A dispensing rack and valve assembly for use with quart or king-size bottles of beverages. The rack supports a bottle in an inclined position and is suited to be placed on a shelf in a conventional refrigerator. The dispensing valve has a threaded portion to engage the threaded mouth of a conventional bottle of carbonated beverage. The valve assembly cooperates with the rack to secure the bottle in place.

4 Claims, 4 Drawing Figures
BOTTLE SECURING AND DISPENSING APPARATUS

FIELD OF THE INVENTION

This invention relates in general to dispensing apparatus and more specifically to a rack and valve assembly to be used for dispensing desired quantities of a beverage from the bottle in which it was originally purchased. The assembly is so constructed that it supports the bottle in an inclined position and is intended to be placed in a conventional refrigerator whereby beverages may be dispensed from the bottle without the necessity of removing the bottle or rack from the refrigerator.

DESCRIPTION OF THE PRIOR ART

The sale of various beverages such as carbonated soft drinks in quart and "king-size" disposable glass containers is becoming increasingly popular. While this practice is desirable from an economic standpoint, it often creates problems for the consumer, who must store and handle these rather large and cumbersome containers. This is particularly a problem for children, who generally find such bottles very difficult to handle.

The bottles are often too tall to stand up in a conventional refrigerator unless the shelving arrangement is modified with a consequent loss of storage space on other shelves in the refrigerator.

Present bottles of beverages are provided with screw threaded mouths and resealable caps but these preserve the carbonation in the beverage only if properly used. In many instances, the primary users of these closures are small children who are not always capable of successfully resealing the bottle tightly enough to prevent the loss of carbonation and deterioration of the quality and desireability of the beverage. Additionally, each time the bottle is handled, there is a chance of spillage and breakage.

A number of racks and supports for various liquid containers exist in the prior art but none of these is suitable for use with bottles of carbonated beverages that should be kept in the refrigerator. Either the racks provide for storage of the bottle in an upright position with the associated waste of shelving space, or they make no provisions for the dispensing of only a portion of the contents of the bottle while retaining the rest of the beverage in the desired tightly sealed, carbonated condition. The prior art devices are also not suited for use by small children. In addition, the prior art devices are expensive, cumbersome, and do not provide suitable means for securing the bottle to the rack in a simple, easy manner.

SUMMARY

It is the object of the present invention to provide a rack and dispensing valve assembly which overcomes the problems inherent in the prior art structures and which is designed to be placed in the conventional home refrigerator.

The invention is comprised of a generally rectangular rack assembly which is provided with a bottle neck retaining arm, and a valve assembly that cooperates with the rack assembly to securely hold a bottle in position on the rack. The rack assembly is so constructed that it acts as a cradle and holds the bottle in a generally horizontal position. The cap is first removed from a conventional bottle of beverage, and the dispensing valve secured to the threaded neck portion of the bottle. The bottle and valve combination is then securely positioned in the rack structure, and held in place due to the engagement of the valve assembly with the rack structure, and the entire assembly can then be stored in the conventional home refrigerator. Since the bottle is secured on the rack in a generally horizontal position, there is no loss of shelf space and no need to modify the normally existing shelving arrangement.

Children can easily use the dispensing rack and do not have to remove the structure from the refrigerator. This eliminates unnecessary handling of the large, cumbersome bottles and lessens the possibility of breakage or spillage.

Once the original cap has been removed and the dispensing valve screwed into place, no further opening or closing of the bottle is required. The dispensing valve structure is provided with threads which engage the threaded neck of the conventional disposable bottle and form a leakproof seal therewith so that the carbonation of the beverage is retained. In this way, there is no waste or spoilage of the beverage due to loss of carbonation.

The valve is a conventional design and is spring biased to its closed position. The device is easily operated with one hand, thereby leaving the other hand free to hold the cup or similar receptacle for the beverage.

The device is simple to manufacture, is inexpensive, highly durable and easily kept clean and pleasant appearing. In addition the engagement between the rack and valve assembly provides for secure storage of the bottle and contents.

BRIEF DESCRIPTION OF THE DRAWINGS

The novel features of the invention are set out with particularity in the appended claims, but the invention will be understood more fully and clearly from the following detailed description of a preferred embodiment of the invention as set forth in the accompanying drawings, in which:

FIG. 1 is a side elevation view of the rack and valve assembly of the present invention, showing a bottle in place;

FIG. 2 is a perspective view of the dispensing rack portion of the present invention;

FIG. 3 is a side view of the dispensing valve portion of the present invention; and,

FIG. 4 is a cross-sectional view of the dispensing valve assembly of FIG. 3, showing a typical construction suitable for the invention.

DESCRIPTION OF A PREFERRED EMBODIMENT

Referring now to FIG. 1 there is shown generally at 10 a preferred embodiment of a beverage dispensing rack and valve assembly in accordance with the present invention. Assembly 10 is comprised of rack 12 and dispensing valve structure 14 which cooperate to hold and support a quart or "king-sized" bottle 16 of the type commonly used for carbonated beverages such as soft drinks.

As seen more fully in FIG. 2, rack 12 is comprised of a generally rectangular support beam 18 and a bottle neck retaining arm 20. Support beam 18 is provided with a planar base 22 and an inclined, generally V shaped, support face 24 with the incline sloping downwardly...
toward retainer arm 20. As seen in FIG. 1 in dashed lines, V shaped support face 24 provides a cradle which supports bottle 16 and prevents it from rolling from side to side.

Again referring to FIGS. 1 and 2 bottle neck retainer arm 20 is attached to one end of support bed 18 and is secured at an angle of 90° to the plane of the outer edges of V shaped support face 24. As seen in FIG. 2, retainer arm 20 is provided with a centrally located U shaped aperture 26 in its upper edge, the centerline of the aperture being aligned with the apex of the V-shaped surface 24. Aperture 26 is so shaped, and of such a size as to be specifically adapted to receive the dispensing valve structure 14 in a manner as will hereinafter be more fully described.

Rack 12 may be made of high-impact plastic or other suitable material and may be made in a multiplicity of bright colors and designs so as to have a pleasing appearance. It may be either solid or of closed, thin-walled construction and preferably should be made of easily cleaned, non-odor absorbent material so as to be suitable for use in a refrigerator.

Turning to FIGS. 3 and 4, dispensing valve structure 14 is provided with threaded portion 30 and is designed to engage the threaded neck portion of a conventional quart or "king-size" bottle of carbonated beverage, particularly the disposable type bottle. As seen more clearly in FIG. 4, a typical valve structure 14 is provided with a reciprocable valve head 32 and a stationary valve seat 34 which cooperate to form a positive seal. Valve head 32 is biased to its closed position by a coil spring 36 and is opened by pressing on button 38 formed at the end of the valve stem. As may also be seen in FIG. 4, valve structure 14 is provided with a dispensing outlet 40 which carries the flow of liquid when button 38 is pushed to open valve head 32.

As seen in FIG. 3, valve structure 14 is provided with an exterior neck portion 42 defined by a shoulder 44 and a flange 46. Neck 42 is of appropriate diameter and length to engage aperture 26 in the bottle neck retainer arm 20 with flange 46 located on the outer portion of arm 20 (to the right as viewed in FIG. 1) and shoulder 44 positioned on the inner side of arm 20. The valve assembly preferably fits firmly in the aperture, with the shoulder 44 and the flange 46 engaging opposite sides of arm 20 so as to be secured in place. In this way, as seen in FIG. 1, the neck of bottle 16 is held in the arm portion of rack 12 and is prevented from sliding forward or backward when button 38 is pushed in the dispensing operation.

Valve structure 14 may be made of high impact plastic or similar material and may be provided with various alternative conventional internal valving arrangements which serve the purpose of maintaining a positive seal for the bottle on which it is secured.

In operation, the screw cap on a quart or "king-size" bottle of beverage is removed and the dispensing valve structure 14 screwed into place. The bottle is then placed on its side on the V shaped support face 24 with neck 42 of valve structure 14 held in aperture 26 as previously described. The assembly may then be placed on a shelf in a conventional refrigerator, and the contents of the bottle dispensed by merely pressing button 38.

While a preferred embodiment of the present invention has hereinafore been described, it will be obvious to one of ordinary skill in the art that various modifications such as using different materials or valve structures may be made without departing from the spirit of the invention and that therefore the scope of the invention is to be limited only by the appended claims.

1. In an apparatus for supporting and dispensing from a bottle, the combination of a rack and valve assembly comprising:

   a support rack, said rack having a base and an inclined support bed affixed to, and above, said base;

   a bottle retainer arm attached to one end of said support rack and extending upwardly therefrom substantially perpendicularly to the plane of said inclined support bed;

   a dispensing valve assembly;

   means for attaching said valve assembly to the mouth of said bottle; and,

   securing means on said valve assembly, said securing means including a central neck portion having a spaced flange and shoulder, said flange and shoulder being spaced to engage opposing faces of said bottle retainer arm whereby movement of said bottle along said inclined support bed is eliminated.

2. The apparatus of claim 1 wherein said means for attaching said valve assembly to the mouth of said bottle comprises internal screw threads on one end of said valve assembly, said threads engaging a conventional external threaded neck portion of said bottle.

3. The apparatus of claim 1 wherein said bottle retainer arm is provided with a U shaped aperture on its upper edge, said aperture engaging said securing means on said valve assembly to secure said bottle in place on said rack portion of said assembly.

4. The apparatus of claim 1 wherein the upper surface of said inclined support bed is V shaped and provides a cradle support for said bottle.