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W. H. LINDHOLM ETAL

3,370,787

BAG-LINED GARBAGE RECEPTACLE

Filed June 8, 1966

3 Sheets-Sheet 1

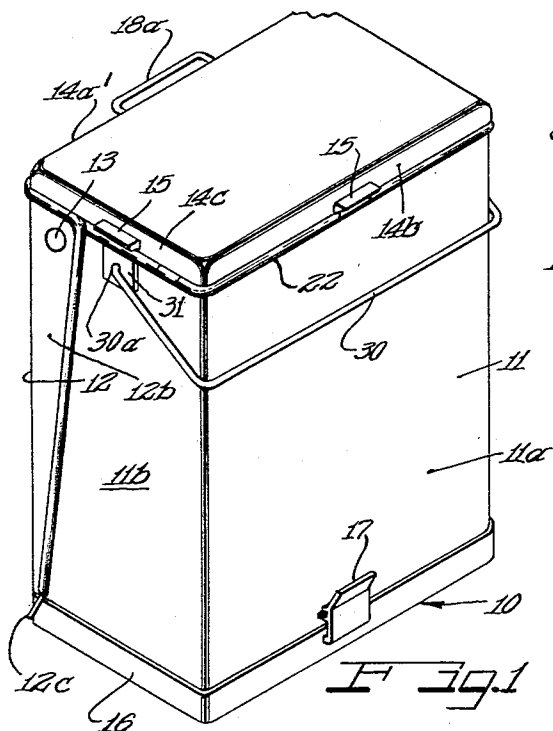


Fig. 1

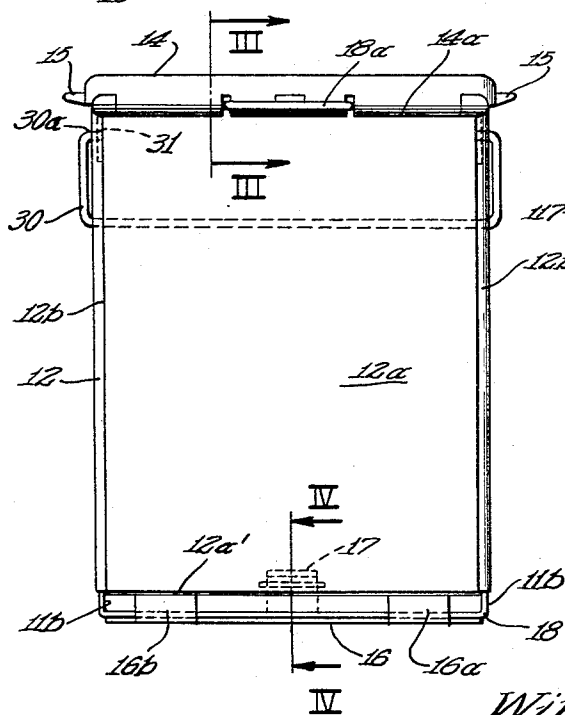


Fig. 2

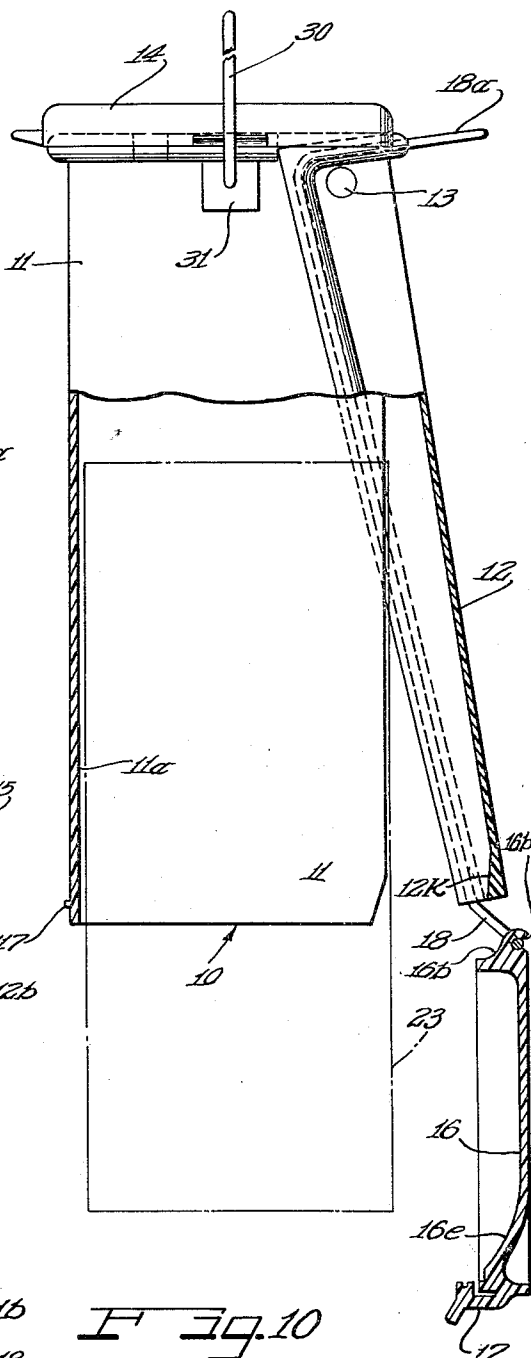


Fig. 10

INVENTORS

William H. Lindholm
Donald W. Lindholm

BY *Hill, Sperman, Meani, Chase & Simpson* ATTORNEYS

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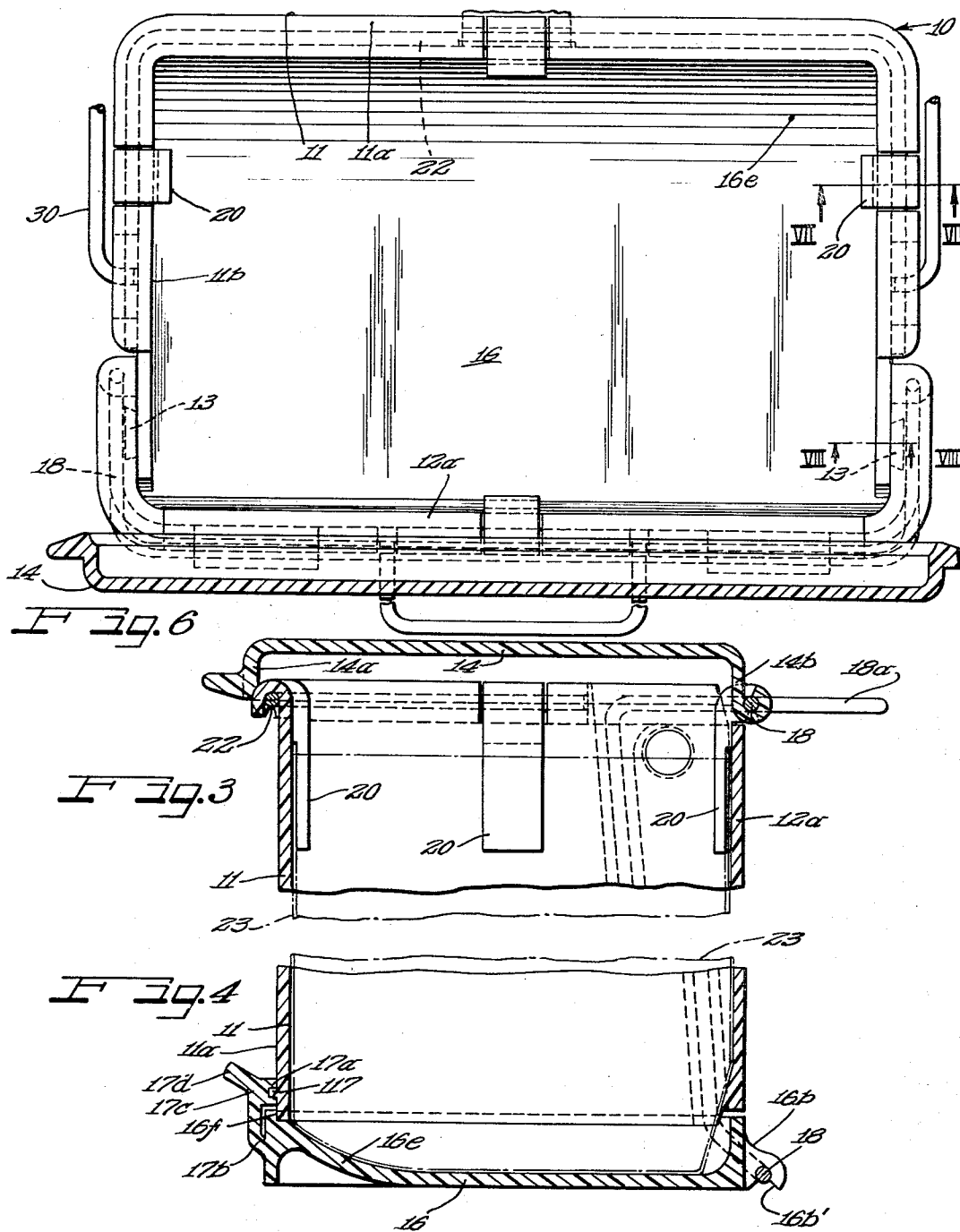
W. H. LINDHOLM ET AL

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INVENTORS

William H. Lindholm
Donald W. Lindholm

BY *Hell, Sherman, Morris, Glass & Simpson* ATTORNEYS

Feb. 27, 1968

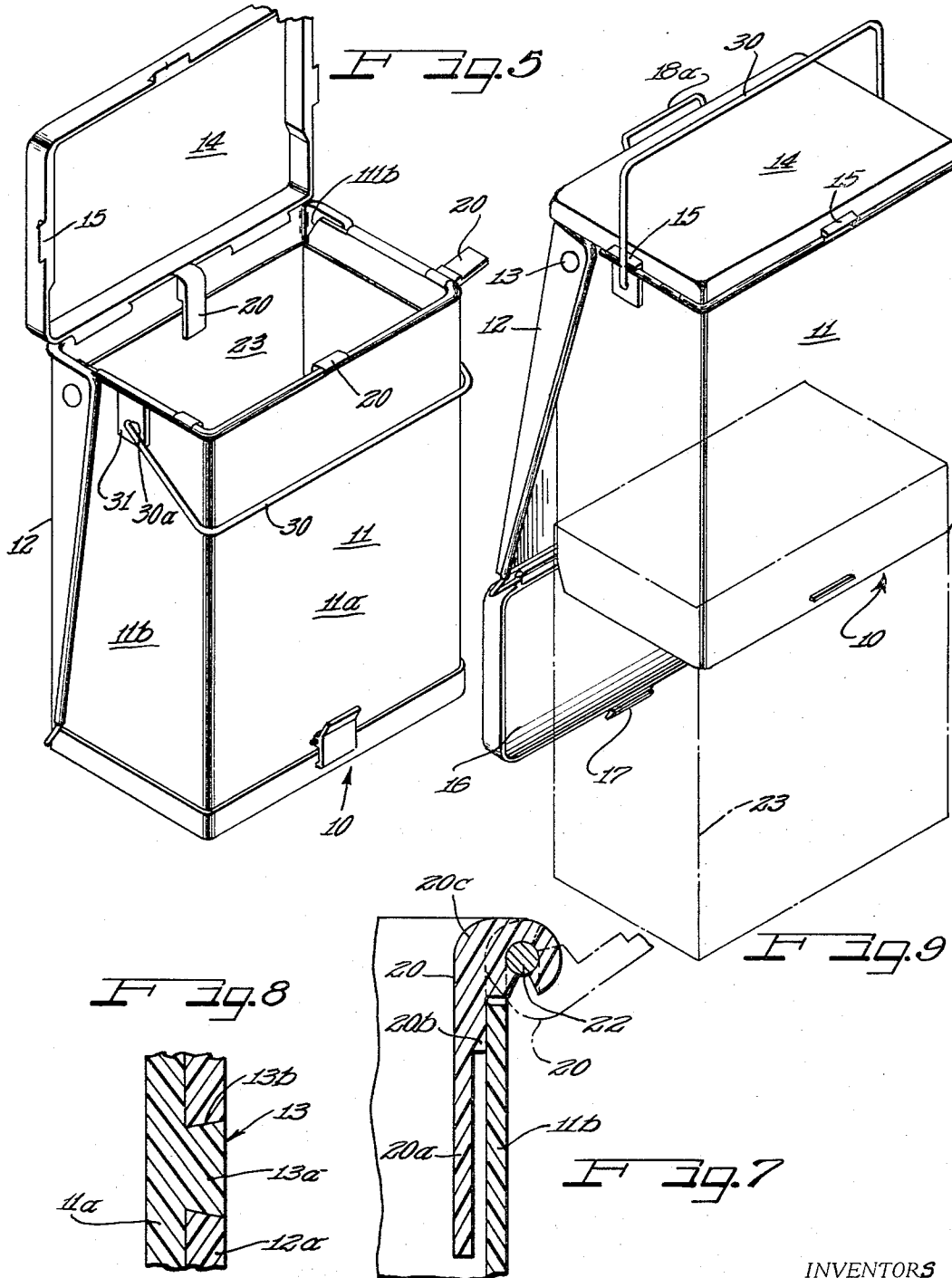
W. H. LINDHOLM ET AL

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BAG-LINED GARBAGE RECEPTACLE

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3 Sheets-Sheet 3



INVENTORS
William H. Lindholm
Donald W. Lindholm
BY *Hill, Sherman, Merri, Chase & Simpson* ATTORNEYS

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BAG-LINED GARBAGE RECEPTACLE

William H. Lindholm, 8514 W. 119th Place, Palos Park, Ill. 60464, and Donald W. Lindholm, 15929 S. Grove, Oak Forest, Ill. 60452

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The present invention relates to a bag-lined receptacle of the type that may be used to receive garbage. A bag-lined garbage receptacle of the type herein disclosed may be used in the kitchen of a household where it will provide support for the side walls of a paper garbage bag to prevent tipping or spilling from such a bag. When the garbage bag so supported is filled, the receptacle may be easily removed to the place of disposal and the garbage containing bag easily deposited there without the user handling the bag itself.

A feature of this invention is the provision of a split rigid container adapted to be lined with a conventional grocery and produce paper bag in which garbage can be packed and pressed tightly to fill the bag without resulting in bursting or tearing of the bag and adapted to be easily opened and expanded to release the packed bag without damage.

It is a general object of the present invention to provide a new and improved bag-lined garbage receptacle which may be used as described above or in similar uses.

It is a more specific object of the invention to provide such a receptacle which is easy and economical to use, assemble and manufacture.

It is one object of the invention to provide a receptacle which can discharge a bag and its contents without the necessity of handling the bag itself.

It is a specific object of the invention to provide such a container which will not jam in discharging its contents even if irregular or oversized items are placed therein.

In accomplishing these and other objects of the invention a receptacle is provided which is adapted to receive a bag and support it in an open upright position to receive material introduced through the top of the receptacle and to discharge the filled bag through the bottom of the receptacle. The receptacle comprises a pivotally connected complementary member defining an open-ended tube in closed position adapted to swing to an open position providing an enlarged space therebetween, and a lid selectively closing the top of the tube and the bottom. Means are further provided for selectively locking the bottom in a closed position, whereby a bag introduced through the top of the closed locked-together members may rest in the bottom completely enveloped by the members in a supporting upright position lining the tube defined thereby to receive material through the top thereof and may easily be discharged through the bottom by unlocking the members and by swinging the members to an open position.

Other objects, features and advantages of the present invention will be readily apparent from the following detailed description of certain preferred embodiments thereof taken in conjunction with the accompanying drawings, in which:

On the drawings:

FIG. 1 is a perspective view of a bag-lined receptacle constructed in accordance with the principles of the present invention;

FIG. 2 is a rear view of the receptacle of FIG. 1 with hidden parts shown in dashed outline;

FIG. 3 is a fragmentary view, partly in section, of the receptacle as seen from the line III—III of FIG. 2;

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FIG. 4 is a view similar to that of FIG. 3 as seen from the line IV—IV of FIG. 2;

FIG. 5 is a perspective view of the receptacle of FIGS. 1-4, with a part shown in a moved position;

FIG. 6 is a top plan view of the receptacle as depicted in FIG. 5, partially shown in section with parts broken away and with interior and hidden parts shown in dashed outline;

FIG. 7 is a sectional view of a portion of the receptacle of FIGS. 1-6, as seen from the line VII—VII in FIG. 6;

FIG. 8 is an elevational view partly in section of another part of the receptacle shown in FIGS. 1-7 as seen from the line VIII—VIII in FIG. 6;

FIG. 9 is a perspective view of the receptacle of FIGS. 1-8 with parts shown in a moved position; and

FIG. 10 is a side elevational view with parts broken away to show interior parts of the receptacle as depicted in FIG. 9.

As shown on the drawings:

Referring now to FIG. 1 there is depicted a receptacle adapted to receive and support a bag containing garbage or the like. The receptacle, which is generally indicated by the numeral 10, comprises pivotally connected complementary members 11 and 12 defining an open-ended tube when in a closed position, as shown. The member 11 comprises a rectangular front wall 11a and rectangular side walls 11b formed at the longitudinal end edges thereof as part of a unitary structure for enclosing three sides of a rectangular tube. The member 12 completes the tube with a rectangular back side wall 12a, best shown in FIG. 2. In addition to the back side wall 12a, the member 12 includes a pair of oppositely disposed triangular-shaped wall segments 12b which overlap for a portion on the outer surface of the walls 11b of the member 11 and include a pivot mounting 13 defined therebetween. The side walls 12b are in the shape of a right triangle with the base along the edge of the back wall 12a and the altitude adjacent to the top edge of the wall 11b. Selectively closing the top of the tube formed by the members 11 and 12 is a lid 14 of a generally rectangular configuration sized to fit over the generally rectangular cross-sectional end of the tube and pivotally mounted at 14a' to the member 12 along the upper edge of the back wall 12a. The members 11 and 12 are of such a size and configuration as to receive therein a conventionally sized paper bag or sack of the type commonly used in super markets for the packaging of groceries and thus are commonly available to the housewife. Such bags are often used independently of a receptacle for holding garbage in the kitchen. When so used, they are easily upset and garbage placed therein often soaks through the paper and spills or causes the bag to tear and thus spill the contents at an inconvenient location. The receptacle 10 is sized so as to support such a bag and maintain it until the transportation of the bag and the garbage contained therein to a suitable disposal area may be achieved. The lid 14 includes an outstanding lifting handle 15 placed on the front edge 14b and similar handles 15 formed on the transverse edges 14c of the lid.

A carrying handle 30 is provided for the receptacle 10 of a generally squared C-shape for fitting about the outer surfaces of the sections of the receptacle. The handle is attached at the point 30a on each side wall 11b to the exterior plate 31 formed for receiving it. The receiving metal plates or hinge fittings 31 are preferably welded to and depend downward from a wire 22 at the transverse center point of the walls 11b. The fittings 31 extend through a cutout portion of the plastic encasement of the wire 22 and are positioned outside of the walls 11b to prevent any contact between the metal fitting 21 and interior of the receptacle 10.

The receptacle 10 is further provided with a base 16 of generally rectangular conforming configuration for closing the bottom of the tube formed by the members 11 and 12. The base 16 includes means 17 for selectively locking the base to the members 11 and 12. The locking means 17 is affixed at the front longitudinal edge of the base 16 between that edge and the portion of the front wall 11a of the member 11. The base 16 is pivotally mounted to the rear wall 12a of the member 12 along its bottom edge 12a', as shown in FIG. 2, by means of a pair of spaced hinges 16a and 16b. The members 11 and 12, the lid 14, the base 16 and the locking means 17 are preferably formed of a flexible plastic material such as polyethylene or stiff rubber and reinforced by a plurality of wire or rod sections. Although other construction materials may be used such as wood or light metal, the more flexible materials are preferred. The receptacle formed from the preferred material is not only light in weight and easy to assemble but is also easily cleaned. It should be noted that only plastic parts are exposed to the bag in the present embodiment and that any leakage may be easily wiped or hosed off at the time of discharging the bag from the receptacle. The member 12 is reinforced by a thin rod or stiff wire 18 of circular cross section. The wire 18 generally encircles the periphery of the member 12 extending along the hypotenuse and altitude sides of the triangular walls 12b and across the top and bottom of the wall 12a. The wire 18 is encased in and surrounded by the flexible material of the walls for most of its extent but is not so encased along the lower edge of the wall 12a. This enables it to receive the extending parts 16a and 16b of the base 16 which cooperate with the wire 18 to form the pivotal connection between the base 16 and the member 12.

Welded to and extending from the wire 18 at its portion along the upper edge of the back 12a is a U-shaped extending section 18a formed to lie about a plane perpendicularly to that of the back wall 12a. The relation between the wall 12a and the section 18a is best depicted in FIG. 3. Referring to that figure, it can be seen that the outstanding portion 18a has the dual function of serving as a back stopper for the lid 14 and as a steadying handle for the receptacle 10. The lid 14 is formed in an inverted shallow dish-like configuration with edge walls 14b depending from the central portion of the lid 14. The lid 14 is pivotally mounted on the wire 18 by means of a pair of extending portions 14e which define a C-shaped opening to encircle the wire 18 for a portion of its circumference. The portion 14e has an opening 14e' of a normal dimension less than that of the diameter of the wire 18 and is constructed of resiliently deformable material to allow the wire 18 to enter therein during assembly.

The interior of the hollow tube formed by the members 11 and 12 has a plurality of bag holders 20 positioned about the upper edge of the members 11 and 14. The bag holders 20 are each pivotally mounted about a portion of the reinforcing wire 18 or its equivalent about the upper edge of a portion of the member 11 designated by the numeral 22. This portion extends about the upper edge of the member 11 up to a point approximately adjacent to the upper edge of side walls 12b of the member 12. The bag holders 20 serve to maintain the side walls of a bag 23, which may be a conventional grocery paper bag, against the interior side walls of the members 11 and 12 in a closed configuration. The bag holders 20 are pivotally mounted about the wires 18 or 22 for movement away from and clear of the bag when inserted and serve the function of maintaining the side walls of the bag against the interior side walls of the members 11 and 12. The bag holders 20 are pivotally mounted to the wire 18 or 22 in a manner similar to that of the pivotal mounting of the lid 14 in that the breach 20a' is slightly less than the diameter of the wire 18 or 22, and the opening walls leading into the opening 20a' are sloped to aid in the spreading of the members in assembly. This construction causes the mem-

ber to expand when forced against the wire 18 or 22 to allow the bag holder 20 to "snap on" to the wire 18 or 22. This method of construction greatly facilitates assembly.

As better shown in FIG. 4, the attachment between the locking means 17 comprises a unitary extension of the base 16 including a longitudinally extending cutout ridge 17a for fitting over a conformingly shaped outstanding portion 117 of the member 11 on the front wall 11a. As the locking means 17 is made of flexible plastic material or the like, extending in a first portion 17b which forms a hinge for the body 17c, in which the portion 117, is received and from which an extending handle 17d is formed, the body 17c is hinged at the point 17b so that pressure on the outstanding handle portion 17d will readily remove the body portion 17c from the ridge 17a from its locking contact with the outstanding portion 117. Similarly a slight pressure upon the flexible material of the member 17 will replace and relock the members together. It has been found that this simple lock is sufficient and provides adequate security to hold the base to the members 11 and to hold together the members 11 and 12.

This lock 17 actually holds more securely with the increasing load as the receptacle is filled. The base 16 is preferably hinged by the hinges 16a and 16b and is made with a conformingly shaped "snap-on" provision of a C-opening 16b' similar to that described above in conjunction with the lid 14 and hinges 14a, with the hinges being flexible and easily placed on the wire 18 during assembly. The base 16 is formed in the shape of a shallow dish, opening upward so as to be able to entrap any liquid seepage therein to lessen the chance of spillage or leakage from the receptacle 10. The forward part, as indicated at 16e is sloped to facilitate the discharge of the bag 22 from the receptacle 10. The junction between the base 16 and the members 11 and 12 may be made tight fitting and substantially leak-proof. The rim of the base 16, as indicated at 16f, encases the bottom edge of the member 11 to prevent bulging of this member when the bag is filled with garbage or the like.

In FIG. 5, the cooperation between the bag 23 and the bag holder 20 is shown. One of the side wall holders 20 is shown in its open position as in preparation for the insertion of the bag 23. When open, the bag holder 20 has its upper portion resting against the wire support 18 and side wall 12b so as to be clear of the opening formed by the upper edges of the members 11 and 12. The receptacle 10, with the lid 14 upraised and resting against the wire portion 18a, is in position to receive garbage placed therein. The bag 23 will be maintained open with its sides held against the sides of the members 11 and 12 by the bag holders 20 when closed.

In FIG. 6, the spacing relationship between the receptacle 10 and the holders 20 is shown. The holders 20 are centrally positioned on the front wall 11a and back wall 12a, and one each approximately centered on the side walls 11b at approximately one-quarter of the distance from the front wall 11a to the rear wall 12b.

As best shown in FIG. 7, the bag holders 20 comprise a rectangular-shaped planar member 20a which has a counter portion 20b for lying against the sides of the bag when in position as shown in FIG. 5. In its closed position the member 20a is spaced from the side walls, such as the wall 11b, by means of a spacer portion 20b which rests thereagainst. The upstanding portion 20c of the holder 20 serves to maintain the holder 20 in the open position resting against the outer surface of the portion of the wall 11b.

The pivots 13 between the members 11 and 12 are formed in a unique manner so as to facilitate assembly. As best shown in FIG. 8, the walls 12b are each formed with a continuous projection in the shape of a cone-section tapering outwardly with an expanding diameter from the wall 12b. The section 13a of the wall 12b is formed with a hole 13b of conforming shape and size, i.e., of

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increasing diameter from without through the interior of the wall 12b. As the members 11 and 12 are, as mentioned above, preferably made of flexible material such as polyethylene, the assembly of the portions is made easily and quickly as the walls may simply be pressed together to allow the outstanding portion 13a to enter the hole 13b, and be captivated therein.

As depicted in FIG. 9, the members 11 and 12 are so constructed as to open upon release of the locking means 17 so that the base 16 may swing away, and any bag such as the bag 23, indicated in dashed outline in FIG. 9, may fall clear therefrom. With the receptacle 10 supported by the handle 30a at approximately its center of gravity, at the release of the locking means 17 the downward pull of gravity causes the base 16 to pivot about the pivots 16a and 16b and swing downward. Also the member 12 is caused to pivot about the pivots 13 and swing away from the member 11. This also causes the member 11 to move slightly outward pivoting about the handle supports 30a thus moving the forward wall 11a from the bag 23. The bag 23 drops quickly out of contact with the bag holders 20 since there is but frictional support of the bags between the members 20 and the bag 22. In some uses, it is desirable to remove the holders 20 from the bag 23 and to close the bag within the receptacle prior to the release operation depicted in FIGS. 9 and 10. In which case, of course, a closed bag would be discharged from the bottom of the garbage receptacle 10.

As best shown in FIG. 10, the wall 12a at the bottom of the base member has an outstanding lip portion 12k for the prevention of leakage from the bag and for aid in release of the bag from the member 12. The bottom and top rear edge corners of the side walls 11b are cut off at 11k to accommodate the lip portion 12k and the top, as shown in FIG. 5 at 11b, to allow the member 12 to pivot freely.

It should be noted that with the base 16 released and swung away, the bag 23 is surrounded on three sides by the un-reinforced walls 11a and 11b of the member 11. These walls being preferably constructed of flexible material offer little resistance to the discharge of the bag and its contents even if the contents be of irregular shapes such as would normally resist discharge. The unreinforced side walls 11b being of flexible material allow behavior, at least in part, as if they were free, to expand outwardly from the bag 23. Thus, the bag 23 is effectively freed of all the supporting walls of the members 11 and 12 during the discharge operation.

It should further be noted that, in returning the receptacle to its closed position, the side walls 12a of the member 12 function to automatically align the walls 11b of the member 11 and to reinforce them.

As will now be apparent a receptacle for garbage and the like has been provided which is both economical to manufacture and easy to use. The receptacle 10 by providing a splitting or opening between its members prevents the jamming of the bag-receiving tube by large or irregularly shaped items and facilitates the easy ejection of the bag and its contents without the necessity of handling the garbage bag itself.

It will be understood that various modification may be suggested by the embodiment disclosed, but we desire to claim within the scope of the patent warranted hereon all such modifications as come within the scope of our invention.

We claim as our invention:

1. A receptacle adapted to receive a bag, support the bag in open upright position to receive material introduced through the top of the receptacle and discharge the filled bag through the bottom of the receptacle which comprises:

pivotally connected complementary members defining an open-ended tube in closed position and adapted to swing to an open position providing an enlarged space therebetween,

a lid selectively closing the top of the tube,

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a base selectively closing the bottom of the tube, and means selectively locking the members and base in closed position,

whereby a bag introduced through the top of the closed, locked-together members and base may rest on the base completely enveloped by the members in supported upright position lining the tube defined thereby to receive material through the top thereof which may easily be discharged through the bottom by unlocking the members and base and by swinging the members to an open position.

2. The receptacle as claimed in claim 1 in which said tube is of a rectangular shape sized to receive conventional paper bags.

3. The receptacle as claimed in claim 2 in which said base is generally rectangular in shape and is pivotally mounted on one of said pivotally connected complementary members defining the open-ended tube for swinging clear of the bottom of the tube when said members are swung to the open position.

4. The receptacle as claimed in claim 3 in which said base is pivotally affixed at one longitudinal edge to said one member and includes locking means formed between said base and another of said members, whereby release of said locking means when said receptacle is supported in an upright position with said base clear to pivot causes said base to pivot and said members to open to enable said receptacle to discharge a bag.

5. The receptacle as claimed in claim 1 in which a plurality of bag holders is mounted about the upper portion of said tube-defining members for releasably holding the sides of a bag against said members.

6. The receptacle as claimed in claim 4 in which said lid is of a generally rectangular shape and is pivotally mounted along one longitudinal edge to one of said members to pivot from a position overlying and closing the top of said tube defined by said members to a position in which said tube is open so as to receive a bag and material therethrough.

7. The receptacle as claimed in claim 1 further characterized by having said members constructed of a flexible material such as polyethylene and stiff rubber and reinforced by a plurality of wire sections.

8. The receptacle as claimed in claim 1 in which said members include a first member having a rectangular front wall and generally rectangular side walls for enclosing three sides of a bag and a second member having a rectangular wall for enclosing the third side of the bag in the closed position, said second member including two triangular-shaped side walls for overlying part of the side walls of the first member, said first and second members being pivotally connected between each pair of said overlying side walls.

9. The receptacle as claimed in claim 8 further characterized by having said members formed of a material specified in claim 7 and said second member is reinforced about its periphery by a circular cross-sectional wire about which the material of said member is at least partially formed.

10. The receptacle as claimed in claim 9 in which said base is pivotally affixed to a section of said wire by means of a C-shaped, in cross-section, opening formed therein having a breach less than the diameter of the wire so that it may be inserted thereon in assembly by pressing thereagainst.

11. The receptacle as claimed in claim 7 in which said members are reinforced about the upper edge of the tube formed by means of a wire segment, and a plurality of bag holders constructed of a plastic material having a C-shaped, in cross-section, mounting for attaching to said wires at spaced intervals about the upper edges of said members, said C-shaped mounting having a breach smaller than the diameter of the wire for affixing the holders thereto and said holder being resiliently deformable so as to allow said mounting to resiliently deform to receive said wire during assembly.

12. The receptacle as claimed in claim 8 constructed in accordance with claim 7 and further characterized by having the pivotal connection between the overlying side walls of the first and second members formed by means of an outstanding conically shaped section which increases in diameter from the plane of the side wall on one of said members and a conformingly shaped hole in the side wall of the other member.

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