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(54) **BEVERAGE CARTRIDGE AND FILTER SUPPORT FOR DISPOSING THEREIN**

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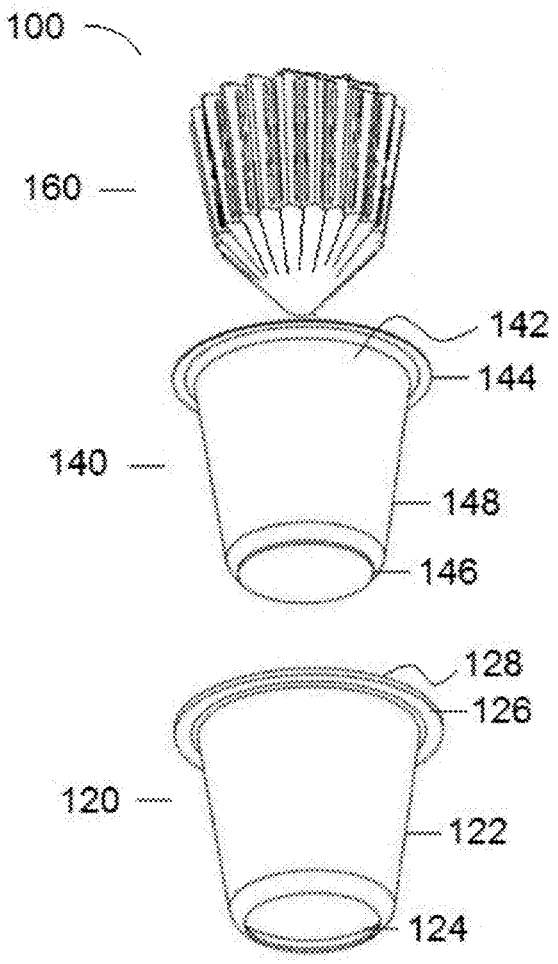
CPC ***A47J 31/0642*** (2013.01); ***B65D 43/0233*** (2013.01); ***B65D 25/02*** (2013.01); ***B65D 85/8043*** (2013.01)

(57) **ABSTRACT**

The present disclosure relates to a beverage cartridge comprising an outer container, a sleeve for inserting into the outer container, and a filter support for inserting into the sleeve and for supporting a filtering material. The filter support comprises: (a) a first element comprising a first perimetral edge, a second perimetral edge opposite the first perimetral edge, and a sidewall extending therebetween, the sidewall comprising: (i) one or more channels extending between the first perimetral edge and the second perimetral edge; and (ii) one or more apertures disposed in the sidewall; and (b) a second element coupled to the first element at the second perimetral edge, the second element comprising a base of the filter support. The beverage cartridge is manufactured of materials that are biodegradable and compostable.



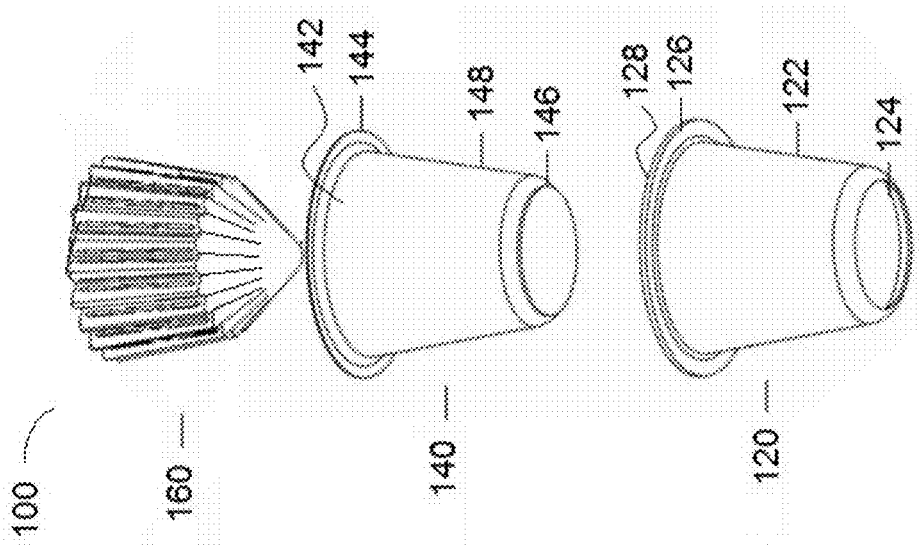


FIGURE 1

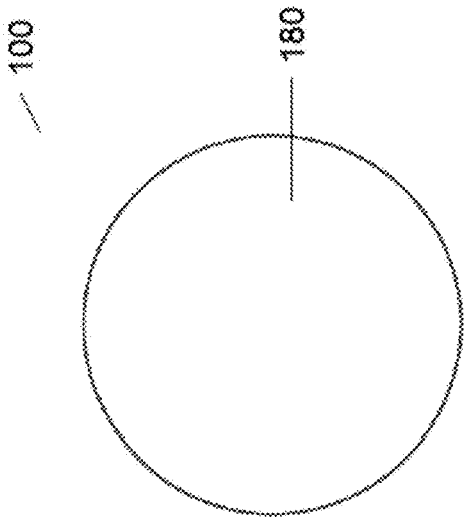


FIGURE 2

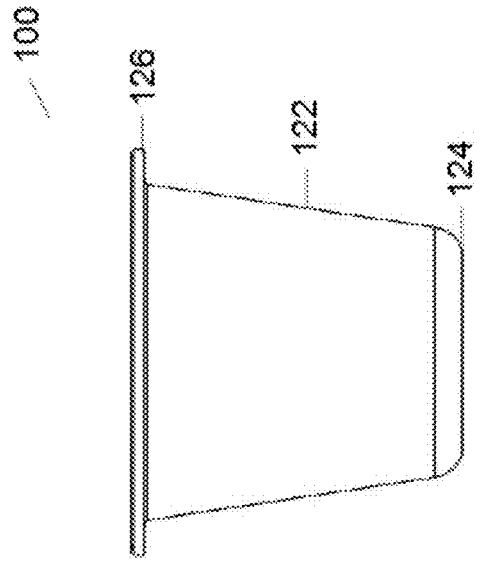


FIGURE 4

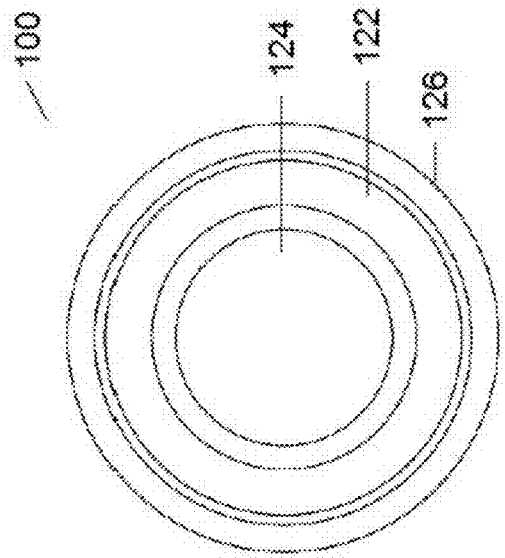


FIGURE 3

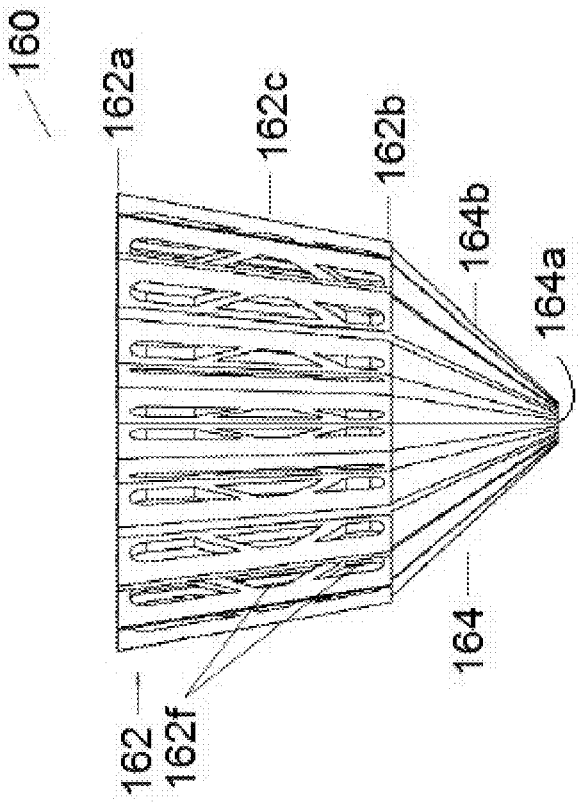


FIGURE 6

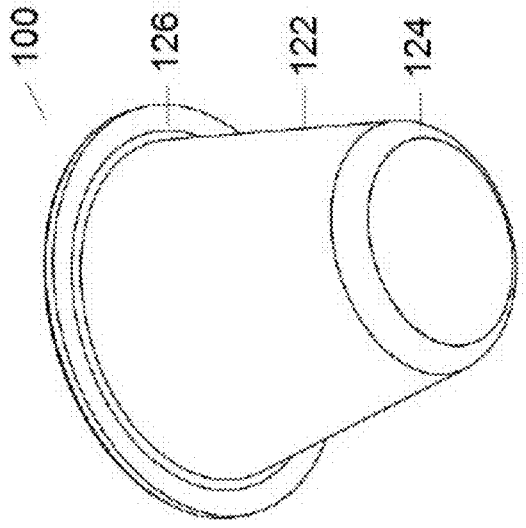


FIGURE 5

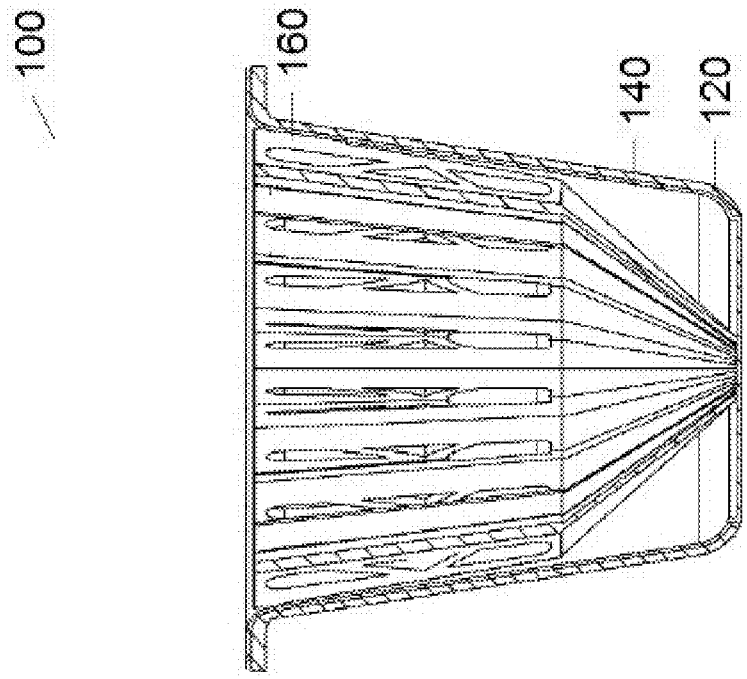


FIGURE 8

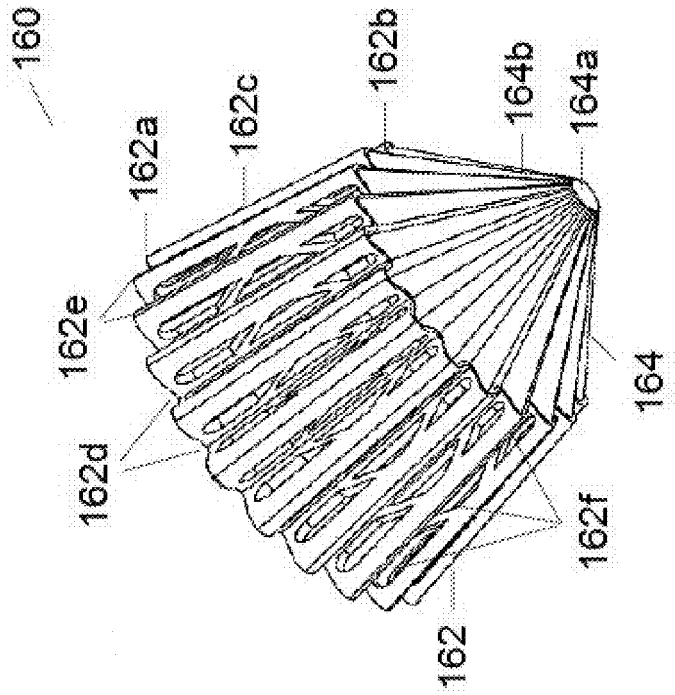


FIGURE 7

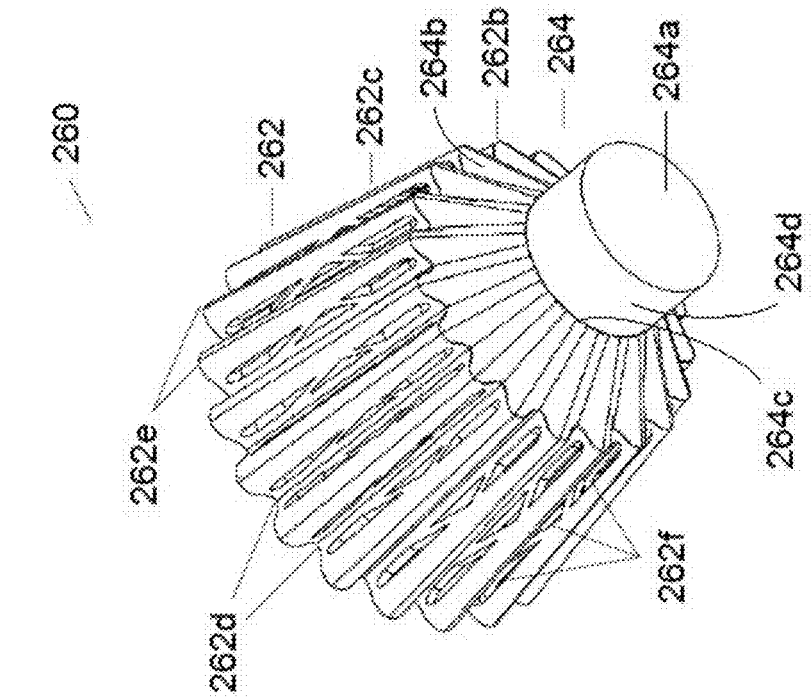


FIGURE 10

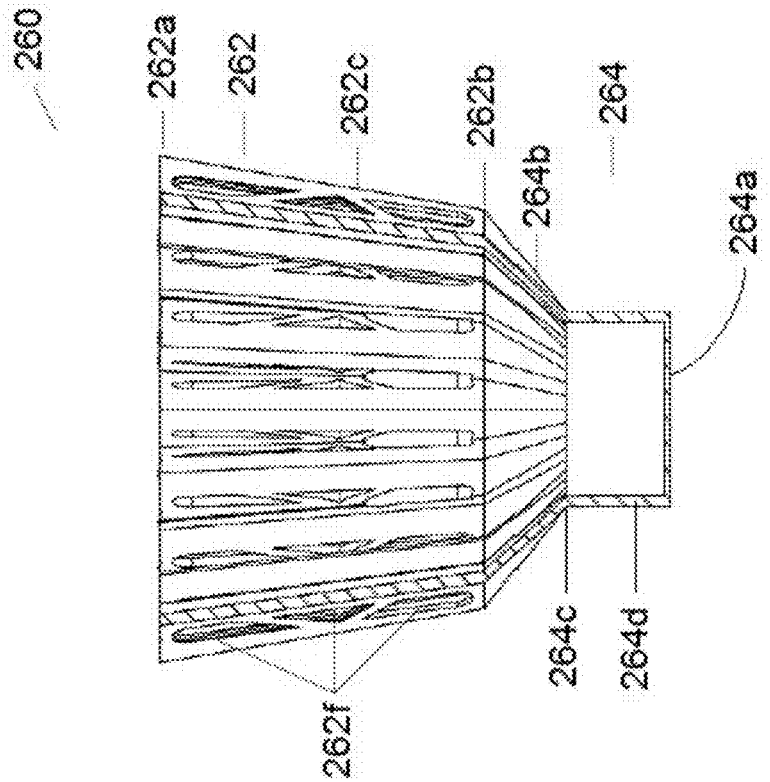


FIGURE 9

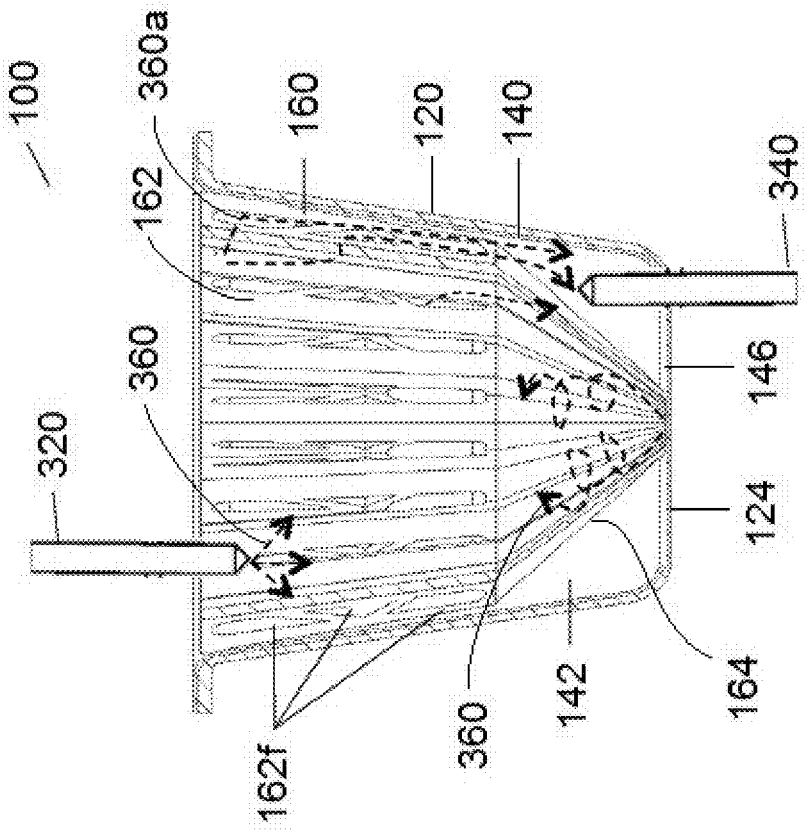


FIGURE 12

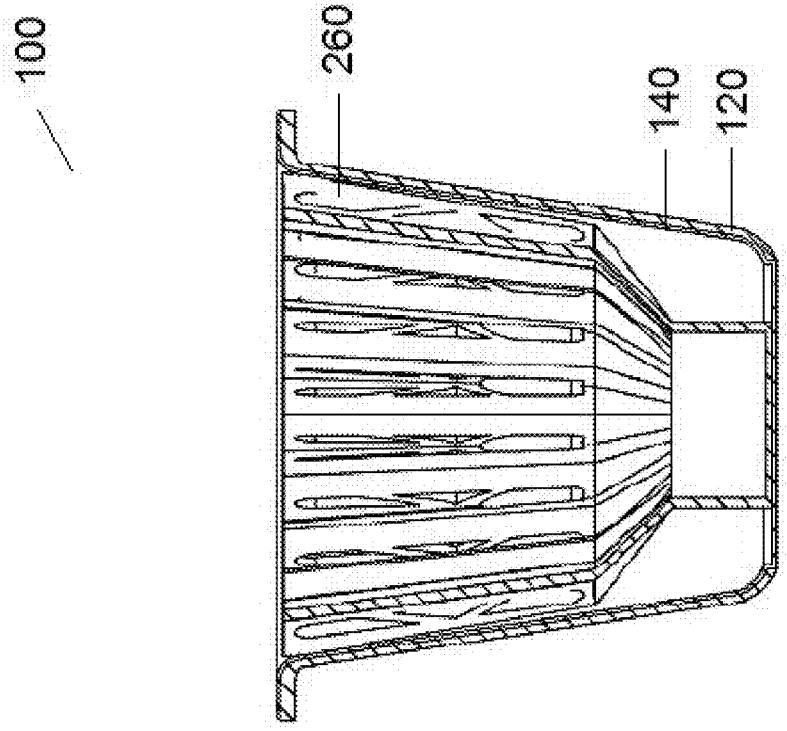


FIGURE 11

BEVERAGE CARTRIDGE AND FILTER SUPPORT FOR DISPOSING THEREIN

TECHNICAL FIELD

[0001] The present disclosure relates to a beverage cartridge, and particularly a filter support for disposing in a beverage cartridge.

BACKGROUND

[0002] Beverage cartridges for single-serve use minimize the time required to produce fragrant and flavour-full beverage brews. To prepare a beverage brew, a beverage cartridge is inserted into a compartment of a brewing machine. The brewing machine is activated and a fluid injector of the brewing machine penetrates the lid of the beverage cartridge and injects a brewing medium (e.g. hot water) into the beverage cartridge. The brewing medium mixes with the brewing ingredients within the beverage cartridge, and produces a brewing mix. The brewing mix percolates through a filtering material, and is extracted from the beverage cartridge by a fluid extractor that has penetrated the base of the beverage cartridge and is dispensed as a beverage.

[0003] Beverage cartridges for single-serve use generally comprise an outer container defining an inner cavity, a filtering material (e.g. filter paper) disposed within the inner cavity, and a lid. The filtering material generally separates the cavity into two chambers: (i) a first chamber occupying the space between the filtering material and the lid, the first chamber for holding the beverage ingredients such as, but not limited to, ground coffee beans, tea leaves, or cocoa powder; and (ii) a second chamber occupying the space between the filtering material and the base of the beverage cartridge. The lid covers the top opening of the beverage cartridge, and provides a barrier between an external environment and the inside of the beverage cartridge.

[0004] To prevent the fluid extractor from accidentally puncturing the filtering material during the extraction of the beverage mix, some beverage cartridges further comprise a filter guard disposed in the second chamber between the base of the cartridge and the filtering material. When the fluid extractor penetrates the base of the cartridge, the filter guard acts as a barrier between the fluid extractor and the filtering material, thereby preventing the fluid extractor from contacting or piercing the filtering material.

[0005] Many beverage cartridges for single-serve use are at least in part manufactured from petroleum-based plastic materials which are neither biodegradable nor compostable. The lid is typically made of a metal foil or a metal foil laminate, and is coupled to the container by a petroleum-based synthetic adhesive. Such non-biodegradable and non-compostable beverage cartridges typically end up in landfills and contribute to the on-going environmental concerns associated with trash disposal. To address on-going environmental concerns, there is consumer and manufacturer interest in developing biodegradable and compostable beverage cartridges for single-serve (see, for example, Footz et al., U.S. Pat. No. 8,960,489).

SUMMARY

[0006] The present disclosure relates to a beverage cartridge, and particularly a filter support for disposing in a beverage cartridge.

[0007] It is an object of the present disclosure to provide a beverage cartridge that is biodegradable and compostable, and manufactured in the absence of petroleum-based plastic materials and/or petroleum-based synthetic adhesive.

[0008] According to an aspect of the disclosure, there is a filter support for a beverage cartridge, the filter support comprising: (a) a first element comprising a first perimetral edge, a second perimetral edge opposite the first perimetral edge, and a sidewall extending therebetween, the sidewall comprising: (i) one or more channels extending between the first perimetral edge and the second perimetral edge; and (ii) one or more apertures disposed in the sidewall; and (b) a second element coupled to the first element at the second edge, the second element comprising a base of the filter support.

[0009] According to an aspect of the disclosure, there is a filter support for a beverage cartridge, the filter support comprising: (a) a first element comprising a first perimetral edge, a second perimetral edge opposite the first perimetral edge, and a sidewall extending therebetween, the sidewall comprising: (i) one or more channels extending between the first perimetral edge and the second perimetral edge; and (ii) one or more apertures disposed in the sidewall; and (b) a second element coupled to the first element at the second edge, the second element comprising a base of the filter support; wherein the one or more apertures are disposed in the one or more channels.

[0010] According to an aspect of the disclosure, there is a filter support for a beverage cartridge, the filter support comprising: (a) a first element comprising a first perimetral edge, a second perimetral edge opposite the first perimetral edge, and a sidewall extending therebetween, the sidewall comprising: (i) one or more channels extending between the first perimetral edge and the second perimetral edge; and (ii) one or more apertures disposed in the sidewall; and (b) a second element coupled to the first element at the second edge, the second element comprising a base of the filter support; wherein the sidewall comprises a plurality of channels extending between the first edge and the second edge.

[0011] According to an aspect of the disclosure, there is a filter support for a beverage cartridge, the filter support comprising: (a) a first element comprising a first perimetral edge, a second perimetral edge opposite the first perimetral edge, and a sidewall extending therebetween, the sidewall comprising: (i) one or more channels extending between the first perimetral edge and the second perimetral edge; and (ii) one or more apertures disposed in the sidewall; and (b) a second element coupled to the first element at the second edge, the second element comprising a base of the filter support; wherein the second element comprises a first sidewall extending between the second edge of the first element and the base of the filter support, and wherein the first sidewall comprises one or more channels extending between the second edge of the first element and the base of the filter support.

[0012] According to an aspect of the disclosure, there is a filter support for a beverage cartridge, the filter support comprising: (a) a first element comprising a first perimetral edge, a second perimetral edge opposite the first perimetral edge, and a sidewall extending therebetween, the sidewall comprising: (i) one or more channels extending between the first perimetral edge and the second perimetral edge; and (ii) one or more apertures disposed in the sidewall; and (b) a second element coupled to the first element at the second

edge, the second element comprising a base of the filter support; wherein the first sidewall extends away from the second edge of the first element and converges towards and terminates at the base of the filter support, wherein the first sidewall extends between the second edge of the first element and an edge of the second element that is in between the second edge of the first element and the base of the filter support, and a second sidewall that extends between the edge of the second element and the base of the filter support, and wherein the first sidewall comprises one or more channels extending between the second edge of the first element and the edge of the second element.

[0013] According to another aspect of the disclosure, there is a filter support manufactured of poly-lactic acid or poly-L-lactide.

[0014] According to another aspect of the disclosure, there is a beverage cartridge comprising: (a) an outer container comprising a perimetral rim, a base, and a sidewall extending therebetween; (b) a sleeve couplable to an inner surface of the outer container; (c) a filter support couplable to an inner surface of the sleeve at least at the base of the filter support, the filter support comprising: (i) a first element comprising a first perimetral edge, a second perimetral edge, and a sidewall extending therebetween, the sidewall comprising: (A) one or more channels extending between the first perimetral edge and the second perimetral edge; and (B) one or more apertures disposed in the sidewall; and (ii) a second element coupled to the first element at the second perimetral edge, the second element comprising a base of the filter support; and (d) a filtering material that is coupled to at least an inner surface or an outer surface of the first element of the filter support, the filtering material overlying the one or more apertures of the first element.

[0015] This summary does not necessarily describe the entire scope of all aspects of the disclosure. Other aspects, features and advantages will be apparent to those of ordinary skill in the art upon review of the following description of specific embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] In the accompanying drawings, which illustrate one or more exemplary embodiments:

[0017] FIG. **1** is an exploded view of a beverage cartridge comprising an outer container, a sleeve for inserting into the outer container, and a filter support for inserting into the sleeve.

[0018] FIG. **2** is a top view of the beverage cartridge depicted in FIG. **1**.

[0019] FIG. **3** is a bottom view of the beverage cartridge depicted in FIG. **1**.

[0020] FIG. **4** is a side view of the beverage cartridge depicted in FIG. **1**.

[0021] FIG. **5** is a perspective view of the beverage cartridge depicted in FIG. **1**.

[0022] FIG. **6** is a side view of a filter support according to an embodiment.

[0023] FIG. **7** is a perspective view of the filter support depicted in FIG. **6**.

[0024] FIG. **8** is a cross-sectional view of a beverage cartridge comprising the filter support depicted in FIG. **6**.

[0025] FIG. **9** is a side view of a filter support according to another embodiment.

[0026] FIG. **10** is a perspective view of the filter support depicted in FIG. **9**.

[0027] FIG. **11** is a cross-sectional view of a beverage cartridge comprising the filter support depicted in FIG. **9**.

[0028] FIG. **12** is a cross-sectional view of a beverage cartridge comprising the filter support depicted in FIG. **6**, wherein the base of the beverage cartridge is penetrated by a fluid extractor, and the lid of the beverage cartridge is penetrated by a fluid injector.

DETAILED DESCRIPTION

[0029] In the description, directional terms such as "top," "bottom," "upwards," "downwards," "vertically," and "laterally" are used in the following description for the purpose of providing relative reference only, and are not intended to suggest any limitations on how any article is to be positioned during use, or to be mounted in an assembly or relative to an environment. Terms such as "connected", "connecting", "attached", "attaching", "joined", and "joining" are used interchangeably and refer to one structure or surface being secured to another structure or surface or integrally fabricated in one piece unless expressly described otherwise.

[0030] The present disclosure relates to a beverage cartridge, and particularly a filter support for disposing in a beverage cartridge. In this disclosure, the following terms have the following meanings.

[0031] "Biodegradable" means capable of degrading as a result of the action of naturally occurring living organisms such as bacteria, fungi, and algae.

[0032] "Compostable" means capable of undergoing degradation by biological processes during composting to yield at least carbon dioxide gas, water, and biomass and leaving no visible, distinguishable or toxic residue.

[0033] "Readily renewable resource" means that the resource is derived from plant materials which grow abundantly or rapidly. Examples of readily renewable resources include, but are not limited to, bamboo and bagasse.

Beverage Container

[0034] Referring to FIGS. **1** to **5**, there is a beverage cartridge **100** comprising an outer container **120**, a sleeve **140** for inserting into the outer container **120**, a filter support (as exemplified by filter support **160**) for inserting into the sleeve **140** and for supporting a filtering material (not shown), and a lid **180** for separating the inside of the beverage cartridge **100** from an external environment.

[0035] The outer container **120** comprises a perimetral rim **126** surrounding an opening **128**, a base **124**, and a sidewall **122** extending between the base **124** and the rim **126**. The outer container **120** acts as a gas and light barrier for preserving the quality of the beverage ingredients disposed within the beverage cartridge **100**. As contemplated herein, the outer container **120** is made of a biodegradable and compostable material derived from readily renewable resources such as, but not limited to, bamboo, bagasse, wheat, sugar cane, and other fibrous plant materials. The shape of the container is preferably one that is compatible with brewing machines. As depicted in FIGS. **4-5**, the outer container **120** is frusto-conical in shape. However, the outer container may be of any other suitable shape including, but not limited to, a square prism and a rectangular prism.

[0036] The outer container **120** contains the sleeve **140**. The sleeve **140** comprises a perimetral rim **144**, a base **146**, and a sidewall **148** extending therebetween. The sleeve **140** is coupled to the inner surface of the container **120** by

methods known in the art such as, but not limited to, heat melting. The sleeve **140** provides a gas and moisture impermeable barrier between the outer container **120** and the inside of the beverage cartridge **100**, and imparts structural rigidity to the beverage cartridge **100**. The rim **144**, base **146** and sidewall **148** of the sleeve **140** define an interior space **142**. Since most beverages are brewed at or below 100° C. (i.e. the boiling point of water under atmospheric pressure), the sleeve **140** is preferably manufactured (for example, by vacuum forming) of a material that has a melting point that is greater than 100° C. under atmospheric pressure. As contemplated herein, the sleeve **140** is manufactured of a suitable biodegradable, compostable polymer, such as, but not limited to, poly-lactic acid (PLA) and poly-L-lactide (PLLA), or a material comprising a suitable biodegradable, compostable polymer. However, the sleeve **140** may be manufactured of any suitable material known in the art having a melting point that is greater than 100° C. under atmospheric pressure. Preferably, the shape of the sleeve **140** is complementary to the shape of the container **120**. As depicted in FIG. **1**, the sleeve **140** is frusto-conical in shape, and lines an inner surface of the outer container **120**. In other embodiments, however, the sleeve may be of any other suitable shape including, but not limited to, a square prism and a rectangular prism.

[0037] The filter support is insertable into the interior space **142**, and comprises a first element and a second element. The first element comprises a first perimetral edge, a second perimetral edge opposite the first perimetral edge, and a sidewall extending therebetween. The sidewall comprises: (i) one or more channels extending between the first perimetral edge and the second perimetral edge; and (ii) one or more apertures disposed in the sidewall. The second element is coupled to the second perimetral edge of the first element, and comprises a base of the filter support. The second element also defines a spatial volume between the second perimetral edge and the base of the filter support, the spatial volume for containing at least a portion of a beverage ingredient.

[0038] The filter support is preferably rigid for imparting structural rigidity to the beverage cartridge **100**, and is preferably made of a biodegradable and compostable material such as, but not limited to, PLA and PLLA, or a combination of biodegradable and compostable materials. However, the filter support may be manufactured of any suitable material known in the art having a melting point that is greater than 100° C. under atmospheric pressure, and by a suitable method known in the art (for example, but not limited to, injection molding). The filter support may be of any suitable shape as long as the filter support is insertable and couplable to the sleeve **140**. As contemplated herein, the filter support is couplable to the sleeve **140** at least at the base of the filter support by a suitable method known in the art such as, but not limited to, hot melting. In addition, the filter support may be integrally formed as one piece, or the first element and the second element may be detachably coupled to each other.

[0039] Filtering material (not shown) such as, but not limited to, filter paper is coupled to at least the outer surface or inner surface of the first element of the filter support such that the filtering material overlies the apertures of the sidewall of the first element. The filtering material is coupled to the filter support according to any method known in the art. For example, the filtering material is coupled to the filter support by melting a surface of the filter support and adhering the filtering material to the melted surface. The filter support is then rapidly cooled, thereby securely engaging the filtering material. The surface melt temperature is kept below a temperature that would damage, burn or otherwise affect the structural integrity of the filter support.

[0040] The lid **180** seals the opening **128** of the container **120** and provides a barrier (preferably a gas and moisture impermeable barrier) between the inside of the beverage cartridge **100** and an external environment. As contemplated herein, the lid **180** is made of a biodegradable, compostable materials (such as, but not limited to, PLA and PLLA), renewable resources, or a combination of thereof. The lid **180** is coupled to at least a portion of the perimetral rim **126** of the container **120** by methods known in the art such as, but not limited to, hot pressing.

Filter Support

[0041] Referring to FIGS. **6** to **8**, and according to an embodiment of the filter support, there is a filter support **160** comprising a first element **162** and a second element **164**. The first element **162** comprises a first perimetral edge **162***a*, a second perimetral edge **162***b* opposite the first perimetral edge **162***a*, and a sidewall **162***c* extending therebetween. The second perimetral edge **162***b* demarcates the first element **162** from the second element **164**. The first element **162** further comprises a plurality of channels **162***d* that are even spaced around the sidewall **162***c*. Each channel **162***d* extends the entire width of the sidewall **162***c* from the first perimetral edge **162***a* to the second perimetral edge **162***b*. As a result, the sidewall **162***c* comprises a plurality of alternating channels **162***d* and protrusions **162***e*, thereby imparting a fluted shape to the sidewall **162***c* and increasing the contact surface area of the sidewall **162***c*. Each channel **162***d* also comprises a plurality of apertures **162***f*.

[0042] The second element **164** comprises a base **164***a* and a sidewall **164***b* that extends between the base **164***a* and the second perimetral edge **162***b*. The base **164***a* is distal to the first element **162**, and covers an area that is less than an area surrounded by the second perimetral edge **162***b*. The sidewall **164***b* extends away from the second perimetral edge **162***b* and inwardly slopes towards and terminates at the base **164***a*. The sidewall **164***b* preferably has a sloping angle relative to second perimetral edge **162***b* of between about 30° and about 60°. As used herein, the term "about" provides ±10% tolerance of the recited value. As depicted in this embodiment of the filter support, the sidewall **164***b* comprises a plurality of channels and protrusions (un-numbered) extending the width of the sidewall **164***b*, and does not have any apertures. However, in other embodiments, the sidewall **164***b* may be of any suitable texture such as, but not limited to, smoothened or pleated, or may comprise one or more apertures therein. For such other embodiments comprising one or more apertures in the sidewall **164***b*, filtering material is coupled to the outer surface or inner surface of the sidewall **164***b* such that the filtering material overlies the apertures therein.

[0043] Referring to FIGS. **9** to **11** and according to another embodiment of the filter support, there is a filter support **260** comprising a first element **262** and a second element **264**. The first element **262** is defined by a first perimetral edge **262***a*, a second perimetral edge **262***b* opposite the first perimetral edge **262***a*, and a sidewall **262***c* extending therebetween. The second perimetral edge **262***b* demarcates the

first element **262** from the second element **264**. The first element **262** comprises a plurality of channels **262***d* that are even spaced around the sidewall **262***c*. Each channel **262***d* extends the entire width of the sidewall **262***c* from the first perimetral edge **262***a* to the second perimetral edge **262***b*. As a result, the sidewall **262***c* comprises a plurality of alternating channels **262***d* and protrusions **262***e*, thereby imparting a fluted shape to the sidewall **262***c* and increasing the contact surface area of the sidewall **262***c*. Each channel **262***d* also comprises a plurality of apertures **262***f*.

[0044] The second element **264** comprises a third perimetral edge **264***c*, a sidewall **264***b* extending between the second perimetral edge **262***b* and the third perimetral edge **264***c*, a base **264***a* located distal to the second perimetral edge **262***b* and the third perimetral edge **264***c*, and a sidewall **264***d* extending between the base **264***a* and the third perimetral edge **264***c*. The area surrounded by the third perimetral edge **264***c* is less than the area surrounded by the second perimetral edge **262***b*. The sidewall **264***b* extends away from the second perimetral edge **262***b* and inwardly slopes towards and terminates at the third perimetral edge **264***c*. The sidewall **264***b* preferably has a sloping angle relative to the second perimetral edge **262***b* of between about 30° and about 60°. As depicted in this embodiment of the filter support, the sidewall **264***b* comprises a plurality of channels and protrusions (un-numbered) extending the width of the sidewall **264***b*, and does not have any apertures. However, in other embodiments, the sidewall **264***b* may be of any suitable texture such as, but not limited to, smoothened or pleated, or may comprise one or more apertures therein. For such other embodiments comprising one or more apertures in the sidewall **264***b*, filtering material is coupled to the outer surface or inner surface of the sidewall **264***b* such that the filtering material overlies the apertures therein.

[0045] Sidewall **264***d* of the second element **264** extends away from the third perimetral edge **264***c* and terminates at the base **264***a*. The base **264***a* and the sidewall **264***d* define a spatial volume below the third perimetral edge **264***c*, the spatial volume for containing at least a portion of a beverage ingredient. As depicted in FIGS. **9-10**, the base **264***a* and the sidewall **264***d* define a cylindrical spatial volume. However, said defined spatial volume may be of any suitable shape including, but not limited to, a square prism and a rectangular prism. As depicted in FIGS. **9-10**, the sidewall **264***d* is smoothened and does not comprise any apertures. In other embodiments however, the sidewall **264***d* may be of any suitable texture such as, but not limited to, ridged or pleated, and may comprise one or more apertures. For such other embodiments comprising one or more apertures in the sidewall **264***d*, filtering material is coupled to the outer surface or inner surface of the sidewall **264***d* such that the filtering material overlies the apertures therein.

[0046] As contemplated in this embodiment, the filter support **260** is one integral piece. In other embodiments, the first element **262** and the second element **264** are detachably coupled to each other. In other embodiments, the sidewall **264***d* is detachably coupled to the sidewall **264***b*.

Use of a Beverage Cartridge

[0047] Referring to FIG. **12**, and using a beverage cartridge **100** comprising a filter support **160** as an example, the beverage cartridge **100** is introduced into a brewing machine (not shown). The brewing machine is activated, and a fluid injector **320** of the brewing machine punctures the lid (not shown) of the beverage cartridge **100** and introduces a brewing medium **360** (e.g. hot water) into at least the second element **164** of the filter support **160** containing a brewing ingredient (not shown). In practice, the brewing ingredient may be confined to the spatial volume defined by the second element **164** or may be present in both the spatial volumes defined by the first element **162** and the second element **164**. The brewing medium **360** mixes with the brewing ingredient to form a brewing mix **360***a*. Without wishing to be bound by theory, it is believed that a fluted second element **164** improves the mixture of brewing medium **360** and brewing ingredients, thereby improving the extraction of flavours from the brewing ingredients. The brewing mix **360***a* then percolates through the filtering material (not shown) and the apertures **162***f* of the filter support **160**, and towards the base **146** of the sleeve **140**. The channels **162***d* in the sidewall **162***c* of the first element **162** guide the brewing mix **360***a* towards the base **146** of the sleeve **140**. A fluid extractor **340** penetrates the base **124** of the cartridge and enters the interior space **142** between the base **146** of the sleeve **140** and the sidewall **164***b* of the filter support **160**. The brewing mix **360***a* is then extracted from the cartridge **100** by the fluid extractor **340**, and eventually dispensed as a beverage.

[0048] It is contemplated that any part of any aspect or embodiment discussed in this specification can be implemented or combined with any part of any other aspect or embodiment discussed in this specification. While particular embodiments have been described in the foregoing, it is to be understood that other embodiments are possible and are intended to be included herein. It will be clear to any person skilled in the art that modification of and adjustment to the foregoing embodiments, not shown, is possible.

What is claimed is:

1. A filter support for a beverage cartridge, the filter support comprising:

(a) a first element comprising a first perimetral edge, a second perimetral edge opposite the first perimetral edge, and a sidewall extending therebetween, the sidewall comprising: (i) one or more channels extending between the first perimetral edge and the second perimetral edge; and (ii) one or more apertures disposed in the sidewall; and

(b) a second element coupled to the first element at the second perimetral edge, the second element comprising a base of the filter support.

2. The filter support according to claim **1**, wherein the one or more apertures is disposed in the one or more channels.

3. The filter support according to claim **1**, wherein the sidewall comprises a plurality of channels extending between the first perimetral edge and the second perimetral edge.

4. The filter support according to claim **1**, wherein the second element comprises a first sidewall extending between the second perimetral edge of the first element and the base of the filter support.

5. The filter support according to claim **4**, wherein the first sidewall extends away from the second perimetral edge of the first element and inwardly slopes towards and terminates at the base of the filter support.

6. The filter support according to claim **5**, wherein the first sidewall comprises one or more channels extending between the second perimetral edge of the first element and the base of the filter support.

7. The filter support according to claim **5**, wherein one or more apertures is disposed in the first sidewall.

8. The filter support according to claim **4**, wherein the first sidewall extends between the second perimetral edge of the first element and a first perimetral edge of the second element disposed between the second perimetral edge of the first element and the base of the filter support, and a second sidewall that extends between the first perimetral edge of the second element and the base of the filter support.

9. The filter support according to claim **8**, wherein the first sidewall comprises one or more channels extending between the second perimetral edge of the first element and the first perimetral edge of the second element.

10. The filter support according to claim **8**, wherein the second sidewall comprises one or more channels extending between the first perimetral edge of the second element and the base of the filter support.

11. The filter support according to claim **8**, wherein one or more apertures is disposed in the first sidewall, the second sidewall, or both.

12. The filter support according to claim **1**, wherein the filter support is manufactured of poly-lactic acid or poly-L-lactide.

13. A beverage cartridge comprising:

(a) an outer container comprising a perimetral rim, a base, and a sidewall extending therebetween;

(b) a sleeve couplable to an inner surface of the outer container;

(c) a filter support according to claim **1** and couplable to an inner surface of the sleeve at least at the base of the filter support; and

(d) a filtering material that is coupled to at least an inner surface or an outer surface of the first element of the filter support, the filtering material overlying the one or more apertures of the first element.

14. The beverage cartridge according to claim **13**, further comprising a lid coupled to at least the perimetral rim of the outer container.

15. The beverage cartridge according to claim **14**, further comprising a brewing ingredient at least disposed in a spatial volume defined by the second element.

16. The beverage cartridge according to claim **14**, wherein the lid is coupled to the perimetral rim of the outer container by hot pressing.

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