United States Patent

Harris

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[54] **CONTAINER AND METHOD FOR DISPENSING ARTICLES**

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[52] **U.S. Cl.** .....**229/17 RS,** 229/51 D, 206/57 R

[51] **Int. Cl.**.....**B65d 5/54,** B65d 85/62

[58] **Field of Search**.....229/175, 36, 51 TC, 51 D, 52 A, 229/52 AM; 206/57 R

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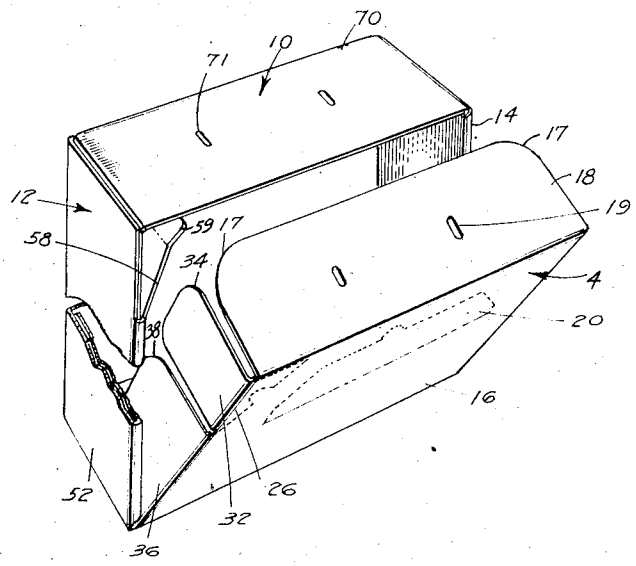
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[57] **ABSTRACT**

A container and method for storing and/or dispensing articles, such as bags or the like. The container includes a compartment for holding a plurality of interfolded bags and a cover member closeable over the compartment which has a window-like opening for removal of the bags. A bridge-like abutment member is angularly disposed interiorly of the compartment for biasing selective folded corner portions of the bags outwardly for dispensing one-at-a-time from the container.

The method includes progressively folding a plurality of superimposed stacked bags in a predetermined symmetric pattern so that one of the corners of the bags contains only folded portions that can be disposed in abutting engagement with the bridge-like member of the container for subsequent dispensing of the bags therefrom.

13 Claims, 9 Drawing Figures



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SHEET 1 OF 3

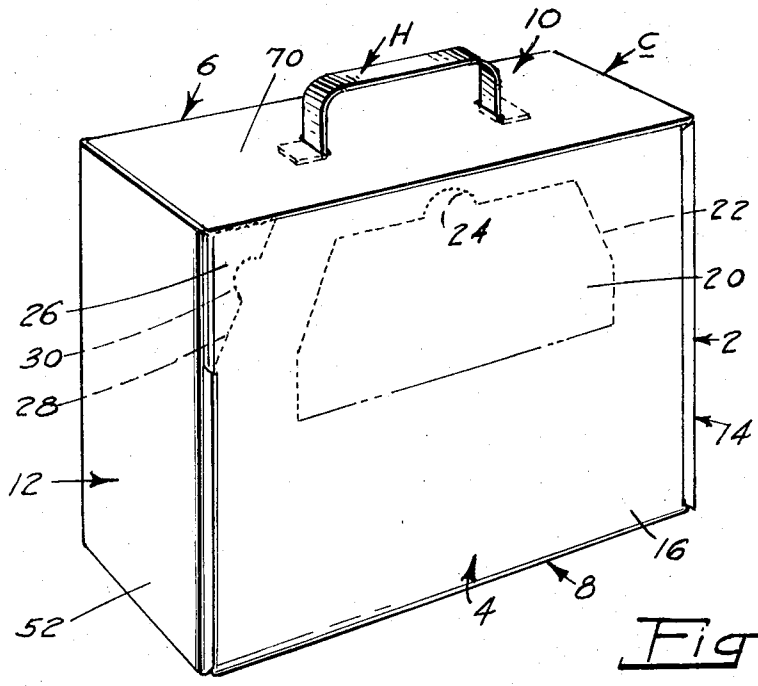


Fig 1

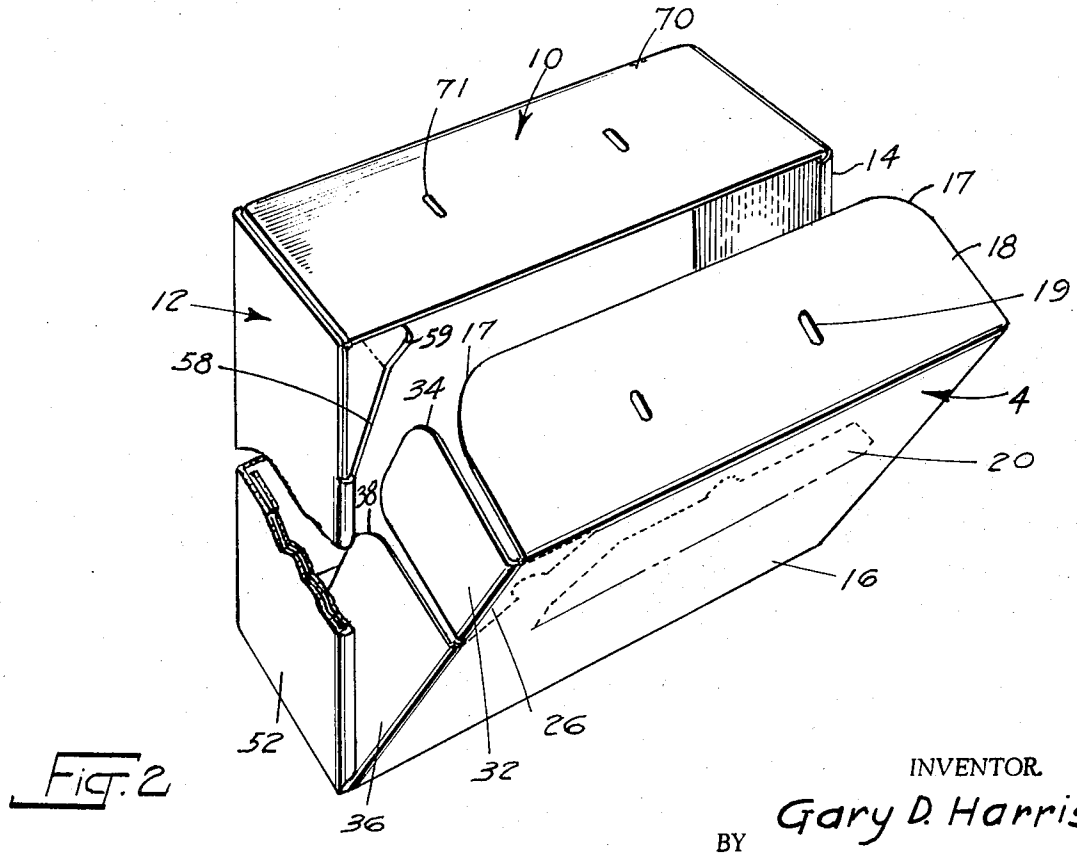


Fig. 2

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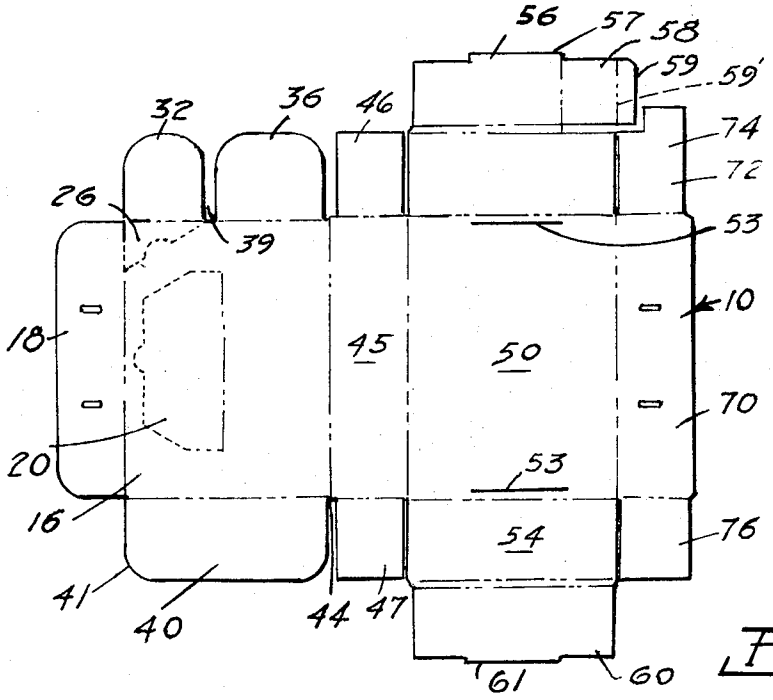


Fig. 3

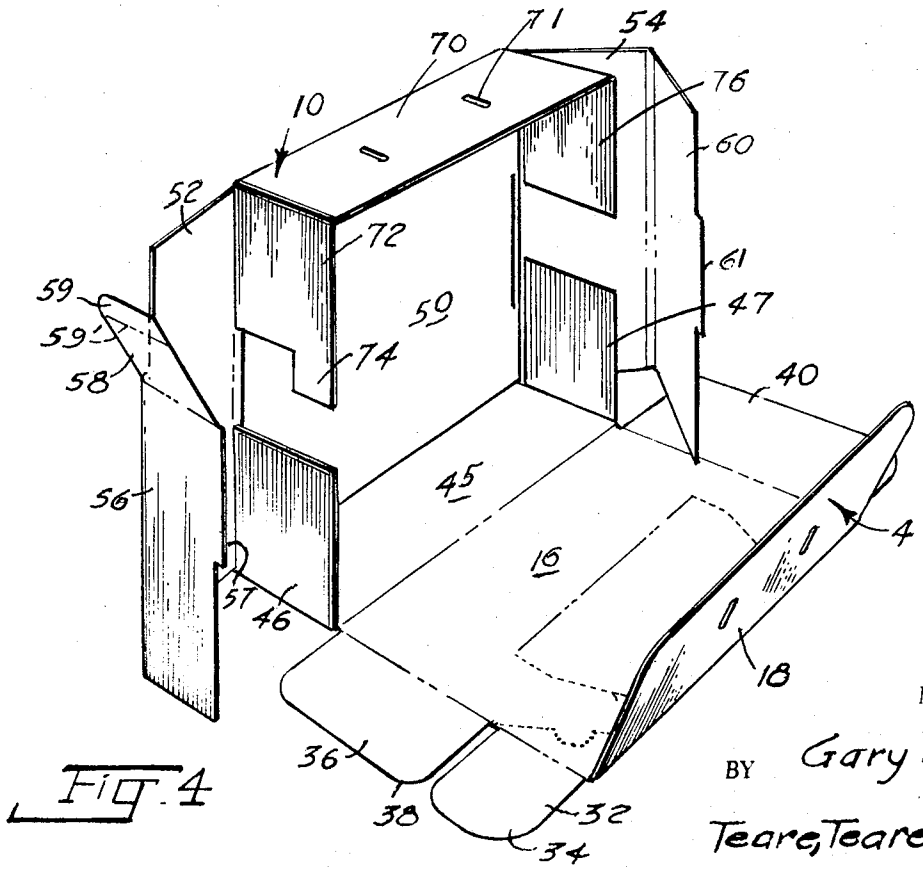


Fig. 4

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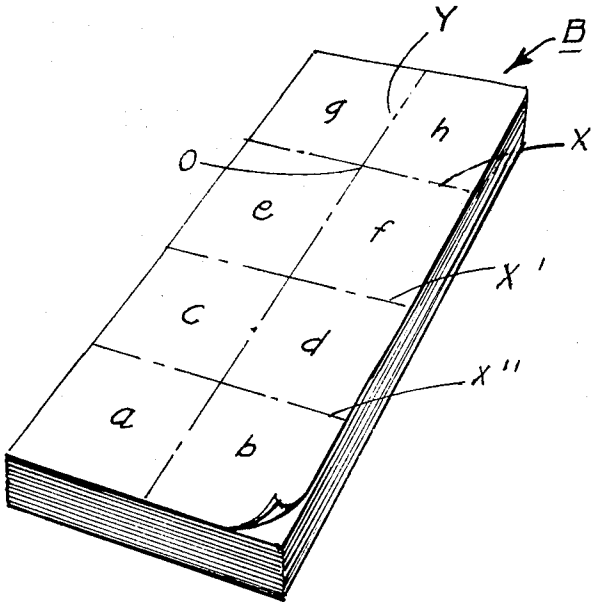


Fig. 5

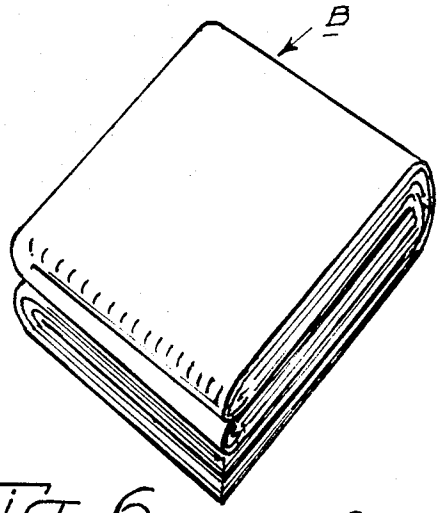


Fig 6

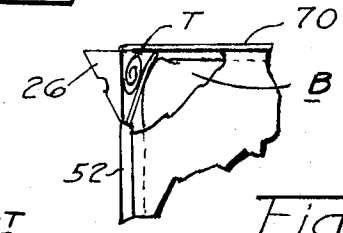


Fig. 7

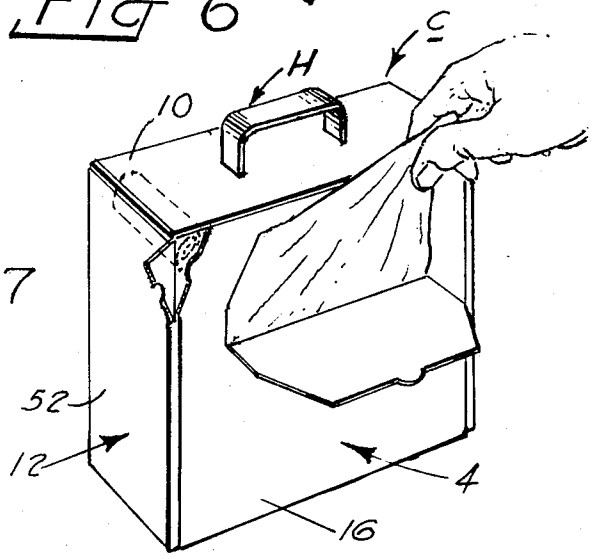


Fig. 9

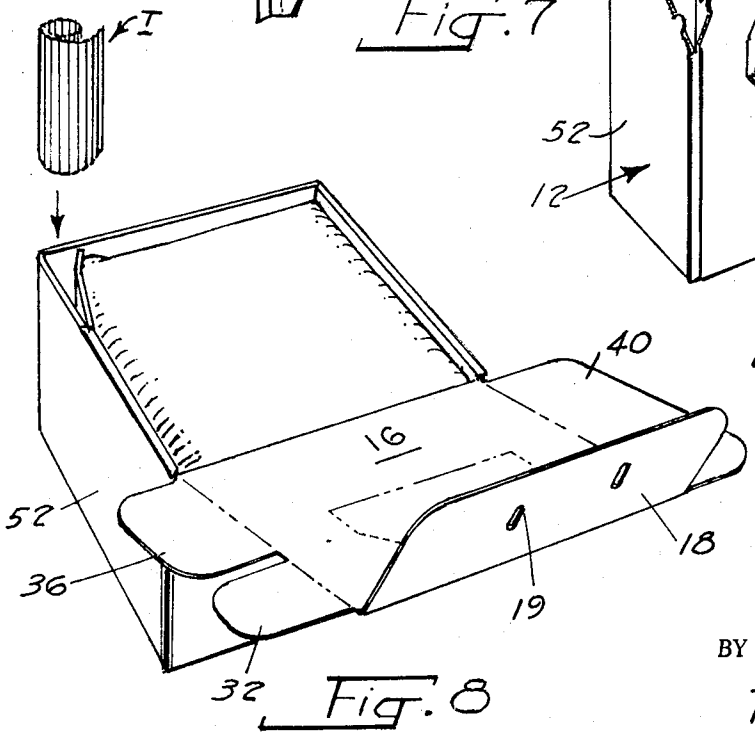


Fig. 8

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CONTAINER AND METHOD FOR DISPENSING ARTICLES

BACKGROUND OF THE INVENTION

This invention relates in general to a container device and method for dispensing articles, and more particularly relates to an improved construction for a container and to a method for storing and/or dispensing articles, such as bags or the like, from the container. The invention has particular application for storing and/or dispensing disposable bags made from a flexible polymeric material of the type for use as bags and/or lines for the removal of refuse, such as garbage, leaves, grass clippings and the like.

Heretofore, it has been known to dispense plastic bags from containers for use as lines in handling refuse, such as in trash cans or the like. Such bags have been of an open ended construction adapted to be closed by twist ties or the like for storing the refuse prior to ultimate disposal thereof. However, such prior container devices and/or methods have not been entirely satisfactory and have presented difficulties. One of the difficulties has been that of removing one bag at a time without disturbing the stacked relationship of the remaining bags. For example, if the remaining bags are severely disturbed or disoriented, it becomes extremely difficult to easily remove the next successive bag, particularly when the container is tightly packed with bags. Since the bags are generally made from a lightweight plastic material, it is important that the bags be easily removed one-at-a-time without having to apply extreme force so as to prevent damage and/or destruction to the bags during removal thereof. Another difficulty has resided in the belief that it was not feasible to machine fold a plurality of stacked bags simultaneously so that all of the interfolded bags could be easily placed, as a unit, in the container. In prior methods, the bags are generally first each individually folded and then stacked together for placement in the container. This is not only a costly and time consuming practice, but also fails to afford an optimum interfolded relationship of the bags for subsequent dispensing one-at-a-time from the container by simple manual manipulation. In addition, the prior container or dispensing devices have not incorporated a construction which is relatively simple and inexpensive to produce, yet which enables the user to dispense a plurality of bags one-at-a-time without disturbing and/or interfering with the orientation of the remaining bags in the container.

SUMMARY OF THE INVENTION

The present invention relates to a container and method for storing and/or dispensing a plurality of flexible bags. The container generally comprises a base member having a back and a plurality of interconnected sides extending outwardly from said back to define a compartment for storing a plurality of flexible bags in stacked relation therein, a cover member is pivotally connected to one of said sides adapted for selective closing relation over said compartment, said cover member including a door member pivotally connected thereto adapted to define a window-like opening to provide ingress and egress to said compartment, and a bridging member extends angularly between certain of said sides adapted to engageably abut certain selective portions of said bags to enable said bags to be dispensed one-at-a-time through the window-like opening in said cover member.

The method for folding the bags comprises stacking a plurality of bags in superimposed relation, progressively folding all of the stacked bags, first by folding the bags over in one transverse direction, second by folding the bags over in an opposite transverse direction, and third by folding the bags over again in a transverse direction corresponding to said first mentioned transverse direction so that one corner of the interfolded bags contains only folded portions of the bags, which corner then can be placed adjacent the bridging member interiorly of the compartment for biasing the corner portions of the bags outwardly to facilitate their dispensing one-at-a-time from the container, as aforesaid.

By the foregoing arrangement and accompanying drawings, it will be seen that the present invention provides a novel method and improved construction of a container for storing and/or dispensing articles, such as bags or the like, for use in handling refuse materials. The container is of a simple, yet rugged construction which can be made from a single blank of material requiring no gluing, stapling or other auxiliary fastening means for attaching the parts together. The container is constructed and arranged so that a plurality of stacked and interfolded bags can be dispenses therefrom one-at-a-time without disturbing or interfering with the orientation of the remaining bags so that the bags can be quickly and easily dispensed from the first to the last with a minimum time and effort. The method of the invention enables a plurality of bags, such as 50 in number, to be stacked in superimposed relation on one another and then all progressively and simultaneously folded in accordance with the predetermined symmetric pattern of the present invention. By this arrangement, all the bags can be stacked and simultaneously machine folded without the requirement to individually fold and then stack each of the folded bags as has been encountered in prior art methods.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a generally perspective view of the container device of the invention;

FIG. 2 is a fragmentary, generally perspective view of the container device of the invention showing the front cover member in a partially open position;

FIG. 3 is a top plan view, on reduced scale, showing a single blank from which the container device of the present invention may be fabricated;

FIG. 4 is a generally perspective view showing the single blank illustrated in FIG. 3 in partially assembled position to provide the container device of the invention;

FIG. 5 is a generally perspective view illustrating a plurality of bags in superimposed stacked relation with one another;

FIG. 6 is a generally perspective view illustrating the stacked bags of FIG. 5 after they have been progressively interfolded in accordance with the method of the invention;

FIG. 7 is a fragmentary elevation view, on an enlarged scale, illustrating the bridging member construction and compartment for receiving twist ties for tying the open ends of the bags together;

FIG. 8 is a generally perspective view illustrating the container with the cover member in open position with the interfolded bags of FIG. 6 stored therein, and showing a strip of twist ties ready for insertion into one of the compartments in the container; and

FIG. 9 is a generally perspective view illustrating the manner in which the outermost bag may be manually grasped for removal through the window-like opening of the container.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring again to the drawings, and particularly to FIGS. 1, 6 and 8 thereof, there is illustrated the container of the invention, designated generally at C, adapted to receive a plurality of stacked interfolded bags, designated generally at B, for dispensing one-at-a-time from the container. The container also is constructed and arranged to receive a strip of twist ties T for closing the open ends of the bags upon use thereof.

As best seen in FIGS. 1 and 2, the container generally includes a base member 2 having a pivotally mounted cover member 4. The base member 2 includes a back member 6, a bottom member 8, a top member 10 and a pair of side end members 12 and 14 which are fabricated together from a single blank (FIG. 3) to define a compartment within the container for storing a plurality of interfolded bags B.

As best seen in FIGS. 1—3, the cover member 4 includes a wing-like member 16 pivotally connected to the bottom member 8 adjacent its lower marginal edge. The wing-like member 16 includes an integral flap 18 pivoted thereto and having rounded corner portions, as at 17, adapted to be seated in interfitting relation below the top member 10. The flap 18 is provided with a pair of slots 19 so as to accommodate a removable handle H so that the container can be portably carried by the user. In the form shown, the wing-like member 16 includes a door member 20 formed from the material thereof and cut-out along the perforated line, as at 22, so that the door 20 can be pulled out via the perforated finger tab 24 to provide ingress and egress to the interior of the container. As best seen in FIG. 3, the hinged or pivotal connection of the door 20 to the wing-like member 16 is preferably disposed along a line containing its geometric center or slightly above such center. Upon pulling out of the door 20, there is defined a cut-out window-like opening of polygonal shape. In the form shown, the opening is of an irregular hexagon defined along the perforated line 22 to facilitate removal of the bags from the interior of the container.

In the invention, the wing-like member 16 is further provided with another hinged or pivoted door member 26 defined by the perforated line 28 which includes a perforated finger tab 30 to enable the door 26 to be pulled upwardly and outwardly, as best seen in FIGS. 1 and 7. By this arrangement, there is provided access to another compartment provided interiorly of the container adapted to receive a strip of twist ties T, and for biasing certain folded corner portions of the bags B outwardly, as will hereinafter be more fully described.

The wing-like member 16 further includes a pair of spaced side flaps 32 and 36 having rounded corner portions respectively, as at 34 and 38, on one side thereof with a single pivoted flap 40 rounded, as at 41, on the other side thereof. Such dual and single flap construction together with the top flap 18 enables the cover member 4 to be engageably locked with the base member 2 in the closed position thereof.

As best seen in FIGS. 1, 3 and 4, the bottom member 4 defines one of the sides 45 of the base member 2. The side 45 includes a pair of oppositely disposed pivotal flaps 46 and 47 adapted to be folded upwardly at right angles therefrom (FIG. 4) and which are spaced, as at 44, from the respective flaps 36 and 40 of the wing-like member 16. The back member 6 includes a back side 50 having a pair of oppositely disposed integral side flaps 52 and 54 hinged or pivoted thereto. The side flap 52 has an integral inner portion 56 hinged thereto having a terminal edge tab 57 adapted to be received in a corresponding slit 53 provided in the back side 50, as best seen in FIG. 3. In the invention, the inner portion 56 has an integral bridging member 58 pivotally connected thereto. The bridging member 58 terminates in a flap portion 59 provided by a perforated line, as at 59' FIG. 4, for coacting sliding engagement with the confronting interior surface of the top member 10. The other flap 54 includes an inner portion 60 pivotally connected thereto which also has a marginal edge tab 61 adapted to be interlockably inserted within the slit 53 provided in the back side 50.

The top member 10 includes a top side 70 having an integral pivotally connected flap 72 at one end which flap includes a finger-like projection 74 (FIG. 3) to define the generally L-shaped configuration shown. The top side 70 is provided at its other end with another flap 76 corresponding in shape generally to that of flaps 46 and 47 of the bottom side 45.

To assemble the container and commencing with the single blank illustrated in FIG. 3, the bottom and top sides 45 and 70 are simply folded up at right angles to the back side 50 with the respective flaps 46, 47, 72 and 76 folded up at right angles to the respective sides 45 and 70 so as to be in generally parallel alignment with one another. The side flaps 52 and 54 are then folded over the aligned flaps 46, 47, 72 and 76 so that the inner portions 56 and 60 are disposed interiorly over the aforementioned flaps so that the tabs 57 and 61 may be inserted into the slits 53 to provide a double sidewall construction for the base member 2. The cover member 4 is then pivoted upwardly or in a counterclockwise direction, as viewed in FIG. 2, so that its corresponding flaps 32, 36 and 40 are disposed interiorly within the base member for bearing engagement against the confronting surfaces provided by the flap portions 56 and 60 of the double side wall construction. Since the bridging member 58 is angularly disposed so as to extend upwardly and outwardly from the side member 12 (FIG. 2), the flap 32 will be accommodated behind the bridging member 58 for bearing engagement against the confronting interior surface of the flap 52 (FIG. 4) while the flap 36 bears against the confronting surface of the inner flap portion 56. Moreover, a space 39 (FIG. 3) is provided between the respective flaps 32 and 36 so as to accommodate the thickness of the bridging member 58 generally adjacent its pivotal juncture with the inner flap portion 56.

In the invention, the bridging member 58 is preferably angularly disposed in inclined relation relative to the side member 12 by an amount sufficient to

provide an outward biasing force on certain selective interfolded corner portions of the bags B. In the form shown, the bridging member **58** is preferably fixedly connected at one end to the inner portion **56** of the flap **52** and is free for movement adjacent its outer end. By this arrangement, the terminal end portion **59** of the bridging member **58** is capable of coacting sliding movement along the confronting interior surface of the top member **10** so as to accommodate and/or to automatically adjust for variations in the sizes of bags disposed within the main compartment of the container. Further, the angular disposition of the bridging member **58** provides a prismatic compartment within the main compartment adapted to receive a strip of twist ties T or the like.

In the invention, the bags are preferably made of a flexible polymeric material, such as polyethylene or the like, which are open at one end. For example, the bags may be 2 feet 9 inches wide and 3 feet 4 inches in length so as to accommodate trash cans, barrels or the like having a capacity of approximately 32 gallons. In such case, the container C would accommodate approximately 50 bags. It is to be understood, however, that any size container may be provided to accommodate any size and/or number of bags within the operating limits desired. Also, the bags may be of any conventional shape, but are preferably of a polygonal shape, such as rectangular, square and the like.

In carrying out the method of the invention and referring to FIGS. **5—9** of the drawings, a plurality of bags are first stacked in superimposed relation within respect to one another with their respective edges in parallel alignment. Thus stacked and in the case of rectangular shaped bags, there is provided transverse and longitudinal imaginary median lines represented by the reference characters X, X′, X″ and Y. Such median lines divide the polygonal surface presented by the stacked bags into quadrant areas *a—h*, as shown. The superimposed bags are then progressively interfolded by first folding the bags in half on the transverse median line X′ so that the edges which form the bottoms of the bags are superimposed upon the edges which form the tops of the bags. This would place the quadrant areas *a—d* in juxtaposed relation with respect to the quadrant areas *e—h*. The bags are then folded on the longitudinal median line Y which superimposes one side edge of the bags upon the opposite side edge of the bags. This places quadrant areas *a* and *c* in juxtaposed relation with quadrant areas *b* and *d* respectively. The bags are then again folded on the transverse median line X′ which superimposes folded edges upon the open edges of the bags. This places quadrant area *f* in juxtaposed relation with respect to quadrant area *h*. In this manner, the corner provided by the third fold, as at O, is common to and contains all the folded portions of the bags. Thus interfolded, the bags B are then inserted into the compartment of the container C with the corner O adjacent the bridging member **58**. The bridging member **58** then acts to bias the folded corner outwardly in a direction toward the cover member **4** so that the portion of the outermost exposed bag can be taken between the thumb and forefinger, for example, and pulled out of the stack without disturbing the orientation of the remaining bags within the container. This procedure may then be repeated until all of the bags have been extracted from the container for ultimate usage.

I claim

1. A container for storing and/or dispensing a plurality of flexible bags comprising,

a base member having a back and a plurality of interconnected sides extending outwardly from said back to define a compartment for storing a plurality of flexible bags in stacked relation therein,

a cover member pivotally connected to one of said sides adapted for selective closing relation over said compartment,

said cover member including a door member pivotally connected thereto adapted to define a window-like opening to provide ingress and egress to said compartment, and

a bridging member disposed interiorly of said compartment and extending angularly between certain of said sides and inwardly of their juncture.

2. A container in accordance with claim **1**, wherein

said bridging member has a widthwise dimension generally corresponding to that of said sides to define another compartment of generally prismatic construction within said first mentioned compartment adapted to receive ties or the like for use with said bags.

3. A container in accordance with claim **1**, wherein

said bridging member is inclined at an angle with respect to the associated sides sufficient to hold certain folded portions of the bags in an outwardly biased relation generally in the direction toward said cover member.

4. A container in accordance with claim **2**, wherein

said cover member includes another door member pivotally connected thereto to define another window-like opening to provide ingress and egress to said other compartment.

5. A container in accordance with claim **1**, wherein

said bridging member is fixedly connected at one end to a respective one of said sides and is free for movement at its other end adapted for bearing coacting engagement with the confronting surface of the other respective adjacent of said sides.

6. A container in accordance with claim **5**, wherein

said bridging member has a perforated line means extending transversely adjacent the free end thereof to define a yieldable terminal end portion adapted for sliding coacting engagement with the confronting surface of a respective one of said sides in response to force applied to said bridging member by said bags.

7. A container in accordance with claim **1**, wherein

said cover member is pivotally connected to a respective one of said sides adjacent the end remote from said bridging member, and

said door member being disposed to pivot outwardly in the same general direction as said cover member.

8. A container in accordance with claim **7**, wherein

said door member is of a polygonal construction pivotally connected at one end to said cover member, and wherein

perforation line means detachably connect the remaining periphery of said door member to said cover member.

9. A container in accordance with claim **7**, wherein

said cover member includes a pivotal top flap member and a pair of pivotal side flap sections adapted to be folded upwardly for seating engagement interiorly of the sides of said compartment in the closed position of said cover member.

10. A container in accordance with claim **9**, wherein

one of said side flap sections includes a pair of spaced flap portions adapted to be folded upwardly for seating engagement interiorly of a respective one of the sides of said compartment on opposite sides of said bridging member in the closed position of said cover member.

11. A container in accordance with claim **1**, wherein

said base member includes two pair of opposed sides which together define a polygonal configuration,

one pair of said sides being of a single-wall construction and the other pair of said sides being of a multiple-wall construction, and

said bridging member made integral at one end with the multiple-wall construction of one of the sides of said pair.

12. A container in accordance with claim **11**, wherein

one of said multiple-wall constructions includes a pair of flap members made integral therewith and folded inwardly from the respective sides of said single-wall constructions,

a flap member having inner and outer portions integral with said back and folded around said pair of flaps, and

said bridging member being a continuation of said inner portion.

13. A container in accordance with claim **12**, wherein

said other multiple-wall construction includes a pair of flaps folded inwardly from the respective sides of said single wall constructions, and

a flap member having inner and outer portions integral with said back and folded over said pair of flaps.

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