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☒ Description : paged 1 to paged 6
☐ Claim(s) : paged 7 to paged 8
☒ Drawing(s) : paged 1 to paged 4
☒ Abstract : paged 9 to paged 1

KEEL STRUCTURE IN WRAPAROUND PACKAGES

- 5 This invention relates to a keel structure in a package of the wraparound type formed from paperboard or similar foldable sheet material and accommodating containers arranged in a number of parallel rows.
- 10 A keel structure in a wraparound type carton comprises a structure which may be continuous or which may comprise a plurality of keel elements which separate one row of containers from another row within the carton.
- 15 The present invention provides a keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of
- 20 which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward
- 25 another upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element.

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According to a feature of the invention, the platform of each keel element may be hinged at spaced locations to each of a pair of upstanding panels, but otherwise is unattached thereto, and wherein said platform
5 interconnects said pair of upstanding means to provide a bridge-like structure. In constructions where this feature is adopted a first upstanding panel of said pair may provide a flexible face of said keel element and may be substantially coextensive with the hinged locations
10 between that first panel and said platform and wherein the second upstanding panel may provide an opposed flexible face of said keel element and may extend beyond the hinged locations between that upstanding panel and said platform. Preferably, in such constructions, said
15 second upstanding panel is a single substantially continuous panel common to a plurality of like said keel elements and providing one edge of the blank of said carton.

20 According to another feature of the invention, said platform may be struck from said second upstanding panel.

According to yet another feature of the invention a pair of panels of said upstanding panel means may be struck
25 from a base panel of the carton and wherein said platform is struck from one of the upstanding panels.

According to a still further feature of the invention the

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platform may be defined by curved edges extending towards one another.

Preferably, parts of at least one of said upstanding
5 panels adjacent said curved edges of said platform are separable so that those parts can be flexed more readily.

The keel structure according to the invention will now be described, by way of example only, with reference to the
10 accompanying drawings, in which:-

FIGURE 1 is a plan view of a carton blank having a keel structure according to the invention;

15 FIGURE 1a is an enlarged plan view of a portion of the blank shown in Figure 1;

FIGURE 2 is a perspective view of a part of a carton, as seen from one end, formed from the blank shown in Figure
20 1;

FIGURE 3 is a plan view of a part of a carton blank having a different partition panel arrangement; and

FIGURE 4 is a perspective view showing a part of the
25 modified keel structure of Figure 3.

Referring first to Figure 1, there is shown a carton blank 10 of the wraparound type formed from paperboard or

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similar foldable sheet material. Keel elements K are formed in series in one of the base panels of the carton blank. Blank 10 comprises a series of joined panels including a first base panel 12, first side wall panel 14, a top panel 16, a second side wall panel 18 and a second base panel 20 hinged one to the next along transverse fold lines 22, 24, 26 and 28 respectively.

Each of the keel elements in base panel 12 is of similar construction and is shown in more detail in Figure 1a and Figures 2 which latter shows a keel element in its erected form. Keel element K comprises a bridge-like structure comprising an upstanding panel P and a platform P1 hinged together along short hinge lines h and h1. The upstanding panel is hinged to the base panel 12 along hinge line h2 and the platform P1 is hinged to a support partition panel 32 at hinged connections h3 & h4 respectively. The support partition panel 32 is hinged to base panel 12 along interrupted fold line 34. The upstanding panel P and the partition panel are each formed with slits or score lines S, S1 so that parts of the panel adjacent the slits are separable and can be flexed about the adjacent hinged parts with relative ease. Thus, upstanding panel P can be flexed inwardly towards the platform by being flexed between its hinged connections with the support platform into the space defined by a curved edge C of the support platform. Likewise the partition panel immediately adjacent slit 51

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can be flexed inwardly about its hinged connections with the platform into the space defined by a similar opposed curved edge C1 of the platform. The other keel elements K1-K3 have like features. In some instances it is envisaged that the slit or score line 51 can be omitted.

As best seen in Figure 2, when the blank is wrapped around a group of containers Cn to form the carton Ct, one row of containers is aligned adjacent the partition panel 32 and another row of containers is aligned adjacent the upstanding panels P of the keel elements K-K₄, so that each container is disposed with its wall in abutment with either the partition panel or the upstanding panel P of a keel element. Owing to the flexing which is provided for in both the partition panel and the upstanding panel of the keel element, the containers adjacent these parts of the keel construction are allowed to "bed in" and so be more closely received against the adjacent curved edge of the platform P1 to improve the retention between the keel elements their respective containers in the neighbouring rows so that dislodgment of the containers is resisted.

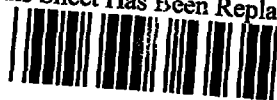
In this embodiment partition panel P1 is in the form of substantially continuous single marginal panel which is folded out of the plane of the blank into an upstanding position. In a modified arrangement, shown in Figures 3 and 4, the partition panel is substituted by several



individual partition panels, one for each keel element.

In the arrangement shown in Figures 3 and 4 like parts to those of the previous embodiment are designated like reference numerals with the addition of suffix "a" although the keel elements in this case are struck from the base panel 20a. Hence each keel element Ka comprises an upstanding panel Pa having a slit or score line Sa to facilitate flexing of the panel towards the curved edge Ca of its support platform Pla. In this embodiment the partition panel is not continuous as previously described but an individual panel 32a is associated with each keel element Ka and is hinged to base panel 20a along interrupted fold line 36. Each partition panel is struck from the base panel 20a and hinged into an upstanding position, out of the plane of the base panel, so that the slit or score line S1a is disposed alongside the curved edge C1a of the platform Pla. The function of the keel structure of this embodiment nevertheless is similar to that earlier described and, in some instances the slit or score S1a may be omitted.

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CLAIMS

1. A keel structure in a wraparound type carton comprises a plurality of keel elements which separate one
5 row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the
10 upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward the another upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element.

15

2. A keel structure according to claim 1 wherein the platform of each keel element is hinged at spaced locations to each of a pair of upstanding panels, but otherwise is unattached thereto, and wherein said
20 platform interconnects said pair of upstanding means to provide a bridge-like structure.

3. A keel structure according to claim 2 wherein a first upstanding panel of said pair provides a flexible
25 face of said keel element and is substantially coextensive with the hinged locations between that first panel and said platform wherein the second upstanding panel provides an opposed flexible face of said keel



element and extends beyond the hinged locations between that upstanding panel and said platform.

4. A keel structure according to claim 3 wherein said
5 second upstanding panel is a single substantially continuous panel common to a plurality of like said keel elements and providing one edge of the blank of said carton.

10 5. A keel structure according to claim 3 or claim 4 wherein said platform is struck from said second upstanding panel.

15 6. A keel structure according to any of claims 1 to 4 wherein a pair of panels of said upstanding panel means is struck from a base panel of the carton and wherein said platform is struck from one of the upstanding panels.

20 7. A keel structure according to any of the preceding claims wherein the platform is defined by curved edges extending towards one another.

25 8. A keel structure according to claim 7 wherein parts of at least one of said upstanding panels adjacent said curved edges of said platform are separable so that those parts can be flexed more readily.

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Abstract

A keel structure in a wraparound carton comprises a number of keel elements (K) which separate one row of containers from another row within the carton. Each keel element has spaced upstanding panels (P, 32; Pa, 32a) against which containers held in the carton abut. Each of the upstanding panels is spaced from the other by a platform (P1, P1a) defined by curved edges (C, C1; Ca, C1a) extending towards one another permitting adjacent portions of each of said upstanding panel means to be flexed inwardly toward the other to receive a wall portion of an adjacent container.

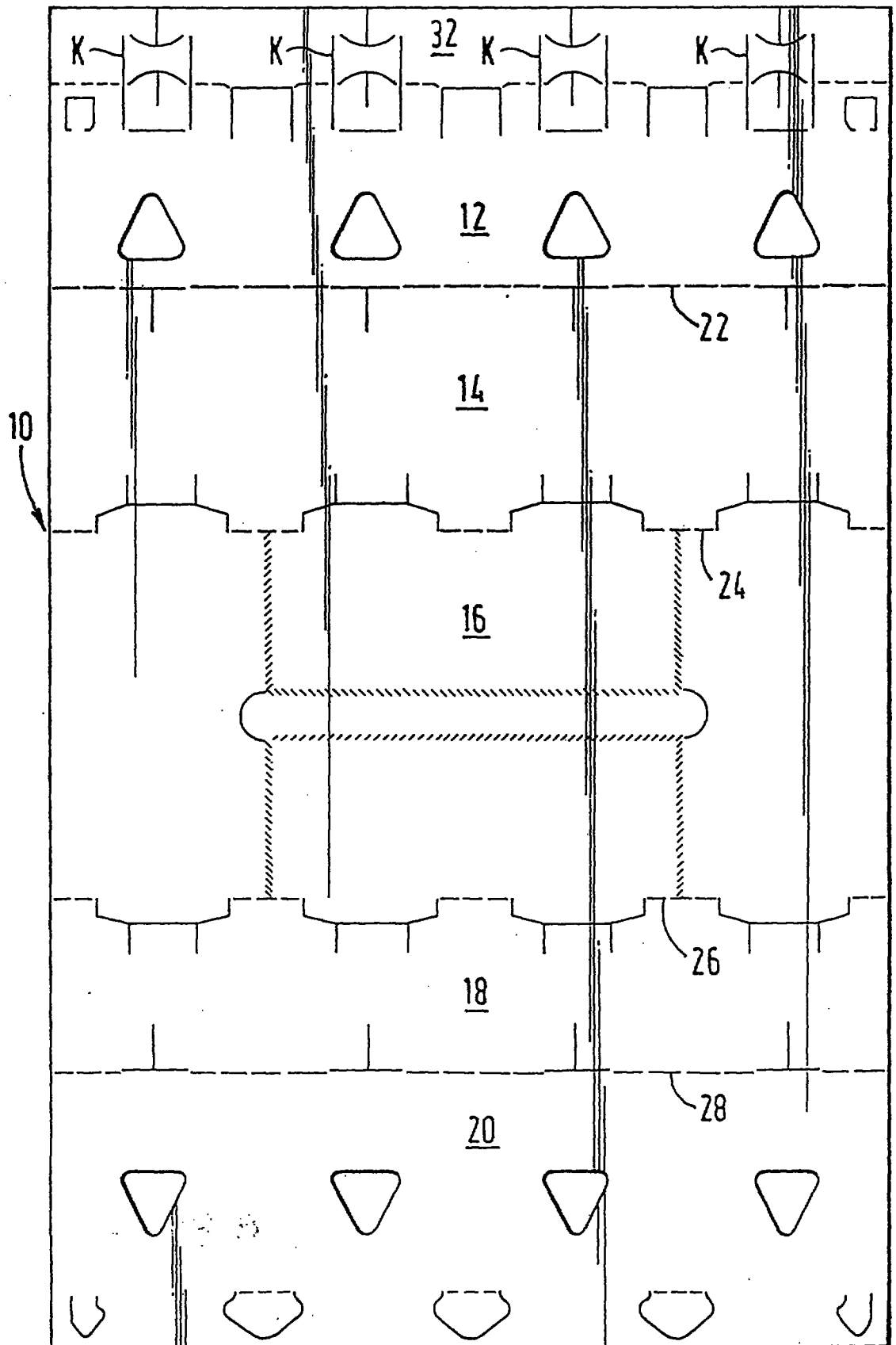
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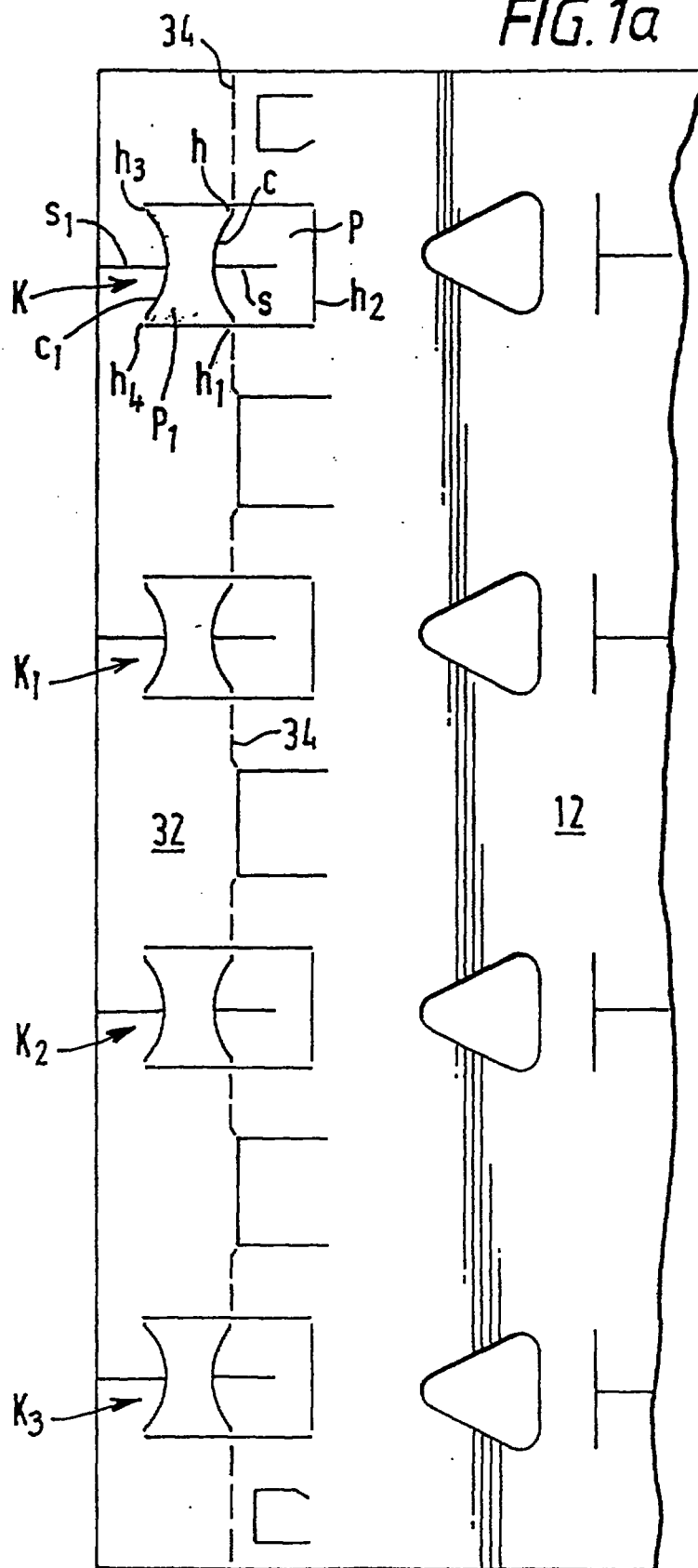
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FIG. 1



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FIG. 1a



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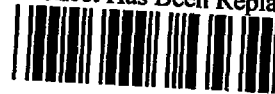


FIG. 2

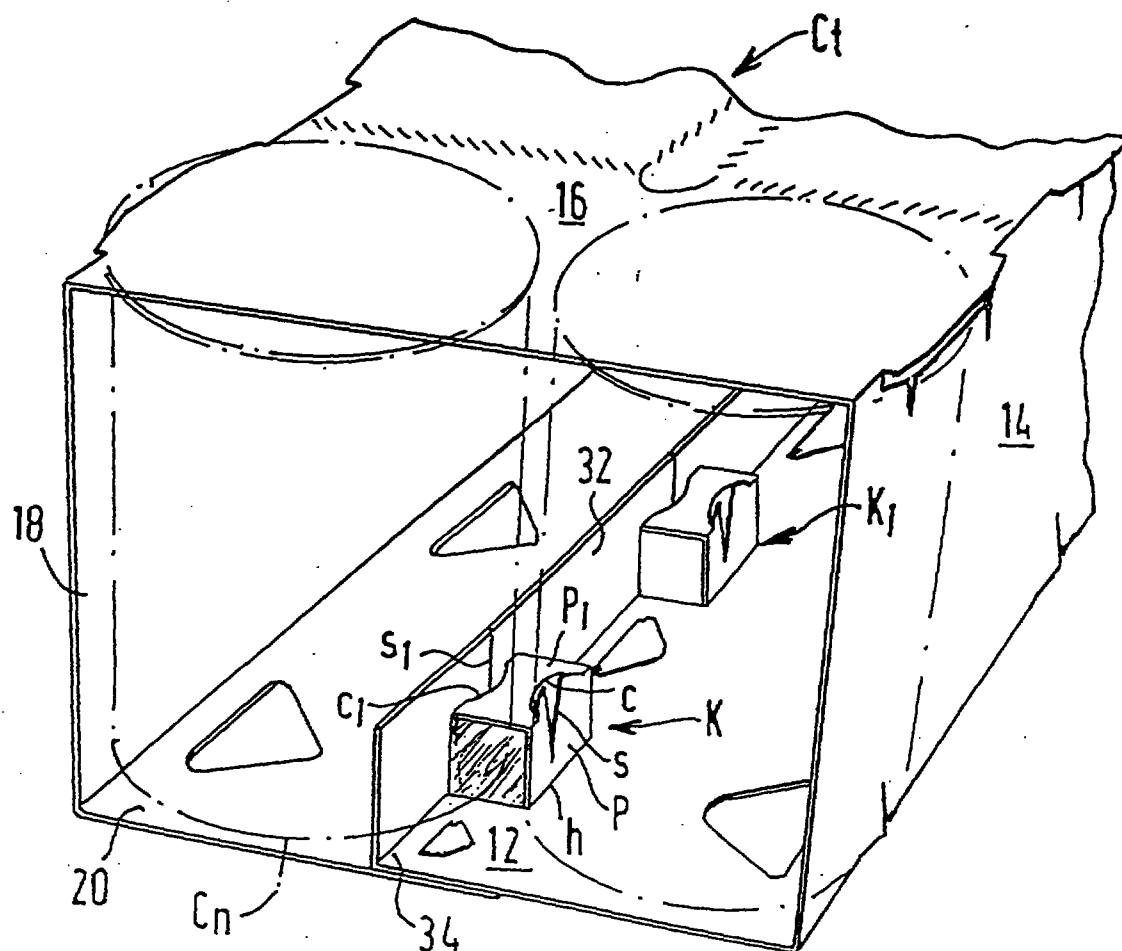




FIG. 3

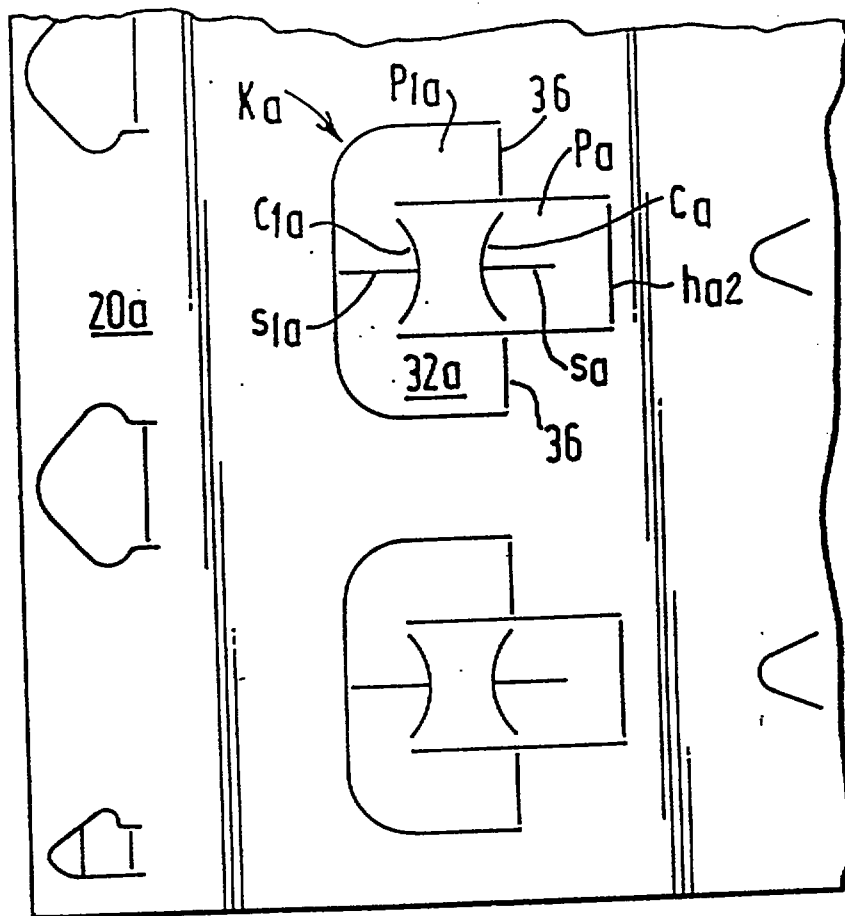
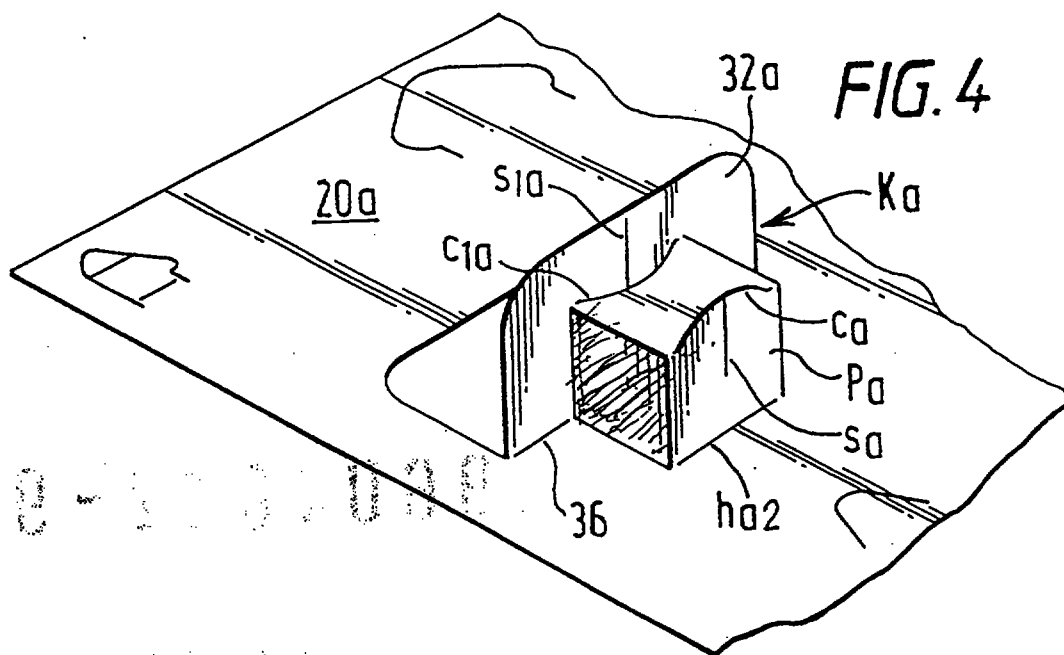


FIG. 4



Correction

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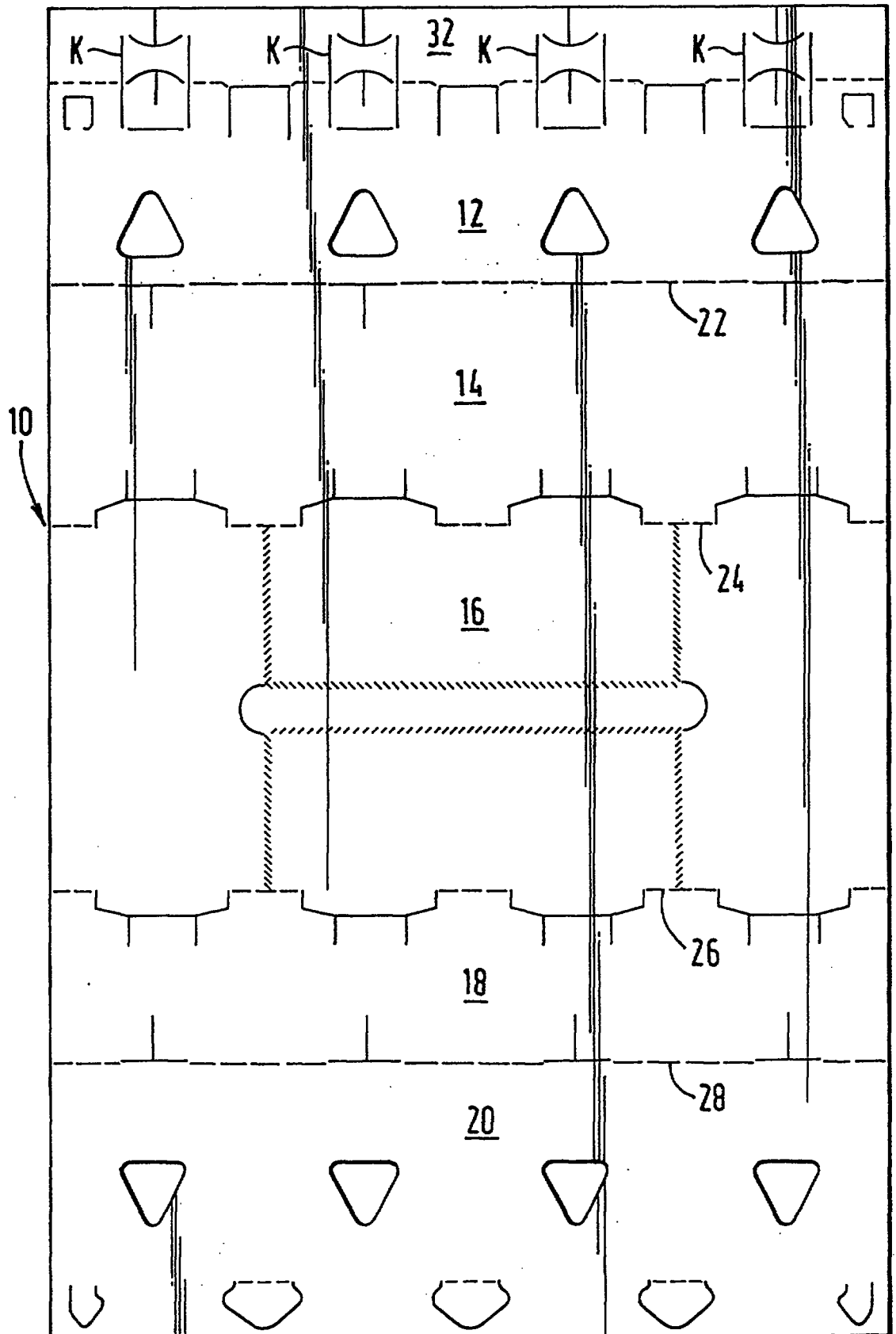
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FIG. 1



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FIG. 1a

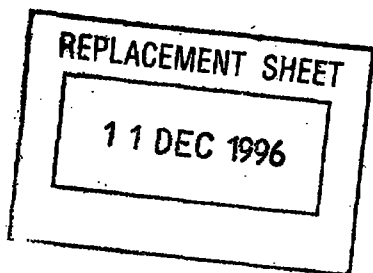
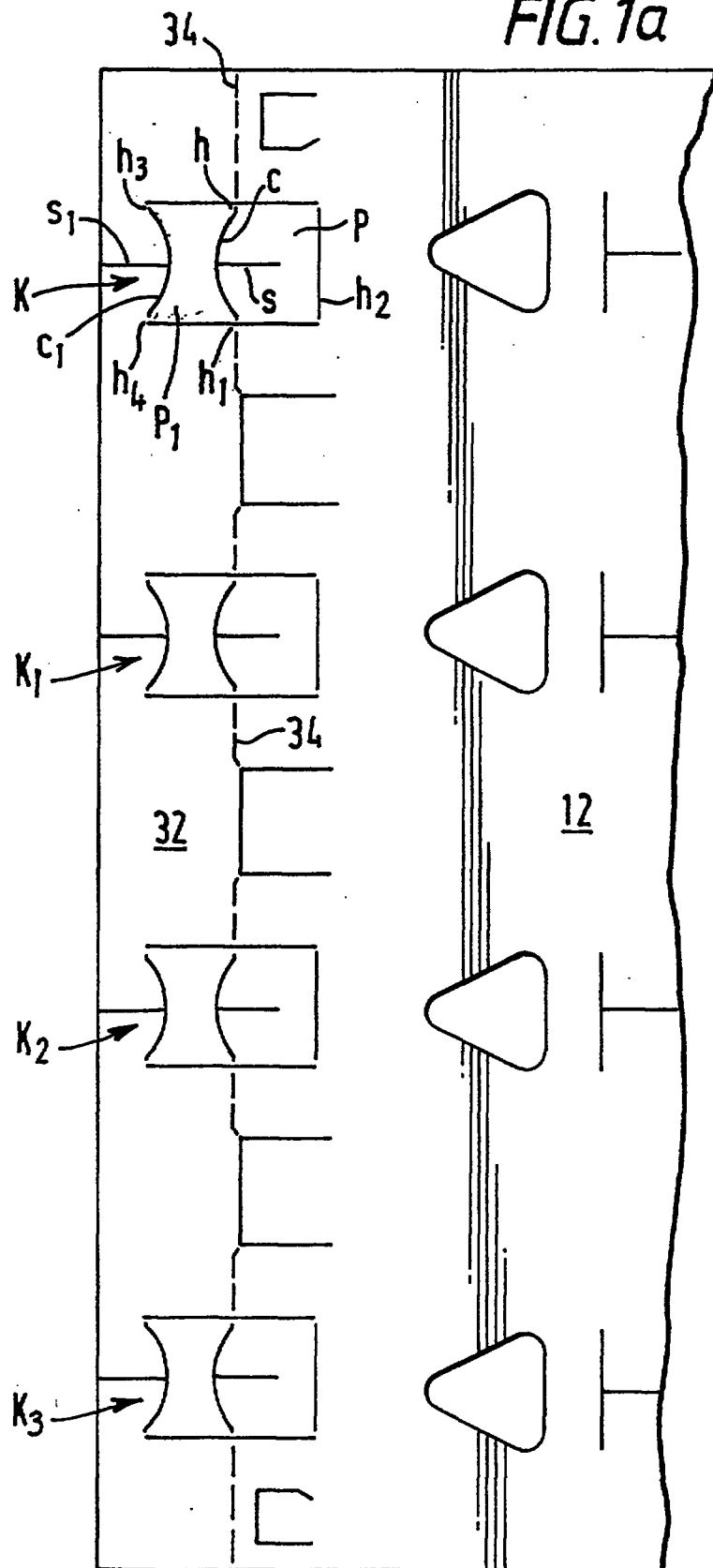


FIG. 2

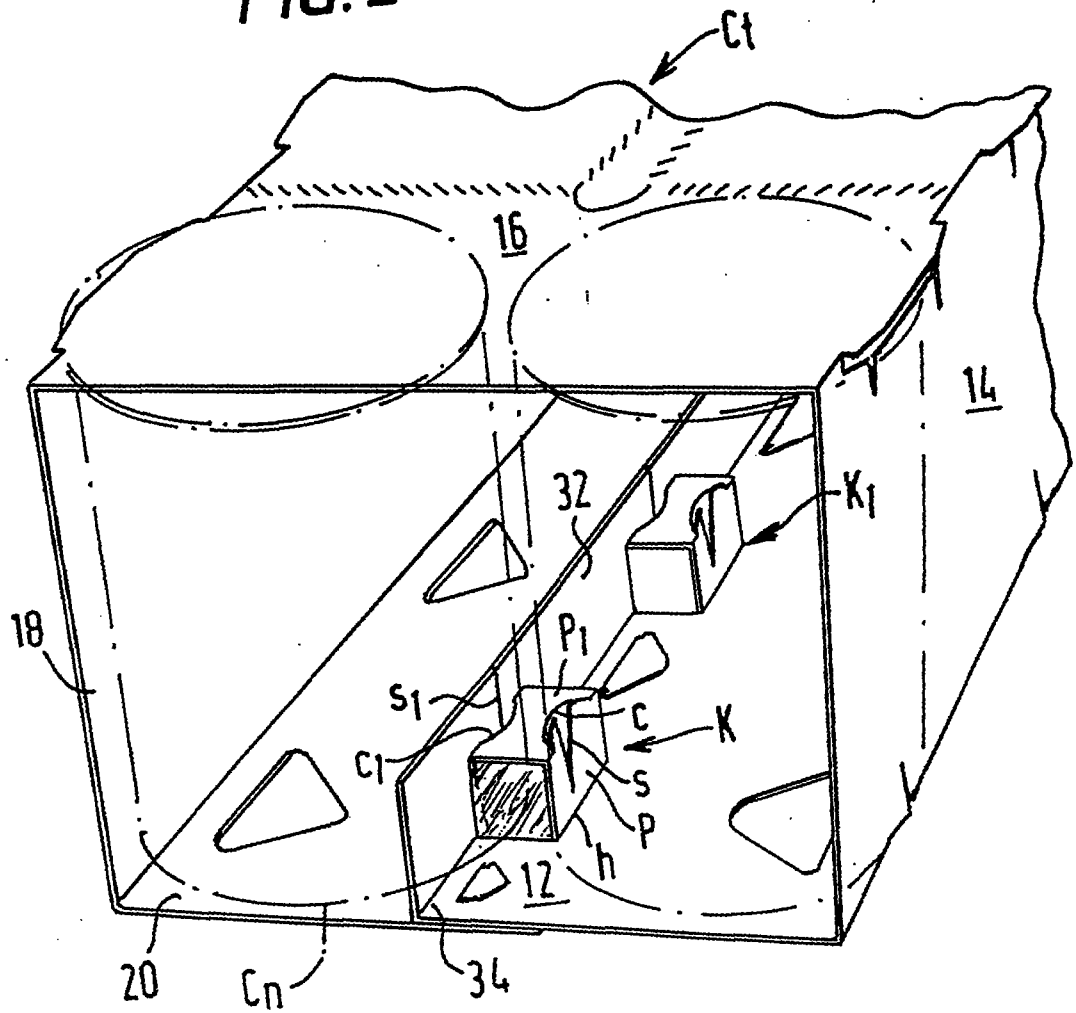


FIG. 3

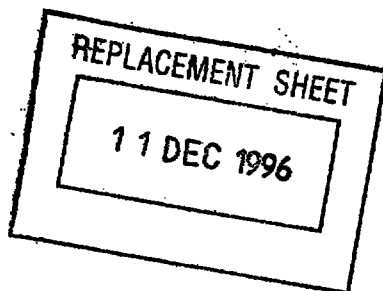
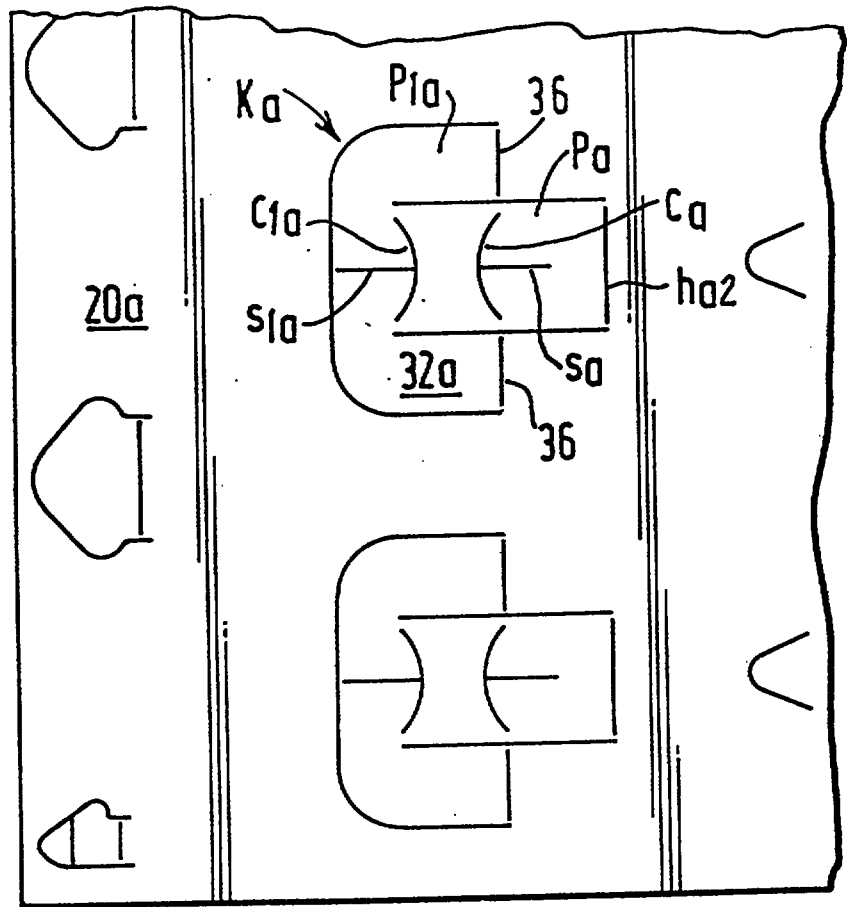
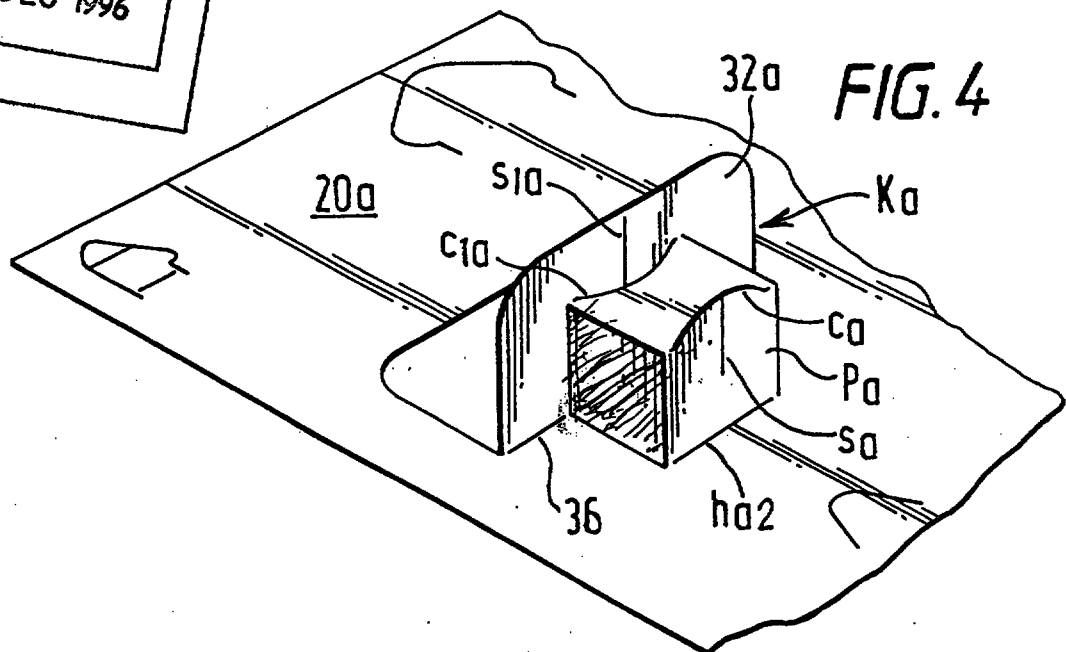


FIG. 4



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Correction

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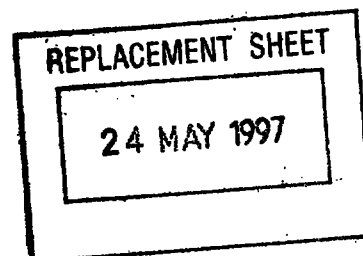
KEEL STRUCTURE IN WRAPAROUND PACKAGES

This invention relates to a keel structure in a package of the wraparound type formed from paperboard or similar foldable sheet material and accommodating containers arranged in a number of parallel rows.

A keel structure in a wraparound type carton comprises a structure which may be continuous or which may comprise a plurality of keel elements which separate one row of containers from another row within the carton.

The present invention provides a keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward another upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element.

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According to a feature of the invention, the platform of each keel element may be hinged at spaced locations to each of a pair of upstanding panels, but otherwise is unattached thereto, and wherein said platform interconnects said pair of upstanding means to provide a bridge-like structure. In constructions where this feature is adopted a first upstanding panel of said pair may provide a flexible face of said keel element and may be substantially coextensive with the hinged locations between that first panel and said platform and wherein the second upstanding panel may provide an opposed flexible face of said keel element and may extend beyond the hinged locations between that upstanding panel and said platform. Preferably, in such constructions, said second upstanding panel is a single substantially continuous panel common to a plurality of like said keel elements and providing one edge of the blank of said carton.

According to another feature of the invention, said platform may be struck from said second upstanding panel.

According to yet another feature of the invention a pair of panels of said upstanding panel means may be struck from a base panel of the carton and wherein said platform is struck from one of the upstanding panels.

According to a still further feature of the invention the

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platform may be defined by curved edges extending towards one another.

Preferably, parts of at least one of said upstanding panels adjacent said curved edges of said platform are separable so that those parts can be flexed more readily.

The keel structure according to the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

FIGURE 1 is a plan view of a carton blank having a keel structure according to the invention;

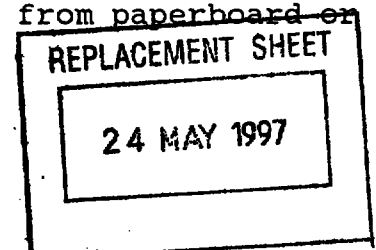
FIGURE 1a is an enlarged plan view of a portion of the blank shown in Figure 1;

FIGURE 2 is a perspective view of a part of a carton, as seen from one end, formed from the blank shown in Figure 1;

FIGURE 3 is a plan view of a part of a carton blank having a different partition panel arrangement; and

FIGURE 4 is a perspective view showing a part of the modified keel structure of Figure 3.

Referring first to Figure 1, there is shown a carton blank 10 of the wraparound type formed from paperboard on



similar foldable sheet material. Keel elements K are formed in series in one of the base panels of the carton blank. Blank 10 comprises a series of joined panels including a first base panel 12, first side wall panel 14, a top panel 16, a second side wall panel 18 and a second base panel 20 hinged one to the next along transverse fold lines 22, 24, 26 and 28 respectively.

Each of the keel elements in base panel 12 is of similar construction and is shown in more detail in Figure 1a and Figures 2 which latter shows a keel element in its erected form. Keel element K comprises a bridge-like structure comprising an upstanding panel P and a platform P1 hinged together along short hinge lines h and h1. The upstanding panel is hinged to the base panel 12 along hinge line h2 and the platform P1 is hinged to a support partition panel 32 at hinged connections h3 & h4 respectively. The support partition panel 32 is hinged to base panel 12 along interrupted fold line 34. The upstanding panel P and the partition panel are each formed with slits or score lines S, S1 so that parts of the panel adjacent the slits are separable and can be flexed about the adjacent hinged parts with relative ease. Thus, upstanding panel P can be flexed inwardly towards the platform by being flexed between its hinged connections with the support platform into the space defined by a curved edge C of the support platform. Likewise the partition panel immediately adjacent slit 51

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can be flexed inwardly about its hinged connections with the platform into the space defined by a similar opposed curved edge C1 of the platform. The other keel elements K1-K3 have like features. In some instances it is envisaged that the slit or score line 51 can be omitted.

As best seen in Figure 2, when the blank is wrapped around a group of containers Cn to form the carton Ct, one row of containers is aligned adjacent the partition panel 32 and another row of containers is aligned adjacent the upstanding panels P of the keel elements K-K₄, so that each container is disposed with its wall in abutment with either the partition panel or the upstanding panel P of a keel element. Owing to the flexing which is provided for in both the partition panel and the upstanding panel of the keel element, the containers adjacent these parts of the keel construction are allowed to "bed in" and so be more closely received against the adjacent curved edge of the platform P1 to improve the retention between the keel elements their respective containers in the neighbouring rows so that dislodgment of the containers is resisted.

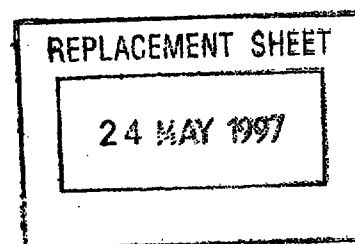
In this embodiment partition panel P1 is in the form of substantially continuous single marginal panel which is folded out of the plane of the blank into an upstanding position. In a modified arrangement, shown in Figures 3 and 4, the partition panel is substituted by several

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individual partition panels, one for each keel element.

In the arrangement shown in Figures 3 and 4 like parts to those of the previous embodiment are designated like reference numerals with the addition of suffix "a" although the keel elements in this case are struck from the base panel 20a. Hence each keel element Ka comprises an upstanding panel Pa having a slit or score line Sa to facilitate flexing of the panel towards the curved edge Ca of its support platform Pla. In this embodiment the partition panel is not continuous as previously described but an individual panel 32a is associated with each keel element Ka and is hinged to base panel 20a along interrupted fold line 36. Each partition panel is struck from the base panel 20a and hinged into an upstanding position, out of the plane of the base panel, so that the slit or score line Sla is disposed alongside the curved edge Cla of the platform Pla. The function of the keel structure of this embodiment nevertheless is similar to that earlier described and, in some instances the slit or score Sla may be omitted.



CLAIMS

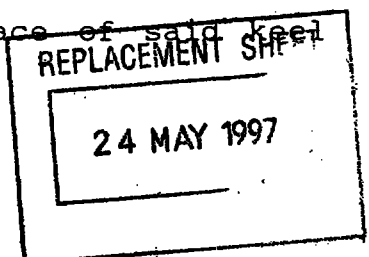


1. A keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward the another upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element.

2. A keel structure according to claim 1 wherein the platform of each keel element is hinged at spaced locations to each of a pair of upstanding panels, but otherwise is unattached thereto, and wherein said platform interconnects said pair of upstanding means to provide a bridge-like structure.

3. A keel structure according to claim 2 wherein a first upstanding panel of said pair provides a flexible face of said keel element and is substantially coextensive with the hinged locations between that first panel and said platform wherein the second upstanding panel provides an opposed flexible face of said keel

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element and extends beyond the hinged locations between that upstanding panel and said platform.

4. A keel structure according to claim 3 wherein said second upstanding panel is a single substantially continuous panel common to a plurality of like said keel elements and providing one edge of the blank of said carton.

5. A keel structure according to claim 3 or claim 4 wherein said platform is struck from said second upstanding panel.

6. A keel structure according to any of claims 1 to 4 wherein a pair of panels of said upstanding panel means is struck from a base panel of the carton and wherein said platform is struck from one of the upstanding panels.

7. A keel structure according to any of the preceding claims wherein the platform is defined by curved edges extending towards one another.

8. A keel structure according to claim 7 wherein parts of at least one of said upstanding panels adjacent said curved edges of said platform are separable so that those parts can be flexed more readily.

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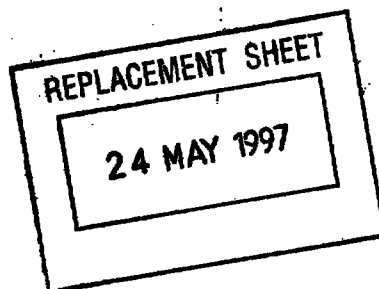
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KEEL STRUCTURE IN WRAPAROUND PACKAGES

ABSTRACT

A keel structure in a wraparound carton comprises a number of keel elements (K) which separate one row of containers from another row within the carton. Each keel element has spaced upstanding panels (P, 32; Pa, 32a) against which containers held in the carton abut. Each of the upstanding panels is spaced from the other by a platform (P1, P1a) defined by curved edges (C, C1; Ca, C1a) extending towards one another permitting adjacent portions of each of said upstanding panel means to be flexed inwardly toward the other to receive a wall portion of an adjacent container.

Fig. 1.



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KEEL STRUCTURE IN WRAPAROUND PACKAGES

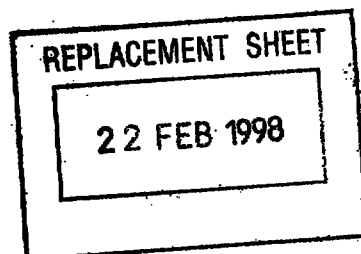
This invention relates to a keel structure in a package of the wraparound type formed from paperboard or similar foldable sheet material and accommodating containers arranged in a number of parallel rows.

A keel structure in a wraparound type carton comprises a structure which may be continuous or which may comprise a plurality of keel elements which separate one row of containers from another row within the carton.

SUMMARY OF THE INVENTION

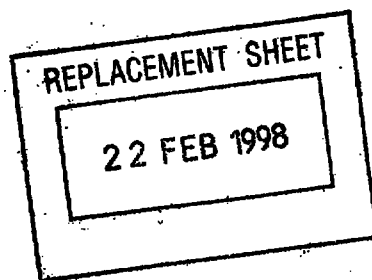
According to one aspect of the present invention there is provided a keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward the other upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element, wherein the platform is struck from one of said upstanding panel means.

According to another aspect of the present invention there is provided a keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward the other upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element, wherein the carton further comprises two



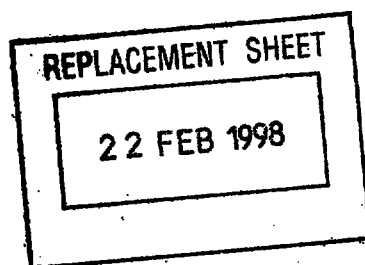
overlap panels which cooperate with one another when overlapped to form a base wall of the carton and wherein the keel structure is struck from one of said overlap panels.

According to still another aspect of the present invention there is provided a keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward the other upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element wherein the platform is defined by curved edges extending towards one another, and parts of at least one of said upstanding panel means adjacent said curved edges of said platform are separable so that those parts can be flexed more readily.



CLAIMS

1. A keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward the other upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element, wherein the platform is struck from one of said upstanding panel means.
2. A keel structure according to claim 1 wherein the platform of each keel element is hinged at spaced locations to each of a pair of upstanding panels, but otherwise is unattached thereto, and wherein said platform interconnects said pair of upstanding means to provide a bridge-like structure.
3. A keel structure according to claim 2 wherein a first upstanding panel of said pair provides a flexible face of said keel element, and is substantially coextensive with the hinged locations between that first panel and said platform wherein the second upstanding panel provides an opposed flexible face of said keel element and extends beyond the hinged locations between that upstanding panel and said platform.
4. A keel structure according to claim 3 wherein said second upstanding panel is a single substantially continuous panel common to a plurality of like said keel elements and providing one edge of the blank of said carton.
5. A keel structure according to claim 3 or claim 4 wherein said platform is struck from said second upstanding panel.
6. A keel structure according to any one of claims 1 to 4 wherein a pair of panels of said upstanding panel means is struck from a base panel of the carton and wherein said platform is struck from one of the upstanding panels.
7. A keel structure according to any one of the preceding claims wherein the platform is defined by curved edges extending towards one another.
8. A keel structure according to claim 7 wherein parts of at least one of said upstanding panels adjacent said curved edges of said platform are separable so that those parts can be flexed more readily.
9. A keel structure according to any preceding claim wherein the carton further comprises two overlap panels which cooperate with one another when overlapped to form a base wall of the carton and wherein the keel structure is struck from one of said overlap panels.



10. A keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward the other upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element, wherein the carton further comprises two overlap panels which cooperate with one another when overlapped to form a base wall of the carton and wherein the keel structure is struck from one of said overlap panels.

11. A carton according to claim 9 or 10 wherein the keel structure comprises a panel hingably connected to said one of said overlap panels.

12. A keel structure according to any preceding claim where the platform is defined by curved edges extending towards one another, and parts of at least one of said upstanding panel means adjacent said curved edges of said platform are separable so that those parts can be flexed more readily.

13. A keel structure in a wraparound type carton comprises a plurality of keel elements which separate one row of containers from another row within the carton, each keel element having spaced upstanding panel means against respective ones of which panel means a container abuts, said upstanding panel means being spaced apart by a platform said platform being connected to each of the upstanding panel means so as to allow adjacent portions of each of said upstanding panel means to be flexed inwardly toward the other upstanding panel means to allow a wall portion of an adjacent container to be more closely received against the keel element wherein the platform is defined by curved edges extending towards one another, and parts of at least one of said upstanding panel means adjacent said curved edges of said platform are separable so that those parts can be flexed more readily.

