A flexible pouch for holding a fluid includes a front and rear side that together define a compartment, a rim, and a spout. The compartment is for holding a fluid and has a longitudinal axis that extends through the long axis of the compartment and a transverse axis that is perpendicular to the longitudinal axis. The rim is provided around the compartment and is formed by coupling the front and rear sides together. The spout is positioned at a top end of the pouch. The spout has a notch defined in the top end thereof and has a convex shape on a top cut edge thereof. The rim has a bottom cut edge that has a continuously concave shape from one side of the pouch to the other side of the pouch.
FLEXIBLE POUCH FOR HOLDING LIQUIDS

FIELD

[0001] The technology described herein relates a flexible pouch for use in holding drink components that may be used in a drink-making machine in order to make a drink, like a cocktail.

BACKGROUND

[0002] A variety of pouches are known for holding liquids, such as drink pouches or alcohol pouches. Pouch types include flat pouches and standup pouches, among other pouches. Flat pouches may be formed by sealing together two layers of material around an outer edge of the pouch to form an internal compartment. Flat pouches may also be made from an extruded tube, or by other methods. Flat pouches typically do not stand up on their own. They are stored in a container, such as a cardboard box. Standup pouches include a front and back layer, as well as a bottom layer. Standup pouches typically will stand up on their own.

SUMMARY

[0003] An example flexible pouch is shown and described for holding a liquid component.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] FIG. 1 is a perspective view of an example pouch according to the invention;
[0005] FIG. 2 is a front view of an example pouch of FIG. 1;
[0006] FIG. 3 is a side view of the example pouch of FIG. 1;
[0007] FIG. 4 is a bottom view of the example pouch of FIG. 1;
[0008] FIG. 5 is a top view of the example pouch of FIG. 1;
[0009] FIG. 6 is a representation of a cutting pattern for the pouches of FIG. 1 during the manufacturing process;
[0010] FIG. 7 is a plan view of a cutting blade and cutting unit for cutting the pouches apart in an assembly line fashion;
[0011] FIG. 8 is a perspective view of a cutting unit with a line of pouches installed on the cutting unit; and
[0012] FIG. 9 is an end view of a cutting unit with a line of pouches installed on the cutting unit for cutting.

DETAILED DESCRIPTION

[0013] The technology described herein relates generally to a pouch 10 for use in storing a liquid, such as a concentrate, a non-concentrate, a flavor, an alcoholic beverage, another beverage component, or the like. The pouch 10 is designed for use in a drink machine (not shown) that incorporates a cutting blade (not shown) that slices the pouch longitudinally in order to open the pouch. The pouch 10 could alternatively be used without a drink machine and could be opened by hand by tearing or cutting through part of the pouch 10, as will be described in greater detail below.

[0014] An example pouch 10 is shown in FIGS. 1-5. The pouch 10 is a flexible pouch that has an inner compartment 12 and an outer, sealed edge that forms a rim 14. The pouch 10 is formed from a front layer 16 and a back layer 18. As discussed in greater detail below, the front and back layers 16, 18 may be formed from two separate sheets, or from a single sheet of material that is folded over or shaped as a tube. The front layer 16 has an inner and an outer surface and the back layer has an inner and an outer surface. A space is provided in the compartment 12 between the inner surfaces of the front and back layers. The compartment 12 forms a space for accommodating a liquid for storage therein. The perimeter of the pouch 10 is sealed entirely around the outer perimeter. The sealing process is known in the art and creates a seam or rim 14. The pouch 10 may be hermetically sealed.

[0015] The general shape of the pouch 10 is rectangular with a spout 20 at an upper end. The pouch 10 has a longitudinal axis Y-Y that extends along the long axis of the pouch 10. The pouch 10 also has a transverse axis X-X that is perpendicular to the longitudinal axis Y-Y. During use, the longitudinal axis Y-Y of the pouch 10 will be positioned substantially vertically. The pouch 10 has a front outer surface 22 and a rear outer surface 24. The shape of the front outer surface 22 matches the shape of the rear outer surface 24. The perimeter of the pouch 10 is cut simultaneously after the pouch 10 is sealed in order to form matching front and rear outer surfaces 22, 24.

[0016] The compartment 12 has a top end 26, a bottom edge 28, a left and right side edge 30, 32, which are substantially identical to one another, and a front and rear surface 22, 24, which are also substantially identical to one another in shape. A narrowed portion 34 is positioned at the top end 26 of the compartment 12, and the bottom edge of the compartment is flat 28. An upper edge 36 of the compartment 12 is substantially an inverted V-shape, with the upper edge 36 formed in two parts that extend from the left and right side edges 30, 32 to the narrowed portion 34 on either side of the pouch 10. The compartment 12 has a length L1 that is greater than a width W1 thereof, although the length could be less than the width, if desired.

[0017] The rim 14 of the pouch 10 is formed from the front and back layers 16, 18, which are joined together around the outer edge by heat sealing or otherwise. The rim 14 has a top end 38, a bottom edge 40, a left and a right side 42, 44, which are substantially identical to one another, and a front and a back surface 22, 24, which are substantially identical to one another in shape, but may have different graphics applied thereto. The top end 38 of the rim 14 includes a spout 46 into which the narrowed portion 34 of the compartment 12 extends. The spout 46 is approximately rectangular in profile, but could have other shapes. The bottom edge 40 of the rim 14 has an inwardly curved or concave surface. The spout has a top edge 38 and the top edge 38 of the spout 46 has a curved surface, which may have a convex shape. The bottom concave shape and the top convex shape may be complementary to one another, such that they are substantially identical or created by the same cutting tool, such as a die punch. Other shapes could also be used for the top edge 38 of the spout 46. The side edges 42, 44 of the rim 14 are straight, but could be other shapes. The rim 14 also includes an upper edge 50 that is an inverted V-shape that mirrors the upper edge 36 of the compartment 12. The upper edge 50 of the rim 14 mates with the spout 46, which is centrally located. The side edges 42, 44 of the rim 14 join with the upper edges 50 of the pouch 10 at shoulders 52, which are rounded portions where the side edges 42, 44 meet the upper edges 50 of the rim 14.
The spout 46 includes two necked-in cut outs 54, one on each side of the pouch 10, that are positioned between the spout 46 and the adjacent upper edge 50 of the pouch 10. These necked-in cut outs 54 help to create a narrowed portion 34 of the spout 46 that can be used for tearing the spout 46 open by hand.

The pouch 10 also includes a notch 56 that extends downwardly and inwardly at the top edge 38 of the spout 46. This notch 56 is used to create a thinned portion 58 of the spout 46 to aid in cutting the pouch 10 with a blade (not shown) that is positioned inside a drink machine. It is contemplated that a cutting blade will enter the front or rear surfaces 22, 24 of the pouch 10 and slice downwardly longitudinally Y-Y. The notch 56 is designed to aid in the guiding of a blade through the spout 46 of the pouch 10 in order to release the contents of the pouch 10 therefrom. In practice, the top end 38 of the pouch 10 will be inserted into a receptacle in a drink machine such that the top end 38 faces downwardly and the bottom edge 40 faces upwardly. A blade will enter from the front or rear surfaces of the pouch 10 and slice the pouch 10 vertically through the front and/or rear surfaces 22, 24 of the pouch 10 and spout 46. The blade is directed towards the notch 56 in the pouch 10 since that area of the pouch 10 has a thinner rim 14. Thus, the notch 56 helps to promote cutting in a desired location of the pouch 10.

The pouch 10 dimensions are, in part, determined based upon the types of manufacturing machines presently readily available. As other manufacturing machines become available, the pouch 10 size and shape may vary. In addition, although the compartment 12 mimics the shape of the rim 14 of the pouch 10 (with the exception of the bottom edge 40), the compartment 12 could have a shape that is different from that of the rim 14.

The notch 56 on the top end 38 of the pouch 10 can be formed with an angle A1 of about 90 degrees. The notch 56 could have other dimensions than shown and described. The necked-in cut outs 54 that form the tear location in the spout 46 could be formed at an angle A2 of about 50 or 60 degrees. The cut outs 54 could have different dimensions than shown and described. The cut outs 54 of the spout 46 form a thinned area 58 of the rim 14, making it easier to remove the spout 46 from the remainder of the pouch 10 by tearing or cutting. The indented notch 56 on the top edge 38 of the pouch 10 also defines a thinned portion 58 at the top end of the pouch 10 for cutting, as previously discussed.

The compartment 12 has a thickness that can vary based upon how much contents are required in each pouch 10. One exemplary thickness is about 11 mm. A length L1 of the pouch 10 may be about 139 mm while a width W1 may be about 82 mm. The width W2 of the spout 46 may be about 35 mm and the width of the narrowed portion 34 of the compartment 12 may be about 20 mm. The width W3 of the narrowed portion 34 of the spout 46 may be about 25 mm. The concavity of the top edge 38 and convex surface 40 at the bottom end of the pouch 10 may be about R70. The angle of the top shoulders 52 of the pouch 10 relative to the transverse axis X-X may be around 15 degrees. The thickness of the rim 14 at the narrowest point at the bottom edge 40 may be about 5 mm. The shoulders 52 may have a radius of about R12.

FIG. 6 depicts an example of the layout used during manufacture of the pouches 10 according to the invention in the production line. As shown, the curved radius of the top end 38 and bottom edge 40 of the pouches 10 helps to provide greater efficiency for the manufacture of the pouches 10 since more pouches 10 can be made from a sheet of material. The concave top edge 38 of the pouch 10 is cut at the same time that the convex bottom edge 40 of the preceding pouch 10 is cut. Part of the spout 46 of each pouch 10 is formed within the bottom end of each preceding pouch 10. Because of the curved shape of the pouch 10 at the top and bottom ends, the number of pouches 10 made from a sheet of material is increased, saving cost and time. In particular, the repeating length RL of the cut is less than the length L2 of the actual pouch that is formed. In addition, the curved cut at the bottom edge 40 may be created by a curved compound blade 64, an example of which is shown in FIG. 7. The lifetime of a curved blade is longer than that of a straight blade. Thus, the curved blade will last longer and will need less maintenance than a straight blade. It also helps to provide a unique look to the pouch 10.

During production, the distance between the top 38 of each pouch 10 and the shoulder 52 of each pouch 10 is about 27 mm. The distance between the bottom 28 of the compartment 12 of each pouch 10 and the shoulder 52 of the following pouch 10 is about 32 mm. The repeating length RL of the pouch 10 is about 129 mm, which is smaller than the actual length L2 of the pouch 10, which is about 139 mm. The reason for this is because the top of each pouch 10 is recessed into the bottom of the preceding pouch 10. Thus, approximately 10 mm of material can be saved per pouch 10 by utilizing the curved bottom edge 40 and curved top edge 38. The cutting blade may be formed as a shaped (non-straight) blade that serves as a cookie cutter for cutting the bottom of one pouch 10 at the same time that it cuts the top of the next pouch 10. One type of cutting tool that can perform this type of cutting is a die punch set 62. An example shaped cutting blade 64 is shown in FIG. 7. Alternatively or in addition thereto, multiple cuts can be made to form the various shapes of the pouch 10, if desired.

The pouches 10 are cut apart using standard cutting machines and cutting units 62, such as shown in FIGS. 8-9. Types of blades that may be used include steel, high speed steel, tungsten carbide, Teflon coated materials, and other metal or plastic blades. The blades may be heat treated and hardened. The blades are long-lasting and provide razor-sharp cutting. Any type of cutting blade may be used in order to make the cuts necessary to create the pouch 10 shape.

The pouch 10 may be made of any known material for storing beverages. The material may be food grade or non-food grade, depending upon what is stored in the pouch 10. For example, motor oil would not need food grade materials while orange juice would need food grade materials.

One type of material that is contemplated is a multilayer material that includes a barrier. This multilayer material utilizes a combination of polyester (PET), foil, and polyethylene (PE). Multilayer materials will typically include an outer layer that can accept graphics, a barrier layer, and a sealant layer, among other layers. Types of outer layers that are contemplated either alone or in combination with other materials include polypropylene (PP), polyethylene (PE), polyester (PET), and nylon. Barrier layers may be foil, metalized poly, ethylene vinyl alcohol (EVOH), or silicon oxide; among other materials and combinations thereof. Sealant layers may be PE or PP, among other know
sealant layers. The combinations may be formed by lamination, or other means. One type of pouch 10 may be a laminated foil. Although not shown, the pouches 10 could alternatively be paper based or a combination of paper and plastic. The pouches 10 could be 3 or 4 layer laminates, such as 3 or 4 film layers like Paper/Poly/foil/Poly. Alternatively, the pouches 10 could be similar to aseptic brick packages, or aseptic bags, but formed at least in part in the manner shown. The pouches 10 can be made from a heat-sealable, heat-weldable, or ultrasonic sealing flexible laminate, such as aluminum sheet covered with a plastic material, or from any other suitable material. It is contemplated that the front and back sheets of material are made of the same material, although it’s possible that they could be made of different types of material. For example, if it’s preferred that the front surface be transparent while the back surface is opaque, the materials may be different. The pouches 10 could be formed so that graphics are provided on only one of the sheets of material, on both a front and rear surface of the sheet, with the front sheet being transparent.

[0028] While the rim 14 is shown as being continuous in the figures, it could be discontinuous as long as the compartment 12 is sealable. The rim 14 can be formed by joining the front and back sheets of material using heat sealing, heat welding, ultrasonic sealing, or other known manufacturing methods. Alternatively, adhesives, crimping or other suitable methods can be used to bond the sheets together around the perimeter. Also, as discussed above, a single extruded tube can be used in place of two sheets. When a tube is used, only the ends of the pouch 10 need to be sealed since the sides of the tube are already sealed. However, in order to provide a uniform appearance, the entire outer edge of the pouch 10 may be sealed to form a rim 14.

[0029] In an alternative embodiment, a single sheet of material can be used that is folded over on itself, with the free ends being bonded together to define the sealed compartment 12. In this embodiment, the folded over side may remain unsealed, or the entire outer edge of the pouch 10 may be sealed to form a rim 14 in order to provide an overall uniform appearance to the pouch 10. The compartment 12 in each of these embodiments is sealed fluid tight.

[0030] The rim 14 that is created by heat sealing or otherwise can be a thin line or combination of lines, a patterned section, or a smooth wide rib-like section. The rib 14 may have a thickness that ranges from about 5 mm to 12 mm. A preferred range is 6 mm to 10 mm. An example thickness is about 6 mm.

[0031] When the pouch 10 is empty, the compartment 12 is substantially flat. When the compartment 12 is filled with a liquid, the compartment 12 bulges outwardly on both the front and rear sides 22, 24. The pouch 10, as shown, is symmetrical. It is envisioned that a pouch 10 could be non-symmetrical and still incorporate the novel features of the present invention. Moreover, pouches 10 of different shapes and sizes could incorporate features taught in the present disclosure.

[0032] The pouches 10 may be used to hold a fluid, a liquid, a beverage, paste media, fine granular material, or other flowable material, including thicker materials. The pouches 10 may also be used to hold non-liquid materials, if desired. It is contemplated that the pouch 10 will be used as a beverage container.

[0033] According to one embodiment of the invention, a flexible pouch 10 for holding a fluid includes a front and a rear side 16, 18, a rim 14, and a spout 46. The front and rear sides 16, 18 together define a compartment 12 for holding a fluid. The compartment 12 has a longitudinal axis Y-Y that extends through the long axis of the compartment 12 and a transverse axis X-X that is perpendicular to the longitudinal axis Y-Y. The rim 14 is positioned around the compartment 12 and is formed by coupling the front and rear sides 16, 18 together. The spout 46 is positioned at the top end 38 of the pouch 10. The spout 46 has a notch 56 at the top end thereof. The spout 46 has a convex shape at a top cut edge 38 thereof. The rim 14 includes a bottom cut edge 40 that has a continuously concave shape from one side 42 of the pouch 10 to the other side 44 of the pouch 10.

[0034] The top cut edge 38 of the flexible pouch 10 may have a convex shape that is substantially the same as the concave shape of the bottom cut edge 40. The notch 56 in the top end 38 of the pouch 10 is V-shaped and extends inwardly into the spout 46 in order to provide a thinned portion 58 at the notch 56.

[0035] In another embodiment, a flexible pouch 10 system includes an assembly line for manufacturing the flexible pouch 10, as described above, in a line of pouches 10 in a continuous manner. The system includes a cutter for cutting the flexible pouches 10 in the line of pouches 10 apart. Each pouch 10 in the line of pouches 10 has substantially the same length L2 and the line of pouches 10 has a repeating length RL that is less than the length L2 of each pouch 10.

[0036] In another embodiment, a flexible pouch 10 for holding a fluid includes a front and a rear side 16, 18, a rim 14, and a spout 46. The front and the rear sides 16, 18 together define a compartment 12 for holding a fluid. The compartment 12 has a longitudinal axis Y-Y that extends through the long axis of the compartment 12 and a transverse axis X-X that is perpendicular to the longitudinal axis Y-Y. The rim 14 is provided around the compartment 12 and is formed by coupling the front and rear sides 16, 18 together. The spout 46 is positioned at a top end 38 of the pouch 10. The pouch 10 has a notch 56 defined in the top end 38 thereof. The spout 46 is openable to release the fluid from the pouch 10.

[0037] The spout 46 may be aligned with the longitudinal axis Y-Y and the notch 56 in the top end may be aligned with the longitudinal axis Y-Y. The pouch 10 may be configured to be openable by one of tearing or cutting the spout 46 either along the longitudinal axis Y-Y or substantially parallel to the transverse axis X-X of the compartment 12.

[0038] The compartment 12 may have a narrowed portion 34 at a top end thereof in the vicinity of the spout 46, with the narrowed portion 34 being aligned with the longitudinal axis Y-Y. The compartment 12 may have upper edges 50 positioned adjacent the spout 46, with the upper edge 50 extending downwardly from the spout 46 at an angle relative to the transverse axis X-X. The rim 14 may also have sides 42, 44 that extend downwardly from the upper edges 50 parallel to the longitudinal axis Y-Y to define side edges 42, 44 of the pouch 10.

[0039] The rim 14 may also include a bottom cut edge 40 positioned at a bottom end of the pouch 10, with the bottom edge 40 being at an end opposite the top end 38. The bottom cut edge 40 of the rim 14 is curved inwardly. The pouch 10 may be a flat pouch 10. The bottom cut edge 40 of the rim 14 may be concave. The bottom edge 28 of the compartment 12 may be flat.
The compartment 12 may have a bottom edge 28, side edges 30, 32, a top edge 26, and a narrowed top portion 34 that is associated with the spout 46. The bottom edge 28 of the compartment 12 may be straight and parallel to and spaced from the transverse axis X-X. The side edges 30, 32 may be straight and parallel to and spaced from the longitudinal axis Y-Y. The upper edge 50 may be an inverted V-shape that extends from the side edges 30, 32 to the narrowed top portion 34. The narrowed top portion 34 may be substantially rectangular. The rim 14 may have a bottom cut edge 40, two side cut edges 42, 44, an upper cut edge 50, and a spout 46 positioned substantially in the center of the upper cut edge 50. The bottom cut edge 40 may be continuously concavely curved inwardly. The side cut edges 42, 44 may be substantially straight and parallel to the longitudinal axis Y-Y. The upper cut edge 50 may be an inverted V-shape that extends from the side cut edges 42, 44 to the spout 46. The spout 46 may have a convex cut top edge 38 and straight cut side edges. The convex cut top edge 38 of the spout 46 may have substantially the same curvature as the concave cut bottom edge 40 of the rim 14.

In another embodiment, a flexible pouch 10 for holding a fluid includes a front and a rear surface 22, 24 and a portion of the pouch 10 positioned at a top end 38 thereof configured as a spout 46. The front and rear surfaces 22, 24 are joined around the edges thereof to define a rim 14, with a compartment 12 positioned inside the rim 14 for holding the fluid. The rim 14 at the bottom end of the pouch 10 has a cut edge 40 that is continuously concavely curved from a left side edge 30 of the pouch 10 to a right side edge 32 of the pouch 10.

The spout 46 may have a top cut edge 38 that is convexly curved. The curvature of the top edge 38 of the spout 46 may substantially match the curvature of the continuously concave cut bottom edge 40 of the pouch 10. The pouch 10 top cut edge 38 of the spout 46 may include an inwardly extending, substantially centrally positioned notch 56 formed therein. The pouch 10 may include side edges and a top edge 38. The spout 46 may have a top edge 38 and side edges that extend upwardly from the upper edges 50. The upper edges may extend between the side edges 42, 44 and the side edges of the spout 46, with a cut out portion 54 positioned on both side edges of the spout 46 in the vicinity where the upper edges 50 mate with the side edges of the spout 46. The cut out portions 54 of the spout 46 may be formed by cutting away material of the spout 46 to form indentations in the side edges of the spout 46, with the cut out portion 54 providing a location where the spout 46 can be torn.

In a first embodiment, a flexible pouch for holding a fluid includes a front and a rear side, a compartment, a rim, a spout, and a bottom cut edge. The front and a rear side together define the compartment for holding a fluid. The compartment has a longitudinal axis that extends through the long axis of the compartment and a transverse axis that is perpendicular to the longitudinal axis. The rim is provided around the compartment comprised of the front and rear sides coupled together. The spout is positioned at a top end of the pouch, with the spout having a notch defined in the top end thereof and having a convex shape on a top cut edge thereof. The bottom cut edge of the rim has a continuously concave shape from one side of the pouch to the other side of the pouch.

The convex shape of the flexible pouch top edge may be substantially the same as the concave shape of the bottom cut edge. The notch in the top end of the pouch may be V-shaped and may extend inwardly into the spout in order to provide a thinned rim portion at the notch. In another embodiment, a flexible pouch system includes an assembly line for manufacturing the flexible pouch of claim 1 in a line of pouches in a continuous manner, and a cutter. The cutter is for cutting the flexible pouches in the line of pouches apart. Each pouch in the line of pouches has substantially the same length. The line of pouches has a repeat length that is less than the length of each pouch.

In another embodiment, a flexible pouch for holding a fluid includes a front and a rear side that together define a compartment for holding a fluid, a rim, and a spout. The compartment has a longitudinal axis that extends through the long axis of the compartment and a transverse axis that is perpendicular to the longitudinal axis. The rim is provided around the compartment comprised of the front and rear sides coupled together. The spout is positioned at a top end of the pouch, with the pouch having a notch defined in the top end thereof. The spout is openable to release the fluid from the pouch.

The spout may be aligned with the longitudinal axis. The notch in the top end may be aligned with the longitudinal axis. The pouch may be configured to be openable by one of tearing or cutting the spout either along the longitudinal axis or substantially parallel to the transverse axis of the compartment. The compartment may have a narrowed portion at a top end thereof in the vicinity of the spout, with the narrowed portion being aligned with the longitudinal axis. The compartment has upper edges that are positioned adjacent the spout. The upper edges may extend downwardly from the spout at an angle relative to the transverse axis. The sides of the pouch may extend downwardly from the upper edges parallel to the longitudinal axis to define side edges of the pouch.

The pouch may also include a bottom cut edge of the rim positioned at a bottom end of the pouch. The bottom end may be at an end opposite the top end. The bottom cut edge of the rim may be curved inwardly.

The pouch may be a flat pouch. The bottom cut edge of the rim may be concave. The bottom edge of the compartment may be flat. The compartment has a bottom edge, side edges, a top edge and a narrowed top portion that is associated with the spout. The bottom edge may be straight and parallel to and spaced from the transverse axis. The side edges may be straight and parallel to and spaced from the longitudinal axis. The top edge may be an inverted V-shape that extends from the side edges to the narrowed top portion. The narrowed top portion may be substantially rectangular. The rim may have a bottom cut edge, two side cut edges, an upper cut edge, and a spout positioned substantially in the center of the upper cut edge, with the bottom cut edge being continuously concavely curved inwardly, the side cut edges being substantially straight and parallel to the longitudinal axis, the upper cut edge being an inverted V-shape that extends from the side cut edges to the spout. The spout may have a convex cut top edge and straight cut side edges. The convex cut top edge of the spout may have substantially the same curvature as the concave cut bottom edge of the rim.
In another embodiment, a flat pouch for holding a fluid includes a front and a rear surface joined around the edges thereof to define a rim and a portion of the pouch positioned at a top end configured as a spout. A compartment is positioned inside the rim for holding a fluid. The rim at the bottom end of the pouch has a cut edge that is continuously concavely curved from a left side edge of the pouch to a right side edge of the pouch.

The spout may have a top cut edge that is convexly curved. The curvature of the spout top cut edge may substantially match the curvature of the continuously concave curved bottom cut edge of the pouch. The pouch top cut edge of the spout may include an inwardly extending, substantially centrally positioned notch formed therein.

The pouch may include side edges and upper edges. The spout may have a top edge and side edges. The upper edges may extend upwardly from the upper edges of the pouch. The upper edges may extend between the side edges of the pouch and the side edges of the spout, with a necked in cut out portion positioned on both side edges of the spout in the vicinity where the upper edges mate with the side edges of the spout. The necked in cut outs may be formed by cutting away material of the spout to form indentations in the side edges of the spout, with the necked in cut outs providing a location where the spout can be torn.

Other embodiments other than those claimed are also anticipated in view of the disclosure herein.

The term “substantially,” if used herein, is a term of estimation.

While various features are presented above, it should be understood that the features may be used singly or in any combination thereof. Further, it should be understood that variations and modifications may occur to those skilled in the art to which the claimed examples pertain. The examples described herein are exemplary. The disclosure may enable those skilled in the art to make and use alternative designs having alternative elements that correspond to the elements recited in the claims. The intended scope may thus include other examples that do not differ or that in substantially differ from the literal language of the claims. The scope of the disclosure is accordingly defined as set forth in the appended claims.

1. A flexible pouch for holding a fluid comprising:
   a front and a rear side that together define a compartment for holding a fluid, with the compartment having a longitudinal axis that extends through the long axis of the compartment and a transverse axis that is perpendicular to the longitudinal axis;
   a rim provided around the compartment comprised of the front and rear sides coupled together;
   a spout positioned at a top end of the pouch, with the spout having a notch defined in the top end thereof and having a concave shape on a top cut edge thereof; and
   a bottom cut edge of the rim that has a continuously concave shape from one side of the pouch to the other side of the pouch.

2. The flexible pouch of claim 1, wherein the convex shape of the top cut edge is substantially the same as the concave shape of the bottom cut edge.

3. The flexible pouch of claim 1, wherein the notch in the top end of the pouch is V-shaped and extends inwardly into the spout in order to provide a thinned rim portion at the notch.

4. A flexible pouch system comprising:
   an assembly line for manufacturing the flexible pouch of claim 1 in a line of pouches in a continuous manner; and
   a cutter for cutting the flexible pouches in the line of pouches apart,
   wherein each pouch in the line of pouches has substantially the same length and the line of pouches has a repeat length that is less than the length of each pouch.

5. A flexible pouch for holding a fluid comprising:
   a front and a rear side that together define a compartment for holding a fluid, with the compartment having a longitudinal axis that extends through the long axis of the compartment and a transverse axis that is perpendicular to the longitudinal axis;
   a rim provided around the compartment comprised of the front and rear sides coupled together; and
   an opening end of the pouch, said opening end openable by cutting or slicing longitudinally, or tearing transversely to the longitudinal axis, through the material of the pouch in order to release the fluid from the pouch, wherein the pouch is sized to seat in a drink dispensing machine.

6. The flexible pouch of claim 5, wherein the opening end of the pouch has a spout that is aligned with the longitudinal axis and a notch is formed in the top end of the spout and is aligned with the longitudinal axis.

7. (canceled)

8. The pouch of claim 6, wherein the compartment has a narrowed portion at a top end thereof in the vicinity of the spout, with the narrowed portion being aligned with the longitudinal axis.

9. The pouch of claim 6, wherein the compartment has upper edges positioned adjacent the spout, with the upper edges extending downwardly from the spout at an angle relative to the transverse axis, and sides that extend downwardly from the upper edges parallel to the longitudinal axis to define side edges of the pouch.

10. The pouch of claim 5, further comprising a bottom cut edge of the rim positioned at a bottom end of the pouch, with the bottom end being at an end opposite the top end, wherein the bottom cut edge of the rim is curved inwardly.

11. The pouch of claim 10, wherein the pouch is a flat pouch, the bottom cut edge of the rim is concave, and the bottom edge of the compartment is flat.

12. The pouch of claim 6, wherein the compartment has a bottom edge, side edges, a top edge, and a narrowed top portion that is associated with the spout, with the bottom edge being straight and parallel to and spaced from the transverse axis, the side edges being straight and parallel to and spaced from the longitudinal axis, the top edge being an inverted V-shape that extends from the side edges to the narrowed top portion, and the narrowed top portion is substantially rectangular; and
   the rim has a bottom cut edge, two side cut edges, an upper cut edge, and a spout positioned substantially in the center of the upper cut edge, with the bottom cut edge being continuously concavely curved inwardly, the side cut edges being substantially straight and parallel to the longitudinal axis, the upper cut edge being an inverted V-shape that extends from the side cut edges to the spout, and the spout has a convex cut top edge and straight cut side edges.
13. The pouch of claim 12, wherein the convex cut top edge of the spout has substantially the same curvature as the concave cut bottom edge of the rim.

14. A flat, flexible pouch for holding a fluid comprising: a front and a rear surface joined around the edges thereof to define a rim, with a compartment positioned inside the rim for holding a fluid; and a portion of the pouch positioned at a top end thereof configured as a spout; wherein the rim at the bottom end of the pouch has a cut edge that is continuously concavely curved from a left side edge of the pouch to a right side edge of the pouch.

15. The pouch of claim 14, wherein the spout has a top cut edge that is convexly curved.

16. The pouch of claim 15, wherein the curvature of the spout top cut edge substantially matches the curvature of the continuously concave curved bottom cut edge of the pouch.

17. The pouch of claim 14, wherein the pouch top cut edge of the spout includes an inwardly extending, substantially centrally positioned notch formed therein.

18. The pouch of claim 14, wherein the pouch includes side edges and upper edges, the spout has a top edge and side edges, the spout extends upwardly from the upper edges of the pouch, and the upper edges extending between the side edges of the pouch and the side edges of the spout, with a necked in cut out portion positioned on both side edges of the spout in the vicinity where the upper edges mate with the side edges of the spout.

19. The pouch of claim 18, wherein the necked in cut outs are formed by cutting away material of the spout to form indentations in the side edges of the spout, with the necked in cut outs providing a location where the spout can be torn.

20. The pouch of claim 5, wherein the pouch is flexible along its entirety and the opening end is openable with a cutting mechanism that is provided in a dispensing unit into which the pouch is positioned.

21. A pouch for holding a content of a beverage mix, a spirit, or a combination thereof comprising: a front wall; a rear wall; a top end; a bottom end; and a compartment formed between the front and rear wall for holding the contents of the pouch, with the entirety of pouch being made of a flexible material that is openable by cutting, tearing, or slicing; wherein the pouch is sized to seat in a drink dispensing machine that has a cutting mechanism for cutting open a bottom end of the pouch such that the contents of the pouch substantially completely evacuates therefrom due to the forces of gravity.

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