These plastic liners are typically fixed to the frames using fasteners, such as screws, which are driven through the liner and into the frame from an inner face of the liner.

A potentially serious problem arises however, where one of these screws works loose and falls into the contents of the container.

It is an object of the invention therefore to substantially ameliorate one or more of the above stated difficulties, or at least provide useful alternatives to known containers and container panels and gates.

Other objects and advantages of the present invention will become apparent from the following description, taken in connection with the accompanying drawings, wherein, by way of illustration and example, an embodiment of the present invention is disclosed.

SUMMARY OF THE INVENTION

In one aspect, the invention the may be said to reside in a gate or panel for a storage container comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an elongate infill panel attachment member attached to and extending along at least a pair of opposing margins of the ~~gate~~outer perimeter frame, each elongate infill panel attachment member comprising an infill panel retaining flange ~~which extends in a plane parallel to an inner face of the perimeter frame so that~~enabling the infill panel ~~is~~ to be retained between the retaining flanges and an inner face of the outer perimeter frame; and wherein each elongate infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an intra-panel attachment flange secured to a margin of its associated outer perimeter frame.

In one form, the infill panel retaining flange extends in a plane parallel to an inner face of the perimeter frame.

In one form, the infill panel is clamped between the retaining flanges and the inner face of the outer perimeter frame.

In one form, the opposing margins are vertical margins of the gate or panel.

In one form, the opposing margins are horizontal margins of the gate or panel.

In one form, wherein the elongate infill panel attachment members extend along both opposing vertical and horizontal margins of the gate or panel.

In one form, each elongate infill panel attachment member is an elongate member of constant cross-sectional shape ~~terminating at one end in the infill panel retaining flange, and at its other end in an intra-panel attachment flange secured to a margin of its associated perimeter frame~~.

In one form, each elongate infill panel attachment member is an elongate member of constant cross-sectional shape terminating at one end in the infill panel retaining flange, and at its other end in an inter-gate or panel attachment flange, which is attachable to another erected gate or panel of the container.

In one form, the infill panel retaining flange extends from an intra-panel attachment portion secured to the vertical margin of its associated outer perimeter frame.

In one form, the infill panel is a solid plastic infill panel.

In one form, the infill panel is a solid sheet of food grade plastic.

In one form, the gate or panel comprises locking means arranged to releasably lock adjacently erected gates or panels together.

In one form, the locking means is a manually releasable locking or latching mechanism.

In one form, the gate or panel further comprises means for attaching the gate or panel to a container base.

In one form, the attachment means creates a permanent attachment.

In one form, the attachment means creates a pivotable attachment.

In one form, the attachment means creates a detachable attachment.

In one form, the gate or panel further comprises a plurality of hingedly connected sections.

A gate or panel for a storage container comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an infill panel attachment member attached to and extending along at least a pair of opposing margins of the outer perimeter frame, each infill panel attachment member comprising an infill panel retaining flange enabling the infill panel to be retained between the retaining flanges and an inner face of the outer perimeter frame; and wherein each infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an inter-gate or panel attachment flange, which is attachable to another erected gate or panel of the container.

In a further aspect, the invention the may be said to reside in a gate or panel for a storage container comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an elongate infill panel attachment member attached to and extending along a margin of the ~~gate~~outer perimeter frame, wherein each elongate infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an intra-panel attachment flange ~~,the or each infill panel attachment member comprising an infill panel retaining flange which extends in a plane parallel to an inner face of the~~

~~perimeter frame so that the infill panel is retained between the retaining flange or flanges and an inner face of the outer perimeter frame~~.

In one form, the intra-panel attachment flange is secured to a margin of its associated outer perimeter frame.

In a further aspect, the invention the may be said to reside in a storage container comprising a base, two pairs of opposing side and end gates or panels, each gate or panel comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an elongate infill panel attachment member attached to and extending along at least a pair of opposing margins of each of the ~~gates or panels~~outer perimeter frame, wherein each elongate infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an intra-panel attachment flange ~~,each infill panel attachment member comprising an infill panel retaining flange which lies in a plane parallel to an inner face of the perimeter frame so that the infill panel is retained between the retaining flange and the inner face of the outer perimeter frame~~.

In a further aspect, the invention the may be said to reside in a storage container comprising a base, two pairs of opposing side and end gates or panels, each gate or panel comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an infill panel attachment member attached to and extending along at least a pair of opposing margins of each of the gates or panels, each infill panel attachment member comprising an infill panel retaining flange enabling the infill panel to be retained between the retaining flange and the inner face of the outer perimeter frame; and wherein each infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an inter-gate or panel attachment flange, which is attachable to another erected gate or panel of the container.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of this disclosure it will now be described with respect to an exemplary embodiment which shall be described herein with the assistance of drawings wherein:

Figure 1 is a perspective view of a gate for a collapsible container, when viewed from its inner side;

Figure 2 is a perspective view of the gate in Figure 1, when viewed from its outer side;

Figure 3 is a top view of the gate in Figures 1 and 2;

Figure 4 is a detailed top view of an end of the gate illustrated in Figures 1 through 3;

Figure 5 is a top view of an infill panel attachment member from the gate illustrated in Figures 1 through 4;

Figure 6 is a top view of a gate according to a further embodiment of the invention;

Figure 7 is a detailed top view of an end of the gate illustrated in Figure 6;

Figure 8 is a top view of an infill panel attachment member from the gate illustrated in Figures 6 and 7;

Figure 9 is a top view of a gate according to a further embodiment of the invention;

Figure 10 is a detailed top view of an end of the gate illustrated in Figure 9; and

Figure 11 is top view of an infill panel attachment member from the gate illustrated in Figures 9 and 10.

DETAILED DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

Referring now to Figure 1, where there is illustrated a gate 1 for a collapsible container of the kind which includes a rectangular pallet base which is provided at each of its four corners with stub corner posts, the base having a horizontal removable floor panel supported by a plurality of floor support members and additional intermediate bearers.

In this embodiment, the container is provided with a first pair of folding side gates and a second pair of opposing folding end gates, each panel being pivotally mounted via hinges ~~5~~ adjacent its bottom corners to form a gate 1 which can be swung inwardly from its erect in-use position to a collapsed position on top of the pallet base. These erected gates 1 interlock with one another along their adjacent vertical margins, which enhances the stiffness and rigidity of the erected container.

THE CLAIMS:

1. A gate or panel for a storage container comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an infill panel attachment member attached to and extending along at least a pair of opposing margins of the ~~gate~~outer perimeter frame, each infill panel attachment member comprising an infill panel retaining flange ~~which extends in a plane parallel to an inner face of the perimeter frame so that~~enabling the infill panel ~~is~~ to be retained between the retaining flanges and an inner face of the outer perimeter frame; and wherein each infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an intra-panel attachment flange secured to a margin of its associated outer perimeter frame.

2. The gate or panel of claim 1, wherein the infill panel is clamped between the retaining flanges and the inner face of the outer perimeter frame.

3. The gate or panel as in either of claims 1 or 2, wherein the opposing margins are vertical margins of the gate or panel.

4. The gate or panel as in either of claims 1 or 2, wherein the opposing margins are horizontal margins of the gate or panel.

5. The gate or panel as in any one of the preceding claims, wherein the infill panel attachment members extend along both opposing vertical and horizontal margins of the gate or panel.

6. The gate or panel as in any one of the preceding claims, wherein each ~~elongate~~ infill panel attachment member is an elongate member of constant cross-sectional shape ~~terminating at one end in the infill panel retaining flange, and at its other end in an intra-panel attachment flange secured to a margin of its associated perimeter frame~~.

7. A gate or panel for a storage container comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an infill panel attachment member attached to and extending along at least a pair of opposing margins of the outer perimeter frame, each infill panel attachment member comprising an infill panel retaining flange enabling the infill panel to be retained between the retaining flanges and an inner face of the outer perimeter frame; and ~~The gate or panel as in any one of claims 1 through 5,~~ wherein each ~~elongate~~ infill panel attachment member ~~is an elongate member of constant cross-sectional shape terminating~~terminates at one end in the

infill panel retaining flange, and at its other end in an inter-gate or panel attachment flange, which is attachable to another erected gate or panel of the container.

8. The gate or panel of claim 7, wherein the infill panel retaining flange extends from an intra-panel attachment portion secured to the vertical margin of its associated outer perimeter frame.

9. The gate or panel as in any one of the preceding claims, wherein the infill panel is a solid plastic infill panel.

10. The gate or panel as in any one of the preceding claims, wherein the infill panel is a solid sheet of food grade plastic.

11. The gate or panel as in any one of the preceding claims, ~~wherein this comprises~~further comprising locking means arranged to releasably lock adjacently erected gates or panels together.

12. The gate or panel of claim 11, wherein the locking means is a manually releasable locking or latching mechanism.

13. The gate or panel as in any one of the preceding claims, ~~wherein this further comprises~~further comprising means for attaching the gate or panel to a container base.

14. The gate or panel of claim 13, wherein the attachment means creates a permanent attachment.

15. The gate or panel of either of claims 13 or 14, wherein the attachment means creates a pivotable attachment.

16. The gate or panel of claim 13, wherein the attachment means creates a detachable attachment.

17. The gate or panel as in any one of the preceding claims, ~~wherein this is comprised of~~ further comprising a plurality of hingedly connected sections.

18. A gate or panel for a storage container comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an infill panel attachment member attached to and extending along a margin of the ~~gate~~outer perimeter frame, wherein each infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an intra-panel attachment flange~~the or each infill panel attachment member comprising an infill panel retaining flange which extends in a plane parallel to an inner face of the perimeter frame so that the infill panel is retained between the retaining flange or flanges and an inner face of the outer perimeter frame~~.

19. The gate or panel as in claim 18, wherein the intra-panel attachment flange is secured to a margin of its associated outer perimeter frame.

~~19.~~20. A storage container comprising a panel or gate according to any one of claims 1 through ~~18~~19.

~~20.~~21. A storage container comprising a base, two pairs of opposing side and end gates or panels, each gate or panel comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an infill panel attachment member attached to and extending along at least a pair of opposing

margins of each of the gates or panels, each infill panel attachment member comprising an infill panel retaining flange enabling ~~which lies in a plane parallel to an inner face of the perimeter frame so that~~ the infill panel ~~is~~ to be retained between the retaining flange and the inner face of the outer perimeter frame; and wherein each infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an intra-panel attachment flange secured to a margin of its associated outer perimeter frame.

22. A storage container comprising a base, two pairs of opposing side and end gates or panels, each gate or panel comprising a rectangular or square infill panel having an inner face and an outer face, an outer perimeter frame adjacent to the outer face of the infill panel, and an infill panel attachment member attached to and extending along at least a pair of opposing margins of each of the gates or panels, each infill panel attachment member comprising an infill panel retaining flange enabling the infill panel to be retained between the retaining flange and the inner face of the outer perimeter frame; and wherein each infill panel attachment member terminates at one end in the infill panel retaining flange, and at its other end in an inter-gate or panel attachment flange, which is attachable to another erected gate or panel of the container.

~~21.~~23. The storage container of claim ~~20~~21 or 22, wherein the container is a collapsible storage container comprising gates or panels moveable between an erect in-use position and a collapsed position on top of the base.

~~22.~~24. The storage container ~~of claim 21~~according to any one of claims 21 to 23, wherein the gates or panels comprise locking means arranged to releasably lock adjacently erected gates or panels together.

~~23. A gate or panel being substantially as herein described with reference to the accompanying drawings.~~

~~24. A storage container being substantially as herein described with reference to the accompanying drawings.~~

25. The gate or panel as in any one of the preceding claims, wherein the infill panel retaining flange extends in a plane parallel to an inner face of the perimeter frame.