

March 4, 1947.

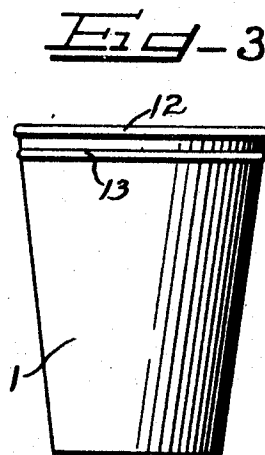
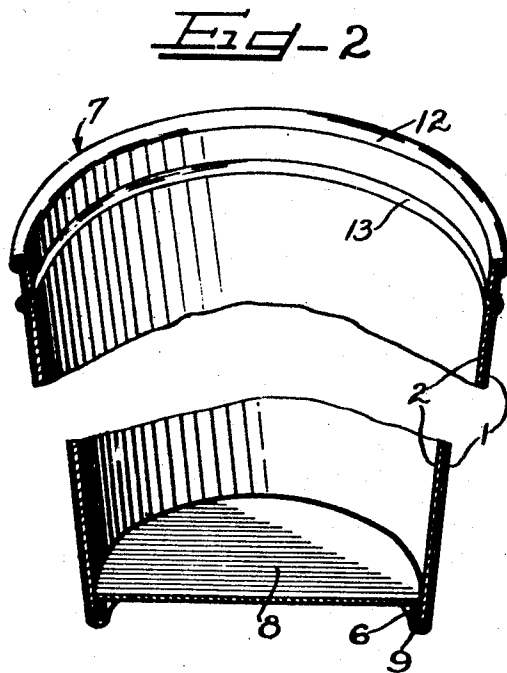
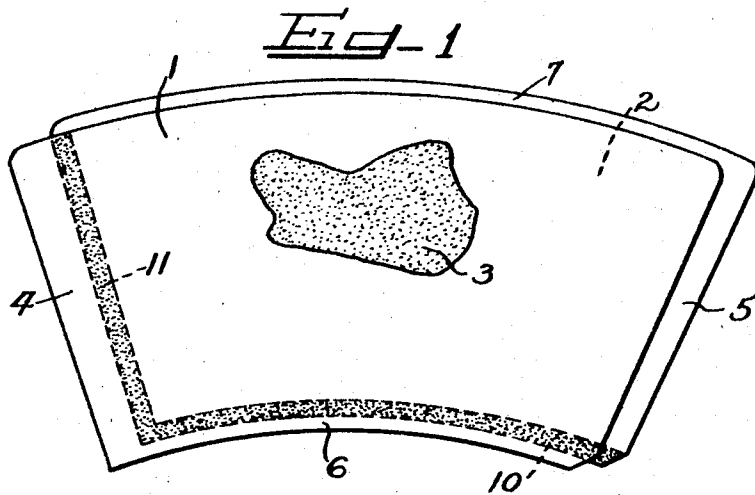
C. BARBIERI

2,416,813

CONTAINER

Original Filed May 5, 1941

2 Sheets-Sheet 1



INVENTOR
Cesare Barbieri

By *Charles A. Hill* Attys

March 4, 1947.

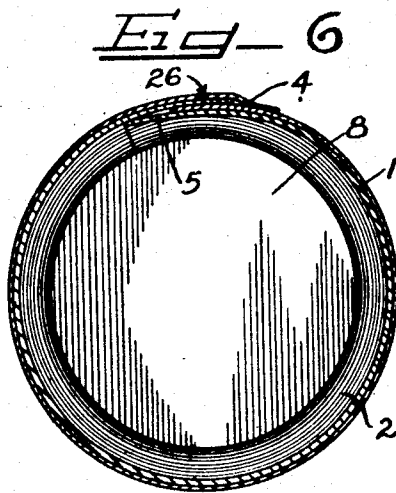
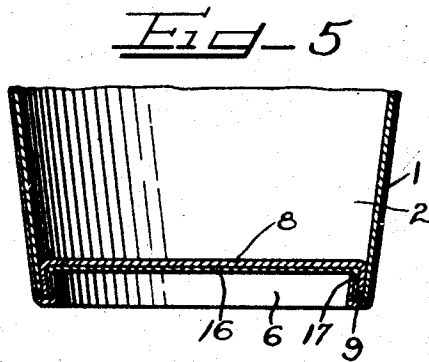
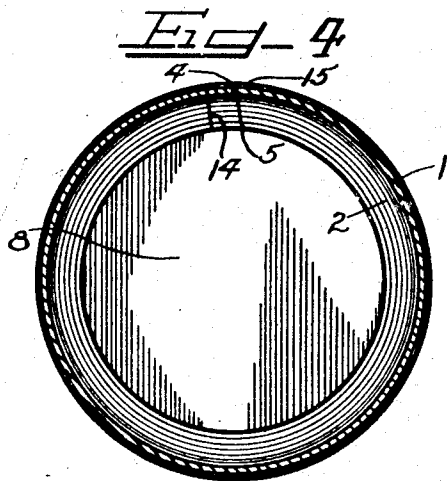
C. BARBIERI

2,416,813

CONTAINER

Original Filed May 5, 1941

2 Sheets-Sheet 2



INVENTOR
Cesare Barbieri

By *Quaranta* Attys

UNITED STATES PATENT OFFICE

2,416,813

CONTAINER

Cesare Barbieri, New York, N. Y., assignor to
Dixie Cup Company, Chicago, Ill., a corporation
of Delaware

Original application May 5, 1941, Serial No.
391,859. Divided and this application March 17,
1944, Serial No. 526,874

2 Claims. (Cl. 229—21)

1

This invention relates to improvements in containers which are of the general character of flat bottomed paper drinking cups, the invention being highly desirable for use in connection with the serving or carrying of hot or cold liquids or substances, such for example as coffee, ice cream, cottage cheese, etc., and being capable of carrying such substances for a considerable length of time without any material weakening of the container, although the invention will have other uses and purposes as will be apparent to one skilled in the art.

This application is a division of my co-pending application entitled "Container," filed May 5, 1941, Serial No. 391,859.

More particularly, the invention relates to a container having a multi-thickness wall to strengthen the container so as to enable the carrying of hot or cold substances for a comparatively long time without material weakening of the container and without objectionable change in the temperature of the substance carried.

I am aware that in the past many and various types of multi-walled paper containers of the general shape of a truncated cone have been provided, some of which were made from a single blank of sufficient length to provide several wraps in the finished container wall, and others from a plurality of blanks glued or otherwise adhesively secured together. However, such containers heretofore known were not capable of being manufactured on known machines for forming single-walled containers of the same character. Further, such formerly known containers required the use of an objectionable amount of stock, not only embodied in the actual blanks from which the container bodies are formed, but also in the wastage of stock occurring when a blank is severed from a stock strip or sheet. In the manufacture of articles of the character of this invention, economy is an essential, and any saving in the amount of material used is a highly important item.

With the foregoing in mind, it is an important object of the present invention to provide a container in the nature of a truncated conical paper drinking cup, having a multi-thickness wall and which may be manufactured upon known automatic cup-forming machines, designed for forming a similarly shaped container with but a single thickness wall, or which may be produced on such machines after a very slight and substantially negligible adjustment.

Another object of the invention is the provision of a multi-walled container embodying

2

less stock in the container body than heretofore used in the manufacture of a container of corresponding size.

Still another object of the invention is the provision of a paper container having a multi-thickness body wall which is made from a plurality of initially separate blanks joined into a single composite blank, each of the initially separate blanks being of an insufficient size to produce the body of a single-walled container of corresponding capacity as the resultant multi-walled container.

Another feature of the invention is the provision of a paper container having a multi-thickness wall and made from a composite blank of initially separate pieces of stock, wherein the initially separate pieces may be of different materials, different colors, and certain of which may be treated or decorated as desired, the resultant composite blank being used as a single blank in the formation of the container body.

A further feature of the invention resides in the provision of a paper container having a multi-thickness wall, the body portion of such container being formed from a composite blank made up of initially separate pieces, each of said pieces being undersized in that it is not of sufficient size to produce a single walled container of corresponding capacity to that made from the composite blank.

A further object of the instant invention resides in the provision of a paper container having a multi-thickness wall, which container is made from a composite blank comprising a plurality of initially separate undersized pieces secured together in echelon.

A still further object of the invention is the provision of a paper container having a multi-thickness wall, the body portion of said container being made from a composite blank wrapped into the proper shape with overlapping marginal portions in such a manner that the resultant container wall is of even thickness throughout, including the seam formed by the overlapping portions.

While some of the more salient features, characteristics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawings, in which:

Figure 1 is a plan view of a composite container blank, embodying principles of this invention, and illustrated with parts broken away;

Figure 2 is a fragmentary projectional view

shown in vertical section of a container embodying principles of this invention and of which the body portion is formed of the composite blank shown in Figure 1;

Figure 3 is a reduced side elevational view of the container of Figure 2;

Figure 4 is a plan sectional view through a container embodying principles of this invention, and of which the body portion is shown as butt-seamed and may be made from the composite blank of Figure 1;

Figure 5 is a fragmentary vertical sectional view illustrating the use of a double bottom in a container made in accordance with the principles of the instant invention;

Figure 6 is a plan sectional view of a container made in accordance with the instant invention and which may be made from the composite blank of Figure 1.

As shown on the drawings:

In the first illustrated embodiment of this invention, seen in Figures 1, 2 and 3, there is shown a composite body blank (Figure 1) which is made up of a pair of initially separate pieces 1 and 2 secured together substantially in echelon arrangement by adhesive 3 or the equivalent. In the preferred form of arrangement, each of the initially separate pieces, 1 and 2, are undersized; that is, one of these pieces is not sufficient to form a single thickness body portion for a cup of the same capacity as that formed by the composite blank. In so forming a single thickness body portion, there must be an overlap between the end margins of the blank which forms a seam in the cup wall. Arranging the blanks in echelon eliminates the need for such an overlap so each individual piece may be short an amount substantially equivalent to the width of the seam in a single thickness body portion.

The initially separate pieces 1 and 2, in this instance, are of substantially the same size and shape. As is evident from the showing in Figures 2 and 3 when a composite blank is rolled around a mandrel to form the cup or container, the piece 2 will be on the inside, and the piece 1 on the outside.

With the pieces 1 and 2 arranged in echelon, there will be an end margin 4 of the outer blank projecting beyond the inner blank at one end of the composite structure. Likewise, there will be an end margin 5 of the inner blank projecting beyond the outer blank. A marginal portion 6 of the outer blank projects below the inner blank, and a marginal portion 7 of the inner blank projects above the outer blank.

The complete cup includes not only the composite body blank, but also a downwardly flanged bottom member 8 (Figure 3), the integral circumscribing depending flange being indicated by numeral 9. In order to attach this bottom member to the composite body blank, a marginal stripe of adhesive 10 is provided along the lower edge of the inner face of the inner blank 2.

In order to hold the body portion of the cup in proper shape, the adhesive 3 on the inner face of the margin 4 may be utilized or a stripe or equivalent application of adhesive may be applied along the marginal portion near the adjacent end or side edge of the piece 2, depending upon what type of cup is to be formed. For example, if the pieces 1 and 2 are each undersized so that the composite blank will provide a butt-seamed container body as indicated in Figure 4, then the adhesive 3 along the inside face of the protruding margin 4 of the outer piece 1 will cause a

sealing engagement with the outer face of the protruding margin 5 on the inner piece 2 when the composite blank is wound into cup shape. On the other hand, if the initially separate pieces 1 and 2 are substantially full size and if it is desired to have a lap seam in the finished cup as indicated in Figure 6, then there would be a stripe of adhesive as indicated at 11 in Figure 1 along the inner face of the margin of the inner piece 2. The protruding margin 5 of the inner piece 2 is preferably left free of adhesive at all times so that this margin may be readily gripped by a forming mandrel during the forming operation.

In forming the composite blank of Figure 1 into the body portion of a cup or container, only one revolution of the composite blank is necessary. The blank is wound around the flange 9 of the bottom member 8 and the flange is secured to the lower margin of the inner piece 2 by virtue of the adhesive 10. After the winding of the composite blank, the protruding margin 6 of the outer piece 1 is turned inwardly around the flange of the bottom member as indicated in Figure 2, and if so desired this marginal portion 6 may also be adhesively engaged with the inner face of the flange 9 on the bottom member. The margin 7 of the inner piece 2 protruding at the top of the cup is turned outwardly over the upper edge of the outer piece 1 to form a rolled drinking rim 12.

During the forming operation, a hollow bead may be formed in the body wall of the cup a short distance below the rolled rim 12 to provide a cover receiving groove as indicated at 13. The wall of the resulting cup will be sloping inwardly toward the bottom, and it is a simple expedient to press a disk-shaped cover into the mouth of the cup until the cover seats in the groove 13.

It will be noted that during the forming operation, a composite blank is treated as though it were but a single blank. The cup may therefore be formed upon known cup making machinery previously used for forming a cup with a single thickness body, either with no or but a negligible adjustment of the mechanism.

With reference to Figure 4 it will be seen that when the cup is provided with a butt-seam, the end or side edges of the inner piece 2 just meet or abut each other as indicated at 14, and the corresponding edges of the outer piece 1 abut each other as indicated at 15. Thus, the entire body portion of the cup is of equal thickness throughout, notwithstanding the fact that there is a seam running lengthwise of the body portion.

With reference more particularly to Figures 2 and 4, it will be noted that I have indicated the initially separate blank pieces 1 and 2 as being of different thicknesses, to show that these pieces may be of different character if so desired, that is, they may be made of different thicknesses of the same stock, different thicknesses of different stock, and the outer piece may be of a different color than the inner piece, or the outer piece may be printed or decorated in a desired manner for a particular usage of the cup.

In the event of external coloring or decorating, it may, in some cases, be desirable to have an outside bottom member matching the outside ply of the container body. With this in mind, I have illustrated in Figure 5 the use of a second bottom member 16 having a depending circumscribing flange 17. The bottom member 16 is nested within the bottom member 8 and its flange 9, and the protruding margin 6 of the outer blank

5

piece 1 is turned inwardly around depending flanges of both bottom members.

In the event a lap seam as shown in Figure 6 is desired, then the composite blank as well as each initially separate piece embodied in it is preferably a trifle longer than would be necessary for a butt seam. For purposes of convenience I have illustrated the blank of Figure 1 providing the lapped seam of Figure 6, and it will be seen that when both marginal portions at each end of the composite blank are overlapped, a quadruple ply seam generally indicated by numeral 26 results.

From the foregoing, it is apparent that I have provided an invention embodying both a novel composite blank and a novel container made from such a composite blank, the container being exceedingly simple in construction, yet more than adequately rigid, durable, and balanced. Further, in the construction of the container, the composite blank is so designed as to affect a material saving in the stock and while a composite blank is made up of initially separate pieces, it may be handled in the forming operation as though it were but a single blank.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention, and it is, therefore, not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. A flat-bottom paper cup having a double-ply wall, including a flanged bottom member, and a body part comprising a composite blank made up of initially separate pieces arranged in eche-

6

lon, a protruding margin of one piece only being turned about the flange of the bottom member, and a protruding margin of the other piece only being shaped into a rolled rim around the mouth of the cup.

2. A paper cup having a multi-thickness wall and a rolled rim at the mouth end, including a bottom member having a depending flange, and a composite body blank made up of initially separate pieces each of which is smaller in size both as to length and width than required for a container of like shape and size with a single ply wall, said pieces being secured together in echelon to provide a composite blank of adequate size, a projecting margin on one of said pieces only being turned about the flange of said bottom member, and a projecting margin on one of said pieces only being rolled over the adjacent edge of the other piece to provide a rolled rim at the mouth of the cup.

CESARE BARBIERI.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
957,264	Sholl	May 10, 1910
1,741,809	Benson	Dec. 31, 1929
2,019,552	Watts	Nov. 5, 1935
1,731,780	Inman	Oct. 15, 1929
1,967,931	Fox	July 24, 1934
2,202,558	Kernehan	May 28, 1940
2,088,832	Barbieri	Aug. 3, 1937
2,094,387	Vasburgh	Sept. 28, 1937