(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 968 865 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
11.03.2015 Bulletin 2015/11

(21) Application number: **06835225.1**

(22) Date of filing: **16.12.2006**

(51) Int Cl.:
B65D 51/28 *(2006.01)*

(86) International application number:
PCT/KR2006/005507

(87) International publication number:
WO 2007/073064 (28.06.2007 Gazette 2007/26)

(54) **CAP ASSEMBLY WITH SECTIONAL STORAGE CHAMBER FOR SECONDARY MATERIAL**

KAPPENANORDNUNG MIT IN SEKTIONEN GETEILTER SPEICHERKAMMER FÜR SEKUNDÄRMATERIAL

ENSEMBLE CAPSULE POSSEDANT UNE CHAMBRE SEPARABLE SERVANT A CONTENIR UN DEUXIEME MATERIAU

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

(30) Priority: **19.12.2005 KR 20050126626**
19.12.2005 KR 20050126627

(43) Date of publication of application:
17.09.2008 Bulletin 2008/38

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Description

Technical Field

[0001] The present invention relates to a cap assembly for closing a container and more particularly to a cap assembly having a storage chamber for containing a secondary material(ingredient) for example a concentrated liquid or a granule different from a material(ingredient) for example water or a beverage accommodated in a container.

[0002] Such a cap assembly is useful in the various industrial fields such as medical, pharmaceutical, cosmetic and etc..

Background Art

[0003] Generally, when a beverage that requires mixing up a liquid in a container with a granule or a concentrate liquid as additives or secondary ingredients such as carbon dioxide, vitamin powder, etc, it is often necessary that the container has a separate chamber for storage the secondary ingredients.

[0004] There are many suggestions more than 5,000 including US Patent No. 937,049(filed on October 19, 1909) about the structure for mixing two or more ingredients in a container.

[0005] However, the containers disclosed in the above patents have not commercially succeeded because of the problems such as inefficiency in a manufacture process, inconvenience in use, etc.

[0006] There are further needs for more easily handling of a cap assembly and a container for mixing one or more ingredients in an ingredient contained in a container without problems of changing a structure or an injury of an elbow caused by acting an excessive force to open a discharging device for use.

[0007] Recently, PCT/EP2002/004523 filed on January 17, 2002 and Japanese Patent Application No. 2001-00185428 filed on June 19, 2001 suggested other structure, but a commercial success has not been obtained.

[0008] Particularly, the structure disclosed in Japanese Patent Application mentioned above has a problem that a piece cut out from a discharging port falls into a container and a child may swallow it. To overcome this problem, a discharging device which is not separated from a novel neck of a container has been developed, but such a discharging device could not be used to a conventional neck of a container.

[0009] A cap having an assembly-typed housing for storage therein has been known, the assembly-typed housing is limited to the functions as a storage chamber or simply an sealing means thereof.

[0010] WO 2005/049430 A2 describes a cap containing a secondary material, including a fixing member fixed on a container, the fixing member having a hollow main body and a supporting tube extending downward from an inner surface of the hollow main body, the supporting tube having a material exhausting portion and a seal member formed on the lower end of the supporting tube, and a movable member coupled to the fixing member, the movable member having a main body coupled on the main body of the fixing member and a tube extending downward from the main body to define a storage chamber for the secondary material, the tube being provided with an opened lower end through which the secondary material can be filled in the storage chamber, the opened lower end of the tube being tightly interlocked with the seal member formed on the supporting tube of the fixing member after the secondary material is filled in the storage chamber and the movable member is coupled to the fixing member and being released from the seal member so that the secondary material can be mixed with a primary material contained in the container by being exhausted into the bottle through the material exhausting portion formed on the supporting tube of the fixing member.

[0011] DE 299 16 436 U1 is directed to a cap with a thread and a chamber for storing a liquid or solid ingredient.

[0012] WO 2005/091730 is directed to a cap assembly with a storage chamber for a secondary material includes a stationary member for coupling to a neck portion of a container containing a primary material and a movable member detachably coupled to the stationary member and having a storage space defined by the storage chamber for storing the secondary material.

[0013] Furthermore, WO 01/83313 A2 describes a cap for storing powder and releasing it into a bottle. The cap comprises a cap top and an inner cap member which fits partially within the cap top to form a closed cavity for storing the powder and the cap is secured over the neck of the bottle. In use, the cap is rotated in an anticlockwise direction so that the cap top is rotated and raised o relative to the inner cap member so as to open the cavity, releasing the powder stored therein into the bottle via the neck. The cap top is then further rotated in the anticlockwise direction so as to also rotate the inner cap member in the same direction, freeing the cap from the bottle.

[0014] US 5,593,055 describes a tamper-evident, snap-on, screw-off closure is used with a specially shaped container neck. The neck has at least one first helical thread on a neck stretch portion, and at least one external ratchet tooth on a locking wall portion below the neck stretch.

Disclosure of Invention

Technical Problem

[0015] In view of the above, an object of the present invention is to provide a cap assembly having an improved convenience.

[0016] Another object of the present invention is to provide a cap assembly which is adapted to open the storage

chamber and container at the same time so that a secondary ingredient may be discharged and mixed into a primary ingredient in a container.

[0017] Another object of the present invention is to provide a cap assembly having an integral sealing assembly for obtaining improved sealing property.

Technical Solution

[0018] The invention is solved according to claim 1.

[0019] In order to accomplish the above-mentioned objects, according to the present invention, a cap assembly mounted on a discharging portion of a container for containing a secondary ingredient different from a primary ingredient in accommodated in a container, comprises a cap body formed by an upper cap part and a lower cap part which are connnected by a cut-off line; a housing with a storage chamber for a secondary ingredient formed by the lower portion of the upper cap part; a separate sealing assembly provided below the lower cap part, comprising a scaling element and a space through which the secondary ingredient may be discharged in use; and a mouth formed above the lower cap part.

Brief Description of the Drawings

[0020] In the following figures exemplary bottle cap assemblies will be described :

FIG. 1 is a cross-sectional view of cap assembly in accordance with a first embodiment;
FIG. 2 is a cross-sectional view of a cap assembly in accordance with another embodiment.

[0021] Reference will now be made to the drawings to describe the exemplary bottle cap assemblies in detail. In the following description, the same drawing reference numerals are used for the same elements even in different drawings, and the duplicate explanation thereof will be omitted.

[0022] FIG. 1 shows a cap assembly 1 in accordance with an embodiment, which may be mounted to a container for example a beverage container in such a way of a conventional thread engagement, a snap-fit engagement or adhering type.

[0023] The cap assembly 1 in FIG. 1 comprises a cap body 10 and a sealing assembly 20.

[0024] The cap body 10 comprises an upper cap part 11 and a lower cap part 12 which are connected by a cut-off line 13, the lower portion of the upper cap part 11 comprises a housing 14 in which a chamber 15 for storage of a secondary ingredient is formed.

[0025] The sealing assembly 20 is provided at the lower opening of the housing 14 having the storage chamber 15 for sealing thereof. The sealing assembly 20 comprises a sealing element 21 for blocking the lower opening of the housing 14 and an annular hoop for connecting the sealing assembly 20 to a connecting portion of the lower cap part 12.

[0026] At least one opening 23 is formed between the annular hoop and the sealing hoop 21.

[0027] A mouth 24 is formed above the annular hoop and has a thread 25 for engaging with a thread 17 formed at the inner wall of the upper cap part 11 of the cap body 10.

[0028] An elongated protrusion 26 is upwardly formed at the sealing element 21.

[0029] The elongated protrusion 26 may stir the secondary ingredient in the chamber 15, when a lower end opening of the housing is opened.

[0030] When the upper cap part 11 is turned in use, the upper cap part 11 is disconnected along the cut-off line 13 from the lower cap part and is upwardly moved.

[0031] At this time, the lower portion of the housing 14 is disconnected from the sealing clement 21 and then the secondary ingredient in the chamber 15 may be discharged into the container.

[0032] The upper cap part 11 and the lower cap part 12 are easily disconnected by a cut-off line 13 which is a portion that may be easily torn by the thread engagement 17 and 25. However, other conventional disconnecting structure may be used.

[0033] Preferably, a snap-on-screw-off type structure is used.

[0034] The sealing assembly 20 may be safely retained by the lower cap part 12.

[0035] The lower cap part 12 may be mounted on the container in such a manner of a snap fit engagement or a adhering to a paper pack or a pouch.

[0036] The separate sealing element 21 may be assembled to the sealing assembly.

[0037] FIG. 2 shows another embodiment of an bottle cap assembly, in which the upper cap part 21 and the lower cap part 212 are separately formed and the mouth 218 is provided above the lower cap part 212.

[0038] The housing 214 with the storage chamber 215 is formed by the lower portion of the upper cap part 211.

[0039] When the upper cap part 212 is turned in use, the secondary ingredient in the storage chamber 215 may be discharged into the container through the space formed by departing of the sealing element 21 of the sealing assembly 20 from the housing 214 and is mixed with the primary ingredient in the container.

[0040] In this embodiment, the elongated protrusion 26 may be provided at the sealing element 21 and the separate sealing element 21 may be assembled.

[0041] Furthermore, the sealing element 21 may be separated into the container.

[0042] The lower cap parts 12 and 212 may be fixedly attached to the container.

Industrial Applicability

[0043] As apparent from the above description, the cap assembly of the present invention may be adapted to accommodate a concentrate liquid or a granule to be

mixed which a water, a beverage or other liquid in the container with an easy and improved mixing two different materials, which may be advantageous in the various industrial fields such as medical, pharmaceutical, cosmetic and etc..

Claims

1. A cap assembly (1) mounted on a discharging portion of a container for containing a secondary ingredient different from a primary ingredient in accommodated in a container, comprising:

   a cap body (10) formed by an upper cap part (11) and a lower cap part (12);
   a housing (14) with a storage chamber (15) for a secondary ingredient formed by the lower portion of the upper cap part (11);
   a sealing assembly (20) provided below the lower cap part (12), comprising a sealing element (21) and a space (23) through which the secondary ingredient may be discharged in use; and
   a mouth (24) formed above the lower cap part (12), wherein said mouth (24) is adapted to tightly engage with the inner wall of the upper cap part (11) of the cap body (10) and the mouth (24) and the inner wall of the upper cap part (11) are threaded (17, 25) each other,
   characterized in that
   the upper cap part (11) and the lower cap part (12) are connected by a cut-off line (13), wherein the cut-off line (13) is adapted to be torn by the thread engagement (17,25) thereby disconnecting the upper cap part (11) and the lower cap part (12).

2. A cap assembly in accordance with claim 1, wherein the sealing assembly (20) assembled to the cap body (10) is maintained by an annular hoop provided at the lower cap part (12).

3. A cap assembly (1) in accordance with claim 1, wherein an elongated protrusion (26) is upwardly formed at the sealing element (21).

4. A cap assembly (1) in accordance with claim 1, wherein the thread engagement (17, 25) is a snap-on-screw-off type.

5. A cap assembly (1) in accordance with claim 1, wherein said sealing element (21) is assembled to the sealing assembly (20).

Patentansprüche

1. Deckelanordnung (1), montiert auf einem Auslassteil eines Containers zur Bevorratung eines sekundären Inhaltsstoffs, der unterschiedlich ist von einem primären Inhaltsstoff, der in dem Container untergebracht ist, umfassend:

   ein Deckelkörper (10) gebildet von einem oberen Deckelteil (11) und einem unteren Deckelteil (12);
   ein Gehäuse (14) mit einer Lagerkammer (15) für einen zweiten Inhaltsstoff gebildet von dem unteren Abschnitt des oberen Deckelteils (11);
   eine unter dem unteren Deckelteil (12) vorgesehene Dichtungsanordnung (20), enthaltend ein Dichtungselement (21) und eine Aussparung (23), durch welche der sekundäre inhaltsstoff während der Benutzung ausgelassen werden kann; und
   eine Mündung (24) gebildet über dem unteren Deckelteil (12), wobei besagte Mündung (24) geeignet ist, um dicht mit der inneren Wand des oberen Deckelteils (11) des Deckelkörpers (10) in Eingriff zu stehen, und die Mündung (24) und die innere Wand des oberen Deckelteils (11) zueinander gewindegeschnitten (17, 25) sind,
   dadurch gekennzeichnet, dass
   der obere Deckelteil (11) und der unter Deckelteil (12) durch eine Schnittlinie (13) verbunden sind, wobei die Schnittlinie (13) geeignet ist, um durch den Gewindeeingriff (17, 25) zerrissen zu werden und dabei den oberen Deckelteil (11) und den unteren Deckelteil (12) zu trennen.

2. Deckelanordnung gemäß Anspruch 1, wobei die am Deckelkörper (10) montierte Dichtungsanordnung (20) durch einen am unteren Deckelteil (12) vorgesehenen ringförmigen Reif gehalten wird.

3. Deckelanordnung (1) gemäß Anspruch 1, wobei ein länglicher Vorsprung (26) aufwärts am Dichtungselement (21) gebildet ist.

4. Deckelanordnung (1) gemäß Anspruch 1, wobei der Gewindeeingriff (17, 25) ein Aufschnapp-Aufschraub-Modell ist.

5. Deckelanordnung (1) gemäß Anspruch 1, wobei besagtes Dichtungselement (21) an der Dichtungsanordnung (20) montiert ist.

Revendications

1. Ensemble bouchon (1) monté sur une partie évacuation d'un contenant destiné à contenir un ingrédient secondaire different d'un ingrédient primaire reçu dans un contenant, camprenant :

   un corps de bouchon (10) formé par une partie

bouchon supérieure (11) et par une partie bouchon inférieure (12) ;
un logement (14) avec une chambre de stockage (15) d'un ingrédient secondaire, formé par la partie inférieure de la partie bouchon supérieure (11) ;
un ensemble étanchéité (20) disposé sous la partie bouchon inférieure (12), comprenant un élément d'étanchéité (21) et un espace (23) à travers lequel l'ingrédient secondaire peut être évacué en service ; et
une ouverture (24) formée au-dessus de la partie bouchon inférieure (12), dans lequel ladite ouverture (24) est adaptée de façon à venir étroitement en prise avec la paroi intérieure de la partie bouchon supérieure (11) du corps de bouchon (10), et l'ouverture (24) et la paroi intérieure de la partie bouchon supérieure (11) sont toutes deux filetées (17, 25) ;
caractérisé en ce que :

la partie bouchon supérieure (11) et la partie bouchon inférieure (12) sont connectées par une ligne de rupture (13), dans lequel la ligne de rupture (13) est adaptée de façon à être rompue par la mise en prise par filetage (17, 25), en déconnectant de ce fait la partie bouchon supérieure (11) et la partie bouchon inférieure (12).

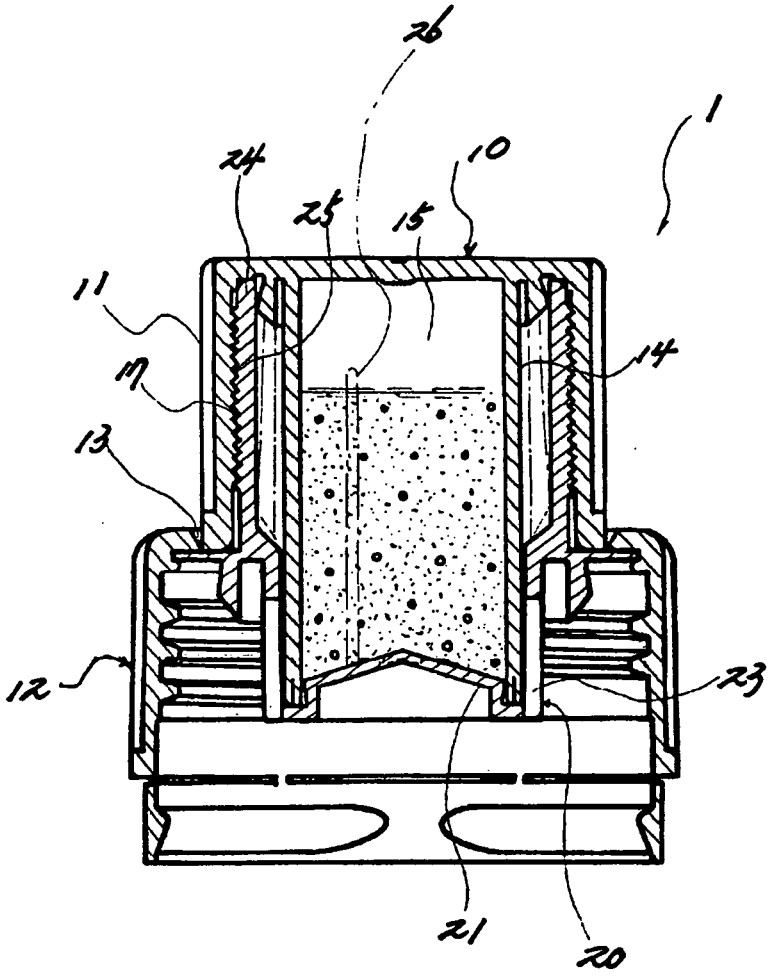
2. Ensemble bouchon (1) selon la revendication 1, dans lequel l'ensemble étanchéité(20) assemblé sur le corps de bouchon (10), est maintenu par un collier annulaire disposé au niveau de la partie bouchon inférieure (12).

3. Ensemble bouchon (1) selon la revendication 1, dans lequel une saillie allongée (26) est formée vers le haut au niveau de l'élément d'étanchéité (21).

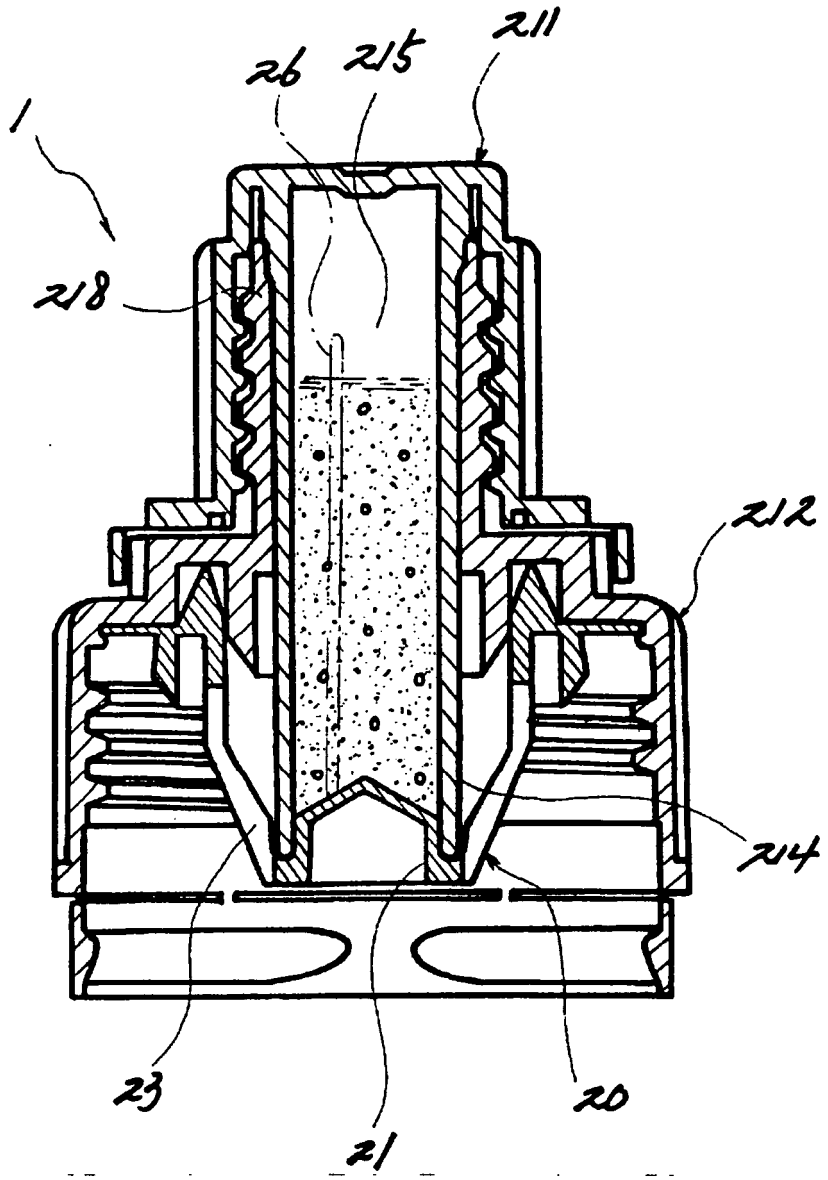
4. Ensemble bouchon (1) selon la revendication 1, dans lequel la mise en prise par filetage (17, 25) est du type pression - dévissage.

5. Ensemble bouchon (1) selon la revendication 1, dans lequel ledit élément d'étanchéité (21) est assemblé sur l'ensemble étanchéité (20).

[Fig. 1]



[Fig. 2]



REFERENCES CITED IN THE DESCRIPTION

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