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BOX FORMED OF STIFF PAPER, CARDBOARD, OR THE LIKE

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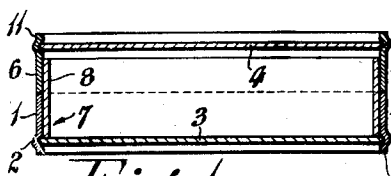


Fig. 1.

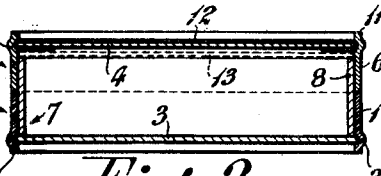


Fig. 2.

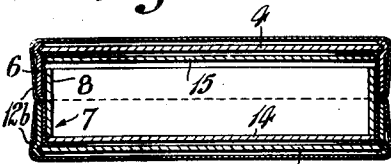


Fig. 3.

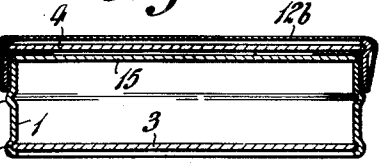


Fig. 4.

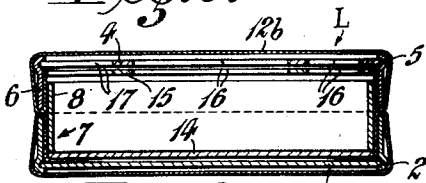


Fig. 6.

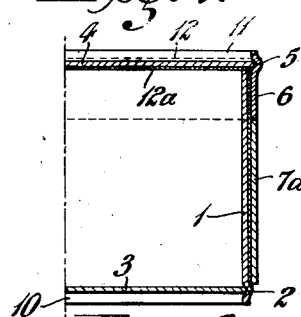


Fig. 5.

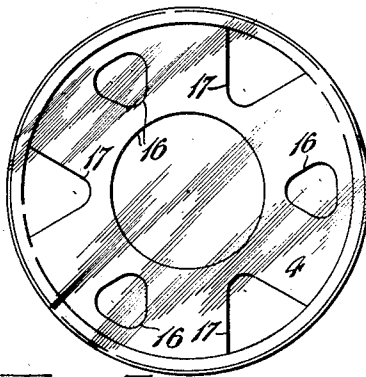


Fig. 7.

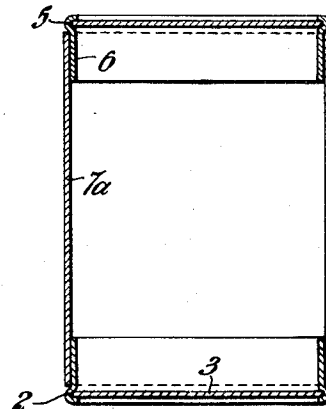


Fig. 8.

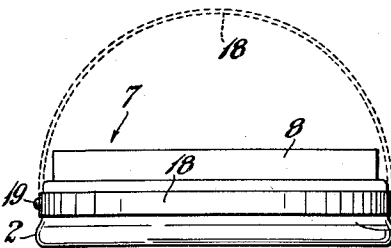


Fig. 9.

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UNITED STATES PATENT OFFICE

1,995,820

BOX FORMED OF STIFF PAPER, CARD-BOARD, OR THE LIKE

James Royle, Elwood, Victoria, Australia

Application May 31, 1933, Serial No. 673,702
In Australia December 22, 1932

8 Claims. (Cl. 229-6)

This invention refers to two part boxes made of stiff paper, pasteboard, cardboard or the like intended to contain dry or comparatively dry articles or materials, and the improvements have been devised in order to enable an efficient box or carton to be produced that is simpler in construction and more stable than the known articles and which can be manufactured at a lower cost.

The kind of two part boxes to which the invention specifically refers comprise a body portion and a lid with a flange or depending rim that fits outside or inside the box, and the invention is applicable to such boxes of various shapes such as circular, oval, rectangular, triangular or octagonal.

It has been usual in the manufacture of these boxes to secure the bottom to the body by passing a wrapper composed for instance of transparent or translucent cellulose tissue or the like under the loose bottom then up over the wall of the body and securing the edge against the inner surface of the wall by means of a tight fitting sleeve, constituting the neck of the body, which is inserted in said body or by first seating the loose bottom against intumed lugs provided on the body wall and after the wrapper is placed in position, securing the edge of same and the bottom by a tight fitting disk in the lower part of the body.

The top of the lid of the container is fitted to the flange of said lid by similar means. In such forms of construction neither bottom of the body nor the top of the lid is permanently fixed and the stability of either is dependent on the tautness of the wrappers and the efficiency of the means employed for ensuring such tautness. Moreover the material forming the wrappers is usually of a flimsy character and may be easily torn, in which case the bottom or top will fall off.

According to the present invention the bottom is secured to the body by forming in the interior of the wall thereof a continuous groove and fitting the edge of the bottom into said groove.

The area of the bottom slightly exceeds the cross sectional area of the body and said bottom is forced or sprung into position with its edge engaging the groove which step in the manufacture is practicable owing to the inherent resiliency of the material of which the bottom is composed and in the case of a pasteboard body of the like resiliency of same.

In a like manner the edge of the top of the lid is sprung into engagement with a continuous

groove formed in the interior surface of the flange of the lid.

It will thus be noted that by springing the bottom into engagement with the body and the top with the flange of the lid the two essential parts of the box are completed. The top may be made to overlap the wall of the body or a neck provided thereon in the well known manner for instance of fitting a sleeve in the body with the edge of the sleeve forming the neck, projecting above the edge of the wall of the body.

Alternatively the sleeve may be external to the body so that the top of the latter forms the neck and furthermore the flange of the lid may fit inside the sleeve.

It will be appreciated that with a two part box so constructed that the ends of same are permanently fitted and no dependence is made upon the strength or tautness of the wrapper and it is possible to fit the bottom and top to a box otherwise formed of substantially rigid material.

The invention also incorporates improved means for applying a cover or wrapper to either the top or bottom or both parts of the box and for applying a covering or wrapping material to the whole of the external surfaces of the box.

According to one means the wrapper or covering of transparent or translucent cellulose tissue or the like or other suitable material is secured over the top or bottom of the box by jamming the material between the edge of said top or bottom and the groove associated therewith. In this manner the exposed part of either wrapper is drawn taut with a neat appearance and said material is firmly secured in position.

If the body of the box is to be completely covered with a wrapper, the edge of same extends over the interior surface of the permanent bottom and the wrapper is drawn taut over the exterior surface of the bottom, the outside and inside of the body and secured by means of a clamping plate tightly fitting the interior of the body and jamming the edge of the wrapper between said plate and the permanent bottom.

In a like manner a wrapper may be applied to the lid and secured by a clamping plate.

Some examples of the invention are illustrated in the accompanying drawing wherein the boxes are of cylindrical shape.

Fig. 1 is a vertical section of one form of the box, and—

Fig. 2 a similar view illustrating a wrapper on the top of the lid.

Fig. 3 is a vertical section of the box provided with a complete wrapper.

Fig. 4 is a vertical section of the box illustrating the application of the invention to one in which the lid overlaps the wall of the body and a complete wrapper is applied to the lid.

Fig. 5 is a vertical section of half a box with an exterior sleeve.

Fig. 6 is a vertical section of a box as in Fig. 3, but illustrating a modification.

Fig. 7 is a plan of Fig. 6.

Fig. 8 is a section of a box with the flange of the lid fitting inside the box.

Fig. 9 is a side elevation of the body of the box with a handle attached thereto.

Referring to these figures of drawing the wall 1 of the body is formed on the interior and about its bottom edge with a continuous groove 2 and the bottom 3 of pasteboard or the like is of slightly greater area than the interior cross sectional area of the wall and it is forced within the latter till its edge springs into engagement with the groove which is possible owing to the natural resiliency of the pasteboard or like material of which the bottom, in particular, of the box is composed. By this means a permanent bottom is provided on the body B of the box.

In a similar manner the edge of the top 4 of the lid L is sprung into a groove 5 formed in the flange 6 of the lid.

When the lid and body form a butt joint, the body has a reinforcing sleeve 7 tightly fitted in it and projecting above the edge of the wall of the body and said projecting portion forms a neck 8 over which the flange of the lid overlaps as in Fig. 2 for instance.

When the flange of the lid is of slightly greater diameter than the wall of the body, the sleeve 7 is not essential as the flange 6 overlaps the wall 1 of the body as in Figs. 4 and 5. In Figure 4 is also shown an annular bead or shoulder 9 which may be provided on the body and upon which the edge of the flange 6 of the lid may rest.

The groove 2 may be formed practically at the edge of wall 1 and the groove 5 at the edge of the flange 6 as in Fig. 3 for instance or such grooves may be formed at a short distance from the respective edges of the wall and flange as in Figs. 1 and 2, so that the bottom and top of the box are formed with slight flanges 10—11 which protect the bottom and top of the box.

A wrapper 12 of transparent or translucent cellulose tissue or the like or other material may be applied to the outside of the top 4 of the lid as in Fig. 2 and it is placed over the top of the lid with the edge overlapping same and when the lid is sprung into position the wrapper is jammed between the edge of the top 4 and the groove 5 and is thereby not only securely held in position but said wrapper is drawn neatly taut over the top of the lid.

If desired the pleated edge of the wrapper which is intumed and underlies the top may be obscured by a tight fitting cover plate 13, shown in broken lines Fig. 2, pressed into the lid against said intumed edge.

It will be evident that the bottom of the body may be similarly covered by a wrapper in the manner described with relation to the lid.

According to Fig. 5 the flange 6 of the lid overlaps the edge of the wall 1 of the body and the body is reinforced by an external sleeve 7a which rests on the shoulder formed by the bulge in the wall caused in the impression of the groove 2 therein.

This sleeve 7a is shorter than the wall of the body and its top edge acts as an abutment for the flange 6 of the lid.

Alternatively as in Fig. 8 the external sleeve 7a may be the full length of the box with the flange 6 of the lid fitted inside said sleeve.

It is found in practice that if the body material is not cut accurately to shape or its ends are not uniformly attached it becomes slightly tapered, but the reinforcing sleeve 7a ensures a 10 cylindrical appearance to the box with a neat fitting lid.

With this construction the objection to the internal sleeve which sometimes becomes displaced on lifting the lid is obviated.

A wrapper 12a may be passed over the top edge of the wall 1 and down the outside thereof and be secured by the sleeve 7a.

With the construction shown in Fig. 5 it will be obvious that a wrapper 12 shown in broken lines may be fitted to the top 4 in the manner described with reference to Fig. 2.

Furthermore the top 4 may be provided with inspection gaps 17 or openings 16 as illustrated in Figs. 6 and 7.

In the case where a wrapper is required over the lid or body or both they are more easily applied on account of the ends of the box being permanently fixed as distinct from boxes in which wrappers are employed to retain the ends of the box in position.

As illustrated in Figs. 3, 4 and 6 the wrappers 12b cover the ends of the box and are respectively turned over the wall of the body and flange of the lid and the edges of the wrappers which are intumed are secured by tight fitting clamping plates 14—15, pressed within the body and lid and jamming said intumed edges of the wrappers respectively between said plates and the bottom of the body and top of the lid.

If it is desired to expose to view the contents of the box the top 4 of the lid and correspondingly the clamping plate 14 (or the cover plate 13) are formed with one or more openings 16 or gaps 17 as in Figs. 6 and 7.

If desired as illustrated in Fig. 9 the body of the box may have a semi-circular handle 18 loosely or pivotally attached at its ends by rivets 19 or the like to the body 1 so that when the lid has been removed the handle may be swung up for use as such in the manner illustrated in broken lines.

It is to be understood that a two part box may be constructed in which only the body is formed with the permanent bottom or only the lid with the permanent top and only the lid may be covered by a wrapper as in Fig. 4 or only the body as shown in the lower portions of Figs. 3 and 6.

I claim:—

1. A two part box of the character described comprising, in combination, a hollow body consisting of an annular wall preformed adjacent one continuous edge with a continuous internal groove, a flat bottom for said body having the peripheral edge thereof sprung into said internal groove, a lid provided with an axially directed flange preformed adjacent one continuous edge with a second continuous internal groove and having a flat top for the same whereof the peripheral edge is sprung into said second internal groove, which bottom and top are slightly greater, respectively than the cross sectional areas of said body and lid, and an interior sleeve fitted within said body, the flat bottom sprung into the groove

in said hollow body and the flat top sprung into the groove in said axially directed flange being accessible and displaceable from within when the lid is removed from off said hollow body and being further readily replaceable at will in said hollow body and lid.

2. A two part box of the character described comprising, in combination, a hollow body consisting of an annular wall preformed adjacent its edge with a continuous internal groove, a flat bottom for said body having the peripheral edge thereof sprung into said internal groove, a lid provided with an axially directed flange preformed adjacent its edge with a second continuous internal groove and having a flat top for the same whereof the peripheral edge is sprung into said second internal groove, which bottom and top are slightly greater, respectively than the cross sectional areas of said body and lid, a wrapper extending exteriorly over the top of said lid with the edge of said wrapper folded under said top and secured between the peripheral edge of the latter and the groove in said lid, and an interior sleeve fitted within said body.

3. A two part box of the character described comprising, in combination, a hollow body consisting of an annular wall preformed adjacent its edge with a continuous internal groove, a flat bottom for said body having the peripheral edge thereof sprung into said internal groove, a lid provided with an axially directed flange preformed adjacent its edge with a second continuous internal groove and having a flat top for the same whereof the peripheral edge is sprung into said second internal groove, which bottom and top are slightly greater, respectively than the cross sectional areas of said body and lid, a wrapper extending exteriorly over the top of said lid with the edge of said wrapper folded under said top and secured between the peripheral edge of the latter and the groove in said lid, a cover plate fitted interiorly against the infolded edge of said wrapper and against said top, and an interior sleeve fitted within said body.

4. A two part box of the character described comprising, in combination, a hollow body consisting of an annular wall preformed adjacent its edge with a continuous internal groove, a flat bottom for said body having the peripheral edge thereof sprung into said internal groove, a lid provided with an axially directed flange preformed adjacent its edge with a second continuous internal groove and having a flat top for the same whereof the peripheral edge is sprung into said second internal groove, which bottom and top are slightly greater, respectively than the cross sectional areas of said body and lid, a wrapper extending exteriorly under the bottom of the box with the edge of said wrapper folded over the peripheral edge of said bottom and jambed between said edge and the internal groove in the wall of said bottom, and an interior sleeve fitted within said body.

5. A two part box of the character described comprising, in combination, a hollow body consisting of an annular wall preformed adjacent its edge with a continuous internal groove, a flat bottom for said body having the peripheral edge thereof sprung into said internal groove, a lid provided with an axially directed flange preformed adjacent its edge with a second continuous internal groove and having a flat top for the same whereof the peripheral edge is sprung into said second internal groove, which bottom and top are slightly greater, respectively than the

cross sectional areas of said body and lid, a wrapper extending exteriorly under the bottom of the box with the edge of said wrapper folded over the peripheral edge of said bottom while the edge of said wrapper is folded in and extends partly inward over the interior of said bottom, a cover plate fitted interiorly against the infolded edge of said wrapper and against the interior of said bottom, and an interior sleeve fitted within said body and bearing against said plate.

6. A two part box of the character described comprising, in combination, a hollow body consisting of an annular wall preformed adjacent its edge with a continuous internal groove, a flat bottom for said body having the peripheral edge thereof sprung into said internal groove, a lid provided with an axially directed flange preformed adjacent its edge with a second continuous internal groove and having a flat top for the same whereof the peripheral edge is sprung into said second internal groove, which bottom and top are slightly greater, respectively than the cross sectional areas of said body and lid, a wrapper for each part of the box, one wrapper extending exteriorly under the bottom of said box and over the wall thereof with the edge of said wrapper also extending down along the interior of said wall and partly inward upon the interior of said bottom, the other wrapper extending over the top and flange of said lid with the edge of said other wrapper extending upward within said flange and partly inward upon the interior of said top, a cover plate fitted within said lid against said top and the inner edge of the wrapper thereof, a second cover plate fitted within the wall of said box body against the bottom and the inner edge of the wrapper thereof, and an interior sleeve fitted in said body and bearing against said second cover plate within the latter.

7. A two part box of the character described comprising, in combination, a hollow body consisting of an annular wall preformed adjacent one continuous edge, with a continuous internal groove, a flat bottom for said body having the peripheral edge thereof sprung into said internal groove, a lid provided with an axially directed flange preformed adjacent one continuous edge with a second continuous internal groove and having a flat top for the same whereof the peripheral edge is sprung into said second internal groove, which bottom and top are slightly greater, respectively than the cross sectional areas of said body and lid, and a sleeve fixedly associated with the wall of said box body forming an extension thereof and serving to connect the lid thereto when in closed position upon said body, the lid being removable from and replaceable upon said box, the flat bottom sprung into the groove in said hollow body and the flat top sprung into the groove in said axially directed flange being accessible and displaceable from within when the lid is removed from off said hollow body and being further readily replaceable at will in said hollow body and lid.

8. A two part box of the character described comprising, in combination, a hollow body consisting of an annular wall preformed adjacent one continuous edge with a continuous internal groove, a flat bottom for said body having the peripheral edge thereof sprung into said internal groove, a lid provided with an axially directed flange preformed adjacent one continuous edge with a second continuous internal groove and having a flat top for the same whereof the pe-

ripheral edge is sprung into said second internal groove, which bottom and top are slightly greater, respectively than the cross sectional areas of said body and lid, a wrapper covering the exterior surface of the wall and also the edge of the box body, and a sleeve fixedly associated with said body, the flat bottom sprung into the groove in said hollow body and the flat top sprung into the groove in said axially directed flange being accessible and displaceable from within when the lid is removed from off said hollow body and being further readily replaceable at will in said hollow body and lid. 5

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