(No Model.)

G. W. SCOTT.

NON-REFILLABLE BOTTLE.

No. 589,035. Patented Aug. 31, 1897.

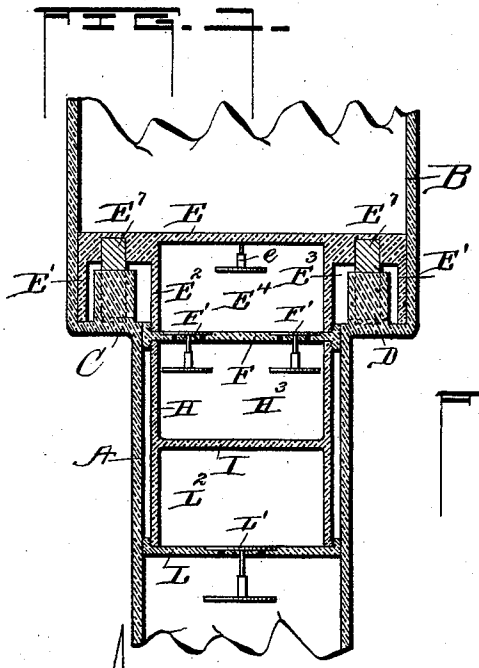


FIG. 1.

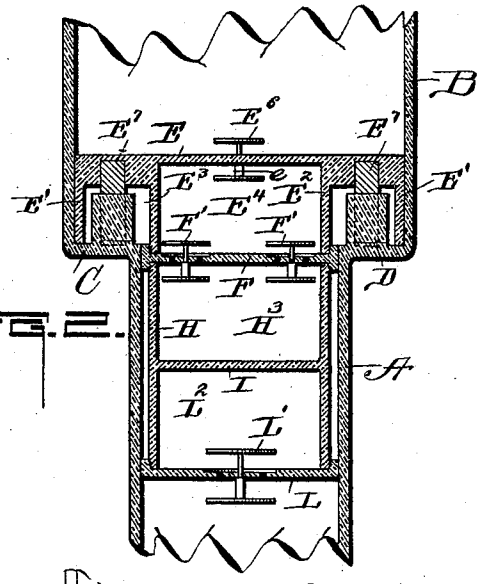


FIG. 2.

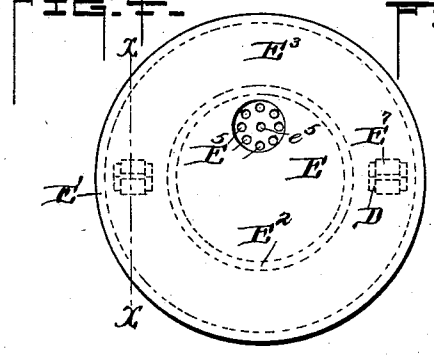


FIG. 4.

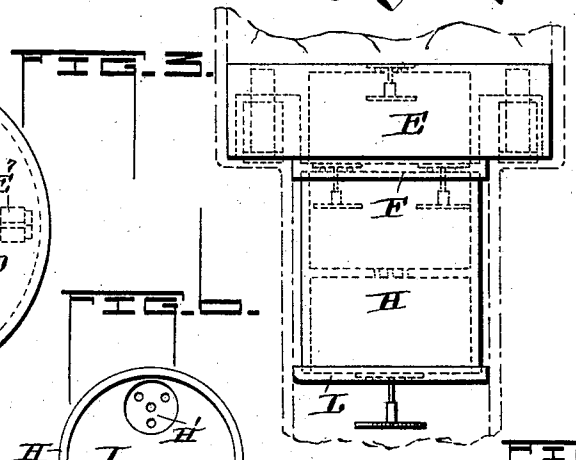


FIG. 3.

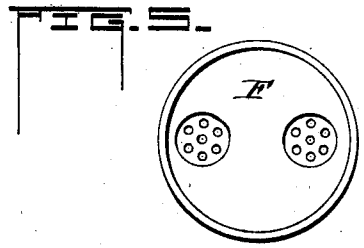


FIG. 5.

FIG. 6.

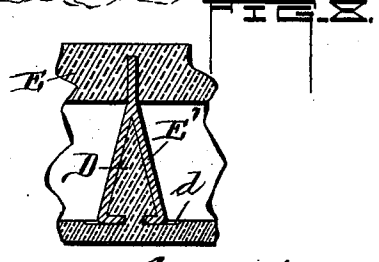


FIG. 8.

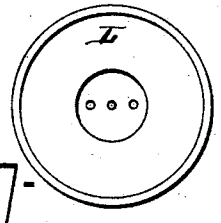


FIG. 7.

Witnesses:-
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UNITED STATES PATENT OFFICE.

GEORGE W. SCOTT, OF PEORIA, ILLINOIS.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 589,035, dated August 31, 1897.

Application filed December 31, 1896. Serial No. 617,687. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SCOTT, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Non-Refillable Bottles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in non-refillable bottles by means of which a bottle and auxiliary parts are combined in such a manner as to produce a perfect device of the character above named.

More particularly my invention relates to a bottle provided with a neck having a particular and peculiar form and added parts and an auxiliary attachable part adapted to be inserted in the neck after the bottle has been filled and non-detachable therefrom constructed in such a manner as to prevent the bottle from being refilled, but adapted to allow the flow of liquid from the bottle in the usual manner—that is, by turning the bottle up in the usual way.

My invention consists, essentially, in expanding the neck of the bottle at the upper portion thereof in such a manner as to provide a shoulder and providing lugs or catches suitably disposed upon the said shoulder, adapted to be engaged by springs, a cap for fitting in the expanded portion of the neck and provided with springs depending from its lower face, adapted to engage the lugs or catches on the shoulders, of a partition or partitions located at intervals in the neck of the bottle below the expanded portion thereof to form a cell or cells and suitably supported thereon by connection with the cap and by similar connection of the parts with each other, or supported in the neck in any other suitable manner, and of egress-openings in the cap and partitions to accommodate the outflow of liquid from the bottle, and of automatic valves connected with said openings or in immediate proximity thereto adapted to open to permit the liquid to flow from the bottle and to close against the admission of the liquid into the bottle.

That my invention may be more fully understood, reference is had to the accompanying drawings, in which—

Figure 1 is a vertical section of a bottle-neck and devices connected therewith which combined form my invention. Fig. 2 is a similar view showing the valves in position when the liquid is being poured from the bottle. Fig. 3 is a side elevation of my invention. Fig. 4 is a plan view of the cap that fits in the expanded portion of the bottle-neck. Figs. 5, 6, and 7 are dividing-partitions which when combined and connected with the cap form the cells in the bottle-neck. Fig. 8 is an enlarged section on the line X X of Fig. 4, showing the detail construction of the lug and spring-catch.

In the drawings, A is the neck of the bottle.

B is an expanded portion at the upper end of the neck and is so expanded as to form the shoulder C.

D are lugs formed upon the surface of the shoulder and are made arrow-head shaped to adapt them to be engaged by spring-catches.

d are depressions in the surface of the shoulder, provided to adapt the hooks on the spring-catches to be seated partially below the surface of the shoulder. This expanding of the upper portion of the bottle-neck, the provision of the shoulder, and the formation of the arrow-head-shaped lugs constitute the only change from the usual form of the bottle and is substantially the formation of the bottle-neck which I desire to use in carrying out my invention.

In connection with the above-described bottle-neck I provide a device purposed to be inserted therein, which consists of the cap E, a plan view of which is shown in Fig. 4, but its construction may be better understood by reference to Figs. 1, 2, or 3. It is round and adapted to fit closely within the expanded portion of the neck. It has the depending flanges E′ and E^2, which together form the circumferential channel or groove E^3, the flange E^2 forming the side walls of the cavity or inverted cup at the center, which I will hereinafter designate as the "top cell" and refer to it by E^4. The outer flange E′ bears flush against the side of the expanded portion of the bottle-neck.

E^5 is a series of perforations through the cap and disposed therein in such a manner that they will open into the cell below very close to its side wall.

E^6 is a valve consisting of flat heads connected by a stem, the stem passing through the centrally-disposed one of the series of the perforations e^5. Normally the top head will rest in a circular groove in the top of cap E, as shown in Fig. 3, and on the lower portion of the valve-stem I provide a shoulder *e* to prevent the lower head from covering the perforations when the bottle is inverted, this particular function of the shoulder being illustrated in Fig. 2, in which figure the bottle is supposed to be shown as inverted with a view of showing the position of the valves when in that position.

E^7 E^7 are spring-catches secured to cap E and depending therefrom and purposed to engage the arrow-head lugs D D, as will be seen by reference to the figures of the drawings, and the particular manner of such engagement is best shown in Fig. 8.

F is a dividing wall or partition purposed to be located at the mouth of the lower neck A. It has upwardly-extending and depending flanges each threaded, and the threads on the upwardly-extended flange are designed to engage matching threads on the lower extremity of flange E^2, which depends from cap E, this partition F forming the lower wall of cell E^4 and is provided with two sets of perforations on opposite sides thereof, as shown in Fig. 5, and with slight depressions therein traversing and extending beyond the space occupied by the perforations.

F′ are valves carried therein having the same construction and the same function relatively as valves E^6 in cap E.

H is a short tube carried within the bottle-neck and is concentric with but having a smaller diameter. I is a dividing-partition which may be located centrally within the short tube and is integral with the walls thereof. It is provided with two sets of perforations H′ H^2 and depressions in the surface thereof the same as the perforations and depressions in partition F, but are located in a lower plane and on different vertical lines—that is, they are oppositely located. It will be observed that I have used no valve in connection with the perforations in this dividing-wall, as ordinarily it is not thought the valve will be needed, but I may use a valve in connection therewith if found necessary or desirable.

In constructing the device I prefer to use the partition I, but I may omit it if I desire without altering my invention.

H^3 is a cell formed by the partitions F and I and the walls of tube H. The top edge of tube H is designed to be threaded to match with the threads on the flange depending from partition F, and the tube and partition are designed to be screwed together.

L is a dividing wall or partition purposed to be secured to the lower end of tube H by means of matching screw-threads or by other suitable means. In fact, all of the above-described parts may be connected in any suitable manner. Partition L is provided with a centrally-disposed depression and with perforations therein and with the valve L′, having the same construction and the same function relatively as valves E^6 and F′.

When applying my invention practically, the bottles having the particular formation of the neck herein shown having been first filled with liquid, the device herein shown and described as being particularly adapted to render the bottle non-refillable is put together in the manner herein shown or by other suitable mechanical connecting means, and is inserted in the bottle-neck in such a manner that the spring-catches E^7 E^7 will contact with the arrow-shaped lugs D D, and when the cap is pressed down the spring-catches will engage the lugs in the manner shown in the drawings, and when so connected with the bottle-neck cannot be disengaged therefrom without destroying the bottle. After my device has been attached a cork is inserted and the bottle is sealed in the usual manner, and when the liquid therein contained is desired for use the seal is broken, the cork withdrawn, and the bottle upturned in the usual manner, the liquid in the bottle pressing the lower heads downward until the shoulders on the stems strike the partitions, and the upper heads will be removed from the perforations in the partitions and the liquid will be permitted to flow freely out of the bottle, and when the bottle is turned down again into its normal position the valves will drop by force of gravity, so that the upper heads will cover the perforations. When the bottle is empty and any one should attempt to refill it, they could not detach cap E without breaking off the lugs D D, and if they should attempt to pour liquid into the bottle without removing the cap the valves bearing over the perforations would prevent its ingress, and if the top valve should be tampered with or raised by artificial means only cell E^4 could be filled, as valves F′ F′ would stop the further ingress of the liquid, or if by artificial means valves E^6 and F′ F′ were raised the liquid would fill cells E^4, H^3, and L^2, but its further ingress would be stopped by valve L′. It is thought that it would be impossible to tamper with any of the valves except valve E^6, as the perforations of the different dividing-partitions are placed on different vertical lines in the different partitions.

In carrying out my invention I may find it convenient to dispense with the partition I and make the tube H shorter and move the partition L upward and secure it thereto. In fact, I reserve the right to use any number of partitions and cells that I may find it practical to use, maintaining always, of course, in

the construction of the device the principle herein shown. In fact, I may modify any and all of the minor details of construction as the practical application of my device may demonstrate it to be economical or practical.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A bottle having the top portion of its neck expanded and a shoulder in the base of the mouth thereof, and suitable lugs or recesses to receive hooks or catches, in combination with a cap for fitting in the expanded portion of the neck with catches for engaging the lugs or depressions in the neck of the bottle, and provided with perforations through the body of the cap and a valve for opening and closing to permit the egress of liquid out of the bottle and to exclude ingress of liquid therein, and a series of dividing-partitions also provided with openings and valves covering same, all substantially as described and shown.

2. In a bottle having the expanded portion of the neck B, forming a shoulder C, in the base of the mouth thereof, a cap E, for fitting in the expanded portion of the neck, provided with downwardly-depending flanges E′, E², forming a circumferential chamber or groove E³, with catches E⁷, secured to the cap purposed to engage the lugs D, D, in the neck of the bottle, of perforations E⁵, through the body of the cap and a valve E⁶, for opening and closing same to permit the egress of liquid out of the bottle and exclude ingress of liquid therein, of dividing wall or partition F, the tube H, and the dividing-partition I, each provided with openings and valves covering same, substantially as and for the purpose described.

3. In a bottle, a neck having the expanded portion B, forming a shoulder C, in the base of the mouth thereof, the shoulder having lugs D, D, integral therewith, a cap E, for fitting in the expanded portion of the neck, provided with depending flanges E′, E², forming a circumferential channel or groove E³, clasps or catches E⁷, for engaging with lugs D, of the dividing wall or partition F, having upwardly-extending and depending flanges, the upwardly-extending flange purposed to be secured to the lower edge of flange E², of cap E, the tube H, provided with a dividing-partition I, and threaded at its upper end to be secured to the depending flange of partition F, of the dividing wall or partition L, secured to the lower end of tube H, cells E⁴, H³, and L², the partitions being provided with suitable valves F′, and L′, to permit the egress of liquid out of the bottle and to exclude ingress of liquid therein, all substantially as described and shown.

4. In a bottle, a neck having the expanded portion B, and the shoulder C, in the base of the mouth thereof, lugs D, D, integral with the shoulder C, the combination therewith of the cap E, formed with suitable depending flanges E′, E², channel or groove E³, within which are provided spring-catches E⁷, adapted to engage the lugs D, which when engaging the lugs are seated partially below the surface of the shoulder in depressions *d*, therein, of the partition F, located at the mouth of the lower neck having upwardly-extending and depending flanges, the upwardly-extending flange purposed to engage with the flange E², the tube H, the upper extremity of which is secured to the depending flange of the partition F, and provided with the centrally-disposed partition I, integral with the tube H, the dividing wall or partition L, secured to the lower end of tube H, of suitable perforations through the cap and partitions disposed in such a manner as to be in opposite vertical lines, and of automatic valves connected with said openings or in immediate proximity thereto adapted to open to permit the liquid to flow from the bottle and to close against the admission of liquid into the bottle, all substantially as described and shown.

5. The combination with a bottle having a neck provided with an expanded upper portion, providing a shoulder and lugs for receiving spring-catches, of a cylindrical cap provided with catches to engage said lugs, a series of partitions suitably connected together and to the cap forming a series of cells and perforations in the cap and the dividing-partition and suitable valves connected with said perforations or openings in such a manner as to automatically open to permit the egress of liquid from the bottle and to prevent the ingress of liquid into the same, all substantially as described and shown.

6. A bottle, having a neck expanded at its upper portion, providing a shoulder at the base of the opening and having suitable lugs at or near the shoulder, a circular cap for fitting in the expanded portion of the neck having a peripheral depending flange and a centrally-disposed depending flange, both flanges purposed to rest on the shoulder and having spring-catches located in the channel formed by said flanges purposed to engage the lugs on the bottle-neck, dividing-partitions provided with flanges connected together to form cells and the cap and dividing-partitions provided with perforations or openings or sets of perforations or openings located in different vertical lines and suitable valves connected with said perforations or openings, as may be desired, in such a manner as to permit the egress of liquid from the bottle and to prevent the ingress of liquid into the bottle, all substantially as described and shown.

7. In a bottle, provided with a neck expanded internally at its upper end providing a shoulder at the base of the expanded portion and having lugs thereon or therein purposed to be engaged by spring-catches, a series of cells formed by a cap provided with a depending flange or flanges and with spring-

catches for engaging said lugs and of partitions located below the said cap and fitting in the lower portion of the neck and suitably connected together and openings leading into and out of the cells and suitable valves connected with the openings in such a manner as to permit the egress of liquid from the bottle and to prevent the ingress of liquid into the bottle, all substantially as described and shown.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. SCOTT.

Witnesses:
W. V. TEFFT,
CHAS. W. LA PORTE.