A beverage holder for mobile usage in a vehicle having a container having a base and an opened end opposite the base. The base has an enclosure, a heating element contained within the enclosure; and a sensor capable of controlling the temperature of the heating element. The container receives a heatable cup that is capable of retaining a heatable beverage cup. A beverage holder for a vehicle console having a container having a base and an opening opposite the base. The beverage holder has a heating pad disposed in the container proximate the base. The base has an enclosure, a heating element contained within the enclosure; and a sensor capable of controlling the temperature of the heating element. The container is fully embedded in and electrically integrated into the vehicle console. A cup assembly for a beverage holder having a heatable cup, a lid and an outer shell.
CUP AND WARMING CUP HOLDER FOR A VEHICLE

[0001] This application claims the benefit of U.S. Provisional Patent Application Ser. No. 60/642,546 filed on Jan. 10, 2005, the contents of which are incorporated by reference herein.

FIELD OF THE INVENTION

[0002] This invention relates to a cup and a cup holder that can be used as a beverage warmer for a vehicle. Particularly, the invention relates to a cup and a cup holder that can be used as a beverage warmer that is either built into or secured to the console of a vehicle.

BACKGROUND OF THE INVENTION

[0003] Currently, there does not exist a convenient and safe beverage warmer for a vehicle that can accommodate different types of cups. When travelers have purchased a cup of a warm beverage, such as coffee or tea, there is no means of keeping the beverage warm for extended periods of time inside of a vehicle. The paper or wax cup does not provide adequate insulation to maintain the temperature of the beverage at a desired level. Further, should travelers bring a mug or a thermos style cup of a warm beverage from their home or consumption in a vehicle, there does not exist a fully integrated or portable beverage warmer to maintain the temperature of the beverage.

[0004] Accordingly, there is a need for an automated cup holder and a beverage warmer that accommodates different types of cups and is safely secured to a moving vehicle or electrically integrated into a vehicle’s console.

SUMMARY OF THE INVENTION

[0005] A beverage holder for mobile usage in a vehicle having a container having a base and an opened end opposite the base. The base has an enclosure, a heating element contained within the enclosure; and a sensor capable of controlling the temperature of the heating element. The container receives a heatable cup that is capable of retaining a heatable beverage cup.

[0006] A beverage holder for a vehicle console having a container having a base and an opening opposite said base. The beverage holder has a heating pad disposed in the container proximate the base. The base has an enclosure; a heating element contained within the enclosure; and a sensor capable of controlling the temperature of the heating element. The container is fully embedded in and electrically integrated into the vehicle console.

[0007] A cup assembly for a beverage holder having a heatable cup, a lid matingly received on the cup and a shell. The cup is matingly received in the shell.

[0008] The above-described and other features and advantages of the present disclosure will be appreciated and understood by those skilled in the art from the following detailed description, drawings, and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Other and further objects, advantages and features of the present invention will be understood by reference to the following specification in conjunction with the accompanying drawings, in which like reference characters denote like elements of structure:

[0010] FIG. 1 illustrates a cup holder warmer according to a first embodiment of the present invention;

[0011] FIG. 2 illustrates a cup holder according to the second embodiment of the present invention; and

[0012] FIGS. 3a through 3b illustrate two power cords to be used with the cup holder of the second embodiment of the present invention;

[0013] FIG. 4 illustrates a cup according to the present invention;

[0014] FIGS. 5a and 5b illustrate two lids for the cup according to the present invention;

[0015] FIG. 6 illustrates a shell that receives the cup of FIG. 4 according to the present invention;

[0016] FIG. 7 illustrates a store bought beverage cup that is inserted to a cup and covered with a lid of the present invention; and

[0017] FIG. 8 illustrates the cup that is fully inserted into the shell of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0018] Referring to FIG. 1, the first embodiment of the cup holder 10 of the present invention is shown. Cup holder 10 is embedded in and electrically integrated into a front console or a side console of a vehicle such as an automobile, a boat or a truck. Alternatively, the cup holder of the present invention could also be integrated into different locations of the vehicle, for example, the back of a front seat for access by a passenger in the rear seat of a vehicle. Cup holder 10 has a base 11, a heating pad 12, a heating element 14 and a surround 16. Heating pad 12 can either be disposed on the bottom of cup holder 10 or it could extend upward along the side of surround 16, as shown. Heating element 14 is contained in enclosure 18 disposed at the bottom of cup holder 10. Cup holder 10 has a depth to prevent the inadvertent tipping of cups during travel. Cup holder 10 can either function to stabilize any beverage during travel or as a beverage warmer to heat or insulate a beverage during travel. Cup holder 10 is designed to accommodate the cup of the present invention.

[0019] Surround 16 is made from an insulating material such as tempered glass, ceramic, porcelain, thermoplastic or any such material that has similar insulating properties. Alternatively, surround 16 could also be made from a metal such as aluminum, stainless steel, or any metal alloy suitable for such purposes. The insulating material must be made from a temperature resistant material that is capable of withstanding temperatures of up to 110° F. to 220° F., or greater.

[0020] The heating element of this embodiment is contained within an enclosure that is located beneath the inner liner. The heating element is a conventional resistive heating element that is activated by a switch after the vehicle is in operation. The temperature of the heating element is regulated by a temperature sensor or a thermostat. The thermostat will prevent the temperature of the heating element from
exceeding a predetermined limit and will eliminate the possibility of the heating element, the cup and/or the beverage warmer from becoming overheated.

[0021] Heating element 14 is contained within enclosure 18 that is embedded in the vehicle's console or other vehicle location. Heating element 14 is a conventional resistive heating element that is activated by a switch after the vehicle is in operation. The temperature of heating element 14 is regulated by a temperature sensor 19 or a thermostat. Sensor 19 or thermostat will prevent the temperature of heating element 14 from exceeding a predetermined limit and will eliminate the possibility of heating element 14 and cup holder 10 from becoming overheated.

[0022] The cup holder 10 of the first embodiment is embedded in and electrically integrated into a vehicle electrical system 25. Cup holder 10 is activated upon ignition of the vehicle. The warmer circuit 21 is powered by the vehicle's battery 22 and has a dedicated fuse in the vehicle's fuse box 23. The circuit is connected to a switch such that when the switch is activated, heating element is energized to warm a beverage. The circuit is properly rated to accommodate the current that the heating element with draw.

[0023] Referring to FIG. 2, a cup holder 40 according to a second embodiment of the present invention is shown. Cup holder 40 has a heating pad 42, a heating element 44 and a switch 46. Heating element 44 is encased at the lower portion of cup holder 40 to heat heating pad 42. Heating pad 42 can alternatively, extend up along sides of cup holder 40 to increase the heating surface as shown in the first embodiment. Cup holder 40 is made from a heat resistant plastic or porcelain or any such material that is capable of withstanding the temperature range of the heating element. Alternatively, cup holder 40 could be made from a metal such as aluminum, stainless steel, or any metal alloy suitable for such purposes. Cup holder 40 is portable and is intended for use in a vehicle or for a desktop.

[0024] Heating element 44 of this embodiment is contained within an enclosure 48. The heating element 44 is a conventional resistive heating element that is activated by a switch 46 after the vehicle is in operation. The temperature of heating element 44 is regulated by a thermostat or a temperature sensor. The thermostat or sensor will prevent the temperature of the heating element from exceeding a predetermined limit and will eliminate the possibility of the heating element 44 and cup holder 40 from becoming overheated.

[0025] The second embodiment of the cup holder of the present invention is intended for portable use. Cup holder 40 is made to be placed on a flat fixed surface. Cup holder 40 can be secured to a flat surface by retaining surface 49 such as a hook and eye connector, such as Velcro, a suction pad, a high friction surface or any other similar method such as a bracket that will ensure stability on either a desktop or a moving vehicle. Preferably, cup holder 40 is secured to a surface by threading. Cup holder 40 preferably has male threadings on an outer surface thereof that mate with female threadings connected to a supporting surface, although the female threadings could be disposed on the cup holder 40 with male threadings on the supporting surface without impacting functionality.

[0026] Referring to FIG. 3a, an electrical cord 50 is can be used with the second embodiment of the present invention. Cord 50 is connected to a base of cup warmer 40 and can be inserted into an outlet to be energized. When cord 50 is inserted into an outlet, switch 46 can be positioned to energize heating element 44 at the bottom of cup holder. Electrical cord 50 plugs into an AC 110 volt power supply. Cord 50 is connected to a 12 volt transformer.

[0027] Referring to FIG. 3b, an alternative electrical cord 60 can be used when cup holder 40 is to be used in a vehicle. Cord 60 is designed to be inserted into a 12 volt cigarette outlet or a transformer sufficient to operate heating element in a vehicle. The 12 volt electrical system will energize heating element 44 of cup holder 40 to warm beverage.

[0028] Referring to FIGS. 4 through 5b and 7, a cup 70 of the present invention will be described. Cup 70 is sized to fit into cup holders 10 and 40 of the first and second embodiments, respectively, of the present invention. Cup 70 is sized to accommodate tapered coffee containers that are store bought. Cup 70 is made of an insulating material such as tempered glass, ceramic, porcelain thermoplastic or any such material that is capable of withstanding heat from 110° F. to 220° F. or greater. Alternatively, cup holder 70 could be made from a metal such as aluminum, stainless steel, or any metal alloy suitable for such purposes. Cup 70 is threaded along a substantial distance of its outer length with male threads. The male threads 72 near the top of cup 70 receive a lid 80 or a lid 90, that each have compatible female threads 82 of an inner surface thereon. Lid 80 is a hollow rimmed top with female threads to mate with the male threads 72 of cup 70. Lid 80 secures a store bought beverage cup of FIG. 7 in cup 70 to prevent the possibility of spills during transport. Alternatively, lid 90 is a spill proof lid that is matingly received on cup 70. Lid 90 also secures a store bought cup inside of cup 70 to prevent spills during transport.

[0029] Cup 70 is configured to receive a styrofoam paper or store bought cup 74. Alternatively, the cup 70 can receive compatibly sized ceramic mug or a stainless steel thermos style cup brought from the user's home. Furthermore, cup 70 can also receive fluid directly such as coffee, tea, soup or a chilled beverage.

[0030] Referring to FIGS. 6 and 8, shell 100 is designed to receive cup 70. Shell 100 is similarly tapered and is designed of an insulating material to maintain the temperature of beverage. Shell 100 can be made of glass, ceramic, porcelain, or thermoplastic or any such material with similar insulating properties. Alternatively, shell 100 could be made from a metal such as aluminum, stainless steel, or any metal alloy suitable for such purposes. Threaded outer surface of cup 70 is designed to be received in female threads of shell 100. This mating relationship will prevent the possibility of spills during transport. Additionally, when cup 70 is placed inside of shell 100, the two can be moved together with a store bought cup should the user decide to enjoy the beverage away from the vehicle.

[0031] Cup 70 and store bought cup 110, when placed inside of shell 100, will extend past bottom of shell 100 and above top of shell 100, respectively. The lower portion of cup 70 that is exposed will come in direct contact with heating pad 12 of cup holder 10 of the first embodiment of the present invention or heating pad 42 of cup holder 40 of the second embodiment of the present invention. The portions of heating pad that extend in a vertical direction will
ensure heating of cup 70 not only at its base, but also along its sides. To further contain store bought cup within shell, a hollow lid similar to lids 80 and 90 that are sized to fit over the extending portion of store bought cup can also be used. In this alternative, lid 80 or 90 would not be secured to top of cup 70.

[0032] While this invention has been described with respect to an automobile, it can also have applicability to other vehicles such as boats, trucks or trailers. Further, while this invention is described with respect to insulating heated beverages, the materials used for the cup and the embodiments of the cup holder can also be used to maintain the temperature of chilled beverages.

[0033] While the instant disclosure has been described with reference to one or more exemplary embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope thereof. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the disclosure without departing from the scope thereof. Therefore, it is intended that the disclosure not be limited to the particular embodiment(s) disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the appended claims.

I claim:

1. A beverage holder for mobile usage in a vehicle comprising:
   - a container having a base and an opened end opposite said base, said base comprising
     - an enclosure;
     - a heating element contained within said enclosure;
     - a sensor capable of controlling the temperature of said heating element; and
     - a heatable cup capable of being retaining in said container,
   wherein said container is fully integrated into a console of the vehicle.

2. The beverage holder of claim 1, wherein said heatable cup contains a heatable beverage cup.

3. The beverage holder of claim 1, wherein said container is fully portable for removal from the vehicle.

4. The beverage holder of claim 1, wherein said heating element temperature is controlled by a thermostat or sensor to prevent overheating during usage.

5. The beverage holder of claim 1, wherein said heating element is operatively connected to a circuit controlled by the vehicle battery.

6. The beverage holder of claim 1, wherein said container is electrically embedded in said vehicle.

7. The beverage holder of claim 3, further comprising an electrical cord that is connectable to said container to enable said container to be operable away from said vehicle.

8. The beverage holder of claim 3, further comprising a shell surrounding said heatable cup for manual movement of said heatable cup from said container.

9. The beverage holder of claim 1, wherein said heatable cup is made from a material selected from the group comprising glass, tempered glass, ceramic or porcelain, thermoplastic material, aluminum, stainless steel or any combinations thereof.

10. The beverage holder of claim 8, wherein said shell is made from a material selected from the group comprising glass, tempered glass, ceramic or porcelain or thermoplastic material, aluminum, stainless steel or any combinations thereof.

11. The beverage holder of claim 8, wherein said heatable cup is matingly received in said shell.

12. The beverage holder of claim 8, further comprising a lid matingly/rotatably secured to said heatable cup.

13. The beverage holder of claim 1, wherein said container further comprises a heating pad proximate said base.

14. A beverage holder for a vehicle console comprising:
   - a container having a base and an opening opposite said base
   - a heating pad disposed in said container proximate said base;
   - said base comprising:
     - an enclosure;
     - a heating element contained within said enclosure; and
     - a sensor capable of controlling the temperature of said heating element,
   wherein said container is fully embedded in and electrically integrated into the vehicle console.

15. The beverage holder of claim 14, wherein said container further comprises a heatable cup that is received within said container.

16. The beverage holder of claim 14, wherein said heating element is a resistive heating element.

17. The beverage holder of claim 14, wherein said heatable cup is received in a shell for transporting said cup.

18. The beverage holder of claim 14, wherein said heatable cup is capable of receiving a cap, a thermos or a fluid.

19. The beverage holder of claim 14, wherein said heatable cup threadingly receives a lid thereon.

20. The beverage holder of claim 14, wherein said heatable cup is threadingly received in a shell.

21. A cup assembly for a beverage holder comprising:
   - a cup; said cup being a heatable cup;
   - a lid matingly received on said cup;
   - a shell,
   wherein said cup is matingly received in said shell.

22. The cup assembly of claim 21, wherein said heatable cup receives one of a store bought cup, a thermos or a fluid.

23. The cup assembly of claim 21, where said cup and said shell are comprised of a material selected from the group consisting of glass, tempered glass, ceramic or porcelain, thermoplastic material or a metal.

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