Oct. 22, 1935. L. A. BECKER 2,018,621

METHOD OF FORMING CONTAINERS

Filed June 4, 1934 6 Sheets-Sheet 1

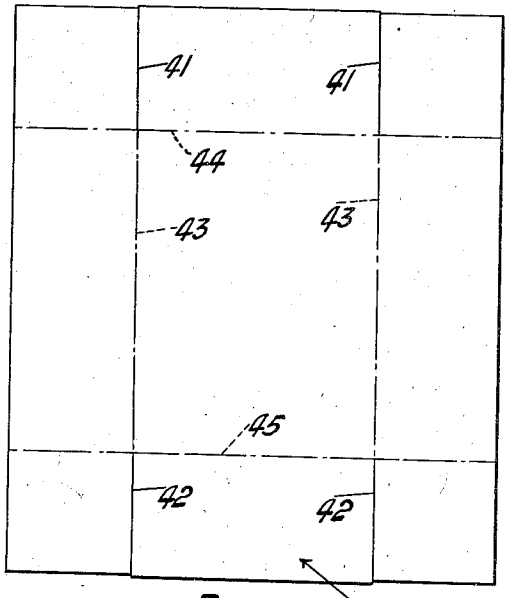


FIG.-1

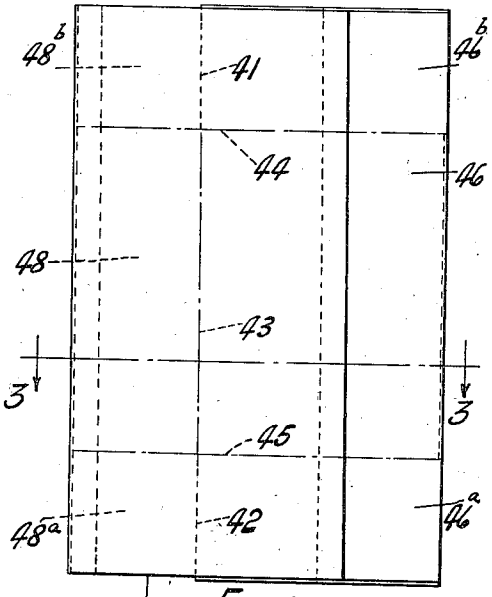


FIG.-2

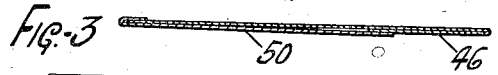


FIG.-3

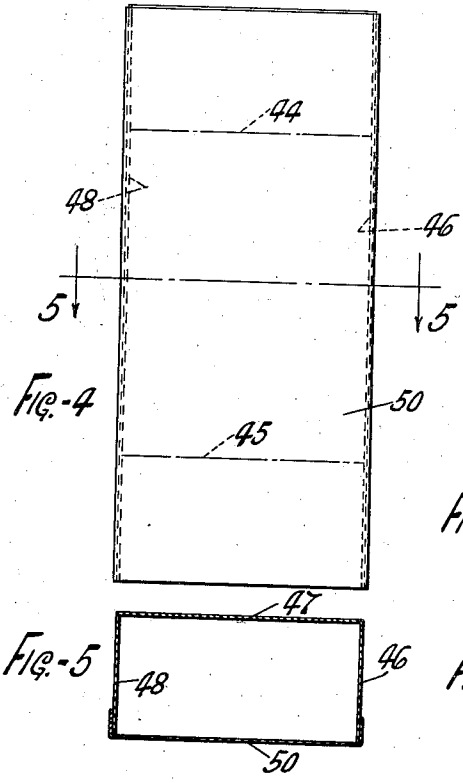


FIG.-4

FIG.-5

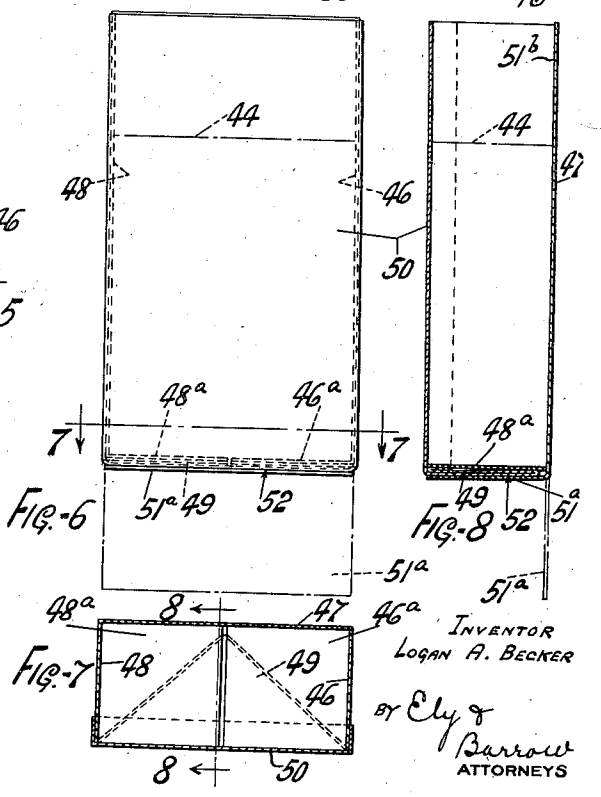


FIG.-6

FIG.-8

FIG.-7

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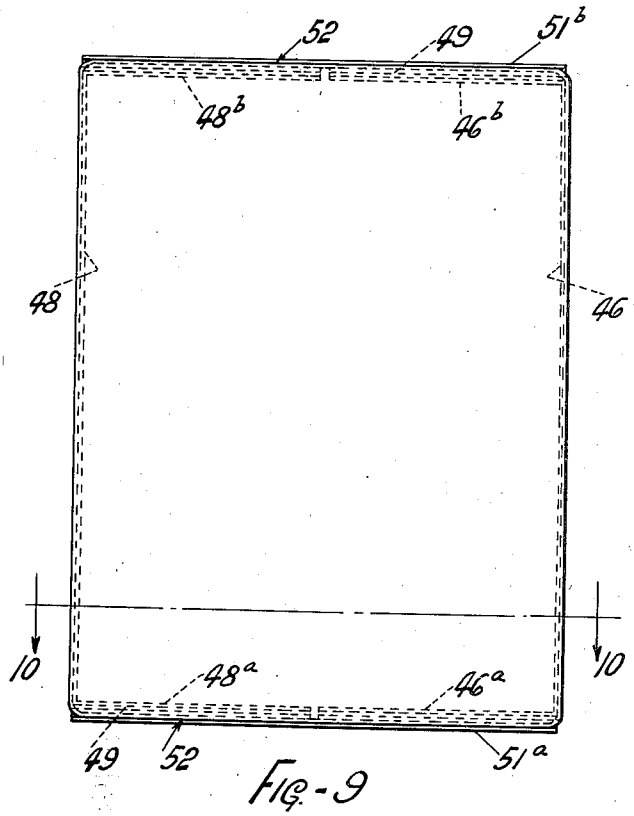


FIG. - 9

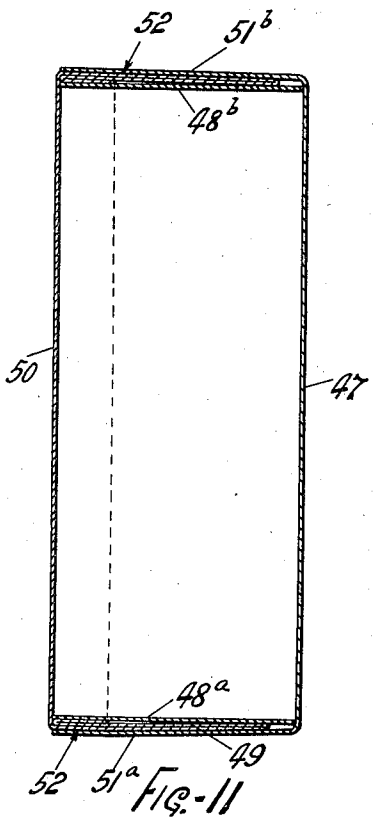
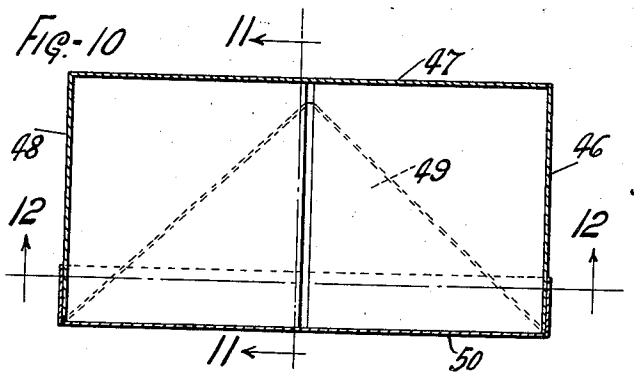


FIG. - 11

FIG. - 10



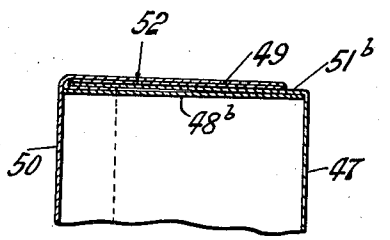


FIG. - 13

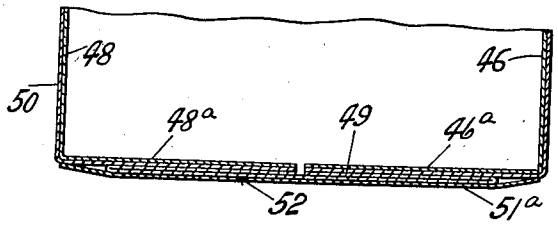


FIG. - 12

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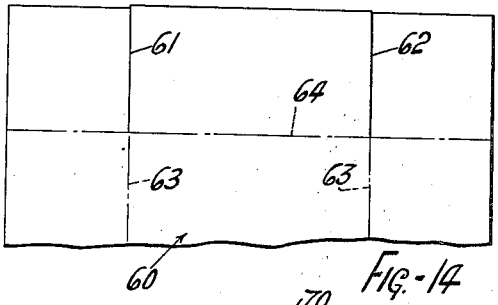


FIG.-14

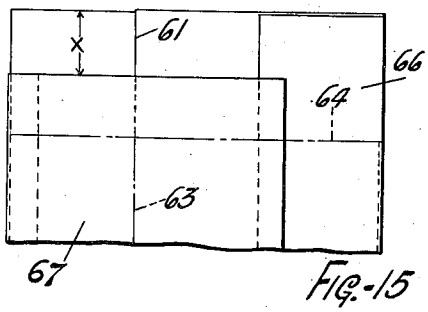


FIG.-15

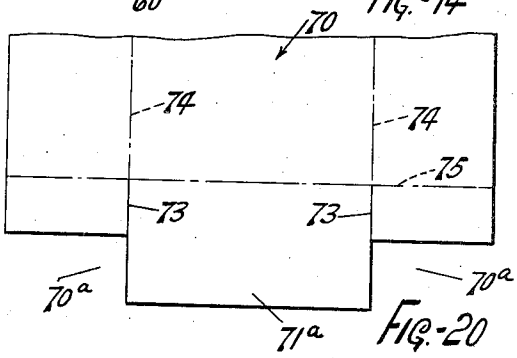


FIG.-20

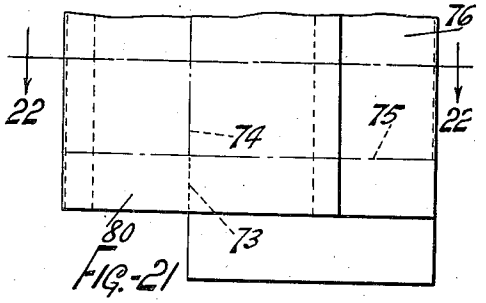


FIG.-21



FIG.-22

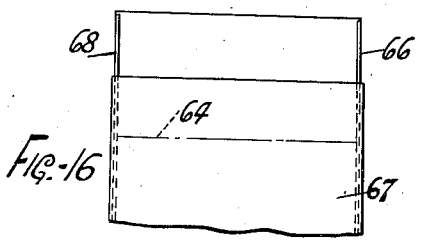


FIG.-16

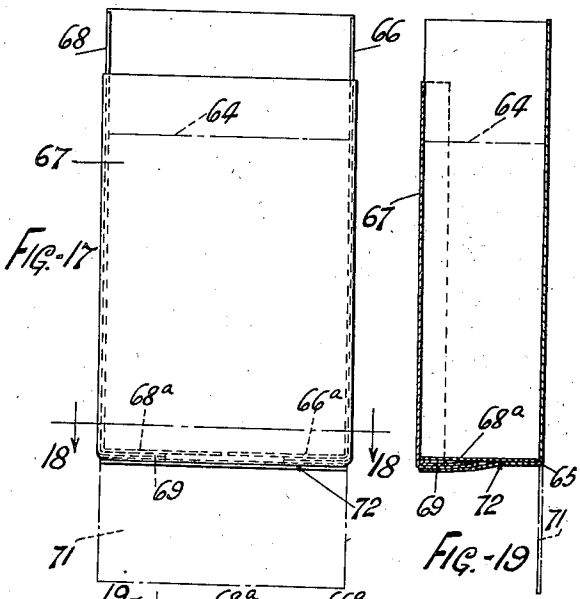


FIG.-17

FIG.-19

FIG.-18

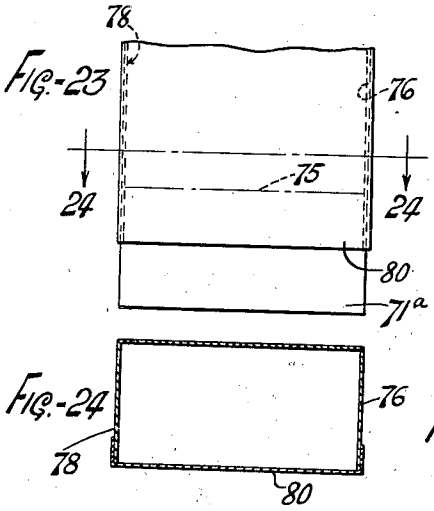


FIG.-23

FIG.-24

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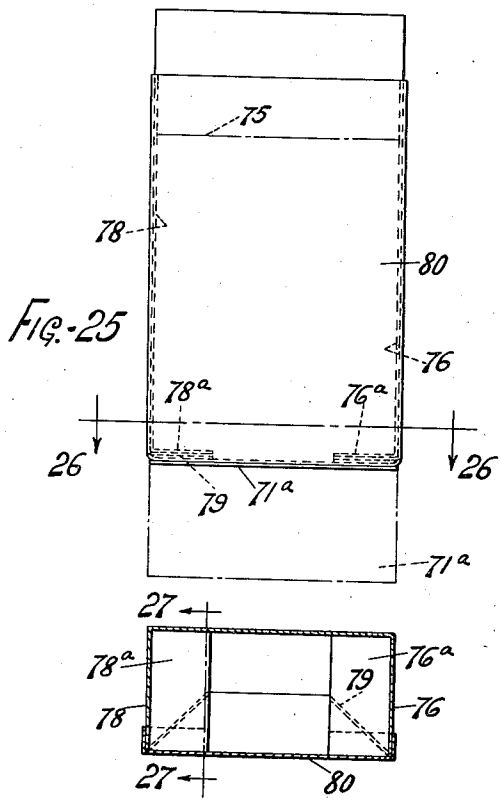


FIG.-25

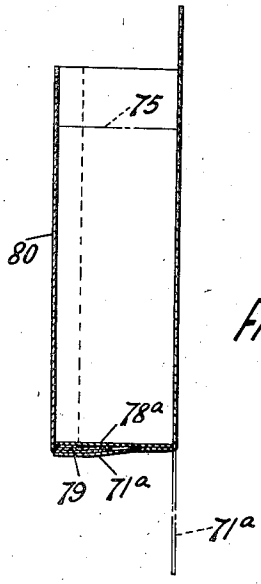


FIG.-27

FIG.-26

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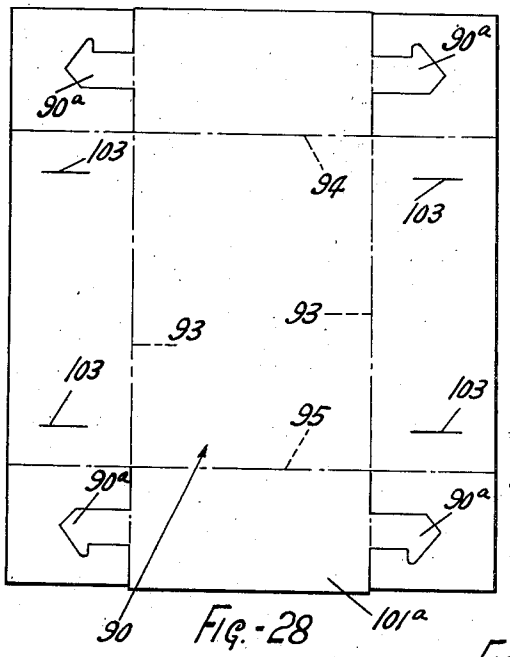


FIG.-28

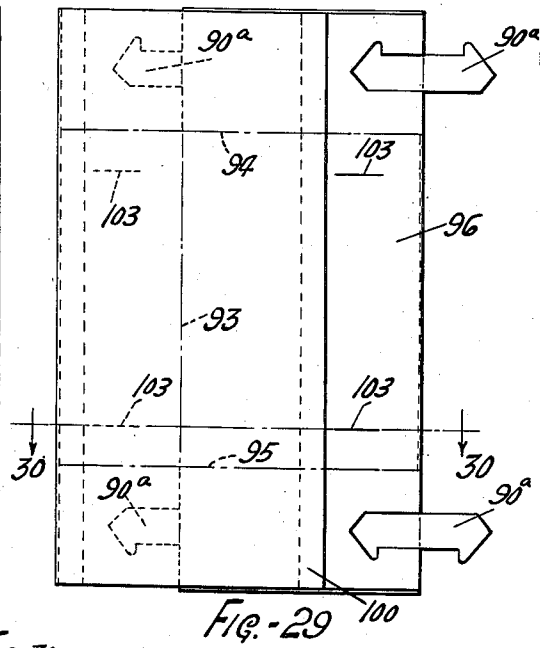


FIG.-29

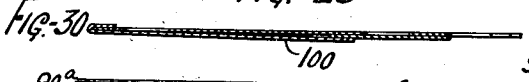


FIG.-30

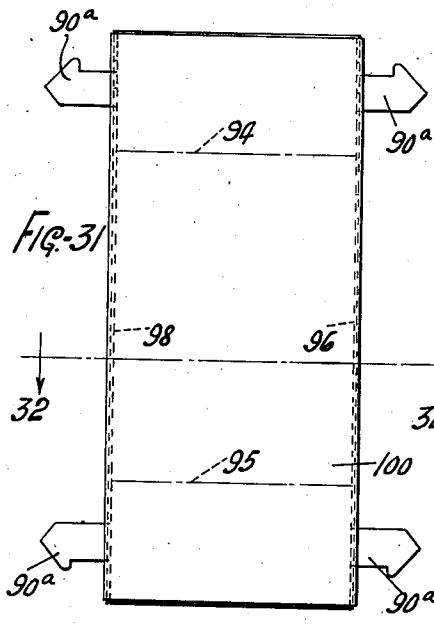


FIG.-31

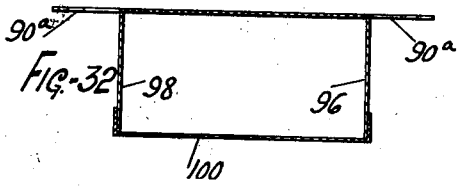


FIG.-32

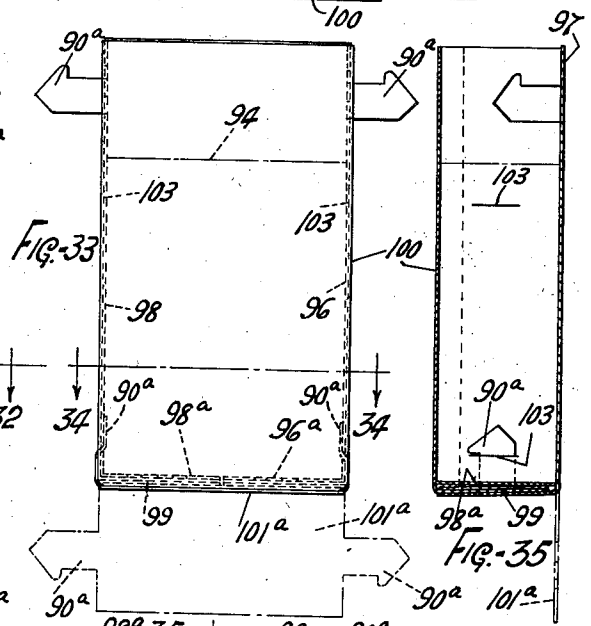


FIG.-33

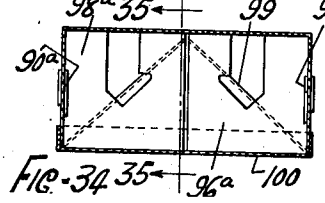


FIG.-34

FIG.-35

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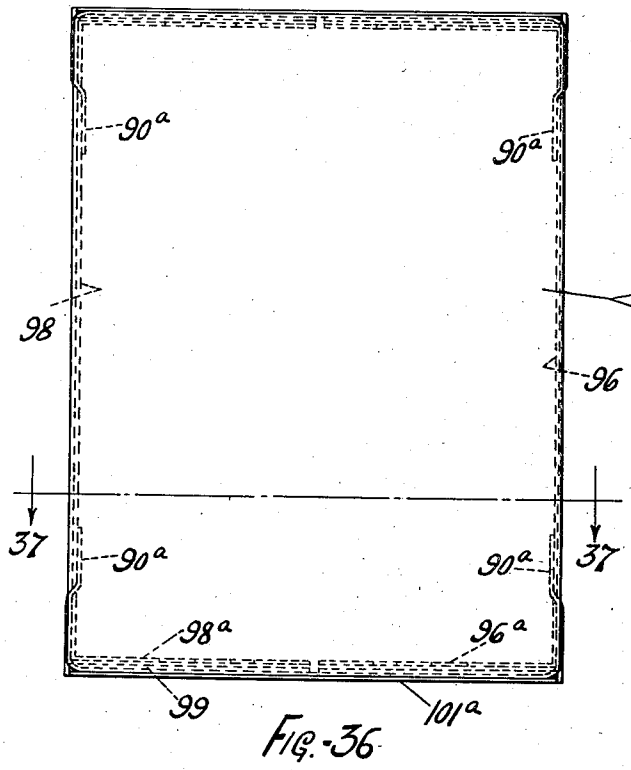


FIG. 36

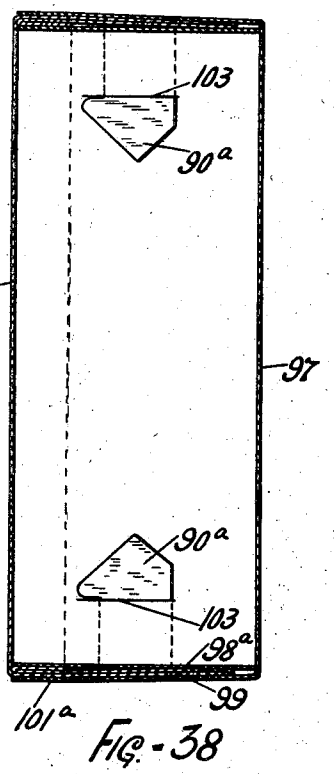


FIG. 38

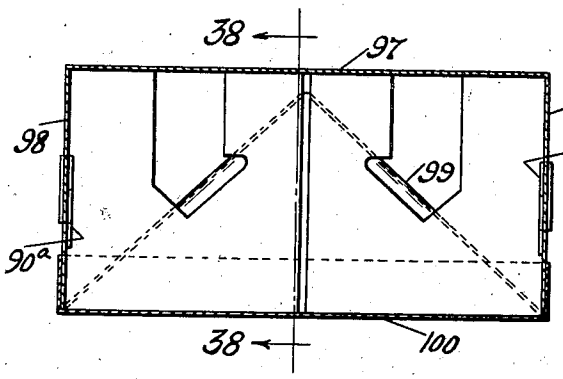


FIG. 37

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BY

Ely & Barrow

ATTORNEYS

Patented Oct. 22, 1935

2,018,621

UNITED STATES PATENT OFFICE

2,018,621

METHOD OF FORMING CONTAINERS

Logan A. Becker, Lakewood, Ohio, assignor to The Dobeckmun Company, Cleveland, Ohio, a corporation of Ohio

Application June 4, 1934, Serial No. 728,903

11 Claims. (Cl. 93—36)

This invention relates to a new and novel method of forming containers for displaying food, merchandise and the like.

More particularly, this invention relates to the method of forming display containers, formed principally of relatively stiff material, such as cardboard or the like, constituting the body portion of the container, and having one side formed of a relatively thin transparent sheet material, such as glassine, regenerated cellulose sheeting or similar transparent sheet material, and the like.

One of the serious handicaps in using a sheet of this type in a container is that it is quite responsive to temperature changes, this characteristic frequently causing the stripping or breaking of the sheet away from the container. For this reason the so-called "window container", having a relatively small transparent sheet incorporated therein, has been found to be unsatisfactory.

An object of this invention is to provide a simple and inexpensive method of incorporating a sheet of relatively thin transparent material in a container, in such a manner that the container may be formed on standard container manufacturing machines, shipped in a flattened condition, and filled either by hand or machine.

Another object is to provide means for incorporating a sheet of transparent material in a container for display purposes, said sheet being secured to the container in such a manner that it will not strip away from the container in response to temperature changes.

Another object is to provide a strong, durable and moisture-proof container, which is especially adapted for packaging and displaying nuts, fruits, foodstuffs and the like.

Other objects and advantages of this invention will be apparent during the course of the following description.

In the drawings forming a part of this specification,

Fig. 1 is a plan view of a blank from which the preferred form of my container is formed, showing the first step in the method;

Fig. 2 is a view similar to Fig. 1 showing the second step of the method with a sheet of transparent material attached;

Fig. 3 is a section taken on the line 3—3 of Fig. 2;

Fig. 4 is a front elevation view with the sides folded outwardly, showing the third step in the method;

Fig. 5 is a section taken on the line 5—5 of Fig. 4;

Fig. 6 is a front elevation view showing the fourth step with the container ready for filling;

Fig. 7 is a section taken on the line 7—7 of Fig. 6;

Fig. 8 is a section taken on the line 8—8 of Fig. 7;

Fig. 9 is a front elevational view of the preferred form of a completed container;

Fig. 10 is a section taken on the line 10—10 of Fig. 9;

Fig. 11 is a section taken on the line 11—11 of Fig. 10;

Fig. 12 is a section taken on the line 12—12 of Fig. 10;

Fig. 13 is a broken longitudinal end section view of a slightly modified form of container with the flap of transparent sheeting on top;

Fig. 14 is a plan view showing one end of a blank from which a first modified form of my invention is made;

Fig. 15 is a view similar to Fig. 14 showing the second step of the method with a sheet attached;

Fig. 16 is a front elevation view of one end, with the sides folded outwardly showing the third step on the method;

Fig. 17 is a front elevation view showing the fourth step with the container ready for filling;

Fig. 18 is a section taken on the line 18—18 of Fig. 17;

Fig. 19 is a section taken on the line 19—19 of Fig. 18;

Fig. 20 is a plan view of a blank similar to Fig. 14 showing the first step in the forming of a second modified form of my invention;

Fig. 21 shows the second step in the method with a transparent sheet attached.

Fig. 22 is a section taken on the line 22—22 of Fig. 21;

Fig. 23 is a front elevational view showing the third step in the method;

Fig. 24 is a section on the line 24—24 of Fig. 23;

Fig. 25 is a front elevational view of a container formed by the second modified method of my invention showing the container ready for filling;

Fig. 26 is a section taken on the line 26—26 of Fig. 25;

Fig. 27 is a section taken on the line 27—27 of Fig. 26;

Fig. 28 is a plan view of a blank from which a third modified form of my invention is formed by using tabs;

Fig. 29 is a view similar to Fig. 28, showing the second step in the method, with a transparent sheet attached;

Fig. 30 is a section taken on the line 30—30 of Fig. 29;

Fig. 31 is a front elevation view with the sides folded outwardly showing the third step in the method;

Fig. 32 is a section taken on the line 32—32 of Fig. 31;

Fig. 33 is a front elevational view of a container formed by the third modified method showing the container ready for filling;

Fig. 34 is a section taken on the line 34—34 of Fig. 33;

Fig. 35 is a section taken on the line 35—35 of Fig. 34;

Fig. 36 is a front elevational view of a completed container formed by the third preferred method;

Fig. 37 is a section taken on the line 37—37 of Fig. 36; while

Fig. 38 is a section taken on the line 38—38 of Fig. 37.

The containers shown herein form the subject matter of a copending application Serial No. 728,902, filed by me on June 4, 1934.

The preferred method of forming containers is shown in Figures 1 through 12. Fig. 1 illustrates the blank from which the body of the container is formed, the blank indicated by the numeral 40 being formed of cardboard, which is of sufficient thickness to form a strong and durable container, and is easily folded. It is contemplated that the blank 40 may be moistureproofed by any suitable method, such as by laminating it with moistureproof sheeting, or otherwise. The blank 40 is provided with longitudinal slits 41 at the top, and similar slits 42 at the bottom, while the blank is scored longitudinally at 43 with scorings connecting the ends of the slits 41 and 42. Transverse scorings 44 are provided at the top of the blank 40, and similar scorings 45 are provided at the bottom of the blank.

One side of the blank 40 is then folded over on itself along the scoring 43 and the slits 41 and 42, forming a side 46, and a rectangular transparent sheet 50, which is the same length as the blank 40 and is slightly wider than the back 47, is placed over the blank, and is adhesively secured to the blank 40 along the longitudinal edges of the side 46, and along the opposite edge of the blank 40, as clearly shown in Figs. 2 and 3. It is contemplated that the container may be shipped in this flattened form by the container manufacturer.

The opposite side of the blank 40 is then folded at right angles to the blank 40, along the scorings 43 and the slits 41 and 42, forming the side 48, and at the same time the side 46 is similarly folded outwardly providing the form shown in Figs. 4 and 5. The bottom end of the container is then formed, as shown in Figs. 6, 7 and 8, by folding inwardly the lower ends of the sides 46 and 48 along the scorings 45, flaps 46a and 48a, and the lower end of the sheet 50 is folded over the end flaps 46a and 48a, forming a triangularly shaped fold 49. The lower end of the blank 40, constituting an end flap 51a, is provided with a suitable adhesive 52 and is folded along the scorings 45, over the end flaps 46a and 48a and the fold 49. The adhesive 52 holds the end flaps and the fold 49 securely in place. The container is then in condition to be filled having the bottom end closed and the top end open. The filling operation may be accomplished either by hand or machine.

By having the sheet 50 secured to the outer surfaces of the sides 46 and 48 and extending over the edges thereof, the stripping of the sheet from the cardboard is prevented and the flexibility of the cardboard permits the transparent sheet to expand and contract in response to temperature changes.

The top of the container is then similarly folded and secured, forming top end flaps 46b, 48b and 51b and producing the finished container shown in Figs. 9 through 12.

Fig. 13 discloses a slight modification in the manner of folding the ends. In this form the end flaps are formed and folded in a manner similar to that disclosed in Figs. 1 through 12, with the exception that the fold 49 is folded over the outside of the end flap 51b instead of being folded under, and an adhesive 52 is placed on its outer surface.

A first modified method of forming my container is shown in Figs. 14 through 19. The blank 60 is similar to the blank 40 of the preferred form. Only the top end of the blank 60 is shown, as it is obvious from a study of the preceding figures, that the blank 60 can be similarly formed at the bottom end. Longitudinal slits 61 and 62 are in registry with longitudinal scorings 63, while a transverse scoring 64, at the intersection of the slits 61 and the scorings 63, is also provided.

It is obvious that the transverse ends of the transparent sheet may terminate at any point between the transverse scorings and the ends of the blank.

As in the preferred method, one side 66 is formed by folding one side of the blank 60 over on itself, and a transparent sheet 67 is placed over the blank 60 and is adhesively secured to the blank 60, along the longitudinal edges of the side 66 and the opposite edge of the blank. The sheet 67 in this form of the invention, is of the same width as that in the preceding form, but is shorter in length, as it does not extend to the end of the blank 60, but terminates the distance below the end of the blank indicated at X. This results in the saving of a substantial amount of transparent sheeting while producing a container having the advantages of the preceding form.

After the sheet 67 is thus secured to the blank 60, the opposite side is then folded at right angles to the blank along the scorings 63 and slit 61 forming the side 68, and at the same time the side 66 is similarly folded outwardly, providing the form shown in Fig. 16. The bottom of the container is then formed by folding inwardly the lower ends of the sides 66 and 68 along transverse scorings, forming flaps 66a and 68a, and the lower end of the sheet 67 is folded over the flaps 66a and 68a, forming a fold 69. The lower end of the blank 60, constituting an end flap 71, is provided with a suitable adhesive 72, and is folded along the scoring 65 over the end flaps 66a and 68a and the fold 69. The container is now ready to be filled, as hereinbefore indicated. After the filling operation is completed, the top end may be similarly folded and secured.

A still further modified method of forming my container is shown in Figs. 20 through 27. In this method, the blank 70 at the corners is cut out as indicated at 70a. The blank 70 is provided with longitudinal slits 73 at the bottom and similar slits at the top, while the blank is scored longitudinally at 74 and transversely at 75.

As in the preceding forms of the invention disclosed, one side of the blank 70 is folded over on itself along the scoring 73, forming a side 76, and a sheet of transparent material 80, which is the same length as the cut-off sides of the blank 70, is placed over the blank 70 and is adhesively secured to the longitudinal edge of the side 76, and along the opposite longitudinal edge of the blank 70, as shown in Fig. 21.

The opposite side of the blank 70 is then folded at right angles to the blank along the longitudinal scoring 74 and the slits 73 forming the side 78, and at the same time, the side 76 is similarly folded outwardly providing the form shown in Figs. 23 and 24. The bottom of the container is then formed by folding inwardly the lower ends of the sides 76 and 78 along the scoring 75, forming the bottom end flaps 76a and 78a, and the lower end of the sheet is folded over the end flaps 76a and 78a forming a fold 79. The lower end of the blank constituting an end flap 71a is folded along the scoring 75 over the end flaps 76a and 78a and the fold 79. Adhesive is placed on the part of the end flap 71a which is in contact with the end flaps when it is folded over. The container is then in the form shown in Figs. 25, 26 and 27 in which the top is open for filling. The top of the container may be similarly folded and secured.

A third modified method of forming my container is shown in Figs. 28 through 38. In this method tabs are employed in place of adhesive to secure the end flaps to the container.

The blank 90 is cut to form tabs 90a, the blank being provided with longitudinal scoring 93, transverse scoring at the bottom 95 and transverse scoring at the top 94. Transverse slits 103 are adapted to receive the tabs 90a when the container is folded. One side of the blank 90 is then folded over on itself along the scoring 93 forming a side 96, and a transparent sheet 100, which is the same length as the blank 90 and slightly wider than the back 97, is placed over the blank and is adhesively secured thereto, along the edge of the side 96 and the opposite edge as shown in Fig. 29.

The opposite side of the blank 90 is then folded at right angles to the blank along the scoring 93, forming the side 98, and at the same time the side 96 is similarly folded outwardly providing the form shown in Figs. 31 and 32. The bottom of the container is then formed by folding inwardly the lower ends of the sides 96 and 98 along the scoring 95, forming flaps 96a and 98a, and the lower end of the sheet 100 is folded over the flaps 96a and 98a forming a triangularly shaped fold 99, and the lower end of the blank 90, constituting an end flap 101a, is folded along the scoring 95 over the end flaps 96a and 98a and the fold 99. The tabs 90a extending from the sides of the flap 101a are inserted in the transverse slits 103 in the sides 96 and 98.

The container is now in condition to be filled with the bottom closed and the top open, as shown in Figs. 33, 34 and 35. After the container is filled, the top of the container is formed and secured in a similar manner, producing the container shown in Figs. 36, 37 and 38.

From the foregoing it will be apparent that my invention may be conveniently used in various containers, packages and the like, and that my invention at least accomplishes the objects herein set forth.

It, therefore, will be understood that my invention may be variously changed, used or modified, without departing from the spirit of the invention or sacrificing the advantages thereof, and that the various embodiments of the invention herein disclosed are illustrative only, and that my invention is not limited thereto.

What is claimed is:

1. The method of forming a container, comprising folding one side of a blank of relatively stiff material over on itself, placing a sheet of transparent material over the blank and securing it to the folded side and the opposite edge of the blank, then folding outwardly the folded over side and a part of the blank at the opposite side to form another side, and interfolding and securing the ends of the sides and the transparent material to form the ends of the container.

2. The method of forming a container, comprising providing longitudinal scorings with registering slits at the ends thereof and transverse scorings in a blank of relatively stiff material, folding one side over on the blank along a longitudinal scoring, placing a sheet of transparent material over the blank and securing it to the folded over side and the opposite side of the blank, then folding outwardly the sides along the longitudinal scorings to form sides of the container, thus permitting the transparent material to form one side, and then interfolding the ends of the blank and transparent material along the transverse scorings to form ends of the container and securing them.

3. The method of forming a container, comprising providing longitudinal scorings with registering slits at the ends thereof and transverse scorings in a blank of relatively stiff material, folding one side over on the blank along a longitudinal scoring, placing a sheet of transparent material over the blank and securing it to the folded over side and the opposite side of the blank, then folding outwardly the sides along the longitudinal scorings to form sides of the container thus permitting the transparent material to form one side, and then folding inwardly the sides to which the transparent material is secured along transverse scorings and folding thereover the end of the transparent material forming a fold, and then folding thereover the end of the other side along a transverse scoring and adhesively securing it over the other folds to form ends of the container.

4. The method of forming a container, comprising providing longitudinal scorings with registering slits at the ends thereof and transverse scorings in a blank of relatively stiff material, folding one side over on the blank along a longitudinal scoring, placing a sheet of transparent material over the blank and securing it to the folded over side and the opposite side of the blank, then folding outwardly the sides along the longitudinal scorings to form sides of the container thus permitting the transparent material to form one side, and then folding inwardly the sides to which the transparent material is secured along transverse scorings, then folding thereover the end of the other side along a transverse scoring, and folding thereover the end of the transparent material forming a fold which is adhesively secured thereto, to form ends of the container.

5. The method of forming a container, comprising providing longitudinal scorings with registering slits at the ends thereof and transverse scorings in a blank of relatively stiff material, folding one side over on the blank along a longitudinal scoring, placing a sheet of transparent material which is shorter in longitudinal extent

than the length of the blank over the blank and securing it to the folded over side and the opposite side of the blank, then folding outwardly the sides along the longitudinal scorings to form sides of the container thus permitting the transparent material to form one side, and then interfolding the ends of the blank and transparent material along the transverse scorings to form ends of the container and securing them.

6. The method of forming a container, comprising providing longitudinal scorings with registering slits at the ends thereof and transverse scorings in a blank of relatively stiff material, the blank having cut-out portions at the corners thereof formed by cutting the blank transversely from the slits outwardly between the ends of the blank and the transverse scorings, folding one side over on the blank along a longitudinal scoring, placing a sheet of transparent material which extends to the severed portions of the blank over the blank and securing it to the folded over side and the opposite side of the blank, then folding outwardly the sides along the longitudinal scorings to form sides of the container thus permitting the transparent material to form one side, and then interfolding the ends of the blank and transparent material along the transverse scorings to form ends of the container, and securing them.

7. The method of forming a container, comprising folding one side of a blank of relatively stiff material over on itself, placing a sheet of transparent material over the blank and securing it to the outer surface of the folded-over side and folding it over the opposite edge and securing it to the opposite side of the blank, then folding outwardly the folded-over side and a part of the blank at the opposite side to form another side, and interfolding and securing the ends of the sides and the transparent material to form the ends of the container.

8. The method of forming a container, comprising folding one side of a blank of relatively stiff material over on itself, placing a sheet of transparent material over the blank and securing it to the folded over side and the opposite edge of the blank, then folding outwardly the folded over side and a part of the blank at the opposite side to form another side, and interfolding the ends of the sides and the transparent material to form the ends of the container and interlocking the ends and sides by means of cooperating tabs and slits.

9. The method of preparing a blank in a flattened condition from which a container may be formed, comprising folding one side of a blank of relatively stiff material over on itself, placing a sheet of transparent material over the blank and securing it to the outside of the folded-over side and placing it over the opposite edge of the blank and securing it to the opposite side of the blank.

10. The method of preparing a blank in a flattened condition from which a container may be formed, comprising providing longitudinal scorings in a blank of relatively stiff material, folding over one side of the blank on a longitudinal scoring to form a side of the container, placing a sheet of transparent material over the blank and securing it to the outside of the folded-over side and placing it over the opposite edge of the blank and securing it to the opposite side of the blank.

11. The method of preparing a blank in a flattened condition from which a container may be formed, comprising providing longitudinal scorings with registering slits at the ends thereof, and transverse scorings at the intersection of the scorings and ends of the slits in a blank of relatively stiff material, folding over one side of the blank on a longitudinal scoring to form a side of the container, placing a sheet of transparent material over the blank and securing it to the folded-over side and placing it over the opposite edge of the blank and securing it to the opposite side of the blank.

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