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(54) TRASH BAG SUPPORTING APPARATUS

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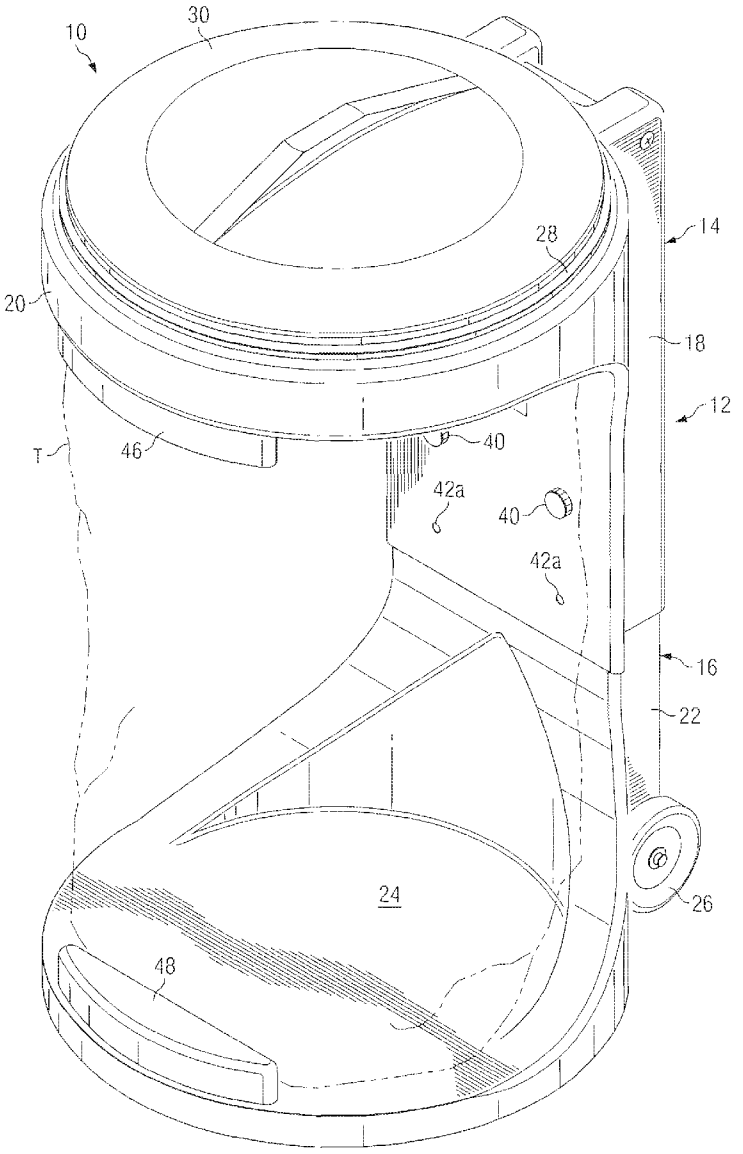
(52) **U.S. Cl.** **383/33**

(57) **ABSTRACT**

A trash bag supporting apparatus comprises a support ring having a circular cylindrical interior surface extending at a predetermined angle for receiving the openable end of a trash bag therethrough with the trash bag draped around the surface. A pressure ring has a circular cylindrical exterior surface extending at the same angle as the surface of the support ring for securing the trash bag in an open configuration and for preventing the trash bag from falling through the support ring upon the receipt of trash therein.



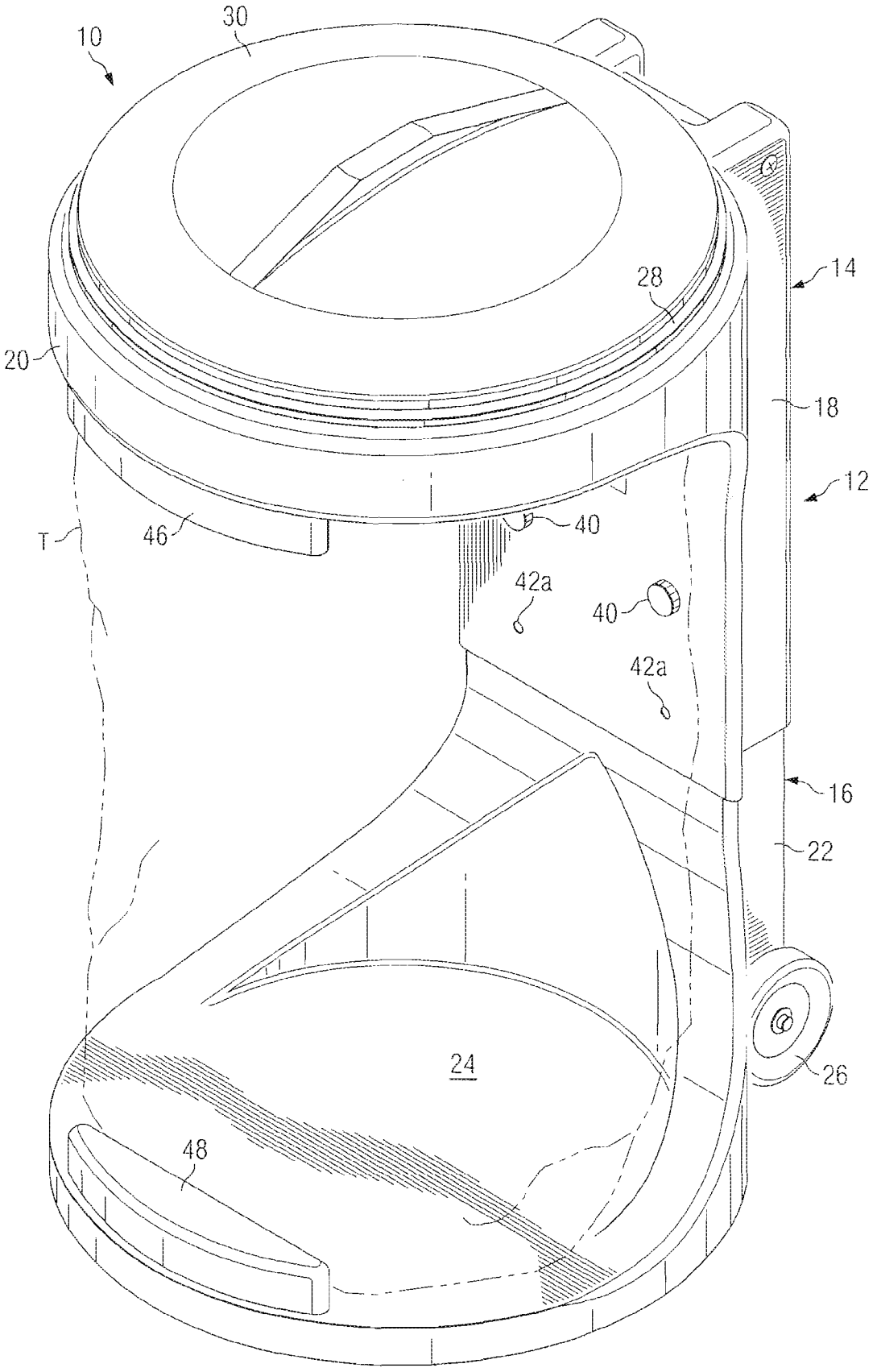


FIG. 1

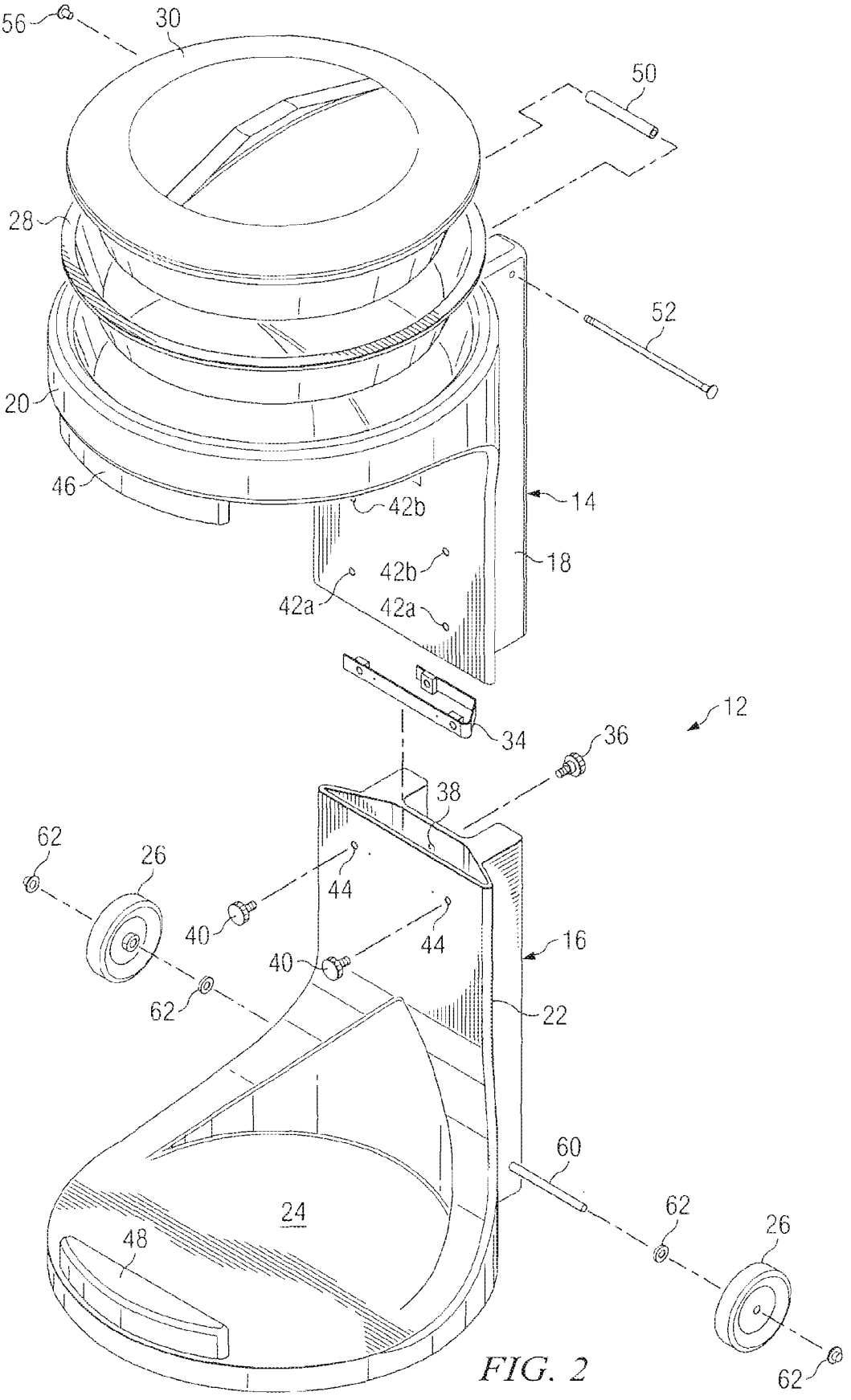

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FIG. 2

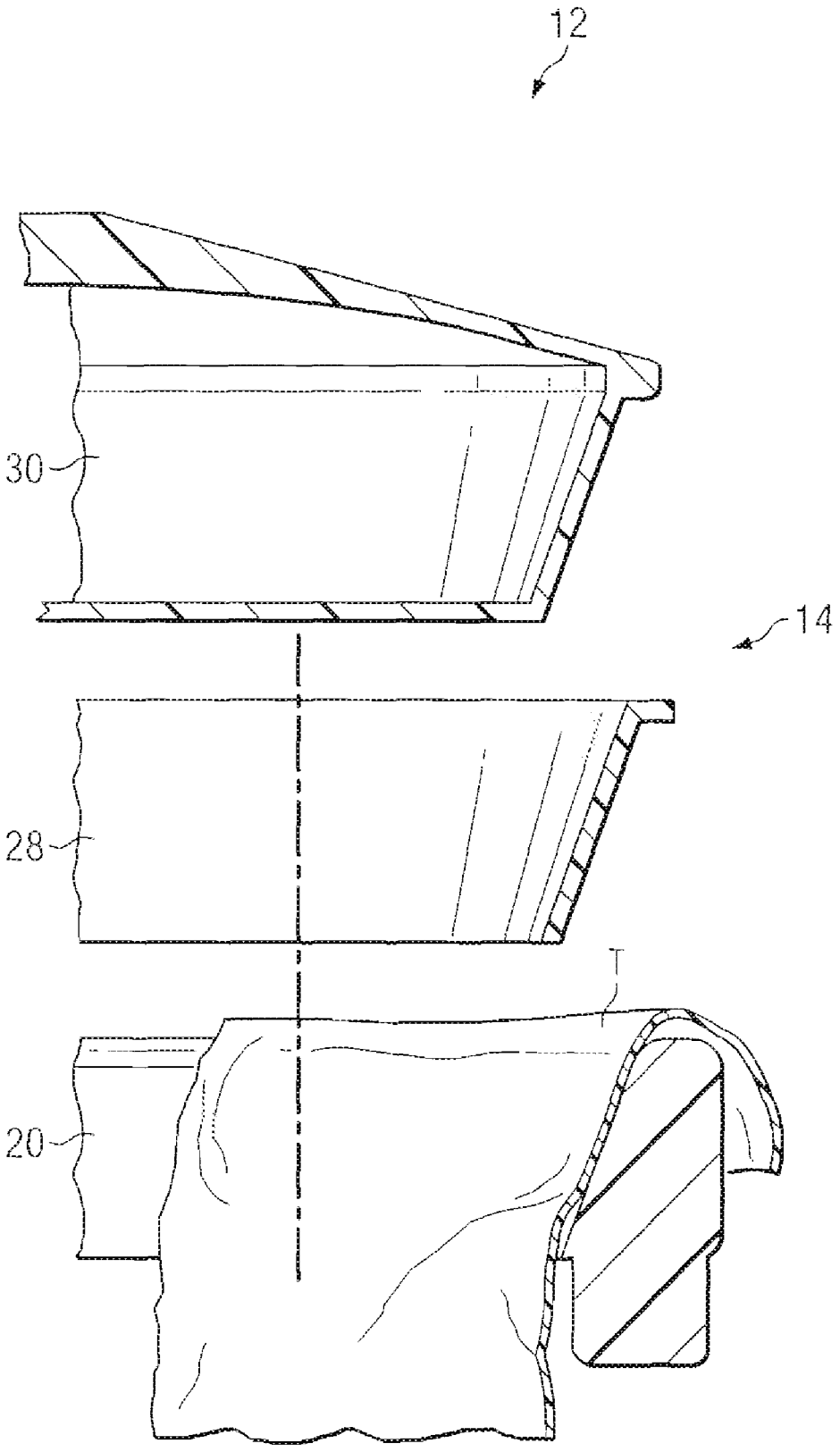


FIG. 3

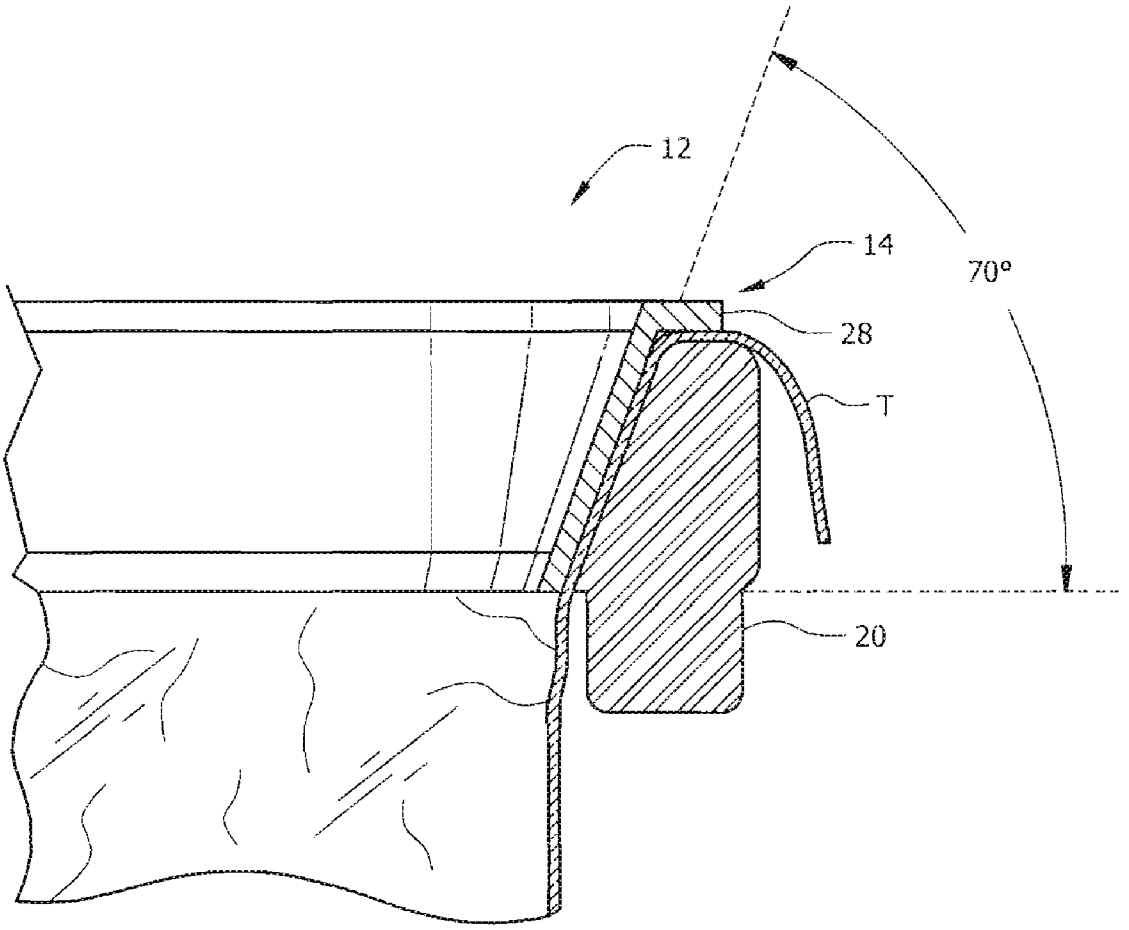


FIG. 3A

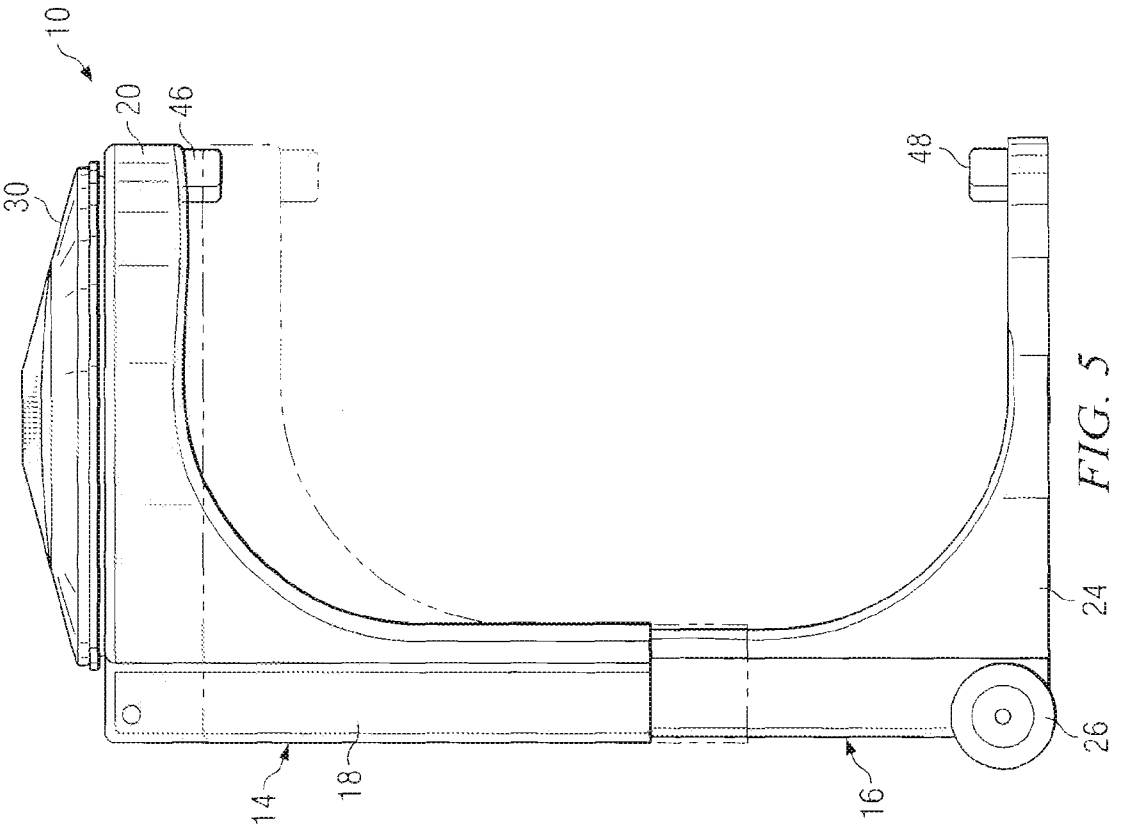


FIG. 5

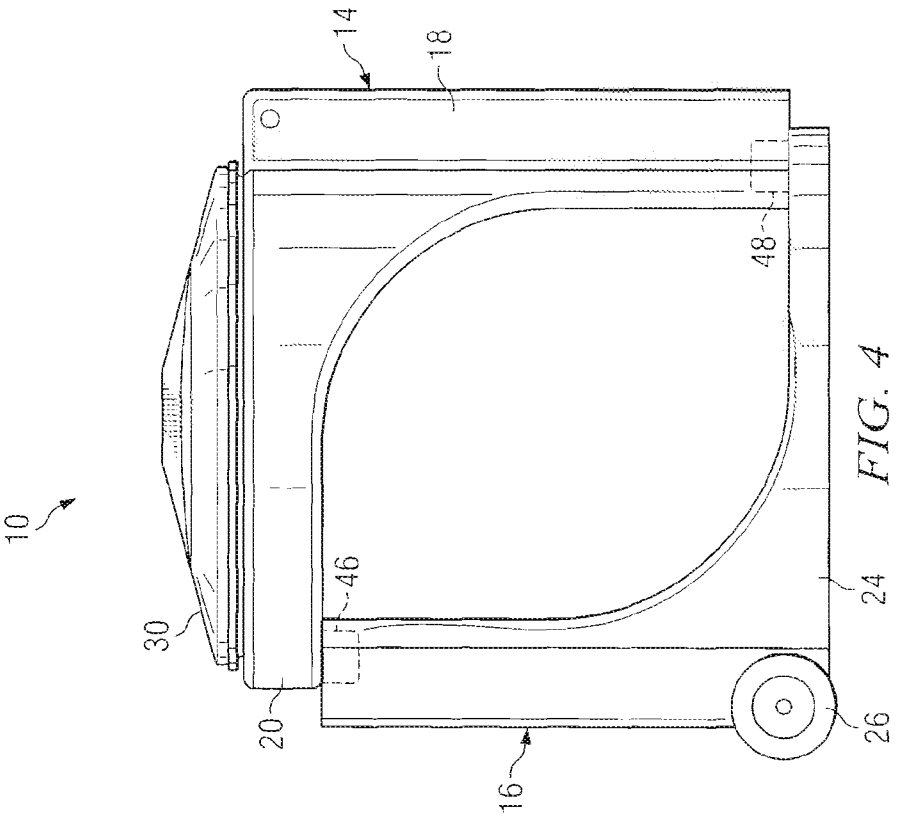


FIG. 4

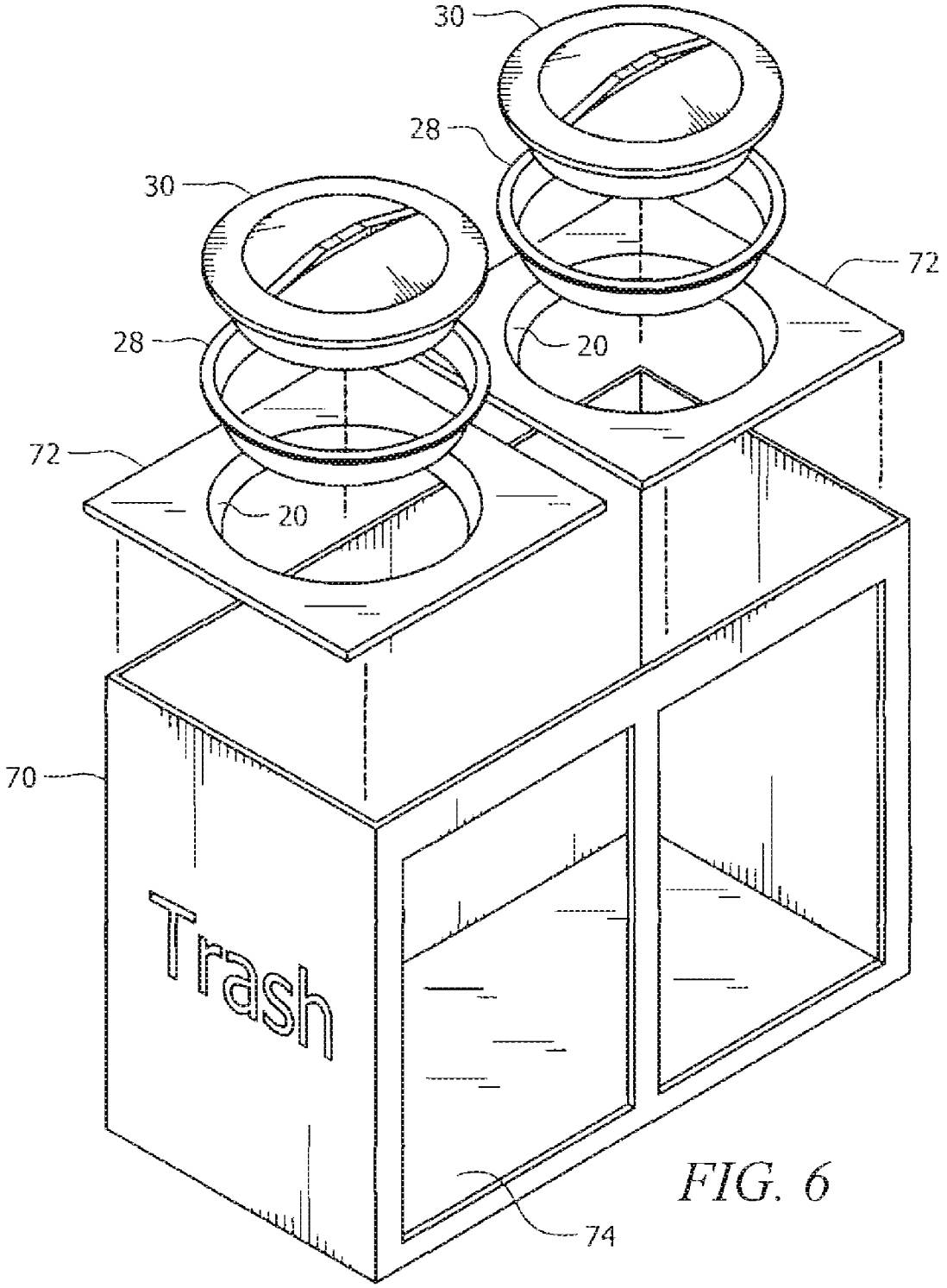


FIG. 6

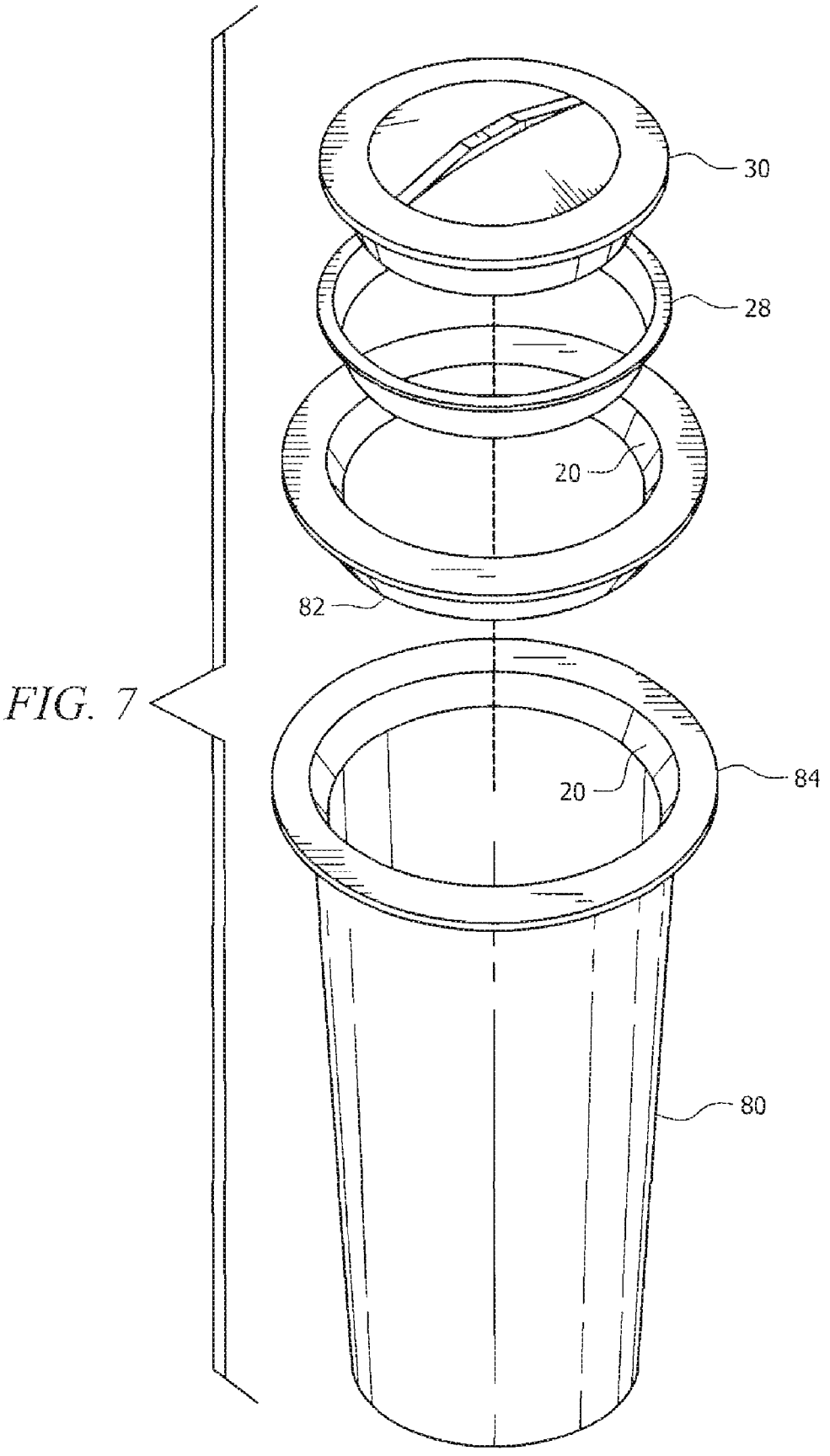


FIG. 7

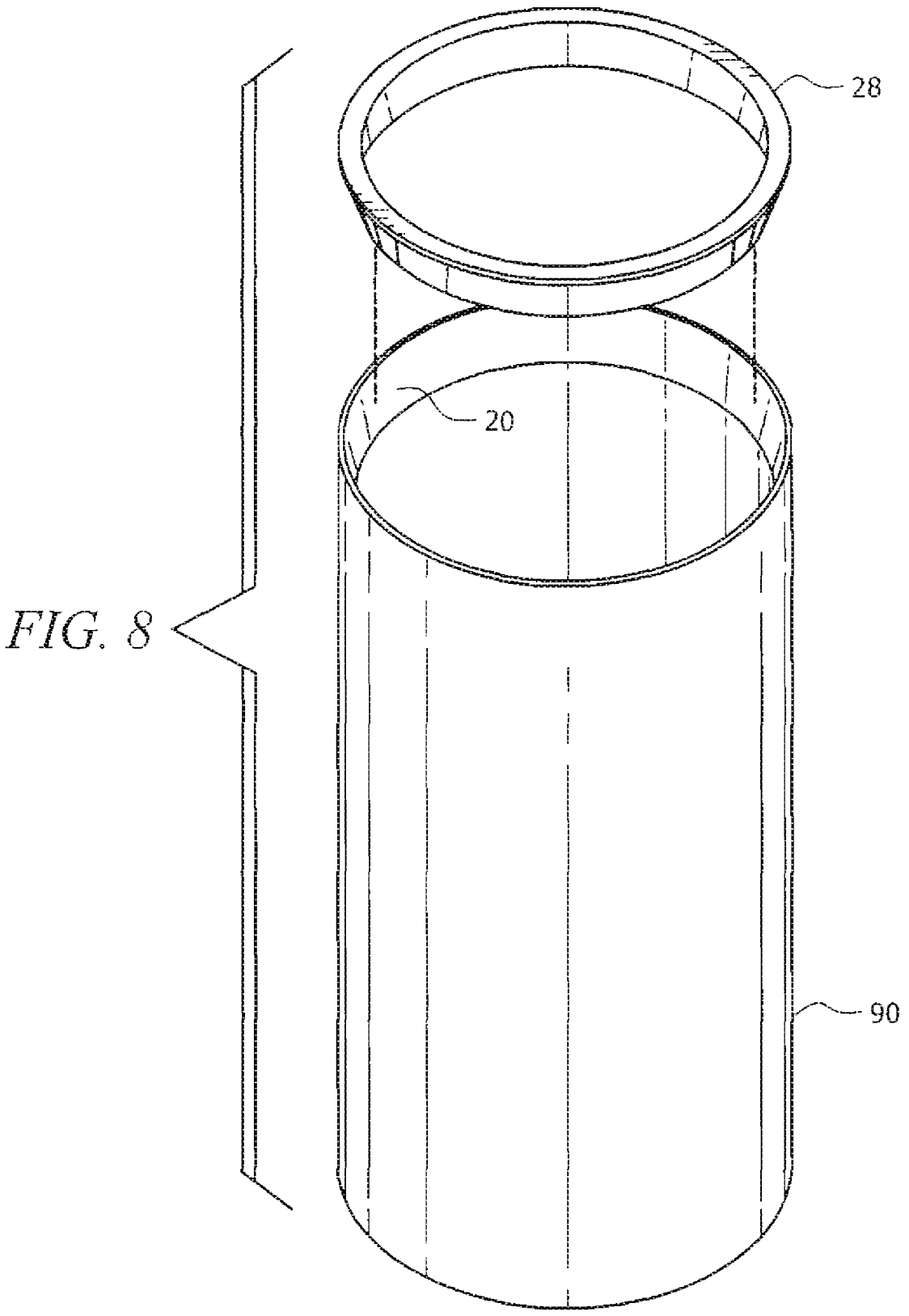


FIG. 8

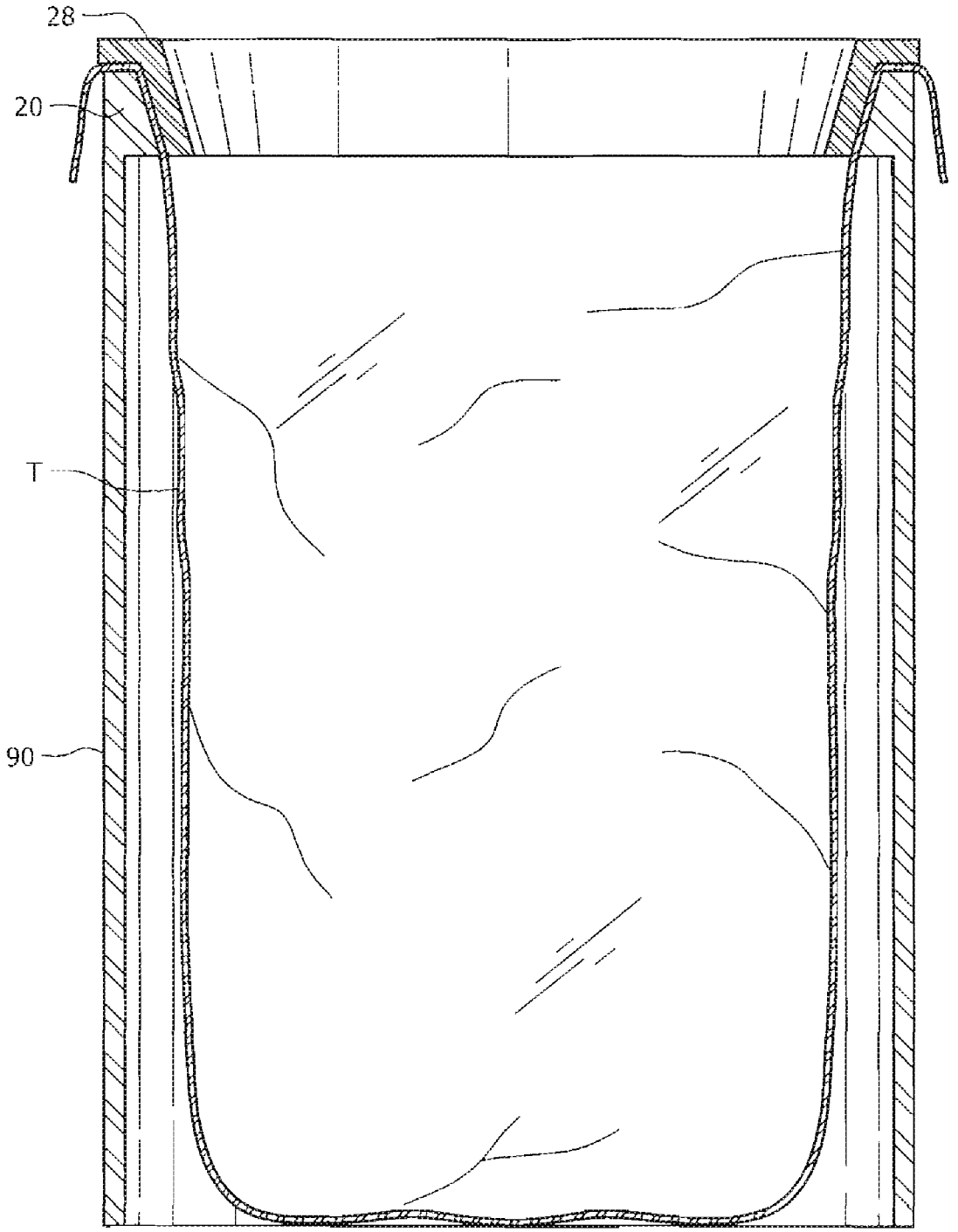


FIG. 9

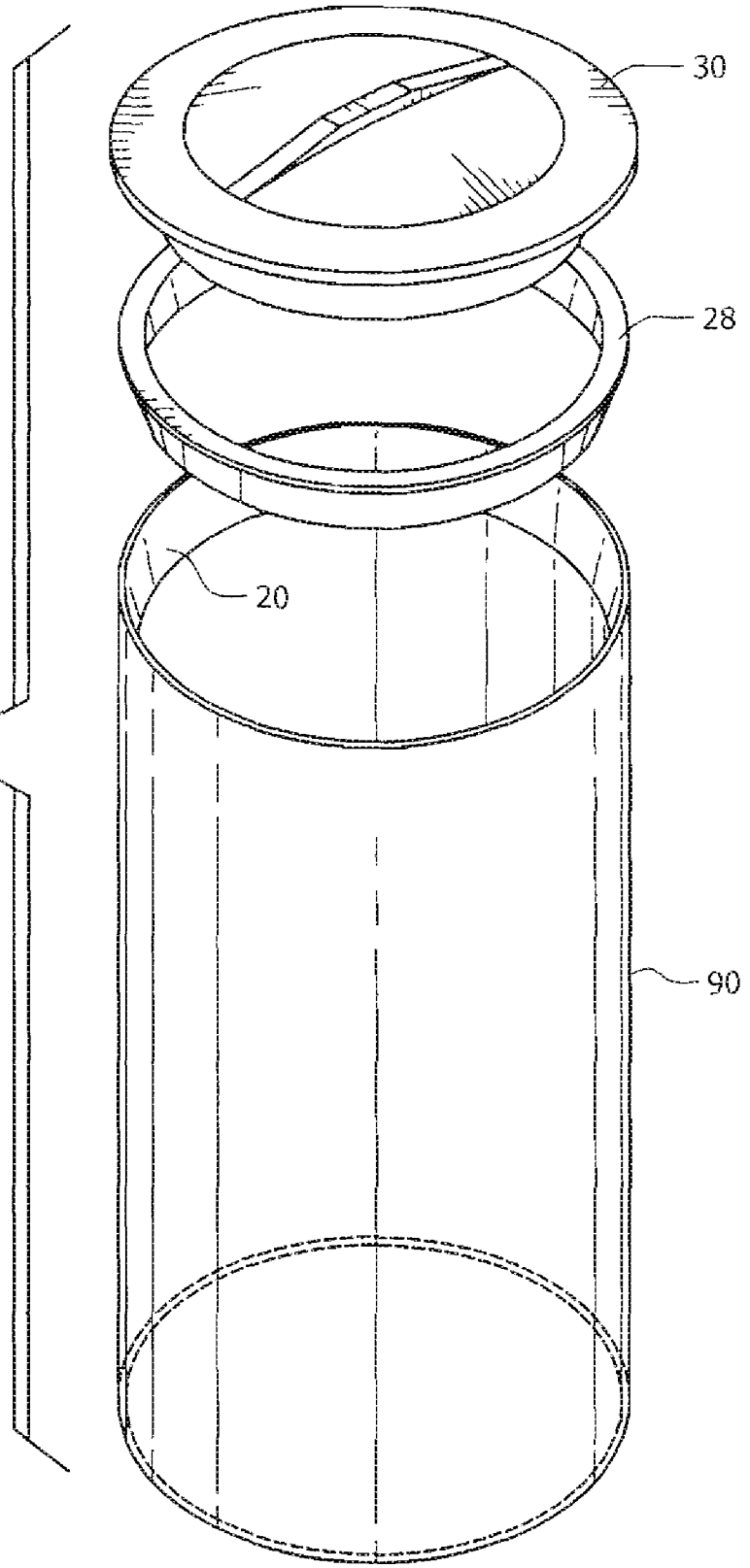
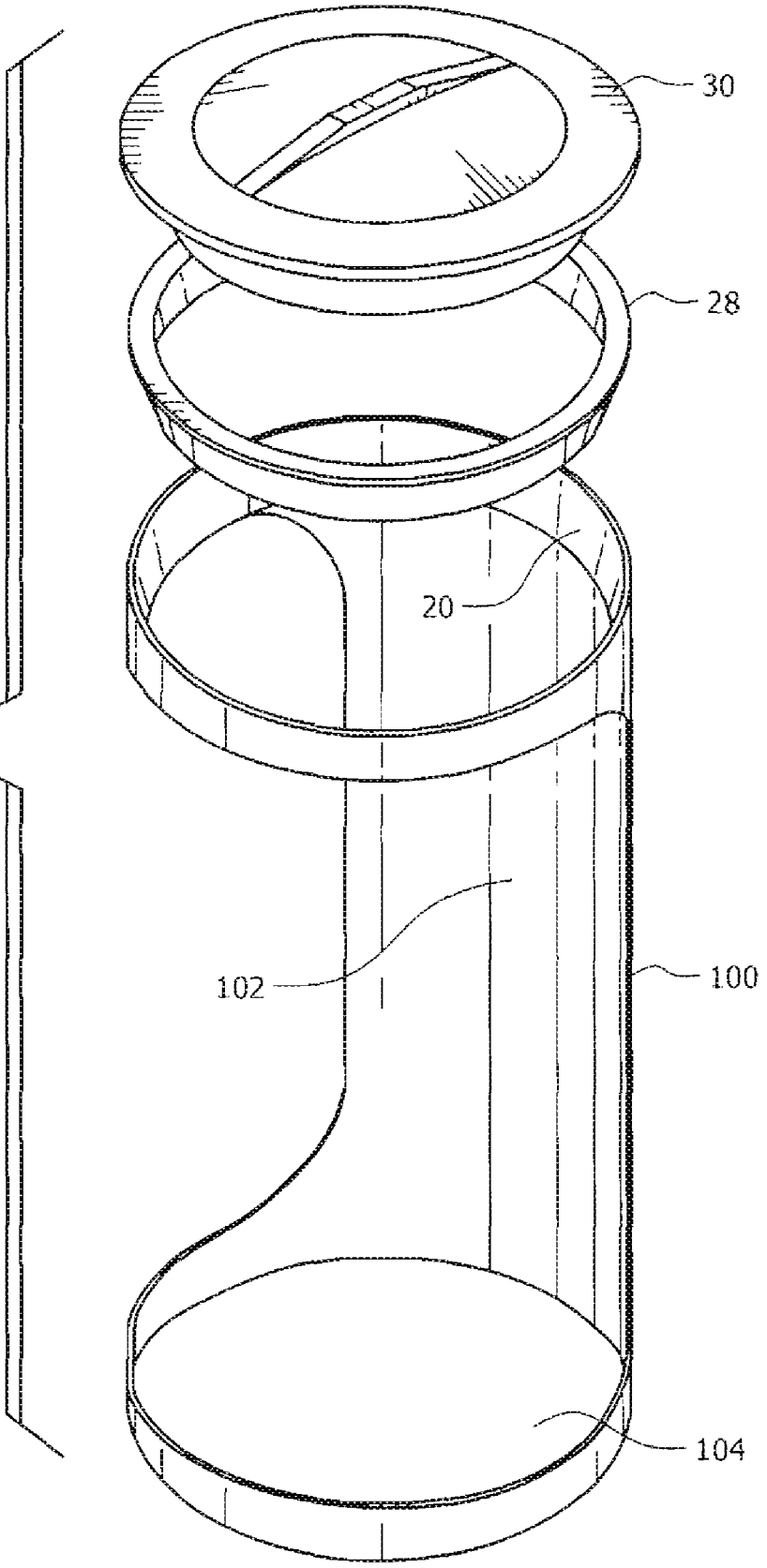


FIG. 10

FIG. 11



TRASH BAG SUPPORTING APPARATUS

CLAIM OF PRIORITY

[0001] Applicant claims priority based on provisional patent application Ser. No. 60/910,695 filed Apr. 9, 2007.

TECHNICAL FIELD

[0002] This invention relates generally to trash receptacles, and more particularly to devices for supporting trash bags and maintaining openings at the upper ends thereof for receiving waste.

BACKGROUND AND SUMMARY OF THE INVENTION

[0003] Traditional waste receptacles comprise an outer structure such as a can or basket and a trash bag set inside the outer structure through an opening in the top thereof. The open upper end of the trash bag is generally stretched and folded over the upper edge of the outer container, and a tie or knot is sometimes placed in any extra bag material to tighten the bag's seal around the container. When items are placed into the bag and the weight within the bag begins to pull the top of the bag down the seal is easily loosened or lost causing the top of the bag to collapse and fall into the container. Re-fastening the top of the bag around the container may or may not occur before more items are put into the container resulting in an undesirable outcome.

[0004] After the trash bag is filled it must be lifted out of the container through the opening in the top of the container. Items inside the trash bag often compact together thereby stretching the sides of the trash bag thereby preventing the filled bag from being easily lifted through the opening at the top of the container. Often a bag will tear when an item is pushing outward against the bag causing the bag to catch on or below the surface of the container opening as the filled bag is being removed from the container. If the filled bag is successfully lifted and removed from the container without tearing or spilling trash deposited therein, the filled bag must then be transported to a trash collection site which may be a large waste collection container, a dumpster, or the like. The task of transporting the filled trash bag be difficult for some persons as not everyone has the strength or ability or desire to lift a filled trash bag and carry it to a larger waste collection container.

[0005] Alternatively, trash bags are not always placed in a container. For example, although a lawn and leaf trash bag may stand on its own it is usually difficult to keep the top of the bag open while placing trash therein. After the bag is filled the top must be folder over and the filled bag must be transported to a designated area for pickup or disposal. Although lawn clippings, leaves, and the like which are generally deposited into lawn and leaf trash bags are light in weight a bag filled with such materials is generally bulky in size and the quantity of trash filling the bag can have a substantial weight thereby making the filled bag cumbersome and difficult to transport.

[0006] The present invention comprises an devices for supporting trash bags which overcome the foregoing and other difficulties which have long since characterized the prior art. In accordance with specific aspects of the invention a trash bag supporting device comprises an open frame having a bag support ring incorporated thereon. A trash bag is extended through the ring, the upper perimeter of the bag is folded over the ring, and a pressure ring is placed over the bag and support ring to maintain the bag in engagement with the frame. Once the bag is filled the pressure ring is removed and the upper perimeter of the bag may be pulled beneath the support ring thereby enabling the bag to be removed without requiring the bag be lifted through the confined area of the support ring. The bag is easily removed from the frame without the risk of tearing and without requiring the strength to lift a heavy filled trash bag.

[0007] In accordance with specific aspects of one embodiment of the invention the frame comprises an upper portion and a lower portion which are adjustably coupled together. The upper portion telescopes between different pre-defined positions enabling the apparatus to accommodate various sizes of trash bags. A lid engages the pressure ring and provides a cover over the trash bag. The lower portion of the frame may comprise a set of wheels thereby enabling the apparatus to be transported with the trash bag supported therein thereby facilitating transport of a filled trash bag to a larger waste collection container or location.

[0008] Other embodiments of the invention comprise otherwise conventional trash bag receiving containers that are equipped with the support ring and the pressure ring of the present invention. A lid may be engaged with the interior surface of the pressure ring to prevent vermin from entering and odors from escaping from trash bags supported in accordance with the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] A more complete understanding of the present invention may be had by reference to the following Detailed Description when taken in conjunction with the accompanying Drawings, wherein:

[0010] FIG. **1** is a perspective view of a trash bag supporting apparatus comprising one embodiment of the present invention;

[0011] FIG. **2** is an exploded perspective view of the trash bag supporting apparatus shown in FIG. **1**;

[0012] FIG. **3** is a sectional view of the upper portion of the trash bag supporting apparatus of FIG. **1**;

[0013] FIG. **3**A is sectional view similar to FIG. **3** showing the pressure ring engaged with the upper end of a trash bag thereby maintaining the trash bag in an open configuration.

[0014] FIG. **4** is a side view of the trash bag supporting apparatus of FIG. **1** shown in a storage position;

[0015] FIG. **5** is side view of the trash bag supporting apparatus of FIG. **1** shown in a multiple positions for receiving various sizes of trash bags;

[0016] FIG. **6** is a perspective view illustrating a conventional trash receiving container equipped with the support ring, the pressure ring, and the lid of the present invention;

[0017] FIG. **7** is another perspective view illustrating a conventional trash receiving container equipped with the support ring, the pressure ring, and the lid of the present invention;

[0018] FIG. **8** is a perspective view illustrating yet another conventional trash receiving container equipped with the support ring and the pressure ring of the present invention;

[0019] FIG. **9** is a sectional view of the embodiment of the invention shown in FIG. **8**; and

[0020] FIG. **10** is a further illustration of the trash bag of FIG. **8**; and receiving container

[0021] FIG. **11** is a perspective view illustrating a trash bag supporting device equipped with the support ring, the pressure ring, and the lid of the present invention.

DETAILED DESCRIPTION

[0022] Referring now to the Drawings, and particularly to FIG. **1** thereof, there is shown a trash bag supporting apparatus **10** comprising one embodiment of the present invention. The apparatus comprises an open frame **12** having an upper portion **14** and a lower portion **16**. The upper portion **14** comprises an upper support wall **18** having a support ring **20** extending perpendicularly therefrom for receiving and supporting a trash bag T. The lower portion **16** comprises a lower support wall **22** and a base **24** extending perpendicularly therefrom for further supporting the trash bag T. The upper portion **12** is adjustably fastened on the lower portion **14** and telescopes vertically in relation thereto such that the frame **12** may be adjusted to different heights to accommodate various sizes of trash bags. Wheels **26** secured to the lower portion **16** enable the apparatus **10** to be moved while supporting the trash bag T.

[0023] After placing a trash bag T through the support ring **20** the upper perimeter of the bag T is folded over the support ring **20** and a pressure ring **28** is then placed thereover and pressed downward until the pressure ring **28** seats within the support ring **20**. The pressure ring **28** thereafter maintains the trash bag T in mating engagement with the support ring **20** and thus the apparatus **10**. A lid **30** provides a covering over the top of the trash bag T and provides further downward pressure on the pressure ring **28** and support ring **20**. To remove the trash bag T from the apparatus **10** the pressure ring **28** is lifted from the support ring **20**, the upper perimeter of the bag T is lowered through the support ring **20**, and the bag T is removed by pulling the bag T horizontally outward from within the frame **12**.

[0024] Referring to FIG. **2**, there is shown an exploded perspective view of the trash bag supporting apparatus **10**. The upper portion **14** and the lower portion **16** of the frame **12** are adjustably fastened by a bracket **34** secured to the lower support wall **22** by a threaded fastener **36** extending through an aperture **38** in the lower support wall **22**. The upper support wall **18** telescopes vertically in relation to the lower support wall **22** and nests over the lower support wall **22** when the frame **12** is assembled together for receiving a trash bag therein. Threaded fasteners **40** extend through one of a plurality of sets of apertures **42***a* and **42***b*, through the apertures **44** in the lower support wall **22** and into threaded engagement with the bracket **34**. The plurality of sets of apertures **42***a* and **42***b* facilitate securing the upper portion **14** at different heights in relation to the lower portion **18** in order for the frame **12** to accommodate various sizes of trash bags.

[0025] The upper portion comprises an upper lip **46** beneath the support ring **20** for providing horizontal support to a trash bag within the frame **12** and also for securing the upper portion **14** to the lower portion **16** in a storage configuration as will be discussed in conjunction with FIG. **4**. The lower portion **16** comprises a lower lip **48** on the base **24** for providing horizontal support to a trash bag within the frame **12** and also for securing the upper portion **14** to the lower portion **16** in a storage configuration as will be discussed in conjunction with FIG. **4**.

[0026] A handle **50** is provided at the upper end of the upper portion **14** and is supported by a dowel **52** extending therethough which is in turn secured by a nut **56** or other suitable fastening means known to those skilled in the art. The wheels **26** are secured to the lower portion **16** by an axle pin **60** and fasteners **62**, or other suitable fastening means known to those skilled in the art.

[0027] Referring now to FIG. **3**, there is shown a sectional view of the upper portion **14** of the frame **12**. As shown therein, the support ring **20**, pressure ring **28**, and lid **30** each have an inward conical shape such that all three components nest within and matingly engage each other. The mating shapes enable the apparatus **10** to support trash bags of various thickness and weight while maintaining a secure fit of the bag about the support ring **20** such that a bag will not slip or lose engagement between the pressure ring **28** and support ring **20**, no matter the weight or amount of trash placed within the bag. Accordingly, the frame **12** may comprise polymers, lightweight metals, and various other suitable materials known to those skilled in the art.

[0028] Referring to FIG. **4**, there is shown the apparatus **10** in a storage and transport configuration. The upper portion **14** of the frame **12** may be inverted such that the upper lip **46** is received in an opening in the lower support wall **22** and the lower lip **48** is received in the upper support wall **18**. The apparatus **10** is thereby configured in a more compact orientation for easier storage and transport without a trash bag therein.

[0029] Referring now to FIG. **5**, there is shown the apparatus **10** with the upper portion **14** telescoped into two different positions relative to the lower portion **16** for accommodating different sizes of trash bags that may be used with the apparatus **10**.

[0030] FIG. **6** illustrates an otherwise conventional trash bag receiving container **70** that is provided with upper walls **72** which are equipped with the support ring **28** of the present invention. In use conventional trash bags are extended downwardly through the pressure rings **28** until the closed ends of the trash bags engage the floor **74** of the container **70**. The openable ends of the trash bags are flared outwardly around the support ring **28**. Thereafter the pressure ring **28** of the present invention are engaged with the interior surface of the trash bag to retain the trash bags in an open figuration and to prevent the trash bags from falling inwardly through the pressure ring **20** as trash is accumulated therein. The lids **30** of the present invention may be employed to prevent vermin from entering trash bags supported in the container **70** and to prevent odors from escaping therefrom.

[0031] A conventional trash receiving container **80** is illustrated in FIG. **7**. The support ring **28** of the present invention is equipped with a base **82** adapted for engagement with the open upper end of the receptacle **80** in the manner illustrated at **84**. When the base **82** of the support ring **28** is engaged with the upper end of the receptacle **80** in the manner illustrated a trash bag is extended through the support ring **28** until the closed end thereof engages the closed bottom end of the receptacle **80**. Thereafter the openable end of the trash bag is draped around the periphery of the support ring **28**. Thereafter the pressure ring **28** of the present invention is engaged with the interior surface of the openable end of the trash bag to secure the trash bag in engagement with the pressure ring **20** and to prevent the trash bag from falling inwardly into the receptacle **80** under the weight of trash accumulated therein. The lid **30** of the present invention is employed to prevent vermin from entering a trash bag secured within the receptacle **80** and to prevent odors from escaping therefrom.

[0032] FIGS. **8**, **9**, and **10** illustrate a trash container **90** comprising the present invention. The trash container **90** comprises a right circular cylinder having and open bottom and equipped with the support ring **20** of the present invention at the upper end thereof. The pressure ring **28** of the present invention is equipped for mating engagement with the support ring **20** to secure a trash bag received within the container **90** in an open figuration and to prevent the trash bag from falling inwardly into the container **90** as it is filled with trash.

[0033] FIG. **9** further illustrates a relationship between the right circular cylinder comprising the container **90**, the support ring **20** thereof, a trash bag T received within the container **90**, and the use of the pressure ring **28** to secure the openable end of the trash bag T in an open configuration and to prevent the trash bag T from falling inwardly into the container **90** when it is filled with trash. As is illustrated in FIG. **10** the container **90** may be provided with the top **30** of the present invention to prevent vermin from entering a trash bag supported within the container **90** and to prevent odors from escaping therefrom.

[0034] FIG. **11** illustrates a trash bag receiving apparatus **100** comprising a frame **102** having a shape which is reminiscent of the shape of the frame **12** of the trash bag supporting apparatus **10** illustrated in FIGS. **1-5** and described hereinabove in conjunction therewith. A support ring **20** comprising the present invention is provided at the upper end of the frame **102**. In the use of the apparatus **100** a conventional trash bag is supported by the frame **102** with the closed end of the trash bag supported by the bottom wall **104** thereof and the openable end of the trash bag draped around the periphery of the support ring **20**. Thereafter the pressure ring **28** of the present invention is engaged with the interior surface of the openable end of the trash bag in the manner illustrated in FIG. **3**A thereby securing the trash bag in its open configuration and preventing the trash bag from falling inwardly when trash is accumulated therein. The lid **30** of the present invention maybe employed to prevent vermin from entering trash bags supported on the apparatus **100** and to prevent odors from emanating therefrom.

[0035] Although preferred embodiments of the invention have been illustrated in the accompanying Drawings and described in the foregoing Detailed Description, it will be understood that the invention is not limited to the embodiments disclosed, but is capable of numerous rearrangements, modifications, and substitutions of parts and elements without departing from the spirit of the invention.

1. An apparatus for maintaining the openable end of a trash bag in an open configuration comprising:

a support ring comprising an interior circular cylindrical surface extending at a predetermined angle relative to horizontal for receiving the openable end of the trash bag therethrough with the exterior surface of the trash bag draped around the periphery of the surface;

a pressure ring having an exterior circular cylindrical surface extending at the same angle relative to the horizontal as the interior circular cylindrical surface of the support ring for engagement with the interior surface of the openable end of a trash bag received draped around the periphery of the support ring and thereby retaining the openable end of the trash bag in an open configuration and preventing the trash bag from falling inwardly through the support ring upon the receipt of trash therein.

2. The apparatus according to the claim **1** wherein the circular cylindrical surfaces of the support ring and the pressure ring extend at an angle of about 70° relative to horizontal.

3. The apparatus according to claim **2** wherein the pressure ring is further characterized by an interior surface and further including a lid for engaging the interior surface of the pressure ring.

4. A trash bag supporting apparatus comprising:

a frame comprising an upper portion and a lower portion, the upper portion comprising an upper vertical support wall having a support ring extending perpendicularly therefrom, the lower portion comprising a lower vertical support wall and a base extending therefrom;

a pressure ring for maintaining a trash bag in mating engagement with the ring of the upper portion;

means for adjustably fastening the upper portion with the lower portion when the upper portion is in an upright position; and

at least one wheel coupled to the lower portion of the base for transporting the apparatus.

5. The apparatus according to claim **4** wherein the upper portion of the frame may be adjusted between first and second positions, the first position enabling the apparatus to support a smaller-sized trash bag, the second position enabling the apparatus to support a larger-sized trash bag.

6. The apparatus according to claim **4** wherein the means for adjustably fastening the upper portion to the lower portion secured to the lower vertical support wall and fasteners extending through apertures bored into the upper vertical support wall.

7. The apparatus according to claim **4** further comprising means for fastening the upper portion to the lower portion when the upper portion is in an inverted position including an upper lip below the support ring which is received into an opening in the lower vertical support wall and a lower lip on the base which is received in an opening in the upper vertical support wall.

* * * * *