise or counterclockwise direction until the entire outer assembly consisting of the top, middle and bottom dials drops downwardly into the position shown in FIGURE 3. Placing the dials in the predetermined position lines up the slot provided in each of the dials so that when the three dials are rotated in unison to the proper position all three of the dials will drop downwardly into engagement with the male lugs provided on the main body 11 and to thereby interlock the dials with the main body. All three of the dials must be in the proper position. If only one of the dials is in an improper position, this one dial cannot drop into engagement with its corresponding lugs on the main body 11 at the time the other dials are in proper positions. Therefore, none of the dials can drop into engagement with the main body 11 because all three

dials are tied together by the cross bar 46. It is for this reason that all three dials must be in the proper position before the three dials can drop down into engagement with the male lugs.

As soon as the outer assembly of the cap, that is, the three dials, drops down to cause engagement of the cooperative means, the retainer bar 46 also drops down into the recesses 26 to engage the main body 11. The entire cap assembly now can be rotated to unscrew the body 11 from the bottle top.

Now let it be assumed that it is desired to again close the bottle. My bottle closure can be threaded onto the bottle top in the same manner in which it was unthreaded because the male lugs on the main body are still in engagement with the female notches in the dials. As soon as the bottle closure has been threaded onto the bottle top, the combination can be confused merely by lifting the outer assembly of the cap, that is, the outer three dials to lift the female slots out of engagement with the male lugs and then rotating the separate dials in various directions.

Although my disclosure relates to a bottle cap closure having three dials it is readily apparent that as few as two dials or as many dials as desired can be utilized. The bottle top closure can be made of any suitable material such as plastic.

It is apparent from the foregoing that I have provided new and improved bottle top closure which makes it possible to lock the bottle to prevent unauthorized use of the contents in the bottle. The bottle top closure is also of such a type that it can be sold as a novelty item. It is also apparent that although the disclosure relates primarily to a bottle top closure, the closure device is readily adaptable for other uses such as covering a push button or switch to prevent unauthorized operation.

I claim:

1. In a closure device incorporating a combination lock, a main body having a threaded central recess and serving as closing means, a bottom dial enclosing the outer surface of the main body, an additional dial, means securing said body, said bottom dial and said additional dial into a unitary assembly to permit rotation of the bottom dial and the additional dial independently of each other and with respect to the body, and cooperative means carried by said body with said dials and movable into engagement to interlock said body and said dials when said dials are in a predetermined position with respect to said body so that said body can be rotated by rotation of the dials, to permit removal of the closure device.

2. A closure as in claim 1 wherein said cooperative means is moved into and out of engagement in a direction at right angles to the planes of rotation of the dials.

3. A closure as in claim 1 wherein said cooperative means includes engaging means carried on each of said dials and the body.

4. In a bottle top closure incorporating a combination lock, a main body having a threaded central recess adapted to be threaded onto the bottle top to close the same, said main body having bottom, middle and top cylindrical portions, a bottom dial enclosing the bottom cylindrical portion of said main body and a middle dial disposed above said bottom dial and enclosing the middle cylindrical portion of said main body, a top dial disposed above the middle dial and enclosing the top cylindrical portion of the main body, means securing said main body, said bottom dial, said middle dial, and said top dial into a unitary assembly to permit rotation of the top, middle and bottom dials in parallel planes with respect to each other and independently of the main body, and cooperative means carried by said main body and each of said dials and movable into engagement to interlock said dials with said body when said dials are in a predetermined position with respect to said body so that said body can be rotated and said bottle top opened by rotation of said dials.

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5. A bottle top closure as in claim 4 wherein said dials are movable into interlocking engagement with said body in a direction at right angles to the planes of rotation of said dials.

6. A bottle top closure as in claim 4 wherein said middle dial overlaps the bottom dial and wherein the top dial overlaps the middle dial and wherein the said top dial is provided with means for securing the top dial to the main body.

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7. A bottle top closure as in claim 4 wherein said dials are provided with inclined surfaces having numerals thereon.

References Cited in the file of this patent**UNITED STATES PATENTS**

2,226,390	Rosevear -----	Dec. 24, 1940
2,731,166	Raphael -----	Jan. 17, 1956