Feb. 19, 1924. 1,484,589

L. TRUBEK

BOTTLE

Filed Nov. 21, 1922

Fig. 1,

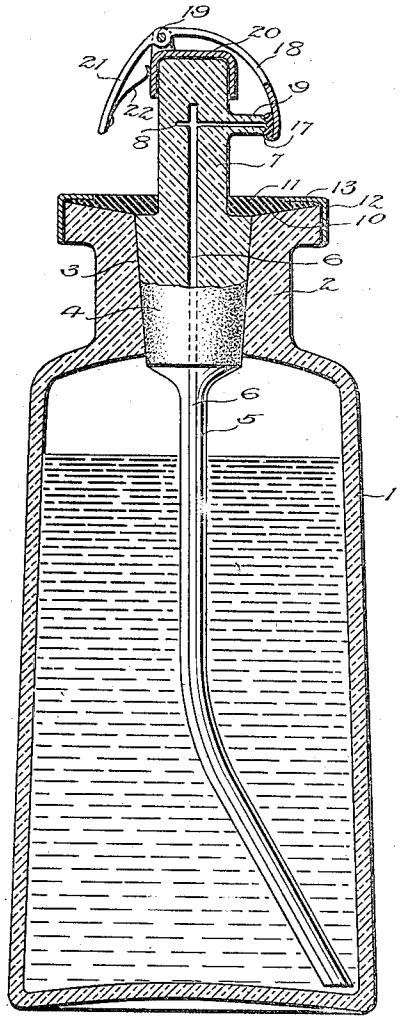
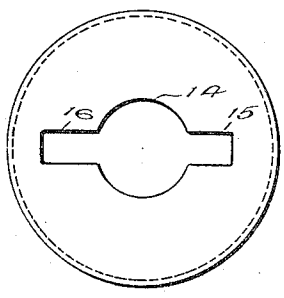


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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BOTTLE.

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To all whom it may concern:

Be it known that I, LEO TRUBEK a citizen of the United States, and a resident of Hasbrouck Heights, in the county of Bergen and State of New Jersey, have invented a new and Improved Bottle, of which the following is a full, clear, and exact description.

This invention relates to a bottle, and particularly to a type of bottle for containing any high-boiling material, such as perfume, and adapted to discharge the same therefrom under pressure through a capillary passage, which provides a very fine stream or spray of perfume.

An object of the invention is to provide a perfume bottle in which the perfume is discharged under pressure through a capillary passage, and which is adapted to having said pressure produced without the injection of gases, such as carbon dioxide, etc.

Another object of the invention is to provide a perfume bottle in which the perfume is discharged through the capillary passage in the stopper of the bottle, which is removable, so that the bottle can be filled through the neck and does not have to be filled through the capillary passage.

A further object is to provide a perfume bottle in which the regulation of flow of the perfume from the bottle is from without instead of within.

A still further object is to provide a perfume bottle which can be readily and thoroughly cleaned through a large opening in the top.

Another object is to provide a perfume bottle in which the capillary member can be removed and replaced in case of clogging so as to eliminate the necessity of having to use an entirely new bottle every time the capillary becomes clogged.

A further object is to provide a perfume bottle which can be filled through the neck to eliminate machine filling, which is not only expensive but is practically impossible where one machine must be used to fill bottles with different kinds of perfume.

A still further object is to provide an all-glass perfume bottle in which the capillary member can be removed and replaced so that the body of the bottle may be moulded, even though the capillary itself must be blown. A moulded bottle can always be made heavier, stronger, and more beautiful than a blown one.

The invention is illustrated in the drawings, of which—

Figure 1 is a vertical section taken through a bottle.

Fig. 2 is a plan view of the cap covering the neck of the bottle.

The form of the invention shown in the drawings is a preferred form, although it is understood that modifications in the construction and arrangement of the parts and in the character of the materials used may be adopted without departing from the spirit of the invention.

A preferred form of the invention is shown in the drawings enclosed and consists of a bottle of any desired shape, preferably made of glass, 1 having a neck portion 2 in which there is a tapered opening or filling passage 3 into which there fits a tapered stopper body portion 4 from the bottom of which a tube 5 depends to a point adjacent the bottom of the bottle. This tube is provided with a narrow passage 6 which extends and is continuous up through the body of the stopper to an extension 7 of the stopper. The passage 6 at this point is interrupted or traversed by a lateral capillary passage 8 to a nozzle portion 9 which may be formed or molded as part of the stopper, which is preferably made of glass. The top of the neck 2 is provided with a sort of shallow depression 10 into which any suitable sealing material such as 11 may be poured to seal the joint between the stopper 4 and the neck 2. A metal cap 12 having a horizontal flange 13 is slipped over the upper end of the neck 2 and is provided with a circular opening 14 from which two oppositely disposed slots 15 and 16 extend. These slots and the opening are of such size as to permit the cap to be lifted from the neck and removed from the bottom without removing from the extension 7 of the neck the fluid passage controlling elements hereinafter to be described.

These elements comprise a valve 17 of any

suitable material, preferably an insoluble material, mounted on the end of a lever arm 18 pivoted at 19 on a metallic cap 20 which can be slid over the stopper extension 7. A second lever arm 21 is connected and preferably is integrally formed with the arm 18 on the opposite side of the pivot point 19. A spring 22 extending between the end of the lever arm 21 and the cap 20 tends to hold the valve 17 against the end of the capillary lateral passage 8 until the lever arm 21 is depressed by the hand of the operator.

It must be noticed that the stopper 4, the extension 7, and the tube 5 are preferably made of one section of glass and that they can be readily removed from the bottle either to be repaired or replaced or to permit the bottle to be filled through the neck opening 3. By reason of the ready removal of the stopper, this bottle can be readily filled, thus eliminating the necessity for filling it by means of expensive filling machinery. Experience with filling machinery, especially for perfume, has convinced the applicant that it is impractical, because of the high pressures and vacuums generally necessary, which would tend to destroy the composition of the original mixture containing many volatile substances of different degrees of volatility, and would also necessitate the use of metal parts and fittings and of a compressor, all of which would eventually destroy the delicacy of the odor, especially where rare perfumes were being filled into the bottle. Furthermore, the cost would be prohibitive if the bottle had to be filled by machine for the waste would be enormous and a new filling outfit would have to be employed for each different odor. Experience has shown that it takes months of airing and washing to rid a machine and a compressor of an odor once employed.

The bottles must also be made of glass, because metal containers, no matter how clean, will in time destroy the delicacy of all the odors used. It must also be possible to recover the material in case the capillary should clog. This can be achieved merely by removing the stopper with its related parts. The control of the discharge of the perfume by means of a valve and valve-actuated mechanism located on the outside of the bottle is essential since—

(*a*) The clogging of the capillary due to loose particles on valve 17, Fig. 1, taking place outside, can more readily be opened up than a similar clogging on the inside.

(*b*) The stopping up of an exposed capillary due to atmospheric dust is entirely eliminated.

(*c*) The material between the valve and the outside end of the capillary is not wasted when the valve is opened and closed.

(*d*) Accumulation and resinification of perfume in the capillary passage is entirely eliminated.

Experience has taught that while only about 5% of capillaries will clog due to loose particles on a washer, as many as 35% will stop up due to dust blown around in the air, especially where the open end is not absolutely dry, as it would not be in the case of a perfume bottle.

It is common knowledge that perfumes resinify and get hard when exposed to the air and that most perfume mixtures contain some dissolved solids. Therefore, it is obvious that no perfume must be allowed to remain behind in the capillary where the opening of not over 0.25 millimeter would soon clog and render the entire bottle useless.

An outside valve mechanism as described is not adaptable to the injection of gases to produce pressure; but the use of gases is decidedly objectionable since they affect the nature and odor of the perfume, and another method for expelling the mixtures is employed.

By having the bottle provided with a generous filling opening and with a removable stopper to which the capillary is intimately connected it is possible for the bottle to be readily and thoroughly cleaned.

What I claim is:—

1. A perfume bottle which includes a body portion having a filling opening in the neck thereof, a stopper to be disposed in said opening, a tube dependent from the stopper within the bottle, said tube and stopper being provided with a continuous capillary passage, an extension on said stopper into which said passage extends, a nozzle on said extension, a lateral capillary passage in said nozzle extending to the first mentioned capillary passage, a valve for closing the end of the capillary passage on said nozzle, and means mounted on the extension for controlling the movement of said valve.

2. A perfume bottle which includes a body portion having a filling opening in the neck thereof, a stopper to be disposed in said opening, a tube dependent from the stopper within the bottle, said tube and stopper being provided with a continuous capillary passage, an extension on said stopper into which said passage extends, a nozzle on said extension, a lateral capillary passage in said nozzle extending to the first mentioned capillary passage, a valve for closing the end of the capillary passage on said nozzle, means mounted on the extension for controlling the movement of said valve, and means tending to hold said valve in its position against the end of the passage.

3. A perfume bottle which includes a neck having a filling aperture, a removable stopper disposed in said aperture having an

extension rising above the end of the neck, valve controlling means disposed on the end of said extension, sealing material to be disposed on the end of the neck around the stopper to seal the joint between the stopper and the neck, and a flanged cap of metal disposed on the neck and against the sealing material, said cap having an aperture of sufficient dimensions to permit the cap's removal from the neck without disturbing the stopper or the valve actuating mechanism mounted thereon.

LEO TRUBEK.