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A5G GV

(56) Documents cited
US 4944455 A US 4372490 A US 4154398 A

(58) Field of search
UK CL (Edition K) A5G GV
INT CL⁵ A61L

(54) Air freshener container assembly

(57) An assembly for containing a fragrance or an air freshener comprises two hemispherical shell halves 4, 5 which together form a ball. Each shell half has a plurality of teeth 8, 9 extending therefrom and means on the teeth to provide a snap fitting so that the two halves can be rotated one relative to the other. The teeth are positioned on each half shell and shaped so that on rotation of one half relative to the other, apertures are formed between the teeth on one shell and those on the other to allow emission of a fragrance absorbed in a pad positioned within one of the shells.

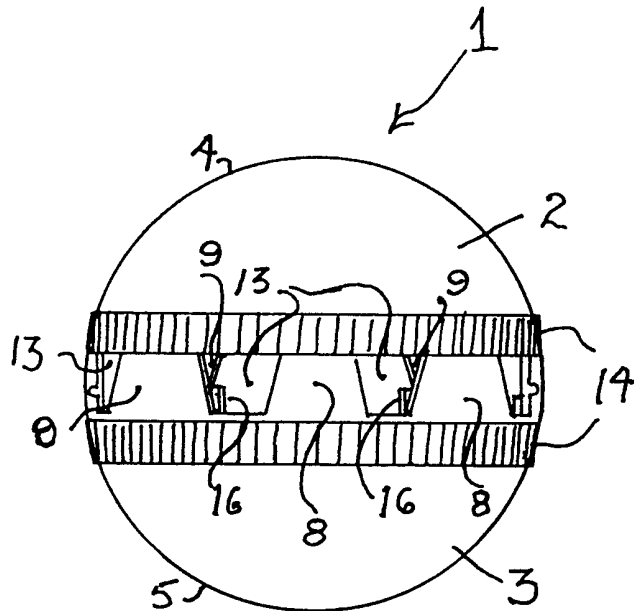


Fig 1

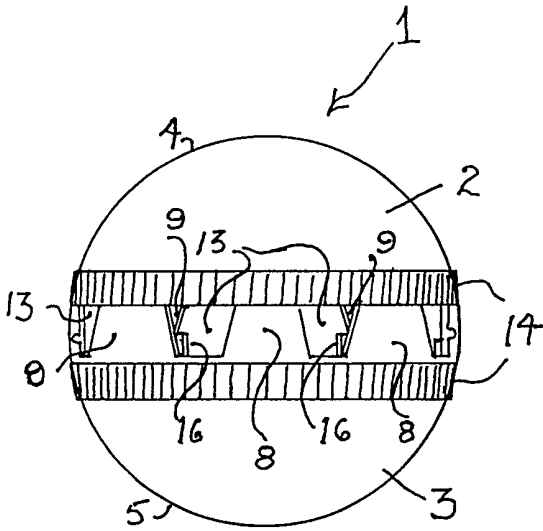


Fig 1

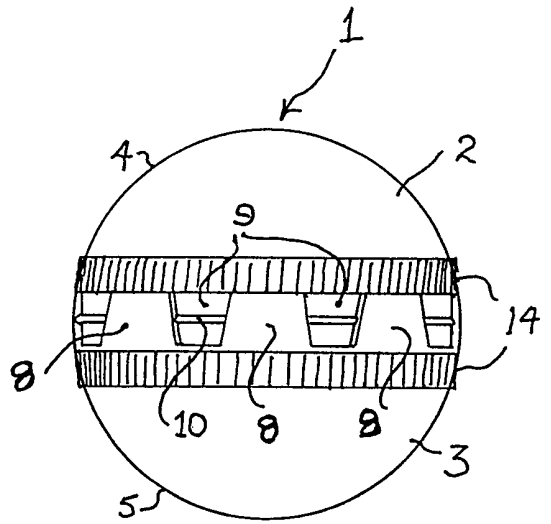


Fig. 2.

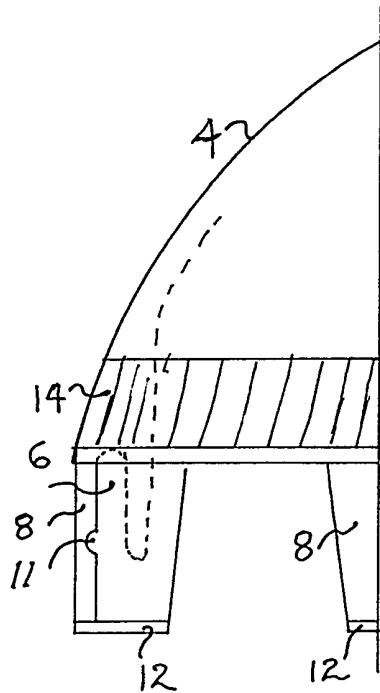


Fig. 9.

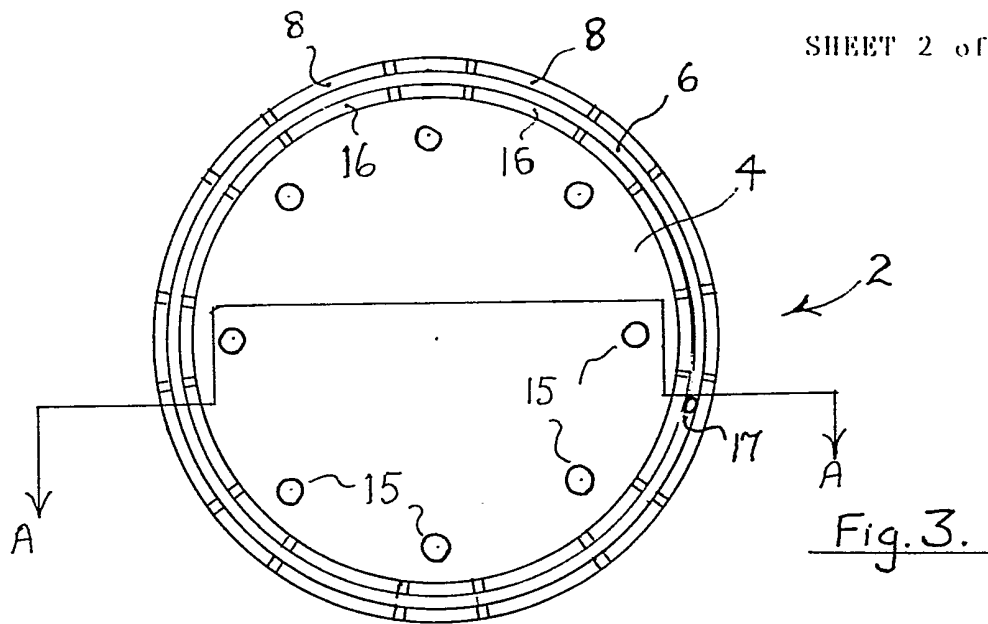


Fig. 3.

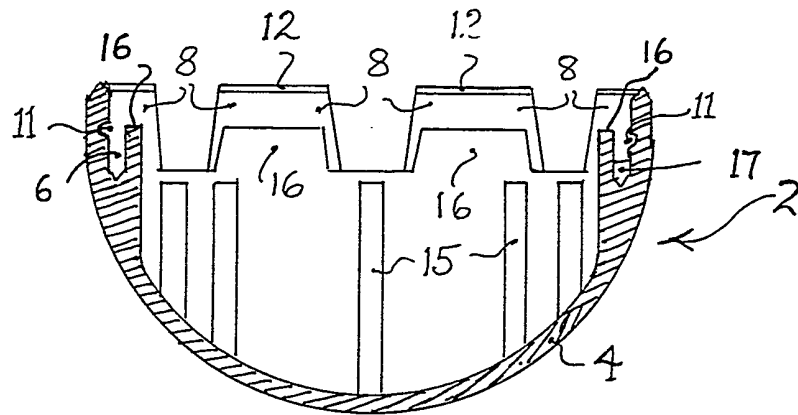


Fig. 4.

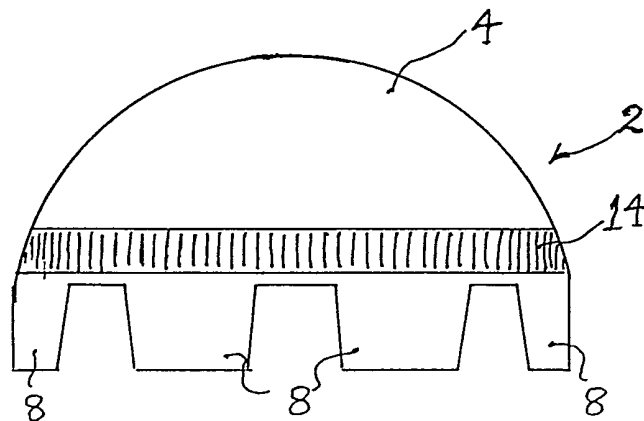


Fig. 5.

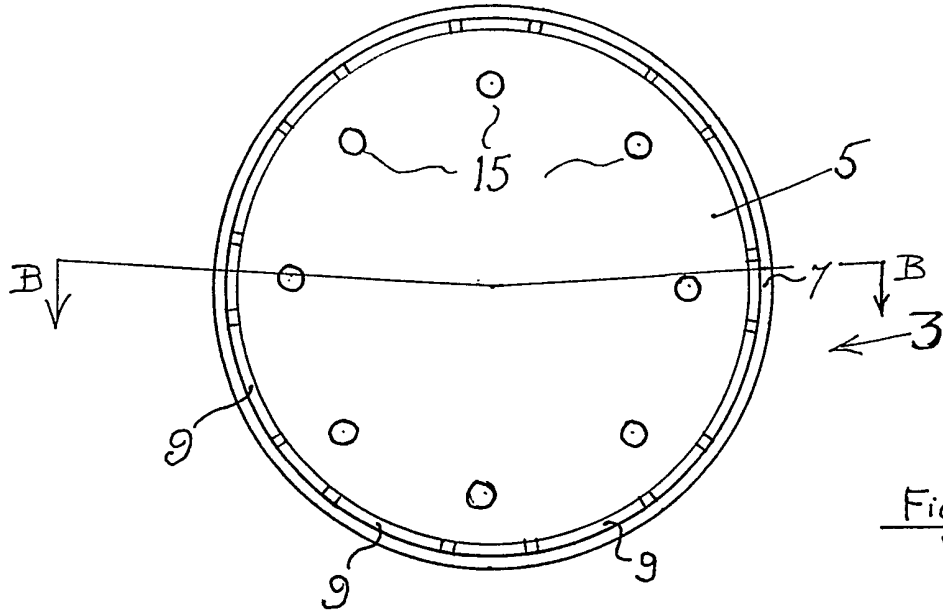


Fig. 6.

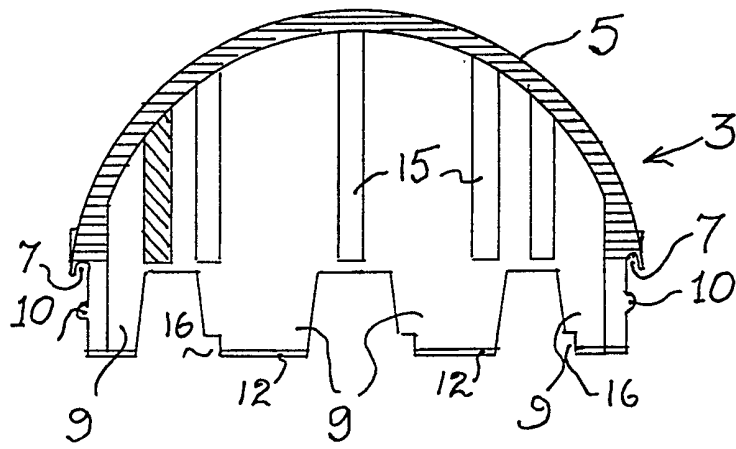


Fig. 7.

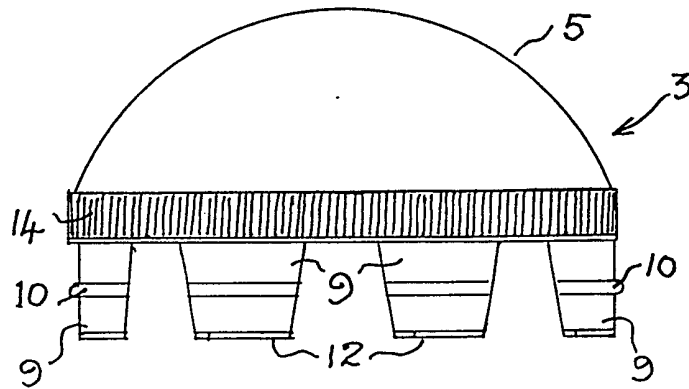


Fig. 8.

IMPROVEMENTS IN AND RELATING TO CONTAINER ASSEMBLIES

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This invention relates to a container assembly of separable parts for housing fragrances, perfumes or air fresheners.

There are numerous housings on the market for fragrances and particularly air fresheners, which are constructed to allow the opening and closing of apertures to release fragrance into the environment in which such housings are placed. Since most of these articles, particularly air fresheners, have a limited life due to the evaporation rate of the fragrances used, the housings need to be of simple and inexpensive construction, which places considerable demands on the design of such articles, particularly when made of plastics materials.

It is therefore an object of this invention to provide an improved form of housing assembly which is inexpensive to produce and readily assembled.

In accordance with this invention therefore we provide an assembly, comprising two separable parts forming a container, the said parts being formed to define one or more apertures therebetween upon relative rotation of said parts; characterised in that each part comprises a body portion in which is formed a circular groove and depending from said body portion one or more teeth positioned concentric with said groove so that the distal ends of the tooth or teeth on one body portion run in the groove of the other body portion when the parts are assembled together, and means on said teeth on both body portions to provide a snap fitting engagement of said parts to form said assembly, said teeth being shaped to define said aperture or apertures between the tooth or teeth on one body portion and those on the other body portion on relative rotation of one part with the other part.

Preferably the parts are formed of plastics material and the body portions are of hemispherical shape so that the two parts together form a ball.

In order that the invention may be fully understood, a preferred embodiment thereof in the form an air freshener will now be described with reference to the accompanying drawings in which:

Figure 1 shows an assembly in the form of a two-part ball in the open position;

Figure 2 shows the ball of Figure 1 in the closed position;

5 Figures 3, 4 and 5 show, respectively, a plan view, a cross-sectional view along lines A-A of Figure 3, and a side view of one part of the ball shown in Figures 1 and 2;

Figures 6, 7 and 8 show, respectively, a plan view, a cross-sectional view along lines B-B of Figure 6, and a side view of the other part of the ball shown in Figures 1 and 2, and

10 Figure 9 is a detail of the side view shown in Figure 5.

The assembly 1 shown in Figures 1 to 9 is formed by first and second parts 2 and 3 comprising hemispherical body portions 4 and 5, having, respectively, grooves 6 and 7 therein with teeth 8 and 9 extending from the body portions 4 and 5 concentric with the grooves 6 and 7.

15 Snap-fitting means is provided in the form of a bead 10 formed midway along the outwardly facing side of teeth 9 and a groove 11 formed in the inwardly facing side of teeth 8 and in a position thereon corresponding to that of the bead 10 so that the two parts 2 and 3 can be snap-fitted together with the chamfered distal ends 12 of teeth 8 and 9 locating and
20 running in the grooves 7 and 6 in body portions 5 and 4 respectively. Preferably the parts 2 and 3 are injection mouldings and the thickness of the teeth such as to allow them to flex when pushing the two parts together, thereby causing the bead 10 to snap into the groove 11 retaining the two parts together but allowing relative rotation there-between. The
25 teeth 8 and 9 are of trapezoidal shape and, on rotation of one part relative to the other, define apertures 13 therebetween as shown in Figure 1. Knurling 14 is formed about the hemispherical body portions 4 and 5 immediately adjacent the root of teeth 8 and 9 to aid in gripping those portions to rotate the parts 2 and 3 one relative to the other.
30 Preferably a stop 17 is formed in the groove 6, which is engaged by a cut-away portion 18 of the distal ends 12 of teeth 9, when part 2 is rotated from the open position shown in Figure 1 to the closed position shown in Figure 2, at which position the teeth 9 lay behind adjacent teeth 8.

Posts 15 upstanding from the inner surfaces of hemispherical body portions 4 and 5 may be provided to form, in one part, a seating for a disk-shaped pad impregnated with a fragrance, the pad being retained in position by the posts 15 in the other part.

5 If preferred, further teeth 16 may be provided concentric with the groove 6 and on the side thereof opposite to teeth 8. These teeth 16 need not be the same height as teeth 8 as viewed in Figure 4, but should extend at least up to the position of the groove 11 so that the bead 10 on teeth 9 is held firmly in the groove 11 when the parts 2 and 3 are snapped
10 together, thus inhibiting separation of the parts once they are together to form the assembly.

It is not essential for the body portions 4 and 5 to be hemispherical, they could be cubic or parabolic, and there need only be one tooth on each part, in which case one of such teeth would need to extend around its
15 associated groove over at least half of its circumference.

The assembly illustrated and described above can be of any size although its use in a preferred form as an air freshener, the diameter of the ball formed by the two hemispherical halves is about 40mm.

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CLAIMS

1. An assembly comprising first and second separable parts which together form a container, the said parts being formed to define one or more apertures therebetween upon relative rotation of said parts; characterised in that said first and second parts each comprises a body portion in which is formed a circular groove and extending from said body portion a tooth or a plurality of teeth positioned concentric with said groove so that the distal ends of the tooth or teeth on the first body portion run in the groove of the second body portion when the parts are assembled together, and means on the tooth or teeth on both body portions to provide a snap fitting engagement of said parts to form said assembly, said teeth being shaped to define said aperture or apertures between the tooth or teeth on the first body portion and the tooth or teeth on the second body portion on rotation of said first and second parts one relative to the other.
2. An assembly as claimed in claim 1, wherein each said part is of substantially hemispherical shape so that the two parts when snapped together form a ball.
3. An assembly as claimed in claim 1 or claim 2 wherein the tooth or teeth extend from the outer circumference of the groove in the first body portion and the tooth or teeth on the second body portion extend from the inner circumference of the groove therein.
4. An assembly as claimed in claim 3, wherein said means comprise a further groove formed in the inner face or faces of the tooth or teeth extending from the first body portion and a bead formed on the outer face of the tooth or teeth extending from the second body portion.
5. An assembly as claimed in claim 4, including a second plurality of teeth arranged around the inner circumference of the groove in the first body portion and positioned opposite the teeth extending from the outer circumference of that groove.
6. An assembly as claimed in any one of the preceding claims including material adapted to emit a fragrance and means to support said material within either or both said body portions adjacent said teeth.
7. An assembly as claimed in claim 6 wherein said support means comprises a plurality of posts upstanding from an inner surface of a body portion.

8. An assembly as claimed in claim 7 wherein said fragrance emitting means comprises a disc of absorbent material, and each said body portion comprises an hemispherical shell having posts extending therefrom such as to hold said disc therebetween.
9. An assembly as claimed in any one the preceding claims in which the groove in the first body portion includes a stop member and the tooth or teeth on the second body member each have a cut away portion on one edge thereof which engages said stop to arrest further rotation of the first body member relative to the second body member at a position at which the tooth or teeth on the first body member are located between the teeth of the second body member.
10. An assembly substantially as described herein with reference to the accompanying drawings.

Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number

9107448.4

Relevant Technical fields

(i) UK Cl (Edition K) A5G GV

(ii) Int CL (Edition 5) A61L

Search Examiner

P N DAVEY

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

20 MAY 1992

Documents considered relevant following a search in respect of claims

1-10

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	US 4944455 A (KINNEY) see eg column 2, lines 14,15 and 21-24	1,2,6 at least
X	US 4372490 A (COCA-COLA)	1,6 at least
X	US 4154398 A (POLICHIMICI GUABER)	1,6 at least

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).