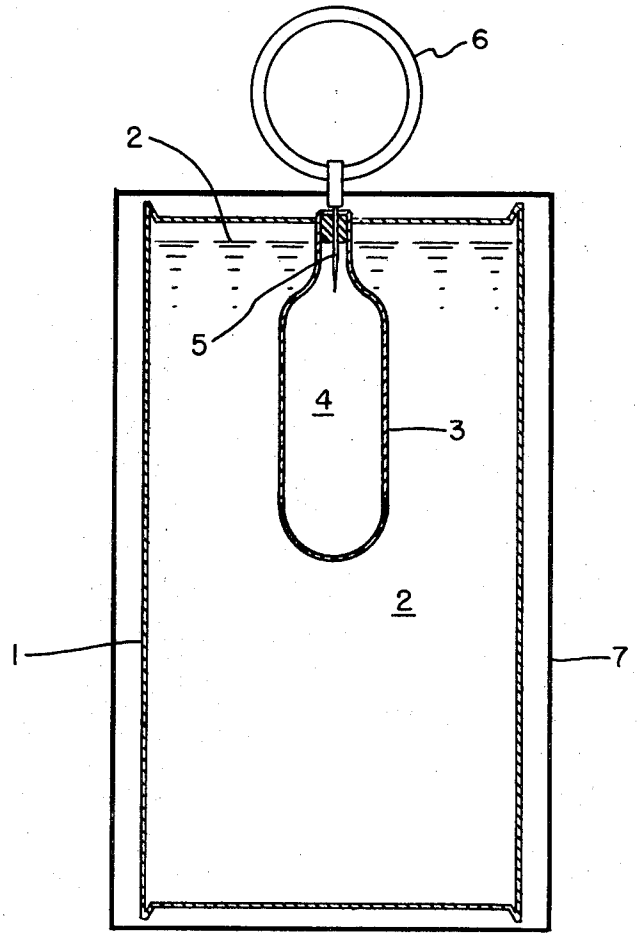
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SELF-COOLING CONTAINER

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SELF-COOLING CONTAINER

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ABSTRACT OF THE DISCLOSURE

A container primarily for liquids which is cooled by an expanding gas. A cartridge containing a compressed gas such as carbon dioxide is positioned next to a can so that when the gas is released it cools the can and its contents.

This invention relates to a container which is self-cooling. Specifically, it relates to a cartirdge of compressed gas which releases an expanding gas which cools a can and its contents.

At the present time it is necessary to refrigerate liquids such as soft drinks, beer, and the like in order to cool them. This means that the liquids must be used in the vicinity of a refrigerator, and cannot, for example, be conveniently taken on hikes or in cars unless they are used at the temperature of the environment which can be very unsatisfactory. Carbonated liquids cannot even be kept well in a thermos as they rapidly become "flat." Most persons would do without a can of beer or a soft drink rather than drink it warm or "flat."

I have invented a container which contains its own means for cooling itself. It can be taken anywhere and can rapidly cool its contents without a thermos or a refrigerator and without permitting carbonated liquids to become "flat." The container is only slightly larger than a conventional container of the same capacity. It is of a simple construction and can be inexpensively made.

The accompanying drawing, which is a side view in cross-section of a container, illustrates a certain presently preferred embodiment of my invention.

In the drawing a can **1** is filled with a liquid **2**. A cartridge **3** filled with a compressed gas **4** is sealed to the top of the can. A pin **5** attached to ring **6** prevents the compressed gas from escaping. A paper shell **7** loosely encloses the container.

To cool the container the ring is grasped with a finger and the pin is pulled out. The compressed gas leaves the cartridge and flows around the container in the space between the container and the paper shell; holes at the bottom of the paper (not shown) prevent the gas from bursting the paper. When all the gas has left the cartridge the paper is removed and the can is opened in the usual manner, or pulling the ring to release the gas could also open the can.

The compressed gas will equilibrate at the temperature of the liquid. As is well known, when the gas is released and expands it will cool rapidly and will cool the cartridge as well; the invention makes use of this fact to cool the contents of the can.

The gas in the cartridge is preferably gaseous carbon dioxide since this gas is harmless and inexpensive. Other gases may also be used and they may even be compressed to such an extent that they are a liquid in the cartridge.

The can will normally contain a liquid, usually a potable liquid, although solids or gases could also be cooled with this container. "Can" as used herein is intended to include materials other than metal, as for example, glass or plastics, in addition to conventional metal cans.

The arrangement shown in the drawings should be regarded as the preferred embodiment, for other designs are also possible. For example, the cartridge could enclose the can as in a thermos bottle, or the cartridge may be juxtaposed to the container in some other fashion so that heat can flow between them.

The embodiment of the drawings is preferred to other designs because it is easy to construct, inexpensive, and utilizes most of the cooling capacity of the cartridge. Thus, the cartridge shown is of the simple cylinder shape in which CO_2 cartridges are usually sold for hobby purposes. Immersing the cartridge into the liquid increases the contact between the cartridge and the liquid and protects the cartridge from injury. The paper shell is also inexpensive and guides the cool gas in contact with the can to help cool it.

I claim:

1. A self-cooling container comprising

(A) A can containing a liquid to be cooled;

(B) A cartridge having a nec kand containing a compressed gas and having release means for releasing said gas from the neck thereof, said cartridge being positioned within said can substantially completely immersed in said liquid, said cartridge being fixed to the top of said can, the neck thereof extending through the top of said can; and

(C) A shell substantially enclosing said can so as to entrap gas released from said cartridge.

2. The container of claim **1** wherein said release means is a pin passing through said neck in gas-tight relationship therewith and clasping means for withdrawing said pin from said neck.

3. The container of claim **1** wherein said gas is carbon dioxide.

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