Sept. 15, 1970 H. J. JOHNSON ET AL 3,528,718

GARBAGE CAN AND SUPPORT

Filed Dec. 1, 1967 2 Sheets-Sheet 1

Fig. 1

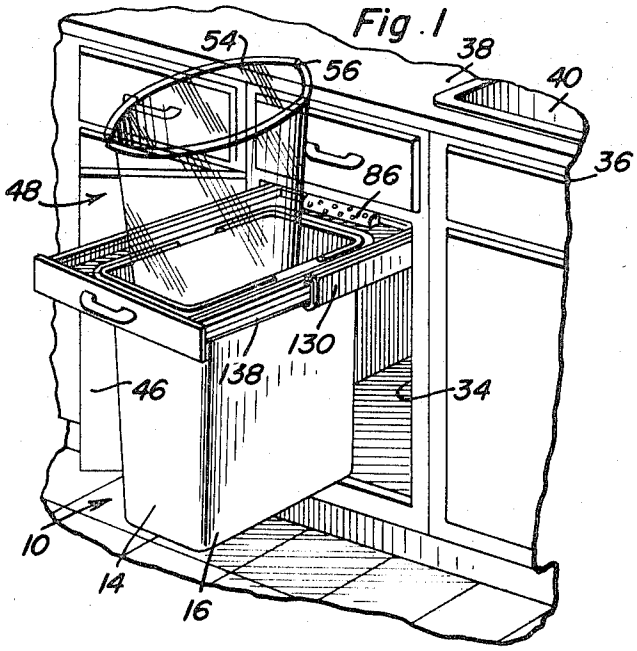


Fig. 6

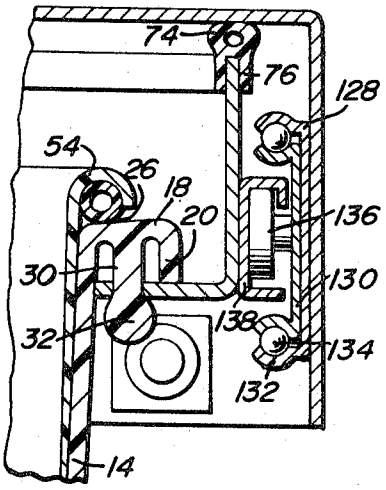


Fig. 2

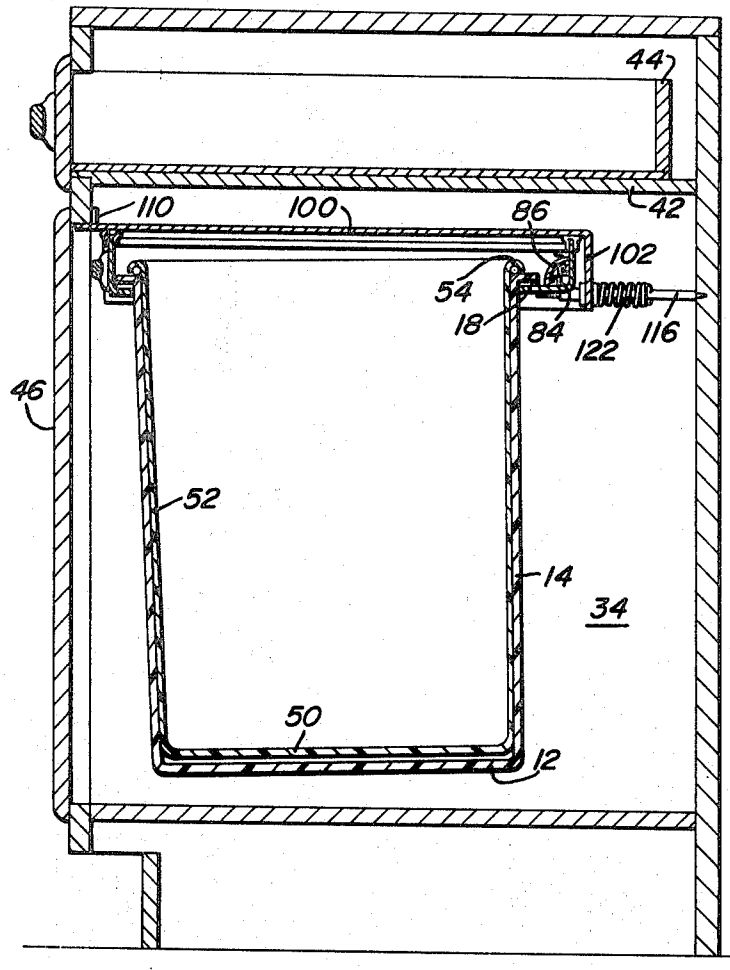


Fig. 7

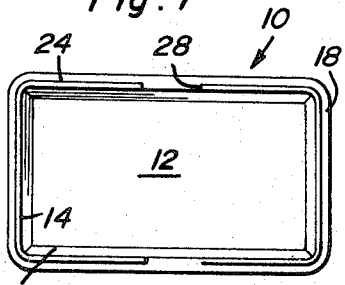
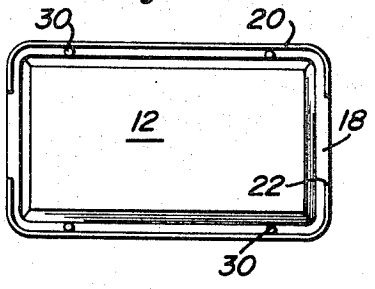


Fig. 8



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Fig. 3

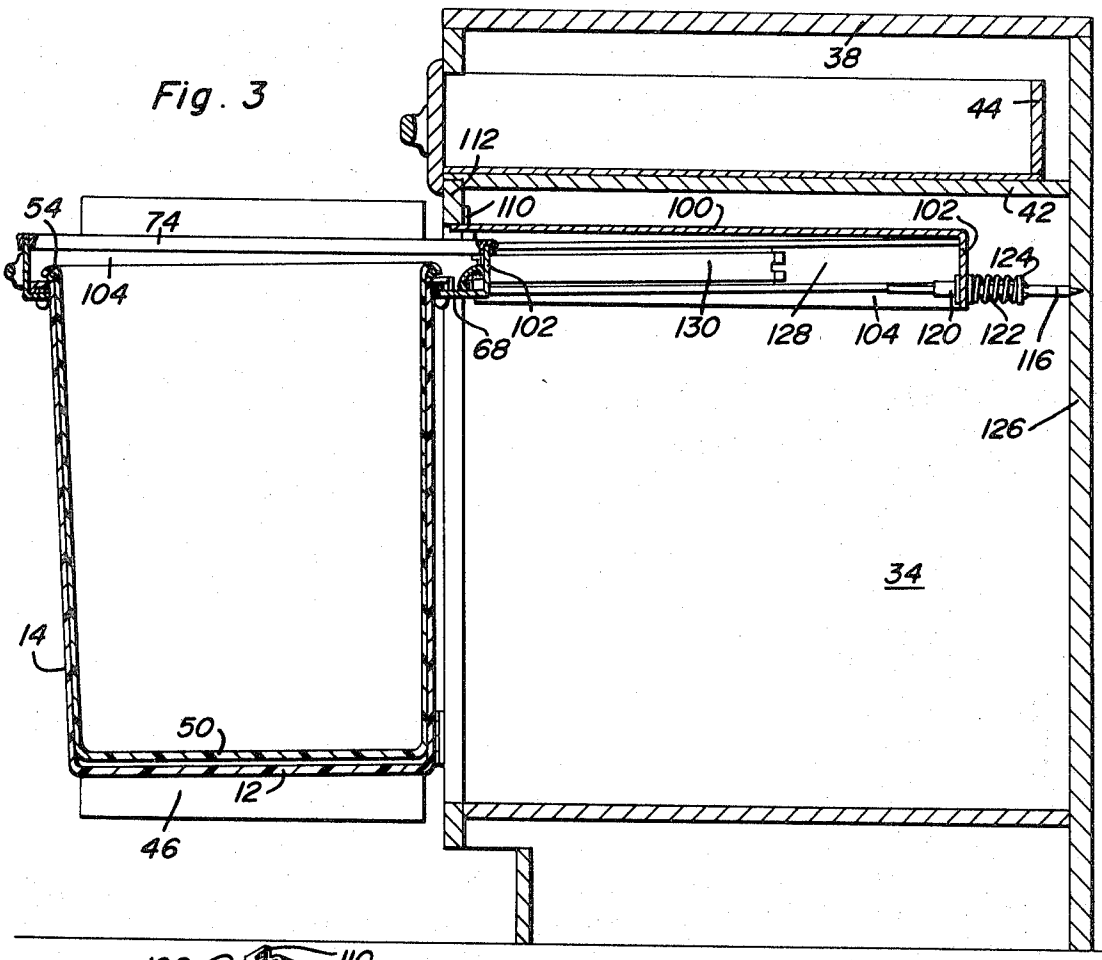


Fig. 4

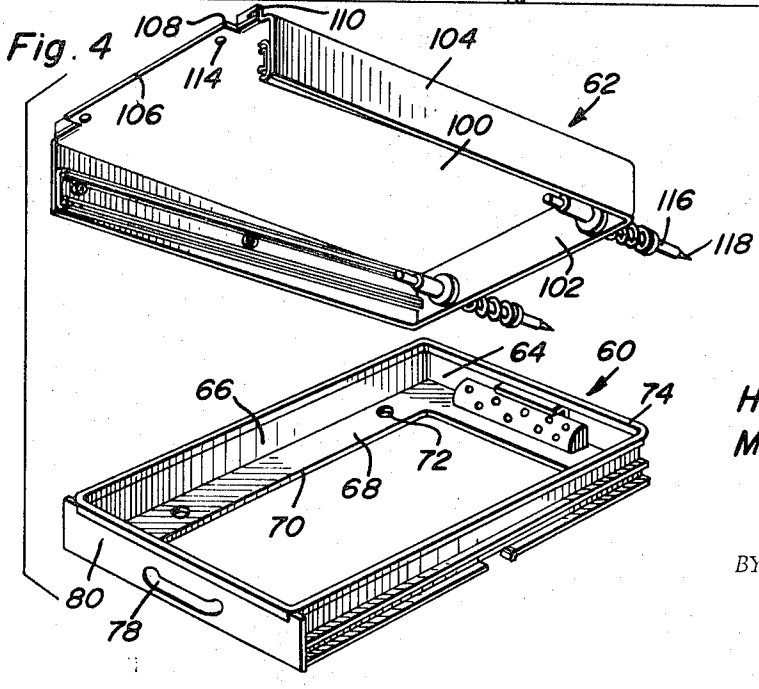
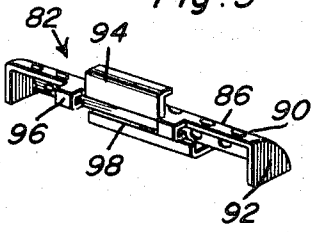


Fig. 5



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GARBAGE CAN AND SUPPORT

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ABSTRACT OF THE DISCLOSURE

A garbage can or container incorporating a removable flexible liner detachably connected with the upper end thereof and a slidable support therefor adapted to be mounted within a cabinet or in underlying relation to a supporting structure to provide movement of the garbage can from a concealed position to an exposed position. The supporting structure includes a sealing assembly which effectively seals the garbage can when in its concealed or stored position.

The present invention relates to garbage cans or containers including a lining therefor which is removable and a drawer-type support therefor to enable movement of the can from a stored concealed and sealed condition to an extended position where it is capable of receiving waste material.

Waste containers including garbage cans are conventionally placed in a convenient corner or the like in the kitchen or other area in which the container is to be used. Frequently, removable liners are provided for such containers and these generally are in the form of conventional paper bags, plastic bags or the like in which the mouth of the bag is merely laid over the top of the container. Cans receiving kitchen wastes are usually provided with a lid which can be opened by a step-on mechanism. Other developments in this field include garbage containers which are mounted in concealed relation within a cabinet or the like and when the container is moved to an exposed position, the container lid is automatically opened. An example of this type of construction is found in Pat. No. 2,934,390 issued Apr. 26, 1960. An example of a garbage can with a liner is found in Pat. No. 1,886,406 issued Nov. 8, 1932. However, such devices have not been accepted in the field of use inasmuch as the structures known previously failed to dependably produce the desired results.

Accordingly, it is an object of the present invention to provide a container such as a garbage can of a relatively large capacity having a liner disposed therein with a novel detachable connection between the upper end of the liner and the upper end of the container to stabilize the liner within the container but yet enable ready removal thereof with the connecting structure the liner serving as a rigidifying handle to enable lifting of the liner when it has been filled with waste material.

Another object of the present invention is to provide a container such as a garbage can including a support structure therefor for supporting the container for movement from a concealed or stored position to an extended position in which the top of the container is exposed for receiving waste material with the supporting structure including a seal which becomes effective automatically when the container is moved to the stored or concealed position.

A further object of the present invention is to provide a garbage container and support in which the support is readily installed in a cabinet such as that normally employed under the sink in a kitchen in an expeditious manner employing only the use of simple tools thus enabling the average homeowner to easily and quickly install the assembly.

Still another important object of the present invention is to provide a garbage can and support which is simple in construction, dependable and long lasting, effective for retaining the container in sealed condition, easy to install in various locations and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a perspective view of the garbage can and support therefor illustrating the assembly in exposed condition and with the liner partially inserted into the container;

FIG. 2 is a vertical sectional view of the construction of FIG. 1 with the container in its stored, concealed position;

FIG. 3 is a sectional view similar to FIG. 2 but with the container in the extended position;

FIG. 4 is a group perspective view of the supporting assembly for the container;

FIG. 5 is a perspective view of a container for deodorizing or sanitizing material;

FIG. 6 is a detail sectional view illustrating the relationship of the garbage container, liner and supporting frame with the seal at the upper edge thereof engaged with the overlying supporting plate;

FIG. 7 is a plan view of the container illustrating the rib around the periphery of the top thereof; and

FIG. 8 is a bottom plan view of the garbage can illustrating the depending projections on the flange for detachable engagement with the supporting frame.

Referring now specifically to the drawings, the garbage container forming a component of the present invention is generally designated by the numeral **10** and may be constructed of any suitable material such as metal, plastic or the like but is preferably constructed of plastic and includes a substantially flat bottom **12** of rectangular configuration and upstanding end walls **14** and sidewalls **16** which terminate at the upper edge thereof in an outwardly extending flange **18** which in turn terminates in a downwardly extending flange **20** as illustrated in FIG. 6. The downwardly extending flange **20** is substantially continuous but discontinuous as at **22** along the end walls thereof to provide handholds for facilitating removal of the container **10**. Attached to the upper surface of the peripheral flange **18** is a rib **24** of cylindrical configuration as illustrated in FIG. 6 which is secured thereto by any suitable means such as by an adhesive or being molded as an integral part thereof or attached thereto by a heat sealing operation or the like as at **26**. The central portion of the rib along each sidewall **16** is discontinuous as at **28** as illustrated in FIG. 7 for a purpose described hereinafter. Also, each side portion of the flange **18** is provided with a pair of depending projections **30** each of which is in the form of a shank having a rounded enlargement **32** on the lower end thereof which has a particular function to be described hereinafter.

Accordingly, the container **10** is constructed with a downwardly tapering cross-sectional area and is substantially conventional except for the rib **24** and the depending projections **30** and has a relatively large capacity as compared with conventional garbage containers. For example, while the capacity may vary, it has been found that a container of this type of **42** quart capacity wlil conveniently be received within a compartment **34** formed in a base cabinet assembly **36** such as normally found within the kitchen and especially is adapted to be received in underlying relation to that portion of a counter top **38** having a sink **40** therein so that the container **10** may be disposed alongside of the drainpipe normally pro-

vided centrally of the sink with the vertical dimension of the container being sufficient to be disposed below the bottom of the sink. As illustrated, the container is mounted in the compartment **34** below a partition **42** which may receive a conventional drawer **44** and the compartment **34** is closed by a conventional door **46** so that the cabinet assembly has the same appearance throughout its extent. The assembly may be supported in a cabinet enclosure or compartment **34**, under a table or ledgetype support or any other suitable supporting structure may be employed for supporting the container **10** in a member described hereinafter.

A liner **48** is provided for the container **10** and generally corresponds in shape and configuration thereto and includes a bottom **50** normally spaced slightly from the bottom **12** but which will be distended into engagement with the bottom **12** when waste material is deposited therein. The liner **48** also includes an upstanding peripheral wall **52** of less thickness and rigidity than the bottom **50**. The upper periphery of the wall **52** is provided with a preformed shape-sustaining reversely curved lip **54** which engages more than one-half of the diameter of the rib **24** in a frictional manner. With the lip **54** which is substantially shape-sustaining and thicker than the wall **52** shaped to engage more than one-half of the circumference of the rib **24**, the liner **48** will be effectively connected to the upper end of the container **10**. The purpose of the omitted portions **28** of the rib **24** is to facilitate the grasping of the opposed side portions of the lip **54** to disconnect the lip **54** from the rib **24** and lift the liner **48** upwardly out of the container **10**. The lip **54** is provided with a notch **56** at diametrically opposed points therein to form a folding point so that the two opposed portions of the lip **54** may pivot toward each other and form substantially a handle structure for facilitating the handling and carrying of the liner **48** when it is filled or partially filled with waste material such as barbage or the like thus facilitating complete removal of the liner **48** without the possibility of the liner being dropped which is a problem when a relatively flexible plastic film type liner is employed.

A supporting assembly is provided for supporting the container **10** and liner **48** for movement from a stored concealed position within the cabinet space **34** to an extended position outwardly of the cabinet space **34** as illustrated in FIGS. 2 and 3 respectively. The supporting assembly includes a movable supporting frame **60** and a stationaary attachable supporting bracket **62**.

The supporting frame **60** is an open rectangular framework defined by vertical end walls **64** and vertical sidewalls **66** integrally connected therewith with the lower edge of the walls **64** and **66** including an inwardly extending peripheral flange **68** defining an enlarged opening **70**. The opening **70** telescopically receives the walls **14** and **16** of the container **10** therethrough with the ledge or flange **18** projecting outwardly in parallel relation to the upper surface of the flange **68** as illustrated in FIG. 6. The opposed portions of the flange **68** have apertures **72** therein which receive the depending projections or shanks **30** having the enlargement **32** thereon so that the plastic material from which the enlargement **32** is constructed will permit the enlargement to pass through the opening **72** and then expand to frictionally and detachably retain the cover **10** in position within the supporting frame **60**. This stabilizes the container **10** during movement thereof between the concealed and extended positions and also retains the container in place during insertion of and removal of the liner **48**.

The upper edge of the walls **64** and **66** is provided with a continuous sealing member **74** thereon which is preferably in the form of a hollow tubular member having depending flanges **76** engaging the opposite sides of the peripheral wall of the frame **60** and being mounted thereon by friction, adhesive or the like as illustrated in FIG. 6.

The outer end of the supporting frame **60** is provided

with a handle **78** in the form of a conventional drawer pull and a cover plate **80** may be provided on the frame **60** for providing a finished appearance to the cabinet assembly.

Supported on the inner end wall **64** of the support frame **60** is a retainer for deodorant material generally designated by the numeral **82** for receiving crystalline deodorant or other type of deodorant material. The retainer **82** includes a bracket **84** attached to the wall **64** and flange **68** in any convenient manner together with an elongated arcuately curved plate **86** having a plurality of perforations mounted therein and end walls **92** integral therewith as illustrated in FIG. 5. The upper edge of the plate **86** is provided with an upwardly extending handle **94** and a pair of downwardly and inwardly extending tabs **96** with the lower edge of the plate **86** also having an inwardly and upwardly extending flange **98** for sliding interlocking engagement with the bracket structure **84** which is in the form of hook-shaped flanges which may be integral with the wall **64** and flange **68** respectively or attached thereto as a separate element.

The supporting plate or bracket assembly **62** includes an enlarged substantially rectangular plate **100** which has a depending inner flange **102** and depending side flanges **104** unitary therewith to telescopically receive the supporting frame **60**. The outer end edge **106** of the plate **100** is straight throughout its major length and provided with recesses **108** at each end edge thereof with the recesses being defined by upturned tabs or abutments **110** which extend above the planar upper surface of the plate **100** for engagement against the inner surface of a transverse frame component **112** of the cabinet assembly as illustrated in FIGS. 2 and 3. The portion of the plate **100** between the recesses **108** is provided with at least one and preferably a pair of openings **114** and this area rests under the transverse frame member **112** and is secured thereto by suitable screw-threaded fasteners such as wood screws or the like extending through the apertures **114**.

The opposite end of the plate **100** is supported by a pair of support pins **116** which have the outer ends thereof sharpened at **118** and which are slidably received in a sleeve number **120** that is fixed to the depending flange **102**. A coil compression spring **122** encircles each pin **116** with one end thereof abutting the flange **102** or a washer provided thereon and the other end abutting a washer or flange **124** fixed rigidly to the pin **116**. Thus, the spring **122** biases the pointed end **118** of the pin **116** away from the flange **102** so that the pointed end thereof will be inserted into a rear wall **126** of the cabinet structure or in the event the cabinet structure does not have a rear wall, it will penetrate into and be anchored to the wall against which the cabinet structure is placed. The plate **100** should be reasonably level and is easily placed in position by taking the front edge thereof and inserting the pointed pins against the rear wall **126** and then forcing the plate **100** inwardly thus compressing the spring until the tabs or lips **110** will slip behind the transverse component **112**. After the plate **100** has been positioned in substantially a level position, the device may be permanently anchored in place by inserting wood screws through the apertures **114**.

Attached to the inner surface of the depending side flanges **104** of the supporting plate assembly **62** is a conventional drawer glide which basically includes nested channels **128** and **130** each of which has upper and lower trackways **132** of arcuate transverse configuration receiving spherical members **134** so that the two channels **128** and **130** may slide in relation to each other. The channel **130** is provided with rollers **136** on the inner surface thereof which are engaged in a longitudinal channel **138** attached to the outer surface of the sidewalls **66** of the supporting frame **60**. The specific construction and configuration of the sliding structure is conventional with

the significant feature of the drawer slide structure being that it is inclined downwardly and outwardly from the inner end toward the outer end as illustrated in FIG. 4. The inner ends of the channels **128** and **130** are nearer the plate **100** than are the ends of the channels adjacent the outer edge **106** of the plate **100**. This is also true of the channel **138** on each sidewall **66** of the supporting frame **60**. With this construction, the supporting frame **60** will move vertically in relation to the plate **100** during its movement between the stored and extended position. For example, as illustrated in FIG. 2, when the supporting frame **60** is in its stored position, the seal **74** is in sealing contact with the undersurface of the plate **100** thus forming a complete seal for the garbage container throughout the periphery thereof. As soon as the supporting frame **60** is moved outwardly toward the extended position of FIG. 3, the downward inclination of the drawer slide including the channels **128**, **130** and **138**, the supporting frame will move downwardly away from the supporting plate **100** so that the seal **74** will only contact the plate **100** when the supporting frame **60** is pushed all of the way inwardly to its stored position.

The inclined channels or drawer slide will cause gravity to automatically roll the garbage container to the fully extended position as soon as it has been moved outwardly only a very slight amount by grasping the handle thus enabling the device to be easily operated by merely grasping the handle and moving it outwardly a very slight amount and then releasing the handle and permitting gravity to fully move the container to the extended position. There is no separate cover for the garbage can which has to be removed after the garbage can has been moved to the extended position inasmuch as the cover engaged by the seal is stationary. The assembly is quite easily installed in a very short time requiring only the use of simple and normally available tools. The springs enable the device to fit into various installations and is especially adapted to fit to the right or left of the waste line from the kitchen sink and the device will fit in all cabinets presently being manufactured and provides a sanitary and odorless installation. The plastic bag or liner may be constructed of inexpensive flexible plastic so that it may be disposed of economically after it has been filled or only partially filled with waste material. The detachable connection between the plastic bag liner and the plastic container provides for retention of the plastic container in a sanitary and clean condition and enables the liner to be readily installed yet easily removed when desired. The pointed ends of the pins securely anchor the rear portion of the supporting structure and eliminate any possible dropping of the inner end of the supporting structure. While the mounting pins are significant when installed in some installations, in other installations, it may be feasible to secure the plate **100** to a support in any suitable manner. For example, in a restaurant or other commercial establishment, the device may be mounted in underlying relation to a counter top, table or the like by merely attaching the plate **100** to the undersurface thereof in a conventional manner. In some installations, the handle and plate associated therewith can be dispensed with in which event the supporting frame **60** itself would form an adequate handle for moving the supporting frame inwardly and outwardly.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described.

What is claimed as new is as follows:

1. A one-piece liner for a waste receptacle comprising a flexible peripheral wall adapted to be received within a container, a bottom forming a closure for the lower end of the peripheral wall, and a peripheral lip at the upper end of the perihpheral wall for engagement with the upper end of a container, said lip being of thicker material than the peripheral wall and being shape-sustaining, said lip being of arcuate configuration in cross-section for detachable engagement with a container, said lip having diametricaly opposed notches therein forming weakened areas in the lip to enable opposed portions of the lip to pivot toward each other about a pivot axis defined by the notches to facilitate lifting and handling of the liner, a waste container having a peripheral wall and a bottom, the upper end of the peripheral wall of the container having an outwardly extending substantially horizontal flange thereon, and an upstanding peripheral rib on the upper surface of the flange, said rib having an arcuate cross-sectional configuration in detachable frictional engagement with the lip on the liner thereby detachably connecting the liner and container.

2. The structure as defined in claim **1** wherein said rib on the flange on the container is discontinuous at opposed portions thereof for enabling the lip of the liner to be easily grasped and lifted upwardly in relation to the container.

3. The structure as defined in claim **2** wherein said flange on the container includes depending projecting means for engagement with an apertured support structure for the container.

4. The structure as defined in claim **3** together with a suporting assembly for the container and liner, said supporting assembly comprising a supporting frame having an enlarged opening therein receiving the container therethrough with the flange of the container projecting peripherally outwardly of the opening, said opening in the frame being defined by an inwardly extending ledge having openings therein receiving the projecting means on the flange of the container, and a suporting plate assembly slidably supporting said suporting frame for supporting the container from a support structure.

5. The structure as defined in claim **4** wherein said supporting plate includes a substantially flat plate surface, said supporting frame having a peripheral wall thereon, a peripherally continuous, seal along the upper edge of the wall for engagement with the flat plate when the supporting frame is disposed in stored condition thus sealing the container and waste material within the liner.

6. The structure as defined in claim **5** wherein said supporting frame and supporting plate includes interconnected movable track means inclined downwardly and outwardly to enable the seal to move away from the flat plate during outward movement of the supporting frame and container therein so that gravity will move the container to an extended position.

7. A liner for a waste receptacle comprising a peripheral will adapted to be received within a container, a bottom forming a closure for the lower end of the peripheral wall, and a peripheral lip at the upper end of the peripheral wall for engagement with the upper end of a container, said lip being of thicker material than the peripheral wall and being shape-sustaining, said lip being of arcuate configuration in cross-section for detachable engagement with a container, a waste container having a peripheral wall and a bottom, the upper end of the peripheral wall of the container having an outwardly extending flange thereon, and a peripheral rib on the upper surface of the flange, said rib having an arcuate cross-sectional configuration for detachable frictional reception of the lip on the liner thereby detachably connecting the liner and container, said rib on the flange on the container being discontinuous at opposed portions thereof for enabling the lip of the liner to be easily grasped and lifted upwardly in relation to the container, said flange on the container including depending projecting means for engagement with an apertured support structure for the container, a supporting assembly for the container and liner, said supporting assembly comprising a supporting frame having an enlarged opening therein receiving the container therethrough with the flange of the container projecting peripherally out-

wardly of the opening, said opening in the frame being defined by an inwardly extending ledge having openings therein receiving the projecting means on the flange of the container, and a supporting plate assembly slidably supporting said supporting frame for supporting the container from a support structure, said supporting plate including a substantially flat plate surface, said supporting frame having a peripheral wall thereon, seal means along the upper edge of the wall for engagement with the flat plate when the supporting frame is disposed in stored condition thus sealing the container and waste material within the liner, said supporting frame and supporting plate including interconnected movable track means inclined downwardly and outwardly to enable the seal to move away from the flat plate during outward movement of the supporting frame and container therein so that gravity will move the container to an extended position, means mounting the supporting plate in a cabinet enclosure, said means including a pair of pointed pins mounted at the rear of the supporting plate, spring means biasing the pins outwardly of the supporting plate for engagement with a back wall of the cabinet enclosure, an upwardly extending lip means at the forward edge of said supporting plate for engaging the inner surface of the front of the cabinet enclosure for retaining the supporting plate in position therein, the forward edge of said supporting plate having apertures therein for receiving fastening screws to fixedly secure the supporting plate in position.

8. The structure as defined in claim 7 together with means on said supporting frame for retaining deodorizing material therein, said means including a perforated plate, means detachably connecting the plate to the supporting frame to enable replenishment of the deodorizing material retained thereby.

9. A supporting assembly for a waste container comprising a stationary supporting plate defining a closure lid,

a supporting frame adapted to suspend a waste container therefrom in sealed relation, means suspending the frame from the undersurface of the plate for relative longitudinal movement of the frame in relation to the plate, said means including inclined cooperating track means on the plate and frame, and a peripheral seal on the frame for sealing engagement with the plate when the frame is in stored position at the upper of the track means and in adjacent relation to the plate, and means operatively connected with the plate for mounting the plate in substantially horizontal position so that gravity will assist movement of the frame to extended position to the lower end of the track means after initial movement of the frame longitudinally of the plate whereby sealing and unsealing of the frame with respect to the plate is responsive solely to longitudinal movement of the frame along the track means with supporting plate defining the closure lid remaining stationary during longitudinal movement of the frame.

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JAMES T. McCALL, Primary Examiner

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