June 29, 1965 A. M. WHITE ETAL 3,191,798

LINED WASTE CONTAINER

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Fig. 1

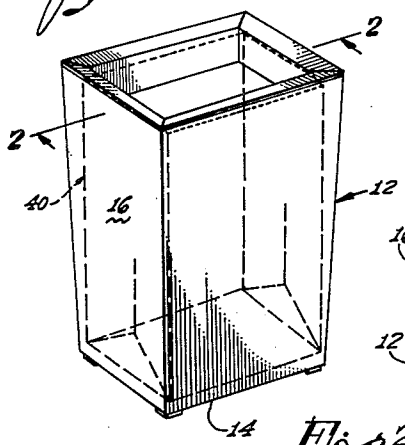



Fig. 2

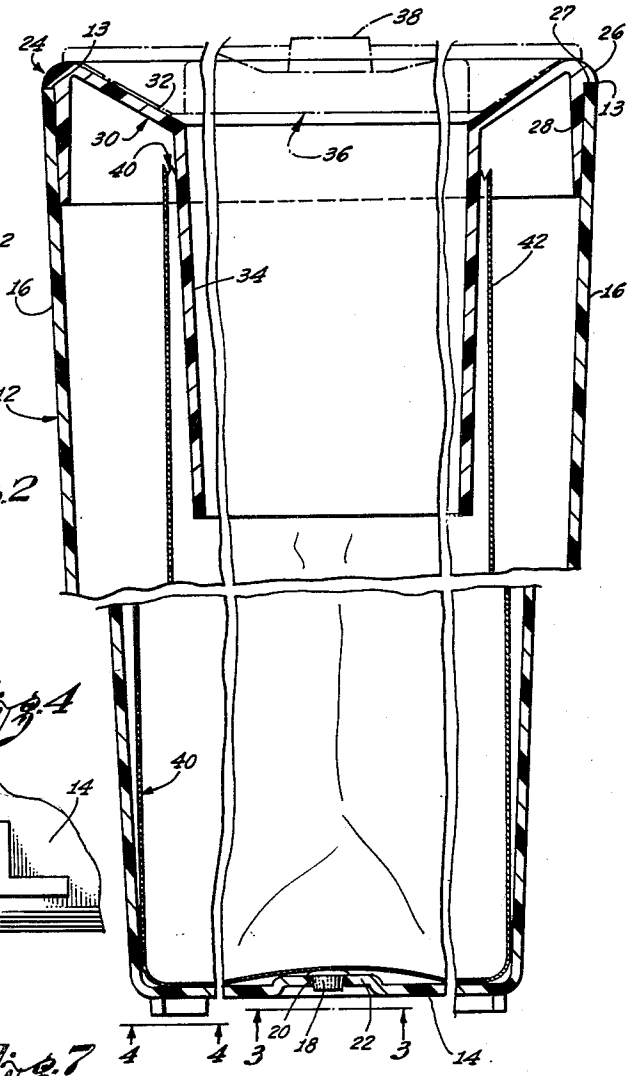



Fig. 5

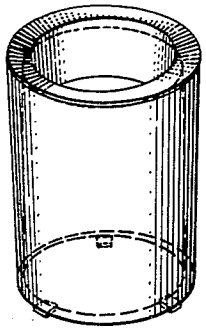


Fig. 4




Fig. 6

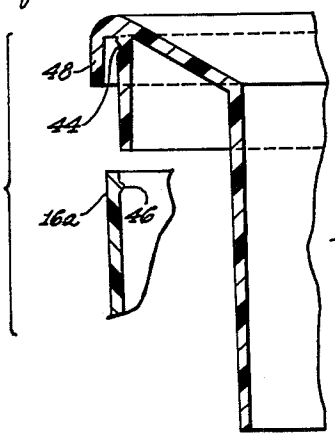



Fig. 7

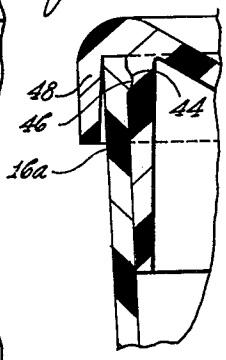
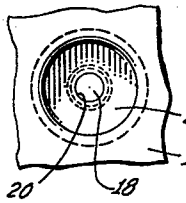



Fig. 3




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Fig. 8

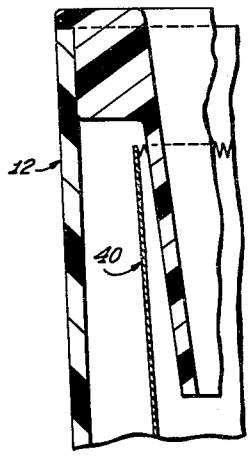



Fig. 9

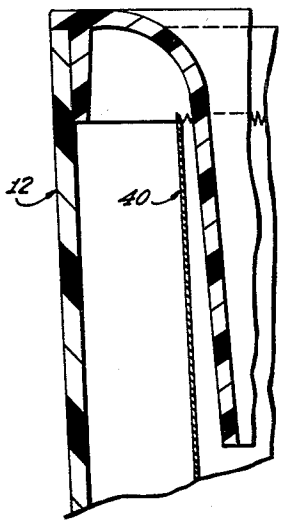
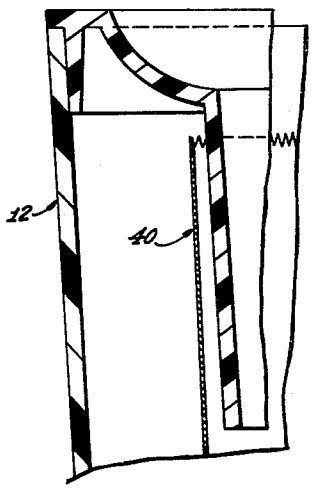



Fig. 10




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United States Patent Office 3,191,798 Patented June 29, 1965



3,191,798

# LINED WASTE CONTAINER

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Filed July 31, 1962, Ser. No. 213,663
6 Claims. (Cl. 220—65)

This invention relates to waste containers, in general, and has specific use in such containers which are provided with disposable bag liners.

While almost every housewife utilizes the brown paper bags into which her groceries, purchased in supermarkets and other stores are placed for carrying away by, or delivery to her, as disposable repositories (usually inserted into some kind of waste basket or container), for garbage, trash and other waste matter, no one has heretofore devised any waste basket or other container which is especially adapted to make use of such widely available brown paper bags. As a consequence, the housewife is compelled to stuff bags which open up essentially into a rectangular configuration into round waste baskets or kitchen containers of varying sizes, or into square, rectangular or other shaped containers which generally have no intended special relationship to such bags. Almost invariably brown paper bags so stuffed into waste baskets or containers are aesthetically unsightly. The average housewife, therefore, consigns such a lined basket or container to a closet, vestibule or the most obscure corner of her kitchen, bedroom or bathroom. If her waste baskets or containers are too unrelated in size and shape to the size and shape of the brown shopping bags, she may decline to use them altogether as liners. Unless some other suitable liner is obtainable, the housewife is then compelled to place her garbage or trash in unlined receptacles which then should be washed out or otherwise cleaned after each use, particularly where the latter receive garbage or other moist or tacky waste items.

But even where the grocery type bag fits reasonably into the housewife's waste basket or other receptacle, no provision is made for restraining the upper edges of the open bag from collapsing when bulky garbage or trash is deposited into the thus lined receptacle. Consequently, it often happens that the bag liner is crumpled down by the inserted trash and then does not serve as a liner at all.

A definite need has existed for many years, therefore, for a container which is not only especially adapted, from a size and shape standpoint, to utilize the standard brown shopping bag as a liner, but to do so in a manner which is aesthetically pleasing to the average housewife, and to secure the bag edges against dislodgement downwardly.

Any such container desirably should meet several further requirements, e.g.:

(1) It should be light in weight so that it may be easily picked up by the housewife;

(2) It should be extremely simple in construction and foolproof in use since most housewives are not endowed with a high degree of mechanical skill, nor will they use "gadgets" which are difficult to set up and make work;

(3) It should be quite economical to manufacture, so that it may be sold at an appealing price, or may even be given away as a premium by supermarkets or other stores under some plan to encourage the housewife to patronize the establishment of the donating merchant. This requirement suggests the use of a molded plastic container. Any such container, then, would have to be of a configuration which may be readily molded. Further economy may be obtained by so shaping the containers or parts therefor in such a manner that large numbers of them may be nested for shipping;

(4) It should be reasonably durable;



(5) It should avoid the creation of a vacuum in the bottom of the container when the bag is being drawn out of the container; since any such vacuum may result in a puncturing of the bag bottom, particularly if the latter is moist, thereby spilling part of the bag contents into the then unlined bottom of the container;

(6) Desirably, provision should be made for a lid closure for the container;

(7) It should utilize most efficiently all capacity of both the bag liner and the receptacle; and

(8) It should include means whereby the bag liner may be filled efficiently and protected against rupture by overstuffing.

The present invention fulfills all of the foregoing objectives and requirements. In the preferred embodiment of the invention, a container is constructed of three parts in addition to the bag liner; one, a receptacle, molded of a medium impact polystyrene, and having a rectangular bottom slightly larger in dimensions than the bottom dimensions of a fifty pound barrel bag (the conventional large size grocery bag), with the side walls flaring slightly outwardly as the walls of an inverted frustum of a four-sided pyramid, and being of a height in dimension slightly greater than the vertical dimension of the bag sides; second, a top rigid frame member, of a harder thermoplastic material, and shaped to seat upon the upper edges of the four side walls; and the third, a lid closure.

The frame member is shaped and dimensioned to provide a flange which seats on the rim of the receptacle walls, and side walls inwardly of the flange, which walls fit within, and in close abutment with the inside area of the upper edges of the four side walls of the receptacle; and further to provide a downwardly and inwardly extending skirt. This container, when put together, will be found to receive such a barrel bag liner, and to hold it in a neat and sightly manner, for use and ready removal.

The invention may be more fully understood by a reading of the detailed description which follows with reference to the accompanying drawings in which:

FIGURE 1 is a perspective view of a lined waste receptacle constructed in accordance with the present invention;

FIGURE 2 is an enlarged section taken on the line 2—2 of FIGURE 1;

FIGURE 3 is a further enlarged view of the bottom orifice and plug, as seen in the direction of the arrows 3—3 of FIGURE 2;

FIGURE 4 is an enlarged view of the bottom corner as seen in the direction of the arrows 4—4 of FIGURE 2;

FIGURE 5 is a perspective view of a frusto-conically shaped receptacle also constructed in accordance with the present invention;

FIGURE 6 is an enlarged section similar to that shown in the upper lefthand corner of FIGURE 2, showing a modified type of framing member;

FIGURE 7 is a section similar to that of FIGURE 6 showing the manner in which the FIGURE 6 framing member engages the upper edge of the receptacle portion of the container;

FIGURES 8, 9 and 10 are each sections similar to that of FIGURE 7, showing modified frame shapes engaging the upper edge of the receptacle in accordance with the present invention.

Referring initially to FIGURES 1 and 2, the preferred embodiment of the present invention comprises a receptacle 12 formed with a rectangular bottom wall 14 and side walls 16. Each of the latter is slightly trapezoidal (as opposed to rectangular) so that the receptacle 12 is shaped as an inverted four-sided pyramid. This shaping not only permits the receptacle to be molded of a thermoplastic material, such as a medium impact polystyrene or

a high density linear polyethylene, but reduces shipping costs of the receptacles since many of them may be nested, one on top of the other, with a minimum of void spacing between them.

The dimensions of the bottom wall are slightly greater than the dimensions of the rectangular bottom of the bag 40 to be inserted in the receptacle 12. Thus, for a 50 lb. barrel bag, the inside bottom dimensions may be 11 inches by 7¼ inches, and the narrower side wall dimensions would probably be 7¼ inches at the bottom and 8½ inches at the top with a height of 18 inches. The wider side wall dimensions would be the same in height with a width of 11 inches at the bottom and 12½ inches at the top.

The bottom wall 14 may be formed with a removable plug 18 adapted to close an orifice 20 which is provided, during molding, in the raised circular center section 22 of the bottom wall 14.

A frame member 24 is provided to seat upon the rim 13 of the receptacle 12. This frame member may also be molded of a thermoplastic material, preferably of a somewhat greater rigidity, such as a lesser plasticized polystyrene, or a high density polyethylene, than the material employed in molding the receptacle 12. This frame member 24 is formed with an overhanging portion 26, the underside of which may be horizontal to constitute a shelf 27. This shelf 27 serves to seat the frame member 24 upon the upper edges or rim 13 of the walls 16. The overhanging portion 26 may be dimensioned laterally to be flush with the walls 16, in the FIGURES 1 and 2 embodiments. Extending downwardly and inwardly of the shelf is circumferential wall portion 28, the outer wall dimensions of which are slightly smaller than the inside dimensions of the upper edges of the walls 16 just below its rim 13, whereby the wall portion 28 may be inserted within the upper edges of the walls 16 to abut therewith.

The frame member further includes a downwardly extending depending skirt portion 30, preferably shaped with an outer section 32 having a relatively great angle of convergence and a further section 34 having a very small angle of convergence. A lid 36 with a handle projection 38 may be provided to seat upon the conically shaped outer portion 32, and thereby constitute a closure for the waste container.

In use, the frame member 24 is removed from the rim of the receptacle portion of the container, and a 50 pound barrel bag 40 (the conventional large size brown paper bag in which groceries may be packed at almost any supermarket or other grocery store), is opened up and inserted, bottom first, into the receptacle 12. Preferably, before such insertion the plug 18 is removed from the orifice 20, in order to allow air, entrapped between the bag bottom and the bottom wall 14 of the receptacle 12 to escape. With the sides 42 of the bag 40 spread apart and in substantial abutment with the walls 16 of the receptacle, the frame member 24 is then lowered onto the rim of the receptacle 12, care being taken to insert the lower edges of the depending skirt portion 30 of the frame member 24 within the bag edges. The frame member 24 is seated upon the upper edges of the walls 16 of the receptacle 12 by lodging the wall portion 28 in abutment with the inner faces of the rim 13 of the walls 16 of the receptacle 12, in the manner shown in FIGURE 2. It will be found that upon so assembling the frame member 24 upon the rim of the receptacle, the sides 42 of the bag 40 will be found to be secured against the inner faces of the receptacle walls 16 with the serrated upper edges of the bag concealed by the frame member 24. The result is a lined container which is extremely pleasing from an aesthetic standpoint and securely holds the bag as a liner.

When removal of the bag 40 is desired, it is simply necessary to lift the frame member 24 off the rim 13 of the receptacle 12, reach into the receptacle and pull out the bag. The creation of a vacuum between the bag bottom and the bottom wall 14 of the receptacle, due to this upward displacement of the bag bottom in relation to the wall 14 is prevented by the orifice 20, which permits air to enter into the space vacated by the upward movement of the bag bottom. This avoidance of a vacuum condition eliminates the probability of rupture of the bag bottom, particularly when it is moistened by wet garbage, due to the action of a pressure differential upon the bottom of the bag, whenever such a vacuum is created.



A plastic molded lid 36 may be desirably employed with this container, although the same is not necessary to the practice of this invention.

The alternate framing members of FIGURES 6–10 may also be employed in the construction of a container according to the present invention.

The embodiment of FIGURES 6 and 7 provides an overhanging downwardly extending outer skirt which may serve to grip the rim 13 of the receptacle 12, and a boss-detent arrangement 44, 46 on the wall portion 28 and upper part of the wall 16, whereby the frame member may be snapped onto the rim 13, and more securely held thereupon to prevent inadvertent dislodgement therefrom. Such a snap-lock arrangement, of course, could be employed with any of the other frame member embodiments illustrated in the drawings. It could also be placed on the outside of the wall 16 at 16*a* to cooperate with a boss on the overhanging flange 48.

The embodiments of FIGURES 8–10 are alternate forms of flush-type rims with different configurations of inwardly and downwardly extending skirts.

It may thus be seen that the present invention provides a lined waste container which may be manufactured economically by molding the components of widely available thermoplastic resins. The receptacle portion is particularly shaped and dimensioned to utilize the popular 50 lb. barrel bag, many of which the average American housewife receives each week with her groceries. The removable frame member of this container, in seating upon the rim of the receptacle, not only imparts rigidity to the upper walls of the receptacle, but also functions as a funnel for depositing garbage or trash into the bag liner, and as a means to hold the upper edges of the bag in position, and to protect them against tearing or crumpling. The particular shaping and dimensioning of the receptacle also effiicently utilizes all of the bag capacity, permits a plurality of receptacles to be nested for shipment and storage, and enables the bag to be more readily inserted and withdrawn from the receptacle. The orificed bottom wall of the receptacle prevents the compression of air under the bag bottom upon insertion of the bag into the receptacle, and the creation of a vacuum upon its removal therefrom. The device is so simple to assemble and operate that no housewife should experience the slightest difficulty in using it; and the overall appearance of the container is such that the average housewife will find it a welcome improvement aesthetically over the garbage pail or waste basket now in use in her kitchen, bedroom or bathroom.

While the embodiments of this invention which are illustrated in FIGURES 1–4 and 6-10 are particularly intended for use with the 50 lb. barrel bags, it will be appreciated that the invention may also be adapted for use with any size or shape of bag of paper, plastic, metal fabric, or other flexible sheet material.

All these and other embodiments which may readily occur to persons skilled in the art to which this invention appertains, are intended to be comprehended within the scope of the present invention.

What is claimed is:

1. A waste container adapted to receive a removable liner in the form of a flexible fabric bag, said container comprising:

(A) an open-topped receptacle having substantially vertical relatively rigid side walls and a transverse

bottom wall into which the said bag is so insertable as a liner; and

(B) a capping frame member, said member including:

(i) a first portion, the outer configuration and dimension of which portion being such that when the frame member is lowered coaxially upon the receptacle, said first portion extends at least partly radially into the space defined by the upper rim of said side walls;

(ii) a second portion, said second portion

(a) being integral with the first portion,

(b) being of sufficiently greater peripheral dimension than that of said first portion, to provide a flange adapted to seat upon said rim, and

(c) having a downwardly extending first skirt dimensioned closely to abut the inner wall of said rim; whereby, when said member is disposed upon said rim, said member is fully supported thereby and provides increased rigidity for the upper area of said side walls; and

(iii) a second skirt, said second skirt

(a) also being integral with said first portion;

(b) extending inwardly of said first and second portions, and downwardly into the space defined by said side walls; and

(c) being spaced from said first skirt.

2. The waste container as described in claim 1, wherein the said second portion of said member further extends outwardly beyond the outside diameter of the rim wall and downwardly therearound to provide an outer flange which, with the said first skirt, serves to grip the said rim when the said member is pressed coaxially down upon the walls of said receptacle.

3. The waste container as described in claim 1, wherein the said bottom wall is provided with an orifice to prevent the creation of a low pressure area within the bottom of the said receptacle when the said bag is drawn upwardly in said receptacle for removal therefrom.

4. The waste container as described in claim 1, wherein the said first portion is at least partially convexed to provide increased strength and, hence, greater rigidity for the upper area of said walls.

5. A waste container adapted to receive a removable liner in the form of a flexible fabric bag, said container comprising:

(A) an open-topped receptacle integrally molded of a thermoplastic material to provide substantially vertical relatively rigid side walls and a transverse bottom wall into which the said bag is so insertable as a liner; and

(B) a capping frame member formed of a more rigid material than said molded thermoplastic material, said member including:

(i) a first portion, the outer configuration and dimension of which portion being such that when the frame member is lowered coaxially upon the receptacle, said first portion extends at least partially radially into the space defined by the upper rim of said side walls;

(ii) a second portion, said second portion

(a) being integrally molded with the first portion,

(b) being of sufficiently greater peripheral dimension than that of said first portion to provide a flange adapted to seat upon the said rim, and



(c) having a downwardly extending first skirt dimensioned closely to abut the inner wall of said rim; whereby, when said member is disposed upon said rim, said member is fully supported thereby and provides increased rigidity for the upper area of said side walls; and

(iii) a second skirt, said second skirt

(a) also being integrally molded with said first portion,

(b) extending inwardly of said first and second portions, and downwardly into the space defined by said side walls, and

(c) being spaced from said first skirt.

6. A waste container comprising:

(A) an open-topped receptacle integrally molded of a thermoplastic material to provide substantially vertical relatively rigid side walls and a transverse bottom wall;

(B) a capping frame member, formed of a more rigid material than said molded thermoplastic material; said member including:

(i) a first portion, the outer configuration and dimension of which portion being such that when the frame member is lowered coaxially upon the receptacle, said first portion extends at least partially radially into the space defined by the upper rim of said side walls;

(ii) a second portion, said second portion

(a) being integrally molded with the first portion,

(b) being of sufficiently greater peripheral dimension than that of said first portion to provide a flange adapted to seat upon the said rim, and

(c) having a downwardly extending first skirt dimensioned closely to abut the inner wall of said rim; whereby, when said member is disposed upon said rim, said member is fully supported thereby and provides increased rigidity for the upper area of said side walls; and

(iii) a second skirt, said second skirt

(a) also being integrally molded with said first portion,

(b) extending inwardly of said first and second portions, and downwardly into the space defined by said side walls; and

(c) being spaced from said first skirt; and

(C) a removable disposable bag, said bag being insertable into said receptacle to line the said walls thereof, with the upper edges of said bag being disposed in the space between said first and second skirts.


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