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(54) Container

(57) A container comprising a base portion and a lid or cover portion and including a closure device for securing said lid or cover portion to said base portion in a closed condition of the container, the closure device

comprising a tab on one of said portions and a slot in the other of said portions, said tab and/or said slot being located asymmetrically of a common centre line of said base portion and said lid or cover portion.

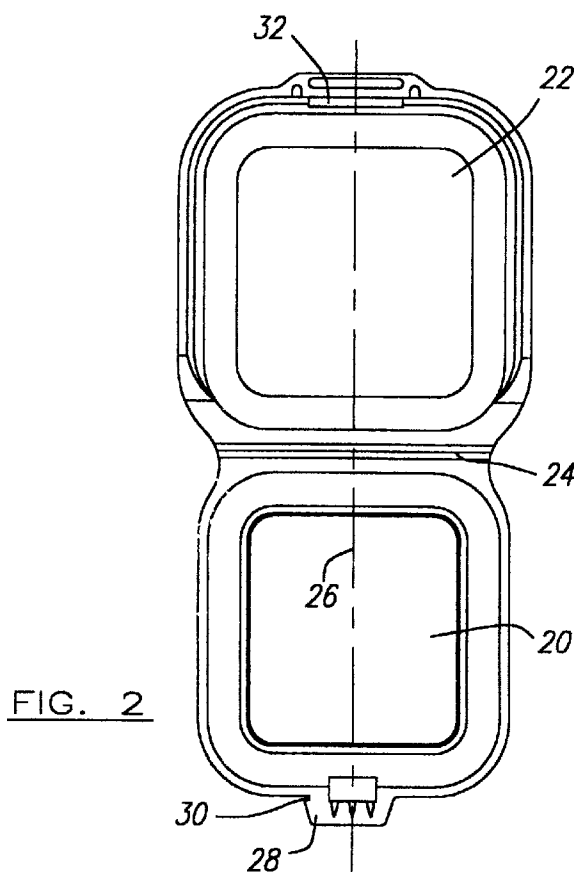


FIG. 2

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Description

This invention relates to containers and particularly, but not exclusively, to food containers such as are used in so-called 'burger bars' and other food take-away or carry out food outlets.

Containers for holding food such as burgers and the like, and other food items such as French fries etc., usually comprise a one-piece structure-consisting of a base portion and a lid or cover portion which is foldable over said base portion so as to overlie said base portion and to enclose a food item or items housed in said container.

To maintain the lid or cover portion in a secure position when overlying said base portion, i.e. in the closed condition of the container, releasable closure means are provided on the container, such closure means usually being located on peripheral areas of the container. The closure means usually comprise co-operating means located one each on the base portion and the lid or cover portion, such means usually interlocking or interengaging with each other to maintain the lid or cover in the closed position relative to the base portion.

There have been many proposals for such closure means, such as butterfly closures, stud closures, and perhaps more commonly tab and slot closures, and it is with the tab and slot closure of a container that the present invention is particularly concerned.

Conventionally, tab and slot closures for containers comprise a tab on the base portion of the container and an elongate slot in the lid or cover portion of the container - or vice versa - the tab being-releasably engageable in said slot to secure the lid or cover portion to the base portion in a closed condition of the container. The tab and slot are disposed symmetrically about a common centre line of said base portion and said lid or cover portion.

The inherent strength of the tab and slot closure is of paramount importance to the in-service performance of the container, i.e. when the container houses food, since failure of the closure could result in failure of the whole container and consequently damage to and spoilage of the food in the container.

A standard test for assessing the strength of the tab and slot closure is its ability to carry a weight above its normal loading. The test consists in placing a weight in the base portion of the container, securing the lid or cover portion in position relative to the base portion, and then lifting the whole container vertically by engagement of the lid or cover portion.

It has been found that many tab and slot closures have failed this test, and it is thought that such failure is due to the fact that both the tab and the slot are located symmetrically about a common centre line of the container such that there is no off-centre resistance to the tab pulling out of the slot.

The present invention seeks to provide an improved container having a tab and slot closure which will obviate the disadvantages of known tab and slot closures.

Accordingly, the present invention provides a container comprising a base portion and a lid or cover portion and including a closure device for securing said lid or cover portion to said base portion in a closed condition of the container, said closure device comprising a tab on one of said portions and a co-operating slot in the other of said portions, said tab and/or said slot being located asymmetrically of a centre line of said container.

In a preferred embodiment of the invention, the tab will be located on the base portion of the container and the slot will be located in the top or cover portion of said container.

The tab will preferably be disposed asymmetrically about a common centre line of said base portion and said lid or cover portion, said tab including an indent or notch which is adapted to be engaged by a wall of said slot in the closed condition of the container.

The container will preferably be a one-piece container and will preferably be composed of expanded polystyrene and formed by moulding.

In order that the invention may be more readily understood, an embodiment thereof will now be described, by way of example, reference being made to the accompanying drawings, in which:

Figure 1 is a plan view of a container in an open position and having a conventional tab and slot closure;

Figure 2 is a plan view of a container in an open position and having a tab and slot closure in accordance with the invention;

Figure 3 is an enlarged detail view of part of Figure 2;

Figure 4 is a plan view of the container of Figure 2 in a closed condition; and

Figure 5 is an enlarged detail view of part of Figure 4.

Referring to the drawings, and firstly to Figure 1, there is shown a container which is a moulded one-piece member comprising a base portion 2 and a lid or cover portion 4 which are connected together through the intermediary of an integral hinge 6. The lid or cover portion is movable about said hinge 6 from the position shown in Figure 1 to a position in which the lid or cover portion 4 overlies said base portion 2.

The container is composed of expanded polystyrene.

As will be seen, the base portion 2 carries a tab 8 and the lid or cover portion 4 has an elongate slot 10, the tab 8 and slot 10 together forming a closure for the container, the tab 8 being adapted to engage in said slot 10 so as to maintain the lid or cover portion 4 in a closed position relative to and over the base portion 2.

As is evident from Figure 1, both the tab 8 and slot 10 are disposed symmetrically about a common centre line 12 of the container, and they remain on this common centre line both in the open condition of the container

(as shown in Figure 1) and in the closed condition of the container. Because of the positioning of the tab 8 and slot 10, i.e. on a common centre line of the container, the tab 8, when the base portion is carrying a product (for example food) and when the container is in a closed condition, has a tendency to pull away from and leave the slot 10, resulting in failure of the container and possibly damage to and/or destruction of the product in the container.

Referring now to Figure 2, it will be seen that the one-piece container - comprising a base portion 20 and a lid or cover portion 22, and an integral hinge 24 - has a tab 28 on the base portion which is disposed asymmetrically about the centre line 26 of the container and symmetrically about its own centre line 27, and which is notched or indented as indicated by reference numeral 30. These features are shown in greater detail in Figure 3. It will also be seen from Figure 2 that the elongate slot 32 is located symmetrically about centre line 26.

Again, the container is composed of expanded polystyrene and is formed by moulding.

Reference to Figure 4, which shows the container of Figure 3 in a closed condition with the lid or cover 22 overlying the base portion 20, will clearly illustrate the disposition of the tab 28 relative to the slot 32.

To place the container in the closed condition as shown in Figure 4, the lid or cover portion 22 is moved about the hinge 24 and is moved slightly sideways and simultaneously the base portion 20 is slightly depressed axially in the vicinity of the tab 28, so as to allow the tab 28 and slot 32 to interengage. In this position, the tab 28 will generally be symmetrical with respect to the slot 32. When the sideways pressure on the lid or cover portion 22 is released, and due to the inherent resilience of the lid or cover portion, the lid or cover portion will return to its normal, off-centre position such that a side wall 32A of the slot 32 will be located in the notch or indent 30. This is best seen in Figure 5.

Thus the lid or cover portion 22 will become securely, but releasably, fastened to the base portion 20.

To release the lid or cover portion from the position shown in Figures 4 and 5, i.e. to open the container, the movement of the lid or cover portion as referred to above is reversed to allow tab 28 to be released from slot 32.

When conducting the dead-weight test - referred to previously - the container will remain in its closed state - with no failure of the closure - due to the engagement of the wall 32A of the slot 32 in the notch or indent 30.

It will be appreciated that instead of the tab being asymmetrical about the centre line of the container, the slot 30 could be asymmetrical with respect to said centre line, in which case the tab 28 would be symmetrical. In addition, it is feasible that both the tab 28 and the slot 30 could be asymmetrical about the common centre line, each being symmetrical about its own centre line, such centre lines being offset with respect to each other and with respect to the common centre line.

Also, instead of the tab being disposed as shown in

Figure 2, it may be disposed on the other side of the centre line of the container, i.e. the centre line of the tab could be to the left (in the drawing) of the centre line of the container, in which case the notch or indent will be at the right hand side (in the drawing) of the tab.

Finally, it will be understood that the container may take forms other than illustrated and described and that it may be composed of material other than expanded polystyrene, for example orientated polystyrene or other material.

Claims

1. A container comprising a base portion (20) and a lid or cover portion (22) and including a closure device for securing said lid or cover portion (22) to said base portion (20) in a closed condition of said container, said closure device comprising a tab (28) on one of said portions (20,22) and a slot (32) in the other of said portions (22,20), characterised in that said tab (28) and/or said slot (32) is located asymmetrically of a centre line 26 of said container.
2. A container according to Claim 1, characterised in that said tab (28) is located on the base portion (20) of the container (2) and the slot (32) is located in the lid or cover portion (22) of said container.
3. A container according to Claim 1, characterised in that said tab (28) is located on the lid or cover portion (22) of the container (2) and the slot (32) is located in the base portion (20) of said container.
4. A container according to any of Claims 1 to 3, characterised in that said tab (28) is disposed asymmetrically about the common centre line (26) of said base portion (20) and said lid or cover portion (22).
5. A container according to any of Claims 1 to 3, characterised in that said slot (32) is disposed asymmetrically about the common centre line (26) of said base portion (20) and said lid or cover portion (22).
6. A container according to any of Claims 1 to 3, characterised in that said tab (28) and said slot (32) are each disposed asymmetrically about the common centre line (26) of said base portion (20) and said lid or cover portion (22).
7. A container according to any of Claims 1 to 6, characterised in that said tab (28) includes a notch or indent (30) adapted to be engaged by a wall (32A) of said slot (32) in a closed condition of the container (2).
8. A container according to any of Claims 1 to 7, characterised in that said container (2) is a one-piece

moulded structure and includes an integral hinge (24) whereby the lid or cover portion (22) may move relative to and overlie said base portion (20).

9. A container according to any of Claims 1 to 8, characterised in that said container (2) is composed of expanded polystyrene or orientated polystyrene.

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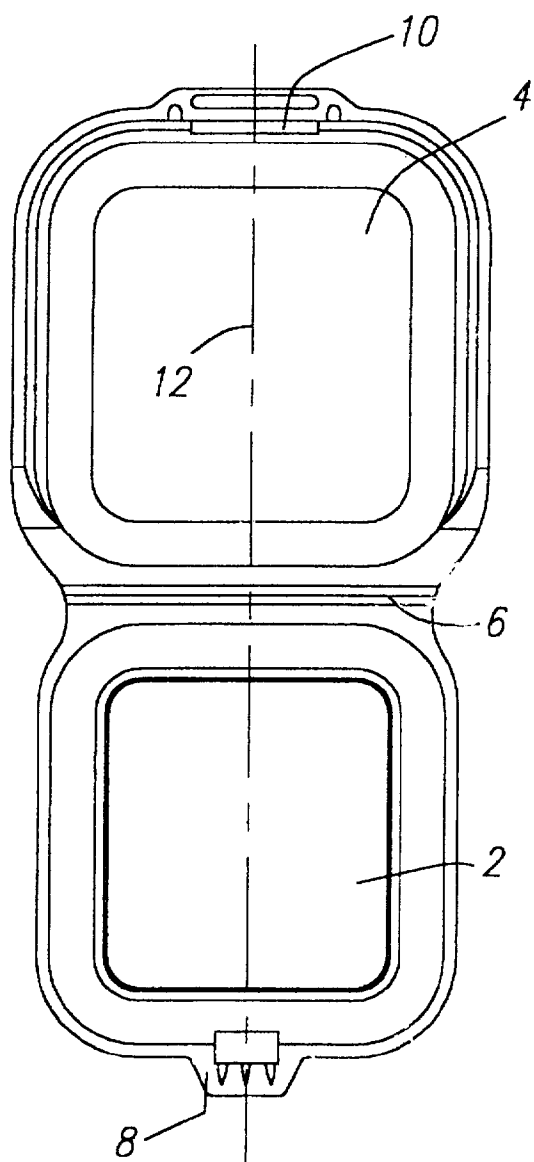


FIG. 1

FIG. 2

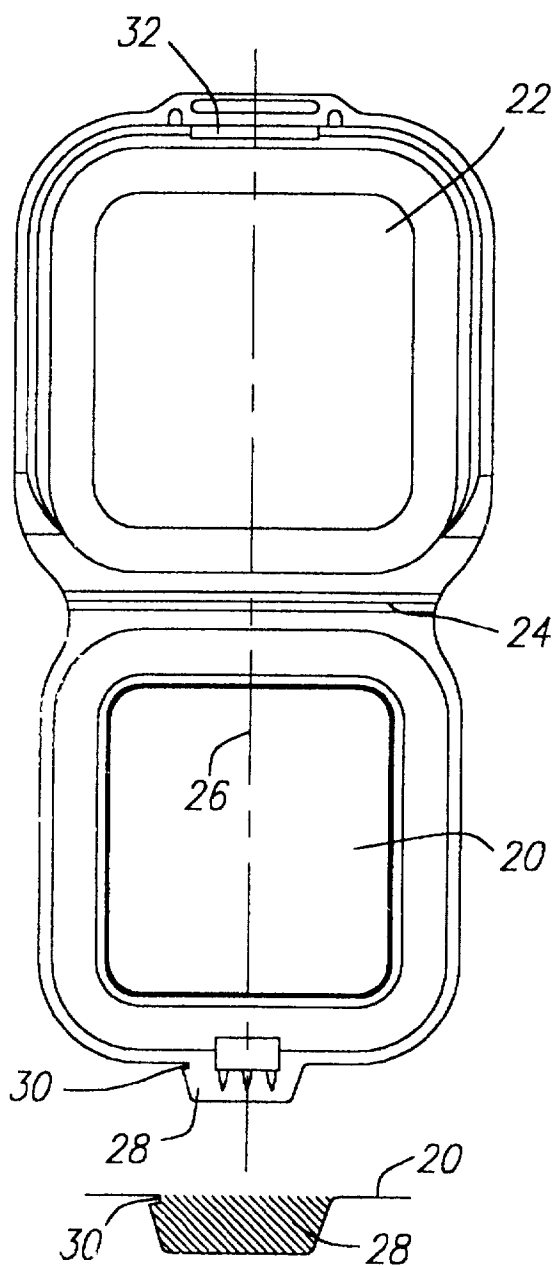


FIG. 3

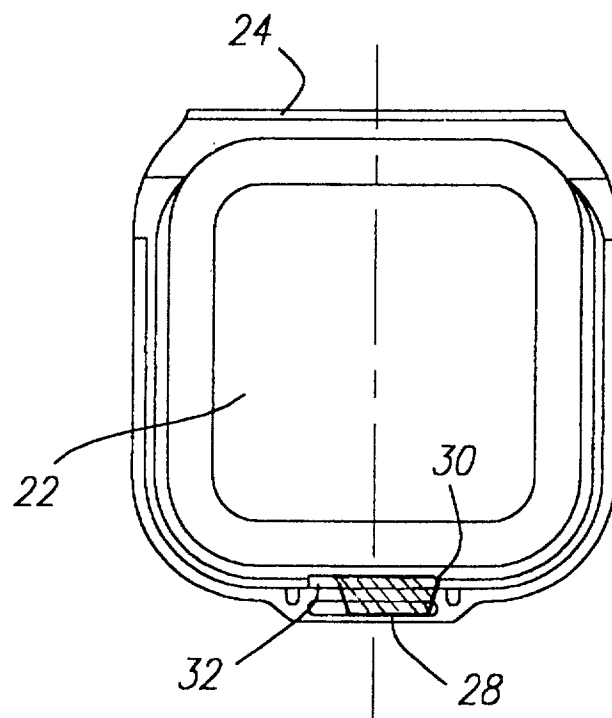


FIG. 4

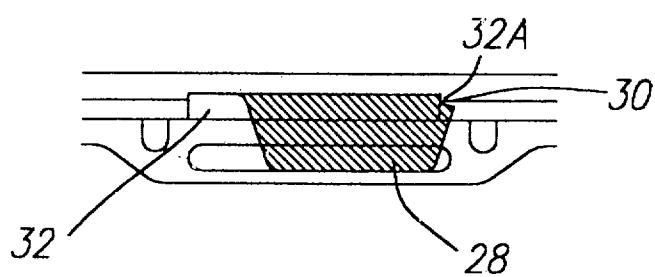


FIG. 5