

SPECIFICATION

Improvements in or relating to a container

5 This invention relates generally to containers and, more particularly, to a lunch box.

It has been proposed to provide containers intended for use as lunch boxes, especially for use by children, said containers usually being made from metal utilizing a conventional box shape with a handle formed on one side and hinges on an opposite side. In addition, there is normally provided some mechanical type of catch on the front portion of the box to hold the lunch box closed. These types of lunch boxes are not only relatively expensive to manufacture, but because metal is used they are relatively heavy, tend to rust during extended use, can have sharp corners which are dangerous to children and are easily dented or otherwise damaged if dropped.

Alternatives to the foregoing types of lunch boxes involve simply packaging a child's lunch in a plastics material container with a cover. While this arrangement will serve to hold the lunch and to keep it relatively fresh, the container itself is not easy for a child to carry and the cover, once separated from the container, can readily become lost. Because of these latter problems, it is not uncommon practice simply to package a child's lunch in a brown paper bag and to identify the lunch properly by writing the child's name on the bag. This solution, however, also has drawbacks in that no proper sealing of the contents is possible with simple bag nor is there provided any type of "container" which could function as a serving tray when the child is eating.

In accordance with the present invention, there is a container comprising a base container having an upper opening and an integrally formed handle, the handle extending forwardly from a first side of the base container below the opening; a cover for closing the upper opening of the base container; and at least one hinge means, the or each hinge means comprising: an integrally formed hinge tab extending from a second side, opposite to said first side of the base container, below the opening; and a hinge block integrally formed on a side of the cover, having a slot adapted to receive the hinge tab, the hinge tab having a thin portion adjacent to the integral connection of the tab to the base container so that the tab can flex, the tab of the or each hinge means being provided with a first means integrally formed with the tab and the block of the or each hinge means being provided with second means integrally formed with the block, the first and second means cooperating to retain the tab in the block during normal hinging movements occurring in the opening and closing of the container, the first and second means being manually yieldable to permit removal of the tab from the slot when it is desired to separate physically the cover and the base container.

Preferably said second side of the base container is provided with an integrally formed flange extending outwardly at a level below the or each hinge tab, such that when the or each hinge tab is received in the corresponding block and the cover is closed over

the base container and the container is placed on a flat surface in a vertical standing position with the handle extending upwardly, the flange and block simultaneously engage said flat surface to stabilize the container in said vertical standing position.

Conveniently the upper opening of the base container is defined by an upwardly and outwardly extending integrally formed peripheral lip, and the cover has a lower opening defined by a peripheral step and an outer wall extending downwardly and inwardly from the step, the step and an inner surface of the outer wall being adapted to engage an upper end and an outer surface respectively of said lip in pressing sealing relationship over substantially the whole periphery of the openings when the step is fully seated on the upper surface of the lip so that the cover is frictionally held in closed sealing relationship on the base container and yet can be manually swung away from the base container to open the container.

Suitably the handle comprises a depressed area adapted to receive an identification card, the outer wall of the cover having integrally moulded therewith a removable retaining member, the retaining member being received and frictionally retained in the depressed area to hold the identification card in place.

Advantageously the cover and the base container are each of such a depth that, when the cover is swung away from the closed position, through 180°, the top of the cover is then coplanar with the bottom of the base container so that both the cover and the base container will engage a flat surface in a stable position, thereby to expose the contents of the container and to function as serving trays.

Preferably said first means comprises an elongate groove on one side of the hinge tab, said second means comprises a projecting bead extending from one edge of an entrance opening of the slot in the hinge block towards the opposite edge of the entrance opening, the groove being adapted to receive the bead, the bead being sufficiently flexible to bend when the tab is being initially inserted into the slot and then to snap into the groove when the tab is fully inserted thereby to retain the tab in the slot.

Conveniently the base container and the cover are generally square shaped with rounded corners, and are integrally moulded from polymeric material, there being two said hinge means, one hinge tab being adjacent to one corner of the rear side of the base container and the other hinge tab being adjacent to the other rear side corner of the base container, the flange being located centrally of the rear corners at a level below the hinge tabs, each hinge tab portion which is to be received in a hinge block slot being notched such that the width of the tab portion can be decreased slightly by squeezing the notch closed, thereby allowing the tab to fit within the slot when assembling the hinging tabs in the slots.

In the embodiment wherein the base container and the cover are made of a polymeric material, the container is relatively easy to clean, light and comprises simple identifying means so that a child's name can be readily secured in the box in a visible

position and yet protected for substantially the lifetime of the lunch box.

So that the invention may be more readily understood, and so that further features thereof may be appreciated, a lunch box in accordance with the invention will now be described by way of example and with reference to the accompanying drawings, in which:

FIGURE 1 is a perspective view of the lunch box in a closed position;

FIGURE 2 is an elevational side view of the lunch box standing in a vertical position;

FIGURE 3 is an enlarged fragmentary cross section taken in the direction of the arrows 3-3 of Figure 1;

FIGURE 4 is a fragmentary exploded perspective view of a portion of the lunch box handle enclosed within the circular arrow 4 of Figure 1;

FIGURE 5 is a perspective view of the lunch box of Figure 1 in fully open position;

FIGURE 6 is a cross section taken in the direction of the arrows 6-6 of Figure 5;

FIGURE 7 is a greatly enlarged fragmentary exploded perspective view of the hinge structures for the lunch box of Figure 5;

FIGURE 8 is another enlarged fragmentary exploded perspective view of one of the hinges looking in the direction of the arrow 8 of Figure 7;

FIGURE 9 is a view similar to Figure 8 but showing the hinge in assembled relationship;

FIGURE 10 is a fragmentary cross section of the hinge structure taken in the direction of the arrows 10-10 of Figure 1; and

FIGURE 11 is another fragmentary cross section of the hinge structure taken in the direction of the arrows 11-11 of Figure 5.

Referring first to Figure 1, a lunch box comprises a base container 10 having an integrally formed handle 11 extending forwardly from one side as shown. The opposite or rear side of the container 10 is provided with two integrally formed hinge tabs 12 and 13 adjacent the rear corners.

Cooperating with the base container 10 is a cover 14 for closing the upper opening of the container. The cover 14 is provided with two hinge blocks 15 and 16 integrally formed on a rear side of the cover. Each of these blocks has a slot which receives a hinge tab thereby to hinge the cover 14 to the base container 10, all as will become clearer as the description proceeds.

Also shown in Figure 1 is an integrally formed flange structure 17 extending outwardly from the side of the container at a level below the hinge tabs. This flange cooperates with the hinge blocks 15 and 16, when the cover 14 is closed over the base container 10, to stabilize the lunch box in the vertical position shown in Figure 2.

Referring now to Figure 2, the extended edge of the flange 17 is the same distance from the rear wall of the base container 10 as the outside edge of the hinge block 15 is from the rear wall of the cover 14. Thus, the closed container rests evenly on a flat surface designated by the dashed line L1. The box is thus stabilized when in a vertical standing position shown in Figure 2 with the handle 11 extending upwardly.

Referring now to the fragmentary cross section of Figure 3, it will be noted that the base container 10 has an upper opening defined by an upwardly and outwardly extending integrally formed peripheral lip

18. The cover 14, in turn, has a lower opening defined by a peripheral step 19 and outer wall 20 extending downwardly and slightly inwardly from the step. The step and inner surface of the wall engage the upper end and outer surface, respectively, of the lip in pressing sealing relationship over the entire perimeter of the openings. Thus, a fully sealed structure results, the cover being frictionally held in its closed relationship on the base container and yet readily manually removable to open the lunch box.

The base container 10 and the cover 14 each include annular exterior flanges such as indicated at 18' for the base container 10 and 20' on the wall portion 20 of the cover 14. As is clear from Figure 3, the small space between these flanges when the step 19 is fully seated on the top surface of the lip 18 provides a convenient area within which a person can insert his fingers to swing open the cover 14 from the container 10.

A means for providing identification of the owner of the lunch box can be formed during the original moulding of the container and cover.

More particularly, with reference to the fragmentary exploded perspective view of Figure 4, it will be noted that the handle 11 has formed therein a depressed area 21. This area 21 can receive an identification card indicated at ID which might bear the child's name, for example NANCY. A cooperating retaining member 22 which has a transparent or translucent surface is arranged to be press fitted over the ID card when the ID card is positioned in the tray 21. The retaining member 22 is initially moulded as a part of the cover 14 and is simply "torn off" or otherwise manually separated from the cover 14 after the moulding operation.

Referring once again to Figure 1, the remnants 22' of the removal of the retaining member 22 can be seen between the hinge blocks 15 and 16.

The foregoing press fitting type of identification means is desirable as it preserves both the simplicity and the important characteristics of avoiding any type of metal parts or more than two basic integrally moulded members.

Referring now to Figure 5, the cover 14 is shown swung through 180° to a fully open position. The depth of both the base container 10 and the cover 14 are such that the top of the cover will be coplanar with the bottom of the container when in the fully open position illustrated in Figure 5.

From Figure 5, it will also be noted that in the preferred embodiment of the invention, both the container and cover are substantially square in shape with rounded corners.

The feature of a coplanar relationship between the top of the cover and the bottom of the base container when in the fully open position is clearly illustrated in Figure 6 wherein the bottom surfaces are resting on a flat surface designated L2.

In the open position of the lunch box, as clearly illustrated in both Figures 5 and 6, it will be clear that



both the base container 10 and the cover 14 function when resting on a flat surface as serving trays for contents within the box.

In Figure 5, the complete perimeter of the upper opening of the base container 10 defined by the lip 18 is clearly shown. Similarly, the complete perimeter of the step 19 and outer wall 20 for the cover 14 is visible.

In Figure 6, the upwardly and outwardly biased positioning of the lip 18, which provides for a pressing and sealing relationship when covered by the corresponding wall portion 20, is evident. The angle of the lip 18 from the vertical is designated A and may be, for example, about eight degrees with a corresponding inward inclination of eight degrees for the inside of the wall 20 of the cover 14. By providing these inclinations with respect to the vertical, the desired pressing and sealing relationship and frictional retaining of the cover on the container all as described in Figure 3 will result.

Referring now to the enlarged exploded view of Figure 7, it can be seen that slots 23 and 24 are formed in the hinge blocks 15 and 16, respectively. Also shown are projecting beads 23' and 24' extending from longitudinal edges of the entrance openings of these slots towards the opposite edges. These beads cooperate with corresponding grooves formed on one side of the hinge tabs 12 and 13. One of these grooves is shown at 12' in Figure 8. The beads 23', 24' and the corresponding grooves constitute cooperating means for retaining the hinge tabs within the slots of the hinge blocks once the tabs are assembled therein.

The foregoing will be better understood by referring to the enlarged fragmentary perspective views of Figures 8 and 9. Thus, in Figure 8 the longitudinal groove 12' can be seen on the underside of the hinge tab 12. As the hinge tab 12 is inserted in the hinge block 13 to pass into the slot 23, the bead projection 23', as described in Figure 7, will initially be bent over and when the hinge tab 12 is fully inserted as illustrated in Figure 9, this bead will pop into the groove 12' and thus retain the hinge tab in the block 15. However by exerting sufficient manual force, the hinge tab can readily be removed from the block when it is desired to separate the base container completely from the cover.

Referring back to the perspective view of Figure 7, it will be noted that each of the hinge tabs 12 and 13 includes a central notch N. This notch permits the side edges of the hinge tabs to squeeze the notch towards a closed position, and thus effectively to narrow the width of the tabs in order to facilitate their insertion into the slots 23 and 24 of the hinge blocks during assembly of the lunch box. When assembling the cover and the base container, a slight tilting is desirable so that a first hinge tab such as 12 is introduced into the slot 23 and then the second hinge tab 13 is introduced into the slot 24. The notches N provide sufficient flexibility to permit the reassembly to be carried out manually without flexing any of the component parts beyond a reasonable amount.

Referring now to the cross sections of Figures 10 and 11, the securement of the hinge tab within the

hinge block by means of the bead 23' and the cooperating groove 12' will be evident. In the closed position of the box, as illustrated in Figure 10, it will be noted that the hinge tab 12 passes upwardly through the slot 23 in the block 15, the bead 23' being received or snapped into the corresponding groove 12'.

In Figure 11 the cover has been lifted from the top of the base container and swung through 180°. The hinge tab 12 is extended downwardly through the hinge block 15, and the bead 23', extending into the groove of the hinge tab, is clearly visible.

In Figures 10 and 11, it will be noted that the hinge tab has a thinned portion 25 adjacent to its integral connection to the base container, this thinned portion defining a flexure hinge axis for the tab.

It will be evident that the children's lunch box described above is greatly improved compared to known lunch boxes. The basic box consists solely of two members which may be separately, integrally moulded of a plastics material and then hinged together by simple manual insertion of the integrally formed hinge tabs into the slots of the integrally formed hinge blocks.

The entire structure is relatively light, provides for substantially hermetic sealing of food therein, is resistant to rusting, dents and damage if dropped, and is economical to manufacture. Further, as mentioned above, the design is such that the lunch box will easily stand in a vertical position in a stable manner when closed and, when opened, the top of the cover and bottom of the base container are in coplanar relationship to provide stability and to allow the cover and the base container to serve as trays.

Finally, the means for providing a permanent securement of a child's identification to the handle of the box itself avoids the necessity of having to tag the box separately.

While the preferred material of construction for both the base container and the cover is a high density polymeric material such as a polyethylene, other plastics can be used.

CLAIMS

1. A container comprising: a base container having an upper opening and an integrally formed handle, the handle extending forwardly from a first side of the base container below the opening; a cover for closing the upper opening of the base container; and at least one hinge means, the or each hinge means comprising: an integrally formed hinge tab extending from a second side, opposite to said first side of the base container, below the opening; and a hinge block integrally formed on a side of the cover, the block having a slot adapted to receive the hinge tab, the hinge tab having a thin portion adjacent to the integral connection of the tab to the base container so that the tab can flex, the tab of the or each hinge means being provided with a first means integrally formed with the tab and the block of the or each hinge means being provided with second means integrally formed with the block, the first and second means cooperating to retain the tab in the block during normal hinging movements occurring in the opening and closing of the container, the first

both the base container 10 and the cover 14 function when resting on a flat surface as serving trays for contents within the box.

5 In Figure 5, the complete perimeter of the upper opening of the base container 10 defined by the lip 18 is clearly shown. Similarly, the complete perimeter of the step 19 and outer wall 20 for the cover 14 is visible.

10 In Figure 6, the upwardly and outwardly biased positioning of the lip 18, which provides for a pressing and sealing relationship when covered by the corresponding wall portion 20, is evident. The angle of the lip 18 from the vertical is designated A and may be, for example, about eight degrees with a corresponding inward inclination of eight degrees for the inside of the wall 20 of the cover 14. By providing these inclinations with respect to the vertical, the desired pressing and sealing relationship and frictional retaining of the cover on the container all as described in Figure 3 will result.

20 Referring now to the enlarged exploded view of Figure 7, it can be seen that slots 23 and 24 are formed in the hinge blocks 15 and 16, respectively. Also shown are projecting beads 23' and 24' extending from longitudinal edges of the entrance openings of these slots towards the opposite edges. These beads cooperate with corresponding grooves formed on one side of the hinge tabs 12 and 13. One of these grooves is shown at 12' in Figure 8. The beads 23', 24' and the corresponding grooves constitute cooperating means for retaining the hinge tabs within the slots of the hinge blocks once the tabs are assembled therein.

30 The foregoing will be better understood by referring to the enlarged fragmentary perspective views of Figures 8 and 9. Thus, in Figure 8 the longitudinal groove 12' can be seen on the underside of the hinge tab 12. As the hinge tab 12 is inserted in the hinge block 13 to pass into the slot 23, the bead projection 23', as described in Figure 7, will initially be bent over and when the hinge tab 12 is fully inserted as illustrated in Figure 9, this bead will pop into the groove 12' and thus retain the hinge tab in the block 15. However by exerting sufficient manual force, the hinge tab can readily be removed from the block when it is desired to separate the base container completely from the cover.

45 Referring back to the perspective view of Figure 7, it will be noted that each of the hinge tabs 12 and 13 includes a central notch N. This notch permits the side edges of the hinge tabs to squeeze the notch towards a closed position, and thus effectively to narrow the width of the tabs in order to facilitate their insertion into the slots 23 and 24 of the hinge blocks during assembly of the lunch box. When assembling the cover and the base container, a slight tilting is desirable so that a first hinge tab such as 12 is introduced into the slot 23 and then the second hinge tab 13 is introduced into the slot 24. The notches N provide sufficient flexibility to permit the reassembly to be carried out manually without flexing any of the component parts beyond a reasonable amount.

65 Referring now to the cross sections of Figures 10 and 11, the securement of the hinge tab within the

hinge block by means of the bead 23' and the cooperating groove 12' will be evident. In the closed position of the box, as illustrated in Figure 10, it will be noted that the hinge tab 12 passes upwardly through the slot 23 in the block 15, the bead 23' being received or snapped into the corresponding groove 12'.

70 In Figure 11 the cover has been lifted from the top of the base container and swung through 180°. The hinge tab 12 is extended downwardly through the hinge block 15, and the bead 23', extending into the groove of the hinge tab, is clearly visible.

75 In Figures 10 and 11, it will be noted that the hinge tab has a thinned portion 25 adjacent to its integral connection to the base container, this thinned portion defining a flexure hinge axis for the tab.

80 It will be evident that the children's lunch box described above is greatly improved compared to known lunch boxes. The basic box consists solely of two members which may be separately, integrally moulded of a plastics material and then hinged together by simple manual insertion of the integrally formed hinge tabs into the slots of the integrally formed hinge blocks.

85 The entire structure is relatively light, provides for substantially hermetic sealing of food therein, is resistant to rusting, dents and damage if dropped, and is economical to manufacture. Further, as mentioned above, the design is such that the lunch box will easily stand in a vertical position in a stable manner when closed and, when opened, the top of the cover and bottom of the base container are in coplanar relationship to provide stability and to allow the cover and the base container to serve as trays.

100 Finally, the means for providing a permanent securement of a child's identification to the handle of the box itself avoids the necessity of having to tag the box separately.

105 While the preferred material of construction for both the base container and the cover is a high density polymeric material such as a polyethylene, other plastics can be used.

CLAIMS

110 1. A container comprising: a base container having an upper opening and an integrally formed handle, the handle extending forwardly from a first side of the base container below the opening; a cover for closing the upper opening of the base container; and at least one hinge means, the or each hinge means comprising: an integrally formed hinge tab extending from a second side, opposite to said first side of the base container, below the opening; and a hinge block integrally formed on a side of the cover, the block having a slot adapted to receive the hinge tab, the hinge tab having a thin portion adjacent to the integral connection of the tab to the base container so that the tab can flex, the tab of the or each hinge means being provided with a first means integrally formed with the tab and the block of the or each hinge means being provided with second means integrally formed with the block, the first and second means cooperating to retain the tab in the block during normal hinging movements occurring in the opening and closing of the container, the first

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(17)



and second means being manually yieldable to permit removal of the tab from the slot when it is desired to separate physically the cover and the base container.

5 2. A container according to claim 1, in which said second side of the base container is provided with an integrally formed flange extending outwardly at a level below the or each hinge tab, such that when the or each hinge tab is received in the corresponding
10 block and the cover is closed over the base container and the container is placed on a flat surface in a vertical standing position with the handle extending upwardly, the flange and block simultaneously engage said flat surface to stabilize the container in
15 said vertical standing position.

3. A container according to claim 1 or 2, in which the upper opening of the base container is defined by an upwardly and outwardly extending integrally formed peripheral lip, and in which container the
20 cover has a lower opening defined by a peripheral step and an outer wall extending downwardly and inwardly from the step, the step and an inner surface of the outer wall being adapted to engage an upper end and an outer surface respectively of said lip in
25 pressing sealing relationship over substantially the whole periphery of the openings when the step is fully seated on the upper surface of the lip so that the cover is frictionally held in closed sealing relationship on the base container and yet can be manually
30 swung away from the base container to open the container.

4. A container according to any one of claims 1 to 3, in which the handle comprises a depressed area adapted to receive an identification card, the outer
35 wall of the cover having integrally moulded therewith a removable retaining member, the retaining member being received and frictionally retained in the depressed area to hold the identification card in place.

40 5. A container according to any one of the preceding claims in which the cover and the base container are each of such a depth that, when the cover is swung away from the closed position, through 180°, the top of the cover is then coplanar with the
45 bottom of the base container so that both the cover and the base container will engage a flat surface in a stable position, thereby to expose the contents of the container and to function as serving trays.

6. A container according to any one of the preceding claims in which said first means comprises an elongate groove on one side of the hinge tab, said second means comprises a projecting bead extending from one edge of an entrance opening of the slot in the hinge block towards the opposite edge of the
55 entrance opening, the groove being adapted to receive the bead, the bead being sufficiently flexible to bend when the tab is being initially inserted into the slot and then to snap into the groove when the tab is fully inserted thereby to retain the tab in the
60 slot.

7. A container according to claim 2 or any one of the preceding claims, when dependent on claim 2 in which the base container and the cover are generally square shaped with rounded corners, and are
65 integrally moulded from polymeric material therebe-

ing two said hinge means, one hinge tab being adjacent to one corner of the rear side of the base container and the other hinge tab being adjacent to the other rear side corner of the base container, the

70 flange being located centrally of the rear corners at a level below the hinge tabs, each hinge tab portion which is to be received in a hinge block slot being notched such that the width of the tab portion can be decreased slightly by squeezing the notch closed, thereby allowing the tab to fit within the slot when
75 assembling the hinging tabs in the slots.

8. A container substantially as herein described with reference to and as shown in the accompanying drawings.

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