

A Food Receptacle

Technical Field

[0001] The present invention relates to a food receptacle.

Background

[0002] It is very common nowadays to use a food box to pack food for takeaways. Typically, the food box for takeaways is made from paper or foam. Due to environmental issues, paper is more commonly used. The food box may include a tray to contain the food and a cover to cover the tray. It is common that such boxes are stacked on top of each other. Often, when the boxes are stacked on top of each other, the weight of the boxes on top would crumble the box at the bottom, thereby squashing the food therein and spilling it out of the food box, causing a mess and the food to become unconsumable.

[0003] It is thus an object of the present invention to improve or resolve the aforementioned problems, i.e. to provide a food box with a durable and stronger box.

Summary

[0004] According to various embodiments, a food receptacle is provided. Food receptacle includes a tray having a base, a base perimeter wall extending therefrom, such that the base perimeter wall extends upwardly from the base, such that the base perimeter wall includes a first side wall, a second side wall opposite the first side wall, a front wall disposed between and connected to the first side wall and the second side wall, such that the front wall forms an obtuse angle with the base and a rear wall opposite the front wall, the rear wall disposed between and connected the first side wall and the second side wall, a lid adapted to cover the tray, the lid includes a top panel having a lid perimeter edge and a lid perimeter wall extending downwardly therefrom, such that the lid perimeter wall includes a first side lid wall, a second side lid wall opposite the first side lid wall, a front lid wall between and connected to the first side lid wall and the second side lid wall, such that the front lid wall forms an obtuse angle with the top panel, such that the top panel is pivotally connected to the rear wall, and such that

the front wall extends beyond the front lid wall and adapted to receive the front lid wall within the front wall when the lid is covering the tray.

[0005] According to various embodiments, the base perimeter wall may be adapted to contact the top panel of the lid when the lid covers the tray.

[0006] According to various embodiments, the first side wall may include a first top edge, the second side wall may include a second top edge, the front wall may include a front top edge, the rear wall may include a rear top edge; such that the base perimeter wall may include a rim formed by the first top edge, the second top edge, the front top edge and the rear top edge, such that the rim may extend along a plane, and such that the rim may contact the top panel when the lid covers the tray.

[0007] According to various embodiments, the rim may be adapted to contact the lid perimeter edge when the lid covers the tray.

[0008] According to various embodiments, the front wall, the rear wall, the first side wall and the second side wall may have the same height from the base such that the first top edge, the second top edge and the front top edge and the rear top edge may be of the same distance from the base.

[0009] According to various embodiments, the first side lid wall, the second side lid wall the front lid wall each may include a connecting edge connecting each of them to the top panel, such that the rim may be adapted to abut against the connecting edge of the front lid wall, the connecting edge of the first side lid portion and the connecting edge of the second side lid portion respectively when the lid covers the tray.

[0010] According to various embodiments, the lid may include an engaging portion adapted to engage the base perimeter wall, such that the engaging portion may engage the base perimeter wall when the lid covers the tray to retain the lid onto the tray.

[0011] According to various embodiments, the engaging portion may be formed on the lid perimeter wall of the lid.

[0012] According to various embodiments, the lid perimeter wall may include an inner side facing the tray and an outer side facing away from the tray, such that the engaging portion may include a protrusion on the inner side of the lid perimeter wall, such that the protrusion may engage the base perimeter wall to retain the lid onto the tray when the lid covers the tray.

[0013] According to various embodiments, the protrusion may extend along the length of the lid perimeter wall.

[0014] According to various embodiments, the protrusion may include at least one of a plurality of studs and a ridge protruding from the lid perimeter wall.

[0015] According to various embodiments, the lid perimeter wall may include an upper portion of the lid perimeter wall adjacent the lid perimeter edge and a lower portion below the upper portion, such that the upper portion may be configured to extend from the lid perimeter edge inwardly towards the centre of the lid and the lower portion may be configured to extend from the upper portion outwardly from the centre of the lid.

Brief Description of Drawings

[0016] Fig. 1 shows a perspective view of an exemplary embodiment of the food receptacle 100 in the opened position.

[0017] Fig. 2 shows the food receptacle in Fig. 1 in the closed position.

[0018] Fig. 3 shows a sectional view of the food receptacle in Fig. 2 along line A-A.

[0019] Fig. 4 shows a sectional view of the food receptacle in Fig. 1 along line B-B.

[0020] Fig. 5 shows a sectional view of an exemplary embodiment of the food receptacle.

[0021] Fig. 6A and Fig. 6B show the inner side of a portion of the lid perimeter wall.

[0022] Fig. 7 show a sectional view of an exemplary embodiment of the food receptacle.

Detailed Description

[0023] Fig. 1 shows a perspective view of an exemplary embodiment of the food receptacle 100 in the opened position. Food receptacle 100 may include a tray 110 comprising a base 112, a base perimeter wall 114 extending therefrom, the base perimeter wall 114 extends upwardly from the base 112, such that the base perimeter wall includes a first side wall 114L, a second side wall 114M opposite the first side wall 114L, a front wall 114F disposed between and connected to the first side wall 114L and the second side wall 114M, such that the front wall 114F forms an obtuse angle with the base 112 and a rear wall 114R opposite the front wall 114F, the rear wall 114R disposed between and connected the first side wall 114L and the second side wall, 114M and forms an obtuse angle with the base 112. Food receptacle 100 includes a lid 120 adapted to cover the tray 110, the lid 120 having a top panel 120T having a lid perimeter edge 122 and a lid perimeter wall 124 extending downwardly therefrom such that the lid perimeter wall 124 includes a first side lid wall 120L, a second side lid wall 120M opposite the first side lid wall 120L, a front lid wall 120F between and connected to the first side lid wall 120L and the second side lid wall 120M, such that the front lid wall 120F forms an obtuse angle with the top panel 120T, such that the top panel 120T is pivotally connected to the rear wall 114R, and such that the front wall 114F extends beyond the front lid wall 120F and adapted to receive the front lid wall 120F within the front wall 114F when the lid 120 is covering the tray 110.

[0024] Base 112 of the tray 110 may be of a quadrilateral shape, e.g. a square, rectangular, or a shape of another number of sides, e.g. pentagonal, hexagonal. Accordingly, the base perimeter wall 114 which extends from the base 112 may have the same number of sides. Referring to Fig. 1, the base 112 may be rectangular such that the base perimeter wall 114 may have four planar walls. First side wall 114L may include a first top edge 114LT. Second side wall 114M may include a second top edge 114MT. Front wall 114F may have a front top edge 114FT. Rear wall 114R may have a rear top edge 114RT. There may be more than one wall portions on the first side wall 114L and the second side wall 114M between the front wall 114F and the rear wall 114R of the base perimeter wall 114. Each wall portion may be planar or curved. In an example of a hexagonal shaped tray 110, there may be two wall portions on each

of the first side wall 114L and the second side wall 114M of the base perimeter wall 114 between the front wall 114F and the rear wall 114R. Base perimeter wall 114 may include a rim 116 formed by the top edges of the wall portions. In the present embodiment, the rim 116 may include the first top edge 114LT, the second top edge 114MT, the front top edge 114FT and the rear top edge 114RT. Rim 116 may extend along a plane, such that the rim 116 contacts the top panel 120T when the lid 120 covers the tray 110.

[0025] The four walls 114F,114R,114L,114M may have the same height such that the top edge of each of the four walls 114F,114R,114L,114M may form a plane. The four walls 114F,114R,114L,114M may be of different heights, e.g. the front wall 114F and the rear wall 114R may be taller than the first side wall 114L and the second side wall 114R. The four walls 114F,114R,114L,114M may lean outwardly from the base 112 such that each wall may form an obtuse angle with the base 112. For example, each wall may be at about 97 degrees, 98 degrees, 99 degrees etc. from the base 112.

[0026] Top panel 120T may have a shape that corresponds to the shape of the base 112. As shown in Fig. 1, the top panel 120T may be rectangular. front lid wall 120F, the first side lid wall 120L, and the second side lid wall 120M, each has a connecting edge, i.e. a first side edge 120LE, a second side edge 120ME and a front edge 120FE respectively, connecting each of them to the top panel 120T, such that the rim 116 may be adapted to contact the lid perimeter edge, i.e. abut against the connecting edge, i.e. the front edge 120FE, of the front lid wall 120F, the connecting edge, i.e. the first side edge 120LE, of the first side lid portion and the connecting edge, i.e. the second side edge 120ME, of the second side lid portion respectively when the lid 120 covers the tray 110.

[0027] Fig. 2 shows the food receptacle 100 in Fig. 1 in the closed position. Lid 120 may be pivotally connected to the rear wall 114R (not shown in Fig. 2) of the tray 110. Lid 120 may be pivotally connected along the rear edge 120RE (shown in Fig. 1) of the top panel 120T and rotatable between an opened position where the tray 110 is not covered by the lid 120 as shown in Fig. 1 and in a closed position where the tray 110 is covered by the lid 120 as shown in Fig. 2. Front lid wall 120F may lean away from the top panel 120T such that the front lid wall 120F may form an obtuse angle with the top panel 120T.

[0028] Fig. 3 shows a sectional view of the food receptacle 100 in Fig. 2 along line A-A. First side lid wall 120L and the second side lid wall 120M may also lean away from the top panel 120T. Top panel 120T may be of the same size and shape as the rim 116. In this way, the top panel 120T may be in contact with the rim 116 of the base perimeter wall 114 when the tray 110 is in the closed position. For example, the front top edge 114FT (not shown in Fig. 3), the rear top edge 114RT (not shown in Fig. 3), the first top edge 114LT and the second top edge 114MT of the base perimeter wall 114 may coincide with the front edge 120FE (not shown in Fig. 3), rear edge 120RE, first side edge 120LE, and second side edge 120ME of the top panel 120T respectively such that the base perimeter wall 114 of the tray 110 may abut against the lid perimeter edge 122 of the top panel 120T and be immobilized, i.e. prevented from rotating, by the lid perimeter wall 124. Due to the immobilization of the base perimeter wall 114, the food receptacle 100 may be able to withstand higher load thereon compared to conventional food boxes, e.g. clam shell box. As the rear edge 120RE of the top panel 120T is connected to the rear top edge 114RT of the rear wall 114R of the tray 110, the rear wall 114R may be immobilized by the top panel 120T. Consequently, the front wall 114F (not shown in Fig. 3) and the rear wall 114R are each connected to the first side wall 114L and the second side wall 114M from the base 112 to the rim 116. In this way, the base perimeter wall 114 may be structurally more rigid to withstand a higher load on the tray 110. Two adjacent walls, e.g. front wall 114F and first side wall 114L, may be reinforced at a connecting portion (not shown in Fig. 3) connecting the two adjacent walls to improve the structural strength between the adjacent walls. For example, the lid 120 may include a reinforcing layer attached to the two adjacent walls at the connecting portion.

[0029] Fig. 4 shows a sectional view of the food receptacle 100 in Fig. 1 along line B-B. Front wall 114F of the lid 120 may include a front lid edge 120FL. When the lid 120 is being closed onto the tray 110, the front lid edge 120FL of the front lid wall 120F, as the front lid wall 120F extends outwardly from the tray 110, extends beyond the front top edge 114FT of the front wall 114F, such that the front wall 114F may be received within the front lid wall 120F and be guided towards the front edge 120FE of the top panel 120T as the lid 120 closes onto the tray 110. Referring to Fig. 3, the first side lid wall 120L may include a first side lid edge 120LL and the second side lid wall 120M may include a second side lid edge 120ML. When the lid 120 is being closed onto the tray 110, the first side lid edge 120LL and the second side lid edge 120ML may extend beyond the first top edge 114LT and the second top edge 114MT of the

base perimeter wall 114 such that the first side wall 114L and the second side wall 114M may be received within the first side lid wall 120L and the second side lid wall 120M and guided towards the first side edge 120LE and the second side edge 120ME of the top panel 120T respectively as the lid 120 closes onto the tray 110.

[0030] While the lid 120 of the food receptacle 100 may be shown to be attached to the tray 110, the lid 120 may be separated from the tray 110. Lid 120 may include a rear lid wall extending from the rear edge 120RE of the top panel 120T and connected to the first side lid wall 120L and the second side lid wall 120M. When the lid 120 is placed onto the tray 110, the base perimeter wall 114 may be abutted against the lid perimeter edge and immobilized by the lid perimeter wall 124. For example, when in the closed position, the front wall 114F may be immobilized by the top panel 120T and the front lid wall 120F, the rear wall 114R may be immobilized by the top panel 120T and the rear lid wall, the first side wall 114L may be immobilized by the top panel 120T and the first side lid wall 120L and the second side wall 114M may be immobilized by the top panel 120T and the second side lid wall 120M.

[0031] Fig. 5 shows a sectional view of an exemplary embodiment of the food receptacle 200. In addition to the embodiment in Fig. 1 and Fig. 2, the lid 220 of the food receptacle 200 may include an engaging portion 226 adapted to engage the base perimeter wall 214, such that the engaging portion 226 may engage the base perimeter wall 214 when the lid 220 covers the tray 210 to retain the lid 220 onto the tray 210. Engaging portion 226 may be formed on the lid perimeter wall 224 of the lid 220. Engaging portion 226 may be formed on at least the first side wall 214L and the second side wall 214M. In addition, the engaging portion 226 may be formed on the front wall 214F (not shown in Fig. 5). Lid perimeter wall 224 may include an inner side 224N facing the tray 210 and an outer side 224M facing away from the tray 210. Engaging portion 226 may include a protrusion 226P on the inner side of the lid perimeter wall 224, such that the protrusion 226P may engage the base perimeter wall 214 to retain the lid 220 onto the tray 210 when the lid 220 covers the tray 210. As the lid 220 closes onto the tray 210, the base perimeter wall 214 may be guided against the lid perimeter wall 224. As the base perimeter wall 214 approaches the top panel 220T, the base perimeter wall 214 may encounter the engaging portion 226. Base perimeter wall 214 may be pushed toward the centre of the tray 210 to avoid the engaging portion 226. Engaging portion 226 may be adapted to allow the base perimeter wall 214 to slide over it as the base perimeter wall 214 meets the engaging portion

226. For example, the engaging portion 226 may be sloped towards the lid edges on one side to allow the base perimeter wall 214 to slide up its sloped side to overcome the engaging portion 226. Once the rim 216 of the base perimeter wall 214 passes the engaging portion 226 and abuts the lid perimeter edge 222, the tray 210 may be retained in the closed position by the engaging portion 226 as the engaging portion 226 is adapted to provide resistance to the lid 220 from being opened.

[0032] Fig. 6A and Fig. 6B show the inner side 224N of a portion of the lid perimeter wall 224, e.g. first side lid wall 220L, the second side lid wall 220M and/or the front lid wall 220F. As shown in Fig. 6A, the protrusion 226P may extend along the length of the lid perimeter wall 224. Protrusion 226P may extend throughout the length of the lid perimeter wall 224. Protrusion 226P may be spaced from the lid perimeter edge 222. Protrusion 226P may include at least one of a ridge (as shown in Fig. 6A) and a plurality of studs (as shown in Fig. 6B) protruding from the lid perimeter wall 224. Protrusion 226P may include rows of parallel protrusions 226P extending along the length of the lid perimeter wall 224. Protrusion 226P may be formed by embossing the lid perimeter wall 224 or adhering the protrusions 226P to the lid perimeter wall 224. Alternatively, the protrusion 226P may be formed at a portion of the lid perimeter wall 224, e.g. at a centre portion or end portions of the first side lid wall 220L, the second side lid wall 220M, and/or the front lid wall 220F.

[0033] Fig. 7 show a sectional view of an exemplary embodiment of the food receptacle 300. Lid perimeter wall 324 may include an upper portion 324U of the lid perimeter wall 324 adjacent the lid perimeter edge 322 and a lower portion 324L below the upper portion 324U, such that the upper portion 324U may be configured to extend from the lid perimeter edge 322 inwardly towards the centre of the lid 320 and the lower portion 324L is configured to extend from the upper portion 324U outwardly from the centre of the lid 320. First side lid wall 320L and the second side lid wall 320M may have their upper portions 320LU, 320MU extending from the top panel 320T and tapered towards the centre of the lid 320 and their lower portions 320LW, 320MW extending from the upper portions 320LU, 320MU respectively and away from the centre of the lid 320. Front lid wall 320F (not shown in Fig. 7) may have an upper portion (not shown in Fig. 7) extending from the top panel 320T and tapered towards the centre of the lid 320 and a lower portion 324L (not shown in Fig. 7) extending from the upper portion 324U and away from the centre of the lid 320. The width between the first side lid edge 320LL

and the second side lid edge 320ML may exceed the width between the first top edge 314LT and the second top edge 314MT such that the tray 310 may be guided into the lid 320 easily. Front lid edge (not shown in Fig. 7) may exceed the front top edge (not shown in Fig. 7) as well. Engaging portion (not shown in Fig. 7) may be formed on the lower portion 324L of the lid perimeter wall 324 to increase the resistance of the tray 310 being opened from the lid 320.

[0034] A skilled person would appreciate that the features described in one example may not be restricted to that example and may be combined with any one of the other examples.

[0035] In the following examples, reference will be made to the figures, in which identical features are designated with like numerals.

[0036] The present invention relates to a food receptacle generally as herein described, with reference to and/or illustrated in the accompanying drawings.

Claim

1. A food receptacle comprising:

a tray comprising a base, a base perimeter wall extending therefrom, wherein the base perimeter wall extends upwardly from the base wherein the base perimeter wall comprises a first side wall, a second side wall opposite the first side wall, a front wall disposed between and connected to the first side wall and the second side wall, wherein the front wall forms an obtuse angle with the base and a rear wall opposite the front wall, the rear wall disposed between and connected the first side wall and the second side wall,

a lid adapted to cover the tray, the lid comprising a top panel having a lid perimeter edge and a lid perimeter wall extending downwardly therefrom, wherein the lid perimeter wall comprises a first side lid wall, a second side lid wall opposite the first side lid wall, a front lid wall between and connected to the first side lid wall and the second side lid wall, wherein the front lid wall forms an obtuse angle with the top panel,

wherein the top panel is pivotally connected to the rear wall, and wherein the front wall extends beyond the front lid wall and adapted to receive the front lid wall within the front wall when the lid is covering the tray.

2. The food receptacle according to claim 1, wherein the base perimeter wall is adapted to contact the top panel of the lid when the lid covers the tray.

3. The food receptacle according to claim 1 or 2, wherein the first side wall has a first top edge, the second side wall has a second top edge, the front wall has a front top edge, and the rear wall has a rear top edge, wherein the base perimeter wall has a rim formed by the first top edge, the second top edge, the front top edge and the rear top edge, wherein the rim extends along a plane, and wherein the rim contacts the top panel when the lid covers the tray.

4. The food receptacle according to claim 3, wherein the rim is adapted to contact the lid perimeter edge when the lid covers the tray.

5. The food receptacle according to claim 3 or 4, wherein the front wall, the rear wall, the first side wall and the second side wall have the same height from the base wherein the first

top edge, the second top edge and the front top edge and the rear top edge are of the same distance from the base.

6. The food receptacle according to any one of claims 1 to 5, wherein the first side lid wall, the second side lid wall, the front lid wall, each has a connecting edge connecting each of them to the top panel, wherein the rim is adapted to abut against the connecting edge of the front lid wall, the connecting edge of the first side lid portion and the connecting edge of the second side lid portion respectively when the lid covers the tray.

7. The food receptacle according to any one of claims 1 to 6, wherein the lid has an engaging portion adapted to engage the base perimeter wall, wherein the engaging portion engages the base perimeter wall when the lid covers the tray to retain the lid onto the tray.

8. The food receptacle according to claim 7, wherein the engaging portion is formed on the lid perimeter wall of the lid.

9. The food receptacle according to claim 7 or 8, wherein the lid perimeter wall has an inner side facing the tray and an outer side facing away from the tray, wherein the engaging portion has a protrusion on the inner side of the lid perimeter wall, wherein the protrusion engages the base perimeter wall to retain the lid onto the tray when the lid covers the tray.

10. The food receptacle according to claim 9, wherein the protrusion extends along the length of the lid perimeter wall.

11. The food receptacle according to claim 10 or 11, wherein the protrusion has at least one of a plurality of studs and a ridge protruding from the lid perimeter wall.

12. The food receptacle according to any one of claims 1 to 11, wherein the lid perimeter wall has an upper portion of the lid perimeter wall adjacent the lid perimeter edge and a lower portion below the upper portion, wherein the upper portion is configured to extend from the lid perimeter edge inwardly towards the centre of the lid and the lower portion is configured to extend from the upper portion outwardly from the centre of the lid.