(51) International Patent Classification: B05B 11/00,
A61L 9/14, B65D 83/14

(21) International Application Number: PCT/GB01/04614

(22) International Filing Date: 16 October 2001 (16.10.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0026229.5 26 October 2000 (26.10.2000) GB

(71) Applicant and
Inventor: PATEL, Abdul, Ebrahim [GB/GB], 189
Plashet Grove, Eastham, London E6 1BX (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK,
SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,
ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian

(54) Title: FLUID SOAP AND AIR FRESHENER DISPENSER

(57) Abstract: A fluid soap container (10, 20, 40 and 51) comprising of a dispensing
pump (13, 23, 33 and 49) which incorporates a pressurised air freshener canister
(11, 35, 46 and 53) or a liquid air freshener container (21). When a dispensing pump
(13, 23, 33 and 49) is depressed it also activates the valve of a pressurised air freshen
ner canister (11, 35, 46, 53) or a liquid air freshener container (21) to refresh the
air whilst at the same time dispensing the liquid or gel soap. A method is shown to
selectively prevent the operation of the air freshener valve when the dispensing pump
(13, 23, 33 and 49) is operated to dispense fluid soap.
ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

— of inventorship (Rule 4.17(iv)) for US only

Published:
— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
FLUID SOAP AND AIR FRESHENER DISPENSER

This invention relates to a fluid soap and air freshener dispenser.

Fluid soap dispensers and air freshener dispensers on their own are well known. A fluid soap comprises of soap in a container usually made of HDPE, PVC, PET or other plastic material. The container has a dispensing pump which is screwed on to the neck of the container which when depressed dispenses the soap in the container.

Air freshener come in many forms and designs but technically all perform the same task i.e. to make a confined space e.g. a toilet, bathroom, kitchen etc smell more pleasant by neutralising an offensive odour and replacing it with a pleasant odour. Air fresheners come in a solid gel, liquid, or pressurised gas canister.

Providing separate systems for washing hands and deodorising a room at this moment in time is relatively expensive as a consumer has to purchase both separately. Moreover the use of an air freshener in the gas canister or a liquid form become active only when a person physically takes the canister in his hand and sprays the room. In the liquid airfreshener system a person has to pour the liquid perfume on to an absorbent material or pot pourri.

Both of these acts are by human nature forgetful especially in a bathroom, toilet, kitchen, commercial or public environment. A person is almost certain to wash his hands after using the toilet or after cooking in a kitchen and it is this habit that is being utilised to create the invention.

The object of this invention is to provide a product which combines both features in one by using our human habit of washing hands to activate an air freshener with the use of a dispensing pump. This system provides advantages in cost and effective use of an air freshener as this invention automatically dispenses not only the liquid soap but also activates an air freshener. This invention also fills a gap in the market as at present both products have to be purchased separately. This invention is of particular use in a toilet situation where washing hands with an antibacterial soap and deodorising the toilet can be achieved in one simple step.
The volume of dispensation of the liquid soap may correspond to the volume of dispensation of the air freshener so that when the liquid soap has emptied out so too has the air freshener.

Though reference is being made to fluid soap in the description, title, and abstract the scope of the invention also includes soaps that are essentially liquid but for thickeners and/or gelling agents that are incorporated in the soap formulation to make the soap a gel or semi liquid/gel soap. The scope of the invention is thus not limited to soaps in liquid or gel form. Any fluid form of soap may be used.

Further though reference is being made to gas and liquid air fresheners in this description, a useful feature in this concept is the incorporation of a solid or gel air freshener as well within the apparatus described herein. This method allows a complete product in that the solid/gel air freshener will have continuous fragrance action whilst the gas or liquid air freshener will give a burst of air freshener when soap is dispensed.

Yet another feature within the scope of this invention is a method to disengage, disconnect, or remove the dispensation of air freshener when the dispensation of soap is activated. This feature is helpful in that it gives a user a choice whether or not to activate the dispensation of air freshener when the soap dispensing pump is activated. This avoids wastage of air freshener when a user might feel he does not need it. A further advantage of this feature is that it makes the apparatus in the invention more marketable.

The uses of this product will not only be limited to domestic households but would be of effective use in commercial and public premises e.g. office buildings, public toilets, hotels etc. As well as potential uses in all modes of transport e.g. Aeroplanes, trains, ships etc.

Preferred embodiments of the invention will now be described, by way of example, using a domestic type of dispensing pump though the concept as it applies to a commercial type dispensing pump is the same. References to the accompanying drawings are made in which:
Fig 1. shows a side view of a liquid soap container with dispensing pump and a pressurised canister of air freshener incorporated along the side wall of the liquid soap container and air vent casing.

Fig 2. shows a plan view of the liquid soap container of fig 1 to demonstrate how the pressurised canister is incorporated within the liquid soap container and the air vent casing.

Fig 3. shows the same view as Fig 1 with the dispensing pump being in a depressed position that allows the liquid soap to be dispensed from the pump. At the same time the lever is adapted so that the dispensing pump activates the pressurised canister valve releasing the air freshener within the air vent casing.

Fig 4. shows the same view as fig 1, once dispensing pump is no longer depressed the air freshener canister too is no longer activated. Both systems work simultaneously.

Fig 5. illustrates a similar example as in fig 1 except that this is adapted to a liquid air freshener system.

Fig 6. illustrates the same as fig 5 but with the liquid air freshener being dispensed and subsequently absorbed by an absorbent material that helps to evaporate the air freshener.

Fig 7. shows the same view as fig 5 with the pump released

Fig 8. shows an enlarged view of the mechanisms involved in activating the liquid air freshener system.

Fig 9. Shows a different embodiment of the invention. Here a commercial soap and air freshener system is described.

Fig 10. Shows a different embodiment of the invention. Here a different shaped container is more aesthetic.

Fig 11. shows a different embodiment of the invention. Here the invention shows a lever is not needed to dispense air freshener.

Fig 12. shows a different embodiment of the invention. Here a method to selectively prevent operation of the valve to release air freshener when the pump is operated is shown.
Fig 13. shows the same view as fig 12. Here the selective operation of the valve to release air freshener is activated when the pump is operated.

Fig 14. shows another embodiment of the invention. Here a solid air freshener is incorporated to work along with a gas or liquid air freshener.

**GAS CANISTER SYSTEM**

Referring to the drawing in fig 1 the liquid soap container 10, has been specially designed to accommodate the air freshener canister 11, which sits along side the air vent casing 12. The dispensing pump 13 has a lever 14 that activates the valve of the gas air freshener canister 11.

Referring to the drawing in fig 2 the gas air freshener is held laterally within the liquid soap container by a vertical notch 15.

Referring to fig 3 the lever 14 has now depressed the gas canister which activates is valve and sprays from its pin hole 16 within the air vent casing that is fully formed i.e. without air vents at that position to prevent spraying on to the walls or directly into the atmosphere. Below the position of the spray pin hole 16 are air vents 17 for the air freshener vapour 18 to escape through into the atmosphere.

At the bottom of the gas canister is an absorbent material 19 which absorbs any further vapour that has not escaped through the air vents 17.

Referring to the drawing in fig 4 once the dispensing pump 13 is no longer depressed a spring within the dispensing pump pushes it upwards and thereby simultaneously deactivates the valve of the gas canister. The system is now ready for a second application.
LIQUID AIR FRESHENER SYSTEM

Referring to the drawing in fig 5 the liquid soap container 20 has been especially designed to accommodate the liquid air freshener container 21 which sits snugly in between the liquid soap container 20 and the air vent casing 22. The dispensing pump 23 has a lever 24 that when depressed activates the valve of the liquid air freshener container 21.

Referring to the drawing in fig 6,7, and 8 the liquid air freshener slides up and down vertically up to a notch 25 on the liquid soap container 20 and a corresponding notch 26 on the air vent casing 22. The dispensing pump 23 when depressed also pushes an adapted lever 24 vertically downwards which then activates the liquid air freshener valve to spray directly on to an absorbent material 27. The liquid air freshener droplets now on the absorbent material evaporates through the air vents 28.

Referring to the drawing in fig 8 the liquid air freshener is dispensed by means of the notches 25 and 26 pressing on to a releasing ring 29 via a spring 30 that activates the air freshener valve and sprays on to an absorbent material. The spring 30 is located at the neck of the liquid air freshener container 21 and sits between the notches 25 and 26 and the shoulder of the liquid air freshener container. The function of the releasing ring 29 is to activate the valve of the liquid air freshener container as it is pressed downwards on to the notches 25 and 26.

The function of the spring 30 is to bring back the liquid air freshener container to its normal resting position and thereby deactivate the valve from releasing any further liquid air freshener. This mechanism will work simultaneously with the up and down movement of the dispensing pump.

OTHER EMBODIMENTS

Fig 9 shows in this method the supply of soap 31 is filled in its container 32, the supply of soap is dispensed by means of dispensing pump 33 by manually pushing its dispensing handle 34. This action puts pressure on the air freshener container 35 by means of disc 36. This in turn will activate the air freshener valve 37 which dispenses the air freshener 39. The released air
freshener will now escape through rented holes 32. Any excess air freshener that does not escape will be absorbed by an absorbent material 41.

Fig. 10. Shows the concept being applied to different shape of container 42. Here the diagram shows the invention in action. Soap 43 is dispensed by depressing the pump which in turn releases air freshener 44 from its valve 45. The air freshener container 46 sits within the vented casing 47. Any excess vapour is absorbed by absorbent material 48.

Fig 11. Shows the invention does not necessarily used a lever to activate the air freshener. Here the action of depressing the pump 49 causes the dispensation of soap 50 contained in its container 51. The action of depressing the pump will put pressure on the valve of the air freshener container 52, there by releasing air freshener within its vented casing 53.

Fig. 12 Shows a method that enables the disconnection of the supply of air freshener when the supply of soap is activated. Here an additional stopper 54 is placed within the lever. When the disc 55 is aligned to face the lever, the air freshener is disconnected as depressing the soap pump will not allow the lever to travel further down to press directly or indirectly against the valve of the air freshener. Soap will be dispensed without the air freshener.

Fig 13 shows if the disc is rotated away from the lever this will now allow the lever to travel fully to press directly or indirectly against the valve of the air freshener thereby activating the dispensation of the air freshener.

Fig 14 shows the incorporation of a solid or gel air freshener 56 with a gas canister airfreshener so that the two systems of air freshener complement each other. The solid/gel air freshener will have continuos fragrance action whilst the gas or liquid air freshener will give a burst of air freshener when dispensing pump for soap is activated.
CLAIMS

1. Apparatus comprising a container for fluid soap, a user operable pump for dispensing fluid soap from the container therefor, and a container for air freshener comprising a valve operable to release air freshener from the container therefor, the apparatus being arranged such that operation of the pump to dispense fluid soap causes operation of the valve to release air freshener.

2. Apparatus as in claim 1 further comprising a vented casing into which air freshener is released from the container for air freshener, and from which released air freshener can escape into the atmosphere.

3. Apparatus as in claim 2, wherein the container for air freshener is accommodated within the casing.

4. Apparatus as in claimed in either claim 2 or 3, wherein the container for air freshener is slidably mounted relative to the casing and/or container for fluid soap.

5. Apparatus as claimed in claim 4, wherein the container for fluid soap comprises notches to arrest sliding movement of the container for air freshener.

6. Apparatus as claimed in any of claims 2 to 5, wherein the casing is arranged to prevent spraying of air freshener directly into the atmosphere.

7. Apparatus as claimed in any preceding claim comprising a material to absorb excess air freshener.

8. Apparatus as in claim 7, when dependant, directly or indirectly, upon any of claims 2 to 6, wherein the absorbent material sits in a cavity between the container of liquid soap and the casing.

9. Apparatus as claimed in any preceding claim, wherein the container for air freshener is a pressurised gas canister.

10. Apparatus as claimed in any preceding claim, wherein the container for air freshener is liquid air freshener container.

11. Apparatus as claimed in any preceding claim, wherein the container for fluid soap is a liquid soap or gel soap container.
12. Apparatus as claimed in any preceding claim comprising a release ring operative to operate the valve of the container for air freshener when the pump is operated.

13. Apparatus as claimed in any preceding claim comprising a spring operative to close the valve of the air freshener container.

14. Apparatus as claimed in any preceding claim, wherein the size of the containers for liquid soap and for air freshener and the volume of soap and air freshener dispensed when the pump is operated are selected so that when the container for liquid soap has emptied so too has the container for air freshener.

15. Apparatus as claimed in any preceding claim, wherein the pump comprises a lever operative to operate the valve for the container for air freshener.

16. Apparatus as claimed in any preceding claim, wherein the container for air freshener is accommodated within or adjacent to the container for liquid soap.

17. Apparatus as claimed in any preceding claim comprising means to selectively prevent operation of the valve to release air freshener when the pump is operated.

18. Apparatus as claimed in any preceding claim comprising a solid or gel air freshener to work in combination with a gas and/or liquid air freshener.

19. Apparatus substantially as herein described with reference to any one or more of the figures of the accompanying drawings.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B05B11/00 A61L9/14 B65D83/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B05B B65D A61L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

I electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document with Indication, where appropriate of the relevant passages</th>
<th>Relevant to claim No</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 4 711 375 A (BUZZI CARLO A ET AL) 8 December 1987 (1987-12-08) column 1, line 55 - line 65; figure 1</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>US 6 062 425 A (BROWN DOUGLAS S ET AL) 16 May 2000 (2000-05-16) column 6, line 40 - line 45 column 6, line 40 - column 7, line 17; figures 1,2,7</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>EP 0 313 414 A (PORTAS ABELARDO ANTONIO) 26 April 1989 (1989-04-26) column 4, line 58 -column 5, line 5; figure 1</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>US 4 084 732 A (DEARLING HARRY S) 18 April 1978 (1978-04-18) column 1, line 33 - line 42; figure 1</td>
<td>1</td>
</tr>
</tbody>
</table>

☐ Further documents are listed in the continuation of box C ☑ Patent family members are listed in annex

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubt on priority claims or which is cited to establish the publication date of another citation or other special reason (see specification)
- *O* document referring to an oral disclosure, e.g., exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

Date of actual completion of the international search 25 January 2002

Date of mailing of the international search report 04/02/2002

Name and mailing address of the ISA
European Patent Office P B 5818 Patentamt Z NL - 228021 TV Hague
Tel 1132-720 340 20 FAX 1132-720 340 20

Authorized officer Jelencic, D
### INTERNATIONAL SEARCH REPORT

<table>
<thead>
<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 4711375 A</td>
<td>08-12-1987</td>
<td>CH 666623 A5</td>
<td>15-08-1988</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AT 40294 T</td>
<td>15-02-1989</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CA 1262520 A1</td>
<td>31-10-1989</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DE 3661881 D1</td>
<td>02-03-1989</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0206982 A1</td>
<td>30-12-1986</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ES 555008 D0</td>
<td>01-09-1987</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ES 8707867 A1</td>
<td>16-11-1987</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 4802480 A</td>
<td>07-02-1989</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 4936487 A</td>
<td>26-06-1990</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 5595324 A</td>
<td>21-01-1997</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 5379917 A</td>
<td>10-01-1995</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 6355794 A</td>
<td>26-09-1994</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CA 2107744 A1</td>
<td>02-09-1994</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0686130 A1</td>
<td>13-12-1995</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WO 9420407 A1</td>
<td>15-09-1994</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 2581488 A</td>
<td>31-05-1990</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BR 8805445 A</td>
<td>27-06-1989</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IL 88127 A</td>
<td>14-01-1993</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 2015001 A</td>
<td>18-01-1990</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MX 169941 B</td>
<td>02-08-1993</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 5005736 A</td>
<td>09-04-1991</td>
</tr>
</tbody>
</table>

---

US 4084732 A                          | 18-04-1978       | NONE                     |