

[54] **HOLDER AND MANIPULATOR FOR REFUSE BAGS**[76] Inventor: **Frank Szita**, 12919 Grenoble Drive, Rockville, Md. 20853[22] Filed: **Apr. 27, 1971**[21] Appl. No.: **137,786**[52] U.S. Cl. **294/55, 294/19 R**[51] Int. Cl. **A47f 13/06**

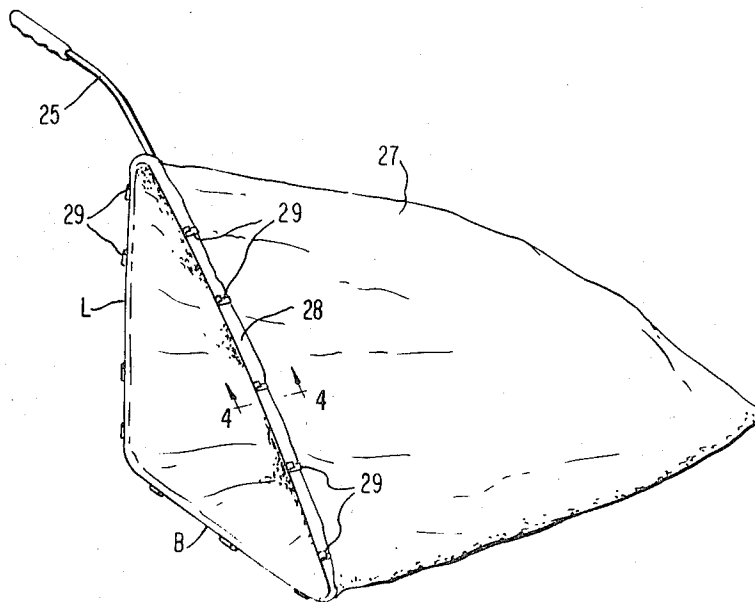
[58] Field of Search 294/1 R, 19 R, 50.6, 294/50.8, 53.5, 55; 248/95, 97, 99, 100, 101; 56/400.08, 400.11, 400.13

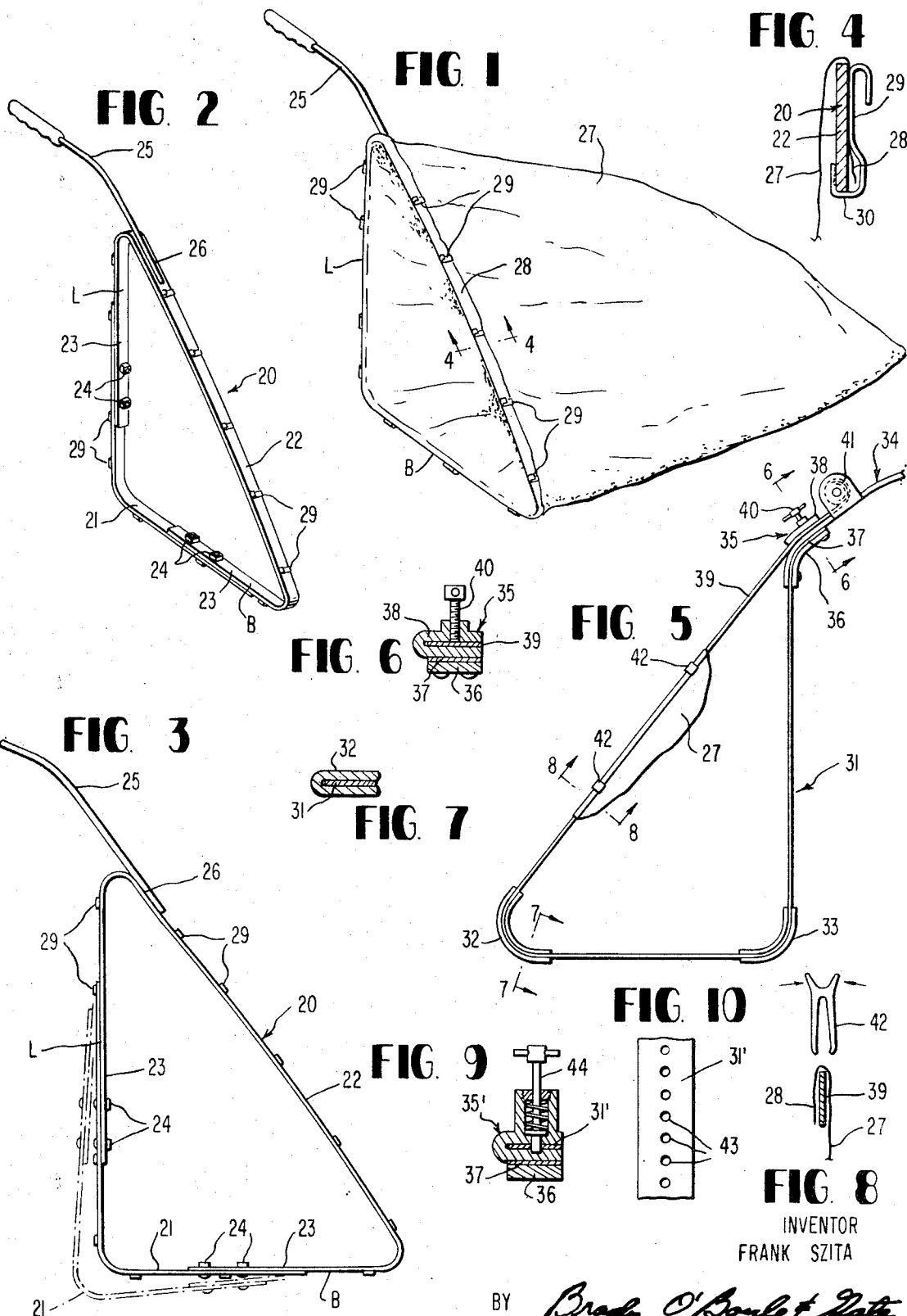
[56] **References Cited****UNITED STATES PATENTS**1,748,835 2/1930 Everitt.....294/52
1,322,445 11/1919 Hyer.....248/99 X134,637 1/1873 Brown.....248/99 X
2,652,680 9/1953 Adams.....294/50.8 X*Primary Examiner*—Evon C. Blunk*Assistant Examiner*—Johnny D. Cherry*Attorney*—Brady, O'Boyle & Gates

[57]

ABSTRACT

A holder and manipulator for flexible refuse bags features an adjustable triangular frame and convenient means for attaching the frame to the mouth of a bag to support the mouth wide open. The frame carries a handle extension for manipulating the holder and for supporting the same on the ground when desirable. The triangular frame enables the user of the bag holder to manipulate the same without stooping and a wide straight edge portion of the frame may be held on the ground to greatly facilitate sweeping debris into the bag.

20 Claims, 16 Drawing Figures



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FIG. 12

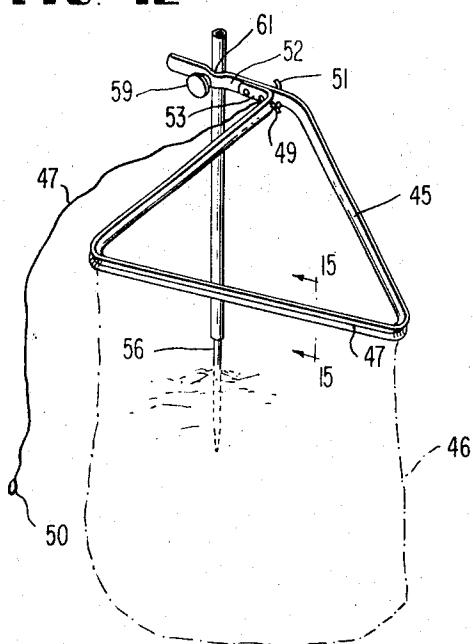


FIG. 11

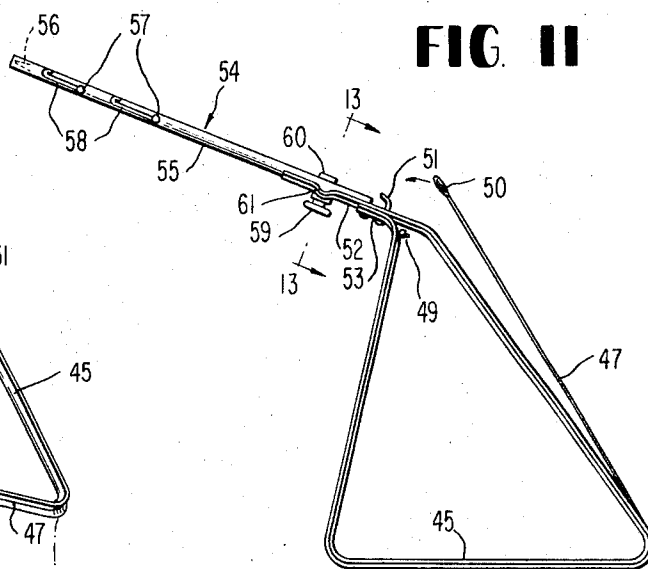


FIG. 13

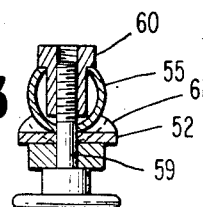


FIG. 15

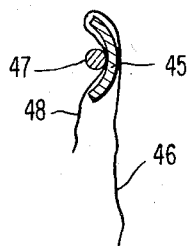
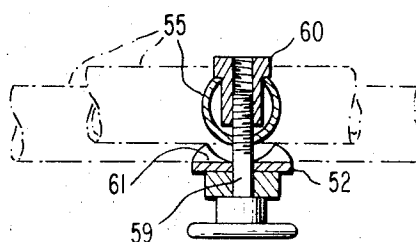
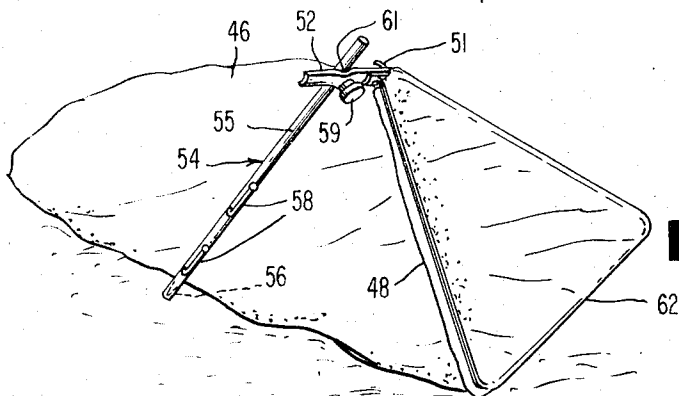


FIG. 14

FIG. 16



HOLDER AND MANIPULATOR FOR REFUSE BAGS

Plastic refuse bags or can liners have come into wide use recently particularly with the emphasis on ecology. These bags are tough and durable, are moisture-proof and possess many advantages in the sanitary disposal of garbage, trash and other refuse. However, in one important respect, the plastic bags are very difficult to use primarily because of their highly flexible nature resulting from being formed from a thin plastic film. Because of this, it is very difficult to hold the mouth of the plastic bag open to receive sweepings of trash, leaves or other debris. The plastic bags are frequently employed as can liners in which case the mouth of the bag is folded over the rim of the can but this precludes manipulation of the bag in a satisfactory manner for sweeping operations.

There is a great need for a satisfactory holder and manipulator for bags of this type in connection with sweeping operations on lawns, sidewalks, parking lots, school yards, warehouses and the like. Small conventional dust pans are not adequate for such operations and there have been no satisfactory devices available.

Accordingly, the main objective of this invention is to satisfy the above prior art need for a highly convenient, light-weight holder and manipulator for refuse bags, particularly of the thin plastic type but not necessarily restricted to such bags. The holder features a unique triangular frame for holding open the mouth of the bag in such a way that a wide straight edge portion can be presented to the ground for sweeping debris into the bag with ease and in rather large quantities. The user of the holder grasps a handle which projects laterally beyond a vertical leg of the holder, thus enabling the user to stand close to the holder without stooping. As a consequence, the device may be used for long periods without tiring. The triangular frame is made adjustable to accommodate bags of different sizes. In one form of the device, the frame is flexible and can be collapsed into a compact form for packaging. In another form, the device may be ground-supported vertically or horizontally for lawn work and the like in situations where both hands of the user need to be free. In all forms, the device is economical in construction, sturdy and durable, convenient to use and light-weight.

Other features and advantages of the invention will be apparent during the course of the following description.

BRIEF DESCRIPTION OF DRAWING FIGURES

FIG. 1 is a perspective view of a refuse bag holder and manipulator in accordance with one preferred form of the invention.

FIG. 2 is a perspective view of the device separated from the bag.

FIG. 3 is a side elevation of the device in FIG. 2, partly broken away, and showing adjustability of the frame portion in broken lines.

FIG. 4 is an enlarged fragmentary cross section taken on line 4—4 of FIG. 1.

FIG. 5 is a side elevational view showing a modified form of the invention featuring a collapsible frame or holder body portion.

FIG. 6 is an enlarged fragmentary cross section taken on line 6—6 of FIG. 5.

FIG. 7 is a similar view taken on line 7—7 of FIG. 5.

FIG. 8 is an exploded fragmentary enlarged cross section taken on line 8—8 of FIG. 5.

FIG. 9 is a fragmentary cross section similar to FIG. 6 showing a modified adjusting and locking device for the flexible frame of the holder.

FIG. 10 is a fragmentary side elevation showing a portion of the flexible frame.

FIG. 11 is a side elevation showing a further modification of the invention.

FIG. 12 is a perspective view showing one static use position of the device shown in FIG. 11.

FIG. 13 is an enlarged fragmentary cross section taken on line 13—13 of FIG. 11 showing a handle support and adjusting means.

FIG. 14 is a similar cross sectional view further illustrating the handle support and adjusting means.

FIG. 15 is an enlarged fragmentary cross section taken on line 15—15 of FIG. 12.

FIG. 16 is a perspective view of the device in FIG. 11 in a second static use position.

DETAILED DESCRIPTION

Referring in detail to FIGS. 1 through 4 of the drawings wherein like numerals designate like parts, the numeral 20 designates a two part adjustable semi-rigid preferably lightweight metal frame or body portion. This frame 20 is roughly triangular in form and preferably in the form of a right triangle as shown. During use, the hypotenuse of the right triangle is disposed diagonally in FIG. 1 and one leg of the frame designated L is disposed vertically while the other leg or base of the frame, B, is disposed horizontally in contact or near contact with the ground. The advantages of this configuration for the frame 20 will be further explained.

The frame 20 includes a substantially right angular section 21 and an interengaging section 22 which includes the hypotenuse portion and leg portions 23 which overlap the legs of the right angular section 21. These overlapping legs are adjustably joined by bolts 24 or like fasteners and the legs of the right angular frame section 21 are slotted where they receive the bolts to render the size of the triangular frame adjustable between limits approximately as shown in FIG. 3. If preferred, the adjusting slots may be placed in the legs 23. In some cases, the frame 20 may be formed in three sections rather than two so that the hypotenuse side may also be adjusted. In the embodiment shown, the frame 20 is sufficiently resilient to permit the desired adjustment of a two-part frame as indicated in broken lines in FIG. 3 and the frame will simply yield somewhat to permit this. In any degree of adjustment, the general right triangular form will be obtained.

The frame 20 is equipped at its top in the normal use position with a handle extension 25 which may be welded directly to the upper portion of the hypotenuse side of frame section 22 as at 26. This handle extension projects laterally of the vertical leg L of the triangular frame and sufficiently far above the frame to be convenient for a standing adult user. The triangular shape of the frame 20 and the vertical leg L thereof allows the user of the device to stand close to the leg L and thus avoid stooping and this is important that it greatly reduces tiring of the user.

The numeral 27 designates a conventional thin plastic refuse bag of the type now commonly used as trash can liners and the like. These bags are available in a range of sizes and the holder and manipulator can ac-

commodate a variety of bag sizes due to its adjustability. The mouth of the bag 27 is placed through the triangular frame and folded over the outer side thereof to provide a lip or skirt portion 28 on the bag. This lip or skirt portion is engaged beneath a plurality of equidistantly spaced spring clips 29 whose bases 30 are permanently anchored to the frame by welding. The actual form of the spring clip may vary. Its tension in any case is sufficient to clamp the skirt portion 28 securely to the triangular frame. Other forms of bag attaching devices could be employed on the frame, such as impaling hooks or pins.

It is apparent, by viewing FIG. 1, that the mouth of the bag is held widely open for the easy reception of refuse sweepings. The user may hold the handle extension 25 in one hand and operate a suitable broom in the other hand, or a raking implement. The wide straight base B of the triangular frame is adjacent to the ground and this assures a wide open entrance for sweepings. The great advantage of the triangular holding frame is self-evident from a consideration of the drawings in light of the above explanation.

FIGS. 5 through 10 show a slightly more sophisticated embodiment of the invention wherein the triangular frame is completely collapsible for compact packaging or storage. In these figures, the approximately right triangular bag holding frame 31 is formed from a semi-flexible preferably metal tape or ribbon, similar to the material employed for strapping crates or for certain metal tape measures or the like. Such material is sufficiently flexible to be coiled and is stiff enough to hold a given shape with the aid of certain support means.

The continuous semi-flexible frame 31 in FIG. 5 is shaped into the desired triangular form by arcuate corner braces 32 and 33 which are channel-like in cross section, FIG. 7, and therefore open at one side to receive the frame 31 removably. The elements 32 and 33 are substantially rigid and may be slid along the semi-flexible frame to shape and size the same in a desired manner.

A handle unit 34 at the top of the device includes a third frame shaping and securing unit 35 rigid therewith. This unit 35 comprises a first clamping plate section 36 of arcuate shape which is secured permanently to the upper free end portion 37 of the vertical leg of the triangular frame 31. A second channel-like holder portion 38 of this unit receives adjustably the top of the hypotenuse frame portion 39. A suitable set screw or clamp 40 or equivalent means is employed to releasably lock the frame 31 in the selected adjusted position as shown. A takeup device or reel 41 for the semi-flexible frame may be incorporated on the handle unit 34, as indicated. This reel can be of a conventional nature. When the frame 31 is separated from the holding and shaping elements 32, 33 and 38, the entire frame may be reeled up on the handle unit and a very compact structure is achieved for packaging or storage. The size of the frame 31 may be adjusted by loosening the clamp screw 40 and reeling up a desired length of the frame and properly repositioning the shaping elements 32 and 33 and then resetting the screw 40.

The plastic bag 27 in FIGS. 5 through 10 is applied to the frame 31 substantially in the manner previously described, FIG. 8, but instead of the permanently attached spring clips 29 of the prior embodiment a suit-

able number of detachable preferably plastic pinch clips 42 are employed.

FIGS. 9 and 10 show a modification of the means in FIG. 6 for adjustably securing the semi-flexible frame. In these figures, at least a portion of the tape-like frame 31' is provided with spaced adjusting apertures 43 capable of receiving a spring-urged locking pin 44 on a securing unit 35' similar to the unit 35. In all other respects, the construction and operation of the device is exactly the same as has been illustrated and described in FIGS. 5 through 8.

FIGS. 11 through 16 show another embodiment of the invention wherein a semi-rigid triangular bag supporting frame 45 is formed from a continuous section of metal or other suitable material which is arcuate in cross section, FIG. 15. This material can be shaped into triangular form with its concave side facing outwardly and will retain the prescribed shape and will be quite rigid due to the cross sectional shape shown.

A plastic bag 46 or the like has its mouth secured to the triangular frame 45 by the use of a flexible and somewhat elastic cord element 47 of nylon or the like which engages in the concave outer side of the frame 45 and clamps the skirt 48 of the bag securely to the frame. One end of the element 47 is anchored to the frame 45 at the top thereof, FIG. 11, by a knot or enlargement 49 formed on the cord element which passes through an opening in the frame too small to allow passage of the knot. The remote end of the cord element 47 has an attaching loop 50 engageable over a hook 51 on the terminal end portion 52 of the frame. This end portion may be secured to the other end portion 53 of the frame by riveting or the like, as indicated.

The bag holder and manipulator in FIGS. 11 through 16 further includes a handle and support unit 54 at the top thereof, FIG. 11, and extending laterally of the triangular frame 45 when the same is in the use position for collecting sweepings. The unit 54 comprises a straight tubular handle 55 containing an extensible and retractable pointed stake 56 whose purpose will be described. The stake 56 carries lateral pins 57 which engage slidably within a pair of J-slots 58 in the tubular handle 55, whereby the stake may be positioned releasably in retracted or extended use positions.

The end portion 52 receives and supports the inner portion of the handle 55 and the parts are connected by a clamping screw 59 and tubular nut 60 as shown in FIGS. 13 and 14. The extension 52 contains a transverse recess or seat 61 which, upon retraction of the screw 59 as in FIG. 14, allows the handle 55 to be turned 90° and to be resealed and clamped at right angles to the extension 52 as depicted in FIGS. 12 and 16. FIG. 14 in broken lines shows how the tubular handle 55 upon turning relative to the extension 52 first rises up to pass over the arcuate edges of the extension and then drops into the seat 61. Upon retightening of the screw 59 the parts are securely locked.

With the handle disposed as in FIG. 11, the device is utilized in association with a sweeping broom substantially in the same manner previously described. If it is desired to support the bag 46 upright with its top open to receive refuse, the stake 56 is extended and forced into the ground vertically as shown in FIG. 12. Both hands are now free to fill the bag. Alternatively, with the stake 56 retracted, the device may be placed on the ground as shown in FIG. 16 with the straight side 62 of the triangular frame on the ground and the bag open to

receive sweepings. At this time, the handle 55 forms a diagonal prop for the triangular frame which is inclined. The parts are still positioned relative to one another in the same manner as shown in FIG. 12. Thus, the device, in accordance with this third embodiment, is not only simple in construction but very flexible as to usage, either as a hand-held bag manipulator and support or a static support.

The terms and expressions which have been employed herein are used as terms of description and not of limitation, and there is no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof but it is recognized that various modifications are possible within the scope of the invention claimed. I claim:

1. A refuse bag holder comprising an approximately triangular bag supporting frame, said frame being in the approximate form of a right triangle with the hypotenuse section of the frame being inclined during use with one leg of the triangle adapted to be on the ground and the other leg extending substantially vertically, means for attaching the mouth of a bag to said frame with the frame holding such mouth open and the mouth conforming to the shape of the frame and having a flat side on the ground formed by said one leg, and a handle element secured at the apex of said approximately triangular frame formed by the convergence of the hypotenuse section and said substantially vertical leg and projecting therefrom transversely outwardly of said substantially vertical leg so that the frame may be conveniently manipulated by a user in a standing position with the frame arranged in an approximately vertical plane with said substantially vertical leg closely adjacent the leg of the user.

2. The structure of claim 1, and said frame being adjustable in size to enable it to accommodate bags of different sizes.

3. The structure of claim 2, and said triangular frame comprising plural frame sections which are adjustable relative to one another, and means to releasably lock said frame sections in selected adjusted positions.

4. The structure of claim 2, and said frame comprising a continuous semi-flexible strip element whose extended length may be varied to vary the size of the frame, and means to impart a roughly triangular shape to the strip element and to secure the strip element in a selected extended length position.

5. The structure of claim 4, and a reeling means for said strip element on the handle element of the bag holder allowing the strip element to be lengthened or foreshortened for increasing or decreasing the size of the triangular frame.

6. The structure of claim 4, and said means to impart said triangular shape comprising substantially rigid arcuate members attachable to the strip element to form and maintain the corners of the triangular frame.

7. The structure of claim 6, and said arcuate members comprising channel-like elbows having slots which open through one side of the elbows whereby the strip element may be attached to or disengaged from the elbows laterally.

8. The structure of claim 4, and said means for attaching the mouth of a bag to said frame comprising

plural resilient clips separate from the frame and attachable thereto manually to clamp the bag mouth to the frame at spaced intervals.

9. The structure of claim 4, and adjustable means on said bag holder engageable with said strip element to releasably lock the same in a selected extended length condition.

10. The structure of claim 9, and said adjustable means comprising a guide for an extensible and retractable section of the strip element, and a clamping set screw on said guide to engage and lock the strip element to the guide.

11. The structure of claim 9, and said adjustable means comprising a guide for an extensible and retractable section of the strip element, said strip element having spaced adjusting apertures, and a spring-urged locking pin on the guide engageable with selected apertures in the strip element.

12. The structure of claim 1, and said means comprising a plurality of resilient clips on said frame in spaced relation adapted to clamp the mouth of the bag to said frame.

13. The structure of claim 1, and said means comprising a flexible cord element approximately coextensive in length with the perimeter of said triangular frame and extending around the mouth of a bag folded over said frame to releasably clamp said mouth to the frame, and means to attach the ends of the cord element to the frame.

14. The structure of claim 13, and the cord element being somewhat elastic and containing a free end attaching element engageable with a stationary attaching part on said frame.

15. The structure of claim 14, and said frame being arcuate in transverse cross section with its concave side facing outwardly and receiving the cord element.

16. The structure of claim 1, and means mounting the handle element on said frame near one corner thereof and being adjustable to allow the handle element to be positioned in the same plane as the frame or substantially perpendicular thereto.

17. The structure of claim 16, and said means mounting the handle element including an extension on said frame having a longitudinal seat for the handle element and an approximately right angular transverse seat, and adjustable clamping means on said extension to secure the handle element in firm engagement with either seat.

18. The structure of claim 16, and an extensible and retractable ground penetrating anchor stake on the handle element, and means to maintain said stake in retracted or extended positions relative to the handle element.

19. The structure of claim 18, and the handle element being tubular and said stake engaging inside of the handle element telescopically and adapted to be retracted completely inside of the handle element.

20. A refuse bag holder as set forth in claim 1 in which said handle is disposed in the plane of said approximately triangular frame and extends upwardly of said frame and outwardly of said substantially vertical leg on the side opposite the hypotenuse section, and said handle having a free end disposed at an acute angle relative to said one leg.

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