A coaster including a highly absorbent pad which is a unique material for coaster design. The pad's porosity directs the condensate away from the drinking vessel preventing fluid buildup on the drinking vessel. The pad is highly durable, does not easily stain and can last for an extended period of time. The removable pad has sufficient strength to accept customized embroidered designs while retaining its durability and absorbent capability. The embroidered designs act to further the effectiveness of the coaster by assisting in preventing surface tension from bonding the drinking vessel and the coaster body.
HIGHLY ABSORBENT DURABLE COASTER

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] A vast majority of soft drinks, fruit juices, beer, wine coolers and other consumable beverages are sold in cans, bottles and other like containers which have been cooled either by refrigeration or immersion in ice cubes or ice water preparatory to being served. Containers cooled by immersion are, of course, wet upon being removed from the cooler and opened. And even if the container is carefully dried, condensation will rapidly form on it if there is any significant temperature differential between the cooled container and the ambient air. Particularly if the surrounding air is hot and humid, such condensation will form rapidly and become quite heavy—heavy enough to run off the container onto the hands and clothing of the individual holding the container or onto a table or other piece of furniture on which the container may be placed. Particularly on fine furniture, a moist or dripping can or bottle can cause considerable damage through water stains, veneer separation, raised grain and discoloration of any table cloths or other coverings.

[0003] Traditional coasters, of course, have long been used to protect furniture against the damage caused by moisture from cans, bottles and like containers. Should a container be carried from place to place, however, as is often done, it is difficult to remember to carry a coaster along with the container or otherwise avoid putting the container down on unprotected tables, desks and other articles of furniture. Some traditional coasters were successful in protecting furniture and surfaces for short periods of time, however a buildup of condensate on the coaster surface acted, through surface tension, to bond to the drinking vessel. In these circumstances the coaster would often drop while the drinking vessel was being picked up, creating a larger mess. In some traditional designs the coaster would allow water to pool around the drink container and the water would drip on the surface or on the user.

[0004] 2. Brief Description of the Related Art

[0005] Some traditional coasters have attempted to deal with these issues by being manufactured of various absorbent materials. However they are either disposable, not durable, or not sufficiently absorbent. The result is that traditional coasters either allow dripping when the user lifts the drinking vessel, adhere to the drinking vessel and then drop, become saturated in short time periods, are not sufficiently sturdy to protect furniture or are not durable. Some coasters have effectively dealt with some but not all of these deficiencies.

[0006] Some traditional designs have achieved high levels of absorbency and sturdy design. However these designs have complex mechanical designs including “support rolls”, “drain openings” (Wilmoth U.S. Pat. No. 4,858,872, Laybourne U.S. Pat. No. 5,273,182) or sophisticated composite layered surface designs (Zheuer U.S. Pat. No. 4,978,566). These complexities make the manufacturing of these coasters complex and result in a costly coaster from a consumer perspective.

[0007] Some traditional coaster designs have attempted to resolve these issues and maintain a durable feature by incorporating an absorbent mat material that is easily removed from a durable base. However these coasters have either relied on geometry and fit or frictional force for maintaining the mat material in place (Woodruff U.S. Pat. No. 4,089,498, Blundell U.S. Pat. No. 3,363,869). These designs do not always ensure that the fit or frictional force will overcome the surface tension adhesion as the mat material becomes saturated. In addition, the mat materials employed in these designs either are not durable, not very absorbent or can not be easily replaced by the user while maintaining the existing base. In addition, fit or frictional force designs may be more expensive because of the close manufacturing tolerances necessary.

[0008] Further, as beverage industries are highly competitive and dependent on consumer recognition and selection at the point of purchase, there is a substantial demand both by producers and retailers in those industries for coasters that are (1) absorbent to prevent dripping when the drink is removed from the coaster, (2) durable allowing repeated use of the coaster without replacement, (3) sturdy in design protecting the underlying furniture, (4) simple construction allowing ease of manufacture and cost competitive as compared to traditional coasters, (5) prevents condensation formation to collect on valuable furniture and (6) provide a user replaceable yet durable absorbent pad available in a wide variety of colors, where the absorbent pad consists of a material that will readily accept adornment with letters, emblems, drawings etc.

OBJECTS OF THE INVENTION

[0009] Over the years, various suggestions have been proposed for solving the problems and meeting the needs discussed above. As far as it is known, however prior to the present invention, no one has been successful in designing, developing or producing a commercially viable coaster that is highly absorbent, durable, will not adhere to drinking vessels during reasonable periods of use, sturdy and capable of protecting surfaces underneath, easily manufactured with a highly absorbent and durable pad that allows for easy removal and replacement by the user. The absorbent pad readily accepts embroidered designs which act to provide attractive commercial or personal appeal and further the function of the coaster by preventing drinking vessel adherence. Other forms of design may also be incorporated onto the absorbent pad.

SUMMARY OF THE INVENTION

[0010] The coaster body is a highly durable plastic design constructed for holding substantial weights, can be manufactured in different colors and will maintain a precise vertical alignment with the surface upon which the coaster is located. The seating surface is fitted with an absorbent pad through the use of an adhesive layer integral to the absorbent pad.

[0011] The adhesive layer is a double sided permanent/removable form of adhesive. The permanent bond side of the adhesive layer is attached to one surface of the absorbent layer using a mild application of pressure, forming a high strength bond. The removable bond side of the adhesive layer is attached to the seating surface of the coaster body using a mild application force.

[0012] The seating ring is raised above the seating surface. The support ring raises the main body above a flat solid
BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1—Provides a top perspective view of coaster illustrating how the absorbent pad [200] fits onto the seating surface [102]. Section A for FIG. 2 is indicated on the drawing.

[0014] FIG. 2—Provides a section A from FIG. 1. This drawing provides details of the arrangement of key elements included in the coaster design.

[0015] FIG. 3—Provides a detailed expanded view of the layered design of the absorbent pad [200].

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] The present invention provides a new and unique coaster particularly adapted for use with all manner of beverage cans and containers in which soft drinks, beer, fruit juices and other like consumable beverages are chilled and served. The coaster is not only uniquely suited to protect clothing and furniture against soiling and damage from the moisture and condensation usually present on containers of chilled beverages but also is highly durable yet it is capable of being modified by the user to alter its aesthetic characteristics.

[0017] The major components of the coaster are the coaster body [100] and the absorbent pad [200]. The absorbent pad is durable, highly absorbent yet can easily be removed and replaced with an equally absorbent pad of the same design but potentially with different aesthetic designs. The absorbent pad will not inadvertently come off of the coaster base. This prevents the absorbent pad from moving as the drinking vessel moves on and off the coaster as well as during normal handling by users. The absorbent pad will not adhere to drinking vessels because of the nature of the absorbent pad [200] to coaster body [100] interface.

[0018] These objectives are achieved through a number of features incorporated into the coaster design. First, the absorbent layer [202] is a unique material for coaster design. This material is composed of a material which provides substantial porosity. The porosity is very small scale and not uniform and results from the interwoven nature of the material. This porosity provides a path for condensate to flow into and be trapped in the absorbent layer [202] until the condensate evaporates. This action keeps the condensate from building up on the bottom and side surface of the drinking vessel. The material porosity further prevents surface tension which could cause the drinking vessel to adhere to the coaster. The material is highly durable, does not easily stain and can last for an extended period of time. Finally, the material has sufficient strength to accept embroidered designs while retaining its durability and absorbent capability. In the preferred embodiment the absorbent pad [200] is a 100% synthetic interwoven pad approximately 10 to 125 mil in thickness.

[0019] As noted above, the absorbent pad [200] will not come off of the seating surface [102] when the drinking vessel is lifted off the coaster. This occurs because of the porosity noted above which reduces surface tension but is also due to the nature of the adhesive layer [201] and the means by which the layer is integrated into the absorbent pad [200]. Specifically, the selection of the bonding strengths as described below.

[0020] The adhesive layer [201] is a two sided high strength plastic film adhesive with a highly adhesive surface [201a] and a low contact adhesive [201b] surface on the other side. The highly adhesive surface [201a] is pressure fit onto one side of the absorbent layer [202]. The adhesive layer [201] takes on the shape of the surface of the absorbent layer [202] following the small surface contours. This results in a highly adhesive bond between the absorbent layer [202] and the adhesive layer [201]. In the preferred embodiment the adhesive layer is a double-sided permanent/removable high strength thin plastic film approximately 0.5 to 10 mil thickness.

[0021] The low contact adhesive surface [201b] is used to form a bond between the seating surface [102] of the coaster and the absorbent pad [200]. The low contact adhesive surface [201b] is chosen such that it will form a sufficiently strong bond with the seating surface [201] so as to prevent absorbent pad [201] movement during use and cleaning of the coaster over repeated uses. The adhesive layer [201] has also been chosen so that the bonding force between the absorbent pad [201] and adhesive layer [201] is much greater than the bonding force between the adhesive layer [201] and the seating surface [201]. This mismatch allows the coaster user to remove the absorbent pad intact from the seating surface if the pad has become damaged or is to be replaced for aesthetic reasons.

[0022] The seating ring [103] has been raised a sufficient distance above the seating surface [102] to provide stability to prevent drinking vessels from easily sliding off of the coaster. The seating ring [103] is attached to the main body [104], along the outer edge of the main body [104]. In addition, the top of the seating ring [103] has been raised a sufficient distance above the seating surface [102] to prevent any condensate from flowing through the absorbent pad [201] and off the coaster.

[0023] The support ring [105] allows for a very flat contact area with the object upon which the coaster is placed. The support ring [105] is attached to the main body [104], slightly inset from the outer edge of the main body [104]. The support ring [105] further acts to slightly elevate the main body [104] off of the surface upon which the coaster rests. Depending on the flatness of the surface upon which the coaster is placed, the support ring [105] will limit free air flow underneath the main body [104]. These features provide for a stable base and minimize any condensation that can form under the coaster on the underlying surface.

[0024] In another preferred embodiment, an embroidered design [205] is included that can be multiple colors and may be designs, drawings, letters etc. The embroidered design [205] is formed by weaving thread into the body of the absorbent layer [202]. The selection of the proper materials in the absorbent pad [200] allows for the design to be woven in without destroying the absorbent layers [202] functionality or shape. In this invention, the novel and unexpected affect of the embroidered design [205] is that it provides improved functional capability of the coaster. Specifically, as noted in FIGS. 2 and 3, the embroidered design provides a slightly increased undulation on the top surface shape of the absorbent pad [201]. This slight undulation acts to
further reduce surface tension forces between the coaster and drinking vessel which tends to completely eliminate cling of the coaster to the underside of the drinking vessel.

[0025] While the invention has been described in connection with what are presently understood to be the most practical and preferred embodiments, it is to be understood that the invention is not limited to the disclosed embodiments, but rather to cover various modifications and equivalent arrangements which are included within the spirit and scope of the following claims.

1. A coaster comprising,
   a. main body with a top surface, a bottom surface and an outer edge,
   b. and an absorbent layer with a top surface and bottom surface,
   c. and an adhesive layer with a top surface and bottom surface,

   where the bottom surface of said absorbent layer is affixed to the top surface of said adhesive layer, where the bottom surface of said adhesive layer is affixed to the top surface of said main body, where said top surface of said adhesive layer has a stronger adhesive bond with said bottom surface of said absorbent layer as compared to the adhesive bond between said bottom surface of said adhesive layer and said top surface of said main body, where this difference in bonds allows for removal of said absorbent layer from said main body with said adhesive layer remaining attached to said absorbent layer, where said absorbent layer is a synthetic felt.

d. and a seating ring where said seating ring is attached to the top surface of said main body, where the point of attachment is along said outer edge of said main body,

c. and a support ring where said support ring is attached to the bottom surface of said main body, where the point of attachment is very near the outer edge of said main body.

3-4. (canceled)

5. The coaster of claim 1, further comprising an embroidered pattern, said embroidered pattern comprised of thread, which is woven into said absorbent layer so that said embroidered pattern is slightly raised above said top surface of said absorbent layer.

6-7. (canceled)

8. The coaster of claim 2, further comprising an embroidered pattern, said embroidered pattern comprised of thread, which is woven into said absorbent layer so that said embroidered pattern is slightly raised above said top surface of said absorbent layer.

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