

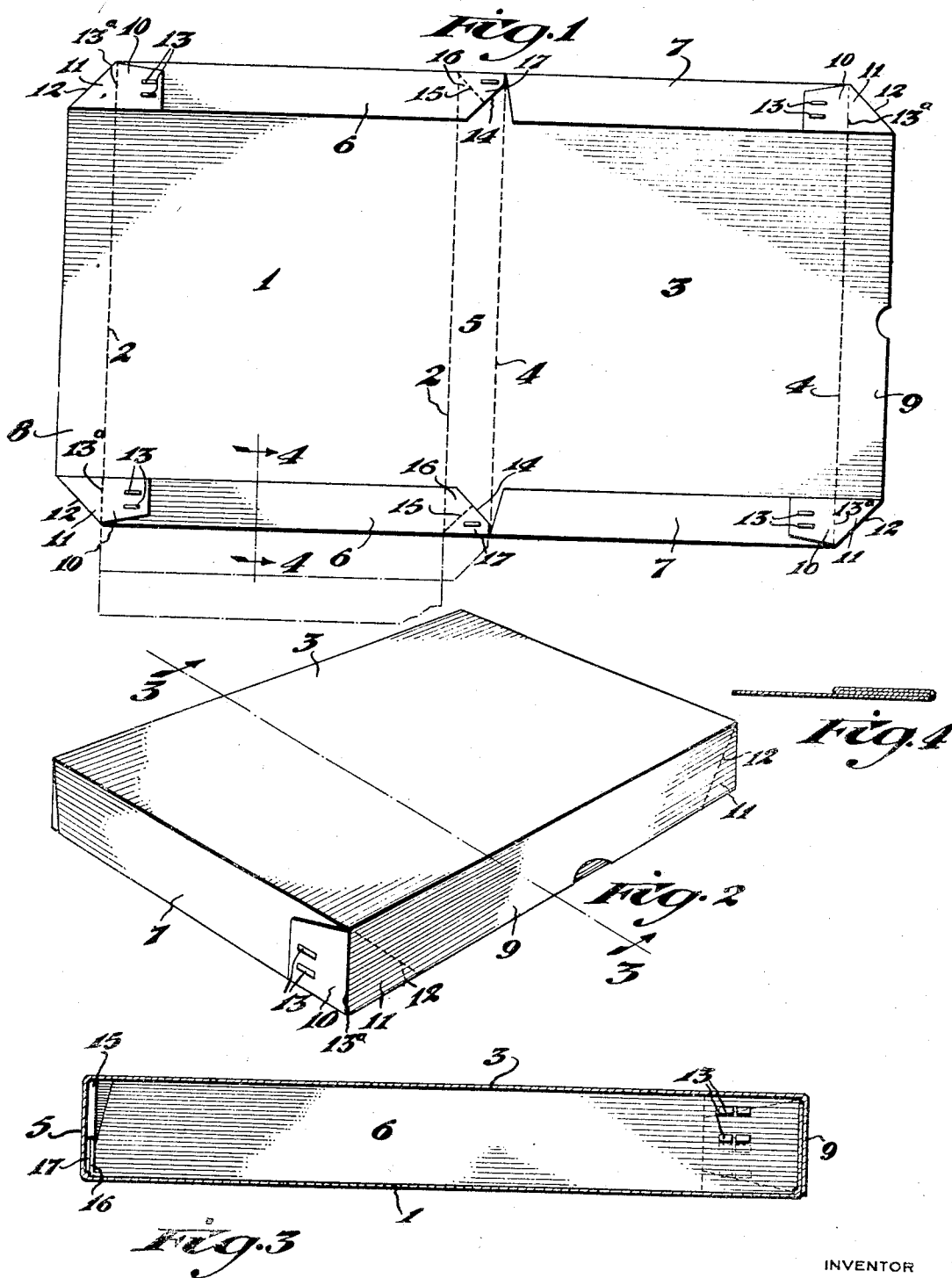
March 5, 1935.

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1,993,323

COLLAPSIBLE BOX

Filed July 30, 1932



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UNITED STATES PATENT OFFICE

1,993,323

COLLAPSIBLE BOX

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Application July 30, 1932, Serial No. 626,363

3 Claims. (Cl. 229—41)

This invention relates to collapsible or knock-down boxes and particularly to a type in which the entire structure, bottom, top and sides, are formed of a single sheet or blank of paper board or foldable material.

An object of the invention is to provide a single piece collapsible box constituting a pair of tray-like box sections of corresponding structure, one serving as a commodity receiving section and the other as a cover, with the sections adapted to interfit or telescope one within the other.

Another object of the invention is to provide a single piece collapsible box constituting two similar integrally united sections, one serving as a commodity receiving section and the other a hinged or swinging cover, with the side walls of both sections of permanent set-up closed corner connection, capable of being folded to flat or collapsed position, and the container ready for service by merely swinging the side walls to their erect position. By making the walls of the two sections of relative dimension, when the container is closed, a multi-wall structure of great strength is provided.

Another object of the invention is to provide a single piece collapsible box constituting a commodity receiving section and a cover section with the side walls of both sections in permanent corner connection.

Another object of the invention is to provide a collapsible box formed from a single blank to comprise a pair of sections connected to interfittingly swing one within the other with opposite end and front walls of one or both sections of several ply formed by folding over the material upon itself for wall reinforcement, adapting the structure to be made of a lower weight stock at a reduction in cost.

Various other objects and features of the invention will be more fully set forth in the description of the accompanying drawing, in which:

Figure 1 is a plan view of the box in a collapsed or knock-down form.

Figure 2 is a perspective view of the box in its set-up, closed position.

Figure 3 is an enlarged section on line 3—3, Figure 2.

Figure 4 is a section on line 4—4, Figure 1, in which the wall is of double ply folding the material upon itself.

The box is made from a single blank of paper or fibre board, cut to a definite pattern outline and scored to include a lower or bottom section with opposite end and side walls, and a top or cover section, along one edge hingedly joined with

a side wall of the bottom section. The top or cover section has oppositely disposed end walls and a side wall and interfits with the bottom section when the box is set up and closed.

The bottom or commodity receiving section, and the cover section are of substantially similar set-up formation and in a collapsed condition have their opposite end walls folded inwardly respectively upon the panels or body portions of the sections, while the several side walls are in plane with the panel portions.

The side and end walls of the respective sections are in permanent set-up connection and both sections form compartment-like structures combining into a single closed compartment when the sections are interfitted or brought into telescopic relation.

The walls are erected by compressing one of the side walls upwardly, which moves the end walls outwardly due to the connection of the walls at their corners.

The erection or set-up can be very conveniently and quickly made without it being required to clip in any of the parts. The box or container permits a ready introduction of the contents into the bottom section, by merely swinging its walls to an erect position and the cover section closed over the bottom section, by interfitting the same over the bottom section. This greatly facilitates the packing operations and provides a structure for making the box of a heavy paper or fibre board material, which, when closed, offers a very stout packing and shipping container.

Referring to the drawing, 1 indicates a base or bottom portion or panel of the commodity receiving section of the container within the scored lines 2—2 respectively parallel to the edges of the blank, and 3, the top portion or panel of the cover section within the scored lines 4—4, likewise parallel respectively with the edges of the blank. The cover portion or panel 3 is integrally joined to the bottom portion or panel 1 by an intermediate portion forming the rear wall 5 of the container. The cover in closing the container swings or hinges on the scored line 4 between the rear wall 5 and the cover portion 3.

The bottom portion is provided with a pair of opposite end walls 6—6, permanently connected at one end respectively to the opposite ends of a front wall 8 parallel with the rear wall 5.

The top portion, similar to the bottom portion, is provided with a pair of opposite end walls 7—7 connected to a front wall 9.

The front wall 8 of the bottom section at each

of its opposite ends respectively has a tab or flap extension 10 foldable with a triangular end portion 11 on the front wall 8 along a diagonal line or scoring 12 extending from a corner of the base portion to the outer edge of the front wall inwardly of the wall. The triangular portion 11 and tab for the collapsed or knock-down position of the container folds along said diagonal scored line bringing the same contiguous with the adjacent end wall, the tab overlapping the forward end of the adjacent end wall, which, in the collapsed condition, is folded downwardly and inwardly upon the upper side of the base portion. The tab preferably overlaps the outer side of the end wall and permanently secured thereto preferably by metallic fasteners or staples 13.

The triangular portion 11 and the tab 10 are divided by a scored line 13^a extending, at right angles to the upper edges thereof and in a line coincident with the scored line 2 between the front wall and base portion, when the container is in its collapsed position and in an erect position forms a corner for the adjoining walls of the box. Swinging the end and side walls upwardly to their erect position causes the tab to hinge on the scored line 13^a and the triangular portion 11 to swing on the diagonal line 12 in plane with the front wall 8.

The form of permanent wall connection is duplicated for connecting the end and front walls of both bottom and cover sections.

The rear ends of the opposite end walls 7—7 of the cover section are free and unconnected and preferably cut at a slight angle inwardly of the wall from the scored line on which the cover hinges.

The rear ends of the opposite end wall of the bottom or commodity receiving section are each respectively provided with a flap extension having a diagonally cut edge 14. The flap is divided by a diagonally scored line 15 into a pair of triangular gussets 16—17 with the gusset 17 permanently secured upon and into the inner side of the rear wall 5 by a metallic fastener or other means. Thus when the walls are erected, the gussets will swing or hinge along the diagonally scored line 15, and the gusset 16 will also swing on a scored line 18 at right angles to the upper edge of the end walls, the gusset 16 swinging inwardly parallel with the gusset 17.

The bottom and cover sections are relatively dimensioned to permit the bottom section to be interfitted or telescoped within the cover section to close the box or container. The box is in permanent set-up formation, readily collapsed or erected, and its collapsed formation is in a flat condition with the opposite end walls of both cover and bottom sections folding inwardly together with a triangular portion of each end of the front walls of the sections.

In the formation shown in the drawing, the walls of the cover section correspond to the depth of wall of the bottom section, thus providing a double wall for three sides of the container, adding stiffness and rigidity to the container when closed, and if necessary the rear wall may be provided with a reinforcing strip on its inner side. It is obvious, however, that the wall depth dimension of the cover section for some uses of the container could be materially reduced.

To reduce the cost the box can be made of a low weight material with the side walls reinforced for increased rigidity by forming the same of several ply thickness except for the tab ex-

tensions and gussets employed to permanently unite the walls at the corners. The side walls in the blank each is of a dimension to permit the material to be folded over inwardly upon itself as shown in cross-section Figure 4 with the top edge of the wall at the line of fold, making a smooth rounded edge to advantage in interfitting or telescoping the sections for closing the box. In some instances it is sufficient to reinforce only the opposite end walls.

Having described my invention, I claim:

1. A collapsible box formed from a single blank of paper board material, comprising, two sections, a compartment and a cover, each section constituting a base having a front side, and opposite end walls, an intermediate portion joining the bases of the two sections and forming a side wall for one of the sections, the front side and end walls of each section respectively permanently joined at their corners, each end wall and an adjoining portion of the front side wall folded inwardly for collapsing the walls, the end walls of one of the sections, each at an end adjacent said intermediate portion extended thereover and fixed thereto, the extension creased diagonally dividing the same into a pair of triangular gussets folding one upon another when the walls are erected.

2. A collapsible box formed from a single blank, comprising, two sections, a bottom and cover, each section constituting a base, two opposite side walls and an end wall, each side wall of both sections secured to the respective end wall by a flap extending from one wall and folded to overlap and connect with the end of the other wall, and an intermediate section joining said sections and providing an end wall for one of the sections, the side walls of one of the sections each at an end adjoining said intermediate section extended to correspondingly overlap an end of said intermediate section, foldable and connected thereto to swing with said intermediate section in collapsing or erecting the walls of the section, the opposite side walls of both sections each collapsible inwardly upon the base of its respective section, and the adjoining ends of the relative side walls of both sections disconnected for telescoping the sections to close the box.

3. A single blank paper board collapsible box, comprising, a body section and a cover section, the body and cover sections each having a main wall, a pair of opposite side walls and a front end wall, said side and end walls swingable into perpendicular relation to the main walls and the side walls in collapsing swinging inwardly upon their respective main walls, a rear end wall for the body section intermediate of and joining said main walls with the cover main wall hinging thereon, the front end wall of each section at each of its opposite ends respectively having a corner portion foldable along a diagonal line inwardly upon itself continuous with the adjoining end of a side wall when collapsed, said corner portion having an extension overlapping and fixed to the adjoining side wall, the other end of each of the side walls of the body section each having a foldable flap continuous therewith overlying and fixed to the adjoining ends of said rear end wall, the flap creased diagonally dividing the same into a pair of triangular gussets folding one upon another when the walls are erected and the corresponding ends of the side walls of said cover section free.

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