Sept. 29, 1970 J. L. RICHMOND ET AL 3,531,025

PERFUME DISPENSING DEVICES

Filed Oct. 17, 1968

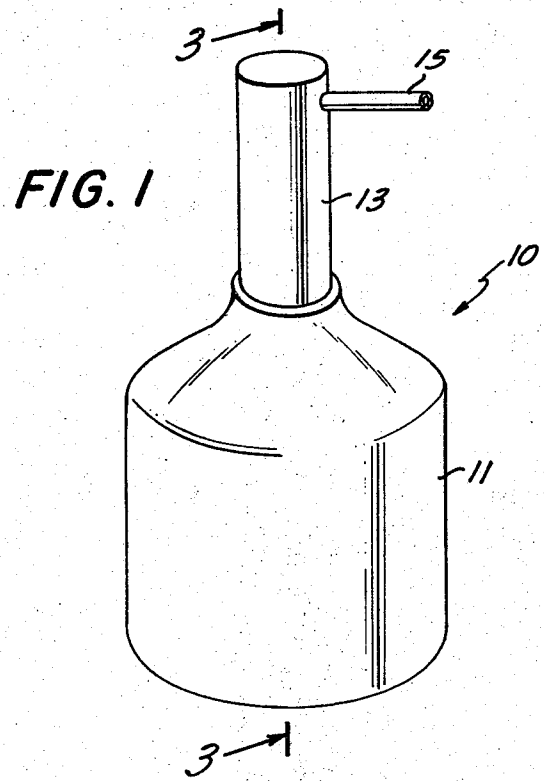


FIG. 1

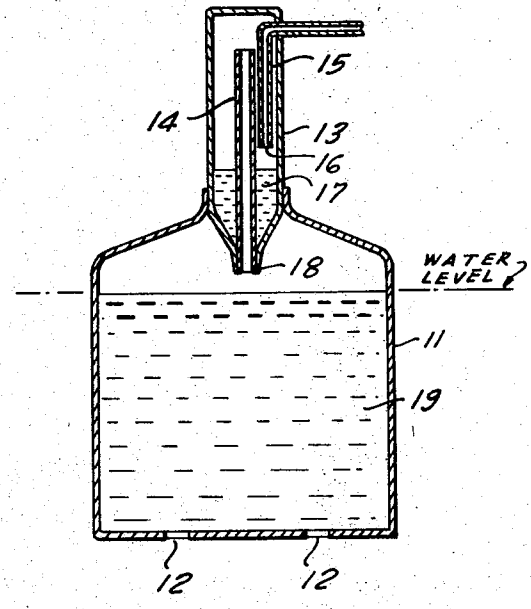


FIG. 3

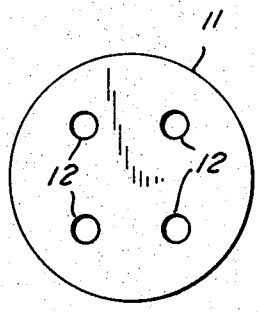


FIG. 2

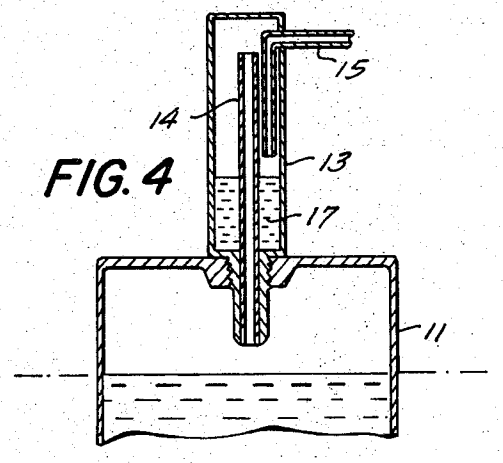


FIG. 4

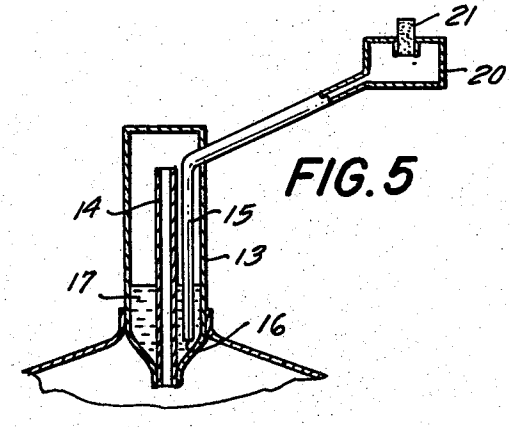


FIG. 5

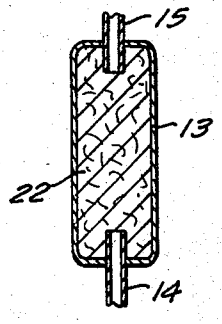


FIG. 6

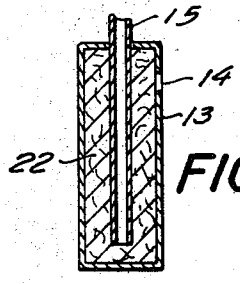


FIG. 7

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PERFUME DISPENSING DEVICES

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U.S. Cl. 222—187 8 Claims

ABSTRACT OF THE DISCLOSURE

An automatic toilet perfume dispensing device for dispensing perfume from flush tanks is formed of a container suspended in the tank and a tubular member, containing perfume, attached to the container. The entire assembly is suspended in the tank. The container has openings at its bottom so that the water from the tank may enter, and in so doing the water forces out the perfume from the tubular member.

BACKGROUND OF THE INVENTION

The present invention relates to perfume dispensing devices. It particularly relates to automatic toilet perfume dispensing devices for use in flush tanks.

Perfumes have been dispensed automatically from flush tanks through the use of mechanical devices which depend upon their functioning by connection to and from the operation of levers operating the flush valve. Examples of such devices are shown in U.S. Pats. Nos. 3,093,835, 2,716,243, 3,068,492, 3,182,337, and 3,143,745. All of these devices have moving parts and possess many drawbacks and disadvantages in their attachment and use.

SUMMARY OF THE INVENTION

It is the principal object of the present invention to provide an improved device for dispensing perfumes in lavatories. It is a further object of the present invention to provide an improved device for dispensing perfumes, which device is operated from the flush tank.

It is another object of the present invention to provide a device of the above nature which in its operation does not depend upon the movement of any part of the flushing mechanism. It is still another object of the present invention to provide a device of the above nature which does not, in its operation, depend on movable parts.

It is still another object of the present invention to provide a device of the nature indicated above which is readily installed in the flush tank.

These and other objects of the present invention will become apparent from a reading of the following description taken in conjunction with the accompanying drawings.

The present invention contemplates the provision of a container to which is attached a tubular member containing the perfume. The container may be of any desired shape and suitable size and can be constructed of any material which is insoluble in water. Preferably, the container is fabricated from glass or plastic. The container is suspended inside the flush tank by a suitable holding device which is attached to the side of the tank. The container is open at the top and its bottom contains one or more openings which permit the water from the flush tank to enter the container. Preferably, the size and number of holes should be such that drainage occurs in about 15 to 40 seconds.

The tubular member is attached to the top opening of the container. The tubular member has an inlet which is above the top level to which the water rises in the container.

The perfume is placed in the tubular member inside

of which there is a vapor outlet tube. The vapor outlet tube passes through the top or side portion of said member to the outside, and is desirably of smaller diameter than the inlet.

The entire unit may be of unitary construction, but preferably the tubular member is separate from the container and secured to it by attaching said member to an opening in the top or cap of the container.

The unit is held inside the flush tank by means of a clamp mounted on the wall of the flush tank at such height that the opening of the vapor outlet tube is outside the flush tank, and the water level in the tank is high enough to fill the container to a level just below the bottom opening of the air inlet. When the tank is flushed, the water level outside the container drops at a rapid rate, whereas the water inside the container drops more slowly, thus creating a partial vacuum inside both the container and tubular member. This causes the perfume to vaporize and fill both the tubular member and the container. As the water rises in both the tank and the container, this vapor is displaced by the water. The vapor is forced out of the container through the inlet and then into the room through the vapor outlet tube.

The clamp is so attached to both the wall of the tank, and the unit so constructed that the unit is held rigidly in a fixed position inside the tank so that changes in bouyancy of the unit, which would occur when the container is being emptied and filled, will not alter the fixed position of the unit.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an assembled device.

FIG. 2 is a bottom view of the container.

FIG. 3 is a sectional view of the device taken along the line 3—3 in FIG. 1.

FIG. 4 is a sectional view of a device showing separate units of the container and tubular member.

FIG. 5 is a sectional view of a modified tubular member.

FIG. 6 is a sectional view of another modified tubular member.

FIG. 7 is a sectional view of still another modified tubular member.

Referring to the drawings which illustrate preferred embodiments of the invention, reference numeral **10** generally designates the improved device formed of glass, plastic, or other suitable material.

The device **10** includes a container **11**, having openings **12** at the bottom, to which is attached a tubular member **13** which contains an inlet **14** extending thereinto, and a vapor outlet tube **15**, the bottom opening **16** of which is above the level of perfume **17** which has been placed in the tubular member. The vapor outlet tube passes through the side of the tubular member. The bottom opening **18** is above the top level of the water **19** in the container. The vapor outlet tube **15** may be separate from the tubular member **13** and secured thereto by threading or other suitable means. It may be so placed that it can be attached to or made part of the clamp which holds the entire unit **10** inside the flush tank.

The tubular member may also be a separate unit and threaded to the container, as shown in FIG. 4.

As shown in FIG. 5, the bottom opening **16** of the vapor outlet tube **15** may be below the level of the perfume **17** so that when the tank and container are filled with water the perfume passes through the vapor outlet tube into a reservoir **20** attached to the end of said outlet tube. The reservoir **20** contains a wick of absorbent material **21** which becomes saturated with the perfume. Once the perfume level drops below the bottom opening **16** of the vapor outlet tube the perfume returns from

the reservoir to the tubular member, and each time the tank is flushed the cycle is repeated giving the wick a fresh supply of perfume.

The perfume may also be impregnated on cotton or other suitable material, and the impregnated material **22** placed in the tubular member to present a large area for enabling efficient vaporizing of the perfume. The inlet **14** may be of length sufficient to reach the bottom of the impregnated material **22** and the vapor outlet tube is then placed above the top of the impregnated material. Instead of the construction just described, the inlet **14** may be placed so that it is above the top of the column of the impregnated material **22** and the vapor outlet tube passes through the length of the tubular member **13** to the bottom of said column.

While there have been described and illustrated numerous alterations, omissions and additions may be made without departing from the spirit thereof.

We claim:

1. A device for dispensing perfume from a flush tank, said device being suspended inside the flush tank, comprising a container having one or more openings in its bottom portion, a closed member, holding perfume, secured to said container, an inlet in said member providing an opening into the container, and a vapor outlet means projecting from inside said member and extending outside thereof, said device being suspended in the flush tank to such level that the water level inside the container is below the opening of the member.

2. A device according to claim **1** wherein the inlet is a tube extending into the bottom of the member to form a reservoir for the perfume.

3. A device according to claim **1** wherein the container and member are of integral construction.

4. A device according to claim **1**, wherein a portion of the vapor outlet means that is outside the member extends outside the flush tank.

5. A device according to claim **1**, wherein the end of the vapor outlet means inside the member is above the level of the perfume in said member.

6. A device according to claim **4**, wherein the vapor outlet means is a tube and the end thereof is inside the member and below the level of the perfume and there is attached to the end of said vapor outlet tube outside the member a reservoir containing a wick for absorbing the perfume.

7. A device according to claim **1**, wherein the internal diameter of the inlet is greater than the internal diameter of the vapor outlet means.

8. A device according to claim **1**, wherein a material saturated with perfume is placed in the member, said material providing a large area for enabling efficient vaporizing of the perfume.

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U.S. Cl. X.R.

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