Title: BIN LINER DISPENSER

Abstract: A bin liner dispensing system comprising a receptacle (19) and a bin (10), the receptacle (19) accommodating a number of folded collapsed liners, said liners being formed of a membrane and having a closed end and an open end, the liners being accommodated within the receptacle (19) in an overlying relationship with the open end uppermost, the receptacle having an opening through which the open end of the uppermost liner is accessible, opposed sidewalls (11) of the bin having a set of protrusions (15) in opposed relation to each other and in spaced relation from the base of the bin, the receptacle configured to be supported between the protrusions and the base of the bin to be retained adjacent or at the floor (17) of the bin (10).
"Bin Liner Dispenser"

Field of the Invention

This invention relates to a liner dispenser for a bin.

Background Art

It is common practice to provide liners for garbage bins and like receptacles. In this regard it is conventional practice to insert a new liner into location within the bin on removal of a filled liner. This necessitates the storage of the liners in another location and in installing the liner also it is desirable to ensure that the space between the inner walls of the bin and the liner is minimised.

Disclosure of the Invention

Throughout the specification and claim, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

Throughout the specification and claim, unless the context requires otherwise, the word "bin" shall be taken as an enclosure having a base or floor a support located in spaced relation above the floor for receiving the open end of a liner.

According to one aspect the invention resides in a bin liner dispensing means comprising a receptacle accommodating a number of folded collapsed liners, said liners being formed of a membrane and having closed end and an open end, the liners being accommodated within the receptacle in an overlying relationship with the open end uppermost, the receptacle having an opening through which the open end of the uppermost liner is accessible, a pair of opposed sidewalls of the bin having a set of protrusions in opposed relation to each other and in spaced relation from the base of the bin, the receptacle configured to be supported at
opposed sides between the protrusions and the base of the bin to be retained adjacent or at the base of the bin.

According to another aspect the invention resides in a receptacle intended in use to be located within a bin having a pair of opposed sidewalls having a set of inwardly directed protrusions in opposed relation to each other and in spaced relation from the base of the bin, accommodating a number of folded collapsed liners, said liners being formed of a membrane and having closed end and an open end, the liners being accommodated within the receptacle in an overlying relationship with the open end uppermost, the receptacle having an opening through which the open end of the uppermost liner is accessible, the receptacle configured to be supported between the protrusions and the base of the bin to be retained adjacent or at the base of the bin.

According to another aspect the invention resides in a bin intended in use to accommodate a receptacle accommodating a number of folded collapsed liners, said liners being formed of a membrane and having closed end and an open end, the liners being accommodated within the receptacle in an overlying relationship with the open end uppermost, the receptacle having an opening through which the open end of the uppermost liner is accessible, the bin having a pair of opposed sidewalls having a set of protrusions in opposed relation to each other and in spaced relation from the base of the bin, the receptacle configured to be supported at opposed sides between the protrusions and the base of the bin to be retained adjacent or at the base of the bin.

According to a preferred feature of the invention within the receptacle are interconnected in an end to end relationship with the closed end of each liner being connected to the open end of the most proximate liner below, said interconnection defined by a line of weakness. According to a preferred feature of the invention the liners the opening is closed by a removal closure.

According to a preferred feature of the invention one pair of opposed sides of the receptacle is provided with tabs in opposed relation to each other, said tabs being adapted to be partially separable from the body of the receptacle to be able to be
displaced laterally from the respective side of the receptacle to be able to engage
the protrusions and resist movement of the receptacle away from the base of the
bin. According to a preferred feature of the invention the receptacle has the
configuration of a rectangular prism having an upper and lower wall of the largest
area and in which the area of the upper and lower walls are substantially in
correspondence with the area of the base and wherein the upper and lower walls
are separated by side walls. According to a preferred feature of the invention the
tabs each comprise a portion which can be separated from the upper wall and the
respective side wall but remain connected to the lower wall by a fold line.

According to a preferred feature of the invention the closed end of the lowermost
liner is fixed to the receptacle. According to a preferred feature of the invention
the closed end of the lowermost liner is fixed the receptacle by at least one tape of
like element fixed at one end to the closed end of the lowermost liner and at the
other end to the receptacle. The other end of the tape-like elements are fixed to
the tabs.

According to a preferred feature of the invention the tabs are formed with
extensions which form part of the lower wall of the receptacle and are defined by
a line of weakness whereby the tabs can be separated from the receptacle.

According to a preferred feature of the invention the protrusions are located in
spaced relation from the base of the bin a distance substantially corresponding to
the spacing between the upper and lower walls of the receptacle whereby said
tabs on their displacement will be engaged with the under face of the protrusion.

According to a preferred feature of the invention the opposed side walls are
formed with inwardly directed flutes extending towards the base and terminating
at their lower end in spaced relation from the base whereby the end face of the
flutes define the protrusions. According to a preferred feature of the invention the
opposed faces of the flutes are divergent in the direction of the open face.

According to a preferred feature of the invention the flutes extend from the
protrusions for a portion of the height of the respective side wall. A bin liner
dispensing means as claimed at any one of the preceding claims wherein the bin has a cross-section conforming to a right angled quadrilateral.

According to a preferred feature of the invention the protrusions are provided on the inner face of all side walls.

According to a preferred feature of the invention the receptacle is provided with upstanding ribs on the other sides of the receptacle.

According to a preferred feature of the invention each protrusion is associated with a gusset-like element located to one side of the protrusion at the junction of the respective side wall and the base, said gusset-like element having an inward extent substantially corresponding to the inward extent of the protrusion.

According to a preferred feature of the invention the gusset-like element has a height substantially corresponding to the spacing of the protrusion from the base.

According to a preferred feature of the invention the cross-sectional area of the lower portion of the bin at least substantially corresponds to the cross-section of the receptacle, said protrusions being provided by recesses formed in the side walls, each recess having an upper lateral face which defines the protrusion.

According to a preferred feature of the invention the bin has a substantially circular or oval cross-sectional configuration.

According to a preferred feature of the invention the bin comprises a garbage bin.

The invention will be more fully understood in the light of the following description of two specific embodiments.

**Brief Description of the Drawings**

The description is made with reference to the accompanying drawings of which:

Figure 1 is a sectional isometric view of a garbage bin accommodating a receptacle according to the first embodiment;
Figure 2 is an enlarged sectional view of the base of the garbage bin which illustrates the retention of the receptacle of the first embodiment;

Figure 3 is an isometric view of a receptacle according to the first embodiment in an unopened condition;

Figure 4 is an isometric view of a receptacle according to the first embodiment in the opened condition;

Figure 5 is a sectional isometric view of a garbage bin according to the second embodiment;

Figure 6 is a plan view of a bin according the third embodiment;

Figure 7 is a plan view of an unopened receptacle according the third embodiment;

Figure 8 is a plan view of the unopened receptacle according the third embodiment;

Figure 9 is a sectional perspective view of the bin according the third embodiment;

Figure 10 is a sectional perspective view of the bin according the third embodiment accommodating an opened receptacle according to the third embodiment;

Figure 11 is a sectional perspective view of the bin according the third embodiment accommodating an opened receptacle according to the third embodiment where a bin liner has been extracted from the receptacle and is accommodated within the bin;

Figure 12 is a sectional perspective view of the bin according the third embodiment accommodating an opened receptacle according to the third embodiment where the last bin liner accommodated within the receptacle is in the process of being extracted from the bin;
Figure 13 is a partial sectional isometric view of the base of the bin according to a fourth embodiment of the invention;

Figure 14 is an isometric view of a bin according to a fifth embodiment;

Figure 15 is a partial sectional isometric view of the base of the bin according to a sixth embodiment of the invention;

Figure 16 is an isometric view of a receptacle according to a seventh embodiment;

Figure 197 is an isometric view of a bin according to the eighth embodiment; and

Figure 18 is a top view of the bin according to the eighth embodiment with the top removed.

**Detailed Description of Specific Embodiments**

The first embodiment as shown at Figures 1 to 4 is directed to a means for providing the liners for a garbage bin 10 which improves the convenience in installing such liners into the garbage bin. As shown in Figure 1 the garbage bin according to the embodiment has a generally cubic configuration in which the side walls are slightly divergent. One pair of opposed side walls 11 are provided with inwardly directed flutes 13 which extend for a portion of the height of the side walls and also extend inwardly from the inner face of the side walls. The flutes terminate in spaced relation from the floor 17 of the garbage bin to provide a protrusion in the form of inwardly extending shoulder 14 which is spaced above the floor 17 of the garbage bin. The opposed faces of the flutes are divergent with respect to each other in the direction away from the floor 17 of the bin.

The other pair of side walls are provided with inwardly directed second flutes which extend the full height of the respective side wall and where the second flutes are divergent with respect to each other in the direction away from the floor 17 of the bin.
The garbage bin liners are accommodated within a receptacle 19 formed from cardboard, plastics or a like suitable material. The receptacle and has the configuration of a rectangular prism having an upper wall and a lower wall which have an area generally corresponding to the area of the floor 17 of the garbage bin and where the upper and lower walls are separated by side walls having a width substantially corresponding the spacing of the shoulder 15 from the floor of the garbage bin.

The upper wall 21 of the receptacle is formed with a central opening which is closed by a removable closure panel 23. The closure panel 23 is connected to the upper wall 21 through line of weakness defined by a line of perforations in the upper wall which has a central closure 23 which is capable of being separated from the main body of the receptacle by a line of perforations or the like.

The opening is associated with a pair of tab portions 25 located in opposed relation to either side of the opening and which are defined by a pair of lines of weakness which extend over the upper wall from the opening to the most adjacent side wall and down the side wall to the lower wall. The junction of each tab portion 25 with the lower wall is defined by a fold line. On removal of the closure panel 23 the tab portions can be separated from the upper wall and the side wall and hinged outwardly form the receptacle about the fold line with the lower wall in order that the tabs will extend laterally from the receptacle as shown in Figures 1, 2 and 4 and in so doing lie underneath the respective protrusion as shown. The location of the tabs beneath the protrusion serves to restrain the receptacle from moving upwardly within the bin and away from the floor 17 of the bin.

The receptacle accommodates a stack of folded liners (not shown) which are in the form of plastic bags each having a closed end and an open end and where the closed end of each liner is connected to the open end of the adjacent liner through a line of weakness and the open end of the uppermost liner is uppermost. On removal of the closure panel 23 the open end of the uppermost liner can be grasped and pulled out of the receptacle and when it is fully outside the confines of the receptacle it will pull the next liner from the receptacle.
In use the receptacle with liners contained therein has its closure panel 23 removed. The tab portions 25 are then separated form the upper and side walls displaced laterally and the receptacle is located within the base of the garbage bin to overlie the floor. In this regard the inwardly convergent flutes 13 and the second flutes serve to guide and centralise the receptacle in its passage to the floor of the bin. When the receptacles is in position on the floor of the bin tabs are displaced laterally to extend beyond each side of the receptacle and such that they underlie the shoulders 15 defined by the flutes. Such engagement serves to retain the receptacle in position on the floor 17 of the garbage bin 10.

The uppermost liner is accessible through the opening in the upper wall of the receptacle whereby it can be withdrawn from the receptacle with the open end uppermost and the open end can then installed around the upper rim 27 of the garbage bin. On the liner having been filled with rubbish the filled liner is then lifted from the bin and in so doing the next liner is lifted and raised out of the receptacle 21 such that it can be separated through the line of weakness from the filled liner and the outer edges of its open end be installed around the rim 27 of the garbage bin.

The lowermost liner is fixed to the tab portions 25 such that on the liner being pulled from the bin 10 the tabs are caused to be pulled out of engagement with the shoulders 15 and will be pulled form the bin with the liner. This will then facilitate the location of a fresh receptacle containing a set of liners into the bin. In addition the lower set of liners in a receptacle can be marked or coloured to indicate that the receptacle is approaching empty.

A bin according to the second embodiment is shown at Figure 5 the bin according to the second embodiment is of a generally circular cross section and corresponding components to those of the first embodiment bear the same reference numerals. In all other respects the bin of the second embodiment corresponds to the bin of the first embodiment and interacts with the receptacle accommodating the liners in the same way.
The third embodiment as shown at Figures 6 to 12 is of generally similar form to the first embodiment with the exception that flutes 13 are provided on each of the side walls 11 to provide shoulder 15 at each of the side walls. As a result the same degree of care is not required in placing the receptacle within the bin compared to the first embodiment because it is not necessary to ensure that the receptacle is located in the bin with the tabs 25 in alignment with the flutes 13. However to ensure that the receptacle remains central within the bin and that the "untabbed" sides of the receptacle do not move into a position at which they are received under the shoulder 15 of the adjacent flute 13, the "untabbed" sides of the upper wall 21 of the receptacle are each provided with a raised rib 29. In use the raised rib 29 will prevent the receptacle from moving into a position under the adjacent shoulder. This will facilitate the removal of the empty receptacle from the bin 10.

In locating a new receptacle into the bin the central panel 23 is removed and the tabs 25 are disconnected from the body of the receptacle and are displaced outwardly. The receptacle can then be dropped into the bin with the upper wall uppermost. As a result the ribs 29 will centralise the receptacle while the tabs 25 will become engaged under the adjacent shoulders 15. The uppermost liner can then be extracted from the receptacle and engaged with the bin.

In addition in the case of the third embodiment (however this feature can be applicable to the first and second embodiments as well) and as shown at Figures 11 and 12 the last liner contained by the receptacle is provided with tapes 31 or a like connection means which extend between the lower end of the lowermost liner and the tabs 25. In use on the final liner having been withdrawn form the receptacle and located within the bin and then being removed form the bin, the tapes 31 will pull upon the tabs 25 to pull them inwardly and out of engagement with the shoulder 15 to permit the empty receptacle to be extracted form the bin with the final liner.

The fourth embodiment as shown at Figure 13 is a variation of the third embodiment in that each of the walls of the bin are provided with flutes 13 and the associated protrusion. In addition the interior of the bin is formed with a pair of
gussets 35 to each side of each flute. The gussets lie at the junction of the floor 17 of the bin and the respective side wall and have an inward extent corresponding to that of the flutes and a height corresponding to the height of the receptacle. The function of the gussets is to centralise the receptacle on the floor of the bin and to replicate the function of the ribs 29 of the receptacle of the third embodiment and therefore to eliminate the need for the rib 29.

The fifth embodiment as shown at Figure 14 is a variation of the fourth embodiment in that the gussets 35 are located at each side of the flute 13 to form a lower extension of the sides of the flute 13.

The sixth embodiment of the invention as shown at Figure 16 differs from the previous embodiments in relation to the formation of the protrusion. As shown the side walls of the bin are generally parallel and do not have flutes. At the lower portion of each wall is formed with a recess 37. Each recess is formed by an outward deformation of the side wall and has configuration which defines the protrusion 15 as a downwardly directed planar face which is parallel to the floor and spaced from the floor a distance substantially corresponding to the height of the receptacle. The rear face 39 of the recess is inclined inwardly to terminate at the floor 17. The recess has a lateral extent on each wall which is sufficient to receive the tabs 25 of the receptacle.

The bins of each of the above embodiments may be formed such that they are nestable with bins of corresponding form.

The seventh embodiment of the invention relates to a variation of the receptacle 19 which facilitates its removal with the last liner. As shown in Figure 16 each tab 25 is associated with an extension tab 41 which is formed in the lower wall of the receptacle. Each extension tab is defined by a line of weakness to enable it to be separated from the base when the tab is pulled upwardly by the lowermost liner. In this regard the extension tab is connected to the lower edge of the tab 25 by the fold line between the tab 25 and the lower wall of the receptacle while the tab has width less than that of the tab 25.
The eighth embodiment of the invention and as shown at Figures 17 and 18 comprises is a variation of the bin according fourth embodiment of Figure 13 with the exception that the bin is a double bin 10 in order that the rubbish to be located into the bin can be sorted as to type (i.e. wet waste, recyclable, plastic, paper and the like). In addition each portion of the bin is rectangular in cross-section and is provided with flutes on the narrower sides of the bin. In addition the bin is associated with a removable lid 51 having a closure 53. In addition the bin is formed such that it is nestable with bins of corresponding form once the lid 51 has been removed.

According to another embodiment, the form of the bin can comprise an enclosure which is to be located at a check-out station or a like situation of a retail outlet and the liners can comprise plastic shopping bags whereby the shop assistant is able to sequentially extract a shopping bag form the receptacle and fix it to the support to be filled with purchases.

According to an alternative embodiment the receptacle is accommodated in a drawer or a like element provided in the lower end of the bin, whereby the drawer is capable of being pulled outwardly to expose the upper face and in order that a receptacle can be inserted into the drawer or removed form the drawer to be replaced by another. On the drawer being pushed back into place the liners accommodated in the receptacle will then be accessible from within the bin.

According to alternative embodiments the bin comprises garbage bins which are intended for use in roadside collections, or rubbish bins which are located in parks along footpaths roadways and the like, or any other form of bin which is intended to receive waste, garbage or rubbish and which needs to be periodically emptied. In this regard the shape of the bin can be varied as required to meet the desired design characteristics of the site.

According to alternative embodiments of the invention the receptacle is formed of a metal which is corrosion resistant or has been treated to be corrosion resistant, wood or a suitable composite material or a like material.
The present invention is not to be limited in scope by any of the specific embodiments described herein. These embodiments are intended for the purpose of exemplification only. Functionally equivalent products, elements and methods are clearly within the scope of the invention as described herein.
Claim

The claims defining the Invention are as follows:

1. A bin liner dispensing means comprising a receptacle accommodating a number of folded collapsed liners, said liners being formed of a membrane and having closed end and an open end, the liners being accommodated within the receptacle in an overlying relationship with the open end uppermost, the receptacle having an opening through which the open end of the uppermost liner is accessible, a pair of opposed sidewalls of the bin having a set of protrusions in opposed relation to each other and in spaced relation from the base of the bin, the receptacle configured to be supported at opposed sides between the protrusions and the base of the bin to be retained adjacent or at the base of the bin.

2. A bin liner dispensing means as claimed at claim 1 wherein the liners within the receptacle are interconnected in an end to end relationship with the closed end of each liner being connected to the open end of the most proximate liner below, said interconnection defined by a line of weakness.

3. A bin liner dispensing means as claimed at claim 1 or 2 wherein the opening is closed by a removal closure.

4. A bin liner dispensing means as claimed at claim 1 or 2 or 3 wherein one pair of opposed sides of the receptacle is provided with tabs in opposed relation to each other, said tabs being adapted to be partially separable from the body of the receptacle to be able to be displaced laterally from the respective side of the receptacle to be able to engage the protrusions and resist movement of the receptacle away from the base of the bin.

5. A bin liner dispensing means as claimed at claim 4 wherein the receptacle has the configuration of a rectangular prism having an upper and lower wall of the largest area and in which the area of the upper and lower walls are
substantially in correspondence with the area of the base and wherein the upper and lower walls are separated by side walls.

6. A bin liner dispensing means as claimed at claim 5 wherein the tabs each comprise a portion which can be separated from the upper wall and the respective side wall but remain connected to the lower wall by a fold line.

7. A bin liner dispensing means as claimed at any one of claims 1 to 6 wherein the closed end of the lowermost liner is fixed to the receptacle.

8. A liner dispensing means as claimed at claim 8 wherein the closed end of the lowermost liner is fixed the receptacle by at least one tape of like element fixed at one end to the closed end of the lowermost liner and at the other end to the receptacle.

9. A bin liner dispensing means as claimed at claim 8 as dependant from any one of claims 4 to 7 wherein the other end of the tape-like elements are fixed to the tabs.

10. A bin liner dispensing means as claimed at claimed 9 wherein the tabs are formed with extensions which form part of the lower wall of the receptacle and are defined by a line of weakness whereby the tabs can be separated from the receptacle.

11. A bin liner dispensing means as claimed at claim 5 or 6 wherein the protrusions are located in spaced relation from the base of the bin a distance substantially corresponding to the spacing between the upper and lower walls of the receptacle whereby said tabs on their displacement will be engaged with the under face of the protrusion.

12. A bin liner dispensing means as claimed at claim 11 wherein the opposed side walls are formed with inwardly directed flutes extending towards the base and terminating at their lower end in spaced relation from the base whereby the end face of the flutes define the protrusions.
13. A bin liner dispensing means as claimed at claim 12 wherein the opposed faces of the flutes are divergent in the direction of the open face.

14. A bin liner dispensing means as claimed at claim 12 or 13 wherein the flutes extend from the protrusions for a portion of the height of the respective side wall.

15. A bin liner dispensing means as claimed at any one of the preceding claims wherein the bin has a cross-section conforming to a right angled quadrilateral.

16. A bin liner dispensing means as claimed at claim 15 wherein the protrusions are provided on the inner face of all side walls.

17. A bin liner dispensing means as claimed at claim 16 as dependant from any one of claims 5, 6, 9 and 10 wherein the receptacle is provided with upstanding ribs on the other sides of the receptacle.

18. A bin liner dispensing means as claimed at claim 16 wherein each protrusion is associated with a gusset-like element located to one side of the protrusion at the junction of the respective side wall and the base, said gusset-like element having an inward extent substantially corresponding to the inward extent of the protrusion.

19. A bin liner dispensing means as claimed at claim 18 wherein the gusset-like element has a height substantially corresponding to the spacing of the protrusion from the base.

20. A bin liner dispensing means as claimed at claim 4 or any one of claims 5 to 11 which are dependant from claim 4 wherein the cross-sectional area of the lower portion of the bin at least substantially corresponds to the cross-section of the receptacle, said protrusions being provided by recesses formed in the side walls, each recess having an upper lateral face which defines the protrusion.
21. A bin liner dispensing means as claimed at any one of claims 1 to 10 wherein the bin has a substantially circular or oval cross-sectional configuration.

22. A bin liner dispensing means as claimed at any one of the preceding claims wherein the bin comprises a garbage bin.

23. A bin liner dispensing means substantially as herein described with reference to the accompanying drawings.

24. A receptacle intended in use to be located within a bin having a pair of opposed sidewalls having a set of inwardly directed protrusions in opposed relation to each other and in spaced relation from the base of the bin, accommodating a number of folded collapsed liners, said liners being formed of a membrane and having closed end and an open end, the liners being accommodated within the receptacle in an overlying relationship with the open end uppermost, the receptacle having an opening through which the open end of the uppermost liner is accessible, the receptacle configured to be supported between the protrusions and the base of the bin to be retained adjacent or at the base of the bin.

25. A receptacle as claimed at claim 24 wherein the liners within the receptacle are interconnected in an end to end relationship with the closed end of each liner being connected to the open end of the most proximate liner below, said interconnection defined by a line of weakness.

26. A receptacle as claimed at claim 24 or 25 wherein the opening is closed by a removal closure.

27. A receptacle as claimed at claim 24 or 25 or 26 wherein one pair of opposed sides of the receptacle is provided with tabs in opposed relation to each other, said tabs being adapted to be partially separable from the body of the receptacle to be able to be displaced laterally from the respective side of the
receptacle to be able to engage the protrusions and resist movement of the receptacle away from the base of the bin.

28. A receptacle as claimed at claim 27 wherein the receptacle has the configuration of a rectangular prism having an upper and lower wall of the largest area and in which the area of the upper and lower walls are substantially in correspondence with the area of the base and wherein the upper and lower walls are separated by side walls.

29. A receptacle as claimed at claim 28 wherein the tabs each comprise a portion which can be separated from the upper wall and the respective side wall but remain connected to the lower wall by a fold line.

30. A receptacle as claimed at any one of claims 24 to 29 wherein the closed end of the lowermost liner is fixed to the receptacle.

31. A receptacle as claimed at claim 30 wherein the closed end of the lowermost liner is fixed the receptacle by at least one tape of like element fixed at one end to the closed end of the lowermost liner and at the other end to the receptacle.

32. A receptacle as claimed at claim 30 wherein as dependant from any one of claims 27 to 29 wherein the other end of the tape-like elements are fixed to the tabs.

33. A receptacle as claimed at claim 32 wherein the tabs are formed with extensions which form part of the lower wall of the receptacle and are defined by a line of weakness whereby the tabs can be separated from the receptacle.

34. A receptacle as claimed at claim 27 and any one of claims 28 to 33 dependant from claim 27 wherein the receptacle is provided with upstanding ribs on the other sides of the receptacle.
35. A receptacle substantially as herein described with reference to the accompanying drawings.

36. A bin intended in use to accommodate a receptacle accommodating a number of folded collapsed liners, said liners being formed of a membrane and having closed end and an open end, the liners being accommodated within the receptacle in an overlying relationship with the open end uppermost, the receptacle having an opening through which the open end of the uppermost liner is accessible, the bin having a pair of opposed sidewalls having a set of protrusions in opposed relation to each other and in spaced relation from the base of the bin, the receptacle configured to be supported at opposed sides between the protrusions and the base of the bin to be retained adjacent or at the base of the bin.

37. A bin as claimed at claim 35 wherein the protrusions are located in spaced relation from the base of the bin a distance substantially corresponding to the spacing between the upper and lower walls of the receptacle whereby said tabs on their displacement will be engaged with the under face of the protrusion.

38. A bin as claimed at claim 35 or 36 wherein the opposed side walls are formed with inwardly directed flutes extending towards the base and terminating at their lower end in spaced relation from the base whereby the end face of the flutes define the protrusions.

39. A bin claimed at claim 37 wherein the opposed faces of the flutes are divergent in the direction of the open face.

40. A bin as claimed at claim 37 or 38 wherein the flutes extend from the protrusions for a portion of the height of the respective side wall.

41. A bin as claimed at any one of claims 35 to 39 wherein the bin has a cross-section conforming to a right angled quadrilateral.
42. A bin as claimed at claim 40 wherein the protrusions are provided on the inner face of all side walls.

43. A bin as claimed at claim 41 wherein each protrusion is associated with a gusset-like element located to one side of the protrusion at the junction of the respective side wall and the base, said gusset-like element having an inward extent substantially corresponding to the inward extent of the protrusion.

44. A bin as claimed at claim 42 wherein the gusset-like element has a height substantially corresponding to the spacing of the protrusion from the base.

45. A bin as claimed at any one of claims 41 to 43 wherein the cross-sectional area of the lower portion of the bin at least substantially corresponds to the cross-section of the receptacle, said protrusions being provided by recesses formed in the side walls, each recess having an upper lateral face which defines the protrusion.

46. A bin as claimed at any one of claims 35 to 39 wherein the bin has a substantially circular or oval cross-sectional configuration.

47. A as claimed at any one of claims 35 to 45 wherein the bin comprises a garbage bin.

48. A bin substantially as herein described with reference to the accompanying drawings.

49. A bin liner dispensing system substantially as herein described with reference to the accompanying drawings.
Diagram 5.
Fig. 17.
### INTERNATIONAL SEARCH REPORT

**International application No.**

PCT/AU2008/000652

#### A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

- **B65F 1/06 (2006.01)**
- **B65D 83/08 (2006.01)**
- **B65F 1/14 (2006.01)**
- **B65D 30/20 (2006.01)**
- **B65D 90/04 (2006.01)**

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

**DWPI -IP C B65F 1/- & keywords:** liner, bag, insert, dispenser, supply, retain, restrain, engage and like terms.

#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>X</td>
<td>US 4721226 A (YURKO) 26 January 1988 Figures 1, 2, column 2 lines 18-61.</td>
<td>1-3, 7-10, 15-17, 21-22</td>
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<td>X</td>
<td>US 4850507 A (LEMONGELLI et al.) 25 July 1989 Figures 5-7 and column 2 line 15 - column 3 line 48</td>
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[X] Further documents are listed in the continuation of Box C  
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lafter document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

-X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

-Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

-S document member of the same patent family

<table>
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Name and mailing address of the ISA/AU

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SHUIWEI XIE

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**INTERNATIONAL SEARCH REPORT**

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. **Claims Nos.:**
   - L
   - because they relate to subject matter not required to be searched by this Authority, namely:

2. **Claims Nos.: 24-48**
   - X
   - because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
   - These claims are not supported by the description. The inventive concept is only present when the receptacle is in situ in the bin. The separate claims to the bin only (claims 36-48) and to the receptacle only (claims 24-35) are simply claims directed to pieces of a kit where the working interrelationship is only present when the pieces of the kit are assembled as a working combination.

3. **Claims Nos.:**
   - because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. **As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.**
2. **As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.**
3. **As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:**
4. **No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:**

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.
# DOCUMENTS CONSIDERED TO BE RELEVANT

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX