

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 107 921 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:

09.04.2003 Bulletin 2003/15

(21) Application number: **99941760.3**

(22) Date of filing: **26.08.1999**

(51) Int Cl.7: **B65D 83/16**

(86) International application number:
PCT/GB99/02818

(87) International publication number:
WO 00/012412 (09.03.2000 Gazette 2000/10)

(54) **MOUSSE DIFFUSER FOR AEROSOL CONTAINER**

SPRÜHKOPF ZUR AUSGABE VON SCHAUM AUS EINEM AEROSOLBEHÄLTER

DIFFUSEUR DE MOUSSE POUR GENERATEUR D'AEROSOL

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**

(30) Priority: **26.08.1998 GB 9818632**

(43) Date of publication of application:
20.06.2001 Bulletin 2001/25

(73) Proprietor: **Betts UK Limited**
Colchester, Essex CO4 4HE (GB)

(72) Inventor: **BEADLE, Simone**
Bildeston Suffolk IP7 7EA (GB)

(74) Representative: **Alexander, Thomas Bruce et al**
BOULT WADE TENNANT,
Verulam Gardens
70 Gray's Inn Road
London WC1X 8BT (GB)

(56) References cited:
EP-A- 0 081 022 EP-A- 0 452 208
WO-A-94/27890 FR-A- 2 588 490
FR-A- 2 692 231

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 1 107 921 B1

Description

[0001] The present invention relates to mousse diffusers which are generally used in combination with an aerosol container.

[0002] Mousse diffusers are used in combination with aerosol containers which store materials such as conditioners, gels, shaving and cleansing foams etc. under pressure. The contents of the container are dispensed through an outlet valve which is resiliently biased into a closed condition. The diffuser generally slows down the delivery from the aerosol container giving time for a mousse or foam to develop. The foam then exits the diffuser through an opening which is sometimes formed as a grill or grid with the foam being dispensed through the apertures in the grill. The grill again helps slow down the delivery of the mousse and helps the mousse to form. The mousse diffuser is a relatively complex component comprising a body which may clip onto the aerosol container, a button for operating the aerosol outlet valve and which may include a chamber into which the mousse is initially discharged, and an opening which is generally formed with a grill or grid, or other baffle means which further helps the generation of the mousse.

[0003] The body and button are injection moulded as a single plastics component with the button hinged to the body, the dispensing grill being moulded integrally with the button.

[0004] Document FR-A-2 588 490, on which the preamble of claim 1 is based, discloses a mousse diffuser having a connecting element between the diffuser body and the aerosol container valve.

[0005] The present invention provides a simplified diffuser construction which is easier to mould.

[0006] According to the present invention there is provided a mousse diffuser comprising a body for attachment to an aerosol container, a valve button hinged to the body and moveable to operate the aerosol container outlet valve, and having a chamber into which the contents of the aerosol are discharged, the chamber having an opening through which said contents are dispensed, wherein the opening is covered by a grill securable in place over the opening, characterised in that the diffuser is formed as a single plastics moulding with the grill hinged to the valve button and the valve button hinged to the body.

[0007] Preferably the grill is secured in place by a simple snap fit connection with the body, located on the opposite side of the opening to the hinge, the grill having a detent as its edge margin which is a snap-fit with a bead or other projection formed on the body adjacent the opening.

[0008] Another aspect of the invention provides a method of manufacture of a mousse diffuser having a body for attachment to an aerosol container having an outlet valve, a valve button for operating the aerosol container outlet valve, and an internal chamber into which the contents of the aerosol are discharged, the

chamber having an opening covered by a grill through which the contents are dispensed, characterised in that the body, button and grill are formed as a single plastics moulding with the grill being hinged to the button which is also hinged to the body, the diffuser being moulded with the grill in an open condition.

[0009] The invention will hereinafter be described by way of example and with reference to the accompanying drawings in which:-

Fig. 1 is a isometric view of a mousse diffuser according to the invention, ready for use;

Fig. 2 is a vertical section through the diffuser shown in Fig 1;

Fig. 3 is a top plan view of the mousse diffuser shown in Fig 1; and

Fig. 4 is an isometric view of the diffuser in Fig 1 in the as-moulded condition.

[0010] With reference to Figs 1 to 3 of the drawings there is shown a mousse diffuser 11 comprising a body 12 and a valve operating button 13. The body 12 has a substantially frustoconical sidewall 14 with a larger diameter base portion 15 which will fit over the rim of an aerosol container (not shown). The base portion 15 has inwardly facing bead 16 on its inner wall surface for securing the diffuser in place on the container (not shown).

[0011] The button 13 has a stepped bore 17 which receives the outlet valve (not shown) of the aerosol container, and an internal chamber 18 which receives the mousse discharged under pressure from the aerosol outlet valve, via an orifice 19 connected to the bore 17. The chamber 18 has an opening 21 which in use is covered by a grill or grid 22. The button 13 is hinged to the base 12 by an integral plastics hinge 30 located at the front of the button below the opening 21. The button 13 is depressed to operate the outlet valve by pushing down onto rear portion 23 having raised ribs 24 thereon to act as a thumb or finger pad. The button 13 pivots about the hinge 30 to push down the valve (not shown) and allows the contents of the aerosol to discharge from the container.

[0012] The grill 22 is connected to the button 13 by a hinge 31 at its upper edge and in the closed condition has a snap fit connection with a detent 32 on the opposite side of the opening 21. Detent 32 is formed in the external surface of the wall surrounding the opening 21 and the grill has a tab 33 formed thereon having a hook 34 which engages the detent 32, when the grill is in a closed condition.

[0013] The mousse diffuser is formed by injecting moulding and is moulded with the grill in the open condition as shown in Fig 4 and then snapped closed. The diffuser is moulded as a single component from a polyolefinic material preferably polypropylene, or high den-

sity polyethylene.

Claims

1. A mousse diffuser (11) comprising a body (12) for attachment to an aerosol container having an outlet valve, a valve button (13) moveable to operate the outlet valve and having a chamber (18) into which the contents of the aerosol are discharged, the chamber (18) having an opening (21) through which said contents are dispensed, wherein the opening (21) is covered by a grill (22) securable in place over the opening (21), **characterised in that** the diffuser (11) is formed as a single plastics moulding with the grill (22) hinged to the valve button (13) and the valve button hinged to the body (12). 5
2. A mousse diffuser as claimed in claim 1, wherein the grill (22) is secured in place by a snap-fit connection with the body. 10
3. A mousse diffuser as claimed in claim 2, wherein the snap-fit connection is located opposite the hinge. 15
4. A mousse diffuser as claimed in claim 1 or claim 2 wherein the grill has a detent (32) located on an edge margin thereof which makes a snap fit connection with a bead or other projection formed on the body adjacent the opening. 20
5. A mousse diffuser as claimed in any one of the preceding claims wherein the diffuser is formed by injection moulding. 25
6. A mousse diffuser as claimed in any one of the preceding claims wherein the diffuser consists of a polyolefinic material. 30
7. A mousse diffuser as claimed in claim 6 wherein the polyolefinic material consists of polypropylene. 35
8. A mousse diffuser as claimed in claim 6 wherein the polyolefinic material consists of high density polyethylene. 40
9. A method of manufacture of a mousse diffuser (11) having a body (12) for attachment to an aerosol container, a valve button (13) for operating the aerosol container outlet valve, and an internal chamber (18) into which the contents of the aerosol are discharged, the chamber (18) having an opening (21) covered by a grill (22) through which the contents are dispensed, **characterised in that** the body (12), button (13) and grill (22) are formed as a single plastics moulding with the grill (22) being hinged to the button (13) which is also hinged to the body (12), 45

the diffuser (11) being moulded with the grill (22) in an open condition.

10. A method as claimed in claim 9 wherein the grill (22) is put into a closed condition covering the opening (21) before the diffuser (11) is assembled to the aerosol container. 50
11. A method of manufacture as claimed in claim 9 or claim 10 wherein the single plastics moulding is formed by injection moulding. 55
12. A method of manufacture as claimed in any one of claims 9 to claim 11 wherein the single plastics moulding consists of a polyolefinic material.
13. A method of manufacture as claimed in claim 12 wherein the polyolefinic material consists of polypropylene.
14. A method of manufacture as claimed in claim 12 wherein the polyolefinic material consists of high density polyethylene.

Patentansprüche

1. Cremediffusor (11), umfassend einen Körper (12) zum Anbringen an einem ein Auslassventil aufweisenden Aerosolbehälter, einen Ventilknopf (13), der zum Betätigen des Auslassventils bewegbar ist und eine Kammer (18) aufweist, in die die Inhaltsstoffe des Aerosols entladen werden, wobei die Kammer (18) eine Öffnung (21) aufweist, durch die die Inhaltsstoffe ausgegeben werden, worin die Öffnung (21) durch einen Rost (22) abgedeckt ist, der am Ort über der Öffnung (21) sicherbar ist, **dadurch gekennzeichnet, dass** der Diffusor (11) als einzelner Kunststoffformling ausgebildet ist, wobei der Rost (22) an dem Ventilknopf (13) angelenkt ist und der Ventilknopf an dem Körper (12) angelenkt ist.
2. Cremediffusor (11) nach Anspruch 1, worin der Rost (22) durch Schnappsitzverbindung mit dem Körper (12) am Ort gesichert ist.
3. Cremediffusor (11) nach Anspruch 2, worin die Schnappsitzverbindung gegenüber dem Gelenk (31) angeordnet ist.
4. Cremediffusor (11) nach Anspruch 1 oder Anspruch 2, worin der Rost (22) eine an seinem Außenrand angeordnete Raste (34) aufweist, die eine Schnappsitzverbindung mit einem Wulst (32) oder einem anderen Vorsprung herstellt, der an dem Körper (12) neben der Öffnung (21) ausgebildet ist.
5. Cremediffusor (11) nach einem der vorhergehenden

den Ansprüche, worin der Diffusor (11) durch Spritzguss gebildet ist.

6. Cremediffusor (11) nach einem der vorhergehenden Ansprüche, worin der Diffusor (11) aus polyolefinischem Material besteht. 5
7. Cremediffusor (11) nach Anspruch 6, worin das polyolefinische Material aus Polypropylen besteht. 10
8. Cremediffusor (11) nach Anspruch 6, worin das polyolefinische Material aus hochdichtem Polyethylen besteht.
9. Verfahren der Herstellung eines Cremediffusors (11), der einen Körper (12) zum Anbringen an einem Aerosolbehälter aufweist, einen Ventilknopf (13) zur Betätigung des Aerosolbehälter-Auslassventils sowie eine Innenkammer (18), in die die Inhaltsstoffe des Aerosols entladen werden, wobei die Kammer (18) eine Öffnung (21) aufweist, die durch einen Rost (22) abgedeckt ist, durch den die Inhaltsstoffe ausgegeben werden, **dadurch gekennzeichnet, dass** der Körper (12), der Knopf (13) und der Rost (22) als einzelner Kunststoffformling ausgebildet sind, wobei der Rost (22) an dem Knopf (13) angelenkt ist, der auch an dem Körper (12) angelenkt ist, wobei der Diffusor (11) mit dem Rost (22) in einem offenen Zustand geformt wird. 15 20 25 30
10. Verfahren nach Anspruch 9, worin der Rost (22) in einen geschlossenen Zustand versetzt wird, der die Öffnung (21) abdeckt, bevor der Diffusor (11) an dem Aerosolbehälter angebracht wird. 35
11. Verfahren der Herstellung nach Anspruch 9 oder Anspruch 10, worin der einzelne Kunststoffformling durch Spritzguss gebildet wird.
12. Verfahren der Herstellung nach einem der Ansprüche 9 bis Anspruch 11, worin der einzelne Kunststoffformling aus polyolefinischem Material besteht. 40
13. Verfahren der Herstellung nach Anspruch 12, worin das polyolefinische Material aus Polypropylen besteht. 45
14. Verfahren der Herstellung nach Anspruch 12, worin das polyolefinische Material aus hochdichtem Polyethylen besteht. 50

Revendications

1. Diffuseur (11) de mousse comportant un corps (12) destiné à être relié à un récipient pour aérosol ayant une valve de sortie, un bouton presse de valve (13) mobile pour actionner la valve de sortie et ayant une 55

chambre (18) dans laquelle le contenu de l'aérosol est déchargé, la chambre (18) ayant une ouverture (21) à travers laquelle ledit contenu est distribué, dans lequel l'ouverture (21) est recouverte d'une grille (22) pouvant être fixée en place au-dessus de l'ouverture (21), **caractérisé en ce que** le diffuseur (11) est formé en une seule pièce moulée en matière plastique avec la grille (22) articulée sur le bouton de valve (13) et le bouton de valve articulé sur le corps (12).

2. Diffuseur (11) de mousse selon la revendication 1, dans lequel la grille (22) est fixée en place par une liaison par encliquetage avec le corps (12).
3. Diffuseur (11) de mousse selon la revendication 2, dans lequel la liaison par encliquetage est placée de façon à être opposée à la charnière.
4. Diffuseur (11) de mousse selon la revendication 1 ou la revendication 2, dans lequel la grille (22) comporte un organe d'arrêt (32) placé sur un bord marginal de cette grille qui réalise une liaison par encliquetage avec un bourrelet (32) ou une autre saillie formée sur le corps (12) à proximité immédiate de l'ouverture (21).
5. Diffuseur (11) de mousse selon l'une quelconque des revendications précédentes, dans lequel le diffuseur (11) est formé par moulage par injection.
6. Diffuseur (11) de mousse selon l'une quelconque des revendications précédentes, dans lequel le diffuseur (11) est constitué d'une matière polyoléfinique.
7. Diffuseur (11) de mousse selon la revendication 6, dans lequel la matière polyoléfinique consiste en du polypropylène.
8. Diffuseur (11) de mousse selon la revendication 6, dans lequel la matière polyoléfinique consiste en du polyéthylène à haute densité.
9. Procédé de fabrication d'un diffuseur (11) de mousse ayant un corps (12) destiné à être relié à un récipient pour aérosol, un bouton de valve (13) pour manoeuvrer la valve de sortie du récipient pour aérosol, et une chambre intérieure (18) dans laquelle le contenu de l'aérosol est déchargé, la chambre (18) ayant une ouverture (21) recouverte par une grille (22) à travers laquelle le contenu est distribué, **caractérisé en ce que** le corps (12), le bouton (13) et la grille (22) sont formés en une seule pièce moulée en matière plastique, la grille (22) étant articulée sur le bouton (32) qui est également articulé sur le corps (12), le diffuseur (11) étant moulé avec la grille (22) dans un état ouvert.

10. Procédé selon la revendication 9, dans lequel la grille (22) est placée dans un état fermé recouvrant l'ouverture (21) avant que le diffuseur (11) soit monté sur le récipient pour aérosol.

5

11. Procédé de fabrication selon la revendication 9 ou la revendication 10, dans lequel la pièce unique moulée en matière plastique est formée par moulage par injection.

10

12. Procédé de fabrication selon l'une quelconque de la revendication 9 à la revendication 11, dans lequel la pièce unique moulée en matière plastique consiste en une matière polyoléfinique.

15

13. Procédé de fabrication selon la revendication 12, dans lequel la matière polyoléfinique consiste en du polypropylène.

14. Procédé de fabrication selon la revendication 12, dans lequel la matière polyoléfinique consiste en du polyéthylène à haute densité.

20

25

30

35

40

45

50

55

