The Heat Dispensing Beverage Lid is a cover for a beverage container with a protruding and densely ridged lip. When one tilts the cup to sip from the lip, the hot beverage would be cooled in transit by passing through the ridges which serve as cooling flanges. This is useful for cooling otherwise too hot to drink beverages for more enjoyable consumption.
Figure 5
HEAT DISPERSING BEVERAGE LID

REFERENCE TO RELATED APPLICATIONS

[0001] This application claims an invention which was disclosed in Provisional Application No. 60/904,859, filed Mar. 5, 2007, entitled “Heat Dispersing Beverage Lid”. The benefit under 35 USC 119(e) of the United States provisional application is hereby claimed, and the aforementioned application is hereby incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] This invention relates to beverage containers and devices which cool hot beverages for consumption. In its ideal embodiment it relates to disposable lids for hot beverage containers.

[0004] 2. Description of Related Art

[0005] A common problem with the consumption of hot beverages is that when first served, the beverages are too hot to consume comfortably. This necessitates waiting for the beverage to cool, blowing on the beverage, and taking scalding test sips to learn whether the beverage is cool enough to drink.

[0006] I decided to invent a cheap and effective lid for such beverages that would cool drinks like coffee and hot chocolate to a comfortable level for drinking. The following are selected examples of prior art which are most similar to my invention.

[0007] U.S. Pat. Nos. 5,645,191 and 4,322,014 have a somewhat similar form, incorporating a protruding lip/spout. However, they both lack the cooling flanges and thus are unsuitable for cooling beverages.

[0008] U.S. Pat. Nos. 4,925,051, 4,986,437, and 5,845,807 have ramps or protruding lips/spouts. However, the spouts are not designed for a cooling function, they lack cooling flanges, and are of insufficient length to cool a consumed beverage.

[0009] U.S. Pat. No. 6,409,374 has a similar form incorporating both a protruding lip and radial ribs. However, the protrusion is of insufficient length to cool a beverage, and the ribs are too wide to serve a cooling function.

[0010] U.S. Pat. No. 6,571,973 is a disposable lid with a cooling function. However, it cools via separation of the beverage into an outer cooling compartment, not via direct transit of the beverage over a flanged protruding lip. This tilt and wait method slows consumption, requires customer knowledge of proper use, and has two parts which complicates manufacture and storage.

[0011] U.S. Pat. No. 6,161,720 is a cup with a cooling function and a small spout. However, the cooling is achieved via separation of the beverage into an outer cooling chamber. The spout is neither flanged nor long enough to serve a cooling purpose.

[0012] U.S. Pat. No. 6,035,659 is a disposable lid with a cooling function and a protruding lip. However, it lacks cooling flanges and instead cools via addition of a cooling substance (such as ice).

[0013] U.S. Pat. No. 5,409,131 is a lid with an integrated flexible straw protruding from the mug. This straw does not have a cooling function and requires sucking of a beverage rather than sipping. It also lacks cooling flanges.

SUMMARY OF THE INVENTION

[0014] The objective of my invention is to create a device that would allow immediate or near immediate consumption of hot beverages while still allowing for non-cooled consumption when the beverage is no longer hot. Ideally, my invention takes two forms, the disposable lid form serving as an alternative to the disposable plastic coffee covers currently in wide use by coffee stands and stores around the nation, and the alternative form being incorporated into a reusable mug lid.

[0015] The above object will be fulfilled through a plastic lid with a protruding lip incorporating one or more cooling flanges along the length of the lip. By tilting a beverage container equipped with this lid, a hot beverage would travel down the extended lip towards the mouth. In transit, the beverage will pass through cooling flanges which serve to split the beverage stream and increase the surface area exposed to the cooling exterior environment. Thus by the time the beverage reaches the mouth, it should be cooler.

[0016] The reusable version would likely be made of more durable plastics and could include metal cooling flanges for greater heat absorption during consumption.

BRIEF DESCRIPTION OF THE DRAWING

[0017] FIG. 1 shows a top down view of the preferred embodiment.

[0018] FIGS. 2a and 2b show side views of the preferred embodiment.

[0019] FIG. 3 shows a top down view of an alternative embodiment.

[0020] FIG. 4 shows a side view of an alternative embodiment.

[0021] FIG. 5 shows a top down view of an alternative embodiment.

DETAILED DESCRIPTION OF THE INVENTION

[0022] The lid of the invention is designed to overcome the shortcomings described in the prior art. The preferred embodiments in FIGS. 1, 2a, and 2b describe the disposable plastic lid. It is a plastic lid with an open bottomed cylindrical base (8), an enclosed top (4) attached to the interior rim (6) with two holes near opposite edges of the top (3a and 3b). Said interior rim curves outward in a U shape with the outer wall forming the exterior rim (5). A lip (1) protrudes upward from the top of the cup along the exterior rim and extends outward from the cylinder. The lip would have at least one cooling flange (2) extending radially or in parallel from the rim of the cup almost to the edge of the lip. The lip would be centered on one of the two holes in the top of the lid, this hole being called the “lip hole” (3a) and the opposite hole being called the “conventional hole” (3b). The cylindrical base would have grooves (7) encircling the interior to grip onto a cup that the disposable form of the lid would be fitted onto.

[0023] When a beverage container equipped with this lid is tilted toward the protruding lip, the contained liquid would exit the lip hole and travel along the cooling flanges. These cooling flanges would serve to increase cooling rate primarily by splitting the stream of liquid into numerous smaller channels which would increase the surface area of the liquid exposed to the cooler external environment. As the liquid
travels the length of the lip, it would continue radiating heat until the time it reaches the edge it would ideally reach a consumable temperature.

Additionally, when the beverage within the container reaches a temperature that is no longer scalding, the imbiber can simply tilt the beverage toward the conventional hole opposite the lip, and thus drink as from a normal beverage cup.

In keeping with the goal of creating a viable alternative to conventional lids, the lid’s U shaped form can be punched out of a sheet of thin plastic and stacked for easy storage. Additionally the cooling flanges are hollow both facilitating cooling and allowing for the flanges to interlock for more compact stacking.

FIG. 3 depicts an alternative form of the cooling flanges that could improve the splitting of the beverage as it travels along the lip.

A reusable version of the lid would likely be made of thicker and more durable plastics. Additionally, the efficacy of the cooling flanges can be improved on such a model through use of metal or other heat conducting cooling flanges.

FIG. 4 depicts an alternative embodiment with the lip and cooling flanges being integrated into a beverage container with an interior (9), an exterior (10), and a bottom (11).

FIG. 5 depicts an alternative embodiment with the lip bearing only a single cooling flange.

Accordingly, it is to be understood that the embodiments of the invention herein described are merely illustrative of the application of the principles of the invention. Reference herein to details of the illustrated embodiments is not intended to limit the scope of the claims, which themselves recite those features regarded as essential to the invention.

LIST OF REFERENCE NUMBERS

1. Protruding Lip
2. Cooling Flanges
3a. Lip Hole
3b. Conventional Hole
4. Top of Lid
5. Exterior Rim
6. Interior Grooves
7. Interior Grooves
8. Base
9. Exterior of container
10. Interior of container
11. Bottom of container

What is claimed is:
1. A lid for cooling a hot beverage suitable for attachment to a beverage container, comprising:
   a top having a circumference and at least 1 hole through which a beverage can pass when the container is tilted;
   a base;
   at least one protrusion extending beyond a circumference of the lid, said protrusion incorporating at least one cooling flange along which the beverage can pass when the container is tilted for consumption, said protrusion being of sufficient length to significantly cool a beverage during consumption.
2. The lid of claim 1, where the lid is disposable.
3. The lid of claim 1, in which the at least one cooling flange is at least partially coated with or comprised of a heat conductive material to enhance the cooling effect of the cooling flange.
4. The lid of claim 1, in which the top does not fully enclose the container.
5. The lid of claim 1, in which there are a plurality of cooling flanges, arranged radially with respect to the lid.
6. The lid of claim 1, in which there are a plurality of cooling flanges, arranged parallel to each other.
7. A beverage container comprising:
   a bottom and walls forming a cavity for a beverage, at least one protrusion extending from a top portion of the walls extending beyond a circumference of the container, said protrusion incorporating at least one cooling flange along which the contained beverage can pass when the container is tilted for consumption, said protrusion being of sufficient length to significantly cool a beverage during consumption.
8. The container of claim 7, in which the at least one cooling flange is at least partially coated with or comprised of a heat conductive material to enhance the cooling effect of the flanges.
9. The container of claim 7, in which there are a plurality of cooling flanges, arranged radially with respect to the container.
10. The container of claim 7, in which there are a plurality of cooling flanges, arranged parallel to each other.

* * * * *