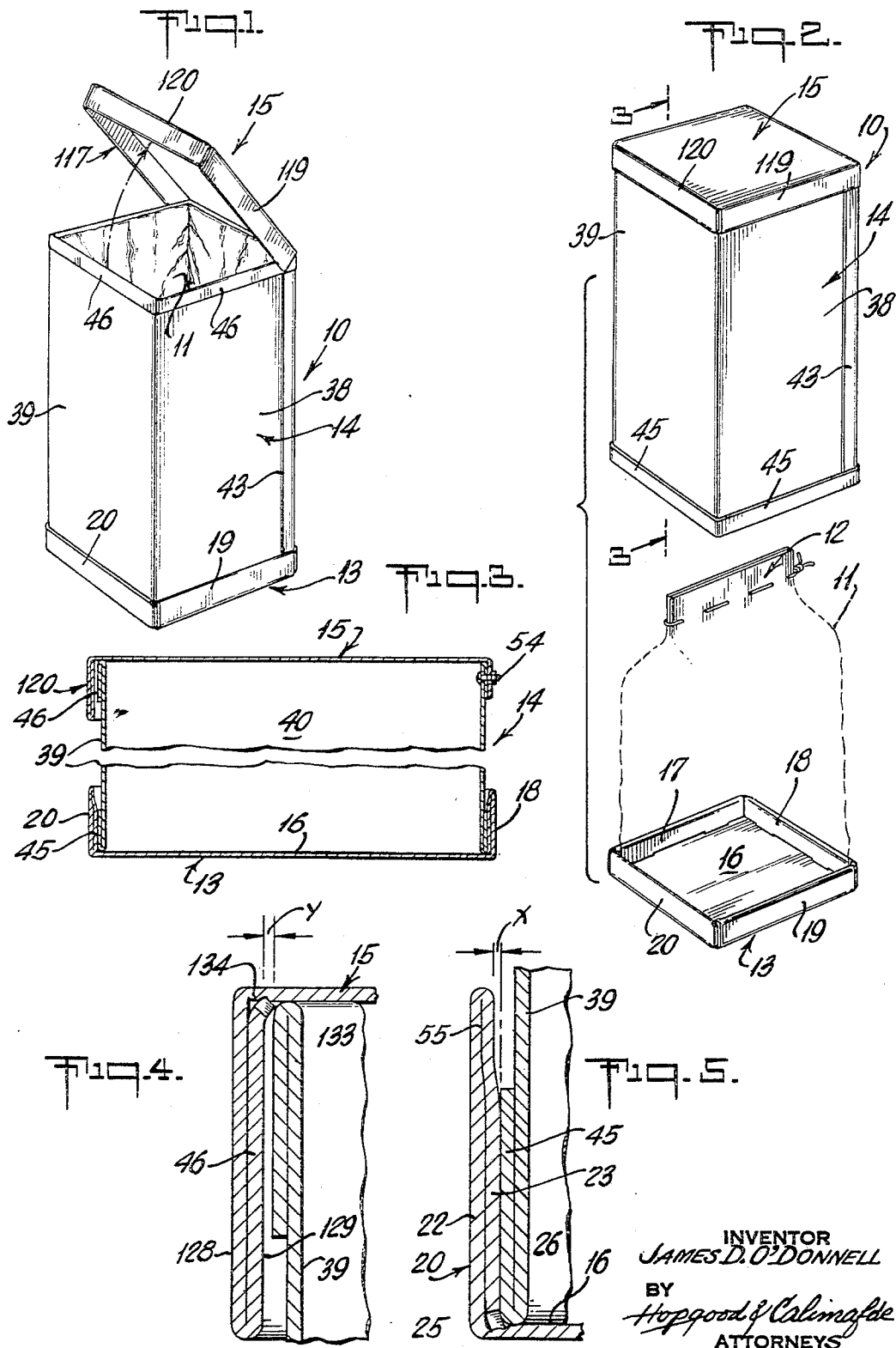


J. D. O'DONNELL
CONTAINER CONSTRUCTION

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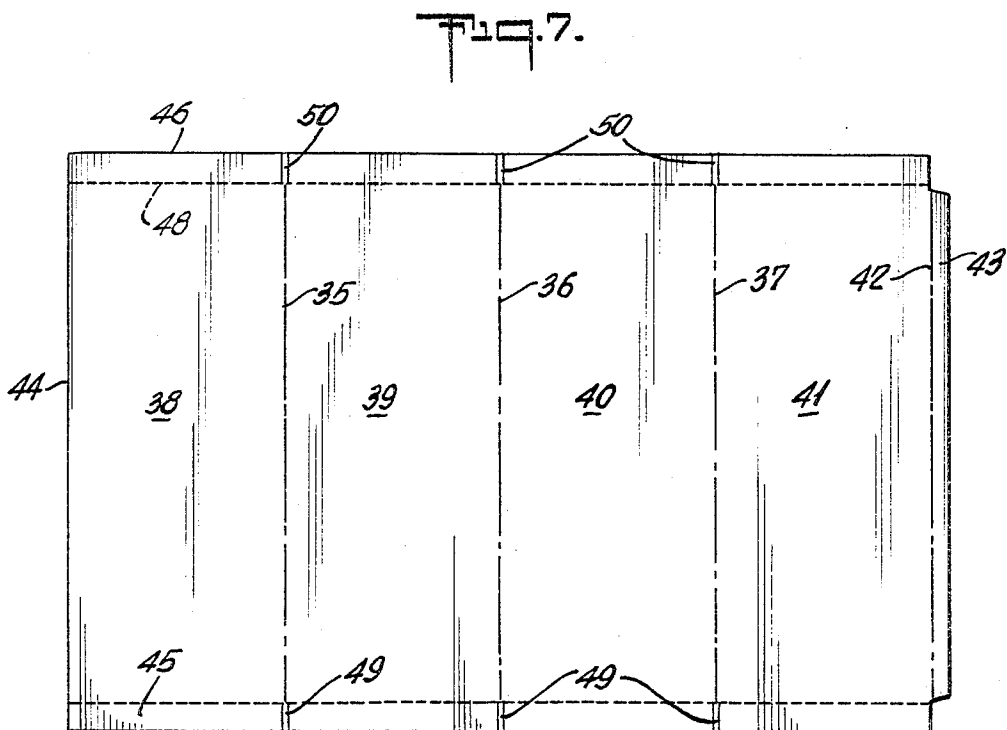
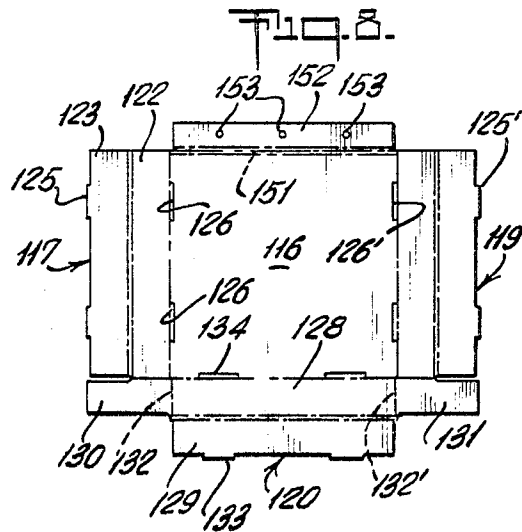
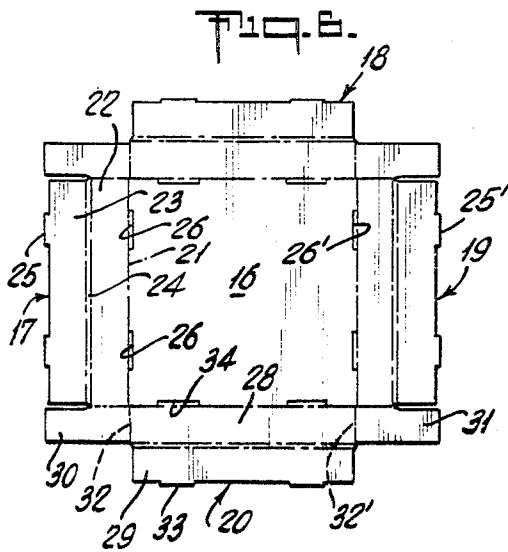
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3,484,017

CONTAINER CONSTRUCTION

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3,484,017

CONTAINER CONSTRUCTION

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4 Claims

ABSTRACT OF THE DISCLOSURE

The invention contemplates an inexpensive stiff box-like container construction, as of corrugated cardboard, for ready reception of a plastic or other pliant bag to be inserted therein for accumulation of small parts, scrap, or the like. The load of accumulating material in the bag is sustained virtually entirely by the base of the container, the base being deliberately made removable from the remainder of the container so that, when the bag is fully loaded, ready access for removing the bag may be had by first removing the body of the container from its base.

This invention relates to a container for the removable accommodation of pliant bags for accumulation of small parts, scrap, waste material, or the like.

In the efficient accumulation of certain parts, scrap material or the like, it is desirable to employ disposable pliant bags, as of polyethylene. These bags have no inherent stiffness to enable them to stand upright to receive an accumulating load, and so stiff reusable containers are employed to support and retain the bag while its load is accumulating. The containers are desirably of stiff paper board, such as corrugated cardboard, and are prefabricated in knocked-down condition to permit easy storage in multiple, and convenient accessibility for use. For large-size containers receiving relatively heavy load accumulations, as in the case of electrical wiring scrap to be accumulated for economical salvage, a problem is presented in regard to efficient removal of a loaded bag from a container; the loaded bag is unwieldy, particularly in the circumstance of the relatively high lifting distance required to remove it from the conventional box-like container, resulting in undue strain on personnel and unwitting damage to the box structure of the container itself.

It is, accordingly, an object of the invention to provide an improved container of the character indicated.

Another object is to provide an improved container construction wherein lifting of loaded bags from the box structure of the container is no longer necessary.

It is a general object to meet the foregoing objects with a container of elemental simplicity, adequate reinforcement, and of inherently low-cost construction, lending itself to the use of stiff paper products such as corrugated cardboard for the entire container construction.

Further objects and various further features of novelty and invention will be pointed out or will occur to those skilled in the art from a reading of the following specification in conjunction with the accompanying drawings. In said drawings, which show, for illustrative purposes only, a preferred form of the invention:

FIG. 1 is a view in perspective of a container of the invention, with its cover partially opened to show a removable pliant bag contained therein;

FIG. 2 is an exploded view in perspective illustrating separable parts of the container of FIG. 1;

FIG. 3 is an enlarged sectional view, taken at the plane 3—3 of FIG. 2 and partly broken away to reveal details of coaction at upper and lower fits of the parts of FIG. 1;

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FIG. 4 is a still further enlarged fragmentary sectional view to show detail of the fit between upper parts of the container;

FIG. 5 is a view similar to FIG. 4 to show the fit at the lower part of the container; and

FIGS. 6, 7 and 8 are die cut-out layouts for the respective three parts of the container of FIG. 1.

Briefly stated, the invention contemplates an inexpensive stiff box-like container construction, as of corrugated cardboard, for ready reception of a plastic or other pliant bag to be inserted therein for accumulation of small parts, scrap, or the like. The load of accumulating material in the bag is sustained virtually entirely by the base of the container. The base is deliberately made removable from the remainder of the container so that, when the bag is fully loaded, ready access for removing the bag may be had by first removing the body of the container from its base.

Referring to the drawings, the invention is shown in application to an upstanding box-like container 10 of relatively stiff material which may be paper board and is preferably tempered corrugated cardboard. The container is of rectangular prismatic configuration, with the upper open end capacitated to receive and to support a pliant bag 11 for reception of small parts, scrap or waste material to be accumulated. Conveniently, bag 11 is of polyethylene or the like and is suitably formed at its upper open edge (FIG. 2) to be collapsed flat along an alignment which permits stitching or lacing as indicated generally at 12. Thus, when a loaded bag is removed, it may be conveniently handled apart from the container 10, without spilling its contents.

According to the invention, the container 10 comprises essentially three parts—a base 13, a body 14, and a removable cover 15. Each one of these three parts is preferably formed by bending along prescored lines from flat or pre-assembled stock, which may be stored flat and therefore made most readily available at the site of ultimate use. Erection and assembly to the shape shown in FIG. 1 are thus simply accomplished.

As best shown in FIG. 2, the base unit 13 comprises a base panel 16 from which integral side walls 17—18—19—20 extend upwardly. The sidewalls 17—18—19—20 are formed as outwardly extending tabs integral with the base panel 16 when cut from flat stock, and prescoring may define all fold locations, as at the edges of the base panel 16.

As best shown in FIGS. 5 and 6, each of the sidewalls 17—18—19—20 is preferably constructed of double-folded material. For example, in the case of sidewall 17, the two halves of the doubly-folded material comprise a first portion or panel 22 joined at fold 21 to the base panel 16, and a second panel 23 joined to the panel 22 at a fold line 24 which ultimately becomes the upper edge of the sidewall 17. Locking tabs 25 are provided in the cut of the outer edge of the outer panel 23, so that when folded at 24 and 21, with the outer panel 23 folded inside and toward the base panel 16, the locking tabs 25 will engage in corresponding slits or slots 26 in the base panel 16 adjacent the fold alignment 21. Preferably, the slit 26 is cut essentially only in the inner face of the base panel 16, the cut being of insufficient extent to mar the smooth continuous nature of the outer surface of the stock from which the base 13 is formed. Thus, when the panels 22—23 are folded up and in, to the point of locking engagement at 25—26, the tabs 25 will locally indent the base panel at slits 26 to achieve and hold the locked relationship.

In the base layout of FIG. 6, the opposite sidewalls 17—19 are preferably mirror images of each other, so that parts of sidewall 19 need not be further identified,

except to observe that the double-folded erected position of the wall 19 is retained by engagement of locking tabs 25' with corresponding locking slits 26'.

The other sidewalls 18-20 of the base 13 are also cut for double-folded erection and assembly, as will be clear from a consideration of the inner and outer panels 28-29 for the sidewall 20. The wall panel 28, which is intermediate the base panel 16 and the panel 29, is additionally provided with integral outwardly extending locking tabs 30-31, scored for fold at the alignments 32-32'. Again, the outer edge of the outer panel 29 is provided with locking tabs 33 for engagement with corresponding slits 34 in the base panel 16.

Assembly of the base 13 is quickly accomplished by first folding up and doubling the walls 18-20, as into locked engagement of tabs 30 with slits 34. The side tabs 30-31 are then folded at scores 32-32' to overstand the creases 21-21' along which the other sidewalls 17-19 are formed. The latter sidewalls are then bent up and doubled over on the score lines 24 so as to surround and lock in their engagement, both with the adjacent folded-in side tabs 30-31 and at the locking tabs 25-26 and 25'-26'.

The body 14 may also be made from a single piece of paper board or cardboard and may be cut from the layout exemplified in FIG. 7. Prescore lines at 35-36-37 define the folds for intersection of the four upstanding sides 38-39-40-41. A fourth score line 42 defines a similar fold for a tab projection 43 at one longitudinal end of the blank, to permit overlap with the other end 44 of the blank; tab projection 43 is secured to its adjacent wall surface 38 by stapling, gluing, or the like. In such assembly, the tab 43 is preferably overlapped on the outside as indicated in FIG. 1, so that the inner surface of the container may be as smooth and uninterrupted as possible. For reinforcement at top and bottom rims or edges of the respective open ends of the body 14, I provide local double thickness of the basic body stock, these rims being formed prior to fold-up on score lines 35-36-37. Additional length of the cut-out blank is therefore provided at tabs 45-46, which extend the full length of the cut-out and are defined by score lines 47-48 at the top and bottom limits of the body 14. Local crushed areas are indicated on the tabs 45-46 (as at 49-50) at the alignment of the score lines 35-36-37; these crushed areas permit folding on score lines 35-36-37 after the double thickness at the top and bottom open edges of the body have first been formed by bending over the tabs 45-46. Preferably, this fold-over is on the outside, as suggested at 46 in FIG. 1 and at 45 in FIG. 2. It will be appreciated that by pre-assembling the tabs 43 to the side panel 38 at corner 44, after first folding over the double-thickness top and bottom rims at 45-46, the body may be stored flat along the folds 36-42, in readiness for easy opening to rectangular prismatic shape when necessary to assemble a new container.

FIG. 8 illustrates the basic cut-out arrangement for the top 15 which will be seen to resemble that for the bottom 13 except for the formations necessary to accomplish hinging along the score lines 51. Corresponding parts are therefore given the same reference numbers, in a 100-series. To accomplish hinging, the tab 52 is shown with punched apertures 53 for alignment with similar apertures at the top of the side panel 41 of the box 14. Erection of the cover 15 may be as described for the base 13, and assembly is accomplished by insertion of suitable fasteners such as nut and bolt means 54 (FIG. 3) at the aligned aperture locations.

The proportioning of clearances between the basic parts 13-14 is preferably such as to establish a friction engagement between the bottom open end of the body 14 and the upstanding sidewall of the base 13. This engagement is shown in the "home" or fully inserted position in FIG. 5. However, to facilitate entry necessary to accomplish this friction engagement, I show my pref-

erence for the provision of an allowance or clearance X upon initial insertion of the body into the base. This may be provided by local crushing of the top double thickness edge of the bottom sidewalls 17-18-19-20 of the base 13, as suggested at 55 in FIG. 5. For a 20-inch long base edge, the clearance X is in the order of 1/8-inch.

Frictional engagement is also desired at closure of the cover 15 upon the reinforced rim 46 of the body. This engagement should not be one of stiff friction and therefore a small clearance Y (in the order of the stock thickness) is shown provided between the reinforced rim 46 and the adjacent sidewall of the cover 15, i.e., for that sidewall which is opposite the hinge region. The remaining opposed sidewalls preferably have contacting engagement with the adjacent rim edges 46 for body side panels 38-40 so that the engagement for walls 38-40 is the one in which reliance is had to established desired friction upon closure of the cover 15.

In the normal employment of my container, the flexible bag contained within the container is preferably folded over the upper reinforced rim 46, so that the full upper open end of the container characterizes the open region of the flexible inserted bag.

It will be seen that I have described a basically simple construction representing a significant advance in the handling of parts, waste or scrap accumulation. Regions for such accumulation are kept neat and orderly, and by simply removing the body 14 from a base which is laden with accumulated material in an insert bag, one avoids any tendency to abuse the container and at the same time avoids any strain on personnel who would otherwise have to perform the awkward operation of lifting a heavy load out of a bulky container. For certain applications in which the scrap accumulations are electrical cable lengths, it is desirable that the container material shall have a foil surface, be it on the inside or the outside, thus avoiding any danger of induced voltages, and providing electrical ground for rapid, efficient dissipation of any and all charges.

What is claimed is:

1. A storage container for a refuse bag, comprising:

- a corrugated cardboard base of rectangular planform with integral relatively short sidewall members folded upwardly from the edges of the base to form a peripherally continuous wall around said base, the base sidewall members being each of double-folded material, with the free end bent inwardly;
- a rectangularly prismatic corrugated cardboard body with four contiguous elongated sidewalls having a base-end periphery capacitated for removable friction engagement within said wall, whereby when so engaged said base and body define an upwardly open upstanding container capacitated to receive there-within a suitable disposable bag of substantially the volumetric capacity of said body, so that said body may provide stiff upwardly oriented location of the disposable bag while scrap material or the like is being accumulated therein, the weight of the bag and its accumulating contents being borne substantially entirely by said base; and

removable corrugated-cardboard closure means for the open end of said body and having friction engagement with the upper-end periphery of said body, said closure means comprising a rectangular cover panel and three relatively short sidewall members integral with said panel along three edges thereof and folded downwardly therefrom, said cover sidewall members being secured to each other to retain their downwardly extended relationship, said sidewall members along opposite edges of said cover panel being each of double-folded material with the free end bent inwardly and the opposed inwardly bent ends being spaced for friction engagement with the corresponding peripheral edges of the open end of said body;

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whereby removal of a loaded bag from said container may be accomplished by first removing said body from said base, so that the loaded bag need only be lifted off said base, and whereby when not in use said body may be compacted by folding two diagonally opposed corners toward each other, and whereby in use said base and closure means retain the prismatic integrity of said body while selectively frictionally engaged thereto.

2. The container of claim 1, in which each open end of said body includes an effectively continuous integral peripheral reinforcing rim formed as a peripherally extending strip folded back against the outer faces of said body sidewalls, whereby said body end rim reinforcement strips are the means of frictional engagement with the inwardly bent sidewall portions of said base and closure means, so that frictional engagement also inherently retains the folded relation of the frictionally engaged members.

3. A container according to claim 1, in which a hinge flap is formed integral with said cover panel along the fourth edge thereof, said hinge flap being secured to one of the sidewalls of said body.

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4. A container according to claim 1, in which the bend of the double-folded material of said base sidewall members defines the upper edge of each sidewall member, the double-folded material of each such upper edge being locally crushed to define in the region of the said upper edges a clearance to freely receive insertion of said body and to pilot the location thereof prior to achieving said interference fit near the point of full insertion of said body into said base.

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JAMES B. MARBERT, Primary Examiner

U.S. Cl. X.R.

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