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SELF-COOLING CONTAINER

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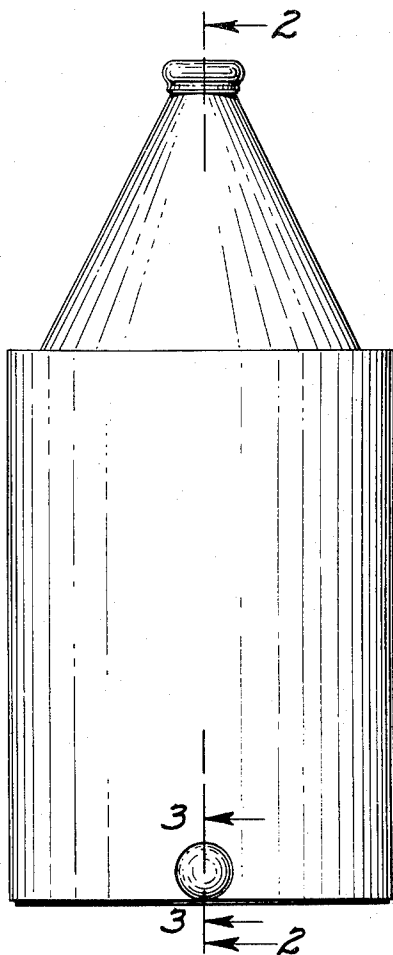


Fig. 1

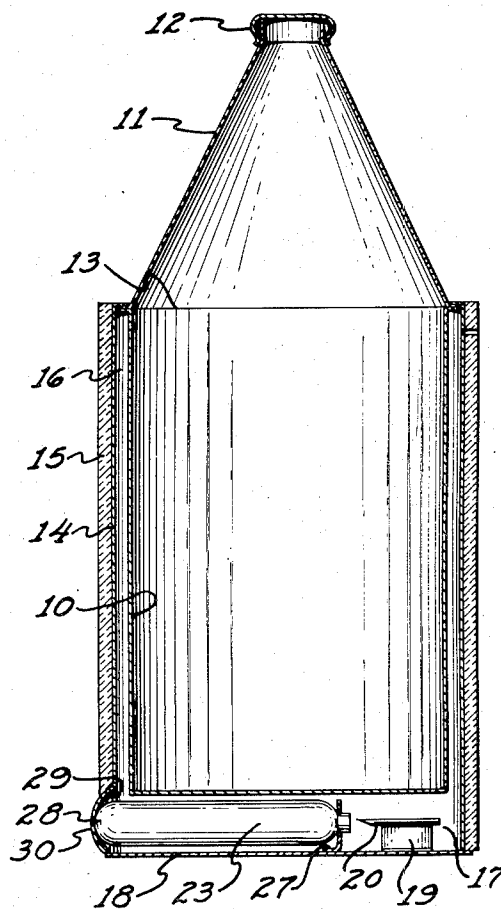


Fig. 2

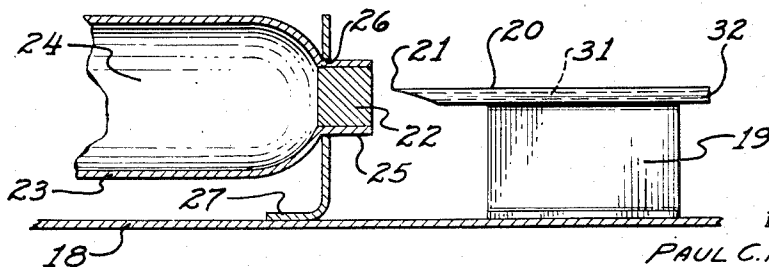


Fig. 3

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SELF-COOLING CONTAINER

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2 Claims. (Cl. 62—92)

This invention pertains to improvements in self-cooling containers and is particularly directed to a container carrying a medium potentially capable of providing refrigeration for a container and its contents which may be energized at any time to effect the cooling operation.

One of the objects of this invention is to provide an improved self-cooling container having a medium of highly pressurized gas capable of being released to provide a refrigerating effect together with a strategically placed insulated cooling chamber around the container having the product therein.

Still another object of this invention is to provide an improved and simplified and trouble-free self-cooling container which is easily put into cooling effect but which at the same time may be easily manufactured and handled in effecting the proper distribution of the containers.

Still another object of this invention is to provide an improved self-cooling container having a highly pressurized evaporative gas contained in a chamber at the bottom of the main product containing receptacle combined with a cooling chamber upstanding from the evaporative chamber and surrounding the main container to effect a refrigeration of the contents when the container is struck against a hard object at the desired time the cooling effect is to be produced.

Further features and advantages of this invention will appear from a detailed description of the drawings in which:

Fig. 1 is a front elevation of a self-cooling container having the features of this invention.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary view on the line 3—3 of Fig. 1.

As an example of one embodiment of this invention there is illustrated a self-cooling container comprising the inner receptacle 10 which may have a conical top 11 and the usual closure cap 12 or it may contain the usual can top lid at the position 13. Surrounding the inner receptacle 10 is the outer member 14 which completely surrounds the receptacle 10 and is provided with an insulative jacket 15. A cooling chamber 16 is thus formed around the inner receptacle 10 and terminates at its lower portion in an expansion chamber portion 17 having a bottom 18 to form a completely enclosed chamber 16—17 surrounding the inner receptacle 10.

On the bottom 18 is fixed the puncturing needle support 19 on top of which is rigidly fixed the puncturing needle 20 having a sharp end 21 adapted to puncture the closure plug 22 of the usual cooling cartridge 23 containing a highly evaporative gas such as Freon in the chamber 24.

The front portion or neck 25 of the cartridge 23 is

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supported in a bore 26 of the support bracket 27 which is secured to the bottom 18 of the expansion chamber portion 17.

The rear portion 28 of the cartridge is sold in firm engagement with the inner concave surface 29 by the support bracket 27, the surface 29 being formed on the outwardly convex portion 30 formed in the outer member 14 as best shown in Figs. 1 and 2.

Thus, a striking button at 30 is presented on the outside surface of the container which may be readily engaged by a hard object such as striking the container against a rock or striking the button 30 with a hard object with the result that the concave surface of 30 caves in pushing the cooling cartridge 23 against the needle point 21 to puncture with a small aperture the plug 22 so as to let the gas escape out through the evaporative discharge opening 31 in the needle 20 and thus out the discharge opening 32 in evaporative effect so as to immediately provide a chilling gas in the cooling chamber 16 and the evaporative chamber 17 surrounding the inner receptacle 10, resulting in an immediate and prompt cooling of the contents of this receptacle.

While the apparatus herein disclosed and described constitutes a preferred form of the invention, it is also to be understood that the apparatus is capable of mechanical alteration without departing from the spirit of the invention and that such mechanical arrangement and commercial adaptation as fall within the scope of the appended claims are intended to be included herein.

Having thus fully set forth and described this invention what is claimed and desired to be obtained by United States Letters patent is:

1. A self-cooling container comprising, an inner receptacle, an outer member surrounding said receptacle, an insulative jacket surrounding said outer member, a bottom for said outer member, a puncturing needle fixed on said bottom, a cooling cartridge yieldably mounted on said bottom with a puncturable closure plug adjacent the point of said needle, and a deformable striking button on said outer member normally engaging said cartridge so that when struck by a hard object said cartridge will be moved to cause said needle to puncture said plug to cause an evaporative refrigeration gas to enter said outer member surrounding said inner receptacle to effect a cooling of the contents of said receptacle.

2. A self-cooling container comprising, an inner product containing receptacle, an outer member forming with said inner receptacle a cooling chamber around the sides of said receptacle, and an expansion chamber under the bottom of said receptacle, an insulative jacket around said outer member, a puncturing needle in said expansion chamber, a cooling cartridge yieldingly mounted in said expansion chamber with a puncturable plug positioned adjacent the point of said needle, and an inwardly deflectable convex striking button on said outer member arranged to engage said cartridge when struck with a hard object to deflect said cartridge to cause said needle to puncture said plug and allow the contents of said cartridge to vaporize into said expansion and cooling chambers to cool the contents of said inner receptacle.

References Cited in the file of this patent

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