Aug. 4, 1970 A. A. BYRON ETAL 3,522,922

REFUSE SACK HOLDER AND SACK

Filed April 30, 1968

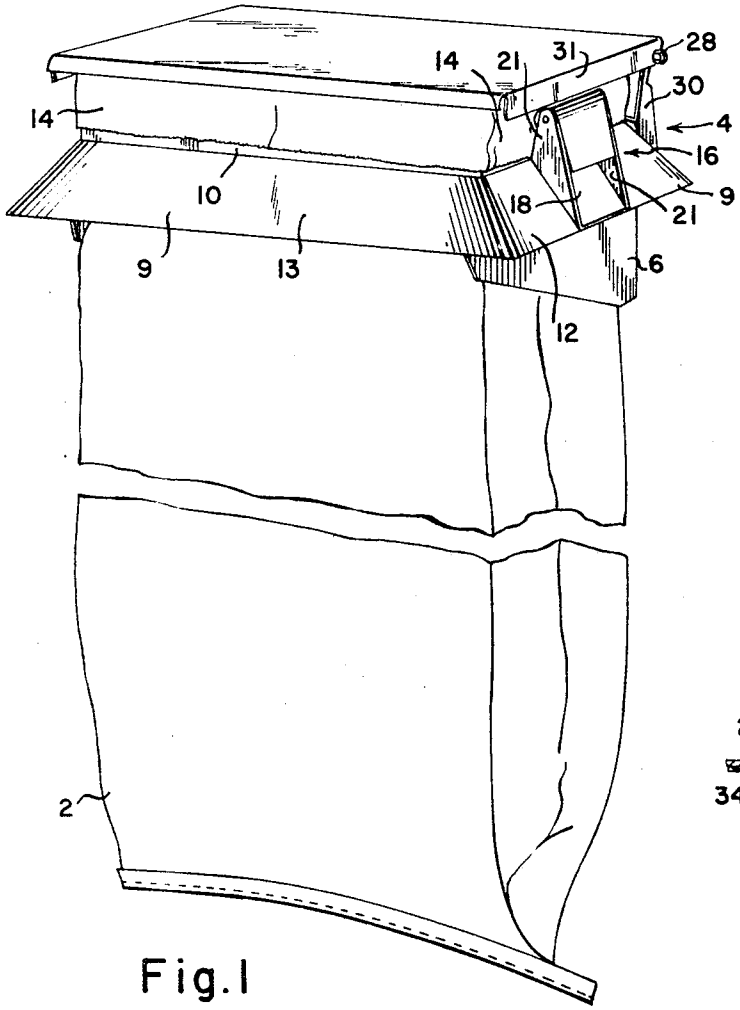

Fig. 1

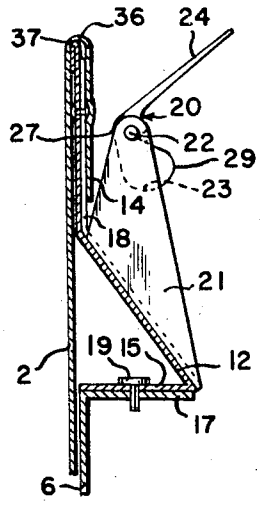

Fig. 3

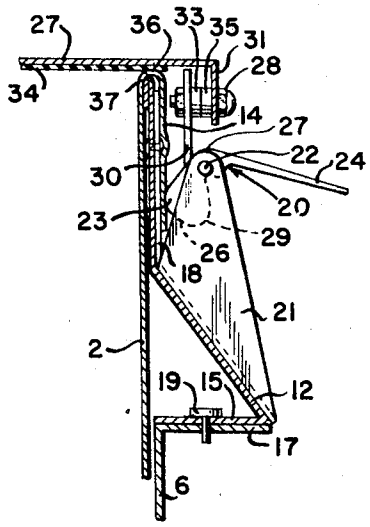

Fig. 4

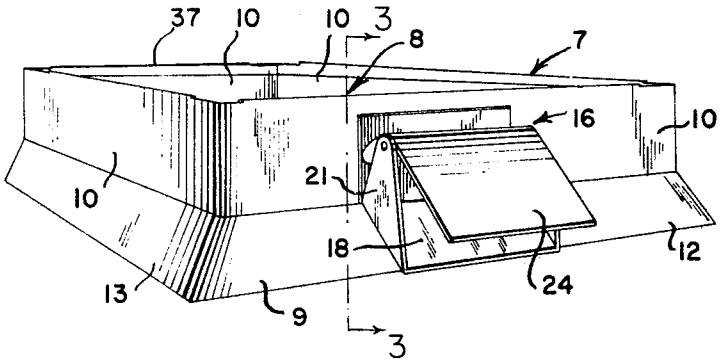

Fig. 2

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REFUSE SACK HOLDER AND SACK

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ABSTRACT OF THE DISCLOSURE

A refuse sack holder for use with disposable bags. The holder supports a disposable refuse sack in an open position so that it may be filled with refuse. The holder has associated clamps which hold the bag in position and a swingably mounted lid to cover the open mouth of the bag held.

This invention relates to refuse handling, and more in particular to supporting paper sacks or the like during the time that they are being filled with refuse.

An object of this invention is to provide a disposable refuse sack holder that can be easily and efficiently used.

A further object is to provide such a holder that is sanitary and economical.

A still further object is to provide means by which containers that have been filled with refuse can be quickly and efficiently removed and replaced with empty containers.

These and other objects will be in part obvious, and in part pointed out below.

In the drawing:

FIG. 1 is a perspective view of one embodiment of the invention;

FIG. 2 is a view similar to FIG. 1 showing the holder without the refuse sack;

FIG. 3 is a vertical section on the line 3—3 of FIG. 2, showing one of the clamps of the unit in FIG. 1 with clamp in the sack-releasing position;

FIG. 4 is a view similar to FIG. 3, with the clamp in the bag-holding position and with the cover closed.

Referring to FIG. 1 of the drawing, a disposable refuse sack **2** is held in a position to receive refuse by a supporting unit **4**, which is mounted on a wall by a sheet metal supporting bracket **6**. Sack **2** is a multi-ply kraft paper sack with one ply made of treated paper, and the sack is strong and resistant to moisture. Supporting unit **4** comprises a rectangular frame **7** which surrounds a rectangular opening **8** (see FIG. 2), which is defined by four vertical walls **10**. Flared outwardly from the bottom of walls **10** and integral therewith is a frustoconical skirt **9** comprising two side walls **12** and identical front and rear walls **13**. Each of the side walls **12** (see FIGS. 3 and 4) has an integral horizontal flange **15** which rests upon a mating flange **17** of the mounting bracket **6**, and each set of flanges **15** and **17** is held together by expansible clamping plugs **19**. Supporting frame **6** is attached to a supporting wall (not shown) so that unit **4** is supported above the floor a sufficient distance to permit sack **2** to hang freely.

Mounted upon each of the walls **12** and the adjacent side walls **10** there is a clamp **16** which clamps the top edge portion of sack **2**, which has been formed into a cuff **14** in a manner discussed below. Each clamp **16** comprises a clamp frame **18** riveted to walls **10** and **12**, and a swinging clamping member **20**, which is mounted between a pair of ears **21** of clamp frame **18** by a fixed axle **22**. Clamping member **20** includes a locking portion **23** and an integral flat handle **24**. Locking portion **23** has a curved cam surface **26** which is knurled to form a large

number of small parallel ridges which extend the length of the locking portion between ears **21**. The distance of surface **26** from the center of axle **22** increases in a counterclockwise direction from a minimum distance at **27** to a maximum distance at **29**. When clamping member **20** is positioned as shown in FIG. 3 it does not project toward wall **10** beyond the edges of ears **21**, and cuff **14** can be readily positioned along wall **10** as shown. However, when the clamping member is swung clockwise (see FIG. 4) surface **26** can be moved into contact with wall **10**, except that when the sack wall is positioned as shown, the clamp engages the sack wall and clamps it tightly against wall **10**.

In FIG. 3, the clamp is shown in the open position. Handle **24** has been raised to the position shown, thereby turning clamping member **22** in a counterclockwise direction until there is a space between the locking member and the adjacent wall **10**. This space permits cuff **14** of sack **2** to be slid into position along the outer surface of wall **10**. Handle **24** is then moved in a downwardly direction (see FIG. 4), thereby turning clamping member **20** in a clockwise direction until it contacts cuff **14** and presses it against wall **10**. As refuse is deposited in sack **2**, the added weight of the sack tends to pull cuff **14** upwardly along wall **10** and around the upper edge of the wall. Because of the friction and clamping forces between the surface of cuff **14** and the surface **26** of locking member **20**, the upward force on cuff **14** tends to rotate the locking member in a closewise direction, thereby pinching cuff **14** more tightly between wall **10** and locking member **20**. In this manner, the clamping mechanism responds to additions to the weight of the sack to be supported by clamping the cuff of the sack more securely. When the sack is to be removed, handle **24** is raised, thereby returning the clamp to the open position shown in FIG. 3.

Cuff **14** acts as a support for the sack; that is the cuff and the adjacent portion of the sack are relatively strong, and the sack is of substantantially the same horizontal dimensions as opening **8**, so that the sack walls and the cuff extend snugly along the opposite sides of walls **10**. The top edges **34** of walls **10** are bent inwardly and flattened to form an inside collar and a rounded top edge. Hence, the reverse fold **36** connecting the cuff to the main portion of the sack rests upon the rounded wall edges and there is no substantial tendency for the rounded edges to cut the sack walls. Also, cuff **14** is of substantially the size of walls **10** so that it holds itself against walls **10**. Hence, it has been found that the supporting cooperation between the walls **10** and the cuffed end of the sack is sufficiently great that a pair of clamps **16**, located on opposite sides of opening **8**, are sufficient to support sack **2**, even when it has been filled with a large quantity of refuse.

A particular problem that has been encountered in past devices for handling and supporting disposable refuse sacks is the tendency for some of the refuse deposited in the mouth of the supporting structure to not fall into the sack. The portion of the refuse remaining in or beneath the supporting structure after the removal of the refuse sack is often difficult to remove and creates an unsanitary condition. The cuff arrangement of the present invention prevents any refuse from falling between the disposable sack and the inside of the supporting structure.

An additional feature of the holder, shown is a lid **27** which is swingably mounted at each of its rear corners (see FIGS. 1 and 4) by a hinge formed by a bolt **28** and a bracket **30** which is mounted upon the rear portion of skirt **9**. Bolt **28** extends through bracket **30** and a side flange **31** on the lid, and a pair of friction washers **33** and **35** are clamped between the bracket and the flange. Wash-

er **33** is fixed to the bracket, and washer **35** is fixed to the flange, so that the washers give the hinge an anti-friction characteristic. Hence, the lid may be swung toward its vertical position and will be held there by the action of the friction washers. As shown in FIG. 4, there is a narrow flat strip of foam rubber **34** bonded to the bottom surface of lid **27** and extending around the periphery of opening **8** in alignment with the top edges **37** of walls **10**. When the lid is closed, the weight of the lid holds it tightly against the top edges **37** of walls **10**, and strip **34** is compressed against the fold portion **36** of bag **2** which extends around the top edges **37** of walls **10**. In that way, the lid provides a closure from the top of the bag which substantially seals it when the lid is closed, yet the lid may be swung up and will remain out of the way for placing refuse into sack **2**.

In installing a sack **2** in unit **4** the top portion of the sack is folded outwardly and downwardly to form the cuff **14** which is substantially the height of walls **10**. The sack is then positioned with its top portion within opening **8** and with cuff **14** above the level of walls **10**. The sack is then moved downwardly and the cuff is placed outside wall **10** and the sack is further lowered until cuff **14** is coextensive with the outer surfaces of walls **10**, and the fold in the sack at the top of the cuff rests upon the upper edges of walls **10**.

In the illustrative embodiment, sack **2** is a disposable refuse container which is inexpensive to manufacture, convenient to handle and store, and dependable in use. Such sacks may be produced upon equipment which is in common use, and the cuff **14** may be produced at the time of installation into unit **4**. It has been pointed out that unit **4** provides a very satisfactory support for the sacks particularly in that the array of edges cooperates with the clamping means and the cuff construction.

The foregoing description of one embodiment of the invention is intended to be illustrative, and not in a limiting sense. It is contemplated that the device described is capable of many modifications without departing from the scope of the invention.

What is claimed is:

1. Refuse collecting means comprising, the combination of, a sack supporting frame having a sack-supporting opening defined by a vertical wall structure which presents an array of sack-supporting edges substantially within a horizontal plane and vertically extending surfaces below the level of said edges, a sack having substantially the horizontal shape and dimensions of said opening and having an upper end positioned in said opening and a cuff portion extending downwardly along the outer surfaces of said wall structure, said sack including a portion connecting said cuff to the remainder of the sack and resting upon said array of edges, said sack having a closed bottom end, two clamping means mounted in fixed relationship upon the opposite sides of said wall structure adjacent the lower edge of said cuff and clamping said cuff, each of said clamping means comprising a bracket having a pair of spaced ears and a clamping member which is

elongated horizontally and is mounted to swing about a horizontal axis between said ears from and to its cuff-clamping position, and a closure swingably mounted upon said wall structure from and to a position wherein it closes the top of said sack and said opening.

2. Apparatus as described in claim **1** wherein said wall structure includes an outwardly flaring bottom portion upon which said clamping means are mounted.

3. Apparatus as described in claim **2** wherein said wall structure defines said opening which is rectangular and said closure is swingably mounted along one side thereof, and wherein said clamping means are mounted along the respective sides adjacent said one side.

4. Apparatus as described in claim **3** wherein said closure comprises a rectangular plate with side flanges, and wherein the mounting means for said closure comprises a pair of hinges at corners of said closure, each of which comprises pivot means extending through one of said flanges and friction washer means to provide friction resisting the swinging movement of said closure.

5. Apparatus as described in claim **4** wherein said wall structure comprises a continuous sheet metal wall with the sheet metal being bent inwardly to form said array of edges as rounded surfaces.

6. A device for supporting flexible open-mouthed containers comprising, a supporting wall structure whose upper edge defines an opening to which the mouth of one of said containers is fitted, and a pair of clamps located below the level of said upper edge adjacent the outer surfaces of opposite walls of said supporting wall structure, said container being folded outwardly along a circumferential line located near its mouth and being positioned so that said outwardly-folded portion of said container lays adjacent said outer surface of said supporting wall structure and said fold lies along said upper edge of said supporting wall structure and the portion of said container immediately below said fold lies adjacent the inner surface of said supporting wall structure, each of said clamps comprising mounting means fixed to said wall structure below the bottom edge of said outwardly-folded portion and having upwardly extending means and a clamping member mounted upon said upwardly extending means to a swing about an axis parallel to the adjacent wall surface from and to a position wherein it presses said outwardly-folded portion of said container against said outer surface of said adjacent wall surface, thereby holding said container in place.

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CHANCELLOR E. HARRIS, Primary Examiner

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,522,922 Dated August 4, 1970

Inventor(s) Austin A. Byron et al

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 5, "Corporation" should be --Corp.--.

SIGNED AND
SEALED
NOV 17 1970

(SEAL)
Attest:

Edward M. Fletcher, Jr.
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WILLIAM E. SCHUYLER, JR.
Commissioner of Patents