

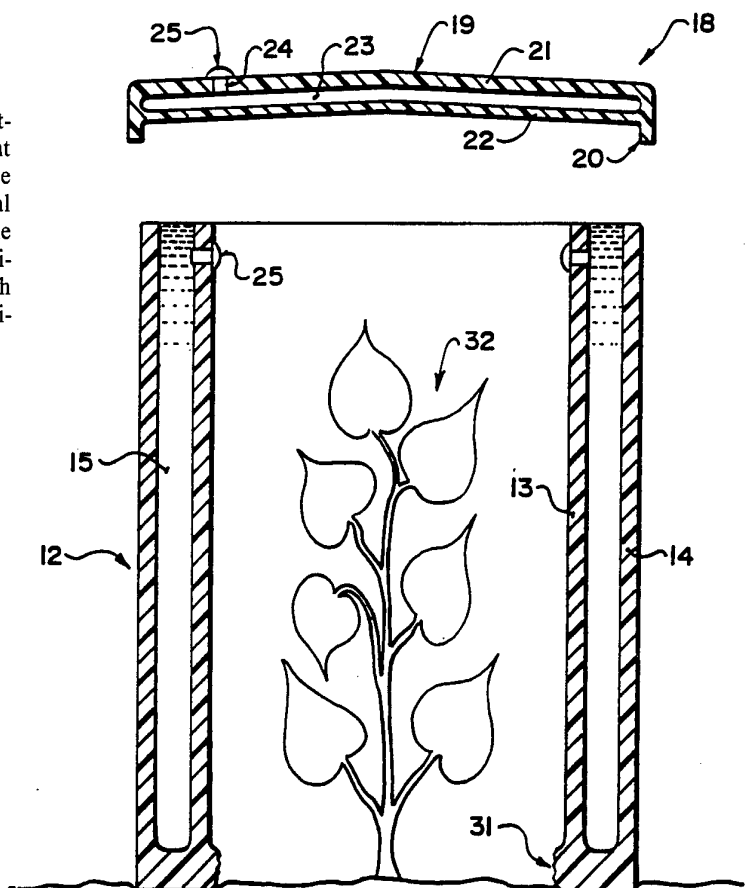


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(54) Title: CONTAINER CONVERTIBLE FOR USE AS A PLANT PROTECTION COVER**(57) Abstract**

A container (10) for storing or transporting pourable material can be converted to a plant protection device by removing a portion of the base (11) of the container to allow the peripheral wall (12) of the container to be engaged over the plant thus surrounding the plant (32). The peripheral wall is formed from a double layer with annular space (15) therebetween for receiving liquid such as water to maintain heat.



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CONTAINER CONVERTIBLE FOR USE AS A PLANT PROTECTION COVER

BACKGROUND OF THE INVENTION

This invention relates to a container which is designed so that it can be reused when emptied as a plant protection cover.

Many materials are supplied in containers which are for example cylindrical with a flat base and a cylindrical peripheral wall upstanding from the flat base. A cover can be attached at the top of the peripheral wall. Containers of this type are often used for supplying paint or similar materials. However, other materials such as household products, oil or food materials can be supplied in containers of this type.

Generally, once used for the storage or transportation of the material, the containers becomes useless and must be thrown away as garbage.

It is one object of the present invention to provide an improved container which can be used subsequently for an alternative use and particular for use as a plant protection cover.

According to the invention, therefore, there is provided a container convertible for use as a plant protection cover comprising a container body having a base wall, peripheral wall upstanding from the base wall so as to define therewith a hollow interior for receiving and containing material for storage or transportation, the base wall being adapted for removal of at least a portion thereof for defining an opening therein to receive the plant passing therethrough, the peripheral wall having an inner and

outer wall portion with the outer wall portion surrounding the inner wall portion so as to define a space therebetween for receiving liquid therein.

One embodiment of the invention will now be described in conjunction with the accompanying drawings in which:

DESCRIPTION OF THE DRAWINGS

Figure 1 is a vertical cross-sectional view through a container according to the present invention.

Figure 2 is a horizontal cross-sectional view through the container of Figure 1.

Figure 3 is a vertical cross-sectional view similar to that of Figure 1 showing the container converted for use as a plant protection cover.

In the drawings like characters of reference indicate corresponding parts in the different figures.

DETAILED DESCRIPTION

The container comprises a hollow container comprises a hollow container part 10 defined by a base wall 11 and an upstanding peripheral wall 12. The base wall is of single thickness and forms preferably a circular flat base. The peripheral wall 12 is of double thickness including an inner wall portion 13 and an outer wall portion 14 with the latter surrounding the inner wall portion to define a space 15 therebetween. With the base being circular in the preferred example, the peripheral wall is of course angular and

the inner and outer portions are coaxial to define an annular space of constant width.

If necessary, the peripheral wall is formed with supporting bridge elements 16 which extend radially outwardly so as to connect the inner wall portion 13 to the outer wall portion 14 for purposes of structural strength.

The inner wall portion includes one or more openings 17 extending through the inner wall portion from the hollow interior to the space 15.

The bottom of the space 15 is closed by the base 11. The top of the space 15 is open. The top of the hollow interior is of course open to allow the entry of material into the hollow interior for storage and/or transportation.

A cover 18 includes a top wall 19 and a depending peripheral flange 20 which engages around the outer portion of the peripheral wall so as to form a seal therewith. The top wall 19 is formed from an upper wall portion 21 and a lower wall portion 22 spaced apart and defining therebetween a transverse space 23. Again one of the upper and lower wall portions is formed with openings 24. The openings 24 and 17 can be closed by plugs 25 when the container is to be used in its secondary purpose. When the container is used in its initial purpose as a container, the plugs are generally omitted so that the whole interior of the container to the outer wall portion can be filled with the material for transportation and/or storage. The base wall 11 has a line of weakness indicated at 30 which is pre-formed during the time of

manufacture and which is arranged as a circular line just inside the inner wall portion 13. The base wall 11 can therefore be simply cut by the user after the container is no longer required as a container so as to form a circular opening in the base wall. With the line of weakness 30 arranged closely adjacent the inner wall portion 13, the finished product once the circular portion is removed comprises substantially the peripheral wall.

When the circular central portion of the base is omitted as shown in Figure 3, this forms an opening 31 in the base which allows the base to be inserted over a plant 32. The peripheral wall is then closed by the insertion of the plugs 25 and the space 15 is filled with water or other similar liquid which acts as a high specific heat insulation or heat retaining system for the plant 32. The cover can be used if required in the double wall arrangement shown in Figure 3 or can be omitted. In some cases a single thickness cover can be used.

The peripheral wall and optionally the cover can be formed wholly of a transparent or translucent material which allows light to pass to the plant. Alternatively, the peripheral wall can be formed with stripes or areas of a darkened nature so that the heat from the sunlight is absorbed into the material of the container for heating the liquid to enable the liquid to achieve a higher temperature to provide an improved heat retention effect.

The container will provide an excellent promotional product in the plastics industry and at the same time act as a

recyclable element especially suitable for northern climates to increase the growing season of the plant.

The container can include triple walls if necessary for increased insulation effect.

The wall is preferably formed from a clear plastics material or can be of a "zebra" type, that is black and white stripes, so that the black areas absorb the sun better to heat the water in the double wall jacket to a greater extent that can be achieved with clear plastic.

The container thus provided is effectively recyclable due to the fact that as a primary object it is used to deliver products such as oil, soap, powders, window cleaner, antifreeze and the like to the customer, and at the same time will carry informational advertising as to its secondary function as a solar energy water-heated plant protection cover or greenhouse. The cover device can be used for tomatoes, peppers or the like and acts thus to extend the growing season both to the early spring and to the later fall. This is achieved because the protective water jacket protects the plants from freezing.

The container with the double walled cover can be used to cover the plant completely during particularly cold nights and thus provides a high level of protection against freezing even at relatively low temperatures.

With the cover removed, the device still provides effective protection since it reduces wind movement and maintains a warm environment around the plant.

The dimensions of the container can be varied in accordance with the requirements to transport various quantities of the primary materials and also to provide when the container is converted a protective wall of a required height for different types of plants.

In particular, the double wall container can be manufactured with dividing walls extending between the inner and outer walls which act to separate the outer space into a plurality of different compartments. This construction can be used, with the sizes of the compartments selected accordingly, for the following:

1) It can be used as a fisherman bucket (big fish in center, minnows, Cray fish, etc. in individual small compartments on outside of big compartment.

2) It can be used as a toolbox (carpenters, mechanics) with big tools in the center and small tools in the individual outside compartments.

3) It can be used as bucket to carry water in undeveloped countries (as per Canadian Hunger Foundation report); women carry water in leather pouches which weigh almost as much as women do and holds barely enough water to half fill your kitchen sink.

4) It can be used as a flower pot in its secondary function with big flowers in the center and small flowers in individual small compartments around in double, triple or more wall jacket.

5) On larger scale - it can be a large half bucket with double triple or more walls with water temperature kept above freezing during cold nights (heaters). If possible with water storage tank in centre of the bucket.

6) On larger scale - quarter bucket (with double triple or more walls) with water temperature kept about freezing during cold nights (heaters). Water storage unit to be preferably placed against the north insulated wall.

Since various modifications can be made in my invention as herein above described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

CLAIMS

(1) A container convertible for use as a plant protection cover comprising a container body having a base wall, peripheral wall upstanding from the base wall so as to define therewith a hollow interior for receiving and containing material for storage or transportation, the base wall being adapted for removal of at least a portion thereof for defining an opening therein to receive the plant passing therethrough, the peripheral wall having an inner and outer wall portion with the outer wall portion surrounding the inner wall portion so as to define a space therebetween for receiving liquid therein.

(2) The container according to Claim 1 including openings in the inner wall portion and plug means insertable into the openings to retain the liquid in the space.

(3) The container according to Claim 2 wherein the plug means are omitted when the container is filled with the material for storage or transportation so that the whole of the container to the outer wall portion can be filled with the material.

(4) The container according to Claim 1 including a cover for extending over an upper edge of the peripheral wall, the cover being removable.

(5) The container according to Claim 4 wherein the cover includes an upper wall and a lower wall defining therebetween a space for receiving liquid therein.

(6) The container according to Claim 1 wherein at least portions of the peripheral wall are transparent.

(7) The container according to Claim 6 wherein at least some portions of the peripheral wall are dark so as to absorb sunlight for heating the liquid.

(8) The container according to Claim 1 wherein the base wall is adapted by the provision of a weakened line therein at which line the base wall can be cut to define said opening.

(9) The container according to Claim 8 wherein the weakened line is formed just inside the peripheral wall.

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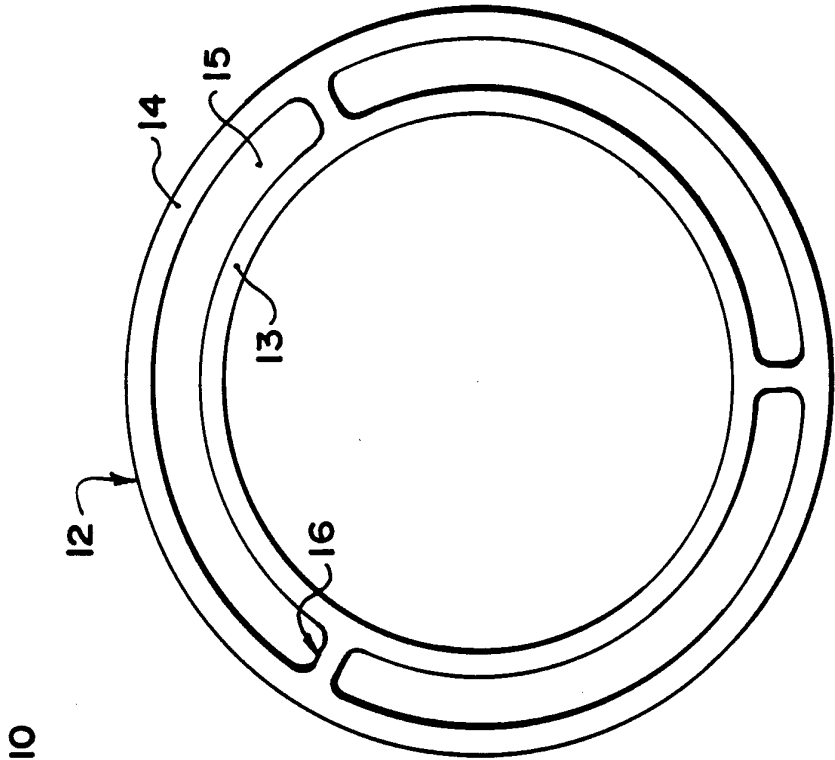


FIG. 2

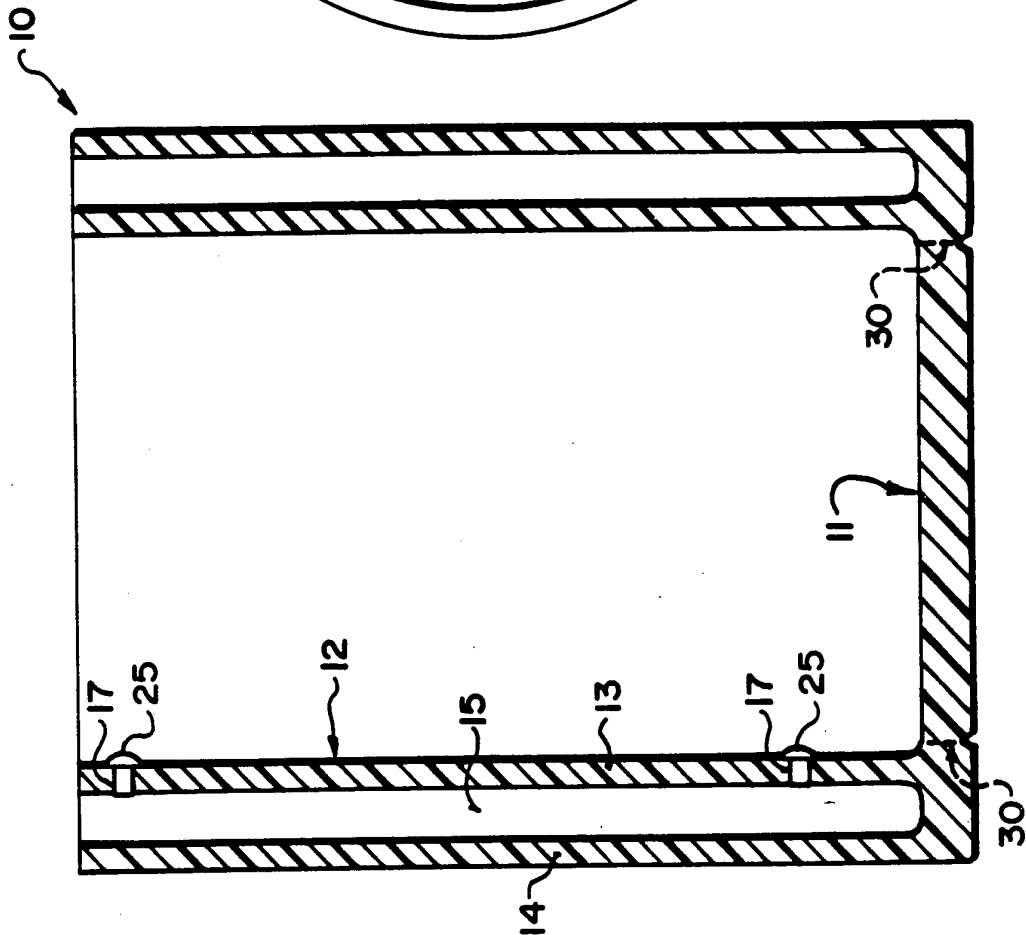


FIG. 1

SUBSTITUTE SHEET

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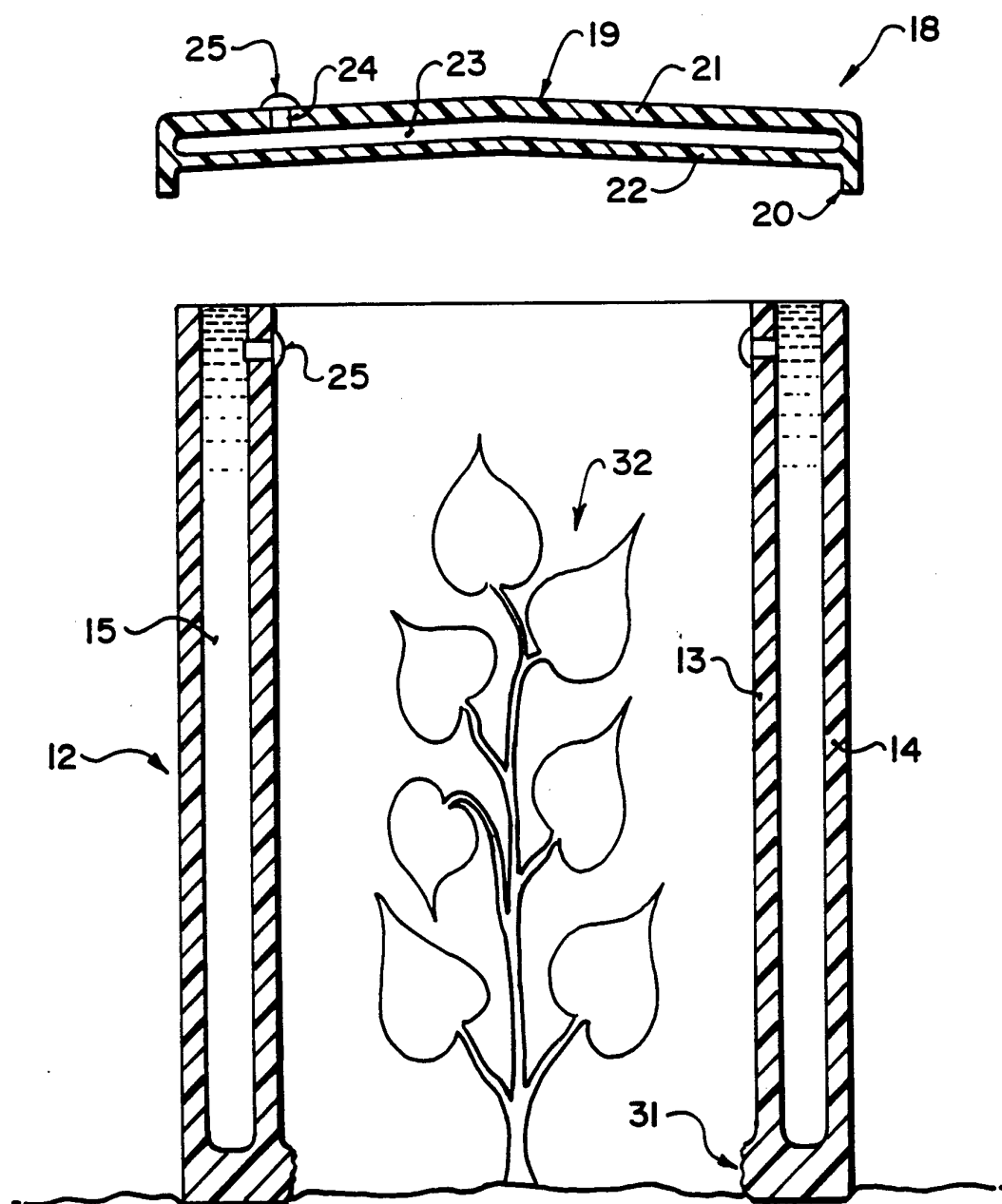


FIG. 3

SUBSTITUTE SHEET

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 93/00391

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 5 B65D81/36 B65D8/06 A01G13/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 5 B65D A01G A47J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,4 821 453 (MOREHEAD) 18 April 1989 see the whole document ----	1,2,6
A	DE,U,91 15 282 (OST) 13 February 1992 see the whole document ----	1
A	GB,A,2 018 974 (LAIRD) 24 October 1979 see the whole document -----	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

3 February 1994

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 93/00391

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-4821453	18-04-89	NONE	
DE-U-9115282	13-02-92	NONE	
GB-A-2018974	24-10-79	NONE	