An extremely lightweight, EPS Styrofoam food carrier. The food carrier has a cover and empty body that form a tightly enclosed container. On the interior base side of the body imprints plurality of interconnecting grooves extending up onto the wall, forming air circulation pathways, allowing more uniform temperature inside the food carrier.
CHEF'S CADDY

DESCRIPTION OF RELATED ART

[0001] The present application relates to a food carrier, and more particularly to polystyrene foam molded food carrier for maintaining food temperature during transport.

[0002] Note that the points discussed below may reflect the hindsight gained from the disclosed inventions, and are not necessarily admitted to be prior art.

[0003] How to keep freshly cooked food temperature during transportation is a concern for many people who bring lunch to work, for restaurant business who want to deliver food to customer as freshly cooked as possible. Many styles of food carriers have been invented. Some are with complicated structures, some are for special types of food.

[0004] For example US Patent Application US 2010/0200555 A1 discloses a carrier bag comprising a primary holder that has a secondary holder which has plurality of chambers. The carrier bag and its secondary holders are double-walled and comprise an insulating layer between the walls.

[0005] US Patent Application US 2010/0200583 A1 describes a container having a base for supporting a pie, cake, cupcakes, or other baked goods. A collapsible cover of flexible material is configured to be attached to the base to generally enclose the carrier, protecting the baked goods for transport or storage.

[0006] Because of the great need in keeping freshly cooked food as fresh as possible, complicated mechanisms are adopted for food transportation. For example, U.S. Pat. No. 7,716,083 B1 describes a complicated food carrier structure comprises a body having an interior compartment, an exterior and an opening, a sealing mechanism disposed around the opening; a door that covers the opening is configured to seal against said sealing means when a partial vacuum or pressure is created in the interior compartment; a passageway is configured to connect the interior and the exterior with a valve on the passageway; and a dish is configured to fit within the interior compartment. This food carrier has a goal of maintaining food temperature two hours or more.

[0007] The preferred material for this invention is high-density hard shell, non-toxic insulating foam TEEK, a novel polyimide, non-toxic foam developed by the National Aeronautics and Space Administration (NASA) Langley Research Center.

[0008] However, these food carriers are expensive either in material cost or in manufacturing because generally multiple steps of manufacturing processes are required. A light weight, easy to manufacture food carrier is therefore needed.

SUMMARY

[0009] The present application discloses a novel food carrier for freshly cooked food storage and transportation using the highly moldable, thermal insulating extendable polystyrene (EPS) foam.

[0010] In one embodiment, the chef's caddy is molded using EPS material, including a body and a matching removable cover having an optional imprint of the trade name of a food service business.

[0011] In one aspect of an example embodiment, the body and the cover form a sealed compartment having plurality of chambers, between chambers are airflow grooves interconnecting and going up the sides and the top, allowing for air circulation throughout inside the compartment for more uniform temperature maintaining.

[0012] In another aspect of an example embodiment, the body forms a pair of finger grove on the exterior sides for easy carry and moving the container.

[0013] In another aspect of an example embodiment, the body includes tall side walls and the interior chambers are formed by shallow recessing grooves, thereby forming a spacious housing for containing quarter, third, half and full pans.

[0014] The disclosed innovation facilitates delivery of a wide variety of food preparations including, broiled, steamed, poached, sautéed, fricasseed, grilled, BBQ, stewed, braised, and roasted. The highly lightweight and easy process in manufacturing dramatically reduces the labor cost in food transportation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The disclosed invention will be described with reference to the accompanying drawings, which show important sample embodiments of the invention and which are incorporated in the specification hereof by reference, wherein:

[0016] FIG. 1A shows a perspective view of the cover of an example chef's caddy in accordance to this application.

[0017] FIG. 1B shows a perspective view of the body of an example chef's caddy in accordance to this application.

[0018] FIG. 2A shows a plan view of the outside surface of the cover of an example chef's caddy in accordance to this application.

[0019] FIG. 2B shows a plan view of the inside surface of the cover of an example chef's caddy in accordance to this application.

[0020] FIG. 2C shows a front view of the side surface of the cover of an example chef's caddy in accordance to this application.

[0021] FIG. 2D shows a section view along line A of the cover of FIG. 2A.

[0022] FIG. 3A shows a plan view of the container body of an example chef's caddy in accordance to this application.

[0023] FIG. 3B shows a section view along line B of the container body of FIG. 3A.

[0024] FIG. 3C shows a front view of non-carry side surface of the container body of an example chef's caddy in accordance to this application.

[0025] FIG. 3D shows a section view along line A of the container body of FIG. 3A.

[0026] FIG. 3E shows a front view of carry side surface of the container body of an example chef's caddy in accordance to this application.

DETAILED DESCRIPTION OF SAMPLE EMBODIMENTS

[0027] The numerous innovative teachings of the present application will be described with particular reference to presently preferred embodiments (by way of example, and not of limitation). The present application describes several embodiments, and none of the statements below should be taken as limiting the claims generally.

[0028] For simplicity and clarity of illustration, the drawing figures illustrate the general manner of construction, and description and details of well-known features and techniques may be omitted to avoid unnecessarily obscuring the invention. Additionally, elements in the drawing figures are not necessarily drawn to scale, some areas or elements may be expanded to help improve understanding of embodiments of the invention.

[0029] The terms "first," "second," "third," "fourth," and the like in the description and the claims, if any, may be used for distinguishing between similar elements and not neces-
sarily for describing a particular sequential or chronological order. It is to be understood that the terms so used are inter-
changeable. Furthermore, the terms “comprise,” “include,” “have,” and any variations thereof, are intended to cover 
non-exclusive inclusions, such that a process, method, article, apparatus, or composition that comprises a list of elements is 
not necessarily limited to those elements, but may include 
other elements not expressly listed or inherent to such pro-
cess, method, article, apparatus, or composition.

[0030] It is contemplated and intended that the design apply to all sizes; for clarity reason, the examples are given based on a 
food carrier to contain a full pan in a restaurant, but an 
ordinary person in the art would know the variations to 
modify the design to apply to other sizes, shapes, and logos.

[0031] Expanded polystyrene (EPS) is a rigid, tough, 
closed-cell foam, and a good thermal insulator that has been 
used as food container material, such as coffee cups, fast food 
boxes etc. Based on scientific tests over five decades, govern-
ment safety agencies have determined that polystyrene is 
safe for use in foodservice products. For example, polystyrene 
meets the stringent standards of the U.S. Food and Drug 
Administration and the European Commission/European 
Food Safety Authority for use in packaging to store and serve 
food. Also the Hong Kong Food and Environmental Hygiene 
Department recently reviewed the safety of serving various 
foods in polystyrene foodservice products and reached the 
same conclusion as the U.S. FDA.

[0032] EPS Styrofoam is ideal for making food carrier 
because of its excellent thermo-insulation feature as well as 
light weight. It can be easily molded, making the manufac-
turing process simple.

[0033] In reference to FIGS. 1A and 1B, a simple rectan-
gular chef’s caddy 100 made of EPS Styrofoam is shown. It 
includes two separate components, a rectangular cover 101 
and a rectangular body portion 107. An optional but perhaps 
important feature of cover 101 is that it may have a trade name 
and logo 103 of a business be molded on the exterior surface.

[0034] Body portion 107 includes side walls 109 and base 
113. The sides for carrying are embodied with finger groves 
111. Cover 101 may also embody matching shapes 105 to the 
grooves to tightly fit with the body portion, forming a 
sealed compartment for carrying food.

[0035] In reference to FIGS. 2A, 2B, 2C and 2D, an 
example structure of the cover is shown. On the exterior top 
surface, trade name 201 and its logo may be imprinted. For 
the interior surface of the cover, recesses on edge 203, shown 
as 207 in FIG. 2D, are made in either side, forming a recessed 
area 205 in the middle for inside air circulation. Protruding 
groove 207 tightly fit into the body portion, keeping air inside 
the caddy insulated from the exterior air, thus maintaining the 
temperature of any food contained.

[0036] In reference to FIGS. 3A, 3B, 3C, 3D and 3E, an 
example structure of the body portion is shown. The body 
simply includes enclosing side walls 313 and a base 311 that 
are thick and strong enough to carry stack of several pans of 
food. The two caddy edges embody finger grooves 309 for 
holding the caddy. Depending on the designated capacity, the 
height of wall 313 may be adjusted in a specific design 
accordingly, with taller for larger capacity.

[0037] On base 311, interconnecting grooves 301, of suf-
ficient depth extend to the side walls as shown as 305 in FIG. 
3D and connect to recess area of the top cover when the cover 
is disposed on the body portion. These interconnecting 
grooves form air circulation pathways, allowing air circula-
tion throughout the inside for uniform inside temperature.

[0038] This simple design can be manufactured by simple 
molding using liquefied EPS material in one step.

[0039] This simple food carrier can keep food temperature 
loss/gain at a rate comparable or better to other, more 
complicated and high cost food carrier designs. For the preferred 
embodiment described, the temperature gain/loss is around 5 
Fahrenheit degrees per hour.

[0040] As will be recognized by those skilled in the art, 
the innovative concepts described in the present application 
can be modified and varied over a tremendous range of applica-
tions, and accordingly the scope of patented subject matter is 
not limited by any of the specific exemplary teachings given. 
It is intended to embrace all such alternatives, modifications 
and variations that fall within the spirit and broad scope of the 
appended claims.

[0041] None of the description in the present application 
should be read as implying that any particular element, step, 
or function is an essential element which must be included in 
the claim scope: THE SCOPE OF PATENTED SUBJECT 
MATTER IS DEFINED ONLY BY THE ALLOWED 
CLAIMS. Moreover, none of these claims are intended to 
invoke paragraph six of 35 USC section 112 unless the exact 
words “means for” are followed by a participle.

[0042] The claims as filed are intended to be as compre-
hsive as possible, and NO subject matter is intentionally relin-
quished, dedicated, or abandoned.

What is claimed is:
1. A food carrier made by molding, comprising: 
cover having a peripherally raised strip; and
a body having a base side and an enclosing wall, with 
sufficient thickness and strength for carrying specified 
amount of food, forming a housing with an aperture, 
wherein a plurality of interconnecting grooves are 
molded on said base side inside said housing, and said 
strip of the cover removably fits into the aperture, 
thereby sealing the aperture and forming an enclosure, 
and said body being made of expandable polystyrene 
Styrofoam.
2. The food carrier of claim 1, wherein said cover includes 
a trade name and/or logo.
3. The food carrier of claim 1, wherein said body further 
comprises a pair of finger grooves outside said housing on said 
wall.
4. The food carrier of claim 1 is rectangular in shape and is 
capable of enclosing a full size pan.
5. The food carrier of claim 1 is in circular shape.
6. The food carrier of claim 1 is made by molding in one 
step.
7. The food carrier of claim 1, wherein said grooves extend 
sufficiently up onto the wall, forming air circulation 
pathways.
8. The food carrier of claim 1, wherein said cover includes 
a central recess area nearing said raised strip.
9. The food carrier of claim 1 has an interior temperature 
change of less than five Fahrenheit degrees per hour.

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