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[54] **REFUSE BAG HOLDING RACK**
 12 Claims, 6 Drawing Figs.

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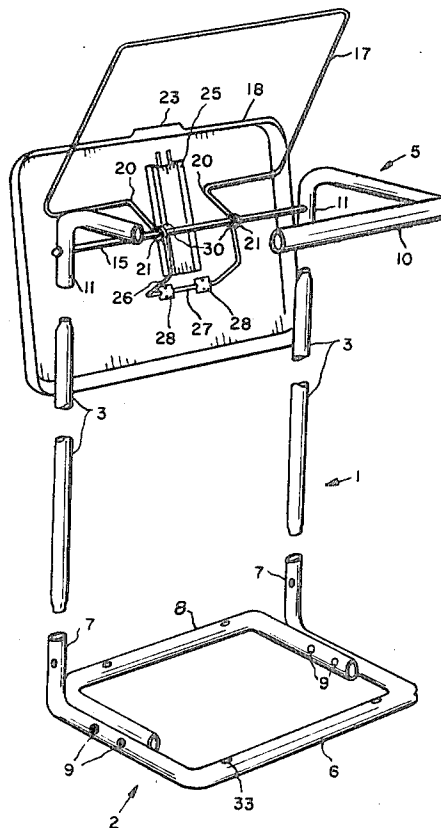
[50] Field of Search 248/97, 98,
 99, 101; 211/84; 232/43.2; 220/34

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ABSTRACT: A holding rack for disposable flexible plastic bags adapted for casters, wheels or wall mounting and featuring a pivotable bag-holding loop with low durometer coating cooperating with an annular bag-support member for strongly supporting the bag with its end open from the support, and a closing lid for the bag opening having a novel double-hinging bracket allowing positioning of the lid to one side away from the bag opening providing ready access thereto.



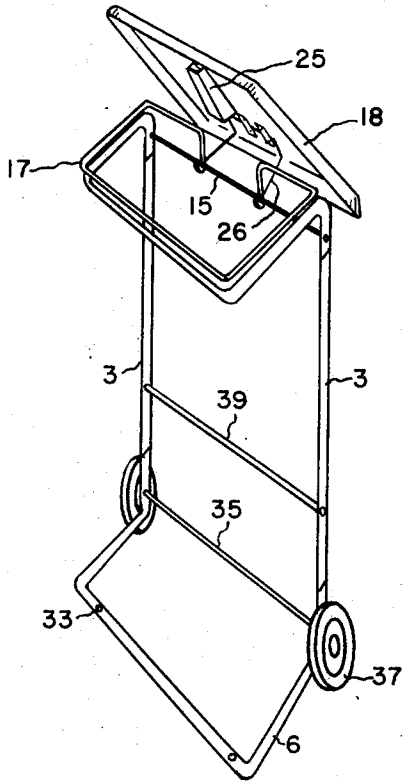


Fig. 1

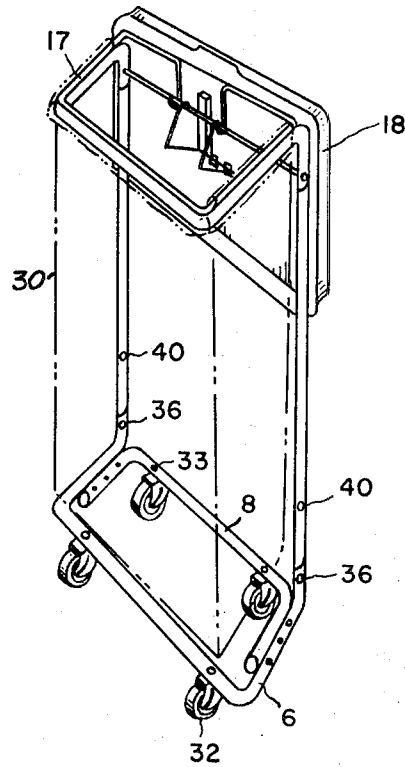


Fig. 2

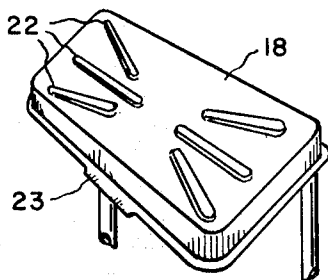


Fig. 3

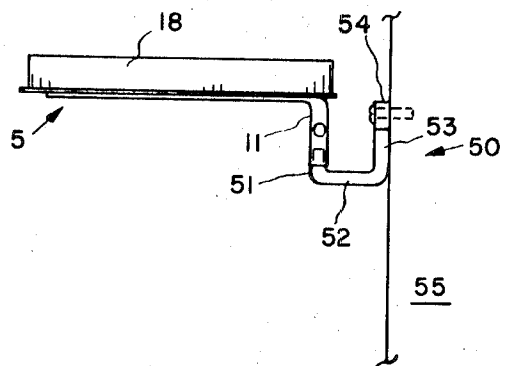


Fig. 4

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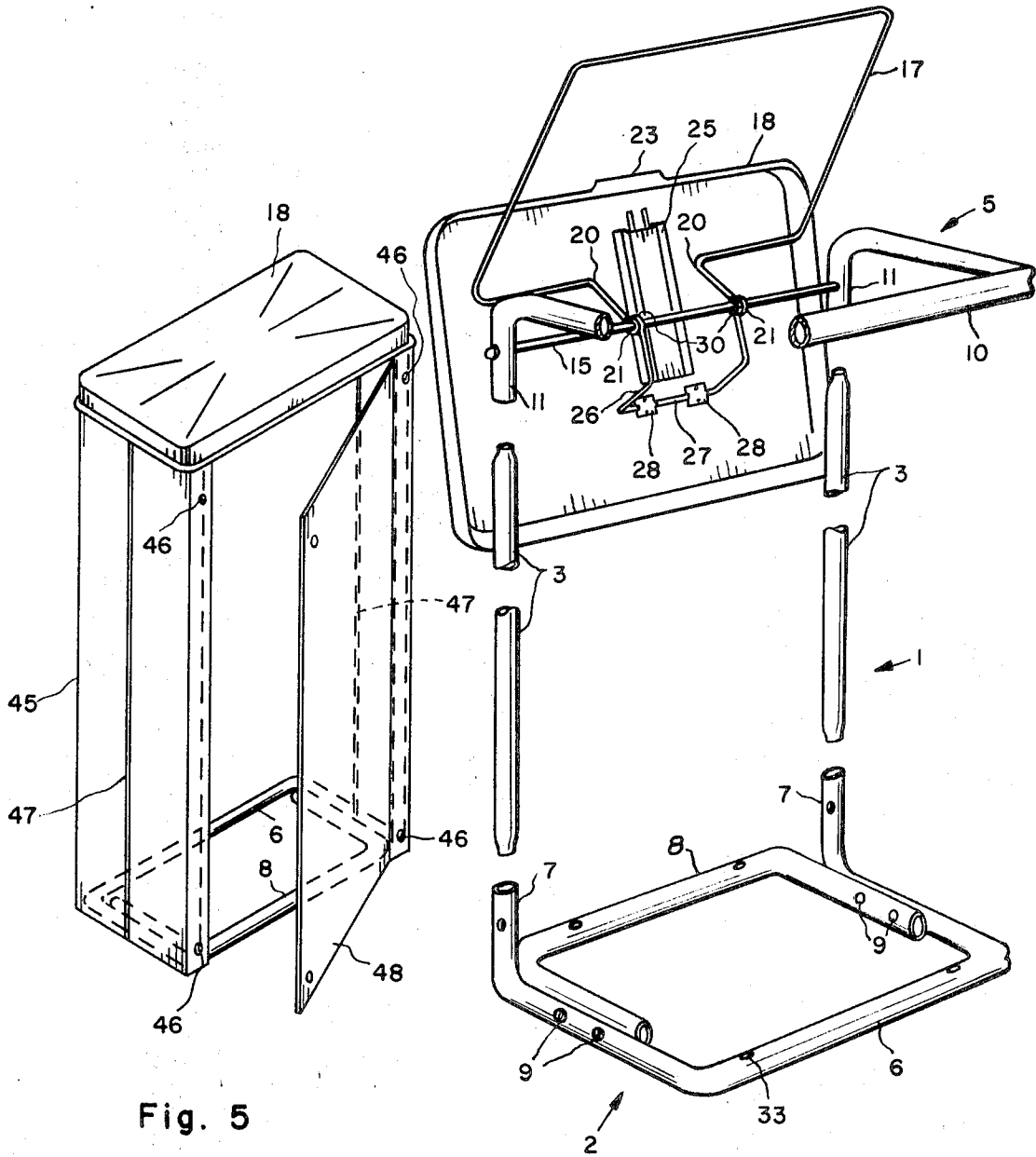


Fig. 5

Fig. 6

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REFUSE BAG HOLDING RACK

This invention relates to a refuse or garbage bag holding rack.

Refuse bags of the synthetic resin type, as for example, polyethylene, are often used as receptacles for refuse, garbage and like waste materials. However, being flexible and nonself-supporting, the bag opening does not remain open unless held in position manually or by mechanical means. Doing it manually is cumbersome and inefficient. Known mechanical devices for holding the bag upright with the open end open are unsatisfactory for various reasons, including clumsiness, unsatisfactory performance, or expensive to manufacture.

Among the objects of the present invention are:

To provide a relatively inexpensive holding rack for supporting a flexible bag in its upright position with the bag opening in its open position.

To provide a holding rack for a flexible bag having means for strongly supporting the flexible bag in its upright position.

To provide a holding rack for a flexible bag having an efficiently operating lid for covering the bag opening while not in use.

To provide a versatile holding rack for a flexible bag having provision for casters, wheels, or wall mounting as desired by the user.

To provide a holding rack for a flexible bag capable of being encased in an attractive enclosure.

These and other objects of the invention are achieved by a novel rack construction of structural frame elements providing a base, vertical support elements mounted on the base, and an annular top bag support member mounted on the vertical supports. Associated with the top bag support is a bag-holding loop which is hinged thereon. The bag end is wrapped around the bag-holding loop which then rests on the top bag support. A lid is provided hinged on the top bag support in such manner that the lid when opened is stably supported in a vertical position away from the bag opening. The rack frame is provided with means for receiving casters or wheels enabling the entire rack with supported bag to be rolled wherever desired, with means for wall mounting of the upper portion with attached bag-holding loop and lid when a nonportable arrangement is desired, and with means for enclosing the rack and bag to present a more attractive appearance.

There now follows a more detailed description of one exemplary embodiment of the invention taken in conjunction with the accompanying drawing wherein: FIG. 1 is a front perspective view of one embodiment of the invention with loop slightly pivoted upward and lid at a 45° position; FIG. 2 is a front perspective view of a modification with loop down showing a bag in phantom supported thereon, and the lid open; FIG. 3 is a top perspective view of the lid closed; FIG. 4 is a side view showing the wall mounting; FIG. 5 is a rear perspective view showing how the enclosure is mounted; FIG. 6 is a partial exploded view of the basic rack construction.

The invention is concerned with holding racks for flexible, nonself-supporting, disposable bags of sheet material, such as synthetic resin films of polyethylene, polyvinylchloride resins and like flexible plastic materials, and also of paper or other strong but flexible sheet materials. The currently most popular material is polyethylene, and bags of the latter material having one end sealed and the other end open are commercially available as discrete articles or on a roll separable from one another by a tearable seam. Typical dimensions of one such bag are 42 inches long with a circumference measuring about 52 inches. Such bags are available in assorted lengths.

One embodiment of the rack of the invention, illustrated in FIG. 6, comprises a structural frame 1 composed of a base 2 serving as a stand, vertical support elements 3 mounted on the base, and an upper bag supporting portion 5 mounted in this embodiment on the vertical support elements 3 (see FIG. 1). In a preferred form, the frame 1 is composed of metal tubular members, for example, of steel or aluminum, affording strength, rigidity and low weight, which can be obtained in the

form of straight tubular stock and bent into the shapes illustrated in a relatively inexpensive manner, though it will be understood that frame members of wood or plastic are also within my contemplation.

As illustrated, the base 2 comprises a horizontally arranged generally U-shaped member 6 whose ends 7 are bent upwardly. A second U-shaped connecting piece 8 is mounted by suitable fastening means 9 on the inside, and serves when desired to support casters. The vertical support elements 3 comprise straight tubular sections which detachably telescope into the upwardly bent base member ends 7. The upper bag supporting member comprises a generally U-shaped member 10 with downwardly bent ends 11 for detachably telescoping into the vertical support members 3. Thus, the entire frame can be readily disassembled into four separate members which can be packed for shipment or storage in a relatively small box not much larger than that accommodating the base alone. If desired, each vertical support member 3 can be subdivided into two or more telescoping parts enabling the height of the upper bag-support member 5 above the base 2 to be varied to accommodate different-sized bags.

A horizontal rod 15 is mounted across the downwardly bent end portions 11 of the upper member 5. On the horizontal rod 15 is hinged the bag-holding loop 17 and the lid 18. The bag-holding loop 17 comprises a continuous steel rod formed by bending into a rectangular loop having downwardly extending parallel end portions 20 terminating in small loop ends 21 engaging the horizontal rod 15 enabling the loop to occupy a closed or down position illustrated in FIG. 2 in which it rests on the upper support 10, and to be pivoted upwardly about the horizontal rod 15 serving as an axle, illustrated in FIG. 6, when it is desired to mount or unmount the bag. The dimensions of the rectangular loop correspond approximately to those of the upper frame support 10. The bag-holding loop is coated with a low durometer synthetic resin plastisol or like high friction surface, known as such in the art, to provide increased frictional engagement of the bag preventing same from slipping off of the loop. With the bag end wrapped around and under the loop, the bag weight pulls the loop down increasing its pressure on the bag locking it tighter. The coating is not essential but adds holding power. The loop will handle any bag whose periphery is equal to or greater than the loop dimensions.

Also mounted on the horizontal rod 15 as an axle and adjacent the bag-holding loop 17 is the lid 18, which comprises, preferably, a solid plastic cover, e.g. of polyethylene, provided with reinforcing ribs 22 and a tab 23 for manually lifting or closing the lid. On its bottom surface and integral therewith is provided a pouch 25 for storing twist ties, several of which are illustrated in FIG. 6, with which the bag top may be tied shut when full and ready to be disposed of and replaced by an empty bag. Underneath the pouch is secured an L-shaped hinge bracket 26 comprising at one end a horizontal element 27 journaled 28 on the lid and terminating at its opposite end in small loops 30 pivotably engaging the horizontal rod 15. As a result of the double-hinging arrangement of the bracket 26—one end on the axle 15 and the other end on the lid 18—the lid can occupy a closed position illustrated in FIG. 3 wherein it covers the open bag top, the loop 17, and the support 10, and can also be pivoted upward to various intermediate positions as illustrated in FIGS. 1 and 6, and finally to a stable open position, illustrated in FIG. 2, with the lid arranged vertically positioned behind the rack. With this arrangement, the lid can be positioned completely out of the way while refuse is placed in the bag or while the bag is being mounted on or dismounted from the rack.

In order to mount the bag 30, the lid 18 is placed in its upright vertical position leaving the rack top clear, the open end of the bag is pushed upwardly through the center opening in the upper support member 10 and the loop 17 opening, the bag-holding loop 17 pivoted slightly upward from its horizontal rest position and the bag end folded outwardly and downwardly underneath and around the loop 17 (see FIG. 2)

so that when the loop is allowed to drop down to its rest position the bag end extends between the loop 17 and the upper support 10 and the bag remains suspended within the rack 1 with its end held open for receiving refuse. The high friction coating on the loop 17 as well as the weight of the loop tightly locks the bag to the upper support 10 preventing detachment or slippage even when loaded with refuse. Yet, when desired, by simply lifting the bag-holding loop 17, the bag 30 is readily detached from the rack.

Among the features of the invention is that the sideways-facing generally U-shaped rack construction of the invention provides a highly versatile arrangement. For instance, to provide casters 32 on the rack, four holes 33, are drilled or punched in the base elements 6 and 8 as illustrated in FIG. 6. A wheeled arrangement is possible by removing the U connecting piece 8 and inserting an axle 35 through holes 36 provided in the upturned ends 7, on the ends of which axle 35 wheels 37 are provided, as illustrated in FIG. 1. If desired, a roll holder 39 may be suspended across the vertical supports 3 via holes 40 drilled or punched in its sides. A roll of the plastic bags can then be mounted thereon affording ready source of replacement bags. Also, while not illustrated, with the wheeled version illustrated in FIG. 1 a handle can be mounted on suitable holes provided in the ends 11 of the top support 5. In an embodiment illustrated in FIG. 5, for those applications where a more decorative appearance is desired, an enclosure 45 can be mounted on the rack so as to surround and hide the bag and rack from view. FIG. 5 is a rear view showing how the enclosure 45 is mounted by suitable fasteners 46 to the frame. The enclosure 45 is provided with opposed hinges 47 extending vertically from top to bottom, which function to allow the enclosure, when detached, to be folded in half for ready storage or shipment. The rear of the enclosure may be closed off by a door 48 as shown providing access for bag removal and replacement.

FIG. 4 illustrates a wall mounting of the rack where portability is unnecessary. For this purpose, the bag support 5 with associated loop 17 and 18 is detached from the vertical supports 3 and mounted on a pair of wall brackets 50 each comprising a generally U-shaped member having a short vertical arm 51 dimensioned to fit within the tubular end 11, a horizontal bight portion 52 wide enough to receive the lid 18 when positioned vertically in its open position, and a longer vertical arm 53 by which the bracket 50 may be mounted with suitable fasteners to a wall 55 or other vertical surface.

There has thus been described a highly versatile holding rack for disposable flexible bags readily adapted for caster, wheeled, or wall mounting, and featuring a pivotable bag-holding loop which in cooperation with an annular bag-support member strongly supports the bag with open end in suspended position from the support yet allows ready detachment and attachment of new bags, and a pivotable lid with novel double-hinged bracket providing coverage of the bag opening while allowing its movement to an open position completely away from the bag opening affording ready access thereto when desired.

Although the invention has been described by way of illustration in connection with several embodiments, it will be readily appreciated by those skilled in this art that they are only exemplary, and other changes and modifications as in shapes and manner of construction and fastening will readily suggest themselves and may be made within the spirit and scope of this invention.

What is claimed is:

1. A holder for a flexible bag comprising a generally annular bag-supporting member defining an opening and in its bag-supporting position extending generally in a horizontal plane, said bag-supporting member comprising a generally U-shaped frame having downwardly turned end portions and a horizontal element mounted across the end portions, a bag holding loop pivotably mounted on the horizontal element of the bag-supporting member such that the loop is positioned on top of the bag-supporting member, a lid, bracket means pivotably

mounting said lid on the horizontal element of the bag-supporting member such that the lid can occupy a closed position covering the top of the loop and be pivoted to occupy a stable open position wherein it extends generally vertically and alongside the bag-supporting member, said lid bracket means comprising an L-shaped element journaled at one end on a middle lid portion and journaled at its opposite end on the horizontal element the axes of rotation of both journaled ends being substantially horizontal, and means for supporting said bag-supporting member in a horizontal position suspended above the floor.

2. A flexible bag holder as set forth in claim 1 wherein the holding loop comprises an annular member having a low durometer coating and substantially parallel downwardly extending end portions terminating in loops engaging the horizontal element.

3. A flexible bag holder as set forth in claim 1 wherein integral with the bottom of the lid is a receptacle for holding twist ties for the bag top.

4. A holder for a flexible bag comprising a generally annular bag-supporting member defining an opening and in its bag-supporting position extending generally in a horizontal plane, said bag-supporting member comprising a generally U-shaped frame having downwardly turned end portions and a horizontal element mounted across the end portions, a bag holding loop pivotably mounted on the horizontal element of the bag-supporting member such that the loop is positioned on top of the bag-supporting member, a lid, first bracket means pivotably mounting said lid on the horizontal element of the bag-supporting member such that the lid can occupy a closed position covering the top of the loop and be pivoted to occupy a stable open position wherein it extends generally vertically and alongside the bag-supporting member, and means for supporting said bag-supporting member in a horizontal position suspended above the floor, said last-named means comprising second bracket means for mounting said bag-supporting member on a vertical surface, said second bracket means comprising a generally U-shaped element having an arm portion for engaging a downwardly turned end portion of the bag-supporting member, and a bight portion for receiving the lid in its open position.

5. A holder for a flexible bag comprising a generally annular bag-supporting member defining an opening and in its bag-supporting position extending generally in a horizontal plane, said bag-supporting member comprising a generally U-shaped frame having downwardly turned end portions and a horizontal element mounted across the end portions, a bag-holding loop pivotably mounted on the horizontal element of the bag-supporting member such that the loop is positioned on top of the bag-supporting member, a lid, bracket means pivotably mounting said lid on the horizontal element of the bag-supporting member such that the lid can occupy a closed position covering the top of the loop and be pivoted to occupy a stable open position wherein it extends generally vertically and alongside the bag-supporting member, and means for supporting said bag-supporting member in a horizontal position suspended above the floor, said last-named means comprising a stand for supporting the bag-supporting member, said stand comprising a generally U-shape base with upturned end portions, and vertical supports for mounting at one end on the upturned end portions of the base and for receiving at the opposite end the downturned end portions of the bag-supporting member.

6. A flexible bag holder as set forth in claim 5 wherein the base comprises means for receiving and supporting casters and wheels for rendering said holder mobile, and the vertical supports are provided with means for supporting a roll of plastic bags.

7. A flexible bag holder as set forth in claim 6 wherein the base, vertical supports, and bag-supporting frame are constructed of bent tubular members joined together by telescoping joints.

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8. A flexible bag holder as set forth in claim 7 and comprising a U-shaped connecting piece detachably connected to the U-shaped base.

9. A holder for a flexible bag comprising a generally annular bag-supporting member defining an opening and its bag-supporting position extending generally in a horizontal plane, a bag holding loop, means extending in a plane below the horizontal plane of the bag-supporting member for pivotable mounting of the bag-holding loop such that the loop is positioned on top of the bag-supporting member, the sides of the loop being substantially unencumbered such that the open end of the bag can be wrapped around and under the holding loop to extend between the latter and the top of the bag-supporting member, a lid, bracket means pivotably mounting said lid on the same means on which the loop is pivotably mounted such that the lid can occupy a closed position covering the top of the loop and be pivoted to occupy a stable open position wherein it extends generally vertically and alongside the bag-supporting member, and means for supporting said bag-supporting member in a horizontal position suspended above the floor.

10. A flexible bag holder as set forth in claim 9 wherein the means for pivotable mounting of the holding loop is a horizontal axle located in the rear vertical plane of the bag-supporting member.

11. A holder for a flexible bag comprising a generally annular bag-supporting member defining an opening and in its bag supporting position extending generally in a horizontal plane, a bag holding loop including downwardly extending portions and pivotably mounted on the bag-supporting member such that the loop is positioned on top of the bag-supporting member, a lid, lid support bracket means, means for journaling one end of the bracket means on the bag-supporting member, and means for journaling the other end of the bracket means on a midportion of said lid, said bracket means being generally L-shaped with one side of the L when the lid is closed extending downwardly parallel to the downwardly extending portions of the holding loop.

12. A holder as set forth in claim 11 wherein both the holding loop and the bracket means are journaled on a common axle.

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