A bedding article is compressed and rolled by hand from one side edge to form a rolled bedding article. The resulting rolled bedding article has a shape that approximates that of a rectangular prism. The bedding article may, for example, be a pillow or a memory foam pillow. The rolled bedding article is then fitted into a hexagonal prism container such that little void space is left inside the container. In one example, the container is a cardboard box structure having a hexagonal cross section, a depth, and a side length that is smaller than the depth. The container has two base panels and six side panels. Retail stores that sell rolled memory foam pillows packaged in the container will reduce the amount of wasted shelf space. During shipment, the novel container provides for more pillows to be stored and shipped within a shipping container.
FIG. 8

FIG. 9

FIG. 10

STACKED HEXAGONAL Prism CONTAINERS
SECOND CONTAINER
FIRST CONTAINER
PANEL
RETAIL-STORE MERCHANDISE SHELF
SECOND CONTAINER

FIG. 11
PERSPECTIVE VIEW OF A SHIPPING CONTAINER

FIG. 12

INSIDE VIEW OF THE SHIPPING CONTAINER

FIG. 13
Figure 14 illustrates the process of placing pillow containers inside the shipping container. The diagram shows the container with the pillow boxes arranged vertically. Figure 15 further illustrates this setup with an additional layer of pillow boxes.
<table>
<thead>
<tr>
<th>Container Type</th>
<th>Container Dimensions (Inches)</th>
<th>Container Cubic Area (Cubic Inches)</th>
<th>Number of Standard Pillows Per Cubic Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novel Hexagonal Prism Package 10</td>
<td>9.1 x 9.1 x 15.4</td>
<td>3,313</td>
<td>6 Pillows / 4.24 Cubic Feet</td>
</tr>
<tr>
<td>Conventional Rectangular Package 1</td>
<td>24.4 x 4.7 x 16.5</td>
<td>1,892</td>
<td>4 Pillows / 4.98 Cubic Feet</td>
</tr>
</tbody>
</table>

**FIG. 16**
MEMORY FOAM PILLOW PACKAGING
HAVING A HEXAGONAL PRISM
STRUCTURE

CROSS REFERENCE TO RELATED
APPLICATION


TECHNICAL FIELD

[0002] The described embodiments relate to memory foam articles packages, and more particularly to the rolling, packaging, and shelving of memory foam pillows.

BACKGROUND INFORMATION

[0003] Memory foam bedding articles, such as memory foam pillows, are compressible. To facilitate transportation, storage, and display, such a bedding article is often rolled and compressed into a cylindrical roll. The roll is then packed into a container such as a cardboard box. The container is transported to a retail store and is then placed on a retail-store merchandise shelf to be purchased by a consumer at the retail store.

[0004] FIG. 1 (Prior Art) is a simplified top-down view looking down into an inside of a container 1 that contains a rolled memory foam pillow 2. FIG. 2 (Prior Art) is a perspective view of the container 1 that contains the rolled memory foam pillow 2. The memory foam pillow 2 illustrated in FIG. 1 is first compressed and coiled into a cylindrical roll and is then placed into the container 1. The cylindrical roll has a diameter 3. The container 1 has a rectangular prism shape with a square cross-section. The size of the square cross-section is determined by the diameter 3 of the cylindrical roll. Due to the circular cross-sectional shape of the memory foam pillow 2 in the container 1, there is void spaces 4 inside the container 1. The volume of the container 1 is larger than the volume of the memory foam pillow 2 due to the void spaces 4. A package that overcomes these limitations is desired.

SUMMARY

[0005] A bedding article is compressed and rolled from one side edge to form a rolled bedding article. The resulting rolled bedding article has a shape that approximates that of a rectangular prism. The bedding article may, for example, be a pillow or a memory foam pillow. The rolled bedding article is then fitted into a hexagonal prism container such that little void space is left inside the container.

[0006] The container may, for example, be a cardboard box having a hexagonal cross section. The cardboard box has a depth and a side length. The side length is smaller than the depth. The depth extends in a depth dimension that is parallel to a roll axis of the memory foam pillow. The cardboard box has two base panels and six side panels.

[0007] In one novel aspect, multiple such containers that contain rolled memory foam pillows as described above are placed on a retail-store merchandise shelf to be purchased by a consumer. The shelf has a shelf depth that extends in a depth dimension. The containers are placed on the shelf such that a first container is disposed on the shelf in front of the second container. A panel of the first container abuts a panel of the second container. The two containers are aligned in the depth dimension without exceeding the shelf depth. The combined depths of the aligned containers in the depth dimension is made to be approximately the same as the shelf depth in order to reduce the amount of wasted shelf space in the retail store.

[0008] In another novel aspect, multiple such containers that contain rolled memory foam pillows as described above are placed into shipping containers for storage and shipment. The shipping container has a depth that extends in a depth dimension. The pillow containers are stacked within the shipping container such that a first pillow container, a second pillow container, and a third pillow container are disposed on the shipping container surface. A side panel of the first pillow container contacts a side panel of the second pillow container. A base panel of the first pillow container contacts a base panel of the third pillow container. A fourth pillow container is disposed above the first and second pillow container, such that a side panel of the fourth pillow container contacts another side panel of the first pillow container and another side panel of the fourth pillow container contacts another side panel of the second pillow container. The novel pillow container provides for more pillows to be stored and shipped within the shipping container than when the conventional rectangular pillow containers are used.

[0009] Further details and embodiments are described in the detailed description below. This summary does not purport to define the invention. The invention is defined by the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The accompanying drawings, where like numerals indicate like components, illustrate embodiments of the invention.

[0011] FIG. 1 (Prior Art) is a top-down diagram of inside of a conventional container 1 that contains a rolled memory foam pillow 2.

[0012] FIG. 2 (Prior Art) is perspective diagram of the container 1 of FIG. 1 that contains the rolled memory foam pillow 2.

[0013] FIG. 3 is a top-down diagram of inside of a hexagonal prism container 10 that contains a rolled memory foam pillow 11 in accordance with one novel aspect.

[0014] FIG. 4 is a perspective diagram of the novel hexagonal prism container 10 that contains the rolled memory foam pillow 11.

[0015] FIG. 5 is a perspective diagram illustrating how the memory foam pillow 11 is hand-rolled and inserted into the hexagonal prism container 10.

[0016] FIG. 6 is a perspective diagram of the inside of the hexagonal prism container 10 after the rolled memory foam pillow 11 is inserted.

[0017] FIG. 7 is a perspective diagram of the inside of the hexagonal prism container 10 as flap portions of the container are folded inward.

[0018] FIG. 8 is a perspective diagram showing how the flap portions of the container are to be folded to secure the package 10 for shipping and storage.

[0019] FIG. 9 is a perspective diagram showing the hexagonal prism container 10 after the flap portions are folded inwards.

[0020] FIG. 10 is a perspective diagram of a plurality of stacked hexagonal prism containers each containing a rolled memory foam pillow.
FIG. 11 is a perspective diagram of hexagonal prism containers 26 on a merchandise shelf 27 that each contains a rolled memory foam pillow 11 in accordance with another novel aspect.

FIG. 12 is a perspective diagram of a shipping container 35 used to transport hexagonal prism pillow containers.

FIG. 13 is a diagram of inside of the shipping container 35.

FIG. 14 is a diagram showing how a plurality of stacked hexagonal prism pillow containers 39 each containing a memory foam pillow are stored in the shipping container 35.

FIG. 15 is a diagram of the inside of the shipping container 35 after the hexagonal prism pillows 39 are inserted.

FIG. 16 is a table 49 showing how the hexagonal prism containers provide for more pillows to be packaged in less area than the conventional rectangular containers.

Reference will now be made in detail to some embodiments of the invention, examples of which are illustrated in the accompanying drawings.

DETAILED DESCRIPTION

FIG. 3 is a top-down diagram of inside of a container 10 that contains a rolled memory foam pillow 11 in accordance with one novel aspect. The rolled memory foam pillow 11 can also be a non-memory foam pillow. The container 10 of FIG. 3 results in less void space 12 than the rectangular-shaped container 1 of FIG. 1 and FIG. 2. By employing container 10 void space is reduced by at least between 1.5-1.75 times per pillow as compared to when the conventional container 1 of FIG. 1 is used.

FIG. 4 is a perspective diagram of the novel container 10 that contains the rolled memory foam pillow 11. In the specific example of FIG. 4, the container 10 is a hexagonal prism cardboard structure having a hexagonal cross section 13. The container 10 has a depth 14 and a side length 15.

FIG. 5 is a perspective diagram illustrating how the bedding memory foam pillow 11 is hand-rolled and inserted into the hexagonal prism container 10. The unpackage pillow 11 has a first side edge 16 and a second side edge 17. The two side edges extend parallel to one another on opposite sides of the pillow 11. The pillow 11 is hand-rolled wherein the first edge 16 is rolled along a roll axis 18 towards the second side edge 17. No machine or device is involved in rolling the pillow 11. As such, the novel hexagonal prism package 10 obviates the need to machine roll memory foam pillows as is typically required when packaging a memory foam pillow 2 into the conventional package 1 shown in FIG. 1 and FIG. 2. Such machine rolling tends to damage the desirable structural properties of memory foam material.

FIG. 6 is a perspective diagram of the inside of the hexagonal prism container 10 after the rolled pillow 11 is inserted. The hexagonal prism container 10 includes a plurality of flap portions 19 at an end of the hexagonal prism container 10. The flap portions 19 are foldable to secure the rolled pillow 11 within the confines of the hexagonal prism container 10.

FIG. 8 is a perspective diagram of the inside of the hexagonal prism container 10 as the flap portions 19 of the container 10 are folded inward. Arrows 20 identify how the flap portions 19 are folded towards the center of the hexagonal prism container 10.

FIG. 9 is a perspective diagram showing the hexagonal prism container 10 after the flap portions 19 are folded inwards. After the flap portions 19 are folded inwards and secured, the hexagonal prism container 10 containing the pillow is ready to be stored or transported. In this example, the hexagonal prism container 10 has six side panels that are rectangular and two base panels that are hexagonal. Reference numeral 21 identifies one of the side panels of the hexagonal prism container 10. Reference numeral 22 identifies one of the base panels of the hexagonal prism container 10.

FIG. 10 is a perspective diagram of a plurality of stacked hexagonal prism containers 10, 23, and 24 each containing a rolled pillow. Hexagonal prism containers 10, 23, and 24 are optimally packed such that at least one panel of a hexagonal prism container contacts a panel of another hexagonal prism container. Dashed circle 25 identifies one such contact between a panel of hexagonal prism container 10 and a panel of hexagonal prism container 24.

FIG. 11 is a perspective diagram of hexagonal prism containers 26 on a merchandise shelf 27 that each contains a rolled pillow in accordance with another novel aspect. The shelf 27 has a shelf depth 28 and is supported by a vertical support structure 29. In the illustration, the vertical support structure 29 is a wall such as a vertical building wall or wall panel. The vertical support structure 29 also includes metal shelf support rails 30 and 31 that have slots for accommodating horizontally extending shelf supports, such as shelf 27.

The shelf depth 28 extends in a depth dimension as illustrated. A very large chain of retail stores has shelves of a standard depth of twenty-two inches. All the containers, including a first container 32 and a second container 33, are disposed on the shelf. At least two containers are disposed on the shelf along the depth dimension without exceeding the shelf depth 28. The two containers 32 and 33 are disposed face-to-face on shelf such that a panel of the first container abuts a panel of the second container. In addition, a retail customer confronting retail-store merchandise shelf will be able to perceive a panel 34 of the first container to make a purchase decision.

FIG. 12 is a perspective diagram of a shipping container 35 used to transport pillow containers. The shipping container 35 of FIG. 12 may also be referred to as an “intermodal container” or as a “freight container”. To maximize profits, transported pillows must be packaged and stored in the shipping container 35 as compactly as possible so that more pillows can be stored and transported in the shipping container 35. The hexagonal prism container, such as container 10 shown in FIG. 3, results in more compact packing than in the conventional rectangular prism containers, such as container 1 shown in FIG. 1.

FIG. 13 is a diagram of inside of the shipping container 35. The shipping container 35 has a length 36, a height 37, and a depth 38. The depth 38 extends in a depth dimension. The depth 38 of the container 35 is greater in magnitude than the length 36 or height 37 of the container 35.

FIG. 14 is a diagram showing how a plurality of stacked hexagonal prism pillow containers 39 each containing a memory foam pillow are stored in the shipping container 35. In this example, the hexagonal prism pillow containers 39 are arranged such that the base panels of the containers are perpendicular to the depth dimension of the shipping container 35. In another example, the hexagonal prism pillow
containers are arranged such that the base panels of the containers 39 are parallel to the depth dimension of the shipping container 35.

FIG. 15 is a diagram of the inside of the shipping container 35 after the hexagonal prism pillow containers 39 are inserted. The hexagonal prism pillow containers 39 result in more efficient packing such that each shipping container stores more pillows than if the conventional rectangular containers were utilized, as shown in the table of FIG. 16.

FIG. 16 is a table 40 showing how the hexagonal prism containers provide for more pillows to be packaged in less area than the conventional rectangular containers. A standard pillow has dimensions of 24-inches by 16-inches by 6-inches. Due to the minimal void space (as shown in FIG. 3), the novel hexagonal prism package stores six pillows in 4.24 cubic feet, whereas the conventional rectangular package stores four pillows in 4.98 cubic feet. Accordingly, when rectangular packages are utilized to store an amount of pillows, more storage and transport area is required than when hexagonal prism packages are utilized to store the amount of pillows. An amount of hexagonal prism packages can store at least one and a half times the number of pillows the equivalent amount of rectangular packages can store, and preferably the amount of hexagonal prism packages can store one and three-quarters times the number of pillows the equivalent amount of rectangular packages can store.

Although certain specific embodiments are described above for instructional purposes, the teachings of this patent document have general applicability and are not limited to the specific embodiments described above. Accordingly, various modifications, adaptations, and combinations of various features of the described embodiments can be practiced without departing from the scope of the invention as set forth in the claims.

1. An apparatus comprising:
   a rolled pillow; and
   a container that contains the rolled pillow, wherein the container is a hexagonal prism structure having a depth and a side length, wherein the depth extends in a depth dimension, and wherein the depth is greater than the side length.

2. The apparatus of claim 1, wherein the container includes two base panels and six side panels, wherein one of the base panels is attached to an end of one of the six side panels, wherein the other of the base panels is attached to an opposite end of one of the six side panels, wherein each base panel has a hexagonal shape, and wherein each side panel has a rectangular shape.

3. The apparatus of claim 1, wherein the container includes a plurality of flap portions, wherein each of the flap portions extends from an end of the container, and wherein each of the flap portions is foldable inward towards a center of the container.

4. The apparatus of claim 1, wherein the rolled pillow has a roll axis, and wherein the roll axis is parallel to the depth dimension.

5. The apparatus of claim 1, wherein the rolled pillow is a rolled memory foam pillow.

6. The apparatus of claim 1, wherein the container contains a single rolled pillow, and wherein the container does not include any additional bedding articles.

7. The apparatus of claim 1, wherein the rolled pillow is rolled by hand such that no machine is involved in rolling the pillow.

8. The apparatus of claim 1, wherein the container has a first volume, wherein the container includes void space that is not consumed by the rolled pillow, wherein the void space has a second volume, and wherein the second volume is less than or equal to one tenth of the first volume.

9. A method comprising:
   (a) rolling at least a portion of a pillow to obtain a rolled pillow, wherein the rolled pillow has a roll axis; and
   (b) placing the rolled pillow into a container, wherein the container is a hexagonal prism structure, wherein the container has a depth and a side length, wherein the depth extends in a depth dimension, and wherein the depth is greater than the side length.

10. The method of claim 9, further comprising:
   (c) placing the container into a shipping container having a plurality of containers disposed within the shipping container, wherein each of the plurality of containers contains a rolled pillow, and wherein the container is substantially identical to each of the plurality of containers.

11. The method of claim 9, wherein the rolled pillow has a roll axis, and wherein the roll axis is parallel to the depth dimension.

12. The method of claim 9, wherein the rolled pillow is a memory foam pillow.

13. The method of claim 9, wherein the rolling of (a) is a hand-rolling operation.

14. The method of claim 9, wherein the placing of (b) involves folding a plurality of flap portions disposed along ends of the container backwards towards a center of the container.

15. The method of claim 9, wherein after the placing of (b) the container contains a single rolled pillow and does not include any additional bedding articles.

16. The method of claim 9, wherein after the placing of (b) the container has a first volume, wherein the container includes void space that is not consumed by the rolled pillow, wherein the void space has a second volume, and wherein the second volume is less than or equal to one tenth of the first volume.

17. A structure, comprising:
   a retail-store merchandise shelf having a shelf depth, wherein the shelf depth extends in a depth dimension; a first container that contains a first rolled pillow; and
   a second container that contains a second rolled pillow, wherein the first container and the second container are substantially identical, and wherein the first container is disposed on the shelf in front of the second container such that the second container is aligned with the first container in the depth dimension.

18. The structure of claim 17, wherein the first container is a first hexagonal prism structure, and wherein the second container is a second hexagonal prism structure.

19. The structure of claim 17, wherein the first container has a plurality of panels and the second container has a plurality of panels, and wherein one of the plurality of panels of the first container and one of the plurality of panels of the second container are disposed face-to-face on the shelf.

20. The structure of claim 17, wherein the first rolled pillow is a rolled memory foam pillow, wherein the first rolled memory foam pillow is rolled without involving any machine, wherein the second rolled pillow is a second rolled memory foam pillow, and wherein the second rolled memory foam pillow is rolled without involving any machine.

21-26. (canceled)