United States Patent [19]

Jerpbak

[11] **3,822,524**

[45] **July 9, 1974**

[54] **DEVICE AND METHOD FOR FACILITATING THE FILLING OF FLEXIBLE TRASH BAGS**

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[22] Filed: **Sept. 14, 1973**

[21] Appl. No.: **397,231**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 223,153, Feb. 3, 1972, abandoned.

[52] **U.S. Cl.** **53/37,** 53/390, 141/10, 141/390, 248/99

[51] **Int. Cl.** **B65b 67/04,** B65b 39/02

[58] **Field of Search** 53/29, 35, 37, 191, 255, 53/257, 261, 262, 390; 141/10, 177, 316, 337, 390, 391; 248/95, 99, 152, 174

[56] **References Cited**

UNITED STATES PATENTS

271,759	2/1883	Adkisson	141/390
576,782	2/1897	Goodrich	141/390
791,472	6/1905	Kaiser	141/390 X
1,879,410	9/1932	Morris et al.	141/390 X
2,605,582	8/1952	Allen	141/391 X

FOREIGN PATENTS OR APPLICATIONS

362,706	12/1931	Great Britain	248/95

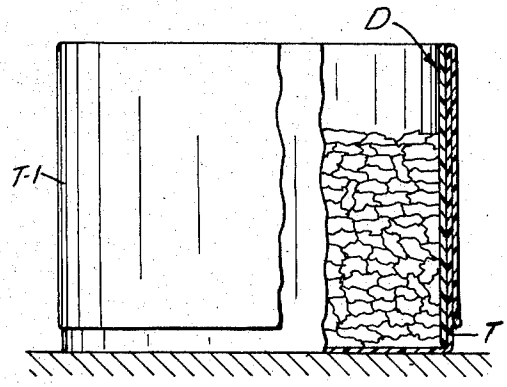
Primary Examiner—Robert L. Spruill

Attorney, Agent, or Firm—Williamson, Baine & Moore

[57] **ABSTRACT**

A device for facilitating filling of elongate flexible trash bags utilizes a generally rectangular sheet of material constructed of a slippery, manually flexible composition having sufficient stiffness to retain itself in a cylindrically formed shape. The sheet is provided with a set of spaced fastener-receiving apertures adjacent one end edge thereof. A plurality of parallel sets of similarly shaped fastening apertures is provided in an intermediate portion of the sheet nearer the opposite end thereof. Quickly applicable fastener elements are provided for insertion through two selected aligned sets of said fastening apertures when the sheet is manually flexed in curvilinear manner to a helical, generally cylindrical shape. Secured by said fasteners in a desired adjusted diameter, the sheet forms a distender cylinder for use in a novel method for filling flexible trash bags. The distender cylinder in height is only a fraction of the height of the limp trash bag with which it functions in a combination relationship. The distender is first slipped to the bottommost position within the bag, thereby uniformly distending the same and thereafter trash is dumped through the open top of the bag to a level just below the upper edge of the cylindrical distender. Thereafter the distender is slid upwardly above the level of trash and the filling operation is repeated. These steps for elongate large bags are repeated until the bag is filled to the desired level, whereafter the distender is removed and the upper annular edge of the bag is twisted tightly and secured and preferably sealed.

2 Claims, 6 Drawing Figures



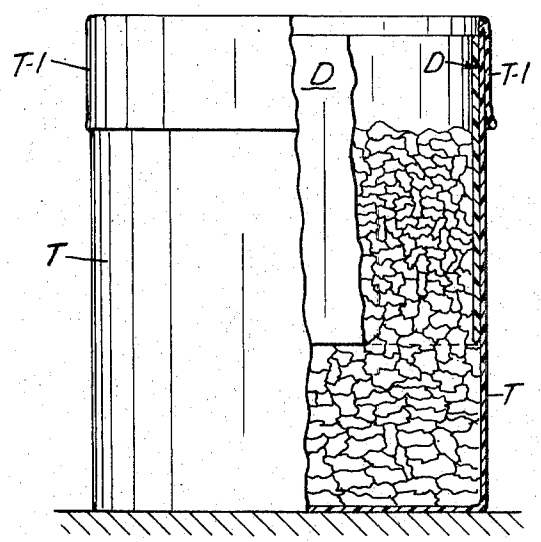


FIG. 1

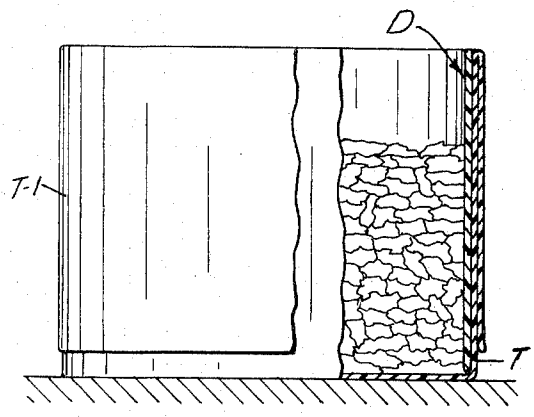


FIG. 2

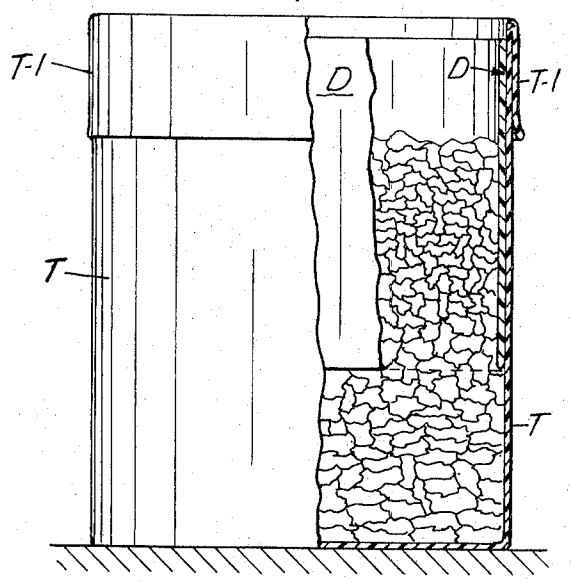


FIG. 3

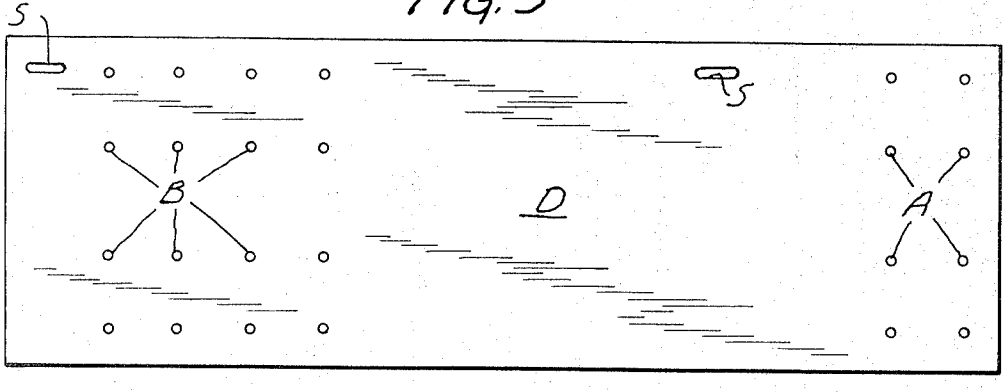
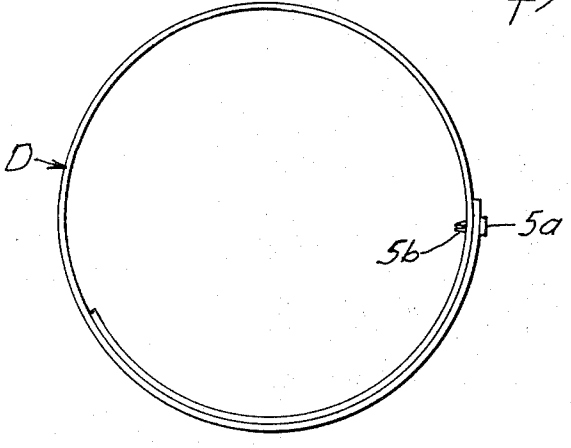


FIG. 4



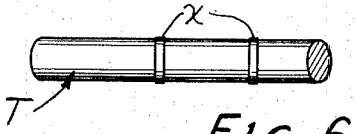
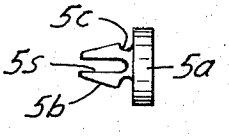


FIG. 6

FIG. 5



DEVICE AND METHOD FOR FACILITATING THE FILLING OF FLEXIBLE TRASH BAGS

CROSS REFERENCE TO RELATED APPLICATION

This is a continuation-in-part of applicant's copending application Ser. No. 223,153, filed Feb. 3, 1972 and now abandoned.

BACKGROUND OF THE INVENTION

It is common knowledge that for at least twelve years limp, plastic bags have been widely used for containing, with substantially sealed effect, trash such as leaves, ashes, cans, litter and garbage. The wide use of such plastic film bags has substantially lessened pollution due to containment and disposal of trash materials which decay in a short time leaving obnoxious odors, germs and liberating harmful gases.

Such limp plastic bags folded in compact form are available at all supermarkets, hardware stores, drug stores and the like and come in elongate sizes running from 3½ feet to 6½ feet in height when distended.

In present day use of such elongate plastic bags a rigid container, such as a garbage can or the like, is usually employed and the elongate bag is inserted therein with the upper end of the bag circularly disposed and overlying the upper open end of the garbage can or other container. Thereafter, trash is thrown into the bag and of course settles and receives some compaction from its own weight and other pressures. When the bag is filled it is then necessary to remove the same by grasping the upper edges of the bag and pulling upwardly thereon. This is accomplished with substantial difficulty, first because application of a uniform upward lift to the periphery of the bag is uncertain and, secondly, because the irregularities and compaction of the trash material produces a marked degree of friction between the periphery of the bag and the upstanding container.

Surveys indicate that more of said limp plastic bags are employed for receiving trash in lawn and yard usage than in actual use with garbage cans. No adequate method or simple apparatus for simplifying and facilitating filling of a limp bag without use of a rigid upstanding container is known to applicant. Often times in filling a trash bag for yard cleanup and the like one person will hold, in vertical or inclined position, the bag to open the mouth thereof and a second person will pour or stuff in litter, cans, leaves, twigs and other trash. Such operation is difficult, consumes much time and usually results in use of only part of the full cylindrical shape of the bag.

Prior art known to applicant is remote and antiquated and consists in removable cylindrical supports for fabric or woven bags or sacks which extend somewhat above the full height of the sack or bag and usually have means for connection of the upper edge of the fabric bag near the upper end of a distending cylinder. The removable supports and bag filling devices of the prior art have been constructed of sheet metal, substantially rigid and frangible fiberboard and the like and in use constitute a cylindrical form flexible only to a slight extent to enable the form to be disposed within the sack or bag.

Typical of the said prior art devices are patents to Goodrich U.S. Pat. No. 576,782, issued Feb. 9, 1897; Adkisson U.S. Pat. No. 271,759, issued Feb. 6, 1883 and Kaiser U.S. Pat. No. 791,472, issued June 6, 1905.

The prior art includes a patent to Morris et al. U.S. Pat. No. 1,879,410, issued Sept. 27, 1932, for a process and device for inserting liners in barrels, drums and other containers. In one form of the insert device which cooperates with the rigid barrel or other container, an adjustable full height cylindrical form is used, the ends of which may be connected together for varying diameters of barrels. There is no suggestion of the use of a cylindrical distending element in combination with a thin limp plastic bag to form a support or partial support for the bag or to facilitate its filling.

It is an object of my invention to eliminate the serious difficulties in filling limp plastic bags with trash and litter; to provide in combination with a large bag and the full height thereof a flexible distender element working in sequence in combination with a much longer bag to distend and support the limp bag in vertical position, to prevent injury or puncturing of the bag when certain piercing elements of trash are disposed in the bag and to be readily removable from the bag when the bag is filled to its desired level.

For practical use and success in overcoming the heretofore unsolved problem, it is essential that the parts of the apparatus or distender device employed be for sale, disposal and portability, compact and readily formable into distender elements of varying diameters. The said elongate, limp plastic trash bags which have met and can even mean more to solving some of our pollution problems are commercially made in sizes which in height, when distended, vary from 3½ feet to 6½ feet. The diameters of said bags also vary in a range of from 26 inches to 38 inches.

BRIEF SUMMARY OF THE INVENTION

In brief, I have discovered that in combinative use with a conventional large limp plastic bag, the full distention of the same and the support or mounting of the bag in a vertical position may be accomplished by combinative use with the bag of a manually rollable sheet of plastic material which may be sold and distributed in very compact, small body form and which may be manually manipulated to dispose the same in cylindrical form and of varying diameter to nicely and slidably fit within the bottom portion of an elongate plastic bag. The outside material of the sheet employed for the cylinder body is of a slippery material to facilitate relative sliding of the distender to elevated positions above the original position adjacent the bottom of the bag. Simple securing elements for interconnecting the locking edges of the sheet in helical form are provided to make the device readily adjustable diametrically to smoothly fit within bags varying substantially in diameter. The plastic material of the distender sheet has sufficient stiffness to retain its shape when helically formed but is sufficiently flexible to be rolled or compacted for shipment or sale in a compact roll of less than 3½ inches in diameter and preferably not exceeding 30 inches in length.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

From the following description, made in connection with the accompanying drawings, the new results, combinative structure and advantages of my invention will be apparent, wherein:

FIG. 1 is a view partly in side elevation and partly in vertical section showing my device as originally applied to the interior of a flexible trash bag and with the lower portion of said bag within the distender filled to a predetermined level;

FIG. 2 is a similar view showing the distender moved upwardly to a second location to receive the next relatively deep stratum of trash material;

FIG. 3 is a plan view of the distender element of rectangular form laid out before helically forming the same into a cylindrical article;

FIG. 4 is a top plan view, on a larger scale, showing the distender sheet helically secured in a predetermined adjusted position;

FIG. 5 is a detail side elevation, on a much larger scale, showing a suitable resilient fastener device for multiple use when securing the sheet together in cylindrical form; and

FIG. 6 is a perspective view showing the distender and fastening means in compact rolled form for sale, shipment and storage.

Referring now to the drawings, I provide an elongate rectangular distender sheet, indicated as an entirety by D, made of rather stiff but manually flexible plastic material, such as polyethylene or polystyrene, and provided therein with two cooperating sets of securing apertures A and B, the sets A being disposed closely adjacent one end edge (vertical in use) of sheet D while the several series B of the second set are in similar spaced relation at an intermediate portion of the sheet closer to the opposite vertical edge. In selection of the sheet material, it is preferable that the surfaces are smooth and slippery. A sheet thickness of 3/32 of an inch is adequate and permits tight rolling of the sheet in helical form for storage, sale and shipment.

Suitable resilient fasteners are provided for cooperation with selected apertures A and B to adjustably secure distender sheet D in helical or generally cylindrical shape. The form of fastener preferably employed, as shown in FIG. 5, constitutes a headed stud device having a disc outer head *5a* and an integrally formed axial split stud *5s* which, on the exterior surfaces of the prongs of the stud, has oppositely inclined wedge surfaces *5b* for producing a cam action against the sides defining the fastener-receiving aperture of sets A and B. Shoulders *5c*, formed inwardly of said wedge surfaces, abut the appropriate edges of the selected apertures B employed in making the connections.

A plurality of widely spaced finger-receiving slots S may be formed adjacent the upper edge of distender sheet D to facilitate manual upward sliding adjustment of the sheet within a plastic bag and of course when the sheet is secured in cylindrical form.

If desired (not shown), indicia may be imprinted lengthwise of the several sets of fastener-receiving apertures B, or at the top apertures thereof, to signify the diameters or sizes of various flexible trash bags to be accommodated and distended when the respective sets are placed in registration with the first set of the fastener-receiving apertures A after curvilinear deformation or shaping of the rectangular sheet.

FIG. 4 and FIGS. 1 and 2 illustrate the generally cylindrical shape of the distender D when helically flexed and secured for use in my novel method. It is usually only necessary, when materials of proper thickness, stiffness and flexibility are employed, to secure only one set of fasteners 5 through properly aligned sets of receiving apertures A and B, as shown in FIG. 4. FIG. 6 shows the distender body or sheet compactly rolled (manually) into the form it assumes for display, sale and shipment and having a diameter preferably of less than 3½ inches. When so rolled in helical form, the distender may be secured by heavy rubber bands or adhesive tape X.

It will be understood that the structure or apparatus of my invention comprises the combination and multipositional relation of an elongate limp trash bag with the distender D smoothly and slidably accommodated within the confines of an elongate limp trash bag having a length, when distended, several times the height of distender D.

My improved method of use consists in first inserting the secured distender cylinder within the confines of a thin flexible trash bag T to a bottommost position within the bag. In such position, with the rectangular sheet properly secured in helical form of the desired diameter, the bag is uniformly distended and the bottom thereof is disposed horizontally and can rest against the ground or a horizontal supporting surface. The upper annular edge T–1 of the flexible bag, as shown in FIGS. 1 and 2, is folded over and downturned and in such downturned fashion is also distended by sheet D. The combination of trash bag T and distender may rest in supported vertical position as shown in FIGS. 1 and 2 or may be manipulated by the user as a scoop to facilitate pick up of leaves, twigs, and other trash.

Thereafter, as shown in FIG. 1, trash material, including leaves, twigs, garbage and even sticky large particle material, is dumped within the upper end of the distender to a level above that shown in FIG. 1 and nearly to the top edge of the distender.

Thereafter, as shown in FIG. 2, the distender cylinder is slid upwardly within the confines of the bag and the filling operation is repeated to a level near the then upper edge of the distender cylinder D. For most bags, repetition once of the filling operation is usually all that is required, but of course for longer bags the filling operation may be repeated until the bag is filled to the desired level, leaving an annular edge of sufficient width to provide for twisting of this edge and application of flare or band twistable securing elements to secure and substantially seal the top of the filled bag. The distender is of course removed after maximum filling of the bag and before the bag is closed.

It will be understood that with my improved and new method and the essential adjustable device forming a critical part of the method and operation, no reinforcing garbage can or container is required since the distender itself, when curvilinearly formed, has adequate strength to support the flexible bag in an upright or vertical position.

It will further be noted that since the reinforcement and distending cylinder D is internally positioned within the flexible bag, the upward sliding of the distender from the initial position to an elevated secondary position requires exceedingly little effort, first because as the cylinder D moves upwardly, an expansion chamber in the bag is formed below the lower edge of the distender. Secondly, of course, the distender itself is made of slippery material and can be easily slid upwardly even though the trash is relatively sticky and of large and varied particle formation.

From the foregoing description it will be seen that the combinative structure (or apparatus) consisting in the

elongate limp bag T and the cooperating relatively short distender and support body D, in use, requires two or more stages of operation to produce my valuable new results. The combinative structural components which inherently provide for such multipositional operation and functions are set forth in the appended structural claims.

As the elongate limp film bags are progressively filled to the level of the distender body, the relatively short sliding movement in the second operation of the structure is very easily effected because no trash or other material lies above the upper edge of the distender and, secondly, because in displacement of the distender upwardly an expansion chamber is created. The filling of the bag progressively, even when trash material has normally cutting edges, will not pierce or injure the film bag because the material is dumped into and stuffed in the portion of the bag internally protected by the distender.

Prior art semi-rigid distenders, which as disclosed must always extend to a height above the top edge of the bag, are commercially unfeasible because of bulk, shipment, storage and difficulty in insertion into present-day film bags. With the vertical edges of such prior art devices free and undetached in smooth arrangement, friction between such edges and present-day film bags would be substantial and injury to the bags in an attempt to upwardly displace such a distender, by tests, is shown to be frequent. No prior art relating specifically to distenders, supports for flexible bags, shows any means for smoothly connecting the edges of distenders in predetermined diameter smooth relation.

With applicant's combinative structure of bag and relatively short cylindrical wall distender, no appreciable effort is needed to slide the distenders upwardly from bottommost position (after partial filling) to the next operative position, and in final removal of the distender only the friction of a fraction of the bag height of the material is imposed.

Thus, positive new results have been attained through applicant's combination of elongate limp bag and relatively short smooth cylindrical distender not previously remotely suggested by anything known to applicant in the prior art.

What is claimed is:

1. In combination with an elongate limp trash bag of thin film construction, a positionally adjustable distender and support device for functionally facilitating filling of said bag, said distending and support device comprising;

a generally rectangular adjustable distender sheet having a height of only a fraction of the height of said bag when distended,

said sheet being constructed of slippery, manually rollable and flexible material having sufficient stiffness to retain its shape when curvilinearly formed into a cylindrical open ended body,

said distender sheet having at least one set of fastener-receiving spaced apertures near one of the end edges thereof and having corresponding spaced sets of fastener-receiving apertures in an intermediate portion of said sheet near the opposite end thereof for selective alignment with said first set of apertures when said sheet is flexed to a helical shape, and

readily applicable fastener elements for insertion through the selected two sets of fastener-receiving apertures said fasteners having thin-headed portions for adjustably and smoothly securing the end portions of said sheet with some overlap therein into one of a plurality of cylindrical forms of different diameters,

said form and cylindrical body in the first operative positioning of the combination being disposed within the bottom portion of the bag to be filled and smoothly distending said bag and providing support for the same in upright position,

the operation of such structure requiring an upper positioning of said distender body through smooth sliding of said body within said body after initial partial filling of said bag with trash.

2. A method for facilitating support and filling of elongate limp trash bags which consists in:

forming a generally rectangular sheet of slippery, manually rollable and flexible material into a open ended cylindrical form, said sheet having sets of fastener-receiving apertures near opposite ends thereof,

inserting fasteners into mating sets of said apertures to maintain said sheet in said cylindrical form,

inserting the above formed cylinder within the lower portion and bottom of said trash bag said cylinder having only a fraction of the length of said trash bag and being of a predetermined diameter to loosely fit and uniformly distend and support the lower portion of said bag,

thereafter filling the bag within the confines of said distending cylinder to a level approximating the upper edge of said cylinder,

thereafter sliding said cylinder upwardly within the confines of said bag to a position just above the filled portion of said bag and successively repeating the procedure of filling until the bag is filled to the desired level, and

thereafter slidably removing said cylinder from the open upper end of said bag and uniformly securing the upper annular edge of said bag to close the same containing the filling therewithin.

* * * * *

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. **3,822,524** Dated **July 9, 1974**

Inventor(s) **Jerpbak, Selmer L.**

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

Column 6, line 25, change "body" (second occurrence) to --bag--.

Signed and sealed this 5th day of November 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

FORM PO-1050 (10-69)

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