United States Patent [19]

Morris

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[45] **July 8, 1975**

[54] **REFUSE BAG HOLDER**

[76] Inventor: **Ervin E. Morris**, 1906 Waunona Way, Madison, Wis. 53713

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[21] Appl. No.: **379,169**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 162,610, July 14, 1971, abandoned.

[52] **U.S. Cl.** ..... **280/34 B**; 248/98; 280/36 C; 280/47.13 R

[51] **Int. Cl.** **B62b 1/04**

[58] **Field of Search** ..... 280/36 C, 34 B, 47.13 R, 280/47.17; 248/98, 99, 101; 24/271

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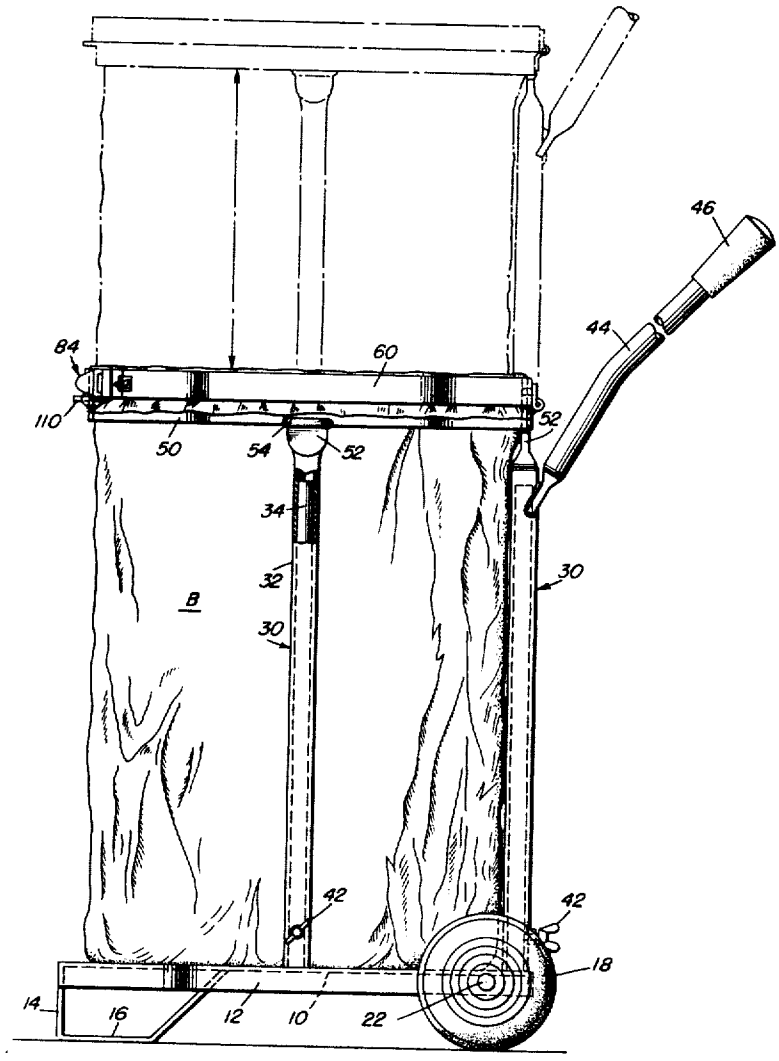
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Primary Examiner—David Schonberg
Assistant Examiner—David M. Mitchell
Attorney, Agent, or Firm—Donald D. Jeffery

[57] **ABSTRACT**

A refuse bag holder comprising a portable frame and a plurality of legs extending upwardly from the frame. A rim or shell is mounted at the top of the legs and a clamping ring is pivotally mounted on the rim and encompasses the latter when in a lower position. The open end of the refuse bag is folded down over the rim and is clamped thereto by means of a latch mechanism carried by the clamping ring.

7 Claims, 9 Drawing Figures



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SHEET 1

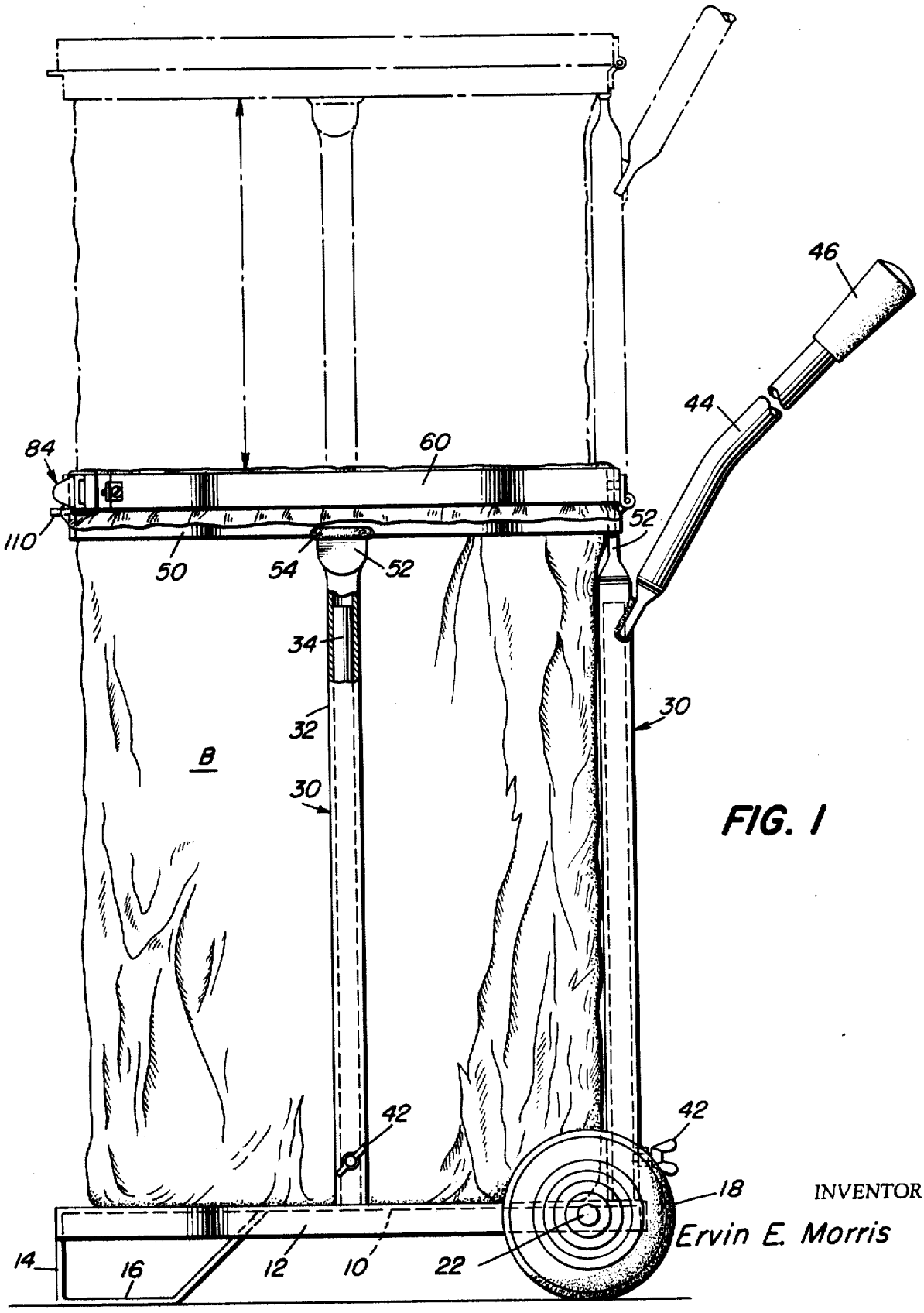
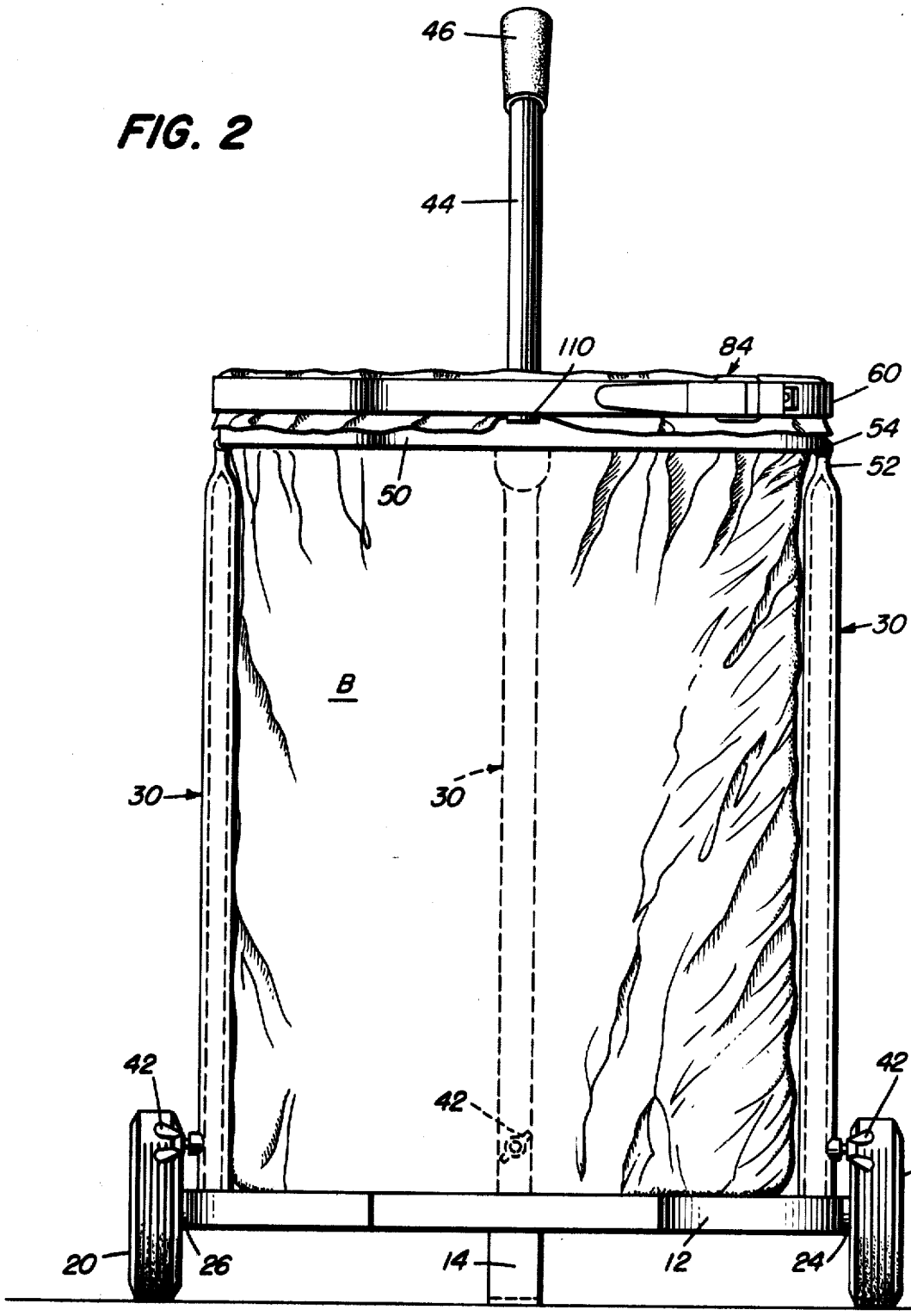


FIG. 1

INVENTOR
Ervin E. Morris

BY Oberlin, Maky, Donnelly & Renner
ATTORNEY.

FIG. 2



INVENTOR
Ervin E. Morris

BY Oberlin, Maky, Donnelly & Renner
ATTORNEYS

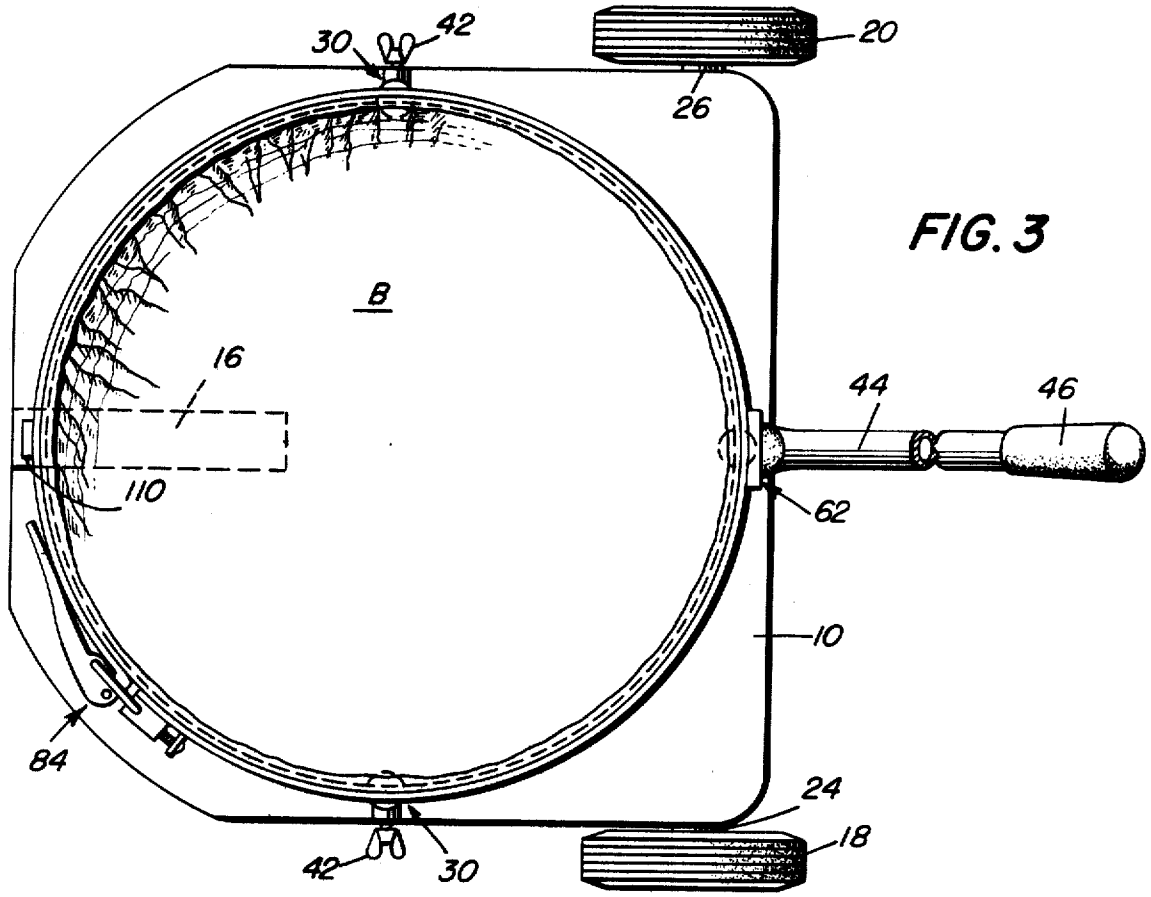


FIG. 3

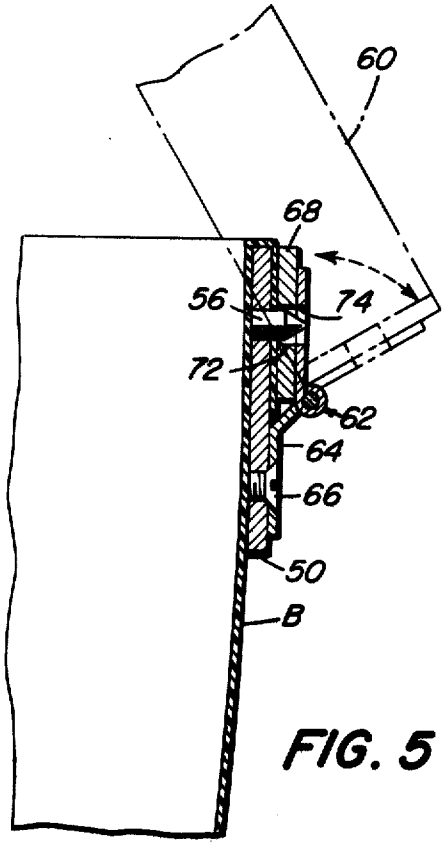
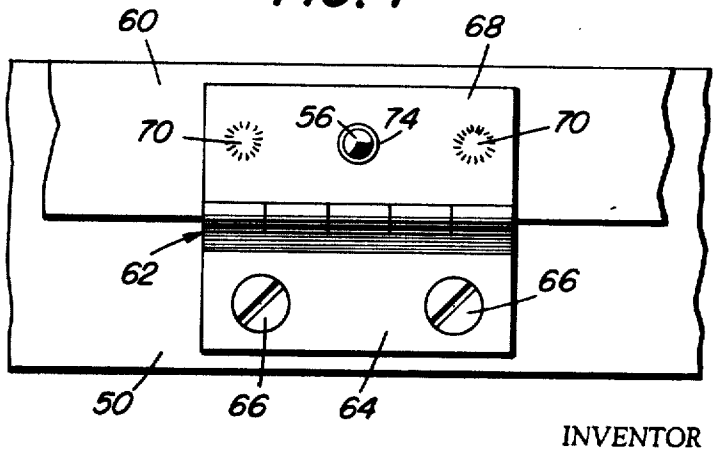


FIG. 5

FIG. 4



INVENTOR
Ervin E. Morris

BY Oberlin, Maky, Donnelly & Renner
ATTORNEYS

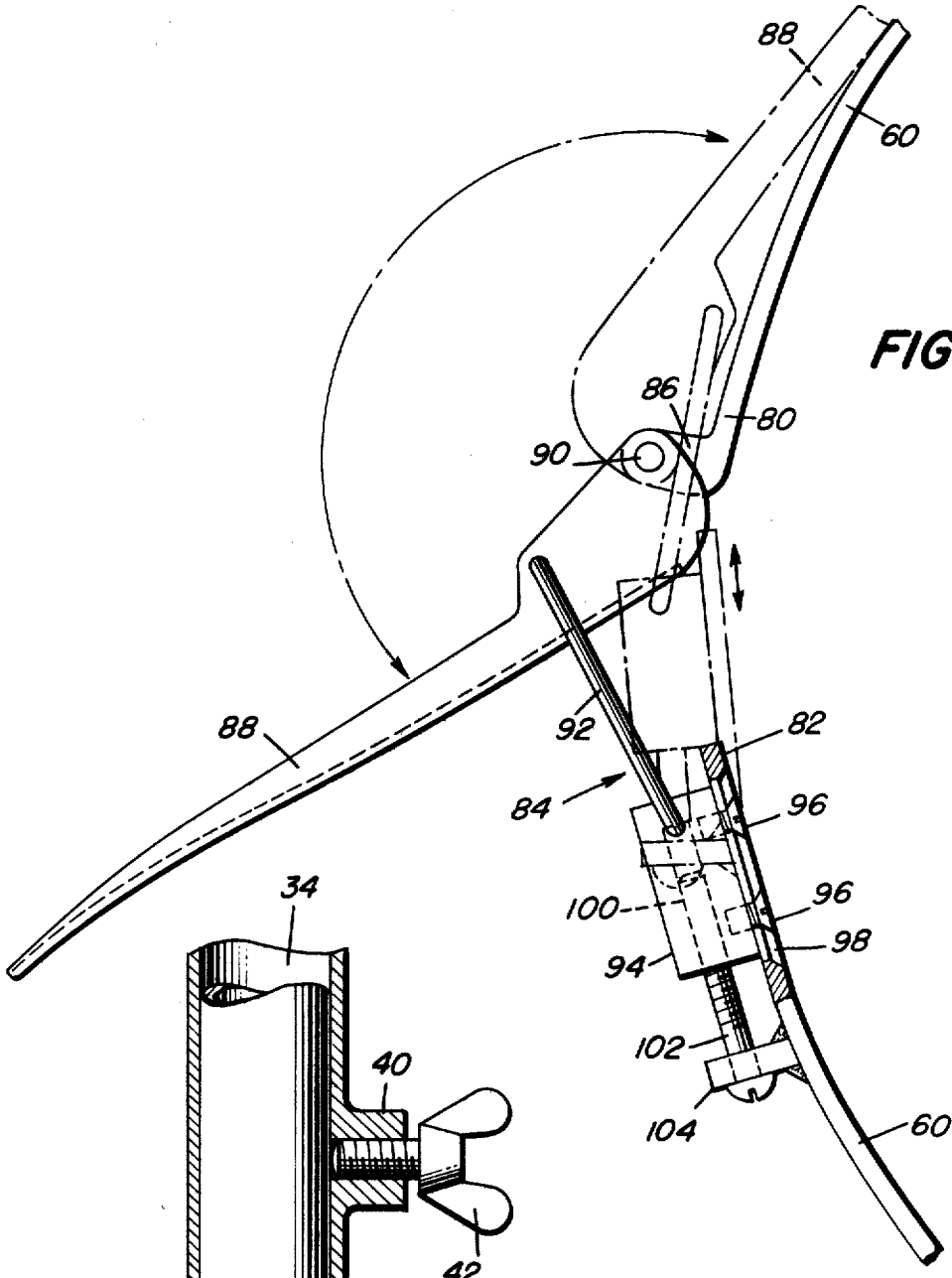


FIG. 6

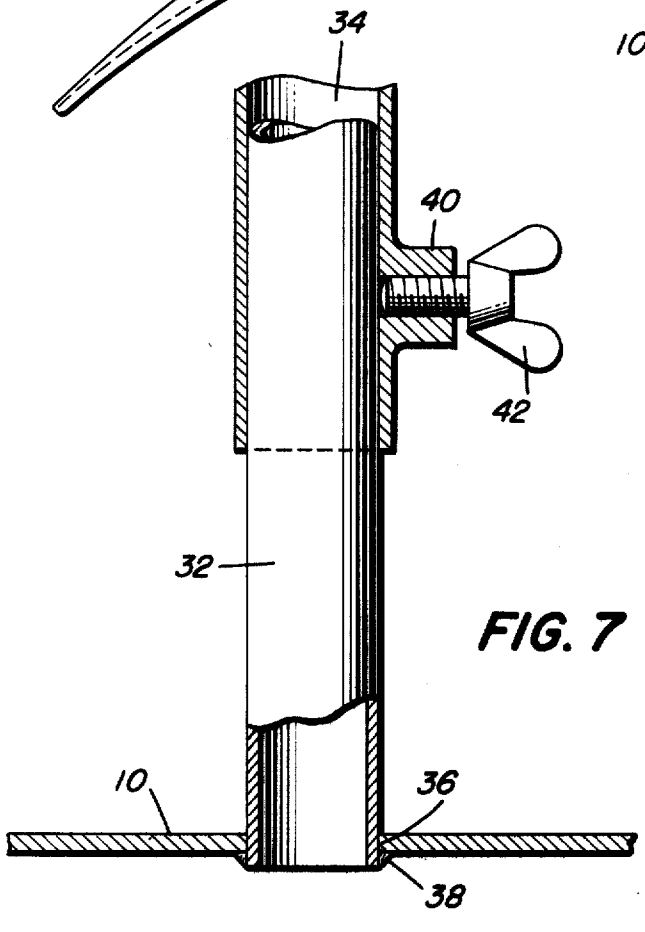
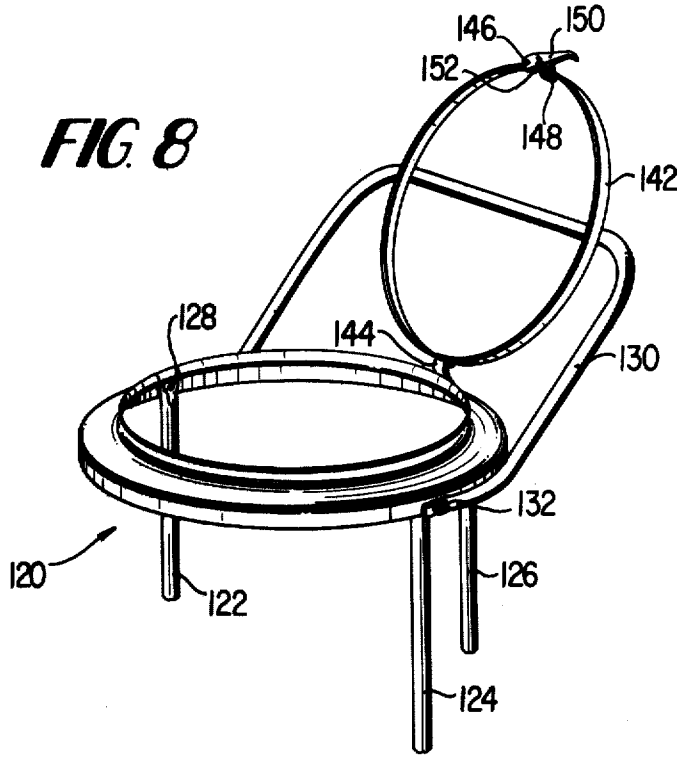


FIG. 7

INVENTOR
Ervin E. Morris

BY Oberlin, Maky, Donnelly & Renner
ATTORNEYS

FIG. 8


146
150
152
148
142
128
144
130
132
120
122
126
124

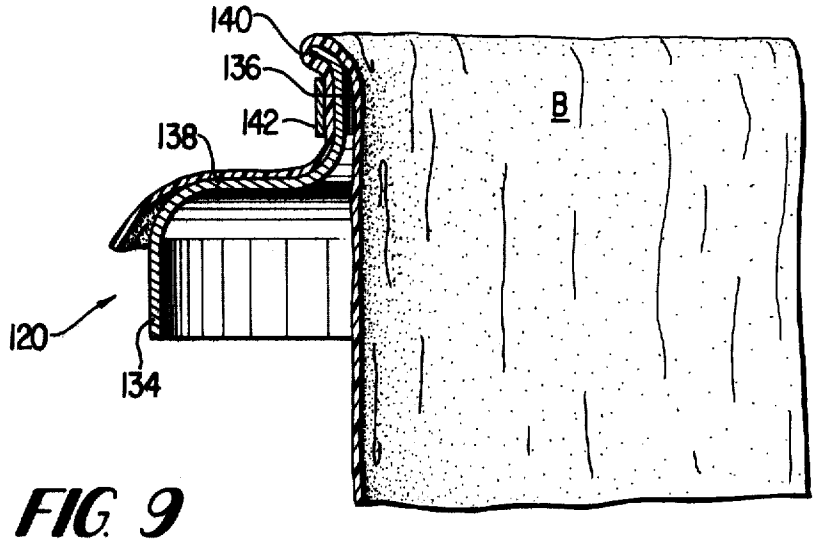

140
136
142
138
B
120
134

FIG. 9

REFUSE BAG HOLDER

CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of my earlier application Ser. No. 162,610, filed July 14, 1971, bearing the same title and now abandoned.

BACKGROUND OF THE INVENTION

The present invention relates as indicated to a refuse bag holder and relates more particularly to a holder which in its preferred form is portable and also adjustable vertically for releasably retaining various size refuse bags.

The relatively recent proliferation of plastic refuse bags for various type refuse products has had a particularly helpful affect on the problem of disposing of lawn and garden refuse. Heretofore, grass and leaves were simply accumulated in piles or relatively large refuse containers such as large baskets or cans. The problem of leave disposal was particularly pronounced in view of the relatively large quantities of leaves which accumulated over a relatively short period of time. This problem was further magnified by the passage in many jurisdictions of ordnances prohibiting the burning of leaves or grass.

The advent of the relatively large plastic bag, which is normally made from any suitable plastic material such as polyethylene or polyvinyl chloride, has permitted the convenient collection of such materials, with such bags normally being clipped or tied at the top to close the bag and thereby prevent the leaves, cut grass or other such materials from being blown away before their intended disposal. Such bags also facilitate refuse pick-up inasmuch as the bags, even when filled, are relatively light in weight, and easy and clean to handle.

This ease of handling in pick-up has unfortunately not characterized the placement or filling of refuse into the plastic bags. Bags are normally supplied in quantity in a flat condition and must of course be expanded or opened to be filled. Usually, one finds himself in the position of trying to maintain the bag open with one hand and trying to fill the bag with refuse with the other hand, a decidedly inconvenient arrangement. Although various bag holders have been proposed, these are essentially of the same order as relatively large garbage cans or the like, in which the plastic bag is placed within the can to in effect serve as a liner for the same. The same difficulties encountered with movement and use of the can itself are thus likewise encountered when such can has been lined with a plastic bag.

SUMMARY OF THE INVENTION

With the above in mind, a primary object of the present invention is to provide a refuse bag holder by means of which a plastic bag of the type described can be quickly and easily supported on the holder in an open position for collection of refuse.

A further object of the present invention is to provide a refuse holder which is portable and can be rolled from one location of use to another, and in which the bag retaining assembly is vertically adjustable relative to the supporting frame to accommodate bags of various sizes.

A further, more specific object of the present invention is to provide a refuse holder in which a plurality of two-part, telescoping leg assemblies extend upwardly from the supporting frame and have attached to their upper ends a rim over which the open end of the refuse bag can be placed. In an alternative form of the invention, an enlarged shell is employed in place of the circular rim. The holder further includes a clamping ring pivotally carried by the rim or shell for movement between an upper, withdrawn position permitting placement or removal of the bag from the rim, and a lower position in which said ring encompasses the rim or shell and the open end of the bag positioned around such rim. The clamp ring is provided with means to quickly clamp or release the bag to permit placement or removal of the same as the case may be.

These and other objects of the invention will become apparent as the following description proceeds in reference to the application drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 comprises a side elevational view of the refuse bag holder of the present invention, with the holder being shown in solid lines and in condition for use with a bag placed thereon, with the holder being shown in dotted lines in a vertically raised position;

FIG. 2 is a front elevational view of the holder shown in FIG. 1;

FIG. 3 is a top plan view of the holder shown in FIG. 1;

FIG. 4 is a fragmentary view showing more clearly the manner in which the clamp ring is hinged to the rim;

FIG. 5 is a cross sectional view taken through the hinge assembly;

FIG. 6 is a fragmentary view showing more clearly the latching mechanism for the clamp ring;

FIG. 7 is a fragmentary view of one of the two-part leg assemblies, showing more clearly the manner in which the vertical adjustment of the holder is effected,

FIG. 8 is a fragmentary perspective view of an alternate form of the invention, in which the rim which receives the clamp ring is in the form of a curved shell, and

FIG. 9 is an enlarged sectional view through the shell of the FIG. 8 form of the invention, showing in detail the manner in which the bag is clamped to the shell.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now in more detail to the application drawings, in which like parts are indicated by like reference numerals, and initially to the form of the invention illustrated in FIGS. 1–7, the refuse bag holder comprises a bottom supporting plate 10 around the periphery of which is mounted a downwardly depending skirt 12. The shape of the plate 10 is not critical, with the plate in the form shown, referring to FIG. 3, comprising generally straight rear and side walls, with slightly curved corners, and a more gradually curved front portion.

The skirt 12 preferably comprises relatively light gauge strap steel, with the skirt being secured to the plate in depending fashion by any suitable securing method, such as welding or the like.

A front supporting stand 14 which can be formed of similar strap material is secured to the rim and plate by welding or the like and includes a flat bottom portion 16 for supporting the front of the holder on the ground or other supporting surface so as to elevate the plate and skirt from such supporting surface. A rotating

caster can be employed in lieu of the stand **14** to facilitate rolling movement of the holder.

A pair of wheels **18** and **20** are carried by shafts **22** carried by sleeves **24** and **26** which position the wheels from the plate **10** and skirt **12**, with the shafts **22**, only one of which is shown in the application drawings, extending through openings therefor in the skirt **12** for supporting the wheels. The wheels **18** and **20** are conventional and serve to support the rear end of the refuse bag holder in elevated position, as shown in FIG. **1**. The holder can be rolled from location to location by simply tilting the holder rearwardly to elevate the stand **14** from the ground whereby the holder is supported solely by the wheels **18** and **20** for rolling movement.

A plurality of leg assemblies commonly and generally indicated at **30** extend vertically upwardly from the supporting plate **10** for supporting the upper sections of the holder. Each such leg assembly **30**, there being three illustrated in the form shown, is identical, comprising, referring to FIG. **7**, an inner leg **32** and an outer telescoping leg **34**. The bottom of the leg **32** extends through an opening **36** provided therefor in the plate **10**, with the leg being welded as shown at **38** to the supporting plate. The outer leg **34** is formed adjacent its lower end with an internally threaded boss **40** which is adapted to threadedly receive a winged bolt **42** which, when tightened, effectively clamps the inner leg **32** to the outer leg **34**. When the winged bolt is withdrawn, the outer leg **34** may be slid upwardly or downwardly over the leg **32** as desired to vertically adjust the elevation of the upper sections of the holder for a purpose which will be made apparent hereinbelow.

Attached by welding or the like to the leg assembly **30** at the rear of the holder is a handle **44** provided with a handle grip **46** at the outer end thereof. The handle **44** is angularly disposed so as to permit gripping of the handle grip **46** at a convenient elevation for moving the holder. As will be apparent, by means of the handle **44**, the holder can be tilted rearwardly and rolled to the desired location.

A circular rim **50** is mounted by welding or the like to the upper end of the outer legs **34**, with the latter being flattened as shown at **52** at their upper ends to facilitate such weldment, which is shown at **54**. To position the bag, which is indicated at B, for use on the holder, the open end of the bag is extended upwardly within the rim and then rolled down over the rim, as perhaps best shown in FIG. **5**. To partially retain the bag in such position over the rim, the latter has mounted thereon a bullet shaped stud **56**, FIG. **5**, which is adapted to pierce the bag and temporarily retain the same until the bag can be more positively clamped over the rim by means to be presently described.

A clamp ring **60** is hinged to the rim **50** for movement between a clamping position as shown in FIG. **1** and a raised position, as shown in dashed lines in FIG. **5**, with this latter position of the clamp ring permitting the refuse bag B to be placed over or removed from the rim.

The clamp ring **60** is hinged to the rim **50** by means of a hinge generally indicated at **62** the lower leaf **64** of which is mounted on the rim **50** by bolts **66** or the like. The upper hinge leaf **68** can be secured to the clamp ring in any suitable manner such as by spot welds **70**. Both the clamp ring **60** and hinge leaf **68** are formed with aligned openings **72** and **74** for receiving the stud **56** when the clamp ring is in its lowered position.

As previously mentioned, means are provided for rigidly clamping the ring **60** around the rim **50** and refuse bag disposed thereover, and for releasing the clamp ring to permit withdrawal of the same to its upper position thereby permitting removal of the refuse bag. Referring to FIG. **6**, the opposed free ends **80** and **82** mount a latching mechanism commonly indicated at **84** for drawing such free ends together to clamp the bag in place or to separate such free ends for permitting withdrawal of the clamp ring **60** from its clamping position.

The free end **80** of the clamp ring is shaped to form a generally cylindrical sleeve **86** disposed around which is a generally U-shaped lever **88**. A pin **90** is attached to the opposed side walls of the lever **88** and extends through the sleeve **86** for permitting pivotal movement of the lever **88** relative to the clamp ring. A generally rectangular connecting member **92** is connected at one end to the lever **88** and at its other end to an adjusting block **94** mounted by bolts **96** to the free end **82** of the clamp ring **60**. The latter is formed with a longitudinal slot **98** for receiving said bolts **96** and permitting longitudinal adjustment of the block **94** relative to the clamp ring **60**.

The block **94** is formed with a transverse bore for receiving the adjacent ends of the connecting member **92** and a longitudinal, threaded bore **100** for receiving a threaded adjustment screw **102**. The latter is supported in the region of its head by means of a flange **104** which is welded or otherwise secured to the clamp ring. It will therefore be seen that by rotating the adjustment screw **102** in the desired direction, the block **94** can be moved longitudinally relative to the clamp ring **60** thereby changing the orientation of the lever **88** due to its connection to the block **94** through the connecting member **92**.

The clamp ring **60** is shown in FIG. **6** in its released condition in which the free ends **80** and **82** are relatively spaced whereby the clamp ring is loosely received around the rim and refuse bag. In such unlatched position, the clamp ring **60** can be moved upwardly to its dashed line position as shown in FIG. **5** thereby to permit removal of the refuse bag B and placement, if desired, of a second refuse bag over the rim **50**. To rigidly clamp a refuse bag in place over the rim **50**, the clamp ring is moved to its lower position encompassing the rim and the lever **88** rotated clockwise, referring to the FIG. **6** orientation thereof, about an axis through the pin **90**. Such movement of the lever **88** effectively draws together the free ends **80** and **82**, with the diameter of the clamp ring **60** and the described variable adjustment permitting the clamp ring to rigidly clamp the bag B over the rim **50**. In such clamped position, the lever **88** will be positioned relatively adjacent the clamp ring, extending longitudinal relative thereto.

A stop pin **110** is mounted in outwardly extending manner on the rim **50** generally opposite the hinge **62** for stopping and thus positioning the rim when the same has been moved to its lower position. The pin **110** is vertically located relative to the hinge so that the rim **50** is generally horizontal when in its lowered position.

To remove the refuse bag after the same has been filled, the lever **88** is pivoted counterclockwise toward its FIG. **6** position thereby separating the free ends **80** and **82** of the clamp ring **60** and releasing the clamping

action on the refuse bag and rim. The clamp ring **60** can then, as described, be pivoted upwardly to permit removal of the refuse bag.

The normal use of the holder shown in FIGS. 1–7 should be apparent from the above description. The leg assemblies **30** can be vertically adjusted relative to the supporting plate **10** depending upon the length of the bag to be held. After such vertical adjustment, the bag is placed in the holder with the open end of the bag being rolled downwardly over the rim **50** with the clamp ring **60** being in a released position. The clamp ring **60** is then by means of the latch mechanism rigidly clamped around the bag and rim **50** thereby holding the bag in supported position. The holder can then be moved to the desired location by means of the handle **44** and refuse placed in the bag. When the bag has been filled or when it is otherwise desired to remove the bag from the holder, the clamp ring **60** is released as described and the bag removed.

Referring now to the modified form of the invention illustrated in FIGS. **8** and **9**, in this form of the invention a top shell generally indicated at **120** is securely mounted at the upper end of legs **122, 124** and **126** which may be single piece, fixed legs, or which may form part of vertically adjustable leg assemblies previously described in connection with the FIGS. 1–7 form of the invention. In either event, the upper ends of the legs are fixed to the interior of the shell by fasteners or welding, with leg **122** in FIG. **8** being shown flattened at its upper end and secured to the shell by a bolt **128.** The shell is formed with a series of openings in the regions in which the legs are bolted to facilitate the mounting of the legs.

A handle **130** of generally inverted U-shape is attached to the exterior of the shell as shown in FIG. **8.** The curved leading ends **132** of the handle are preferably flattened to facilitate the bolting of the handle to the shell, and the handle ends are formed with openings which can be aligned with the openings in the shell to receive the legs **122** and **124,** whereby a single fastening connection can securely mount both the handle and the legs **122** and **124** to the shell **120.**

Referring to FIG. **9,** the shell **120** includes a radially enlarged lower section **134** and a radially inner, reduced upper section **136** which are integrally connected by a generally flat shoulder portion **138.** The upper section **136** is formed with an outwardly turned lip **140** by means of which the bag, indicated at B, can be stretched over the shell as shown in FIG. **9** and firmly retained in place until the clamp ring can be lowered around the bag and latched. The lip **140** also serves to define the upper end of a groove or channel to facilitate entry and retention of the clamping ring around the shell, as can be seen in FIG. **9.**

A clamp ring **142** is hinged to the shell by means of a hinge **144** which preferably comprises a plastic hinge commonly referred to commercially as a "living hinge," the resilience of which permits the hinging action of the clamp ring to be continually repeated without significant deterioration of the hinge action. The ends of the hinge **144** can be secured respectively to the top shoulder **138** of the shell and to the outer surface of the clamp ring **142.** The length of the hinge is selected so that the clamping ring extends loosely around the upper section of the shell when the unlatched clamp ring is lowered around the shell. The clamp ring **142** is shown in its raised position in FIG. **8** and can conveniently rest on the handle **130** when a filled bag is being removed from the holder or a replacement bag fitted around the upper section of the shell. when lowered, the clamp ring **142** overlies and is supported by the shoulder **138** of the shell **120** prior to latching the clamp ring to clamp the bag B to the reduced upper section **136** of the shell, as shown in FIG. **9**

The clamp ring **142** preferably comprises a metal band of steel or the like the ends of which are rolled back to form cylindrical eyelets **146** and **148** for receiving the latching mechanism. The latter comprises a latch handle **150** rotatably mounted in eyelet **146,** and a connecting ring **152** one end of which is positioned in eyelet **148** and the other end of which extends through the latch member **150,** whereby the latch **150** can be moved in the manner of a toggle link to open or close the ends of the clamp ring for clamping the same around the upper section of the shell.

The manner in which the alternative embodiment illustrated in FIGS. **9** and **10** is used should be apparent from the above description and is essentially the same as for the form illustrated in FIGS. **1–7.** As noted, the outwardly turned upper lip **140** of the shell permits the bag B to be stretched when positioned around the lip, as shown in FIG. **9,** whereby the bag can be retained in place until the clamp ring can be lowered to a position supported by the flat shoulder **138** of the shell, with the clamp ring thereafter being latched, with the latched condition of the clamp ring being illustrated in FIG. **9.** The shell also provides a substantially heavier member at the top of the bag holder thereby providing a more rugged quality to the unit. The shoulder section **138** of the shell is preferably slightly tapered so as to shed any materials falling thereon during the bag filling operation. After the bag has been filled, the latch **150** is opened and the clamp ring moved to its raised position in which it can supported by the handle **130** as above noted. The upper end of the bag can then be removed from the shell, and the filled bag removed from the open front end of the refuse holder for suitable disposition.

It will therefore be seen that the present invention provides a refuse bag holder which is simple in construction and very convenient to use. The bag can be rigidly clamped over the rim or shell simply and quickly, and can be removed from the holder by opening the latch and raising the clamp ring. In one form of the invention, the legs are vertically adjustable to accommodate various size bags, and in an alternate embodiment the shell is shaped to frictionally retain the bag in place around the shell until the clamp ring can be lowered and the latch closed.

I claim:

1. A holder for a refuse bag having an open and closed end comprising:

a. a bottom supporting plate for supporting the closed end of said refuse bag,

b. a pair of wheels operatively connected to and supported from said supporting plate for elevating the holder from the ground or supporting surface and permitting rolling movement of said holder thereover,

c. a plurality of legs securely mounted on said plate and extending upwardly in circumferentially spaced relation therefrom,

d. a circular shell securely mounted on the upper ends of said legs for receiving a refuse bag in folded position thereover, said shell comprising an outer, radially enlarged lower skirt section and a radially reduced upper section integrally formed with said skirt and separated therefrom by a generally flat shoulder section of substantial radial dimension, said upper section having an outwardly directed rim at its upper end over which a refuse bag can be stretched and retained,

e. a clamp ring for clamping a refuse bag on said shell, said clamp ring comprising a split ring which when closed tightly engages and holds the bag on the upper section of said shell and which when opened rests on said shoulder section of said shell and permits the bag to be removed from the rim,

f. means for pivotally mounting said clamp ring on said shell, said pivot means permitting movement of said clamp ring between a lower position resting on said shoulder section and encompassing said upper section of said shell and an upper, withdrawn position spaced from said shell for permitting placement or removal of a bag from said shell, and

g. clamp means forming part of said clamp ring for tightly clamping the bag around the upper section of said shell and for releasing said clamp ring from said shell to permit said ring to be moved to its upper, withdrawn position for removal of said bag from said holder, said clamp means comprising a latch mechanism carried by the free ends of said split ring, the closing of said latch mechanism effecting the closing of said split ring thereby to tightly clamp said bag around said upper section of said shell.

2. The holder of claim **1** further including a supporting stand mounted at the front of said supporting plate and cooperating with said wheels to position said supporting plate in an elevated, generally horizontal position when the holder is unattended.

3. The holder of claim **1** wherein said latch mechanism comprises a lever pivotally carried by one of said free ends of said clamp ring, and a member interconnecting said lever and the other end of said clamp ring, with movement of said lever effecting convergence of the free ends of said clamp ring for clamping the bag in place.

4. The holder of claim **1** wherein said clamp means includes means for varying the degree of convergence of said free ends of said clamp ring and thus the clamping pressure on said bag and rim.

5. The holder of claim **1** wherein each of said legs comprises inner and outer telescopically mounted leg members which cooperatively permit vertical adjustment of said rim relative to said supporting plate to accomodate various size bags, and means for locking said leg members in their vertically adjusted position.

6. The holder of claim **1** wherein said legs are three in number and spaced around said plate so as to leave free an opening at the front of said device extending substantially 180° thereby facilitating the removal of a filled bag from the holder.

7. The holder of claim **1** wherein said legs are in the form of leg assemblies each of which includes a pair of telescoping legs, and means for retaining said legs in their vertically adjusted position.

* * * * *