

April 10, 1962

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3,029,012

WASTE DISPOSAL UNIT

Filed Sept. 3, 1959

2 Sheets-Sheet 1

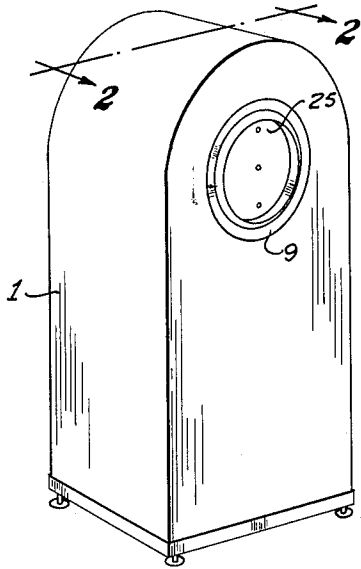


FIG. 1.

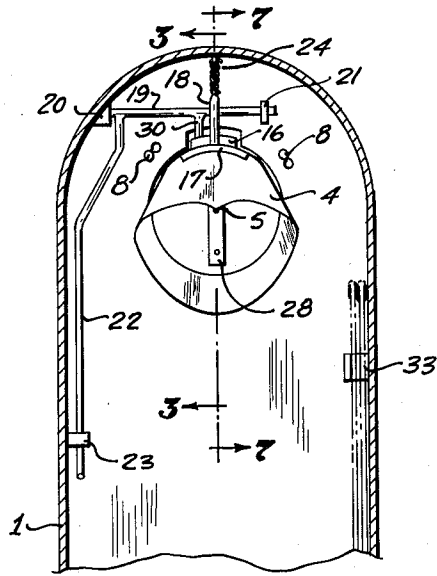


FIG. 2.

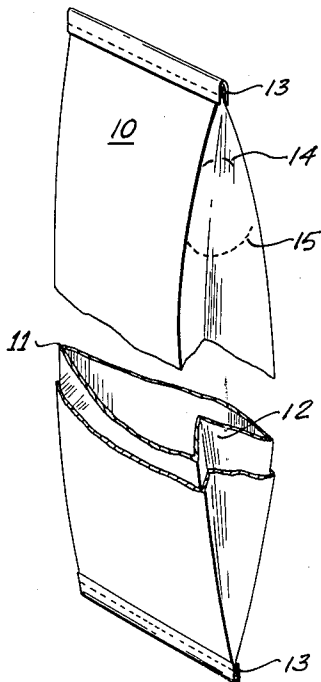


FIG. 4.

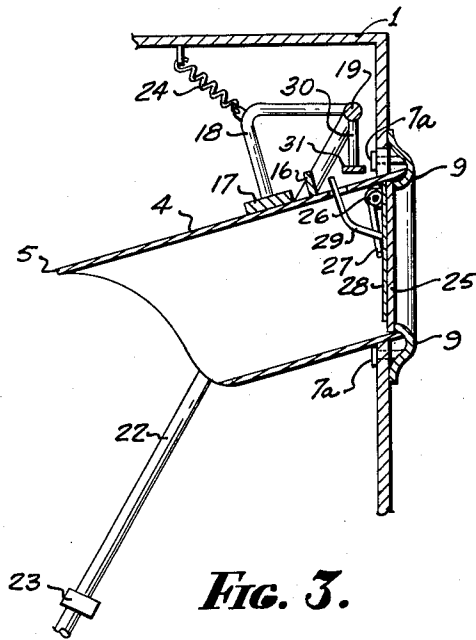


FIG. 3.

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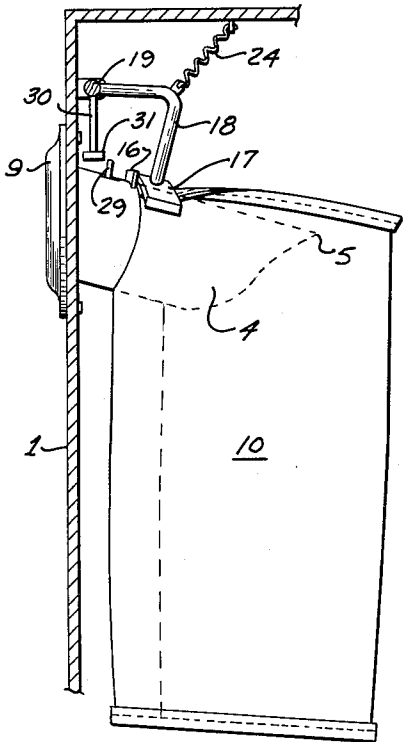


FIG. 5.

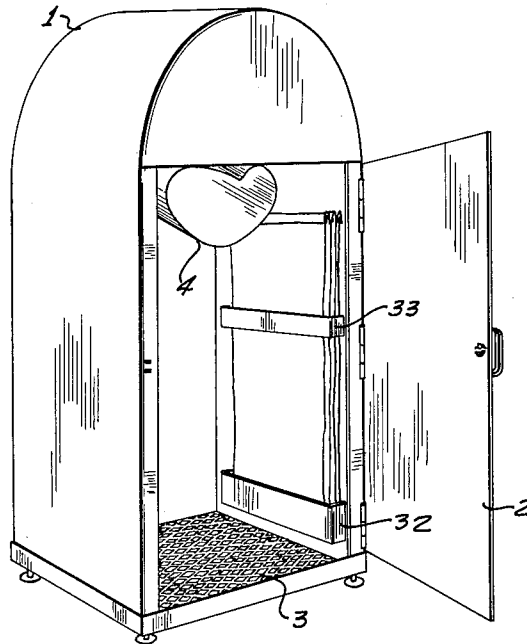


FIG. 6.

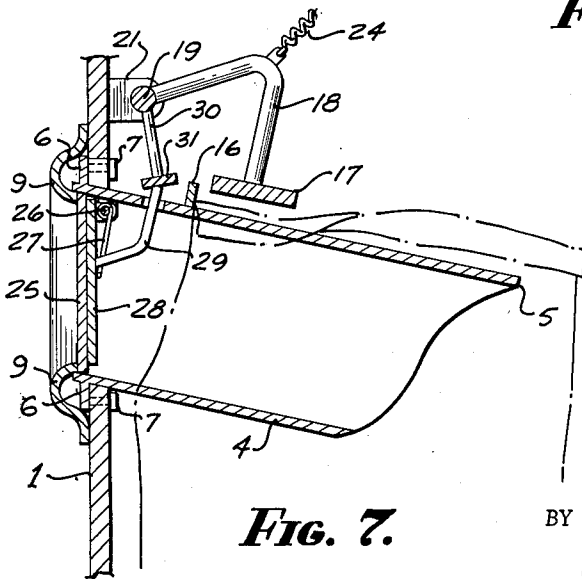


FIG. 7.

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WASTE DISPOSAL UNIT

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6 Claims. (Cl. 232-43.2)

This invention relates to waste receptacles, and more particularly to a waste receptacle incorporating a disposable bag in which refuse may be readily collected and the filled bag easily removed from the receptacle for disposal.

Most waste receptacles now in general use in food service establishments employ a metal or plastic container having a protective and decorative cover provided with an access opening or door through which refuse is deposited in the enclosed container. When filled, such containers must be emptied, either on the spot into some larger refuse can or garbage truck, or transported to some other location for emptying. In either event, it is usually necessary to clean and disinfect the container before it is reused, particularly in cases where the containers are employed to receive food and other perishables.

In order to overcome the inherent disadvantages in cleaning and maintaining such receptacles and their unavailability for use in the event they have to be transported to another location for emptying and cleaning, the instant invention contemplates the provision of a receptacle having a cabinet or other supporting frame mounting a disposable bag to receive the refuse, which bag may be readily removed when filled and replaced by a new one. Such bags will be preferably closed excepting for a relatively small access opening which itself may be closed when the bag is removed for disposal, thereby effectively sealing the refuse in disposable container which may be readily handled without exposing the refuse.

The instant invention permits the user to remove a filled bag and immediately replace it with an empty one, without removing the receptacle from service for any appreciable length of time. The user need never come in contact with the refuse itself since it is contained within the bag and can be readily transferred to a garbage truck or directly to an incinerator or other disposal unit.

The instant invention contemplates the provision of a cabinet or supporting frame mounting a spout-like structure which serves, at its exposed end, as an access opening for the introduction of refuse, and at its other end as a filling spout for introducing the refuse into a bag fitted over the spout. Preferably, the bag will be of the stitched-end type having a gusset along at least one side thereof which gusset is provided with perforations by means of which the bag may be readily fitted over the spout structure. Of course, if desired, the bag could be provided with a valve capable of receiving the spout structure.

The bag itself is preferably of multi-wall construction, the number of plies and their composition being determined by the size of the bag and the nature of the refuse to be received therein. Where the bags are to be used in lunchrooms and other places where liquid and semi-liquid refuse is encountered, the bag may be provided with one or more plies which are suitably proofed to render them at least temporarily proof against such liquids.

From practical experience it has been found that such a receptacle should incorporate means for positively securing the removable bag to the spout structure so that the bag will remain in place until it is released for removal. In addition, it has been found desirable to provide the door or closure on the access opening with locking means effective to close the spout against the introduc-

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tion of refuse during such times as the bags are being changed or the receptacle is without a bag.

With the foregoing objectives in mind, reference is now made to the accompanying drawings wherein:

5 FIGURE 1 is a perspective view of a trash receptacle in accordance with the instant invention.

FIGURE 2 is a sectional view taken along the line 2-2 of FIGURE 1.

10 FIGURE 3 is a cross-sectional view taken on the line 3-3 of FIGURE 2.

FIGURE 4 is a perspective view of a refuse bag, with a portion cut away to show details of its construction.

15 FIGURE 5 is a side elevational view with the cabinet broken away illustrating a bag secured in position on the spout structure.

FIGURE 6 is a perspective view taken from the rear of the unit with the door open.

20 FIGURE 7 is a sectional view taken along the line 7-7 of FIGURE 2.

25 Referring now to FIGURES 1 and 6 of the drawings, the device comprises a cabinet or inclosure 1 preferably provided at the rear with a door 2 for access to the inside of the cabinet. As will be apparent in FIGURE 6, the floor 3 of the cabinet is preferably of open-work construction, such as expanded metal, to provide for ventilation. While an enclosing cabinet is preferred, it will be understood that the form of a cabinet does not constitute a limitation on the invention in that the bag supporting structure could be mounted on a simple frame with the bag exposed or it could be secured to a partition wall, the door of a kitchen cabinet, or the like.

30 Refuse is adapted to be introduced into the unit through an elongated cylindrical spout 4 which is shaped at its inner end to provide a more or less pointed tip 5. The spout is preferably formed from metal and, in the embodiment illustrated in FIGURE 7, the spout is provided at its outer end with an annular flange 6 mounting a plurality of lugs 7 by means of which the spout is secured to the cabinet, the lugs 7 passing through radially disposed shaped slots 8. A decorative molding or rim 9 is preferably provided which, in the embodiment shown in FIGURE 7, frictionally engages the outer end of the spout. The molding may be formed from metal, or from a flexible material such as plastic or rubber. Alternatively, as shown in the embodiment of FIGURE 3, the molding, if formed of metal, may be welded or brazed directly to the outermost end of the spout to the elimination of flange 6; and in this instance lugs 7a are provided on the inner surface of the molding for securing the spout to the cabinet or other supporting frame.

35 A preferred form of disposable bag 10 is shown in FIGURES 4 and 5, the bag preferably being of multi-wall construction comprising two or more plies of paper or other bag forming material. Preferably the innermost ply will be of proofed character so as to prevent liquids and the like from striking through the walls of the bag. Proofing may be accomplished by suitably treating a paper ply, or by providing a non-fibrous film, foil or other impervious or semi-pervious ply.

40 While the construction of a bag does not form a limitation on the invention, a preferred form of bag comprises a tubular body having a single line of fold 11 along one side edge thereof and a bellows 12 along its opposite side edge, the tubular body being closed along its top and bottom edges by lines of stitching 13, as will be well understood by the worker in the art. Near the top of the bag in the bellows, a pair of relatively short curved lines of cut 14, are provided, together with a more or less semicircular line of perforation 15, the lines of cut and the line of perforation responding to the circumference of the spout 4 and defining a severable filling open-

ing for the bag. In fitting the bag over the spout, the tip 5 enters the bag in the area of the cut-outs 14, whereupon the curvilinear shape of the spout easily tears the remainder of the bag, the perforations 15 serving to conform the punctured area to the circumference of the spout, thereby permitting the bag to slide into the position shown in FIGURE 5, with its side edge abutting the stop 16 which prevents the bag from interfering with the action of the locking mechanism hereinafter described.

The bag is secured in place on the spout by means of a clamping foot 17 which is curved to conform to the curvature of the spout. The foot 17 is secured to one end of a bent arm 18, the other end of which is fixedly secured to a rock shaft 19 journaled in fittings 20 and 21. The shaft 19 is adapted to be rocked by means of a handle or arm 22 extending downwardly within the cabinet 1 adjacent a side wall thereof, the arm 22 being held in securing position by means of a catch 23. A spring 24 biases the foot 17 to bag release position when the handle 22 is disengaged from catch 23. A comparison of FIGURES and 3 and 7 shows the relative positions of the clamping foot when in bag engaging and bag release positions. If desired, the clamping foot may be provided with a resilient gripping surface to insure positive gripping contact with the bag.

The outer end of the spout is normally closed by a door 25 hinged to the spout at 26, the hinge mechanism including a spring 27 which normally urges the door to closed position. The door is preferably formed from a flexible material such as plastic, or rubber, so that as it is pushed inwardly, it will conform to the curvature of the spout.

In order to prevent refuse from being placed in the spout when there is no bag in place on the spout, a locking device is provided which automatically locks the door 25 in closed position when the bag gripping mechanism is released. To this end, a metal strip 28 is secured to the back of the door 25, the strip 28 mounting a finger 29 arranged to project through a slot 20 in the top of the spout. As the door is pushed inwardly, the finger will normally move upwardly through a slot. However, when the bag securing mechanism is in the release position illustrated in FIGURE 7, a rod 30 secured to rock shaft 19 moves a stop 31 into the path of finger 29, thereby preventing the door 25 from being opened. When the bag engaging mechanism is in the locked position, as seen in FIGURES 3 and 5, the rock shaft 19 will move the stop 31 out of the path of the finger 29 and hence the door is free to move. In this connection, it may be observed that the spring 24, which acts to bias the parts to bag release position when the handle 22 is disengaged from its catch 23, also serves to maintain the stop 31 in the path of finger 29.

As will be evident from FIGURE 6, the interior of the cabinet 1 may be provided with a storage rack composed of a base 32 and strap 33 in which a supply of extra bags may be conveniently maintained.

It will be understood that various modifications may be made in the invention without departing from the spirit and purpose of it, and the particular modification illustrated is not intended to be a limitation on the invention excepting as set forth in the claims which follow. As already indicated, the instant invention will find utility not only in association with supporting cabinets of the character herein disclosed, but it will be equally useful when mounted on a cabinet door, as in a kitchen sink unit, or on a partition wall or other supporting frame.

Having thus described the instant invention, what is claimed as new and what is desired to be secured by Letters Patent is:

1. A trash receiving unit comprising an elongated tubu-

lar sleeve, means on one end of said sleeve for mounting it to a support, said last-named end of said sleeve defining a trash receiving opening, a door hingedly mounted in said opening, spring means normally biasing said door to the closed position, the opposite end of said sleeve defining a spout adapted to be inserted into the filling opening of a refuse bag, clamping means for securing a refuse bag to said spout, said clamping means being movable from an operative to an inoperative position, and door locking means operatively connected to said clamping means to lock said door in closed position when said clamping means is in the inoperative position.

2. The device claimed in claim 1 wherein the spout end of said sleeve terminates in a tip for puncturing an opening in a bag presented thereto.

3. The device claimed in claim 1 wherein said clamping means comprises a shoe adapted to be juxtaposed to the spout portion of said sleeve, spring means normally biasing said shoe to the inoperative position, and a lever arm operatively connected to said shoe for moving it to operative position against the tension of said spring means.

4. The device claimed in claim 3 wherein the means for locking said door in closed position comprises a finger secured to the inner surface of said door and movable therewith, an opening in said sleeve through which said finger passes as said door is opened, and a stop operatively connected to said clamping means and movable, when said clamping means is in inoperative position, into the path of said finger, whereby said finger is held against movement, thereby maintaining said door in the closed position.

5. A trash receptacle comprising a cabinet having enclosing body walls one of which is provided with an annular opening therein, an elongated tubular sleeve, means mounting one end of said tubular sleeve in said opening, the opposite end of said sleeve projecting inwardly within said cabinet to define a bag-receiving spout, a door hingedly mounted at the first named end of said sleeve, said door being movable inwardly to open said sleeve, spring means normally biasing said door to the closed position, a clamping shoe overlying said sleeve and movable from a clamping position to a released position, whereby when a bag is fitted over the inner end of said sleeve, said shoe will tightly secure it to said sleeve when in clamping position and release the bag for removal from said sleeve when in the released position, an arm operatively connected to said shoe for moving it from clamp to release position, spring means normally biasing said shoe to the release position, and latch means for securing said arm in shoe clamping position against the force of said spring means.

6. The device claimed in claim 5 wherein means are provided to lock said door in closed position when said shoe is in bag-release position, said means comprising a pin projecting from said door and movable in a path of travel as said door is opened, and a stop operatively connected to said arm and movable, when said arm is in shoe-release position, to arrest movement of said pin in its path of travel.

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