



US 20080202975A1

(19) **United States**

(12) **Patent Application Publication**
Vance

(10) **Pub. No.: US 2008/0202975 A1**

(43) **Pub. Date: Aug. 28, 2008**

(54) **LIGHTWEIGHT BEAR-PROOF BAG**

Publication Classification

(76) **Inventor: Veronica R. Vance, San Carlos, CA (US)**

(51) **Int. Cl. A45C 11/20 (2006.01)**

(52) **U.S. Cl. 206/541**

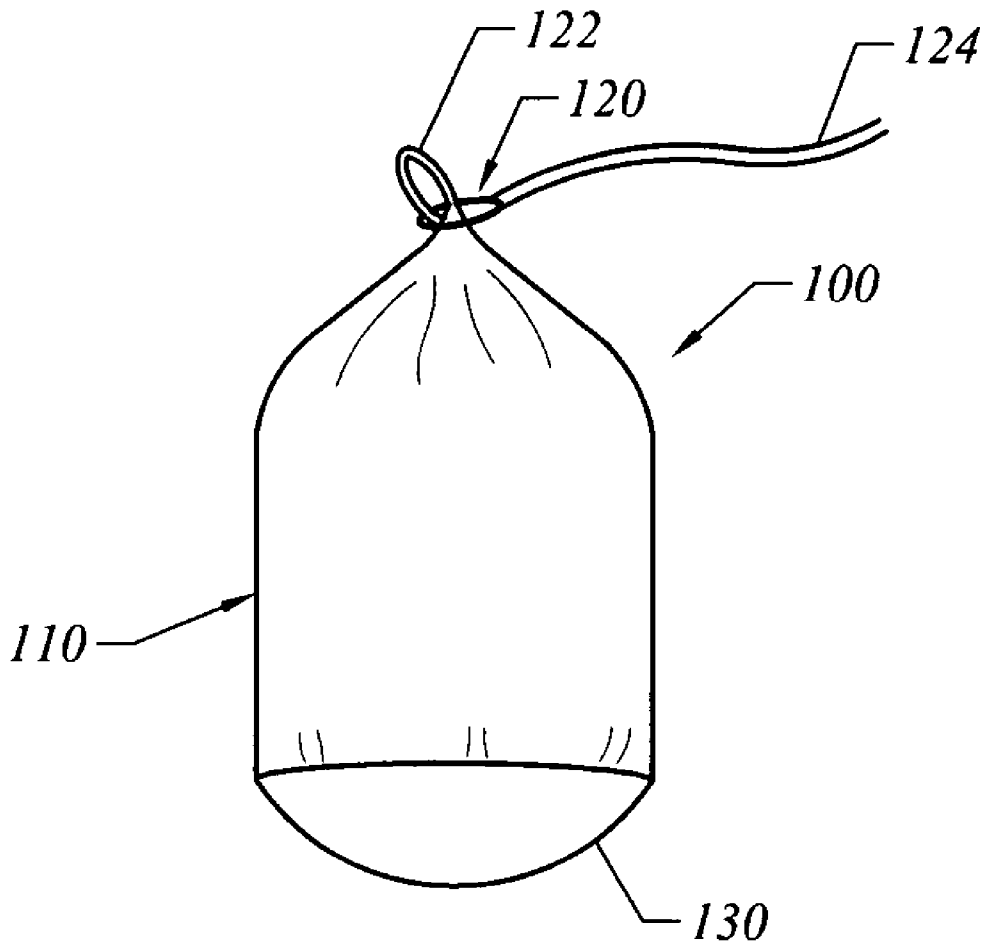
Correspondence Address:
THE MUELLER LAW OFFICE, P.C.
12951 Harwick Lane
San Diego, CA 92130

(57) **ABSTRACT**

A lightweight bear-proof bag for carrying and storing camping related items is provided. The bag includes an outside surface made of a bear-proof material along with a non-solid frame located inside the outside surface. The non-solid frame has a predetermined form which cannot be substantially altered by an animal (e.g., a bear).

(21) **Appl. No.: 11/710,687**

(22) **Filed: Feb. 26, 2007**



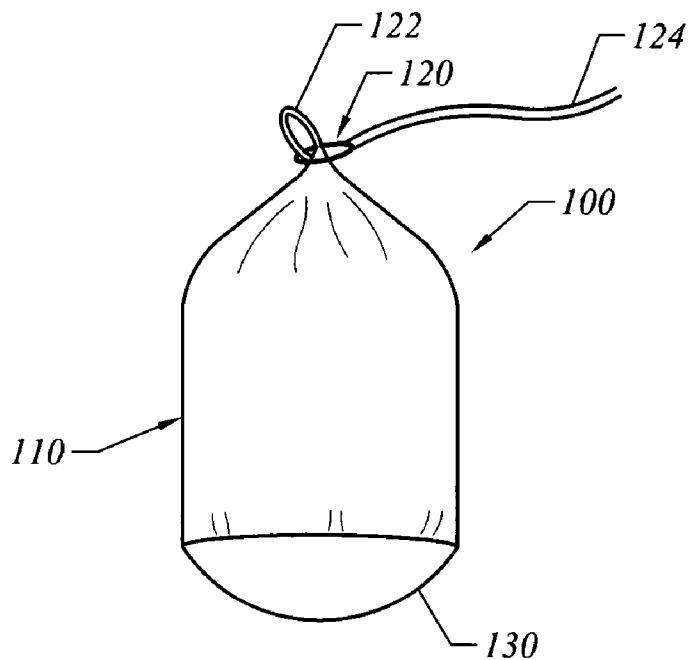


FIG. 1

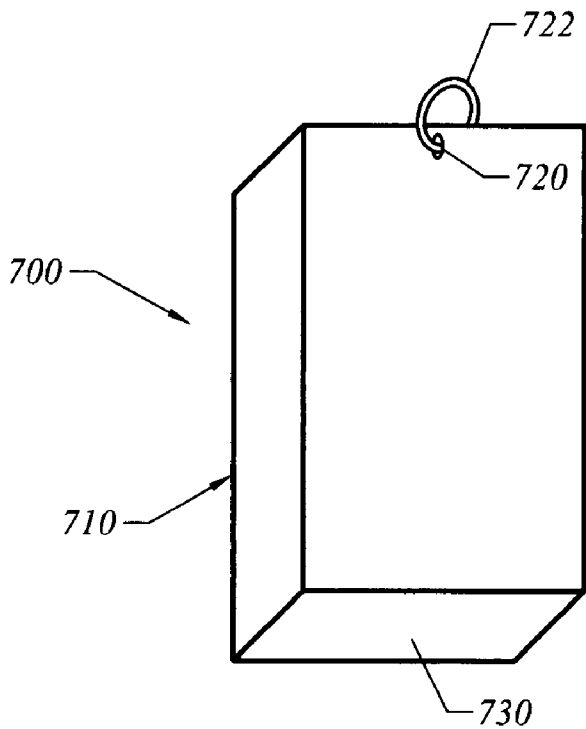


FIG. 7

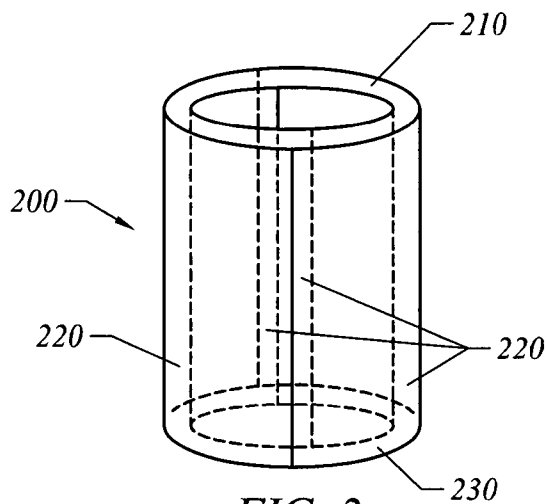


FIG. 2

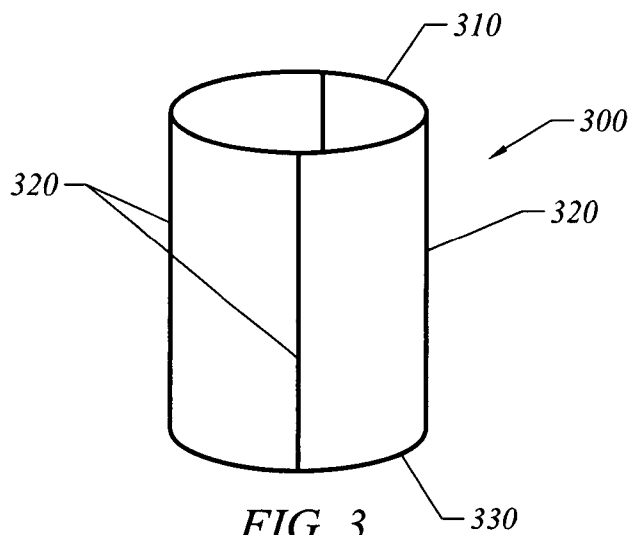


FIG. 3

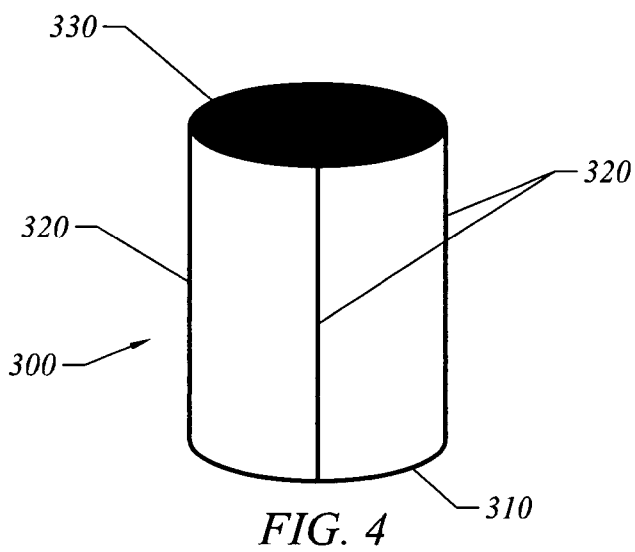


FIG. 4

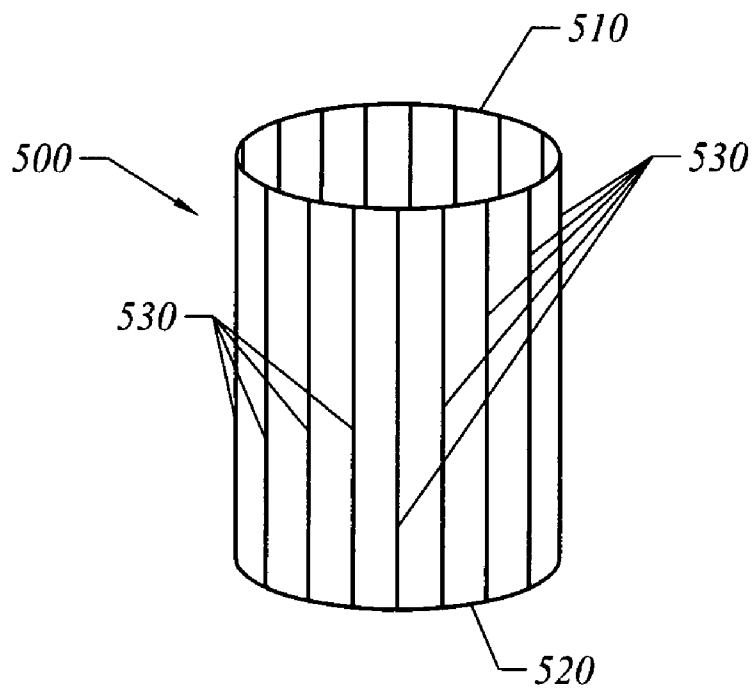


FIG. 5

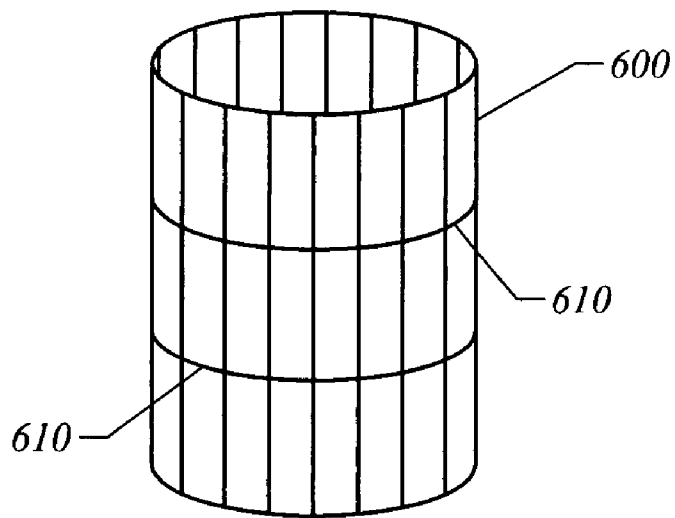


FIG. 6

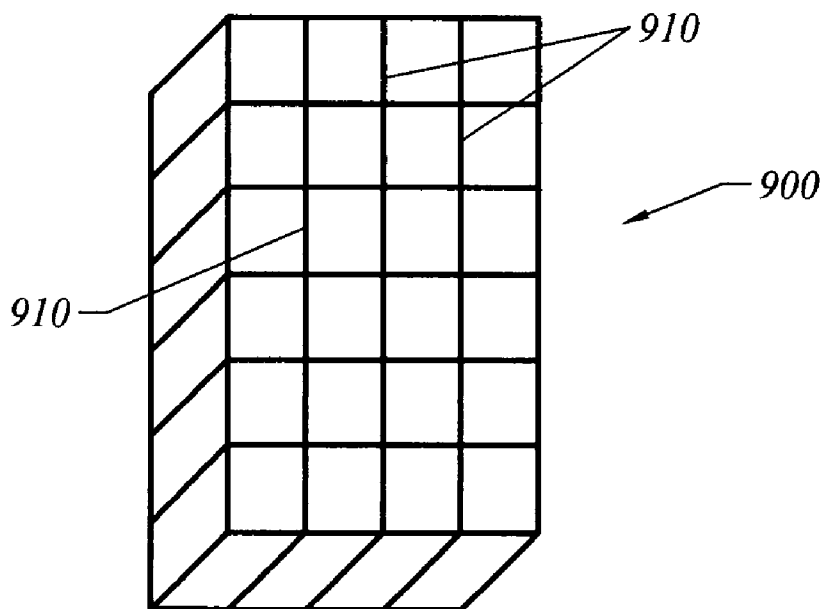
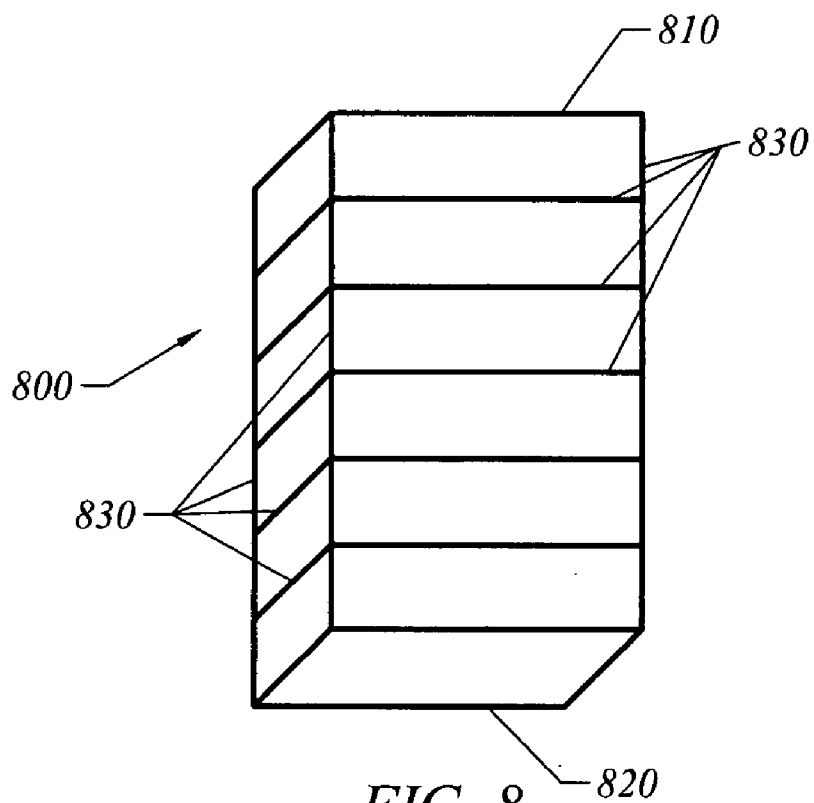


FIG. 9

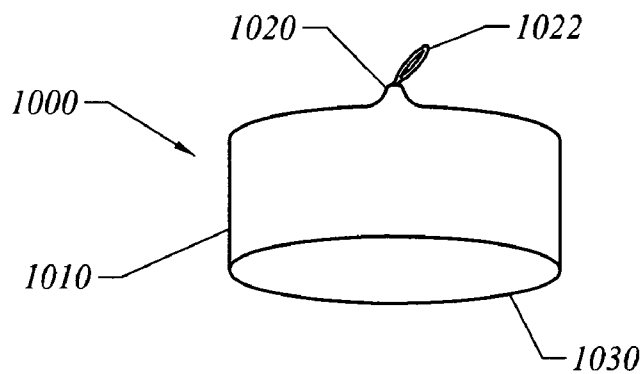


FIG. 10

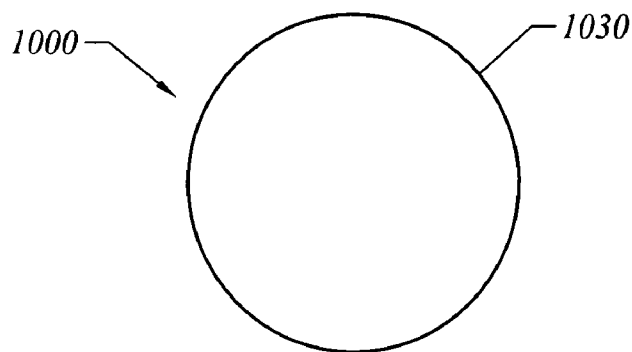


FIG. 11

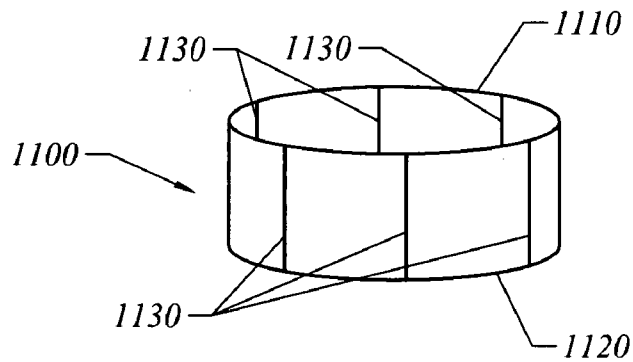


FIG. 12

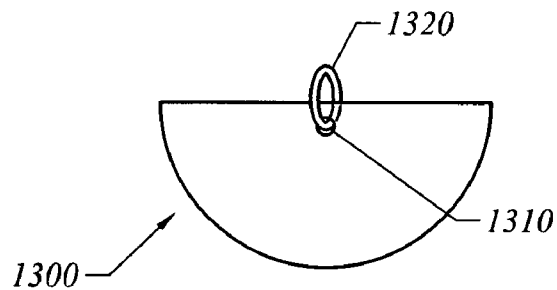
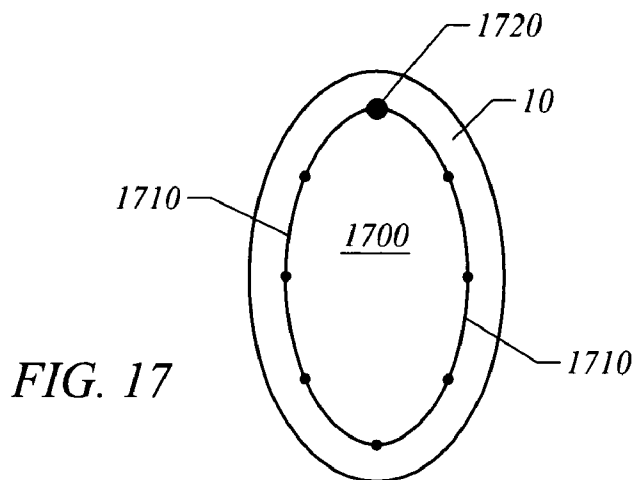
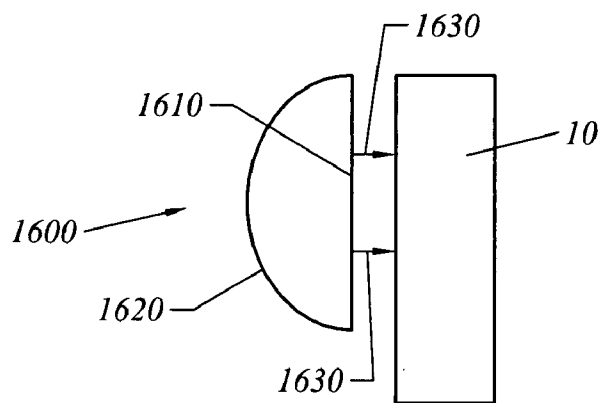
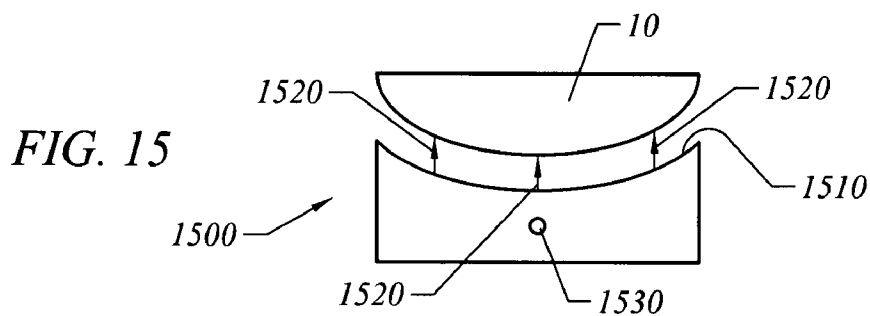
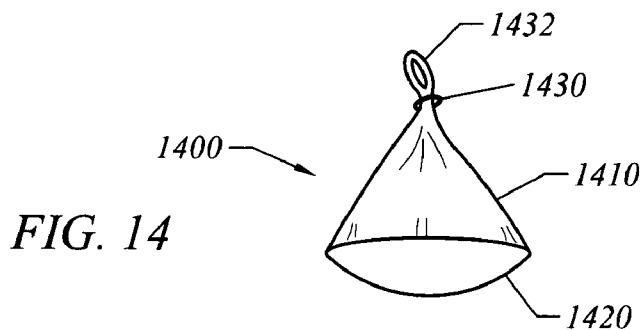


FIG. 13



LIGHTWEIGHT BEAR-PROOF BAG

BACKGROUND OF THE INVENTION

[0001] This invention relates to camping gear, specifically to food storage bags for long-term camping in the wilderness. During long term camping, pack weight is of particular concern. Food storage bags add to pack weight, so it is desirable to keep these bags as lightweight as possible.

[0002] In addition to pack weight, campers desire to keep their food stores from being raided and torn apart by hungry, marauding bears, raccoons or other animals. While back-packing in most areas of the United States, it is suggested that you use a bear-proof bag, bear-proof canister or other bear resistant container for storing your food. Others require the use of a bear-proof container.

[0003] One lightweight bear-proof bag is disclosed in U.S. Pat. No. 6,332,713. This patent discloses puncture and tear resistant fabric sewn with high strength thread and secured with an abrasion resistant cord. This bag is made to be hung high in a tree to prevent bear tampering.

[0004] Another bear-proof option is set forth in U.S. Patent Publication No. 2004/0206763 entitled, "Easily Disassemblable Bear-Proof Container." This publication discloses a complicated structure used for long-term camping in deep wilderness. This container unlocks and opens as a self-contained eating table. It may also be disassembled into individual parts for transportation. It's more like a cage with sturdy table-like side than a bag.

[0005] Additional solutions are currently available for purchase. For example, the BearVault product is a bear-proof container providing tool-less access. BearVault claims its canister product is light weight while able to contain a large volume (approximately seven days worth of food) by using durable Lexan® construction. This canister also has a child-proof-style, press-while-you-turn locking mechanism.

[0006] Wild Ideas provides the Bearikade product which is a bear resistant container including an internal cylinder made of a lightweight composite carbon fiber material. The Bearikade container may be opened by a human using the edge of a coin or other flat object, and animals are unable to open the container. One advantage of the Bearikade canister is that the external diameter is large enough to keep Grizzly Bears from getting a jaw lock on it. A bear may still use its claws, body weight and other tactics to damage the container and its contents. Another disadvantage is that the opening is quite small.

[0007] Another example currently on sale is the Ursack bear-proof food bag made of various materials. Some of these products use bullet-proof fabric, more specifically, high tech spectra fabric that's bolstered with flexible fiberglass Ripstop. Other Ursack bags are made of high tech Vectran fabric, which is the same material used in the airbags on the Mars Rover so that it will safely land on the planet's rough terrain. The Ursack highbred bag is a combination of the regular Ursack bag plus a heavy duty aluminum liner in the shape of a cylinder. The aluminum liner is designed to bend but not break, and it's possible that a bear might bend the liner out of shape. Ursack claims that "your food should survive just fine," but some food may still be squished. Furthermore, Ursack states, "[t]he liner can be reused—although it may have to be reworked into a cylinder shape."

[0008] Additional background for the invention is in the technical area of collapsible cages. Collapsible cages are common and usually used for animals. For example, see U.S.

Pat. No. 5,653,194, entitled, "Collapsible Portable Animal Crate." In this reference, the crate includes a tray to define a collapsed stowed configuration. The stowed configuration allows for easy crate transport.

[0009] Thus it is desirable to provide a lightweight bag that is fully resistant to bear tampering and which can be easily carried during a wilderness hike. To be fully resistant, the bag must not lose its shape while full of food.

SUMMARY OF THE INVENTION

[0010] The present invention is a lightweight bear-proof bag for carrying and storing camping related items. The bag includes an outside surface made of a bear-proof material along with a non-solid frame located inside the outside surface. The non-solid frame has a predetermined form which cannot be substantially altered by an animal (e.g., a bear).

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 provides a perspective illustration of an exemplary embodiment of the lightweight bear-proof bag;

[0012] FIG. 2 illustrates a first embodiment of a non-solid frame for the bear-proof bag of FIG. 1;

[0013] FIG. 3 illustrates a second embodiment of a non-solid frame for the bear-proof bag of FIG. 1;

[0014] FIG. 4 illustrates a bottom view of non-solid frame of the bear-proof bag of FIG. 1;

[0015] FIG. 5 illustrates a third embodiment of a non-solid frame for the bear-proof bag of FIG. 1;

[0016] FIG. 6 illustrates a fourth embodiment of a non-solid frame for the bear-proof bag of FIG. 1;

[0017] FIG. 7 provides perspective illustration of an alternative embodiment of the lightweight bear-proof bag;

[0018] FIG. 8 illustrates a first embodiment of a non-solid frame for the bear-proof bag of FIG. 7;

[0019] FIG. 9 illustrates a second embodiment of a non-solid frame for the bear-proof bag of FIG. 7;

[0020] FIG. 10 provides a perspective view of yet another exemplary lightweight bear-proof bag;

[0021] FIG. 11 illustrates a bottom view for the bear-proof bag of FIG. 10;

[0022] FIG. 12 illustrates an example of a non-solid frame for the bear-proof bag of FIG. 10;

[0023] FIG. 13 illustrates a top view of yet another embodiment of a lightweight bear-proof bag;

[0024] FIG. 14 provides a perspective view of another exemplary lightweight bear-proof bag;

[0025] FIG. 15 illustrates a lightweight bear-proof bag with a semi-circular shape on one side;

[0026] FIG. 16 illustrates a side view of yet another embodiment of a bear-proof bag; and

[0027] FIG. 17 illustrates a back view of a final exemplary embodiment of a bear-proof bag.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0028] Reference now will be made in detail to embodiments of the disclosed invention, one or more examples of which are illustrated in the accompanying drawings. Each example is provided by way of explanation of the present technology, not limitation of the present technology. In fact, it will be apparent to those skilled in the art that modifications and variations can be made in the present technology without departing from the spirit and scope thereof. For instance,

features illustrated or described as part of one embodiment may be used on another embodiment to yield a still further embodiment. Thus, it is intended that the present subject matter covers such modifications and variations as come within the scope of the appended claims and their equivalents.

[0029] With reference to FIG. 1, a simplified perspective view of an exemplary lightweight bear-proof bag is shown. The main elements of bag 100 are outside surface 110, opening 120, optional attachment devices 122, 124, bottom 130 and a non-solid frame (not shown in this figure). Outside surface 110 consists of any tear-proof material, and preferably a commercially available bullet-proof material. Optional attachment device 122 may be a ring, metal clip or other similar device. Optional attachment device 124 may be a rope, strong string, chain, a strip of bear-proof material, or other similar device. Bag 100 and the bags set forth below may include a locking mechanism for additional protection from bear tampering. Standard locking mechanisms used for commercially available bear-proof bags may be used for this optional feature.

[0030] Turning now to FIG. 2, a first embodiment of a non-solid frame 200 for bag 100 is illustrated. Frame 200 includes substantially circular top structure 210, bars 220 and substantially circular bottom structure 230. Bars 220 and substantially circular structures 210, 220 are securely attached to each other as shown, and may consist of a thick material which is a light weight metal such as aluminum and/or a strong plastic.

[0031] FIG. 3 illustrates a second embodiment of a non-solid frame 300. Frame 300 includes substantially oval top structure 310, bars 320 and substantially oval bottom structure 330. Bars 320 and substantially oval structures 310, 330 are securely attached to each other as shown, and may be thin consisting of a light weight metal such as aluminum and/or a strong plastic material.

[0032] FIG. 4 illustrates a bottom view of non-solid frame 300. In one embodiment of the present invention, bottom 330 is a substantially solid material to add additional support structure to the remaining components of the frame, more specifically open top structure 310 and bars 320. In another embodiment of the non-solid frame, bottom 330 is not solid and has the same ring-like structure as top 310 show in FIG. 3.

[0033] FIG. 5 illustrates a third embodiment of a non-solid frame. Frame 500 includes top ring 510 and bottom ring 520. Bars 530 are placed between top ring 510 and bottom ring 520 to provide rigid frame 500.

[0034] FIG. 6 illustrates a fourth embodiment of a non-solid frame. Frame 600 has the same structure as frame 500 with additional rings 610 securely attached as shown for added structural support.

[0035] FIG. 7 is a simplified perspective view of another exemplary lightweight bear-proof bag. The main elements of the bag 700 are outside surface 710, opening 720, optional attachment device 722, bottom 730 and a non-solid frame (not shown in this figure). Possible optional attachment devices are set-forth above. While lightweight bear-proof bag 100 illustrated in FIG. 1 has a substantially cylindrical shape, bag 700 has a substantially rectangular shape as shown in FIG. 7.

[0036] FIG. 8 illustrates a first embodiment of a non-solid frame 800 for bear-proof bag 700. The main elements of frame 800 are rectangular top 810, rectangular bottom 820 and bars 830, which are securely attached to each other as

shown, and may consist of a light weight metal such as aluminum and/or strong plastic material.

[0037] Frame 800 is optionally collapsible such that when the bag is empty, it may be easily reduced in size and stowed away. This is convenient for both the final leg of a trek and for storage. Well know techniques may be used for providing the collapsibility of frame 800 and the other collapsible frames described in this disclosure. A predetermine method is provided to the user for collapsing the non-solid frame. A standard locking mechanism may be used for this collapsing.

[0038] FIG. 9 illustrates a second embodiment of a non-solid frame 900 for bear-proof bag 700. Frame 900 has the same structure as frame 800 with additional bars 910 securely attached as shown for added structural support. Frame 900 is also optionally collapsible.

[0039] FIG. 10 is a simplified perspective view of yet another exemplary lightweight bear-proof bag. The main elements of bag 1000 are outside surface 1010, opening 1020, optional attachment device 1022, bottom 1030 and a non-solid frame (not shown in this figure). FIG. 11 illustrates a bottom view of bag 1000, which reveals the substantially circular shape of bottom 1030 in this embodiment.

[0040] FIG. 12 illustrates an example of a non-solid frame 1100 for bag 1000. The main elements of frame 1100 are top ring 1110, bottom ring 1120 and bars 1130, which are securely attached to each other as shown, and may consist of a light weight metal such as aluminum and/or strong plastic material. Frame 1100 is optionally collapsible.

[0041] FIG. 13 illustrates a top view of yet another embodiment of a lightweight bear-proof bag. This substantially half-oval shaped bag 1300 may be more easily attached to some backpacks at opening 1310 via optional attachment device 1320.

[0042] FIG. 14 is a simplified perspective view of another exemplary lightweight bear-proof bag. The main elements of bag 1400 are outer surface 1410, bottom 1420, opening 1430, optional attachment device 1433 and a non-solid frame (not shown). Bottom 1420 of this example may be oval or circular which leads to an overall cone-like shape. Bag 1400 may fit more easily on top of items stacked on a standard backpack. The frame in this embodiment is preferably cone-shaped and optionally collapsible.

[0043] Many other shapes may be used for the bear-proof bag of the present invention. For example, FIG. 15 illustrates a lightweight bear-proof bag with a semi-circular shape on one side. This allows side 1510 of bear-proof bag 1500 to somewhat wrap around certain backpack 10 shapes to fit more securely. Arrows 1520 indicate how bag 1500 is placed against backpack 10. The opening 1530 of bag 1500 may be used to assist with attachment to backpack 10.

[0044] FIG. 16 illustrates a side view of yet another embodiment of a bear-proof bag. Bag 1600 may also take on a shape which is flat on side 1610 next to backpack 10 and rounded on outside surface 1620. Arrows 1630 indicate how bag 1600 is placed against backpack 10.

[0045] FIG. 17 illustrates a back view of a final exemplary embodiment of a bear-proof bag. Bag 1700 has sides 1710 which are substantially curved to somewhat match the shape of backpack 10. Substantially matching the bear-proof bag shape to a backpack's shape may be done for any configuration of backpack.

[0046] Although embodiments of the invention have been discussed primarily with respect to specific embodiments thereof, other variations are possible. For example, different

sizes and geometric shapes may be utilized with the non-solid frame to match backpack shapes and backpacker needs. It may be possible to use any attachment device with the designs disclosed herein.

[0047] While the specification has been described in detail with respect to specific embodiments of the invention, it will be appreciated that those skilled in the art, upon attaining an understanding of the foregoing, may readily conceive of alterations to, variations of, and equivalents to these embodiments. These and other modifications and variations to the present invention may be practiced by those of ordinary skill in the art, without departing from the spirit and scope of the present invention, which is more particularly set forth in the appended claims. Furthermore, those of ordinary skill in the art will appreciate that the foregoing description is by way of example only, and is not intended to limit the invention.

What is claimed is:

- 1. A lightweight bear-proof bag for carrying and storing camping related items, comprising:
 - an outside surface comprising a bear-proof material; and
 - a non-solid frame located inside said outside surface, said non-solid frame having a predetermined form;
 - wherein said predetermined form cannot be substantially altered by an animal; and
 - wherein said outside surface and said non-solid frame together provide the bag for carrying and storing camping related items.
- 2. The lightweight bear-proof bag for carrying and storing camping related items of claim 1,
 - wherein said predetermined form of said non-solid frame is in an open position; and

wherein said non-solid frame is collapsible to a second predetermined form in a closed position.

- 3. The lightweight bear-proof bag for carrying and storing camping related items of claim 1, wherein said non-solid frame is a cylinder shape.
- 4. The lightweight bear-proof bag for carrying and storing camping related items of claim 1, wherein said non-solid frame is a rectangular shape.
- 5. The lightweight bear-proof bag for carrying and storing camping related items of claim 1, wherein said non-solid frame substantially matches the shape of a backpack.
- 6. The lightweight bear-proof bag for carrying and storing camping related items of claim 1, wherein said bear-proof material is a bullet-proof material.
- 7. The lightweight bear-proof bag for carrying and storing camping related items of claim 1, wherein said non-solid solid frame is a lightweight metal.
- 8. The lightweight bear-proof bag for carrying and storing camping related items of claim 1, wherein said non-solid frame is a lightweight plastic.
- 9. The lightweight bear-proof bag for carrying and storing camping related items of claim 1, wherein a camper may use a predetermined technique to manually collapse said non-solid frame.
- 10. The lightweight bear-proof bag for carrying and storing camping related items of claim 9, wherein said predetermined technique includes unlocking a mechanism.
- 11. The lightweight bear-proof bag for carrying and storing camping related items of claim 1, wherein said non-solid frame is cage-like.

* * * * *