

Sept. 27, 1955

T. W. DAHL ET AL

2,718,973

PORTABLE REFRIGERATING CONTAINER

Filed April 26, 1952

2 Sheets-Sheet 1

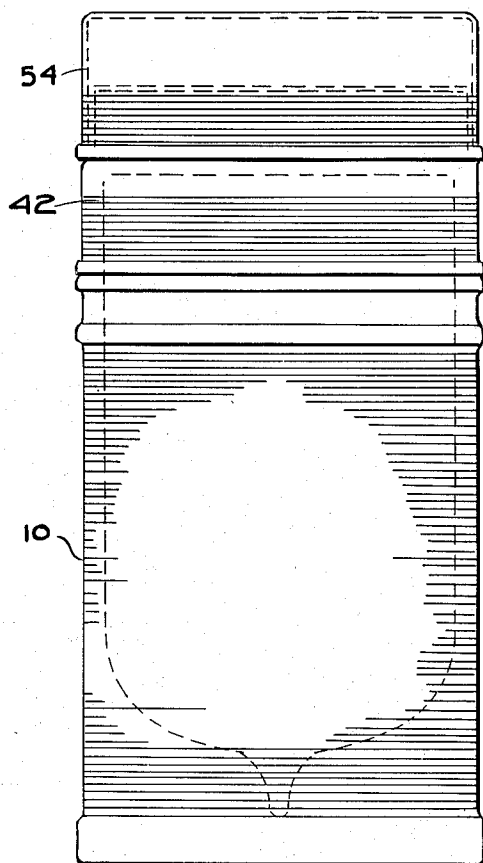


FIG. 1

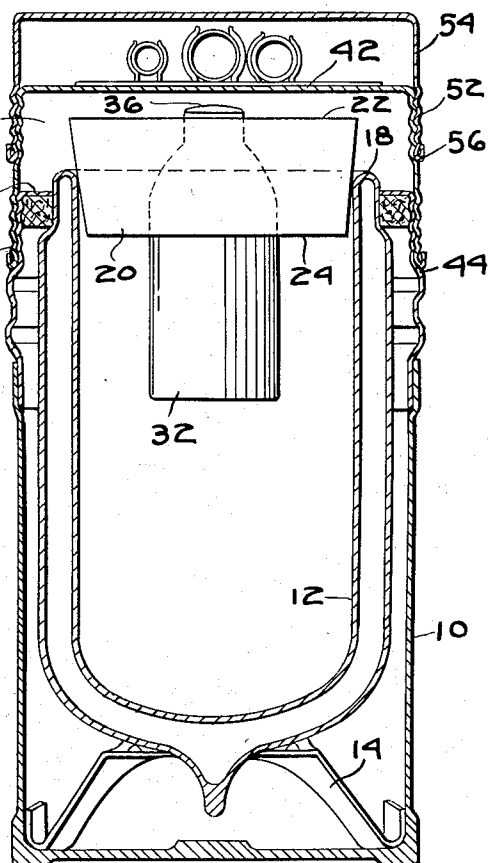


FIG. 2

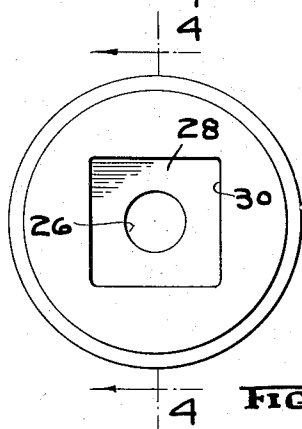


FIG. 3

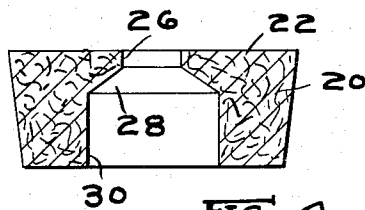


FIG. 4

INVENTORS
THURE W. DAHL
HAROLD C. DAHL
BY
Charles P. Fay,
ATTORNEY

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T. W. DAHL ET AL

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2 Sheets-Sheet 2

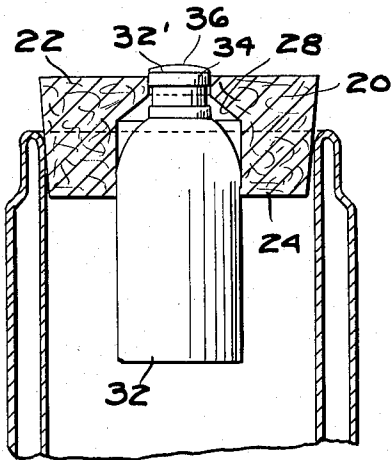


FIG. 5

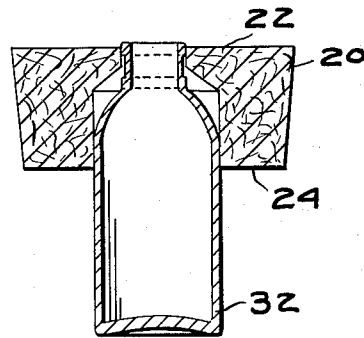


FIG. 6

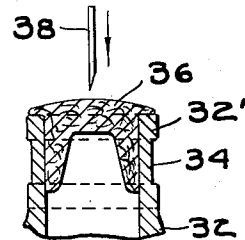


FIG. 7

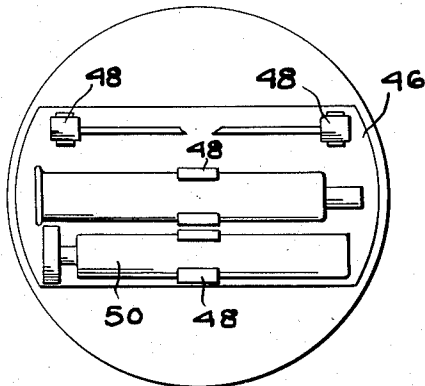


FIG. 8

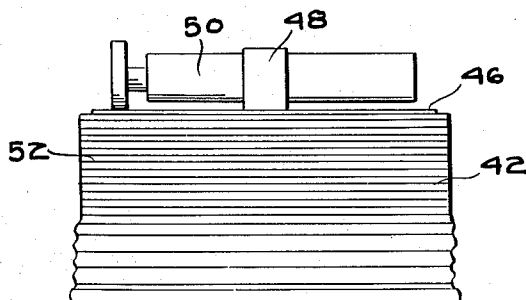


FIG. 9

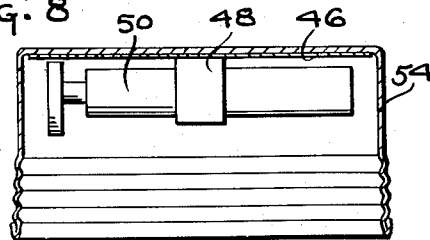


FIG. 10

INVENTORS
THURE W. DAHL
HAROLD C. DAHL

BY
Charles R. Fay,

ATTORNEY

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2,718,973

PORTABLE REFRIGERATING CONTAINER

Thure W. Dahl and Harold C. Dahl, Norwich, Conn.

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1 Claim. (Cl. 215—6)

This invention relates to portable refrigerator receptacles and carriers particularly adapted for easy portability and preferably small size and light weight, adapted for keeping relatively small quantities of materials at a desired temperature to prevent loss of vital qualities under conditions of travel, transmission and storage in general.

One of the more important fields for application of the present invention resides in the personal use and carrying of pharmaceutical products and biologicals which tend to lose their potency or become otherwise damaged when stored at temperatures that are too high. Insulin and certain forms of vitamin preparations, as well as other pharmaceutical products, must be maintained cooled or refrigerated in order to maintain the original potency thereof, and this causes a definite problem for persons who have to use these products when travelling. Ordinarily the products are carried without any kind of refrigeration and therefore the persons suffers from the use of preparations which are not up to standard at the time of use.

It is a principal object of the present invention to provide new and improved means for transporting and refrigerating products, such as above specified, as well as others, and ordinarily the materials carried under refrigeration take up but a very small space and are easily handled and kept refrigerated up to seventy-two hours with a single application of ice or other refrigerant, with the novel container, and the construction thereof is such that it is rendered particularly easy and simple for the material to be used and also it is particularly easy to renew the refrigerant for extended periods of time.

Another object of the invention resides in the provision of an ice or other refrigerant carrier or container of relatively small size, preferably in the nature of a half-pint or pint food container, the same being provided with a wide mouth for the easy insertion of crushed ice or ice in the form of cubes, or other refrigerating material, said wide mouth being closed by a resilient stopper which has a large diameter in relation to the thickness thereof, the stopper being made of such a size that it is tightly wedged in the large mouth opening of the container but still has a substantial part thereof extending out from the mouth of the container for quick and easy manual removal thereof for re-icing, etc., said stopper being provided with a relatively small preferably central hole at one side surface thereof, said hole widening and forming a larger hole or recess at the opposite side surface of the stopper, the latter having a greater area at the side thereof containing the small hole than at the opposite interior side containing the large recess, whereby a small bottle of the medicament or other product may be inserted from the interior side of the stopper and have its conventional reduced neck wedged in the small hole at the exterior side of the stopper for quick and easy access thereto by the user, while at the same time the main body of the small medicament container depends within the cold storage receptacle, thus making it particularly easy for the user to remove the stopper,

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together with the medicament container as a unit, and to replace the refrigerant, etc., as well as to change from an exhausted to a new bottle of medicament while retaining the original resilient stopper described above.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a view in elevation of a carrier or container according to the present invention;

Fig. 2 is a vertical section therethrough showing the stopper, etc.;

Fig. 3 is a bottom plan view of the stopper;

Fig. 4 is a sectional view thereof, taken on the line 4—4 of Fig. 3;

Fig. 5 is a cross sectional view through the stopper and mouth of the refrigerator container;

Fig. 6 is a section through the stopper and the container for the refrigerated product;

Fig. 7 is a section through the neck of the refrigerated container on an enlarged scale;

Fig. 8 is a plan view of the interior cover;

Fig. 9 is a view in side elevation thereof; and

Fig. 10 is a section through the top cover showing a modification.

In carrying out the present invention, a refrigerator container of, for example, a cubic content of a half-pint to a pint may be used. This container preferably is provided with an external casing 10 protecting the interior double-walled insulating refrigerator container as illustrated at 12. An internal supporting means, such as the bracket at 14, and the annular in-turned lip 16 at the top of the container are utilized to maintain the double-walled insulating container 12 in spaced rigid condition relative to the external protective casing 10.

The double-walled insulating container 12 is provided with a wide mouth indicated at 18, this mouth being of a diameter substantially equal to the container itself, as clearly shown in Fig. 2. For this reason, the insulating container 12 easily receives cracked ice or cubes of ice, or other refrigerating material, and is as easily emptied and cleaned out. The mouth of the insulating container 12 rises above the annular flange 16 and is rounded at its lip to more smoothly and easily receive the resilient tapered stopper 20.

Stopper 20 is preferably made of some form of rubber or rubber-like material, so that it is inherently resilient. This stopper has an exposed flat surface 22 of maximum diameter and an interior surface 24 of minimum diameter as clearly shown, the sides of the stopper converging from the wide surface to the narrow surface. This provides for smooth insertion of the stopper in the mouth 18 of the insulating container 12 and at the same time the stopper is distorted by the mouth 18 for holding of the stopper. The effect of this stopper is that the insulating container is tightly corked and the stopper 20, although of wide configuration relative to the distance between the surfaces 22 and 24, still stays firmly in place, and the container may be held upside down, etc., without danger of dislocating the stopper.

The stopper 20 is provided with a through hole which has a particular shape. At the wider exposed surface 22, this aperture is relatively small as at 26 and is centrally located. The aperture 26 has a short dimension at right angles to the surface 22 and then widens out in conical configuration as at 28, this conical portion of the aperture terminating in a relatively longer and larger aperture or recess 30 which is preferably square in shape but which may be of any configuration desired. The square shape will accommodate cylindrical bottles as well as square bottles.

A bottle is indicated at 32, this bottle having shoulders

which may conform in general with the conical surface 28 and a reduced neck 32' which is resiliently held in the aperture 26. Some bottles are provided with a still further reduced portion 34 and it will be seen that it is possible for this reduced portion to be held fairly firmly by the part 26, but it is preferred that the portion 32' of the bottle be resiliently held as is clearly shown in Fig. 5, because this projects the stopper 36 from the aperture 26 to the optimum degree for application of a syringe needle.

The stopper 36 is ordinarily made of a soft self-sealing material and is firmly held in the neck of the bottle, see Fig. 7. A needle 38 is thrust through stopper 36 to extract the contents of the bottle 32 and when needle 38 is withdrawn, the hole made thereby self-closes, so that the contents of the bottle 32 are not lost by seepage under any circumstances.

The protective housing 10 is provided at its upper portion with the screw-threads as indicated at 40 receiving a cover 42 which, when screwed down to its maximum position as indicated by shoulder 44 in Fig. 2, will be slightly spaced from the stopper 36 of the refrigerated container 32. The top or outside surface of the cover 42 is provided with a small plate 46 upon which are mounted or struck up therefrom, a series of metal clips 48 which are adapted to secure hypodermic needles and a hypodermic device itself indicated at 50. These devices are thus held in very convenient position and may be easily extracted from the clips and used in the manner stated.

The cap 42 is in turn provided with screw threads at its upper part as indicated at 52 for the screw-threaded reception of a supplementary cover 54 which, when screwed down to its limit as provided by shoulder 56, covers and protects the hypodermic needles and the hypodermic device.

In the use of the device, the external cover 54 is easily removed by backing it off from the interior cover 42. The hypodermic may then be assembled, cover 42 removed in turn, and the device then used in the manner recited to extract material from the refrigerated container 32. In order to refrigerate the device, it is merely necessary for the user to grasp the shoulder formed by the wide exposed top surface of the stopper 20 and thus relatively easily work the same out of the mouth 18 of the refrigerator container which still firmly holds the relatively small bottle 32 by its neck and in position to be used as described. Therefore it is seen, that one may easily prepare and carry the present container in pocket, purse or bag without fear of injuring or losing the contents, and also at the same time maintaining the same as to potency, etc. for periods of time clearly long enough to provide for re-icing, etc. at convenient intervals in case of need.

As shown in Fig. 10, the top cap or external cover 54 may carry the device 46 for carrying whatever is desired to be taken with the vacuum insulated carrier. In this case, the cover 54 may be removed and inverted and used as a pan to boil the instruments or otherwise sterilize the same as by an alcohol bath. The inner cover 42 still protects the contents of the vacuum jar and need not be removed until the instant the extraction of contents is appropriate.

The covers 42 and 54 may carry other devices also, the cover 42 externally or internally, and the cover 54 internally, such as folding utensils as spoons, forks, etc., so that the unit is usable as a food jar including two cups and utensils to spoon out the food contents and consume the same.

Having thus described our invention and the advantages thereof, we do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claim, but what we claim is:

A stopper of resilient material for the mouth of a receptacle, a relatively small aperture centrally located in and passing through the stopper, said aperture being enlarged at that side of the stopper adapted to face the interior of the receptacle, the exposed side of the stopper presenting the small aperture only, a relatively small shouldered container partially located in the enlarged portion of the stopper aperture, a reduced neck on the container resiliently gripped by the stopper material at the edges of the small aperture at the exposed side of the stopper, said container being exposed for use at the exposed side of the stopper and depending therefrom down into the receptacle.

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