

Jan. 8, 1929.

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C. S. ANDREWS

FOLDED BOX

Filed June 30, 1927

Fig. 1.

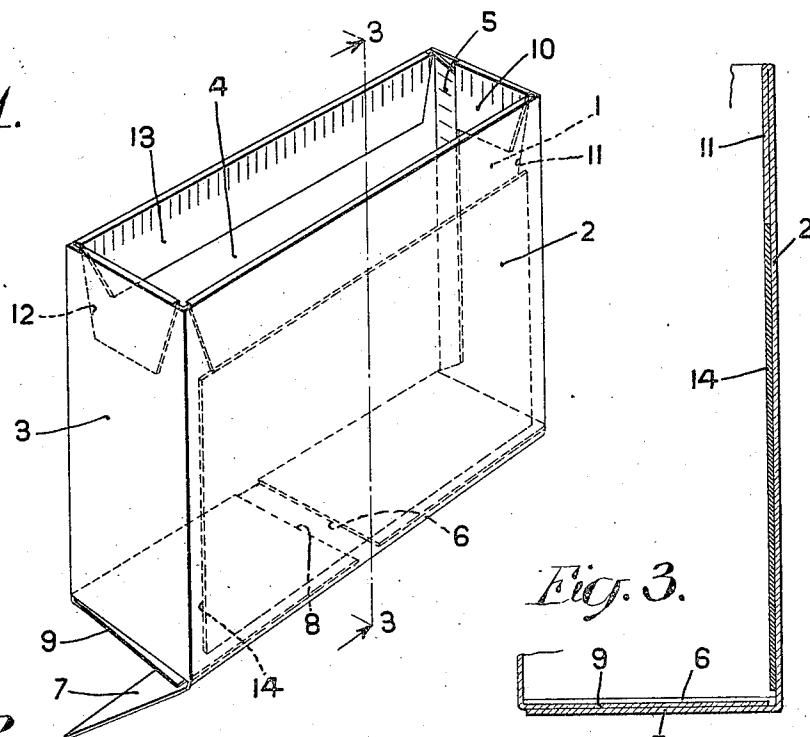
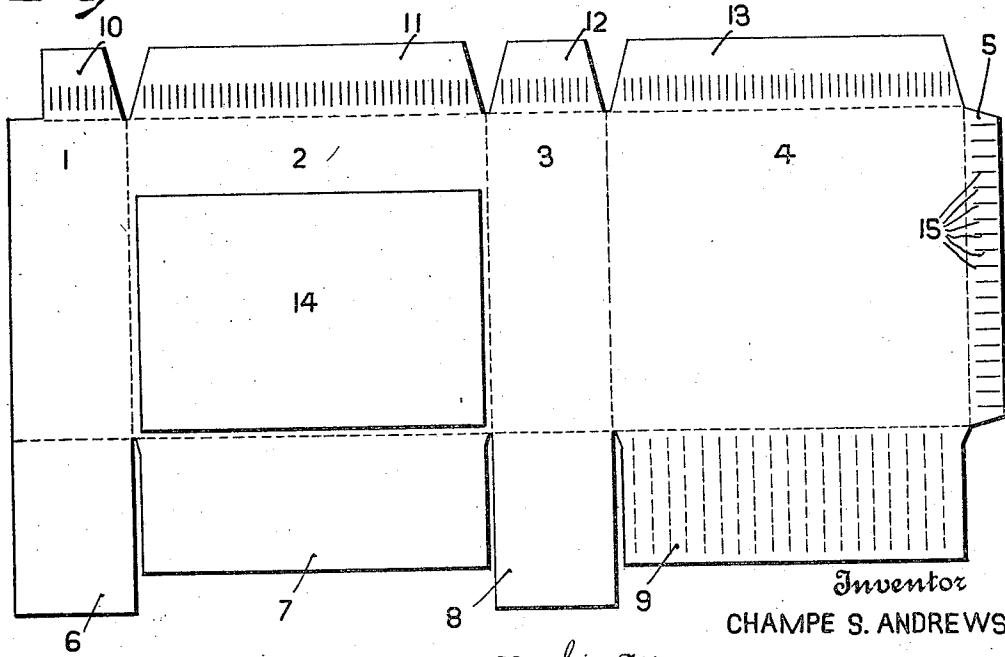


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHAMPE S. ANDREWS, OF CHATTANOOGA, TENNESSEE.

FOLDED BOX.

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This invention relates to containers of the type which are formed from a folded blank.

Containers which are adapted for the high class trade are frequently provided with an outer calendered or varnished surface in order to present a neat and finished appearance. When such a container is of the type which requires various parts to be glued together difficulty is frequently experienced in causing the glue to firmly hold the calendered surfaces, particularly if the surfaces are also varnished. This invention relates to means for gluing such surfaces and permitting the glue to come into firm engagement therewith.

This invention further relates to a glued end box which is provided with an open upper end and includes means for finishing and strengthening the upper end to prevent the same from bulging, and also means for strengthening the side surfaces whereby they will be retained in their original shape and condition when heavy material is carried in said box.

This invention further consists in certain new and original features of construction and combinations of parts hereinafter set forth and claimed.

Although the novel features which are believed to be characteristic of this invention will be specifically pointed out in the claims appended hereto, the invention itself, as to its objects and advantages, the mode of its operation and the manner of its organization, may be better understood by referring to the following description taken in connection with the accompanying drawing forming a part thereof, in which like reference characters have been used to denote like parts in the various figures. Since such illustration is, however, primarily for purposes of disclosure, it will be understood that the structure and the method of operation thereof may be modified in various respects without departing from the broad spirit and scope of the invention.

One embodiment of the invention has been shown for purposes of illustration in the accompanying drawing, in which Fig. 1 is a perspective view of a container constructed in accordance with this invention in partly folded position; Fig. 2 is a plan view of the unfolded blank from which the box may be formed; and Fig. 3 is a section taken on the line 3-3 of Fig. 1.

In the following description and in the claims the various parts of the apparatus and

details of the invention will be identified by specific names for convenience, but they are intended to be as generic in this application as the art will permit.

Referring to the drawings more in detail, the invention is shown as comprising a blank formed with a plurality of sides 1, 2, 3 and 4, which are adapted to be folded to form the sides of the finished box. Tab 5 is secured to the side 4 and is adapted to be folded into engagement with side 1 and glued thereto for maintaining the box in folded position. Tabs 6, 7, 8 and 9 are secured to sides 1, 2, 3 and 4 respectively and are adapted to be folded to form the bottom portion of said box.

After the sides have been folded into rectangular shape and tab 5 has been glued to side 1, the bottom may be formed by bending tabs 6 and 8 into a plane normal to the sides of the box, then folding tab 9 over tabs 6 and 8 and gluing the outer surface thereof to the inner surface of tab 7 which may be suitably finished to form the exposed bottom surface of the carton.

Tabs 10, 11, 12 and 13 are provided at the upper portion of sides 1, 2, 3 and 4 respectively, and are adapted to be folded back upon said sides and glued in that position for strengthening purposes and to eliminate an upper exposed rear edge. When the box has been folded as above described and tabs 10 to 13 have been folded and pasted, the box will take the form disclosed in Fig. 1. In this position although the upper edges have been strengthened, it has been found that when a substance completely filling the box, such as a battery, is inserted therein the larger sides may bulge due to the air pressure within the box which is produced by the battery acting as a piston sliding past the comparatively tight fitting upper tabs and compressing the air in the space below said tabs. Since the side surfaces may be formed comparatively large, further bulging is likely to occur in use especially if the contents of the box are comparatively heavy.

In order to obviate this difficulty, strengthening board 14 is inserted beneath folded tab 11 and firmly glued to the inner surface of side 2. Board 14 is preferably the same thickness as the original blank, so that the inner surface thereof will lie in the same plane as the inner surface of folded tab 11. If desirable, a strengthening board may be attached to both sides of the box, or in case the box is made of unusually large dimen-

sions, such strengthening boards may be attached to all four sides. It has been found, however, that with the type of box used with dry batteries, a strengthening member on one side thereof is sufficient to maintain the box in its normal shape.

If the outer surface of the box blank is finished as by being calendered or varnished, this finish will also include the portion of tab 5 which is glued to the inner surface of side 1. Since it is extremely difficult to cause glue to stick to such a surface, a plurality of cuts or scores 15 are made in said tab and are preferably formed sufficiently deep to allow the glue 15 which is applied thereto, to penetrate to the inner portions of the material itself. It has been found that with a blank constructed in this manner, the sides may be folded to box form and glue successfully applied to the finished surface for causing the same to stick 20 and remain in firm engagement with side 1.

Since the finished surface of tab 9 must be glued to the inner surface of tab 7, it may also be scored or cut to provide means for allowing glue to enter the unfinished surface of the board. Tabs 6 and 8 may be allowed to remain in folded position without gluing since the weight of the material in the box will prevent said tabs from becoming loosened.

Although the inner surface of tabs 10, 11, 12 and 13 are glued to the inner and unfinished portion of sides 1, 2, 3 and 4, it is necessary for the glue which is applied thereto to set quickly in order to prevent the tabs from becoming loosened due to the natural resiliency of the material itself. It has, therefore been found preferable to provide a series of cuts in said tabs which may extend substantially through the blank for allowing the glue to 35 penetrate quickly and come into firm engagement with a large area of material.

It has been found that blanks constructed in this manner may be formed on the usual type of packaging or gluing machine, and the glue will be allowed to penetrate the material and harden substantially immediately, thereby eliminating the necessity for leaving the blank in the machine a considerable length of time in order to allow the glue to set.

The finished box is of neat appearance and of such firm construction, that it is extremely durable and especially well adapted for use with heavy articles such as dry cells. Not only is the upper surface provided with reinforcing means of neat and pleasing appearance, but the sides themselves are prevented from bulging by the additional strengthening member 14. Since boxes of this character are frequently made from comparatively heavy blank material, the space between the sides and the outer surface of the battery or other article contained therein, would be determined by the thickness of the upper in-folded tabs. In order to eliminate this space, the

strengthening member 14 which is inserted in the larger sides is formed of a thickness equal to that of the above mentioned tabs.

While certain novel features of the invention have been shown and described and are 70 pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes in the forms and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. 75

What is claimed is:

1. A blank adapted to be folded into box form, comprising a plurality of side portions and a plurality of tabs adapted to form adjoining edges, certain of said tabs being provided with a plurality of cuts for allowing glue to readily penetrate the same. 80

2. A box blank comprising a board having a finished surface and an un-finished surface, 85 said board being suitably shaped to form the sides and bottom of a box, a plurality of tabs adapted to be glued for maintaining the box in folded position and cuts on said tabs for allowing the glue to enter the board beneath said finished surface. 90

3. A box blank comprising a board having a finished surface, said board being adapted to form the sides of a box, tabs attached thereto for forming the bottom of said box, and a tab attached to one of said sides and adapted to be glued for holding said box in assembled position, said last mentioned tab having a plurality of cuts therein for allowing the glue to penetrate beneath said finished surface. 95

4. A box blank comprising a board having a finished surface, said board being adapted to form the sides of a box, tabs attached thereto and adapted to be glued for forming the bottom of said box, and a tab attached to one of said sides and adapted to be glued for holding said box in assembled position, said tabs having cuts therein for allowing the glue to penetrate beneath said finished surface. 100

5. A box blank comprising a board having a varnished surface, said board being adapted to form the sides of a box, tabs attached thereto for forming the bottom of said box, one of said tabs being adapted to be glued and a tab attached to one of said sides and adapted to be glued for holding said box in assembled position, said tabs to be glued having a plurality of cuts therein for allowing the glue to penetrate beneath said varnished surface. 110

6. A box blank having a plurality of side portions, a plurality of tabs attached thereto and adapted to form the bottom of a box, a tab attached to one of said side portions and adapted to be glued for maintaining the box in assembled position, tabs attached to said side portions opposite to said bottom tabs and adapted to be bent back upon themselves, one side of said blank being provided with a varnished surface, certain of said tabs being provided with a plurality of slots cut through 125 130

said varnished surface for permitting the glue to enter the interior of the material itself.

7. A box blank having a plurality of side portions, a plurality of tabs attached thereto and adapted to form the bottom of a box, a tab attached to one of said side portions and adapted to be glued for maintaining the box in assembled position, tabs attached to said side portions opposite to said bottom tabs and adapted to be bent back upon themselves, one side of said blank being provided with a finished surface, certain of said tabs being provided with a plurality of slots for permitting the glue to enter the interior of the material itself.

8. A box formed from a blank, said box having side portions and a bottom portion, a tab attached to one of said side portions and glued for maintaining said box in assembled position, and a plurality of cuts on said tab for permitting the glue to penetrate the same.

9. A folded box having a glued end and an open top, a plurality of tabs on said top bent back upon themselves and glued, said tabs having slots cut therein to permit the glue to make an intimate contact therewith.

10. A folded box having a glued end and an open top, a plurality of tabs on said top bent back upon themselves and glued, said tabs having slots cut therein to permit the glue to make an intimate contact therewith, and a strengthening member attached to one of said sides beneath said tabs.

11. A folded box having a glued end and an open top, a tab on said top bent back upon itself and glued, said tab having slots to permit the glue to make an intimate contact therewith, and a strengthening member attached to one of said sides beneath said tab, said member being of substantially the same thickness as said tab.

12. A box having a glued end and an open end formed from a blank having a finished surface, said box being provided with a glued

side tab and a plurality of cuts on said glued tab for permitting said glue to enter said material beneath said finished surface.

13. A box having a glued end and an open end, formed from a blank having a finished surface, said box being provided with a glued side tab, and a plurality of cuts on said glued tab and in said glued end portion for permitting glue to enter said material beneath said finished surface.

14. A folded box having a plurality of side portions, a plurality of tabs attached thereto and adapted to form the bottom of a box, a tab attached to one of said side portions and glued for maintaining the box in assembled position, tabs attached to said side portions opposite to said bottom tabs and bent back upon themselves, one side of said blank being provided with a varnished surface, glued tabs being provided with a plurality of slots cut through said varnished surface for permitting the glue to enter the interior of the material itself.

15. A box formed from a blank having a varnished surface and an un-varnished surface, said box having a plurality of side portions, a tab attached to one of said side portions and glued to an adjacent portion, tabs attached to said side portion for forming the bottom of said box, one of said bottom tabs being glued, a plurality of in-folded tabs around the sides opposite said bottom portion, said in-folded tabs being glued to the inner side of said box, each of said glued tabs having a plurality of cuts therein for permitting the glue to enter the material itself beneath said varnished surface, and a strengthening member attached to the inner surface of one of said sides beneath said in-folded tab, said member being of substantially the same thickness as said tab.

In testimony whereof I have hereunto set my hand.

CHAMPE S. ANDREWS.