(11) Application No. AU 2008201548 B2

(19) AUSTRALIAN PATENT OFFICE

(54) Title

Carton with an interlocking separator pad

(51)[6] International Patent Classification(s)

B65D 71/00 (2006.01) 20060101AFI2008041

B65D 71/00 4BMAU

(21) Application No: 2008201548 (22) Application Date: 2008.04.04

(43) Publication Date : 2008.05.01

(43) Publication Journal Date : 2008.05.01

(62) Divisional of:

2005210636

(71) Applicant(s)

Graphic Packaging International, Inc.

(72) Inventor(s)

Sutherland, Robert L

(74) Agent/Attorney

Phillips Ormonde Fitzpatrick, 367 Collins Street, Melbourne, VIC, 3000

(56) Related Art

US 5437143

US 3937326

US 5669500

US 5518111

2008201548 04 Apr 2008

ABSTRACT

The present invention relates to a carton loaded with a plurality of articles. The carton includes a bottom panel (14), a top panel (22), a first side panel (18), a second side panel (26), a first end panel at least partially closing a first end of the carton and including a first plurality of end flaps (40, 48), and a second end panel at least partially closing a second end of the carton. The carton is loaded with at least a first layer of articles and a second layer of articles. An interlocking separator pad (114) having a first end and a second end is located between the first and second layers of articles. The first end of the pad (114) has at least one first tab (122C) that extends through at least one first aperture (50B) in the first end panel (40). The first end of the pad (114) has a first flap (112) that is folded and lodged between the first end panel (40, 48) and one of the layers of articles.

2008201548 04 Apr 2008

AUSTRALIA

Patents Act

COMPLETE SPECIFICATION
(ORIGINAL)

Class Int. Class

Application Number:
Lodged:

Complete Specification Lodged:
Accepted:
Published:

Priority

Related Art:

Name of Applicant:

Graphic Packaging International, Inc.

Actual Inventor(s):

Robert L Sutherland

Address for Service and Correspondence:

PHILLIPS ORMONDE & FITZPATRICK
Patent and Trade Mark Attorneys
367 Collins Street
Melbourne 3000 AUSTRALIA

Invention Title:

CARTON WITH AN INTERLOCKING SEPARATOR PAD

Our Ref : 826245
POF Code: 374805/466861

The following statement is a full description of this invention, including the best method of performing it known to applicant(s):

6009q

2008201548 04 Apr 2008

CARTON WITH AN INTERLOCKING SEPARATOR PAD

BACKGROUND OF THE INVENTION

This application is a divisional of Australian patent application 2005210636, the contents of which are to be taken as incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates generally to a carton for carrying articles in two layers. The articles are typically cylindrical containers.

BACKGROUND

Fully enclosed cartons that are capable of carrying cans have been used in the past that have a feature for dispensing the cans one at a time. Many of these dispensers do not work in a satisfactory fashion when the cans are carried in two layers. It is desirable to carry cans of certain products in two layers, especially when the can size is small. It would be desirable to have a dispenser that would permit the dispensing of cans from each layer in a carton that contains two layers of cans. It would be desirable to have a divider or separator pad separating the two layers of cans in order for the dispenser on the carton to work properly. Otherwise, the cans in one layer could interfere with the dispensing of cans in the other layer. It would also be desirable to have a divider, or separator, pad that would remain in place during the dispensing of all cans in the carton. It would also be desirable to have a divider, or separator, pad that would work with the dispenser in the side panel of the carton.

The discussion of documents, acts, materials, devices, articles and the like is included in this specification solely for the purpose of providing a context for the present invention. It is not suggested or represented that any or all of these matters formed part of the prior art base or were common general knowledge in the field relevant to the present invention as it existed before the priority date of each claim of this application.

2008201548 04 Apr 2008

SUMMARY OF THE INVENTION

According to the present invention there is provided a carton loaded with a plurality of articles, including:

a bottom panel;

a top panel;

a first side panel;

a second side panel;

a first end panel at least partially closing a first end of the carton and including a first plurality of end flaps;

a second end panel at least partially closing a second end of the carton;

a first layer of articles;

a second layer of articles; and

an interlocking separator pad having a first end and a second end and located between the first and second layers of articles, wherein the first end of the pad has at least one first tab that extends through at least one first aperture in the first end panel, and wherein the first end of the pad has a first flap that is folded and lodged between the first end panel and one of the layers of articles.

Preferably, the at least one first tab includes two first tabs and the at least one aperture includes two first apertures, each first tab extending through one of the first apertures.

Preferably, the separator pad further includes at least one second tab at the second end of the separator pad and extending through an aperture in the second end panel, and a second flap folded into a plane which is substantially parallel to the second end panel and lodged between the second end panel and one of the layers of articles.

BRIEF DESCRIPTION OF THE DRAWINGS

Many aspects of the invention can be better understood with reference to the following drawings. The components in the drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating the principles of

the present invention. Moreover, in the drawings, like reference numerals designate corresponding parts throughout the several views.

FIG. 1 is a plan view of a blank of which a carton according to one embodiment of this invention is constructed.

FIG. 1A is a plan view for an interlocking separator pad according to one embodiment of this invention.

FIG. 2 is a perspective view of a carton formed from the blank of FIG. 1 and the separator pad of FIG. 1A that has been placed between two layers of cans for loading into the carton.

FIG. 3 is perspective view of the end of the carton with the cans loaded in both layers with the separator pad extending between each layer of cans with the side end flaps closed with the tabs on the separator pad extending through the slots on the side end flaps.

FIG. 4 is a perspective view of the loaded and closed carton of FIG. 3 which shows the carton resting on its end near the side dispenser which is open for dispensing cans.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is primarily for use with cans of the type used to contain meat products, vegetables and fish. The carton of this invention is primarily useful for cans that are stacked in the carton in two layers with two or more rows in each layer. These cans typically only have a height of two or three inches, and typically these cans are stacked in a carton in two layers of twelve cans in each layer in a three by four configuration.

As illustrated in FIG. 1, the blank 10 for forming the carton is formed from a foldable sheet of material, such as paperboard. The blank 110 for forming the interlocking separator pad is also formed from a foldable sheet of material, such as paperboard, as illustrated in FIG. 1A.

2008201548 04 Apr 2008

The blank 10 has a glue flap 12 which is attached to bottom panel 14 by fold line 16 and interconnected to side panel 18 by fold line 20. Side panel 18 is connected to top panel 22 by fold line 24, and interconnected to opposite side panel 26 by fold line 28.

Bottom panel 14 is connected to bottom end flap 30 by fold line 32 and connected to opposite bottom end flap 34 by fold line 36. Side panel 18 is connected to side end flap 38 by fold line 32 and to opposite side end flap 40 by fold line 36. Top panel 22 is connected to top end flap 42 by fold line 32 and to opposite top end flap 44 by fold line 36. Opposite side panel 26 is connected to side end flap 46 by fold line 32 and to opposite side end flap 48 by fold line 36.

Side end flaps 38 and 46 each have a pair of slot flaps 50A and 50C which are attached to side end flaps 38 and 46 in which they are formed. Between each pair of slot flaps 50A and 50C is cut line 54, with each slot flap connected to the side end flap by fold line 52. The function of these slot flaps is explained *infra*. The other end of the carton has two pairs of slot flaps 50B and 50D in side end flaps 40 and 48. Each slot flap 50B and 50D is attached to the side end flaps by fold line 52 with a cut line 54 separating each pair of slot flaps.

This carton may have a dispenser opening B in a side panel as best illustrated in FIG. 4. The dispenser opening B (as shown in FIG. 4) may be made available by providing a dispenser flap shown as two portions 56A and 56B, in the side panel 18 that extends into the bottom panel 14 and top panel 22 as shown in FIG. 1. This dispenser flap 56A and 56B is formed by top tear line 58A and bottom tear line 58B which are parallel to each other in side panel 18. Finger flaps 62A and 62B may be provided along middle tear line 60 which separates dispenser flap portions 56A and 56B to assist in opening this flap. Finger flap 62A is attached to portion 56A by fold line 66A and finger flap 62B is attached to portion 56B by fold line 66B. Finger flaps 62A and 62B can be formed by providing cuts 64. Top tear line 58A and bottom tear line 58B for forming the portions 56A and 56B extend into the bottom panel 14 and are interconnected by interconnecting tear lines 58C. In a similar fashion top tear line 58A and bottom tear line 58B extend into top panel 22 and are interconnected by

2008201548 04 Apr 2008

interconnecting tear lines 58C. The interconnecting tear lines 58C of both the bottom panel 14 and top panel 22 are curved like the cans the carton is designed to carry to permit the ends of the cans in the dispenser opening to be grasped and easily removed.

To facilitate removing cans from the dispenser opening B (as shown in FIG. 4) after the portions 56A and 56B have been removed, tear lines 68A and 68B may be provided to permit the movement of the dispenser ledge 70 formed between bottom tear line 58B and fold line 32 to ease the removal of cans through the dispenser opening B.

Normally a carton formed from the blank of FIG. 1 only has provision for one dispenser opening B. Of course, a carton could be constructed that has the provision for two dispenser openings B.

A blank 110 for forming an interlocking separator pad for the carton formed from blank 10 is illustrated in FIG. 1A primarily for use with dispenser opening B (FIG. 4). This blank 110 has a leading flap 112 which is foldably attached to separator pad 114 by fold line 116 and foldable attached to leading flap 118 by fold line 120. Each end of the separator pad 114 has two locking tabs 122A-D which are separated from the adjoining leading flap 112 or 118 by a cut line 124. It will be noticed that each tab 122A-D is located near an edge 126A or 126B of the separator pad 114 which helps insure the stability of the pad in the carton. The width WP of the separator pad 114 must be at least slightly less than the width WT of the top panel 22 between fold lines 24 and 28 of the carton formed from the blank 10 of FIG. 1. The length LP of the separator pad 114 must be approximately the same length as the length LT of the carton as illustrated in blank 10. The separator pad 114 may have a cutout 128 which is designed to be located adjacent the dispenser opening of the carton to facilitate the easy removal of cans from the dispenser opening B.

The blank 10 of this embodiment is formed into a carton sleeve by gluing glue flap 12 to opposite side panel 26 to form a sleeve as illustrated in FIG. 2. The blank 110 for the interlocking separator pad 114 is placed on top of three rows

2008201548 04 Apr 2008

of cans, as illustrated by C1, C2 and C3, in one layer in FIG. 2. The carton sleeve in FIG. 2 is shown with the top panel 22 in the top position. Because the bottom panel 14 and top panel 22 are identical, the carton sleeve can also be loaded with the bottom panel 14 in the top position. It should be pointed out that it is preferable to have three rows of cans in each layer in the carton. In FIG. 2 a second layer of three rows of cans represented by cans C4, C5 and C6 is placed on top of separator pad 114. The two layers of cans with the separator pad 114 between them is then pushed into the carton sleeve by pushing leading flap 112 until both layers of cans are inside the carton sleeve as shown in FIG. 3. FIG. 3 is a perspective view of this end of the carton into which the cans and separator pad 114 have been inserted and the leading flap 112 has been folded down and side end flaps 40 and 48 have been folded into the closed position. Tabs 122C and 122D push through each pair of slot flaps 50B and 50D so that the tabs extend through the slot formed by opening each pair of slot flaps 50B and 50D. These slot flaps 50B and 50D assist in sealing the carton. The tabs 122C and 122D hold the separator pad 114 from moving between the top panel 22 and bottom panel 14 in the carton. On the other end of the carton leading flap 118 is folded down or up and side end flaps 38 and 46 closed with tabs 122A and 122B projecting through the slot formed when each pair of slot flaps 50A and 50C is moved outward. The height H of the leading flap 112 must be less than the height of articles or containers to be contained in the carton. By designing the carton so that it fits tightly around the articles or containers, the tabs 122A-D need not be folded up or down. However, they can be made slightly longer so they can be folded up or down if desired.

The carton ends can be closed by folding bottom end flaps 30 and 34 upward and folding top end flap 42 and 44 downward and gluing them to the side end flaps. Top end flaps 42 and 44 can be constructed so that they overlap the bottom end flaps 30 and 34 if desired. The combination of the tabs 122A-D and the leading flaps 112 and 118 hold the separator pad 114 in the proper position even when cans have been removed from one of the layers in the carton through the dispenser opening B. The normal method of securing the ends of the carton is by gluing the end flaps together.

2008201548 04 Apr 2008

FIG. 4 is a perspective view showing the dispenser opening of the carton which is resting on its end adjacent the dispenser opening. In the embodiment of the carton that has dispenser opening B as shown in FIG. 4, the dispenser flap 56A and 56B can be easily opened by pushing in finger flaps 62A and 62B and tearing dispensing flap 56A and 56B open along top tear line 58A and bottom tear line 58B and removing the flap. A can C can be removed from each layer of cans as shown in FIG. 4. The distance between top tear line 58A and bottom tear line 58B should be approximately equal to the diameter of a can. The distance between bottom tear line 58B and fold line 32 should be significantly less than the diameter of a can to allow cans adjacent to this end of the carton to be removed through the dispenser opening, but high enough to prevent cans from automatically rolling out of the carton when the dispenser opening B is open. Preferably the distance between bottom tear line 58B and fold line 32 is approximately one inch for many sizes of cans. The dispenser B is designed to be used when the carton is resting on the end defined by bottom end flap 30, side end flap 38, top end flap 42 and side end flap 46. The dispenser ledge 70 between the bottom tear line 58B and fold line 32 can be moved forward by tearing along tear lines 68A and 68B.

The interlocking of the separator pad 114 by the provision of leading flaps 112 and 118 lodged between the articles or containers contained in the carton and the side end flaps 38, 46, 40, and 48 and the tabs 112A-D extending through the slot formed by the movement of each pair of slot flaps 50A-D ensures that the separator pad 114 remains in the proper position during the removal of cans through the dispenser opening B. Thus, the separator pad 114 is prevented from moving between the top and bottom panels as cans are removed from dispenser opening B. The interlocking of the separator pad 114 with the ends of the carton by the tabs and slots and leading flaps dispenses with any need for gluing the separator pad 114 in position. Placing the tabs 122A-D adjacent the edges 126A and 126B of the separator pad 114 helps ensure the stability of the separator pad 114 to the carton.

2008201548 04 Apr 2008

The separator pad 114 can be constructed with a single leading flap 112, but two flaps ensures the stability of the pad in the carton. The separator pad can have more than two tabs 122A-D on each end if needed.

The ends of the carton are normally secured together by gluing, but can be stapled or otherwise affixed together.

While the invention has been disclosed in its preferred forms, it will be apparent to those skilled in the art that many modifications, additions, and deletions can be made therein without departing from the spirit and scope of the invention and its equivalents as set forth in the following claims.

2008201548 04 Apr 2008

The claims defining the invention are as follows:-

1. A carton loaded with a plurality of articles, including:

a bottom panel;

a top panel;

a first side panel;

a second side panel;

a first end panel at least partially closing a first end of the carton and including a first plurality of end flaps;

a second end panel at least partially closing a second end of the carton;

a first layer of articles;

a second layer of articles; and

an interlocking separator pad having a first end and a second end and located between the first and second layers of articles, wherein the first end of the pad has at least one first tab that extends through at least one first aperture in the first end panel, and wherein the first end of the pad has a first flap that is folded and lodged between the first end panel and one of the layers of articles.

2. A carton loaded with a plurality of articles according to claim 1, wherein:

the at least one first tab includes two first tabs; and

the at least one first aperture includes two first apertures, each first tab extending through one of the first apertures.

3. A carton loaded with a plurality of articles according to claim 2, wherein the separator pad further includes:

at least one second tab at the second end of the separator pad and extending through an aperture in the second end panel; and

a second flap folded into a plane which is substantially parallel to the second end panel and lodged between the second end panel and one of the layers of articles.

2008201548 04 Apr 2008

4. A carton loaded with a plurality of articles according to claim 3, wherein the second end panel includes a second plurality of end flaps.

5. A carton loaded with a plurality of articles according to claim 3, wherein the first plurality of end flaps includes:

a first top end flap foldably attached to the top panel;

a first bottom end flap foldably attached to the bottom panel; and

two first side end flaps, one first side end flap being foldably attached to each side panel.

6. A carton loaded with a plurality of articles according to claim 5, wherein the two apertures in the first end panel include two slots, one slot being disposed in each first side end flap.

7. A carton loaded with a plurality of articles according to claim 6, wherein the aperture in the second end panel includes at least one slot.

8. A carton loaded with a plurality of articles according to claim 1, wherein the articles are substantially cylindrical containers with two ends and an axis extending between the two ends, the axes of the cylindrical containers being substantially perpendicular to the separator pad.

9. A carton loaded with a plurality of articles according to claim 8, wherein the articles are arranged in three rows in each layer.

10. A carton loaded with a plurality of articles according to claim 1, wherein the carton further includes a dispenser flap which when removed provides an opening which permits the removal of the containers from the carton.

11. A carton according to claim 1 and as substantially hereinbefore described with reference to the accompanying drawings.

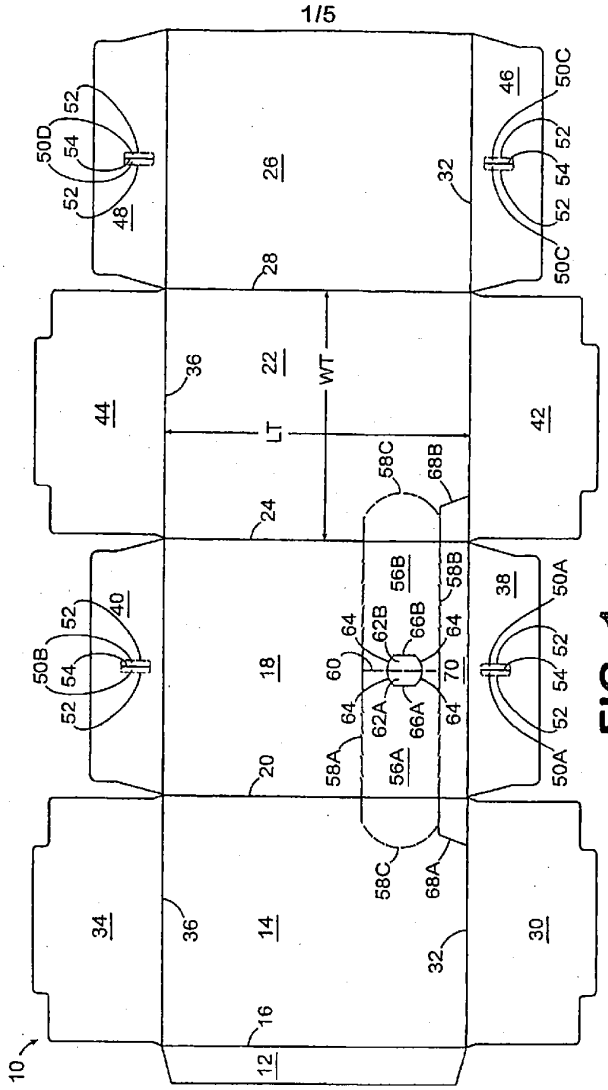
10
12
16
14
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50A
50B
50C
50D
52
54
56A
56B
58A
58B
58C
60
62A
62B
64
66A
66B
68A
68B
70
LT
WT

FIG. 1

2008201548 04 Apr 2008

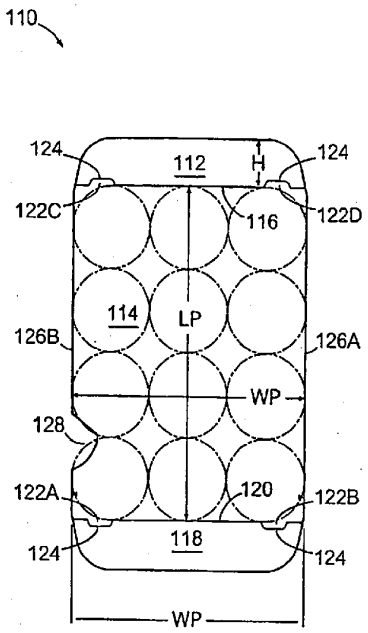

FIG. 1A

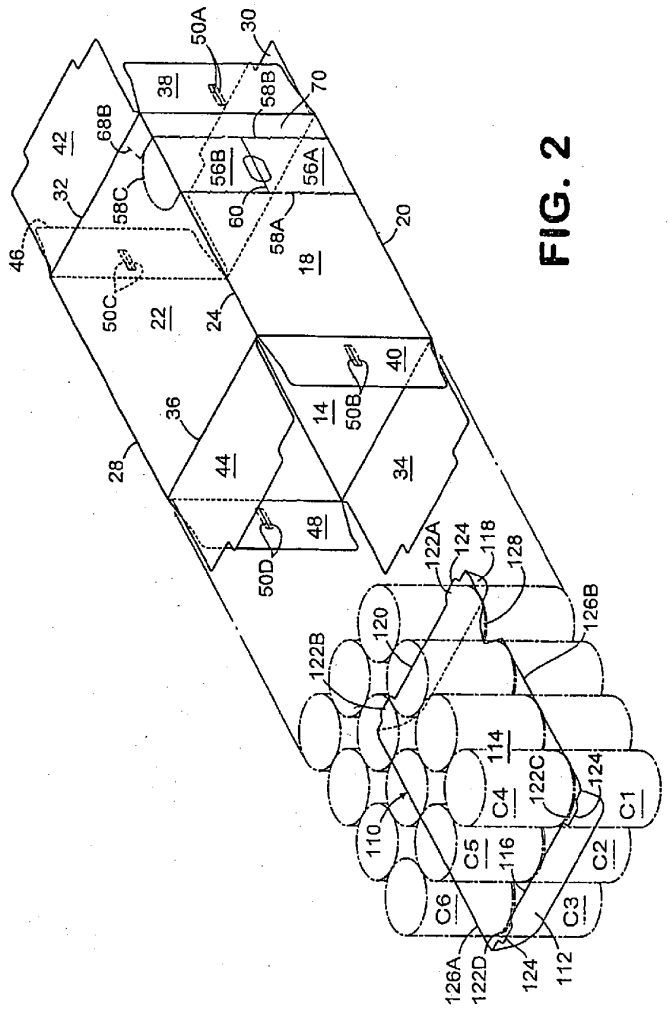
50A
30
38
58B
70
42
68B
56B
56A
32
58C
60
58A
20
46
18
50C
22
24
40
50B
14
36
28
44
34
48
50D
122A
124
118
128
126B
120
122B
114
C4
122C
124
C1
110
C5
116
C2
C6
C3
126A
122D
124
112

FIG. 2

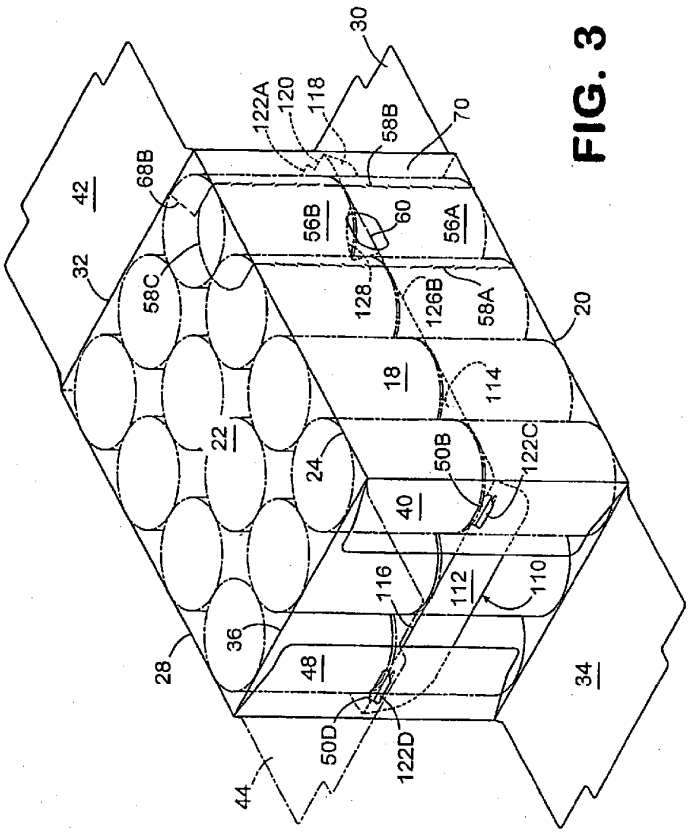
30
122A
120
118
58B
70
68B
42
56B
60
56A
32
58C
128
126B
58A
20
18
114
22
24
50B
122C
40
116
112
110
36
28
48
34
50D
122D
44

FIG. 3

2008201548 04 Apr 2008

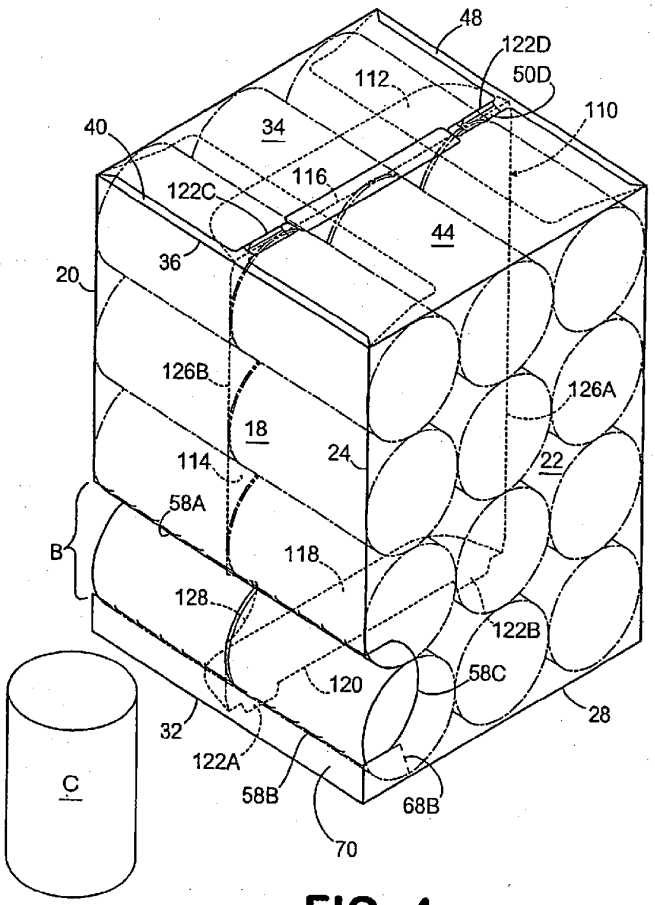

FIG. 4