Jan. 26, 1965 S. A. REED 3,167,185

GARBAGE RECEPTACLE RACK

Filed May 16, 1963 2 Sheets-Sheet 1

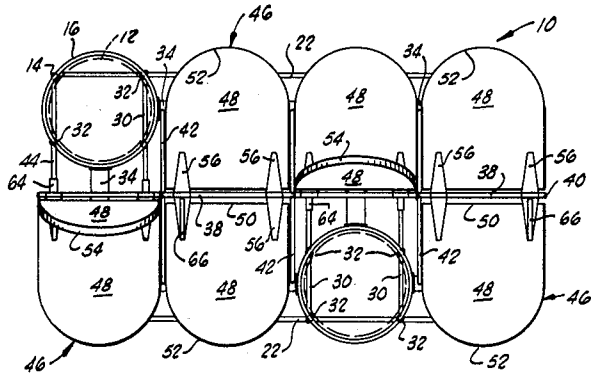


Fig. 1

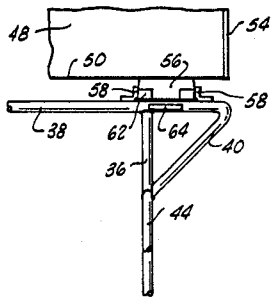


Fig. 4

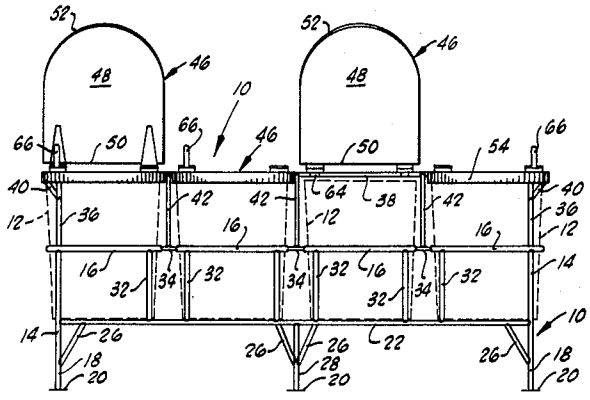


Fig. 2

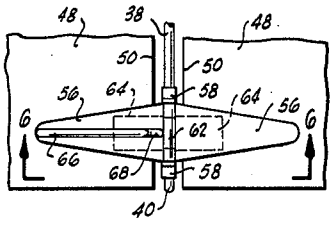


Fig. 5

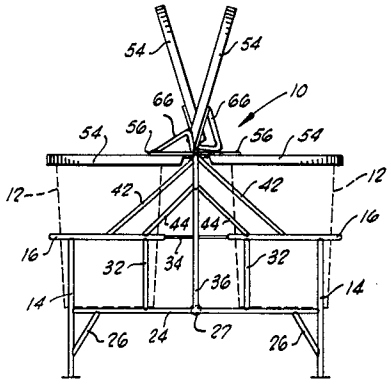


Fig. 3

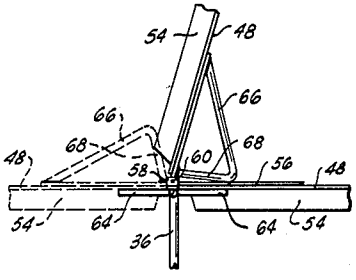


Fig. 6

INVENTOR.
A. REED

BY
Dunlap, Laney & Hubbard
ATTORNEYS

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GARBAGE RECEPTACLE RACK

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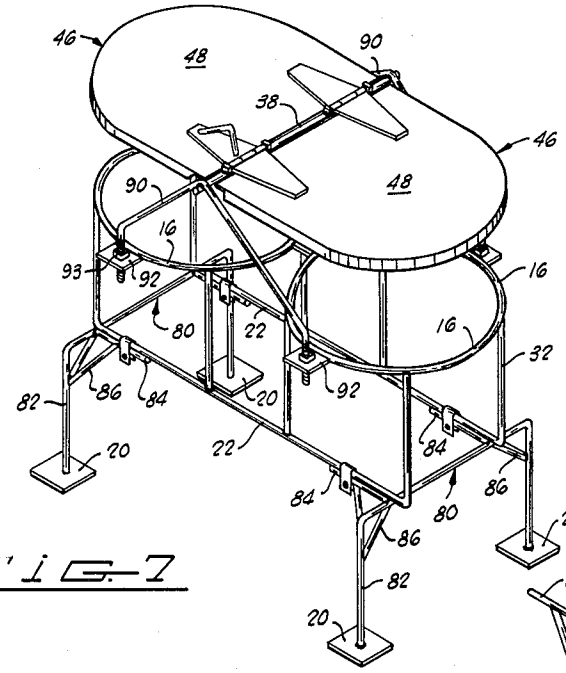


Fig. 7

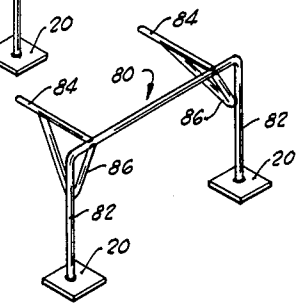


Fig. 7A

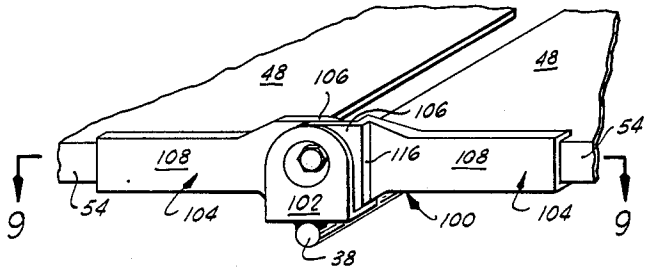


Fig. 8

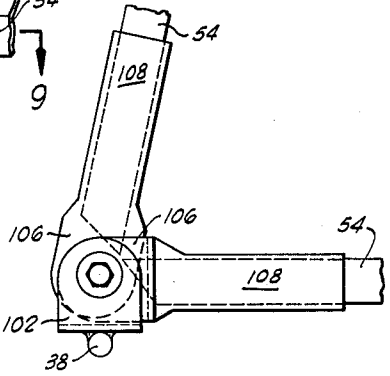


Fig. 10

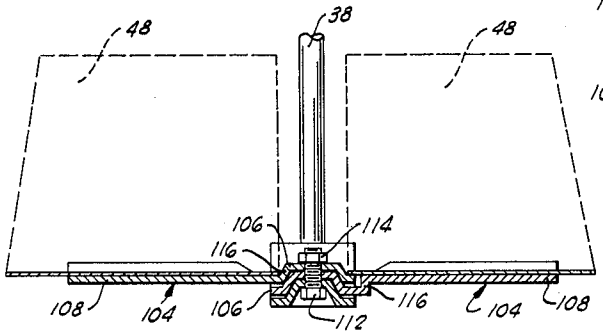


Fig. 9

INVENTOR.
SELMAR A. REED

BY Dunlap, Laney & Hubbard
ATTORNEYS

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3,167,185

GARBAGE RECEPTACLE RACK

Selmar A. Reed, 716 Arlington Ave., Lawton, Okla.

Filed May 16, 1963, Ser. No. 282,195
4 Claims. (Cl. 211—84)

This application is a continuation-in-part of application for United States Letters Patent bearing Serial Number 196,097 and filed May 21, 1962.

This invention relates to a new type of garbage receptacle rack. More particularly, but not by way of limitation, the invention relates to a new type of garbage receptacle with lids attached as an integral part of the rack wherein a number of garbage receptacles may be retained and stored without the necessity of providing a separate, removable cover for each receptacle.

It is frequently necessary, for example, in the case of multiple-dwelling units and places of business, such as hotels, motels, hospitals, restaurants, groceries, and other establishments, to provide for retaining and storing a large number of garbage and trash receptacles in a neat and orderly manner in a minimum of space. An attractive, rubbish-free appearance is, of course, desirable in residential neighborhoods. However, in business districts, shopping centers, hotel and hospital areas, etc., particular care must be taken to guard against cluttered, untidy, ill-smelling and unsanitary conditions in garbage-storage areas which would have a repelling effect upon prospective customers, patients, and guests. With many of the structures now in use where separate, removable covers are provided for each garbage receptacle, it is difficult to prevent covers from being carried away by vandals, misplaced, or, over a period of prolonged usage, from becoming so bent and misshapen that they will not fit tightly enough to prevent garbage and debris from escaping.

A number of structures have heretofore been proposed for neatly storing trash and garbage receptacles in such a manner that dogs or other animals cannot overturn the cans and litter the area around the cans. Such racks have also incorporated various structural features for preventing the lids of the cans from being blown therefrom by high winds or the cans from being overturned by such winds. Since the basic concepts involved in such structures have long since been developed in detail and have appeared over the years in various forms, the more recent developments in structures of this type have taken the form of improvements in the simplicity of the racks and economy of construction. It has also been a constant aim of inventive effort in this area to improve the ease with which such cans may be stored in the racks and removed therefrom by garbage collection personnel and other persons for purposes of cleaning the cans, etc.

The present invention provides a new type of trash or garbage receptacle retaining rack which is extremely simple in construction, yet is sturdy and characterized by a long and trouble-free operating life. A major feature of the invention is the provision, as an integral part of the rack, of a plurality of heavy lids which may be easily raised to a position which does not interfere with the storage and removal of the receptacles from the rack, but which, when closed, prevent any of the trash or garbage contained within the trash receptacles from being blown therefrom by the wind or removed therefrom by dogs or other animals. The rack is also extremely useful in that it will accommodate a substantial number of garbage receptacles, and may be easily moved from one location to another. It is thus especially adapted for use by the occupants of multiple-inhabitant dwellings such as apartment houses, hotels, motels, and the like.

An additional advantage of the present invention is the time saved in simplifying the work of persons whose job is to empty garbage and trash, clean up about the storage

area, and to collect the garbage and trash for hauling away. The attached lids of the rack, which can be easily raised, permit garbage to be placed in or removed from as many receptacles as necessary without going through the additional steps of removing each separate cover, placing it upon the ground while emptying trash into or removing trash from the receptacle, and then replacing the lid upon each receptacle after the task is completed.

Another salient feature of the invention is the adjustability of the lid structures which are provided for covering trash or garbage receptacles stored in the rack of the invention so that variations in the size of these receptacles need not result in undesirable gaps or spaces being left between the top of the receptacles and the lids to permit flies, rats or other vermin to enter the receptacles. The structure which is provided and which permits the lids of the rack to be adjusted in their position is simple and inexpensive in construction, and permits adjustments of the positions of the lids to be made in both a horizontal and vertical plane, or in either a horizontal or vertical plane at different times as a specific situation may require.

Broadly, the present invention comprises a plurality of horizontal members for firmly supporting a plurality of trash or garbage receptacles in spaced relation from the ground such that they are not readily accessible to rats and other vermin, and are kept off of the moist earth to prevent corrosion of the metal of which the receptacles are usually constructed. The garbage receptacle rack of the invention further comprises an annular member which is of a size to snugly surround each receptacle at the midsection thereof and prevent horizontal displacement of the receptacle. As a final element of the invention, the garbage receptacle rack includes a horizontally extending rod or bar to which are pivotally attached a plurality of heavy lid members corresponding in number to the number of garbage receptacles which the rack is capable of accommodating. The lid members are arranged in oppositely disposed pairs with one of the lids in each pair being provided with a novel stop member which prevents both the lid carrying the stop member and the second lid of the pair from being pivoted upwardly beyond a certain point when it is desired to remove the garbage receptacles from the garbage can rack. The point at which the upward movement of the lids is arrested is calculated to permit each of the heavy lids to be closed with a minimum of effort, and yet to permit each of the garbage receptacles in the rack to be removed easily and without interference by its respective lid. The novel stop member construction which is utilized to control the degree of freedom with which each of the lids may move is extremely simple and inexpensive in construction and yet is of a configuration which assures extreme ruggedness and a long service life.

In a preferred embodiment of the invention, the horizontally extending rod to which are pivotally attached the heavy lid members is supported at each of its ends by a pair of adjustable elements which are adjustably attached to the structure which supports and surrounds the garbage cans. The adjustable elements may be adjusted in a way such that the lids used to cover the receptacles placed in the rack may be shifted in their vertical or horizontal positions so that receptacles of varying height may be efficiently covered by the lids which are provided.

In yet another embodiment of the invention, the horizontal members which support the garbage receptacles are retained in their vertically spaced relation from the ground by a plurality of detachable leg assemblies which may be quickly and easily secured to the horizontal receptacle supporting members, but which may be detached therefrom and stored inside the framework formed by the horizontal receptacle supporting members and the annular members to facilitate shipment and storage of the

racks when not in use. Toward the latter end, one embodiment of the invention also contemplates the detachable securement of the lid members to their hinge structures so that the plates which form the lid members can be easily detached from the hinges and remaining structure of the rack to facilitate shipment in a compact form.

From the foregoing description of the invention, it will be apparent that a major object of the garbage receptacle rack of this invention is to provide an improvement in garbage receptacle racks permitting such racks to be constructed more economically, and yet to provide for a more efficient and sightly storage of a larger number of garbage receptacles than has been characteristic of racks as heretofore proposed.

Another object of the present invention is to provide a garbage receptacle rack in which a plurality of garbage receptacles may be stored without the provision of a separate detachable cover for each of the receptacles.

A further object of the present invention is to provide a storage rack for a plurality of garbage receptacles, which rack may be easily moved or transported from one location to another.

An additional object of the present invention is to provide a garbage receptacle rack having a plurality of pivotal lid members in combination therewith, which lid members may be easily and safely moved from a closed position over garbage receptacles stored in the rack, to an open position which permits the receptacles to be easily and quickly removed from the rack, and yet which permits the lid members to be easily returned to their covering position at such times as the garbage receptacles are replaced in the rack.

A further object of the present invention is to provide a garbage receptacle rack which may be utilized for storing a plurality of garbage receptacles in an elevated position so that they are out of contact with the ground.

Yet another object of the present invention is to provide a garbage receptacle rack which is simple and economical in construction, yet which is mechanically rugged and is characterized by a long and trouble-free operating life.

Another object of the invention is to provide a garbage receptacle rack which can accommodate a plurality of garbage receptacles and which is provided with a plurality of lid or cover members corresponding to the number of receptacles to be stored therein, which lid or cover members are adjustable in both horizontal and vertical planes so that receptacles of varying sizes may be stored in the rack.

A further object of the present invention is to provide a detachable leg assembly for supporting a garbage receptacle rack in spaced relation to the ground, which detachable leg assembly can be removed from the rack and stored within the confines of the rack framework in order to form a compact package for shipment and storage.

Yet another object of the invention is to provide a garbage receptacle rack having a plurality of detachable lid members for covering the receptacles stored therein, which lid members may be easily detached from the rack in order to reduce the bulk of the rack and provide more compact packaging thereof for shipment and storage.

Other objects and advantages of the present invention will become apparent to the reader from the following detailed description of the invention, when said description is read in conjunction with a perusal of the accompanying drawings which illustrate my invention.

In the drawings:

FIGURE 1 is a plan view of the garbage receptacle rack of the invention showing two of the pivoted lid members of the rack in their raised positions with the remainder of the lid members in their closed positions.

FIGURE 2 is a view in elevation of the rack shown in FIGURE 1.

FIGURE 3 is an end view of the rack illustrated in FIGURES 1 and 2.

FIGURE 4 is a detail view of the end of the horizontal bar from which the lid members of the garbage receptacle rack are pivotally supported and showing details of construction of the bar and one of the hinges used to pivotally support one of the lid members upon said bar.

FIGURE 5 is a plan view of the end portion of the horizontal bar from which the lid members are pivotally supported.

FIGURE 6 is a sectional view taken along the line 6—6 of FIGURE 5, and showing one of the lid members in its raised or open position.

FIGURE 7 is an isometric view of a modified embodiment of the invention.

FIGURE 7A is a detail perspective view of one of the leg brackets used to support the garbage receptacle rack in vertically spaced relation to the ground.

FIGURE 8 is an isometric view of the hinge and lid mounting structure which may be used in another embodiment of the invention.

FIGURE 9 is a view in section on line 9—9 of the hinge and lid mounting structure shown in FIGURE 8.

FIGURE 10 is an end view in elevation of the hinge and lid mounting structure shown in FIGURES 8 and 9 with one of the lids pivoted to its raised position.

Referring now to the drawings in detail, and particularly, to FIGURE 1, the garbage receptacle rack of the invention is designated generally by reference character **10**, and the garbage receptacles which are illustrated in dashed lines are represented by reference character **12**. The garbage receptacle rack **10** comprises four vertical corner posts **14**, each of which is located at one corner of the rack and extends from the ground upon which the rack rests upwardly to an annular member **16**. At its lower end **18**, each of the vertical corner posts **14** is welded to a shoe or base plate **20** to permit the rack **10** to rest flatly upon the ground, and to prevent the rack from being driven into soft earth or soil by the weight of the garbage receptacles which are retained in the rack. The four corner posts **14** of the rack **10** may conveniently be made of steel rods or any other suitable material of sufficient strength and rigidity.

Interconnecting the vertical corner posts **14** are a pair of horizontal, parallel supporting members **22** which extend from one end of the rack to the other at each side thereof. The vertical corner posts **14** are also interconnected by a pair of horizontal end supporting members **24** which extend across each end of the rack. Both the horizontal side members **22** and the horizontal end members **24** are braced by means of diagonal braces **26** interconnecting these members with the vertical corner posts **14**. Intermediate the length of each of the horizontal side members **22** is a vertical supporting member **28** which also carries a base plate **20** at its lower end and is reinforced by diagonal braces **26**.

The height of each of the vertical corner posts **14** is such that the annular members **16** are positioned approximately around the center of the cylindrical garbage receptacles which are stored in the garbage receptacle rack **10**. It will be appreciated that the types of outdoor garbage receptacles generally in use are of approximately thirty-gallon capacity and are fairly well standardized in size. Each of the annular members **16** is of a diameter which is just slightly larger than the diameter of its respective garbage receptacle **12** at the portion surrounded by the annular member **16** so that very limited horizontal movement, if any, is permitted the receptacle by its surrounding annular member **16**.

In addition to the two parallel horizontal supporting members **22** at each side of the rack **10**, a third horizontal member (not seen) extends parallel to the two horizontal side members **22** in substantially the same plane as that occupied by the horizontal side members **22** and is connected at its opposite ends to the midpoint of the two horizontal end members **24**. A series of horizontal transverse supporting members **30** (see FIGURE 1) are positioned in parallel spaced relation from each other between

the two horizontal end supporting members 24. Each of the horizontal transverse supporting members 30 is connected at one of its ends to one of the horizontal side supporting members 22 and at its other end to the central horizontal supporting member. In referring to FIGURE 1, it will be noted that the horizontal supporting members 22, 24 and 30 each coincides over a portion of its length with a projected chord of the respective annular member 16 which lies directly above the respective horizontal supporting member. It will thus be apparent that each of the horizontal supporting members 22, 24 and 30 is positioned sufficiently inwardly of the circle described by the annular members 12 to provide a firm base upon which the garbage receptacles stored in the rack may be supported.

A plurality of vertical rods or bars 32 are provided for interconnecting the annular members 16 to the several horizontal supporting members 22, 24 and 30. Four of the rods 32 are circumferentally spaced around each of the annular members 16 so that the annular members are amply supported or reinforced to prevent them from being bent or distorted by inadvertent blows which they may receive as the garbage receptacles are being placed in the rack 10. The annular members 16 are connected to each other by a series of horizontal reinforcing plates 34.

Extending upwardly from the midpoint of each of the horizontal end supporting members 24 is a pair of vertical stanchions 36 which are connected at their upper ends to a horizontal lid supporting rod 38. The lid supporting rod 38 extends over the entire length of the garbage receptacle rack 10 and is positioned centrally with respect to the two rows of annular members 16. To provide additional structural strength to the connection between the horizontal lid supporting rod 38 and the vertical stanchions 36, the end of the horizontal lid supporting rod 38 is bent back to form a triangular bracket 40, the end of which is welded or otherwise suitably secured to the vertical stanchions 36.

To provide further support for the horizontal lid supporting bar 38, a plurality of diagonal bars 42 are provided to interconnect the horizontal lid supporting bar 38 with the horizontal reinforcing plates 34 connecting the annular members 16. The diagonal braces 42 may be most clearly seen in FIGURES 2 and 3. At each end of the garbage receptacle rack 10, additional diagonal braces 44 are provided to interconnect the vertical stanchions 36 with the respective annular members 16. The described structure is mechanically strong, yet is relatively inexpensive in construction.

A plurality of lid members 46 are pivotally connected to the horizontal lid supporting rod 38 and correspond in number to the annular members 16 and also to the number of garbage receptacles which it is possible to store in the rack 10. The lids 46 each comprise a flat metallic plate 48 which is of substantial thickness so as to impart considerable weight to each of the lids. The plates 48 are characterized in having a straight inner edge 50 which is disposed adjacent and parallel to the horizontal lid supporting rod 38, and in having a semicircular outer edge 52 which is curved about a radius which is slightly larger than the radius of each of the garbage receptacles 12. To further seal the top of each of the garbage receptacles 12, each of the plates 48 has secured thereto a downwardly depending flange 54 which extends around the entire periphery of each of the plates 48 with the exception of the straight inner side 50. The manner in which the flanges 54 form skirts extending down over the upper edge of the garbage receptacles 12 is best illustrated in FIGURES 2 and 3 of the drawings.

Each of the lids 46 is attached to the horizontal lid supporting rod 38 by means of the butt hinges 56. The lids 46 are arranged in pairs with one lid in each pair disposed on the opposite side of the horizontal lid supporting rod 38 from the second lid of the pair. The butt hinge 56 which is utilized to secure each lid pair to the lid supporting rod 38 are disposed with one of the leaves of each hinge connected to each of the lids disposed on opposite sides of the rod 38. Secured to the top of the lid supporting rod 38 at spaced intervals corresponding to the spacing of the hinges 56 therealong are pairs of vertically extending pivot pin brackets 58. These brackets 58 are generally L-shaped in configuration as shown in FIGURE 4 with one of the legs of the bracket being welded, brazed or otherwise suitably secured to the upper surface of the lid supporting rod 38. The two brackets 58 in each pair of brackets are spaced from each other by a distance slightly greater than the width of the respective butt hinge 56 and journal a pivot pin 60 which pivotally engages the knuckles 62 of each of the butt hinges 56. The knuckles 62 of the butt hinges 56 are interlocked in the conventional manner so that the lids 46 of each lid pair may pivot about the pivot pins 60 independently of each other. At spaced intervals along the horizontal lid supporting rod 38 corresponding to the spacing of the brackets 58 therealong, a pair of horizontally extending stop members 64 are welded to the rod and function to support the lids 46 in a horizontal plane when no garbage receptacles 12 are positioned beneath the respective lids.

A triangular shaped bracket 66 is welded or otherwise secured to one of the leaves of the butt hinge 56 used to secure each pair of lids 46 to the horizontal lid supporting rod 38. Each of the triangular brackets 66 is a scalene triangle in configuration and is shaped with its angles of a size such that the side 68 of the triangular bracket 66 which projects upwardly from the lids 46 adjacent the lid supporting rod 38 is inclined at an acute angle with respect to its vertical plane passing through the rod 38. Preferably the sides 68 of the triangular brackets 66 are inclined at angles of between 1° and 45° with respect to the vertical.

Operation

In the preferred embodiment of the invention illustrated in FIGURES 1 through 6, a garbage receptacle rack 10 is illustrated, which is designed to accommodate eight generally cylindrical garbage receptacles 12 of uniform size. It will be apparent, however, that the rack could be easily modified to accommodate any number of receptacles desired without substantial alteration in the basic structure herein disclosed. When the receptacles 12 are positioned in the rack 10 they are elevated from the ground so that rats, insects and other vermin are denied access to the receptacles. The elevated positioning of the receptacles also presents the advantage that the bottoms of the receptacles are not in contact with the moist earth and, therefore, subject to rusting and corrosion.

With the receptacles 12 positioned in the rack, as illustrated in the accompanying drawings, the annular members 16 function to prevent the receptacles from moving horizontally to any substantial extent and thus prevent them from being turned over by heavy winds or by marauding dogs or other animals. Each of the receptacles 12 is tightly covered by lowering to its horizontal position, the respective lid 46. Each lid 46 fits closely over the top of its respective garbage receptacle 12, and its downwardly depending flange 54 further assures against the accessibility of the contents of the receptacle to flies, gnats and similar pests. The weight of each of the lids 46 is such that the wind cannot cause the lids to be lifted up from a position of closure across the top of the receptacles 12.

When it is desired to remove one of the garbage receptacles 12 from the rack 10, its respective lid 46 is pivoted upwardly until the upward pivotal movement of the lid is arrested, either by contact of the lid with the side 68 of the triangular bracket contained on the lid positioned on the opposite side of the lid supporting rod 38, or by contact of the side 68 of a triangular

bracket 66 mounted on the pivoted lid with the horizontal lid on the other side of the lid supporting rod 38. This action is illustrated in FIGURE 6 which shows one of the lids 46 in both its open and its closed positions. By permitting each lid 46, when raised to come to rest in the opened position shown in FIGURE 6, the thus raised lid will not fall back to a horizontal position on the other side of the supporting rod 38 to bang against the unraised lid on the opposite side of the supporting rod; also, the closure of the lids when garbage receptacles 12 are reinserted in the rack 10 is made much easier. The construction of the hinge elements of the lids and the manner in which the triangular brackets 66 are mounted thereon provides a very strong mechanical arrangement, yet retains the cost of fabrication of the rack at a minimum.

Another embodiment of the invention is illustrated in FIGURE 7 of the drawings. Since some of the structural elements utilized in the embodiment of the invention shown in FIGURE 7 are identical to those which are employed in the embodiment shown in FIGURES 1 through 6, identical reference numerals have been employed to identify identical structural elements. Thus, the cans are supported upon a pair of horizontal parallel supporting members 22 and are retained against horizontal displacement by annular members 16 which are provided for each of the cans to be contained in the rack, which annular members are spaced above the horizontal supporting members 22 and are connected thereto by the rods or bars 32. The horizontal, parallel supporting members 22 are spaced vertically from the ground by a pair of leg brackets designated generally by reference character 80. The leg brackets are each comprised of a U-shaped member 82 and a pair of short, horizontal rods 84 which are welded or otherwise suitably secured to the bight or web of the U-shaped members 82 and are spaced from each other by a distance corresponding to the horizontal spacing of the horizontal supporting members 22. A generally V-shaped brace 86 is welded at its apex or vertex to the downwardly depending legs of each of the U-shaped members 82 and at its free ends to the bight of the U-shaped member and to the horizontally projecting rod 84, respectively. The construction of the leg bracket assembly can best be perceived by reference to FIGURE 7*a*.

A further important feature of the embodiment of the invention illustrated in FIGURE 7 is the structure which permits the vertical and horizontal position of the lids 46 of the rack to be adjusted so that garbage receptacles of varying sizes and differing horizontal alignment may be accommodated. The described adjustability is attained by providing a plurality of generally V-shaped elongated rods 90 which are welded or otherwise suitably secured at their vertices to the horizontal lid supporting bar 38. The generally V-shaped, elongated rods 90 are formed with each of their free ends bent into parallelism with each other and are mounted on the rack so that the free ends, which are threaded as shown in FIGURE 7, project downwardly through a pair of apertured plates 92 secured to the annular members 16. It will be apparent in referring to FIGURE 7, of course, that the plates 92 which are provided for supporting the free ends of one of the generally V-shaped, elongated rods 90 are spaced 180° around the circumference of the annular members 16 from the plates which are provided for receiving the free ends of the second V-shaped rod used to support the horizontal lid supporting bar 38. A pair of nuts 93 is used to adjust the position of each of the free ends of the elongated, V-shaped rods 90 relative to its respective plate 92.

In order to adjust the horizontal or vertical positions of the lids 46, the free ends of the V-shaped, elongated rods 90 are moved upwardly or downwardly in the plates 92 and relative to the respective annular members 16. If it should be desired to move the entire lid assembly upwardly in order to accommodate a plurality of cans of greater height, both of the free ends of all of the V-shaped, elongated rods in use will be moved upwardly in their respective plates 92 so that the lid structure is moved uniformly upwardly in a vertical direction. On the other hand, should it be desired to swivel the lid structure in a horizontal plane, one of the free ends of one of the V-shaped rods 90 can be lowered in the plate 92 and there secured using the nuts 93. This will have the effect of drawing the end of the horizontal lid supporting bar 38 toward the end of the V-shaped, elongated rod which is thus lowered in its plate 92. Since the V-shaped rod 90 at the opposite end of the lid supporting bar 38 has not been changed in its position, the end of the horizontal lid supporting bar 38 which is secured to the second V-shaped rod will remain fixed and the total effect will be that of swiveling the pair of lids 46 in a horizontal plane. A more accentuated swiveling movement can be obtained by lowering in its respective plate 92, the free end of the second V-shaped, elongated rod 90 which is diametrically opposite the lowered end of the first V-shaped bar. This will, of course, have the effect of drawing the end of the horizontal lid supporting bar 38 toward the bracket 92 which receives the free end of the second V-shaped rod which is so adjusted.

A further feature which characterizes the adjustable lid structure shown in FIGURE 7 is the ability to dismantle the lid structure from the remainder of the rack by removing the V-shaped elongated rods 90 completely from their supporting plates 92, removing the lids 46 from the horizontal lid supporting bar 38 and storing such disconnected elements of the structure inside the main body of the rack constituted by the horizontal supporting members 22 and the annular members 16.

A modified hinge and lid supporting structure which may be used in the present invention is illustrated in FIGURES 8, 9 and 10. The advantages of the alternative structure here illustrated are basically twofold. First, the structure of the dimple hinge having countersunk pivotal bearing surfaces and used in the modified hinge and lid supporting structure permits the triangular brackets 66 and the horizontally extending stop member 64 to be eliminated, and thus reduces the complexity and cost of constructing the garbage can rack. Secondly, the use of a pair of channel-shaped arms as an integral portion of the hinge structure permits the lids to be installed, replaced or removed for storage and shipment of the rack.

Referring first to FIGURE 8 of the drawings, the modified hinge and lid supporting structure is designated generally by reference character 100. The hinge and lid supporting structure comprises an L-shaped bracket 102 which is welded or otherwise suitably secured to the horizontal lid supporting bar 38 by one of its legs, and is positioned with the other leg projecting vertically at a right angle to the bar 38. A pair of channel-shaped arms 104 which each are characterized in having an arcuate flat end portion 106 and a channel portion 108 are pivotally secured at their flat radiused end portions 106 to the bracket 102. The mode of securement of the flat arcuate end portions 106 of the channel-shaped arms 104 to the bracket 102 is in general that which is used in forming a dimple hinge, that is, by crimping the joined elements to each other by forming nesting indentations therein as illustrated in FIGURE 9 of the drawings. A suitable bolt 112 is then passed through the indented portions of the bracket 102 and arcuate end portions 106 of the channel-shaped arms 104 and is secured in place by a suitable nut 114. The channel-shaped arms 104 are then free to pivot about the bolt 112.

As best illustrated in FIGURES 8 and 9, the arcuate end portion 106 of each of the channel-shaped arms 104 is joined to the channel section 108 of the arm through an angled or bent portion of the channel-shaped arms which is designated by reference character 116. The angled portion 116 of the channel-shaped arms 104 is

bent out of the plane of pivotation of the channel-shaped arms **104** and functions as a stop to limit the pivotal movement of each of the arms in the manner illustrated in FIGURE 10. In other words, as each of the channel-shaped arms **104** is pivoted upwardly from the horizontal position illustrated in FIGURE 8, the pivotal movement is uninterrupted until the angled portion **116** of the pivoted arm abuts or contacts the corresponding angled portion of the channel-shaped arm **108** on the opposite side of the bracket **102**. At this point, the pivotal movement of the raised channel-shaped arm **104** is arrested and the lids which are mounted therein in a manner hereinafter described are prevented from falling downwardly and banging against the lid carried on the opposite side of the horizontal lid supporting bar **38**. Moreover, since the opened lid is pivoted past a vertical plane, it will not fall back to its original position and thus prevent reinsertion or removal of the garbage receptacle in or from its respective annular member **16**.

In referring to the illustration of the hinge and lid supporting structure in FIGURE 8, it will further be perceived that the geometric configuration of the L-shaped bracket **102** is such that the width of the leg of the bracket which is secured to the horizontal lid supporting bar **38** enables the bracket to function as a horizontal stop member preventing downward pivotation of the channel-shaped arms **104** past a horizontal plane. The brackets **102** thus functionally replace the horizontally extending stop members **64** shown in the embodiment of the invention illustrated in FIGURES 1 through 6.

A plurality of the hinge structures which are illustrated in FIGURES 1 through 6.

A plurality of the hinge structures which are illustrated in FIGURES 8, 9 and 10 and hereinbefore described are spaced along the horizontal lid supporting bar **38** by a distance which corresponds to the width of the lids which are to be supported thereby. With this horizontal spacing of the hinge and lid supporting structures, the lids may then be slidably inserted in the channel sections **108** of the channel-shaped arms **104** and retained therein during the pivotal movement of these arms. It will be readily apparent that the described structure facilitates the rapid replacement of damaged lid structures and also permits the lids to be removed from the hinge and lid supporting structure when it is desired to dismantle the garbage can rack for shipment or storage.

From the foregoing description, it will be apparent that the present invention provides a very useful garbage receptacle rack which can accommodate a plurality of garbage receptacles, and which is relatively strong and durable, yet which is substantially less expensive to construct than racks of this general type heretofore proposed. The rack is especially suitable for use in storing the garbage receptacles used by the occupants of multiple-inhabitant dwellings.

Although some modification and rearrangement of parts and elements described herein will occur to those skilled in the art and may be employed in the fabrication of garbage receptacle racks which basically rely upon the inventive principles herein disclosed, such innovations and modifications are deemed to be circumscribed by the spirit and scope of the present invention except as the same may be necessarily limited by the language of the appended claims.

I claim:

1. A rack for supporting a plurality of generally cylindrical refuse receptacles comprising:

(*a*) a plurality of horizontal supporting rods for supporting said receptacles in vertically spaced relation from the ground;

(*b*) a plurality of annular members spaced vertically from said horizontal supporting rods and having a diameter substantially equal to the outside diameter of said receptacles;

(*c*) generally vertical rods connecting said annular members to said horizontal supporting rods;

(*d*) lid supporting means positioned vertically above said annular members;

(*e*) a plurality of lids corresponding in number to said annular members and each pivotally connected to said lid supporting means for individual pivoting movement between a horizontal position over one of said annular members and substantially parallel thereto, and a raised position facilitating the positioning of one of said receptacles in each of said annular members; and

(*f*) at least one pair of generally V-shaped, elongated rods supporting said lid supporting means at their vertices and each having generally diverging legs adjustably secured to two adjacent annular members at points on the opposite sides of said plurality of annular members from the points of adjustable securement of the legs on the other of said V-shaped members in the respective pair.

2. A garbage can rack comprising:

(*a*) can retaining means including horizontal can supporting members and means for securing a plurality of cans against horizontal movement positioned vertically above said can supporting members;

(*b*) a horizontal pivot pin spaced vertically from said means for securing the cans against horizontal movement;

(*c*) at least two can lids adapted for covering at least two of said cans, said lids being arranged in pairs with one of the lids in each pair positioned on the opposite side of said horizontal pivot pin from the other lid of the respective pair;

(*d*) a pair of horizontally spaced dimple hinges for pivotally securing each pair of said lids to said horizontal pivot pin, said dimple hinges each including an L-shaped bracket affixed to said pivot pin and a pair of channel-shaped arms each having an arcuate flat portion aligned with said L-shaped bracket and pivotally secured thereto and to the arcuate flat portion of the other channel-shaped arm, said lids being slidingly received between the channel-shaped arms of the horizontally spaced dimple hinges in said pair; and

(*e*) means supporting said horizontal pivot pin and adjustably connected to said means for securing said cans against horizontal movement whereby said supporting means may be adjusted to vary the horizontal and vertical positions of said lids, said supporting means including at least two supporting rods secured to said horizontal pivot pin at horizontally spaced points therealong, each of said rods having two downwardly depending legs on opposed sides of the vertical plane of said horizontal pivot pin and the legs of each of said rods being adjustably attached to two horizontally spaced points on said means for securing the cans against horizontal movement.

3. A garbage can rack as claimed in claim 2 wherein said channel-shaped arms are each bent to offset in the plane of pivotation, said arcuate flat portion from the remainder of the respective arm which permits said arms to pivot from a position of alignment in a horizontal plane to a position in which an angle of between 90° and 45° is defined between said arms.

4. A rack for supporting a plurality of refuse receptacles comprising:

(*a*) a plurality of horizontal supporting rods for supporting said receptacles in vertically spaced relation to the ground;

(*b*) a plurality of horizontally extending can confining members spaced vertically from said horizontal supporting rods and disposed to extend around a major portion of the periphery of said receptacles;

(*c*) rods extending between and connecting said confining members and said horizontal supporting rods;

(*d*) lid supporting means positioned vertically above said annular members;

(*e*) a plurality of lids corresponding in number to said confining members each pivotally connected to said lid supporting means for individual pivoting movement between a generally horizontal position over one of said annular members and substantially parallel thereto and a raised position facilitating the positioning of one of said receptacles in each of said confining members; and

(*f*) at least two supporting rods secured to and supporting said lid supporting means, each of said rods having two horizontally spaced downwardly depending legs each adjustably secured to one of said confining members with the points of securement of the two legs of each of said supporting rods being spaced horizontally from each other whereby vertical adjustment of the legs of said supporting rods relative to said confining members changes the vertical and

horizontal position of said lids on said rack to accommodate receptacles of differing heights and in various horizontal alignments.

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CLAUDE A. LE ROY, *Primary Examiner.*