Oct. 20, 1970 L. LEVINSON 3,534,424

COLLAPSIBLE CONTAINER, DUSTPAN ASSEMBLY FOR SOLID CLEANING MATERIAL

Filed July 15, 1968

Fig. 7

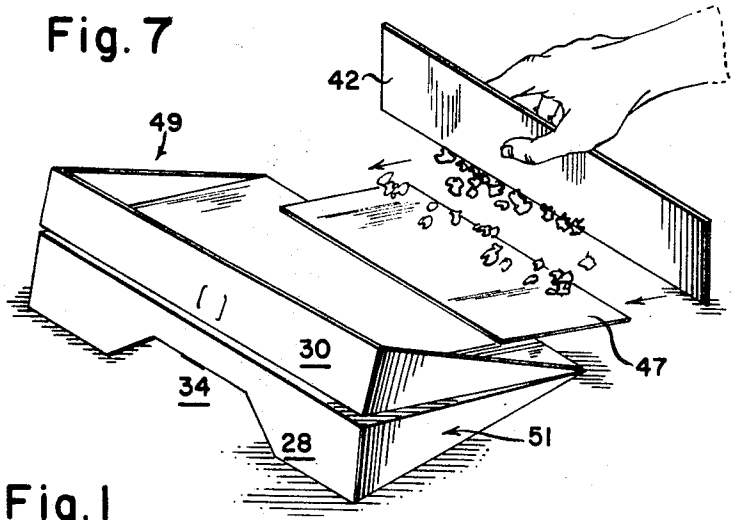


Fig. 3

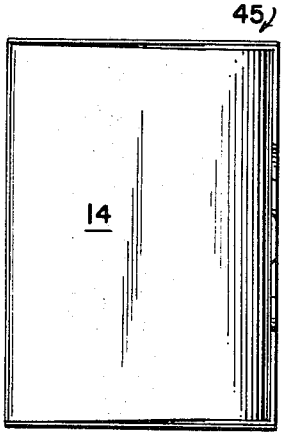


Fig. 1

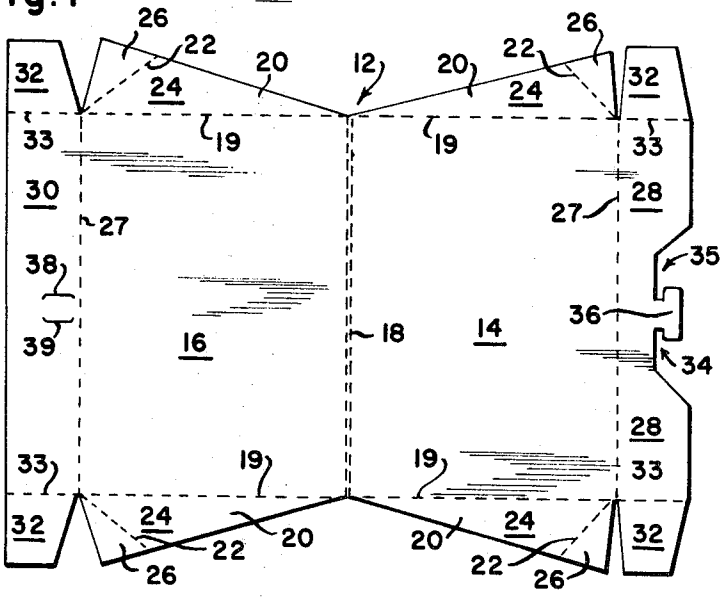
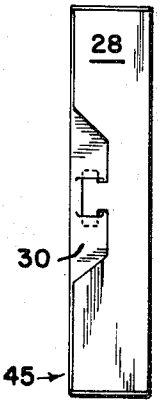


Fig. 2



Fig. 6



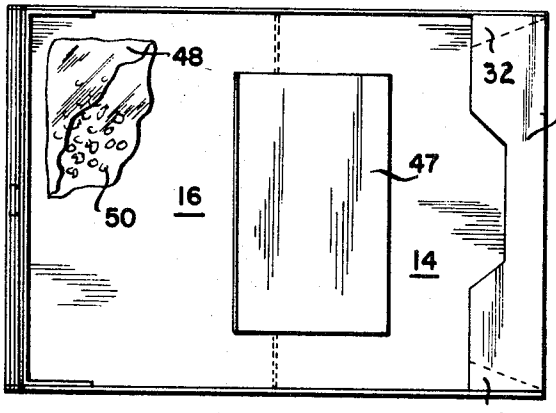
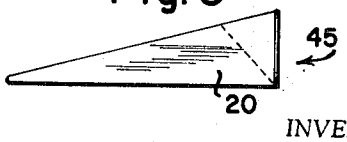


Fig. 4

Fig. 5



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COLLAPSIBLE CONTAINER, DUSTPAN ASSEMBLY FOR SOLID CLEANING MATERIAL

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U.S. Cl. 15—105 12 Claims

ABSTRACT OF THE DISCLOSURE

A container, useful in packaging solid cleaning aids, which is convertible into a dustpan and reconvertible into a disposal container. The container is formed of triangular sidewalls and two main wall panels, each said wall panel extending between a pair of said sidewalls and each said wall panel being pivotally hinged one to the other at the smallest angle of said triangular sidewalls.

BACKGROUND OF THE INVENTION

The rapid collection and removal of noxious spillage especially in public places such as schools, hospitals, and doctors' offices is most desirable. This removal should be accomplished by means readily stored near the site of probable use, but should be accomplished by relatively simple manipulative steps. If so accomplished, any odor from the spillage will be contained in the smallest possible area for the shortest possible time. Thus any chain-reaction often caused by such odors will be avoided.

Although there have been solid absorbents impregnated with deodorizers and suggested for use in such situations, there has been a need for a convenient dispensing and disposal means for such materials.

SUMMARY OF THE INVENTION

Therefore it is an object of the invention to provide an article which is compact, easy-to-use and sufficiently versatile to serve as a package for a solid cleaning aid, a dustpan, and a disposal container.

Another object of the invention is to provide a disposable dustpan of simple construction and a process for forming such a dustpan.

Another object of the invention is to provide a box blank easily convertible into a disposable dustpan.

Other objects of the invention will be obvious to those skilled in the art on reading the instant specification.

These objects have been substantially achieved by providing a multipurpose container of triangular cross-section which container is adaptable for use as a disposable dustpan. This container is formed of a top wall and a bottom wall pivotally connected at an apex of the triangle. Each of the top wall and back wall is provided with triangular side walls and a rectangular back wall. In use as a dustpan the top wall and walls associated therewith form n angled support suitable for holding the bottom wall and walls associated therewith in an advantageous attitude for use as a dustpan. In the more advantageous embodiments of the invention, the rectangular backwall of the top wall includes a cut out to provide easier handling, and a flexible sheet is attached to the bottom wall to provide positive means for reducing the angle of contact between the floor being cleaned and the dustpan.

This novel apparatus has been found to be particularly useful in the removal and disposal of small-volume spillage. Among the uses are the cleaning-up of spillage such as might result from motion sickness in school buses, airplanes, automobiles, boats, and other confined locations where the usual cleaning aids and disposal means are unavailable. Moreover the article of the invention is conveniently used in doctors' offices, hospitals, schools, theaters, stores, and other such public places as well as in the home and in laboratories.

ILLUSTRATIVE EMBODIMENT OF THE INVENTION

FIG. 1 is a plan view of a box blank, an advantageous embodiment of the invention.

FIG. 2 is a plan view of a scraper, or brush, means useful with, and advantageously included with, the package assembly of the invention.

FIG. 3 is a view in elevation of the container in its closed position.

FIG. 4 is a plan view of the container in its open position.

FIG. 5 is a side view in elevation of the container in its closed position.

FIG. 6 is a rear view, in elevation, of the container in its closed position.

FIG. 7 is a perspective view of the blank of FIG. 1 arranged as a dustpan.

Referring to FIG. 1, it is seen that a box blank **12** formed of cardboard comprises a top major wall, or panel, **14** and a bottom major wall, or panel, **16** joined at a central scored hinge line **18**. Along each lateral side of walls **14** and **16** at hinged score lines **19** are substantially triangular side walls **20** which meet at the terminals of line **18**, each said wall **20** being divided by a scored hinge line **22** into a larger sidewall component **24** and a smaller sidewall component **26**. The width of sidewall component **26** is approximately the same as the height along its dimension *a* of backwalls **28** and **30**. At the outer extremities of walls **14** and **16**, and attached thereto by scored hinge lines **27**, are backwall members **28** and **30** respectively. Each of backwalls **28** and **30** have side tabs **32** at either end thereof. Side tabs **32** are suitably truncated triangular shape and are attached to backwalls **28** and **30** on hinged score lines **33**. Backwall member **28** has a cut out handhold **34** and a closure means **35** i.e. tab **36**. Backwall member **30** comprises a receiving means **38** for tab **36**, said receiving means comprising slots **39**.

A scraper, or brush, means **42** comprising a piece of cardboard **43** of such size that it will fit on top wall **16** is seen in FIG. 2. Scraper **42** has a cut out **44** to facilitate removing the same from flatwise contact on panel **14** or **16** and to serve as a hand grip.

Referring to FIG. 4 a container **45** is seen as assembled from blank **12** of FIG. 1: an additional feature has been added to FIG. 4 in that a flexible plastic sheet **47** is adhesively connected to bottom wall **16** and extends therefrom so that it overlaps part of top wall **14**. This sheet **47** is advantageously treated on the bottom side thereof with a non-slip additive such as is known to the packaging art. Also shown in FIG. 4 is a partial view of a plastic bag **48** containing absorbent granules **50**, an item for which the container of the invention is a particular suitable package for reasons described hereinbelow. In FIG. 4, backwall **28** is shown in collapsed position, that is with backwall **28** and sidewalls **20** folded inwardly to contact top wall **14**. This folding is made possible by score lines **22** which provide means for bending larger sidewall component **24** inwardly, whereupon backwall **28** can fold directly down over the smaller sidewall component **26** and over end tabs **32**. This folding capability makes it possible to store finished boxes in a minimum of space.

FIG. 7 shows container **45** emptied of its contents and with that half of container **45** which comprises bottom wall **16** turned through an angle of 270° on fold line **18** and resting on the outside of top wall **14**, thereby forming a suitable dustpan receiver **49** with top wall **14**, back wall **28**, and the triangular sidewall **20** associated therewith forming an angled support **51** for receiver **49**.

In forming container **45** from blank **12**, the blank is folded along score lines **18**, **19**, and **27**. End tabs **32** are inserted under smaller sidewall components **26** and may be fastened thereto with staples, adhesives, or any other fastening means. A scraper means **42** is inserted into container **45**. Also inserted into container **45** is a bag containing a quantity of particulate absorbent which may be formed of diatomaceous earth, silica, or the like and which is advantageously treated with an effective quantity of deodorant such as di-isobutylphenoxyethoxy ethyl dimethyl benzyl ammonium chloride or the like.

In use, container **45** is a convenient dispenser, dustpan and disposal unit. On opening container **45** and bending it ito the dustpan position shown in FIG. 7, granules from plastic bag **48** are emptied into dustpan **49** and spread over the spillage by hand. Scraper **42** is then used to push the entire mass of spillage plus absorbent granules back into the dustpan. Once the mass is returned to the dustpan, it is closed, fastened and thereby packaged for convenient disposal.

Although the container of the invention may be formed of any suitable material of construction, paperboard or plastic sheeting is preferred. When plastic sheeting is used, relatively thin wall paths can take the place of the scored hinge lines use for paperboard. When paperboard is used, it is most advantageous that it be selected from stock which is treated so as to be resistant to wetting on the outside surface of the container. On the contrary, it is most advantageous for the inside surface of the container to be easily wetted so that droplets of waste which may not be absorbed on the solid material will be absorbed on the inner surface of the carton and not be susceptible to spilling.

What is claimed is:

1. A self-packaging cleaning kit comprising a container formed from a box blank suitable for forming both a container and disposable dustpan, said box blank being of the type made foldable by scored hinge lines between the various components thereof and comprising:

(a) a top major wall and a bottom major wall pivotally connected to one another along a central scored hinge line,

(b) triangular side walls on opposite sides of each said major wall, one apex of each said triangular side wall being at a terminal of said central scored hinge line,

(c) a rectangular backwall adjacent each said major wall, said backwalls terminating in end tabs, said end tabs forming means to connect said side sidewalls and said backwalls, and,

(d) a quantity of granular absorbent material in said container

2. A kit as defined in claim **1** wherein said triangular sidewalls comprise a scored hinge line, thereby providing means to collapse a box assembled from said blank into a more easily storable form.

3. A kit as defined in claim **1** wherein one said backwall has a handhold therein, thereby facilitating handling of a dustpan formed from said box blank.

4. A kit as defined in claim **1** wherein said backwalls are provided with closure means.

5. A container formed from the box blank of claim **1**.

6. A container as defined in claim **5** comprising a flexible sheet attached to one major wall and having a free terminal edge portion extendable over said central scored hinge line.

7. A disposable dustpan formed from the box blank of claim **1** wherein one major wall and the sidewalls and backwall comprise a wedge-shaped slanted support means and another major wall and the sidewalls and backwall associated therewith from the dustpan.

8. A disposable dustpan as defined in claim **7** wherein the inner surface thereof is wettable and the outer surface thereof is wet-resistant.

9. A flatwise collapsible, folding, container and dustpan formed of one piece of sheet material, said container when erected having

a pair of rectangular, top and bottom wall panels, hingedly connected along a fold line;

two pairs of triangular end wall flaps, each flap of each pair being hingedly connected on an opposite end of one of said panels and each of increasing height from said fold line to the opposite side edge of said wall panel;

a pair of rectangular sidewall panels, each sidewall panel of said pair being hingedly connected along a side edge of one of said wall panels and being hingedly connected to the adjacent triangular end panels, one of said sidewall panels having a hand hole therein;

said erected container being adapted to form a closed carton of triangular cross section when the angular relationship of said top and bottom wall panels, at said hinge line, is about 10° and being adapted to form a dustpan with an inclined floor when the said angular relationship is over 270° and said top and bottom wall panels are back to back.

10. A container and dustpan as specified in claim **9** plus

an integral T shaped tongue tab extending into said hand hole on said one sidewall panel, and

a pair of tongue receiving slots, adapted to receive said tongue in the other said sidewall panel.

11. A container and dustpan as specified in claim **9** plus a separate stiff one piece planar scraper of said sheet material, normally resting flatwise on one of said wall panels, said scraper having a straight edge on one edge and having a hand hole cut out along the opposite edge thereof.

12. A container and dustpan as specified in claim **9** plus a separate, one piece, dustpan floor extension of flexible sheet material having one side edge portion adhered to one said wall panel, an intermediate portion overlying said fold line and the other side edge portion extending beyond said fold line to form a single thickness, projecting, dustpan, floor in advance of said fold line to facilitate removal of wet spillage.

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