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(54) **Bottle**

(57) There is described a bottle (10) for containing liquid beverages. The bottle (10) has a body (11), a bottle closure (12) which engages the body (11), and one or more storage compartments (15a, 15b, 15c). The storage compartments (15a, 15b, 15c) are for containing a powder or other ingredient for mixing with or dissolving in the

liquid beverage. The contents of the storage compartments (15a, 15b, 15c) may be released independently. Thus several types and/or amounts of a powder and/or other ingredient can be stored in one bottle (10), allowing a user to prepare a particular type and/or amount of a particular beverage at a particular point in a training or exercise program.

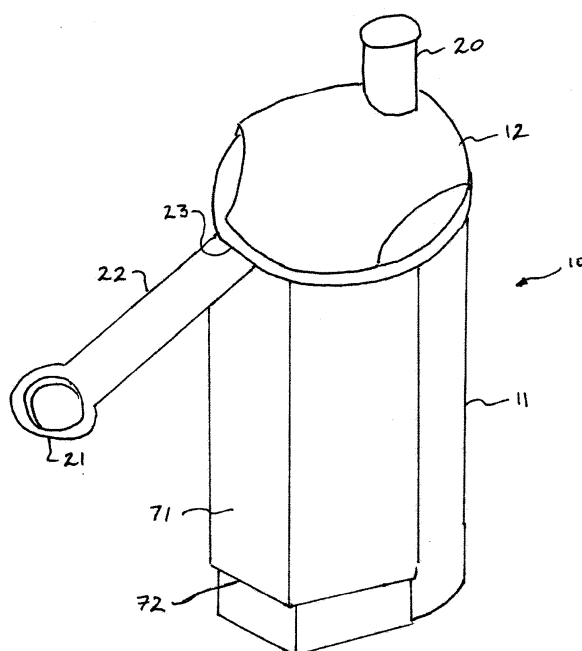


FIGURE 1

Description

[0001] This invention relates generally to beverage bottles, and in one example finds application in drinking bottles used in association with sporting past-times.

[0002] Sports bottles have become popular with all segments of the public interested in a healthy life style and particularly those dedicated to fitness and training. Typically, such sports bottles are made simply of a plastic container and a detachable closure. A straw or other mouthpiece is often provided in the closure. Bottles of this type are suitable storage units for a beverage which may be an energy drink or the like, for example suited to adding electrolytes or other liquids for hydration.

[0003] A particular type of sports bottle is often called a "shaker" or "shaker cup". The name is derived from the practice of using the cup to mix a liquid beverage such as water or milk with a powder or other soluble. The powder is mixed with, or dissolved in, the liquid by the user shaking the components together while both are held in the shaker, and while the closure is appropriately secured.

[0004] In sporting applications, and particularly for those intended for body building, the powder may be a nutritional supplement, such as whey protein or the like.

[0005] Whey protein is a rich source of branched chain amino acids (BCAAs), containing the highest known levels of any natural food source. BCAAs are important for athletes, since, unlike the other essential amino acids, they are metabolized directly into muscle tissue and are the first amino acids used during periods of exercise and resistance training. Whey protein is available in several forms, and whilst it may be provided in an aqueous form (created by the removal of casein) more typically it is provided in a dry, highly soluble form, such as whey protein extract, whey protein concentrate, whey protein isolate, and so on.

[0006] A disadvantage associated with sports bottles known heretofore, is that they are designed to hold only one beverage at a time. This is not entirely satisfactory to athletes and body builders who may desire a few different beverages over the course of a training schedule. For example, a weightlifter may desire a drink containing ingredients most suited to hydration at one point in a program and a drink composed for recovery at another point during or just after an exercise program. This consequentially requires the use of two such bottles, if the drinks are prepared beforehand.

[0007] Alternatively, in the past when only one bottle is available, the sportsperson had to store the various powder supplements separately from the bottle. However, storage apparatus dedicated for this purpose, and which is suitable for use at a gym or other sporting facility, is not commonly known. In fact, most tubs in which such supplements are sold are large and bulky.

[0008] In order to prepare a drink mid-workout, a user might typically require returning to the locker room, which is both time consuming and inconvenient.

[0009] Further, in some situations, it is believed that some of the nutritional value of a beverage can be lost if the powder or other soluble element is mixed or dissolved into the liquid for too great a duration prior to being consumed.

[0010] Thus, the present invention recognises that it would be advantageous to provide apparatus that provides for storing several powders or nutritional supplements in dedicated and appropriately sized compartments which might conveniently be accessed before, during and shortly after exercising, and mixed with or dissolved into a liquid beverage.

[0011] According to the present invention there is provided a bottle comprising a body portion for containing a liquid beverage, a closure sealingly engageable with the body portion, a storage unit adapted to nest inside the body portion and removable therefrom having at least one storage compartment, wherein the or each storage compartment is adapted for containing a powder or other ingredient intended for mixing with or dissolving in the liquid beverage.

[0012] Preferably there are at least three storage compartments.

[0013] Preferably the bottle further comprises a blending means for aiding in the blending or mixing of the powder with the liquid when the bottle is shaken or inverted. The blending means may be a mesh or strainer. The blending means is preferably integral with the storage unit.

[0014] The body portion may be formed or moulded so as to comprise a socket formed in an internal wall thereof, wherein the socket is sized to support or nest the storage unit.

[0015] The storage compartments would suitably be adapted to prevent ingress of the liquid beverage, so as to keep the powder or other ingredient contained therein dry.

[0016] Each storage compartment would preferably have a lid or removable seal for permitting access to, adding or releasing of the powder or ingredient contained therein.

[0017] The storage unit may comprise a handle. The handle renders it easy for a user to lift the storage unit out of the bottle body.

[0018] The storage unit may be provided with a flat side that acts as a stable base upon which the storage unit may rest. This is advantageous when the storage compartments are being filled.

[0019] Typically, the closure will include an integral mouth piece for permitting consumption of the beverage directly from the bottle. Alternatively, the closure may incorporate a pouring spout.

[0020] The closure may further include a lid for sealing the mouth piece or pouring spout when not in use. Typically the lid will be attached to the main body of the closure by a living hinge. The lid may be adapted to also act as a scoop suitable for filling the storage compartments with powder or other ingredient.

[0021] In order to better portray the invention, a number of example embodiments will now be described with reference to the accompanying drawings, in which:

Figure 1 is a pictorial representation of a bottle in accordance with the invention;

Figure 2 is a pictorial representation of a bottle closure, engaged with the body of the bottle shown in Figure 1;

Figure 3 illustrates the closure of Figure 2, removed from the bottle body and revealing a storage unit internally within the bottle body;

Figure 4 illustrates a perspective view of the afore-said storage unit; and

Figure 5 illustrates an exploded view of the three components collectively comprising a bottle in accordance with the invention.

[0022] Referring firstly to Figure 1, a drinking bottle as may be used by sportspersons is illustrated. The bottle, generally depicted as 10, includes a bottle body 11 and a bottle closure 12.

[0023] The bottle 10 of the present invention may be constructed of any one of various types of plastics and preferably is moulded of high density polyethylene. The body 11 may be transparent or opaque.

[0024] The body 11 is adapted to contain a liquid beverage. It is generally cylindrical, however incorporates a flattened area 71 in its circumferential wall that extends from near the top of the body down to a nesting shelf 72 near the base of the body and also formed in the circumferential wall thereof.

[0025] In a preferred embodiment, the body 11 is sized to store 700 ml of liquid, while also a storage unit (described below). Typically, the beverage may be water or milk, but need not be limited to these.

[0026] The closure 12, also shown in Figure 2, is threadably engageable with the body 11 so to provide a leak-proof seal. This is advantageous as the bottle is suitable for carrying in a gym bag or the like, and leaking would be detrimental. Yet further, the bottle also acts as a so-called shaker cup, whereby the beverage may be intentionally shaken for the purpose of mixing the drink contained within it. The male thread 13 moulded into the external upper wall of the body 11 is more clearly illustrated in Figure 3. The closure 12 has a drinking spout 20 associated with a lid 21 connected to the closure 12 by a strap 22. The strap 22 is connected to the closure by a living hinge 23.

[0027] Also in Figure 3 may be seen the upper surface of a storage unit 14. The storage unit 14 nests within a recess formed in the internal wall of the body 11.

[0028] Various alternative methods and devices, known to those skilled in the art, will be readily apparent

which are suitable for holding the storage unit 14 in place within the internal confines of the bottle 10. For example the storage unit 14 may have mouldings or dogs that engage with receptive members in the bottle body. Alternatively, the storage unit itself may be threadably engageable with the body. Preferably though, the storage unit is easily removed from the bottle body. Indeed, this can be facilitated by a user lifting the unit 14 by gripping the handle 24.

[0029] The storage unit 14 is more clearly represented in Figure 4. The storage unit 14 is sized and shaped to nest within the recess of the body 11.

[0030] The storage unit 14 illustrated in Figure 4 comprises of three independent storage compartments 15a, 15b and 15c.

[0031] Each compartment 15 is adapted to store an appropriate measure of powder or other ingredient for mixing with or dissolving into the liquid beverage when desired. In the embodiment shown, each compartment 15 is sized to hold at least 47 grams of protein powder. Recently, various diet and nutrition experts have recommended 47 grams as an optimum measure of protein for replenishment immediately after training.

[0032] It will be understood that as the compartments are separate, they may each hold a different ingredient. Alternatively, some or all of them may hold the same ingredient, but each in a suitable measure for preparing a beverage in the quantity that might ideally be taken at a particular point in a training or exercise program.

[0033] While the embodiment described herein, by way of example, has three such compartments 15, the storage unit 14 may be designed to incorporate more or less such compartments. Moreover, each compartment need not be the same size.

[0034] The compartments 15 are each provided with an access means for enabling filling or emptying the respective compartments with a powder or other ingredient. In the example embodiment illustrated, the access means 18 (see Figure 5 as not shown in Figure 4) are provided as snap fit lids that may be easily removed and replaced by the user. The lids 18 provide a water proof seal to ensure the contents of the compartments 15 are kept dry, and the undesirable ingress of the liquid beverage into the compartments is avoided.

[0035] The perforated section 16 is suitable for assisting in the mixing or blending of the beverage. It also acts to strain the beverage when the bottle is inverted, as is typically the case when a user drinks from it. This ensures the prevention of sizeable congealed or non-dissolved clumps of powder being consumed through the spout 20.

[0036] The storage unit 14 further includes a handle 24. The handle 24 provides a gripping means for ease of lifting the storage unit 14 out of the bottle body 11 (with the closure 12 removed). Similarly, the handle allows the storage unit 14 to be easily manipulated when filling the compartments 15 with powder, capsules, granules and/or other ingredients.

[0037] In this regard, the storage unit 14 is also pro-

vided with a flat base 75 that allows the unit 14 to be in a stable condition when powder or other ingredient is being added to one or more of the compartments 15. The compartments 15 are also designed to have a large open area, when the lids 18 are removed, for receiving powder or other ingredient. The combination of the large open area and the stable base assist a user in being able to fill the compartments with minimum or no spillage.

[0038] Filling the compartments is also assisted by providing a scoop which doubles as a lid for closing the mouth piece or spout 20. The scoop may be used in a similar fashion to a spoon or the like for this purpose.

[0039] The internal surface of the compartments are provided with measuring lines 19 for the purpose of indicating the extent of powder or ingredient added.

[0040] In use, a sports person may arrange to provide for a plurality of drinks to be taken at different times when exercising or thereafter, wherein a plurality of key ingredients may be stored in the same bottle. For example, prior to attending a gymnasium, a user may fill one of the compartments with an appropriate measure of a pre-workout supplement, a second of the compartments with whey protein for carb loading and a third of the compartments with recovery supplement to assist in the prevention of DOMS "delayed onset muscular soreness".

[0041] Notably, the user does not require to transport to the gym the large containers or tubs in which these products are contained when purchased.

[0042] At the desired times, the user may fill the shaker cup with water and empty the contents of one of the compartments into the water. The mixing of the powders with the liquid may then be carried out at an appropriate time and in appropriate measures, most conveniently.

[0043] Once the storage unit 14 and closure 12 have been replaced, the bottle 10 may be shaken to aid in the mixing and or dissolving of the powder with the water. The storage unit 14 is sufficiently gripped within the recess formed in the body 11 to prevent it from dislodging while the bottle is being shaken or inverted.

[0044] The resultant beverage may then be consumed via the spout 20.

[0045] This may be repeated at a later point in an exercise program, using the contents of an alternative compartment.

[0046] An advantage of the invention therefore is that it permits the storage and carrying of a plurality of powders in the same utensil but nevertheless separate from water or other liquid. The need for a user to carry multiple powders separately in bags, tubs, or to purchase inferior products behind the gym bar are negated. A bodybuilder or athlete would have the ability to have, in a convenient manner, their own chosen personal nutrition on them when working out.

[0047] It should be appreciated that further modifications and improvements may be incorporated without departing from the scope of the invention herein intended. Yet further, it should be understood that the invention herein need not be limited to a sporting application, but

may also find utility in other applications - for example, outdoor dining or camping, infant bottles and so on.

5 Claims

1. A bottle comprising a body portion and a closure for containing a liquid beverage, wherein the closure is sealingly engageable with the body portion, the bottle further comprising a storage unit adapted to nest inside the body portion and removable therefrom having at least one storage compartment, wherein the or each storage compartment is adapted for containing a powder or other ingredient intended for mixing with or dissolving in the liquid beverage.
2. A bottle as claimed in Claim 1 having three storage compartments.
3. A bottle as claimed in Claim 1 or Claim 2 further comprising a blending means for aiding in the blending or mixing of the powder with the liquid when the bottle is shaken or inverted.
4. A bottle as claimed in Claim 3 wherein the blending means is formed as a strainer adapted to locate toward an upper end of the body portion.
5. A bottle as claimed in Claim 3 or Claim 4 wherein the blending means is integral with the storage unit.
6. A bottle as claimed in any one of the preceding Claims wherein the storage unit is adapted to nest firmly within a recess or socket formed internally in the body portion.
7. A bottle as claimed in claim 6, wherein the recess formed in the body portion provides a flat planar wall which corresponds to a flat planar surface that forms the base of the storage unit.
8. A bottle as claimed in any one of the preceding claims wherein each compartment is provided with a lid or removable seal, for permitting access to, adding or releasing of the powder or ingredient contained therein.
9. A bottle as claimed in any one of the preceding Claims, wherein the storage unit comprises a handle.
10. A bottle as claimed in any one of the preceding Claims, wherein the closure includes an integral mouth piece for permitting consumption of the beverage directly from the bottle.
11. A bottle as claimed in Claim 10 wherein the closure further includes a lid for closing the mouth piece.

12. A bottle as claimed in Claim 11 wherein the lid is also suitable for use as a scoop for filling the compartments with powder or other ingredient.

13. A bottle as claimed in any one of the preceding claims wherein the compartments include measurement indicator means.

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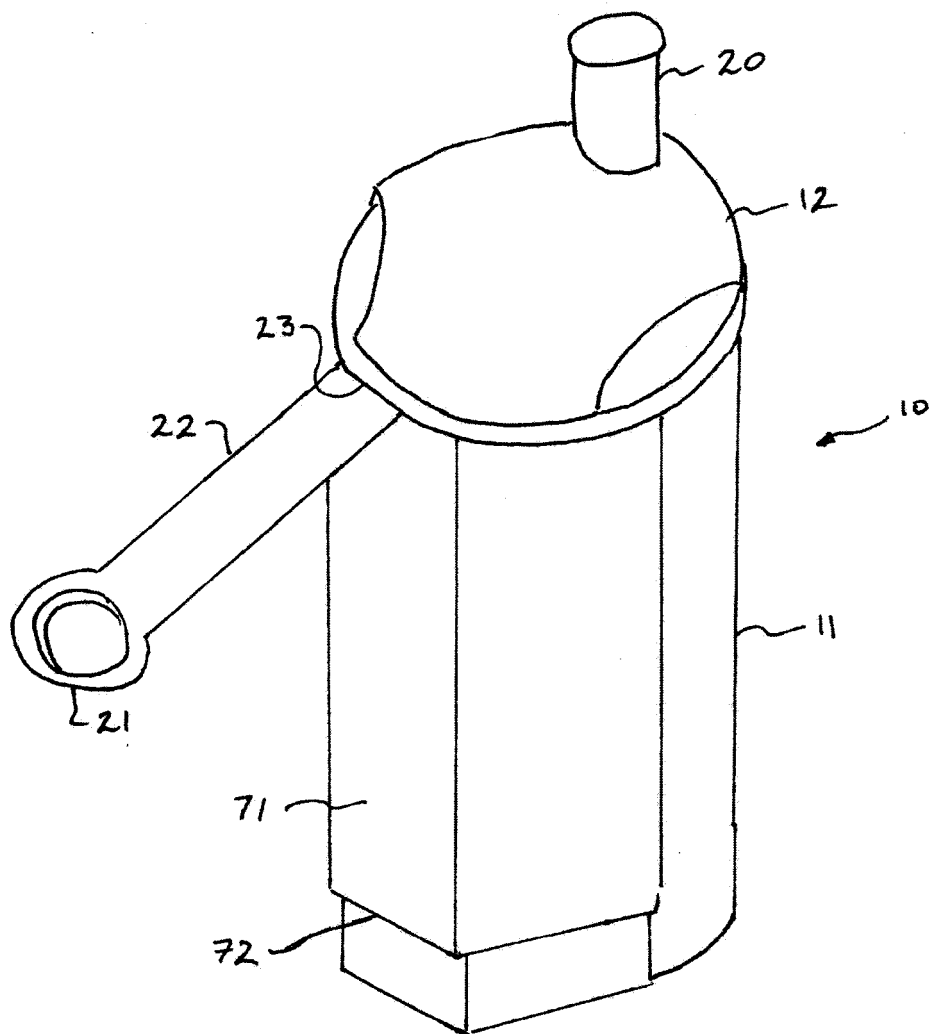


FIGURE 1

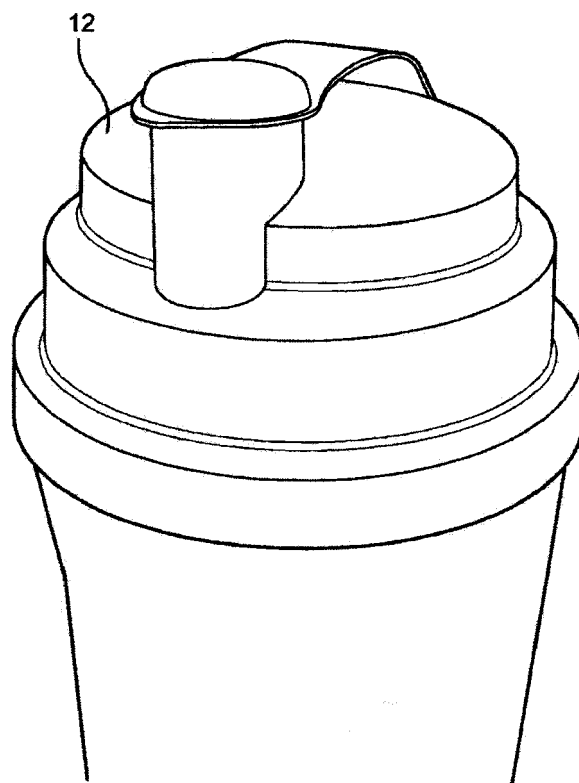


Figure 2

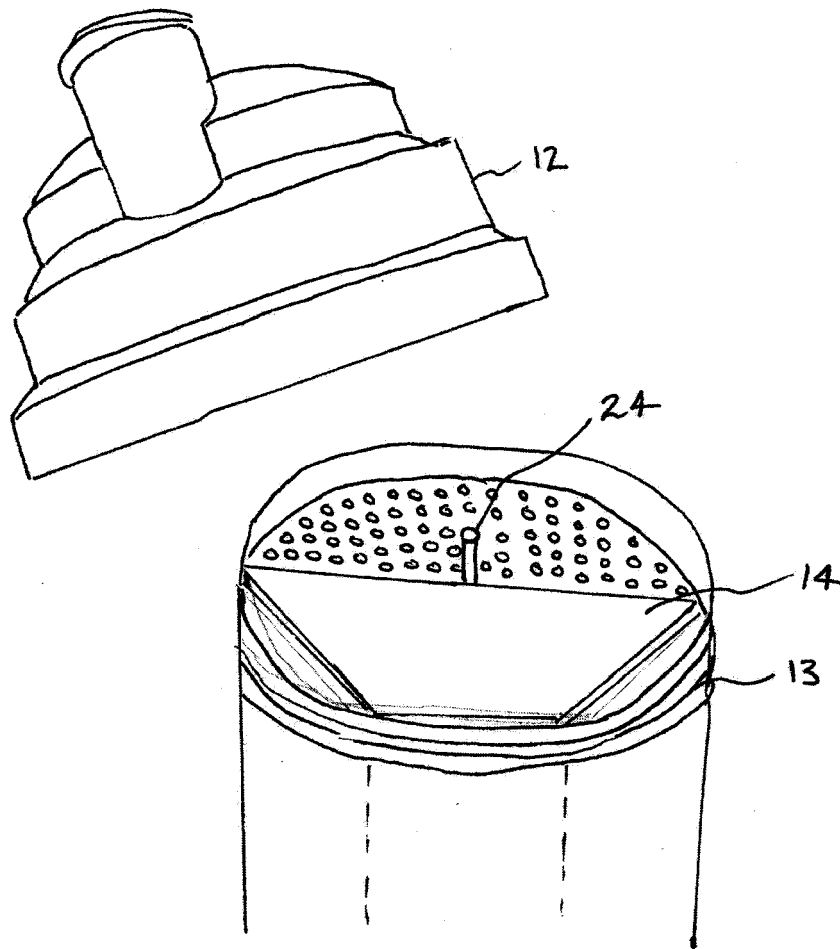


FIGURE 3

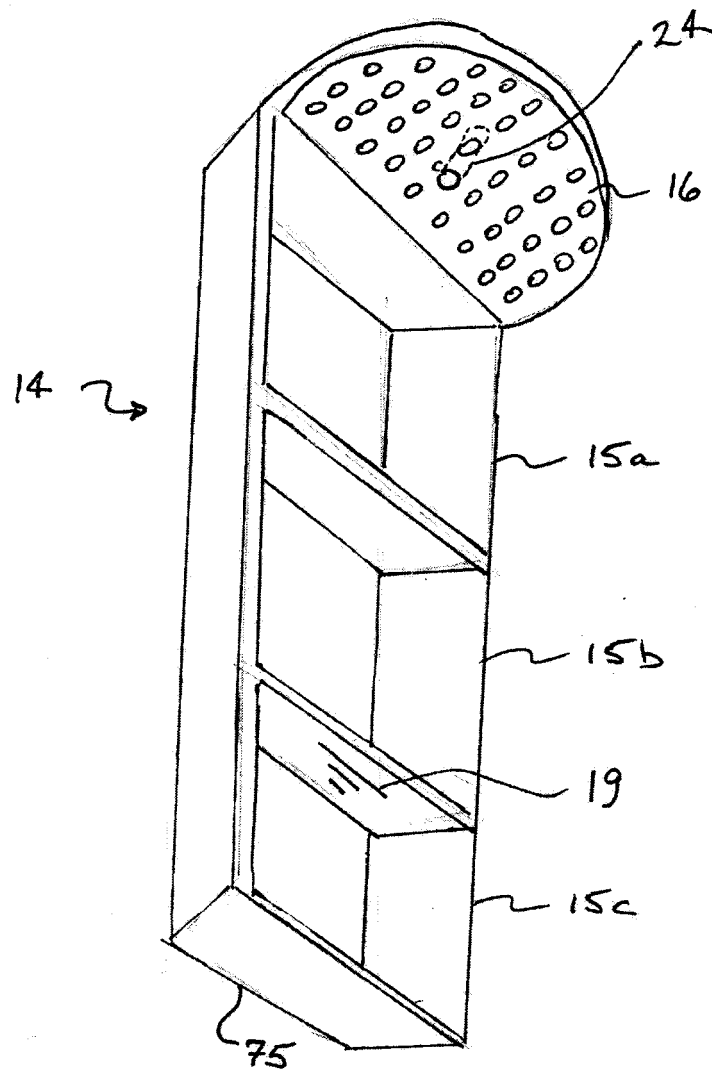


FIGURE 4

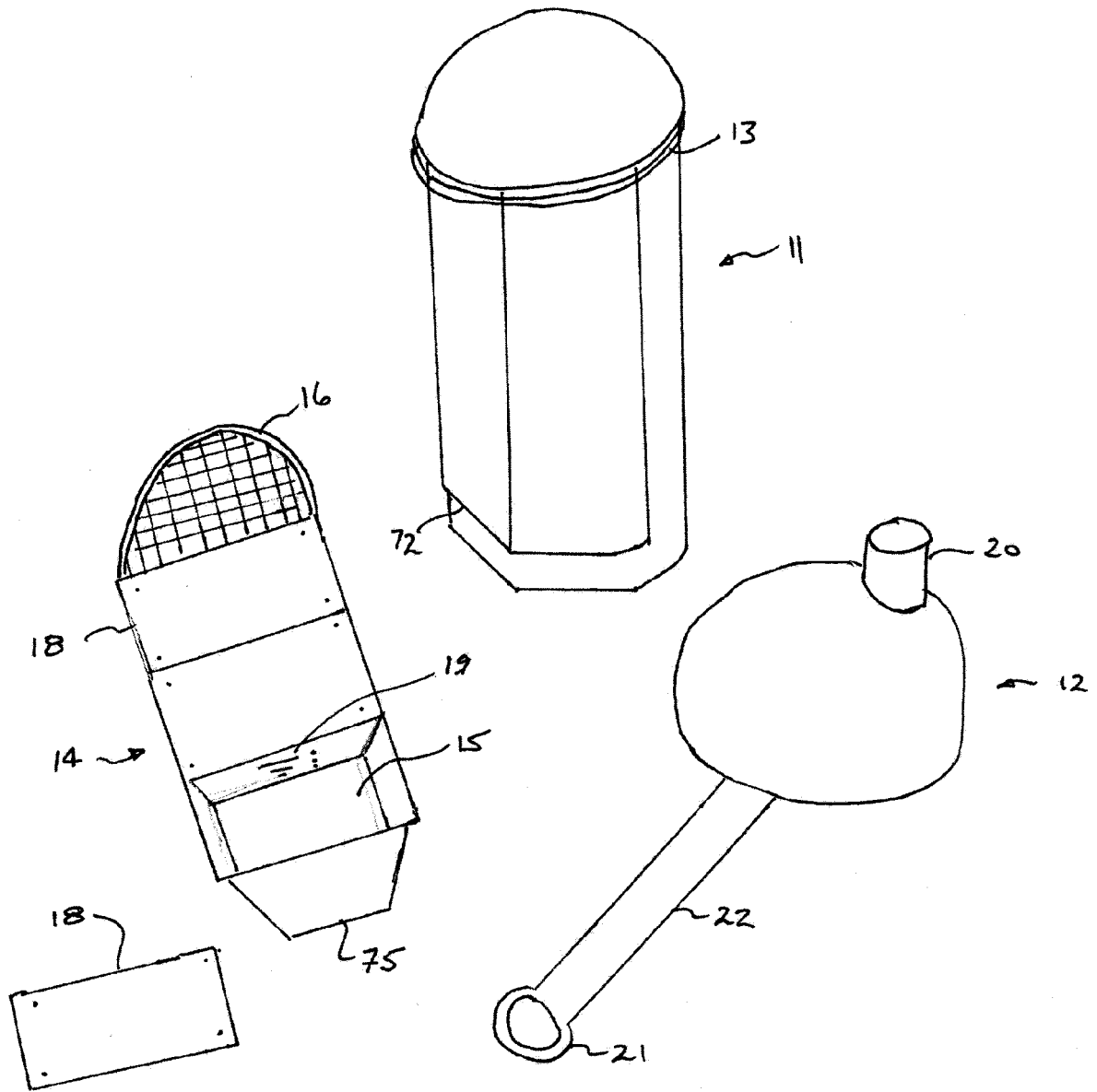


FIGURE 5



EUROPEAN SEARCH REPORT

Application Number
EP 11 16 6085

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			TECHNICAL FIELDS SEARCHED (IPC)
			A47G B65D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 August 2011	Examiner Sundell, Olli
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 16 6085

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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