Feb. 25, 1964 H. W. DAVEY 3,122,306

RECEPTACLE

Filed May 14, 1963 4 Sheets-Sheet 1

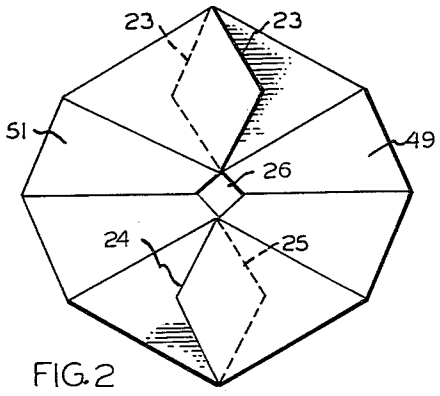

FIG. 2

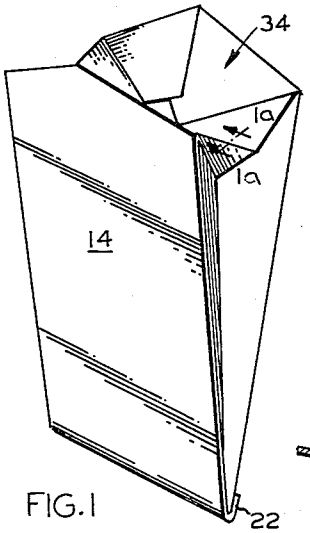

FIG. 1

FIG. 1A

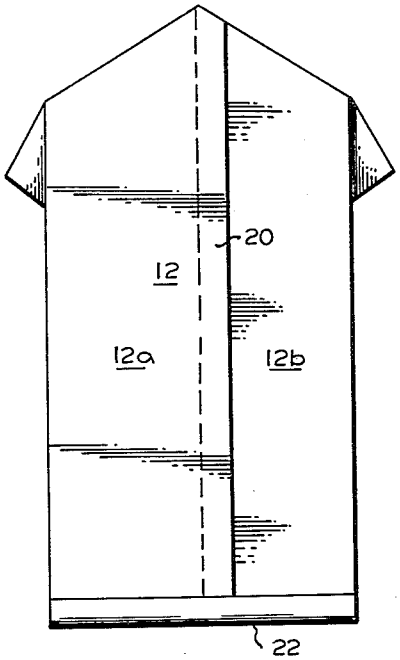

FIG. 3

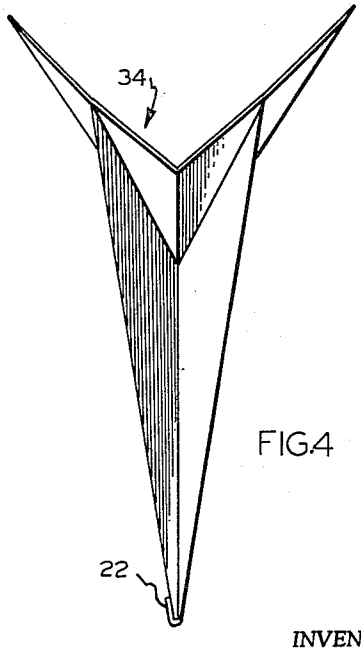

FIG. 4

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Feb. 25, 1964 H. W. DAVEY 3,122,306

RECEPTACLE

Filed May 14, 1963 4 Sheets-Sheet 2

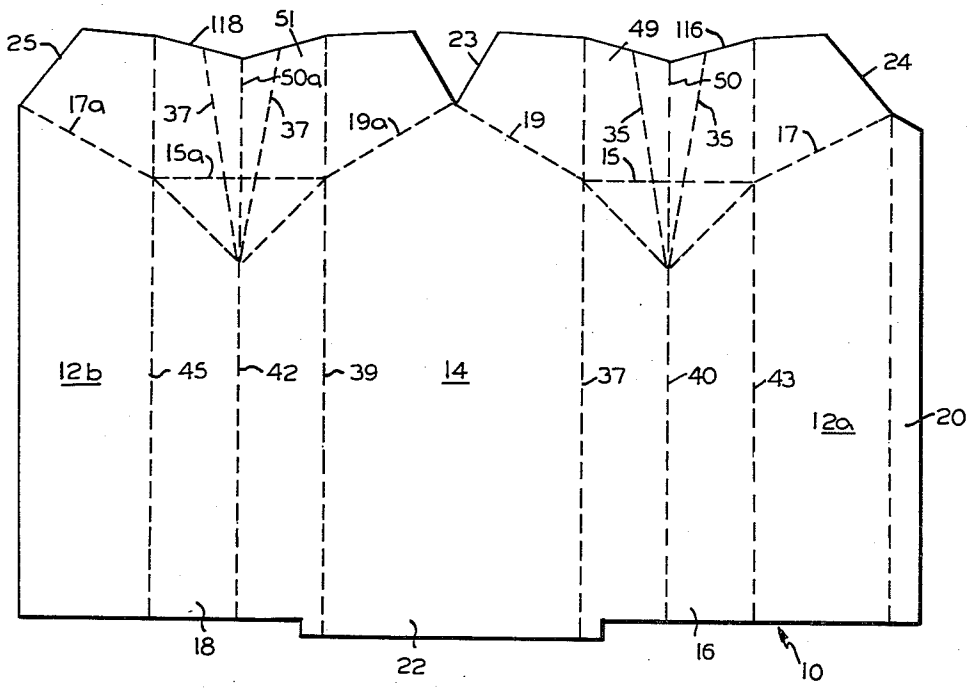

FIG. 5

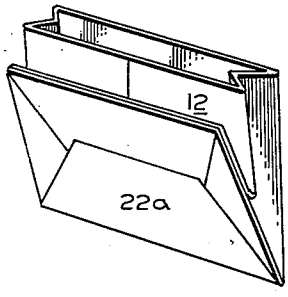

FIG. 7

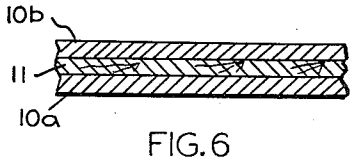

FIG. 6

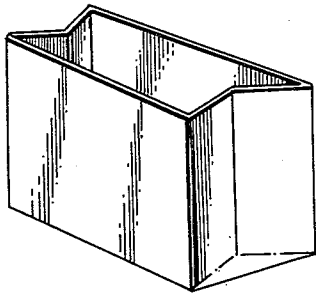

FIG. 8

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Feb. 25, 1964 H. W. DAVEY 3,122,306

RECEPTACLE

Filed May 14, 1963 4 Sheets-Sheet 3

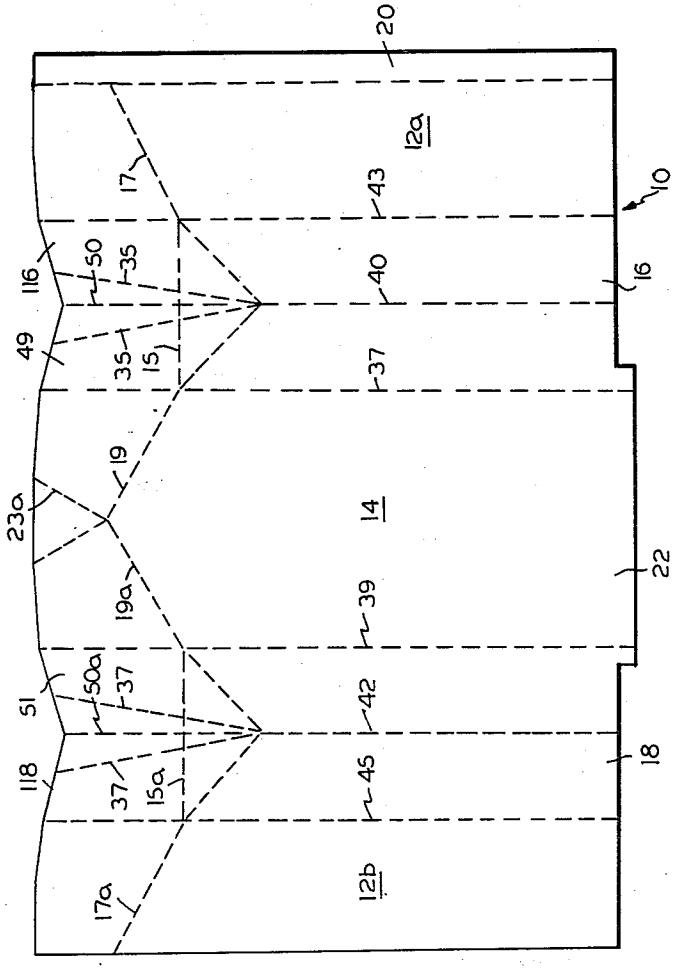

FIG. 5A

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Feb. 25, 1964 H. W. DAVEY 3,122,306

RECEPTACLE

Filed May 14, 1963 4 Sheets-Sheet 4

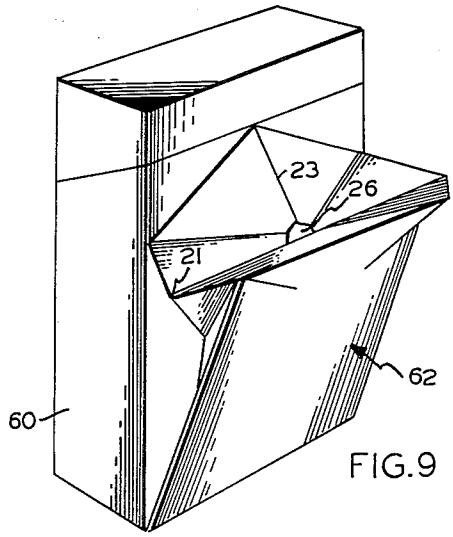

FIG.9

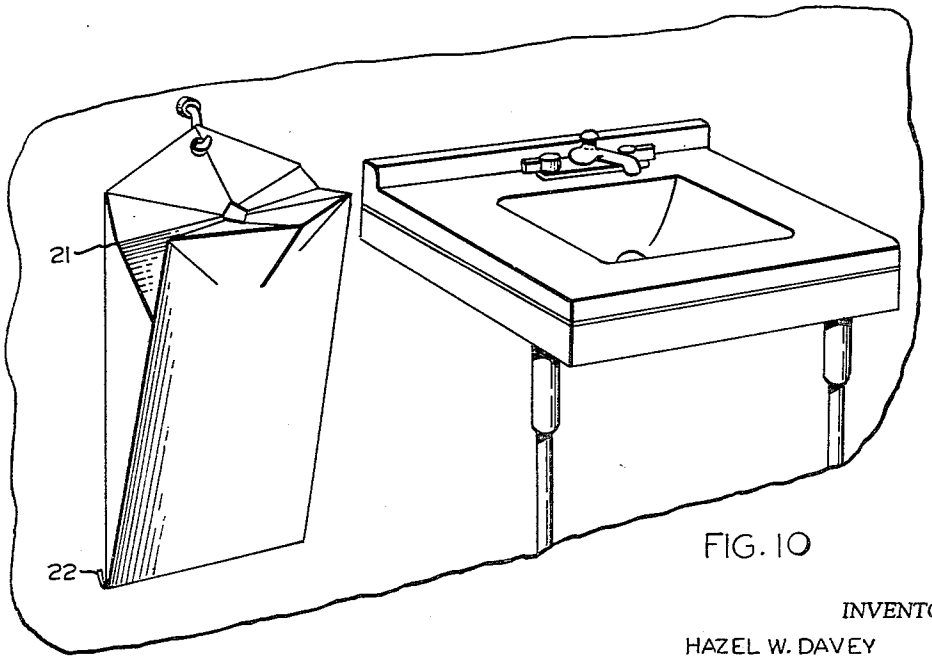

FIG. 10

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3,122,306

RECEPTACLE

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Filed May 14, 1963, Ser. No. 280,463
4 Claims. (Cl. 229—53)

The present invention relates generally to receptacles, and relates more particularly to an improved flat folding receptacle having a large basin mouth with a restricted throat opening, for receiving and directing refuse into the receptacle interior, and closable to seal the receptacle and prevent escape of substance or odor. This is a continuation-in-part of Serial No. 186,050, entitled "Receptacle" and filed April 9, 1962, now abandoned.

The disposal of cigar and cigarette ashes and butts has become a problem which has reached national significance. This applies particularly, for example, to the disposal of lighted butts from motor vehicles, and especially in areas of high fire hazard.

However, the problem of the safe and satisfactory disposal of burnt matches, cigar and cigarette ashes and butts, and the like, is universal. In the home, for example, the use of ash trays not only is often messy; but this always creates the likelihood that a burnt match or blowing cigarette butt, which has not been completely extinguished, may start a fire upon the subsequent emptying of the ash tray.

It has been found that the receptacle of this invention, usually in sizes larger than that employed for smokers' use, is quite ideal for use by persons afflicted with motion sickness. The large basin mouth of this device affords a face covering structure that reduces embarrassment as well as offering a collection facility.

A still further desirable use, as an example of the utility of this invention, is for the reception of tissues and sanitary napkins in public or private rest room areas. The bags store in a flat condition and are readily attached to a wall or other hanger and then sealed and disposed after a reasonable short period of use.

The receptacle of one embodiment of the invention, as will be described, has a flexible construction to facilitate its marketing and shipping, and also permit it to be flattened out after it has served its purpose, so as to assure that cigarette butts therein are completely extinguished. This particular embodiment, for example, may be formed of a metal foil, or other flexible non-combustible material.

The embodiment is constructed to have a relatively small opening through which the ashes and lighted butts are inserted into an enclosed chamber. The limited amount of air in the chamber due to the small size of the opening has a tendency to smother any smouldering ember and cause it to be extinguished, and to minimize development of odors.

A feature of the invention is that the receptacle is disposable and may be thrown away after it has served its purpose. In this respect, the receptacle itself can be collapsed, as mentioned above, and disposed of without fear of creating a fire, as is often the case when ash trays are emptied.

Another feature of the invention is that the improved receptacle may be conveniently suspended in a manner such that it is out of the way, and does not tend to clutter up tables and the like, as is usually the case with ash trays. The receptacle is, therefore, also adapted for ready use in an automobile; in which it may, for example, be suspended from the dashboard, or from the back of the front seat.

An object of the present invention, therefore, is to provide a receptacle of the flat bag-like nature, having a top formation that opens to a large basin mouth configuration,

and having a restricted throat opening to the interior of the bag.

Another object of the invention is to provide such mouth of a closable nature to seal the receptacle and prevent escape of substance or odor.

Another object of the present invention therefore, is to provide an improved disposable receptacle for receiving cigarette butts and the like, which is constructed of non-combustible material, and which is capable of receiving the cigarette butts so as to provide a simple and expeditious structure for the disposal of the same without any danger of creating a fire hazard.

Another object is to provide such an improved receptacle which is adapted to be suspended from the side of a table, desk and the like, so as to form a convenient and unobstrusive means for disposing of cigarette butts and other waste materials.

Another object is to provide an improved receptacle which can be made in sizes to suit the intended use, for example of such large size that it will hold towels, tissues and napkins, or in a small size that it may be carried about, attached to a pack of cigarettes so as to provide a convenient disposal medium for the cigarettes which is always available and handy; and particularly when the user is moving about, as at conventions or similar functions.

In accordance with these and other objects which will become apparent hereinafter, a preferred form of the present invention is disclosed in the accompanying drawings wherein:

FIGURE 1 is a side perspective view of a flexible receptacle constructed in accordance with one embodiment of the invention;

FIGURE 1*a* is a fragmentary section taken along line 1*a*—1*a* of FIGURE 1;

FIGURE 2 is a top end view of the receptacle of FIGURE 1 with the receptacle opened out to a completely opened position;

FIGURE 3 is a front elevational view of the receptacle of FIGURE 1;

FIGURE 4 is a side elevational view of the receptacle of FIGURE 1;

FIGURE 5 is a developed view of the receptacle shown in FIGURES 1–4, and illustrates the manner in which the material is cut and scored prior to being formed into the configuration of FIGURES 1–4;

FIG. 5*a* illustrates an alternative construction useful for larger size structures;

FIGURE 6 is a fragmentary cross-sectional view of a material for a receptacle, such as the receptacle of FIGURES 1–4, and illustrates a sandwiched construction for the receptacle in which two layers of metal foil are used with an intermediate layer of paper, or other filler material;

FIGURE 7 is a fragmentary view showing an alternate construction for the bottom of the receptacle, in which the bottom is folded up in the same manner as paper sacks in common use;

FIGURE 8 is a fragmentary sectional view of the bottom construction shown in FIGURE 7 opened into a full capacity position;

FIGURE 9 is a perspective view of the receptacle of FIGURES 1–4 attached to the side of the pack of cigarettes, as an illustration of one use of the invention; and

FIGURE 10 illustrates a large size receptacle used for general waste material.

The receptacle illustrated in FIGURES 1–5, is formed, for example, of a sheet 10 (FIGURE 5) of a foil material. This foil material exhibits non-combustible characteristics, so that a lighted cigarette or unburned match

may be inserted into the receptacle without a resulting ignition of the material forming the receptacle. Other material will be adapted according to the intended use of the receptacle. Water resistant paper, plastic impregnated paper, or pure plastic, are examples of materials for uses involving moisture. Plain paper will be useful as trash receptacles for cars.

The sheet 10 may be a single sheet of metal foil or may have a laminated configuration as shown in FIGURE 6. The sheet of FIGURE 6 includes an inner layer 10*a* and an outer layer 10*b* of metal foil material, and it also includes an intermediate layer 11 of paper or other suitable material. In the construction of FIGURE 6, the layers 10*a* and 10*b* are adhesively secured to the opposite faces of the intermediate layer 11.

Either or both of the layers 10*a* and 10*b* may be of plastic rather than metal. In such a case, the receptacle is well suited for use as an airsickness bag aboard aircraft, for example, or as a disposal bag for tissues or other refuse.

The sheet 10 of metal foil shown in FIGURE 5 has a generally rectangular configuration, as illustrated. However, the upper edge of the sheet 10 has a serrated configuration, for purposes to be described. As illustrated in FIGURE 5, the sheet 10 of foil material is appropriately scored, so that it may be folded to the desired configuration to form the receptacle illustrated in FIGURES 1–4.

The receptacle of FIGURES 1–4 is formed, as mentioned above, by the appropriate folding of the sheet 10 along its scored lines. The sheet 10 is folded to form a rectangular front panel 12, and a corresponding rectangular rear panel 14. The panel 12 is composed of the two panel sections at each end of the sheet 10. See the end panels in FIGURE 5. The front panel 12 and rear panel 14 are inter-connected by a pair of accordion-pleated inter-connecting side panels 16 and 18.

As best illustrated in FIGURE 3, the side edges of the sheet 10 of FIGURE 5 are caused to overlap one another to form a seam 20, and the overlapping portions are adhesively bonded to one another to form with side 12 a solid enclosure for the receptacle.

In the embodiment of FIGURES 1–4, a bottom panel 22 of the rear panel 14 is folded over the bottom edge of the front panel 12, as shown in FIGURES 3 and 4, and these edges are adhesively bonded to one another to define a closed bottom for the flexible receptacle.

To better illustrate the invention, and the folding of the sheet 10 into a useful composite structure, refer to FIGURE 5. Here it will be seen that the central panel area 14 is centrally located of the blank 10. First and second extreme end sections 12*a* and 12*b* are united to form a composite panel area 12 of the finished receptacle. Note that the right hand edge of the panel 12*a* in the illustration of FIGURE 5, is extended in order to provide extra material in an edge area 20 for overlap of the panel section 12*b* and thus provide the composite panel 12 of substantially the same dimensions as the central panel 14. First and second intermediate panel sections 16 and 18 flank the central panel area 14 and are set off by fold lines 37 and 39 from the central panel section 14. Each of the flanking panel sections is further defined by further fold lines as set forth hereinafter. Panel section 16 is set off from the right hand panel section 12*a* by a fold line 43, and is centrally folded along line 40.

The side panel 18 is set off from the panel section 12*b* by a fold line 45 and is folded along a central line 42.

The top edge of the sheet 10 is defined by an irregular shape which is intended to fold together to form the desired basin shaped top having a central opening. This top edge is defined by a V notch 23 at the end of the central panel area 14. The apex of the V is substantially central of the panel.

The top edge of the panel at the end of the panel sections 12*a* and 12*b* slope outwardly and downwardly in the small sizes, but are sharper, or squared for large sizes, as shown in FIGURE 5*a*. These sloping edges are indicated by the reference characters 24 and 25. When the panel sections 12*a* and 12*b* are joined, they form a composite V notch corresponding substantially in dimensions to the notch 23. Note that the edges 24 and 25 end at a juncture point over the seam 20, and hence, the folded sheet has two opposed panels 12 and 14. The two substantially identical notches form similar overlap panels.

The ends of the intermediate panels 16 and 18 have more gently sloping V notches 116 and 118 respectively.

Quite essential to the proper folding of the top opening is a fold line 15 extending laterally of panel 16 and a similar fold line 15*a* across the panel 18. These two fold lines are spaced from the end of the panels a distance equal to about one-half the width of the panel 14 or 12, because this material is eventually folded inwardly toward one another from either side and forms a composite portion of a top surface but with a resultant opening into the interior of the receptacle.

The top area of each of the panels 16 and 18 are then marked with fold lines 35 and 37 respectively, defining an elongated triangle ending at a point along the center fold lines 40 and 42, a distance below the fold lines 15 and 15*a*. The distance across the "base" of these triangular fold areas will determine the degree of opening possible in the resultant basin portion of the receptacle top.

The fold lines 17 and 17*a* then are employed to join lateral fold lines 15 and 15*a* to the apex corners of the side panels, and fold lines 19 and 19*a* are natural resultant lines that come about as the balance of the folding takes place. Therefore, the blank sheet 10 is folded into a useful container or bag by first folding the vertical fold lines 43, 37, 39, and 45, to define the panels, and then the fold lines 40 and 42 to bisect the side panels 16 and 18. Then, the triangular areas at the top of each of the panels 16 and 18 are folded along the bisecting lines 50 and 50*a* such that one-half of the triangular area lies upon the other half, and may be then secured in that condition. See FIGURE 1*a*. The sheet is then joined at the seam 20 area and the side panels folded inwardly along the lines 15 and 15*a*. In this condition the fold lines are made, but not yet folded tight. By pressing the side panels together, the fold lines are creased sharply and the material closed into a flat condition for storage. Note the point 21 in FIGURE 9. After the structure is closed as described, this point 21 may fold down as would take place by closing the structure shown in FIGURE 9, or may be swung inwardly if no projection beyond the side edges is desired. This is a unique possibility under the conditions of the folding as described. Also, when the structure is then pressed together, folding takes place about the fold lines 19 and 19*a*, and the fold lines 17 and 17*a*. According to the way the folder chooses, one edge or the other of the V notch 23 will lie on top of the other, and form an overlap and closing structure directed toward a resultant opening 26 at the throat of the top. Note the reference number 23 in FIGURE 9, depicting the edge of notch 23 lying in overlap relationship to the opposite side of the notch. This overlap relationship is illustrated in dotted outline in FIGURE 2.

In FIGURE 2, the aperture 26 is visible at the center of the basin area. For purposes of identification between the open sheet of FIGURE 5 and the folded structure, reference characters are used to guide the comparison. The area above fold lines 15 and 15*a* are indicated by reference numbers 49 and 51. In FIGURE 2, the top areas formed by the flaps 49 and 51 are seen to form a configuration extending laterally across the top opening. The notch 23, and the composite notch formed by edges 24 and 25 were provided in order that, as the side panels

were folded as described, the sides of these notches would swing together and fold over one another as seen in FIGURE 2.

Reference character **23** has been applied to the FIGURE 2 as in FIGURE 9 showing the visible side of the overlap and the dotted outline indicated also by the reference character **23** indicates the other side of the notch **13**. Likewise, the opposite side is shown by visible line **24** and phantom line **25**. The material is overlapped to enable suitable adhesive bonds to be made along the seam, although bonding may be omitted if desired where the stiffness of the sheet is sufficient to hold the flaps in place.

The top **34** has a flared configuration, as best shown in FIGURES 1 and 4, by folding it about the score lines (FIGURE 2) and the top is thereby shaped so that a transverse channel is formed across it. This transverse channel is appropriate for receiving a lighted cigarette, and for providing a holding means for the cigarette when it is not in actual use. The top is usually not employed as a holding means except when employed as an ash tray. At other times, it is used as a funnel.

The bottom edge **22** is then folded up to form the closed bottom of the receptacle, and the folded edge is adhesively bonded to form a secure structure.

When the receptacle shown in FIGURES 1–4 is to be disposed in its collapsed condition, appropriate for shipping, or for the final extinguishment of its contents prior to disposal, the front and rear panels **12** and **14** are pressed together, causing the side panels **16** and **18** to fold inwardly along the score lines **40** and **42**.

When the receptacle is in its collapsed condition, it is essentially flat, and as mentioned above, is convenient for shipment, or for the final extinguishment of its contents prior to disposal.

On the other hand, when the receptacle is opened for use, the top flags are separated out until the receptacle assumes the shape shown in FIGURES 1 and 2. At the same time, the accordion-pleated side panels **16** and **18** move out to their illustrated positions, so that the article forms a receptacle having an inner cavity, and having an aperture **26** at its top defining an opening into the cavity for receiving the ashes, cigarette butts and the like.

The top flaps, as mentioned above, are now in position to funnel cigarette butts, and the like, into the cavity through the aperture; and they also now form the above-mentioned channel for temporarily forming a rest for a burning cigarette. The channel shape of the top of the receptacle presents a convex configuration to the interior of the receptacle to trap the contents of the receptacle should the receptacle be tipped over.

As shown in FIGURES 7 and 8 the bottom of the receptacle may be formed to have a rectangular configuration, much in the same manner as is usual with paper sacks in present-day widespread use. For the latter configuration, the lower edges of the front and rear panels **12** and **14**, and the lower edges of the side panels **16** and **18** are folded to form a bottom having a rectangular configuration, as shown in FIGURE 7, the particular bottom being designated as **22***a*.

As shown in FIGURE 7, when the receptacle is in its folded and essentially flat condition, the bottom **22***a* may be folded up over the lower portion of the front panel **12**. Then, when the receptacle is folded out to its open configuration, the bottom moves down to the position shown in FIGURE 8.

Further to add to the convenience of the receptacle of the invention, it may be secured, for example, to the side of a pack of cigarettes, as represented at **60** in FIGURE 9. In the assembly of FIGURE 9, the flexible receptacle, constructed in the manner of the embodiment described in FIGURES 1–5, is represented at **62**, and is shown as adhesively secured to the side of the pack of cigarettes **60**.

The invention provides, therefore, an improved flexible-type of disposable receptacle for semi-fluid and damp waste matter as well as serving as a cigarette butt and ash receptacle. The receptacle of the invention is most advantageous in that it forms a positive and safe means for disposing of cigarette butts and the like without any danger of creating a fire hazard by such disposal.

The structure shown in FIGURE 5 is intended primarily for small size containers. If the V notch **23** is not cut out, but folded, the bulkiness detracts from the appearance as well as the ability to fold.

Therefore, as the size of the bag increases, it becomes acceptable to leave the material in the V area and merely fold it into place. Thus, according to size, the V may be an actual notch **23**, or a folded relief region **23***a*.

Also, as the side panels **16** and **18** are widened, it becomes desirable to adjust and extend the top edges to keep the overlapped condition, and maintain the desired objective of producing a basin top having four sides, each with a relief area, cut or folded, to produce a four panel folded top as illustrated and described.

While the instant invention has been shown and described herein in what is conceived to be the most practical and preferred embodiments, it is recognized that departures may be made therefrom within the scope of the invention which is therefore not to be limited to the details disclosed herein but is to be afforded the full scope of the claims.

What is claimed is:

1. A blank from which an expandable waste container may be folded, comprising, a generally rectangular sheet having a central panel area, first and second intermediate panel sections flanking said central panel area;

said central panel area providing one side wall of the container, said extreme end panel sections adapted to be joined to provide a composite side wall opposite said central panel;

said first and second intermediate panel sections each having a central fold crease dividing the panel into two substantially equal pleats;

said blank having a top edge defined by:

a V notch at the end of the said central panel area with the apex of the V substantially central of the panel; the edge of the extreme panel sections sloping outwardly and downwardly to thereby jointly define a V notch over the said composite side wall when joined; said intermediate panel section having long V shaped fold lines extending downwardly to an apex on said central fold crease;

whereby said blank may be folded by joining the said end panel sections, folding said crease of the intermediate panels inwardly up to the said apex of said V; creasing the upper portion above the apex into a double fold first outwardly and then doubled back upon itself to provide a top fold portion, thereby causing said end areas of the two side walls to also fold inwardly with the sides of the V notched overlapped to complete a folded top cover, said V form resulting in closed top with a central top opening.

2. In the blank defined in claim 1, said sheet having a substantially rectangular straight line edge which may be rolled upon itself to close the bottom of the container.

3. A waste container adapted for attachment to a flat wall, being collapsible into a flat pack and expandable into a wedge shaped container, said container being formed from a blank as defined in claim 1, said container having a recessed folded top structure with a central opening lying on a plane passing through said central fold creases of the side panels.

4. A blank from which an expandable waste container may be folded, comprising, a generally rectangular foil sheet having a central panel area, first and second intermediate panel sections flanking said central panel area;

said central panel area providing one side wall of the container, said extreme end panel sections adapted to be joined to provide a composite side wall opposite said central panel;

said first and second intermediate panel sections each having a central fold crease dividing the panel into two substantially equal pleats;

said blank having a top edge defined by:

a V relief region at the end of the said central panel area with the apex of the V substantially central of the panel; the edge of the extreme panel sections jointly defining a relief region over the said composite side wall when joined; said intermediate panel section having long V shaped fold lines extending downwardly to an apex on said central fold crease;

whereby said blank may be folded by joining the said end panel sections, folding said crease of the intermediate panels inwardly up to the said apex of said V; creasing the upper portion above the apex into a double fold first outwardly and then doubled back

upon itself to provide a top fold portion, thereby causing said end areas of the two side walls to also fold inwardly with the sides of the relief region overlapped to complete a folded top cover, said relief form resulting in closed top with a central top opening.

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