

Sept. 9, 1969

O. J. MUNZ
COMBINATION FOOD PACKAGE, SERVING TRAY AND
SHIPPING AND DISPLAY CONTAINER

3,465,873

Filed Oct. 22, 1965

2 Sheets-Sheet 1

FIG. 1

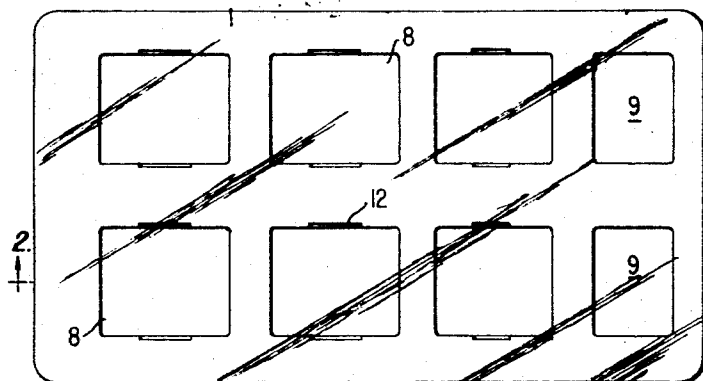


FIG. 3

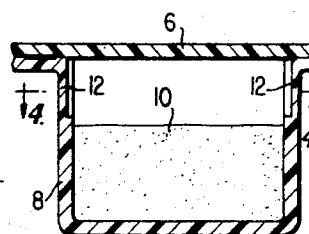


FIG. 4

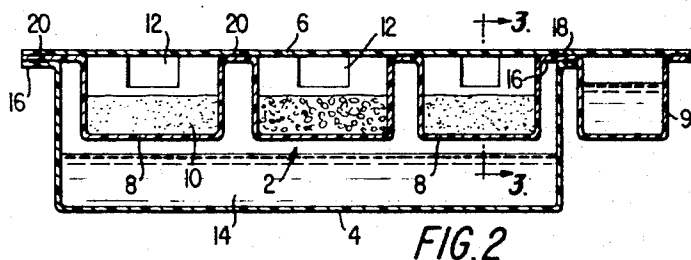
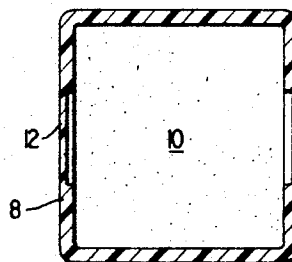


FIG. 2

FIG. 5

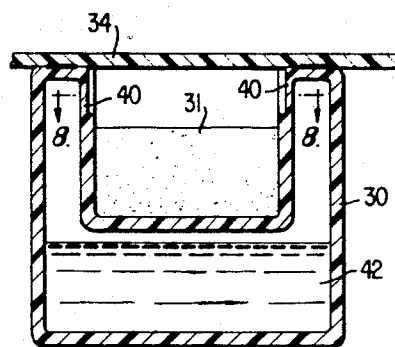
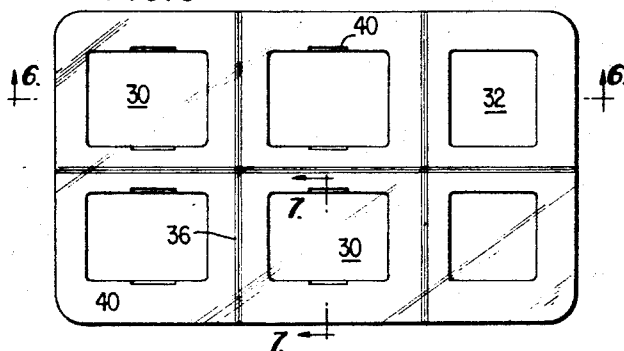


FIG. 7

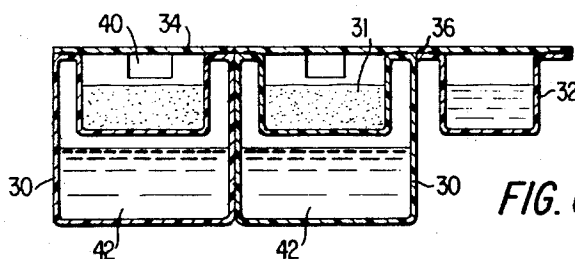


FIG. 6

INVENTOR

O. J. Munz

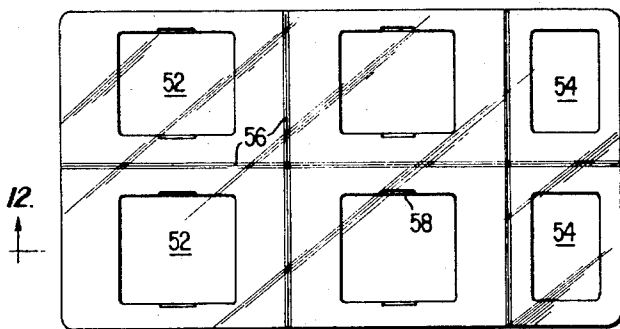
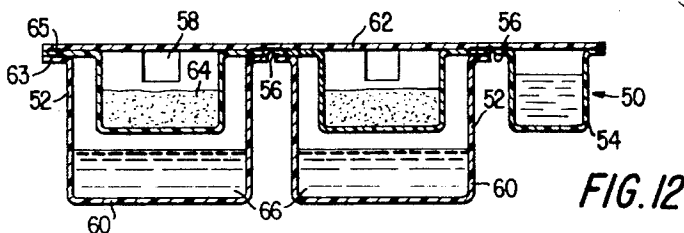
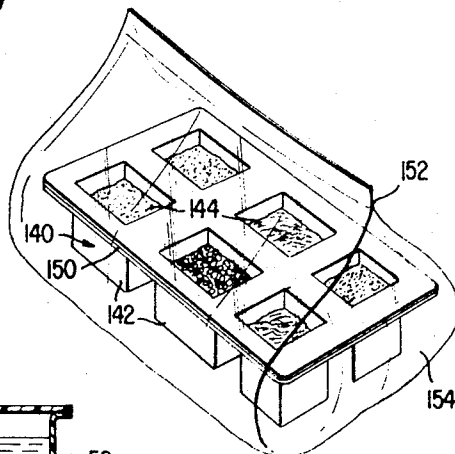
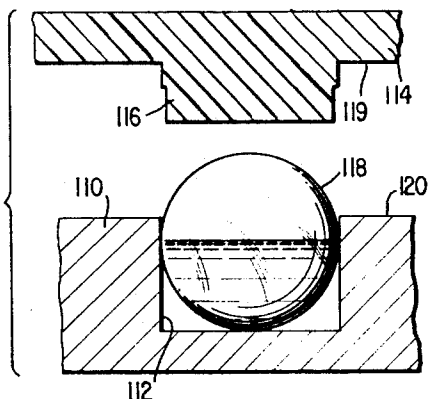
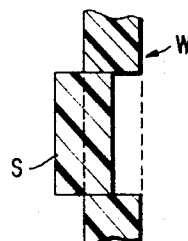
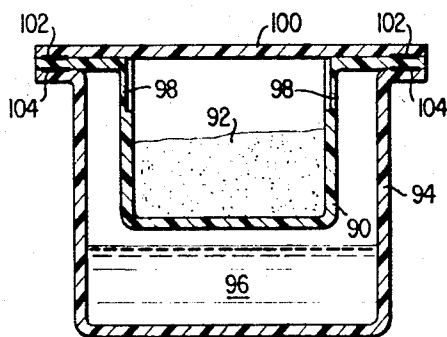
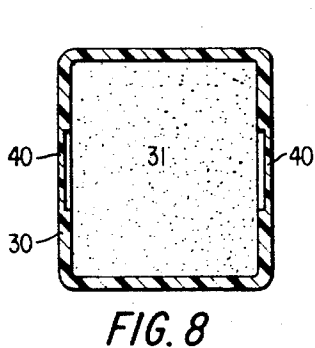
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INVENTOR

Other place memory.

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COMBINATION FOOD PACKAGE, SERVING TRAY AND SHIPPING AND DISPLAY CONTAINER

Otto John Munz, Harness Creek,

Annapolis, Md. 21403

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5 Claims

ABSTRACT OF THE DISCLOSURE

A hermetically sealed package comprising a cover overlying one or more compartments containing dehydrated food, medical supplies or the like to be treated by a vapor, in which the compartments all depend into a single reservoir or independent reservoirs for each compartment and the reservoir or reservoirs contain a vaporizable fluid, when heated, which can comprise a potable water, and in which the compartment or compartments include a vapor-rupturable wall portion exposed to the fluid in the reservoir and the vapor in the reservoirs will substantially surround the compartment depending therein.

This invention relates to a combination food package, serving tray, and shipping and display container.

An object of this invention is to provide a food package, holding a complete meal either precooked or permitting cooking of several foods also having different cooking times, and/or medical supplies, medicines, surgical equipment, etc.

A further object of this invention is to provide a food package for use in an emergency in which drinking water or other fluids are also packaged.

Another object of this invention is to provide a food package which may, but does not need to be maintained under refrigeration and also provides a balanced meal.

A further object of this invention is to provide a frozen food package which will keep the food in a frozen condition for a considerable time after a failure of refrigeration.

A further object of this invention is to provide a container for storage of different articles which it is desired to keep in a sterilized condition.

These and other objects of this invention will become apparent from the following description read in conjunction with the accompanying drawings, in which:

FIG. 1 is a top plan view of the container.

FIG. 2 is a section along the line 2—2 of FIG. 1.

FIG. 3 is an enlarged section taken on the line 3—3 of FIG. 2.

FIG. 4 is a section taken along the line 4—4 of FIG. 3.

FIG. 5 is a top plan view of a second embodiment of this invention.

FIG. 6 is a section taken along the line 6—6 of FIG. 5.

FIG. 7 is a section taken along the line 7—7 of FIG. 5.

FIG. 8 is a section taken along the line 8—8 of FIG. 7.

FIG. 9 is a third embodiment of this invention.

FIG. 10 is a fourth embodiment of the invention.

FIG. 11 is an apparatus which can be used to form the sections of the package shown in FIGURES 5—8.

FIG. 12 is a fifth embodiment of the invention taken along the line 12—12 of FIG. 13.

FIG. 13 is a plan view of FIG. 12.

FIG. 14 is a food package having a water bag which can be frozen without bursting.

The invention comprises a container having a compartmented section 2 secured to a bottom reservoir section 4 and a cover 6 secured to section 2 in hermetically sealed relation with each compartment or pocket 8 and 9, when filled. Each compartment 8 contains dehydrated food 10

which may be different for each compartment and each compartment wall is weakened as at 12. Compartments 9 are not supplied with a reservoir or weakened wall sections since these compartments are for storing nondehydrated foods, medicine, sterilized surgical equipment, etc. The reservoir has stored therein water 14 of sufficient purity for drinking purposes, or other fluids.

The package may be heated by any suitable means to turn the water into steam. The pressure of the steam will rupture the weakened wall sections common to the reservoir and the food compartments to permit contact of the fluid with the material through the ruptures to rehydrate the food as well as heat it. The cover can be removed to provide access to the food and the reservoir may be easily punctured to provide access to the water. A suction tube having a hollow ball type bearing may be included, in nonuse position lying adjacent the rim of the bottom 4, with the ball bearing portion closing off an orifice to container 14. In a use-position the ball bearing having a side orifice connects with container 14.

The package also may be punctured to rehydrate the food and to provide drinking water without the necessity of heating.

In manufacturing the package the reservoir section 4 is supplied with water and the section 2 is blister- or heat-sealed to the reservoir at the flanges 16 as indicated by the heavy lines 18. The cover is also heat-sealed as indicated by the heavy lines 20 to the section 2. The heat sealing surrounds each pocket as well as seals the periphery of the cover to section 2. The particular mode of sealing is preferred because of the sterilizing effect of heat but the use of sealing by suitable adhesives is not excluded.

In FIGURES 5—8 a package is shown, made up of separate compartments 30, 32 and a cover 34 weakened as at 36 by a V-groove. Each compartment is secured to the cover by heat-sealing as shown by heavy lines at 38. Compartments 30 are provided with dehydrated food 31 and with weakened wall sections as at 40 and with a supply of drinking water 42. Compartments 32 are not supplied with a reservoir or weakened wall sections since these compartments are for storing non-dehydrated foods medicine, or sterilized surgical equipment. Such compartments may be omitted as required by the purpose of the package.

In use the compartments 32 are separated from compartments 30 by fracturing the cover 34 along the weakened zones 36 by bending or cutting. The remaining part of the package may be heated to turn the water into steam to rupture the weakened wall sections and rehydrate the food contained in the compartments. If desired, single compartments can be broken away and heated separately to conserve the supply of food.

FIG. 9 shows an individual food package comprising a storage section 90 for dehydrated food 92 and a reservoir section 94 for the storage of drinking and cooking water 96. Section 90 is provided with a weakened portion 98 similar to sections 12 and 40. A cover 100 is heat-sealed to section 90 as at 102 to hermetically seal the contents 92 and the reservoir section 94 is heat-sealed as at 104 to the storage section.

In FIG. 10 is shown a weakened wall section which may be substituted for any of the weakened wall sections shown and described herein. In this modification the weakening is produced by partially shearing the wall W by partially moving a slug S from a position shown in dotted lines to the position shown in full lines.

FIG. 11 shows an apparatus suitable for making the unitary storage and reservoir sections. The lower element 110 is formed with a cavity 112 of the external shape of the reservoir. The upper element 114 is formed with a projection 116 having the desired shape of pocket. In

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use, a capsule 118 of plastic material and of spherical or cylindrical shape for example, containing the proper amount of water is placed in the cavity 112 and the upper element 114 is forced downwardly by any suitable mechanism till surfaces 119 and 120 abut. The volume of the water and plastic is such as to just fill the volume between the upper and lower elements when the surfaces 119 and 120 abut. The water pressure on the inside causes the plastic to conform to the desired shape. Of course the plastic must be at the proper thermoplastic temperature.

In FIG. 12 is shown a compartmented section 50 comprising a plurality of pockets or compartments 52, 54 joined by weakened sections formed by V notches 56. Each pocket 52 is provided with at least one weakened section 58 similar to weakened sections 12 and 14 and is also provided with an individual reservoir 60 and cover 62 heat-sealed thereto as at 63, 65. Each pocket 52 has stored therein dehydrated food 64 and water 66 of sufficient purity to drink. Pockets 54 are not supplied with weakened sections or a reservoir since these compartments are used for the same purpose as compartments 32.

In use, the compartments are separated by breaking apart by bending or tearing along the weakened lines 56.

In FIG. 14 is shown a frozen food package comprising a compartmental section 140 containing a plurality of pockets 142 having stored therein food 144. A cover 146 is heat-sealed to the section 140 as at 150 to hermetically seal each pocket to form a packet which is then sealed in a flexible plastic bag 152 containing water 154 and is frozen. In the event of an interruption to the refrigeration the frozen package will remain frozen for a considerable time. In use, the package is put in hot water to melt the ice and heat the food to provide an instant dinner.

While I have shown transparent plastic as the material for the various packages I do not intend to limit myself to this material since a multitude of plastics and metal foils such as aluminum can be used, the limitation being that they do not react with the food or fluids. I have also shown the pockets in a square shape but any suitable shape can be supplied within the spirit of the invention. For example, a hypodermic needle can be stored in pockets 32, 54 by shaping the pockets to properly secure the instrument.

I claim:

1. A package comprising an integral unit including:
 - at least one material-storage compartment containing a material to be conditioned by a fluid;
 - at least one reservoir containing a vaporizable fluid for treating the material in said material-storage compartment; a cover overlying said material-storage compartment and being hermetically sealed to said compartment at common overlying portions,

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said compartment depending into said reservoir and spaced on all side wall portions and a bottom portion from adjacent portions of said reservoir whereby said fluid and vapor produced therefrom can intimately contact the exterior of said compartment in said reservoir,

said compartment having at least one wall including a rupturable portion in a limited area of said wall and exposed to the fluid in said reservoir, said limited area portion being rupturable independently of said one wall when said fluid is vaporized whereby the vapor pressure will rupture the limited area portion and enter the compartment and treat the material therein.

2. The package as claimed in claim 1 in which a plurality of said compartments depend into a common reservoir.

3. The package as claimed in claim 1 in which said package comprises a plurality of individual compartments and individual reservoirs each cooperating with a respective compartment, each of said cooperating compartments and reservoirs including means permitting manual separation of a portion of the cover, a compartment, and a reservoir as a unit from the other portions of the cover, compartments and reservoirs.

4. The package as claimed in claim 1 in which said material in the compartment is dehydrated and said fluid is water.

5. The package as claimed in claim 1 in which said reservoir comprises a flexible bag filled with said fluid, said compartment and cover being immersed in said fluid in the flexible bag.

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MARTHA L. RICE, Primary Examiner

U.S. Cl. X.R.

99—171, 192; 206—56, 63.2; 220—16