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Zaks

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[54] **FILLING DEVICE FOR USE WITH PLASTIC TRASH BAGS**

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[52] **U.S. Cl.** ..... **220/65;** 141/71; 141/316; 150/52 R; 220/63 R; 150/3

[51] **Int. Cl.²** **B65D 25/14**

[58] **Field of Search** ..... 141/390 X, 337, 338, 98, 141/316 X; 150/5, 1, 3, .5; 220/63, 65; 248/95, 99; 53/390, 187, 257, 260, 266

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Attorney, Agent, or Firm—Howson and Howson

[57] **ABSTRACT**

An open-ended, frusto-conical, tubular liner is provided for insertion large-end downwardly in the open end of a plastic trash bag to facilitate filling of the bag and compaction of materials therein. The liner is fabricated from a flat sheet of resilient plastic material which is pre-cut to provide the desired frusto-conical configuration when flexed about an upright axis. Complementary releasable fasteners are provided on longitudinal margins of the liner to secure the same in its erect usage configuration while affording storage in a flat configuration. A lid is provided for closing the upper end of the liner after the upper peripheral margin of the bag is tucked inside the liner to provide a sanitary refuse container.

4 Claims, 9 Drawing Figures

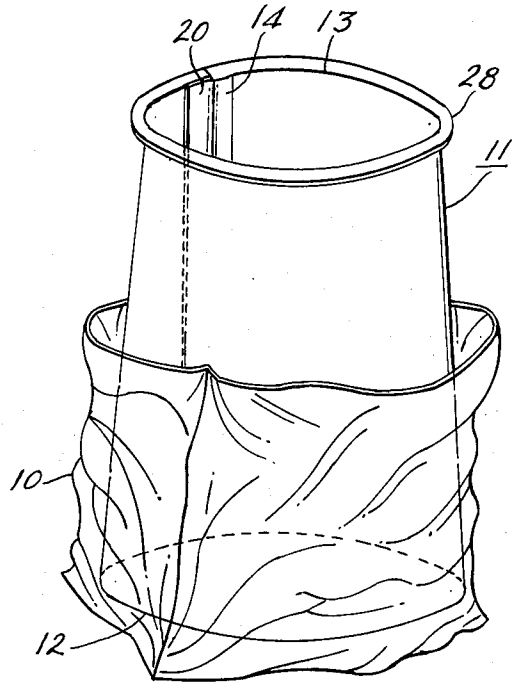


FIG. 1.

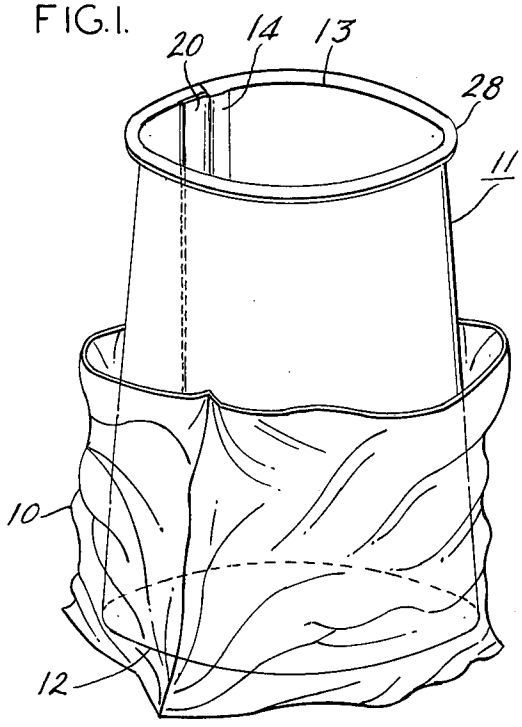


FIG 2

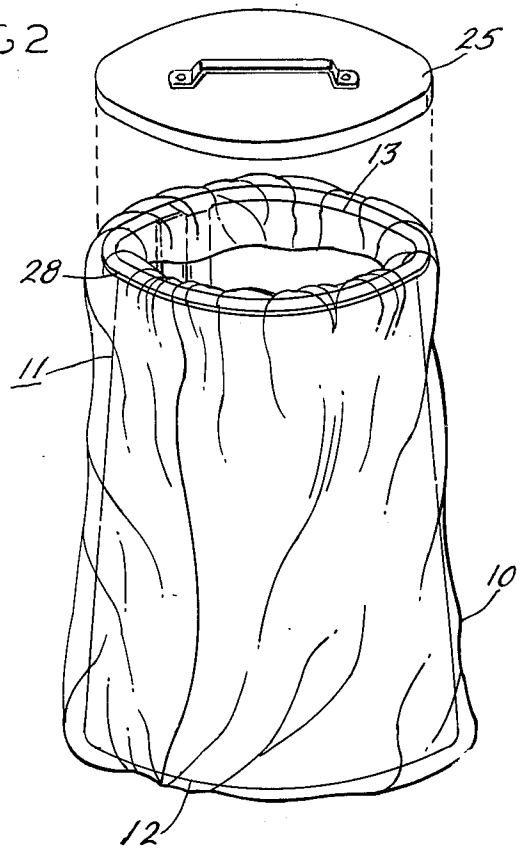


FIG. 3.

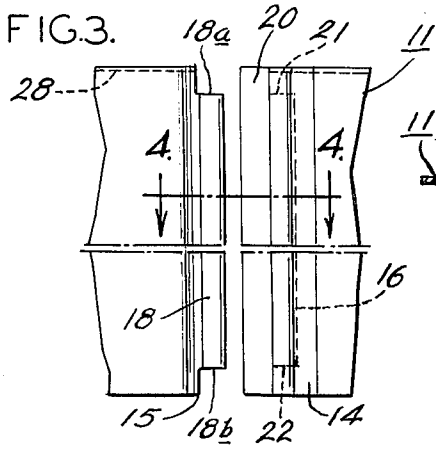


FIG. 4.

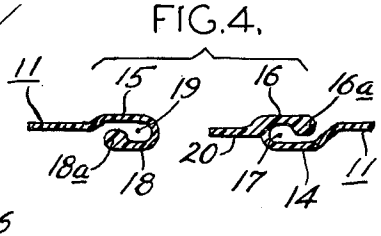


FIG. 5.

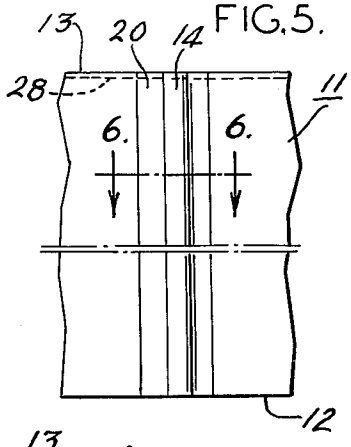


FIG. 6.

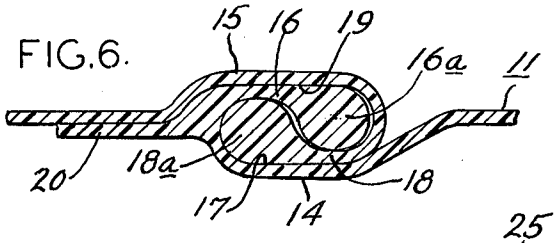


FIG. 7.

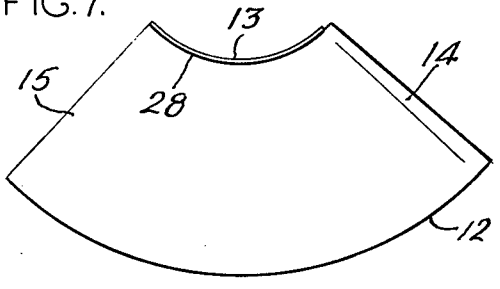


FIG. 8.

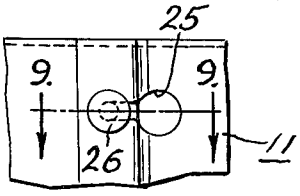
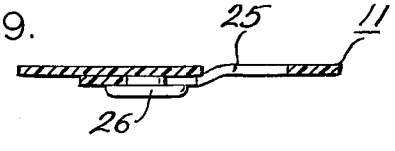


FIG. 9.



FILLING DEVICE FOR USE WITH PLASTIC TRASH BAGS

The present invention relates to bag filling devices, and more particularly, the present invention relates to a bag holder which is designed to be used in conjunction with plastic trash bags to render the bags easier to fill.

In recent years, plastic trash bags have been utilized by homeowners to contain refuse such as grass clippings, leaves, garbage, and the like. Since the bags are fabricated of light gauge plastic, they are relatively inexpensive, and hence readily disposable along with their contents. The disposability feature of plastic trash bags renders them convenient to use; however, because such bags are fabricated of such thin material, they are very flexible and incapable of supporting themselves upright in an open configuration. As a result, they are difficult to fill, particularly when utilized outdoors to contain loose and bulky material such as grass clippings and/or leaves. This is because it is very difficult for a person to hold the bag open with one hand while filling the bag with the other hand. Moreover, because of their light weight, such bags are susceptable of being blown about by the wind and their contents spilled even when partially filled with grass, leaves, etc.

Bag holders are available for supporting plastic trash bags in an open upright position during filling. Known commercial holders have a hoop which surrounds the open end of the bag and upstanding legs which support the hoop above the ground. Although such structures may function satisfactorily, they are complicated to erect. Furthermore, they do not afford significant compaction of bulky materials in the bag since they do not support the sidewall of the bag. As a result, heavy tamping may cause the sidewall of the bag to burst.

With the foregoing in mind, it is a primary object of the present invention to provide a novel device for use in filling plastic trash bags.

It is another object of the present invention to provide a trash bag filling device which is of simple but rugged construction.

It is a further object of the present invention to provide a unique bag filling device which is inexpensive to manufacture.

As still another object, the present invention provides a bag filling device which is capable of being disposed in a compact storage and/or shipping configuration when not in use.

Another object of the present invention is to provide a reusable bag holder which is simple to erect and which may be erected and dismantled rapidly without requiring any tools.

A further object of the present invention is to provide a bag filling device which is particularly useful in conjunction with light gauge plastic trash bags to afford compaction of materials during filling of the bags.

More specifically, the present invention provides apparatus for use in filling a flexible bag. The apparatus comprises a liner fabricated from a sheet of resilient flexible material which is capable of being flexed about an upright axis and disposed in an erect, open-ended, frusto-conical tubular configuration for insertion in the open end of the bag. The liner is secured in its erect configuration with its longitudinal margins in overlapping relation by means of releasable fasteners which are located on the margins. The fasteners cooperate with surface means to prevent relative longitudinal movement of the margins when the liner is erected while permitting the liner to be stored in a flat configuration. In use, the liner is inserted downwardly into the open end of a plastic bag, with the large opening of the liner engaging the bottom of the bag. The sidewall of the bag is pulled upwardly around the outside of the liner as far as possible. The liner is filled with materials which may be compacted therein. After the liner is filled it may be withdrawn; or, it may be used in conjunction with a lid to provide a sanitary container after the upper margin of the bag is tucked inwardly over the upper edge of the liner and the lid is installed thereon.

These and other objects, features and advantages of the present invention should become apparent from the following description when taken in conjunction with the accompanying drawings, in which:

FIG. **1** is a perspective view of a bag filling device embodying the present invention, the device being illustrated in its erect usage configuration inside a plastic trash bag;

FIG. **2** is a perspective view similar to FIG. **1** but illustrating the upper margin of the bag tucked inwardly about the upper edge of the device for cooperating with a lid to provide a sanitary refuse container;

FIG. **3** is a fragmentary elevational view of means for releasably fastening the filling device in its erect configuration, the view looking outwardly prior to interengagement of the fastening means;

FIG. **4** is an enlarged sectional view taken along line **4—4** of FIG. **3**;

FIG. **5** is a view similar to FIG. **3** but illustrating the releasable fasteners engaged with one another;

FIG. **6** is a greatly enlarged sectional view taken along line **6—6** of FIG. **5** to illustrate the interlock effected by the releasable fastening means;

FIG. **7** is a developed view in reduced scale of the filling device of FIG. **1** to illustrate the device in its flat storage configuration;

FIG. **8** is a fragmentary elevational view illustrating a modified form of releasable fastening element which may be utilized satisfactorily in the present invention; and,

FIG. **9** is a sectional view taken along line **9—9** of FIG. **8.**

Referring now to the drawings, there is illustrated in FIG. **1** a disposable plastic trash bag **10** which may be employed to contain bulky refuse such as leaves, grass, clippings, etc., as well as garbage. The bag **10** is fabricated of light gauge plastic material, such as polyethylene, so that the bag is not capable of supporting itself in an open upright configuration. As a result, it is difficult for this type of bag to be filled readily with bulky refuse.

According to the present invention, a filling device is provided for use in combination with the plastic trash bag **10** to hold the bag open while it is being filled and to permit bulky materials to be compacted during filling so that the bag is capable of containing a maximum amount of refuse. To this end, an open-ended, tubular liner or insert **11** is inserted in the open end of the bag **10** during filling, such as illustrated in FIG. **1,** and refuse is charged into the liner **11.** The liner **11** has a frusto-conical erect configuration with its lower edge **12** being dismensioned longer than its upper edge **13** so that the bottom opening of the liner is larger than the top opening. Thus, when the liner **11** is inserted in the bag **10** with its bottom end first, the liner **11** is relatively

stable and tends to weigh down the bag to prevent the bag from being blown about when utilized outdoors.

The liner **11** is capable of being disposed in a compact storage or shipping configuration. For this purpose, the liner **11** is fabricated from a sheet of resilient flexible material, such as plastic or metal, and the liner has a segmental planar configuration such as illustrated in FIG. **7.** The upper and lower edges **13** and **12,** respectively, of the sheet are arcuate and have constant but different radii of curvature, and the sheet has longitudinal margins **14** and **15** which extend between the upper and lower edges. The sheet is flexible about an upright axis and is sufficiently thin and resilient so that it does not take a permanent set when flexed into its erect configuration with its longitudinal margins in overlapping relation.

In order releasably to secure the liner **11** in its usage configuration, a means is provided for releasably fastening the longitudinal edge margins **14** and **15** in overlapping relation. In the embodiment of FIGS. **1–5,** the margins are fastened together by complementary mating releasable fasteners located on the longitudinal margins. The releasable fastening means includes an inturned lip **16** (FIG. **4**) which extends alongside the longitudinal margin **14** to form a recess **17** therebetween. A similar lip **18** is provided alongside the longitudinal margin **15** to form therewith a recess **19.** The lips **16** and **18** each terminate in an enlarged bead **16***a* and **18***a*, respectively. Thus, when the lips **16** and **18** interengage one another circumferential expansion of the insert **11** is resisted so that pressure may be exerted inside the liner, for instance by compacting materials therein. The interengagement of the beads **16***a* and **18***a*, on the other hand, enable the liner **11** to resist a limited amount of circumferential contraction so that the structural integrity of the liner is maintained for permitting the liner **11** to be handled without coming apart. As best seen in FIGS. **1** and **6,** a gripping tab **20** is provided integrally with the lip **16** on the inside of the liner **11** to enable the lip **16** to be pivoted about the lip **18** for erecting and dismantling the liner **11** without requiring any tools.

The longitudinal margins **14** and **15** are prevented from sliding relative to one another when the liner **11** is erect. For this purpose, surface means is disposed transversely to the margins for cooperating with the releasable fasteners. In the illustrated embodiment, a pair of surfaces **21** and **22** extend transversely to the margins **14** and **15,** and the surfaces **21** and **22** are spaced apart to engage opposite edges **18***a* and **18***b* of the lip **18** adjacent the upper and lower edges of the liner **11.** Thus, when the lips are engaged, the surfaces **21** and **22** engage the lip edges **18***a* and **18***b* to prevent relative longitudinal movement. Preferably, the liner **11** is fabricated of plastic and the lips **16** and **18,** as well as the surfaces **21** and **22,** are molded integrally with the liner **11.**

If desired, the liner **11** may be provided with a modified form of releasable fastener. As best seen in FIGS. **8** and **9,** the modified fastener includes an aperture **25** having a horizontally elongated portion extending toward the edge of the liner **11** and an integral button **26.** The button **26** has an enlarged head which is sized to be received in the aperture **25** and slid into the elongated portion so as to prevent longitudinal movement of the overlapped margins relative to one another and to prevent circumferential expansion of the insert **11.** Preferably, two or three fasteners of this type are spaced apart on the longitudinal margins to provide an adequate connection.

In using the filling device **11** of the present invention, the plastic trash bag **10** is opened, and the liner **11** is inserted downwardly into the open end of the bag **10** so that the lower edge **12** of the liner **11** engages the bottom of the bag **10.** The upper margin of the bag **10** is pulled upwardly about the outside of the insert **11** and above its lower edge **12** as far as the sidewall of the bag is capable of supporting itself. Refuse may then be charged into the interior of the liner **11** and compacted, as by being tamped downwardly. After the liner is filled and the materials compacted, the liner **11** is lifted out of the bag **10.** Since the bottom opening of the liner **11** is larger than the top opening, the compact materials tend to drop away from the inside of the liner **11** into the bag **10.** The bag may then be tied at its top in the usual fashion.

If desired, the insert **11** may be utilized to support the bag **10** and to provide a sanitary refuse container. For instance, as best seen in FIG. **2,** the upper margin of the bag **10** may be tucked inwardly about the upper edge **13** of the liner **11,** and a lid **25** may be placed on top of the upper edge **11** to secure the upper margin of the bag **10** in place. The liner may then be discarded with the bag **10.** It is noted that the relatively small top opening on the liner and the taper of the liner would tend to retard dumping of the contents of the bag-liner combination.

The liner is preferably fabricated of a low-cost, relatively stiff plastic which is inherently resilient. However, in order to augment the stiffness of the plastic and the resistance of the liner to flexure about an upright axis, and to insure that the liner does not take a permanent set, reinforcing means in the form of a continuous circumferential flange **28** extends outwardly along the upper edge **13** of the liner. Preferably, the flange **28** is formed integrally with the liner; however, it may be provided by a separate element affixed to the liner and reinforcement may be provided by horizontally-disposed strips of steel embedded in the liner at spaced vertical locations.

In view of the foregoing, it should be apparent that an improved bag filling device has now been provided. The device is simple to erect, is compact to store, and is inexpensive to manufacture.

While a preferred embodiment of the present invention has been described in detail, various modifications, alterations and changes may be made without departing from the spirit and scope of the present invention as defined in the appended claims.

I claim:

1. In combination with a bag having a flexible wall providing a bottom at one end and an opening at an opposite end, said flexible wall normally incapable of supporting itself in a fully upright open position, an open-ended frusto-conical liner mounted in said bag to support said bag wall only from the inside during filling of said bag with materials, said frusto-conical liner having a lower end larger than its upper end and engaged with the bottom of the bag during initial filling of the bag to anchor the bag so that it resists being upset easily during filling, said liner being fabricated of a sheet of flat material having upper and lower arcuate edges with the lower edge being longer than the upper edge, said liner being readily bendable about an upright axis to afford

disposition of the liner either in an erect frusto-conical usage configuration or in a flat storage configuration, said liner having edge margins extending between said upper and lower arcuate edges and overlapping one another when said liner is erect, and including complimentary fastening means mounted on said liner edge margins for releasably securing said liner in said erect frusto-conical usage configuration while affording ready dismantling of said liner for storage.

2. Apparatus according to claim **1** wherein said complementary fasteners include a reversely inturned lip extending along one margin and cooperating to define therebetween a recess, and a reversely outturned lip extending along the other margin for engaging in said recess to fasten said liner in its tubular configuration with said lips interengaging one another to resist circumferential expansion of the liner.

3. Apparatus according to claim **2** wherein each of said lips terminates in an enlarged bead and said beads interengage one another and the lips so that said insert is capable of resisting circumferential contraction.

4. Apparatus according to claim **3** including a gripping tab integral with one of said lips for flexing said one lip relative to the other to effect engagement and disengagement of said beads and lips.

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