Nov. 30, 1937. P. F. BOEYE 2,100,773

CONTAINER

Filed Oct. 28, 1935 2 Sheets-Sheet 1

Fig. 1

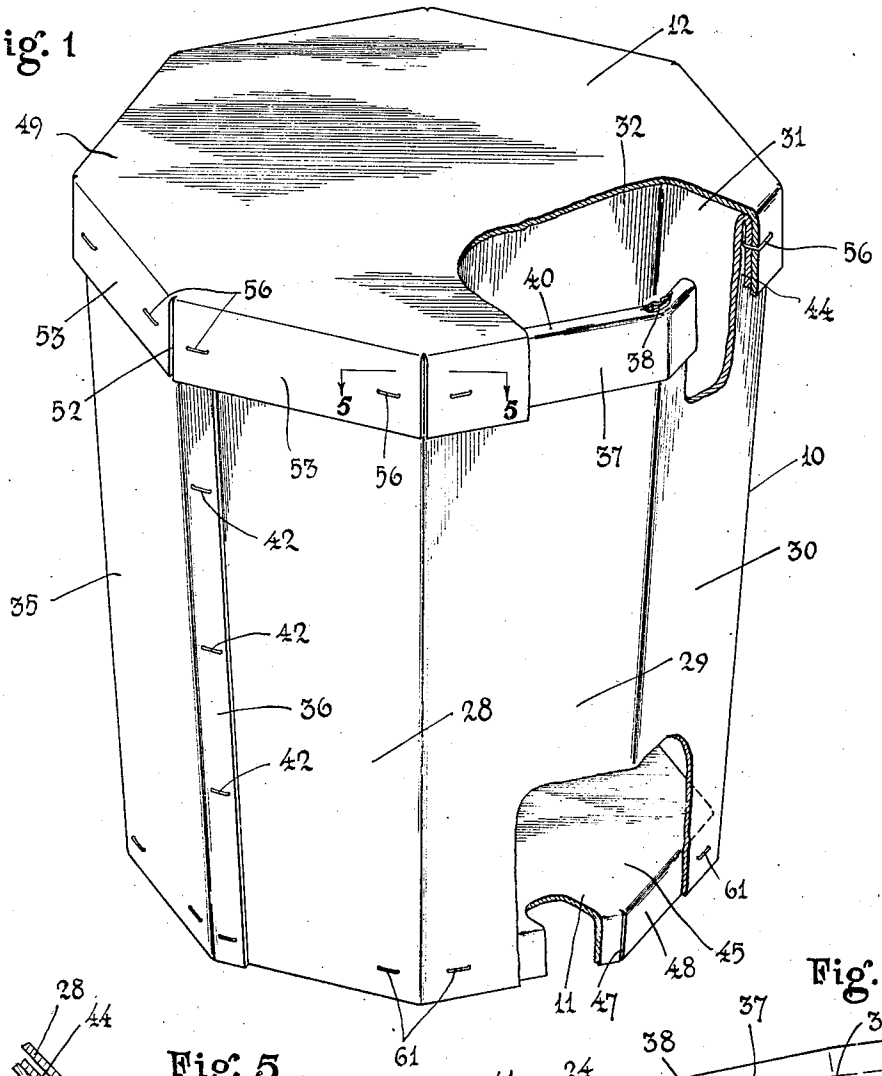
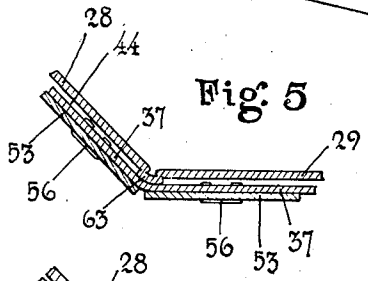


Fig. 5



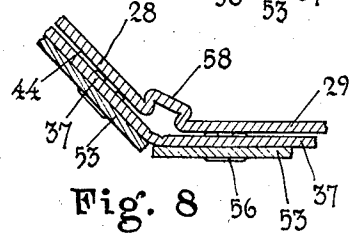
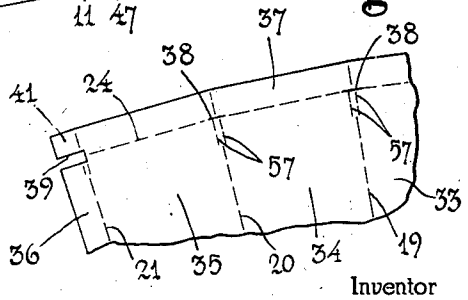


Fig. 8

Fig. 7



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CONTAINER

Filed Oct. 28, 1935 2 Sheets-Sheet 2

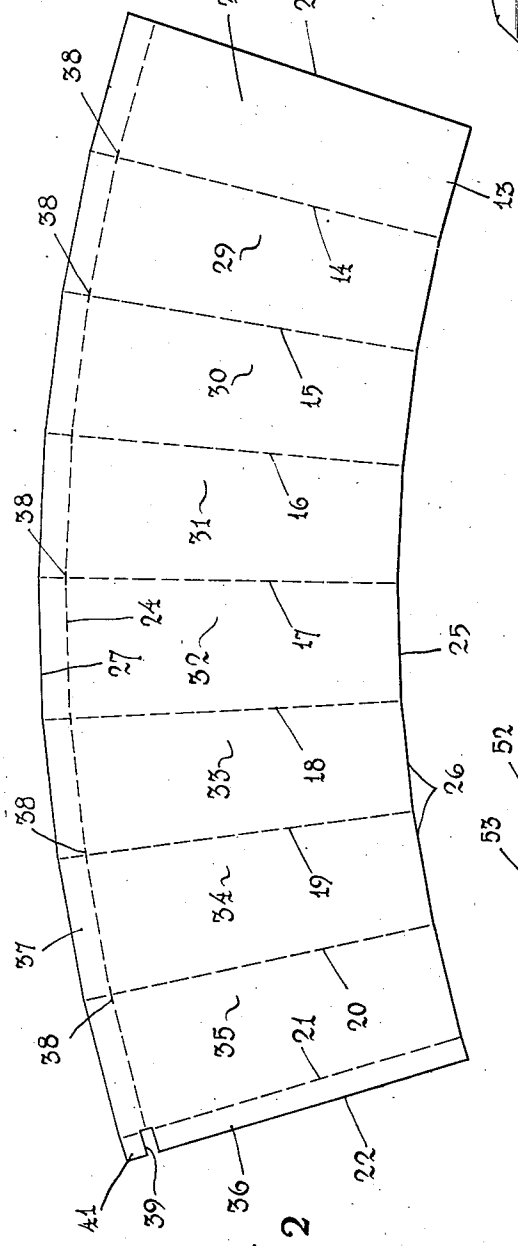

Fig. 2

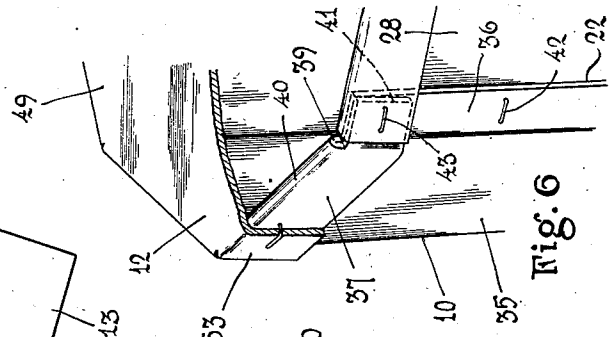

Fig. 6

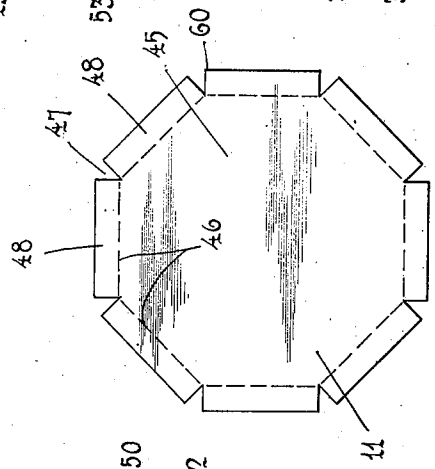

Fig. 4

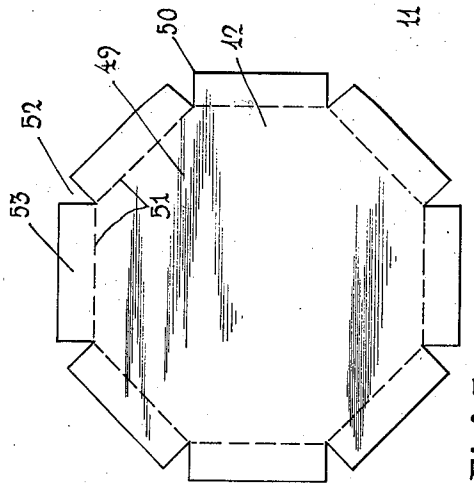

Fig. 3

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UNITED STATES PATENT OFFICE

2,100,773

CONTAINER

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Application October 28, 1935, Serial No. 47,088

11 Claims. (Cl. 229—47)

My invention relates to paper containers open at one end and particularly to the construction for closing the open end of the container.

An object of the invention resides in providing a construction in which the closure may be readily stitched to the body of the container by the ordinary stitching or stapling machine.

Another object of the invention resides in providing a construction in which the open end of the container is greatly reinforced.

A still further object of the invention resides in constructing the container with a flange disposed upon the exterior of the wall structure of the container and attached at one of its edges to the wall structure and free from the wall structure throughout the remainder thereof to permit of inserting the anvil of a stitching machine between said flange and the wall structure of the container to secure the closure thereto.

Another object of the invention resides in constructing the body flange integral with the wall structure of the container and in folding the same back from the upper edge of the wall structure and upon the exterior thereof.

A still further object of the invention resides in constructing the wall structure of the container tapered, the flange thereof being disposed at the larger end of the container to cause the free edge of the flange to be spaced from the wall structure of the container to facilitate the insertion of the anvil of a stitching machine therebetween.

A feature of the invention resides in the construction of the container so that the flange may be doubled back upon the body without breaking the stock from which the container is constructed.

An object of the invention resides in constructing the body of the container from a blank of paper scored transversely to provide a number of side walls and scored longitudinally near the ends of the side walls to provide a flange foldable upon the exterior of the wall structure of the container.

Another object of the invention resides in constructing the length of the flange equal to the perimeter of the body of the container at the end thereof to which the flange is attached, and in constructing the wall structure at predetermined intervals with gathers to take up the excess material occasioned by the disposition of the flange upon the exterior of the wall structure of the container.

A feature of the invention resides in providing slits in the blank of the container body, extending along the longitudinal score line and intersecting the transverse score lines, said slits permitting of the formation of gathers upon the interior of the wall structure in the folding up of the container blank.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a perspective view of a container illustrating an embodiment of my invention.

Fig. 2 is a developed view of the blank from which the body of the container is constructed.

Fig. 3 is a developed view of the blank from which the closure for the container is constructed.

Fig. 4 is a developed view of the blank from which the bottom of the container is constructed.

Fig. 5 is a sectional detail view taken on line 5—5 of Fig. 1 and drawn to a larger scale.

Fig. 6 is a perspective view of a portion of the container showing the method of joining the ends of the flange.

Fig. 7 is a fragmentary developed view of a portion of a blank illustrating a modification of the invention.

Fig. 8 is a view similar to Fig. 5 of a container constructed from the blank shown in Fig. 7.

In the construction of containers from paper considerable difficulty has been encountered in devising a container inexpensive in construction and provided with a cover or closure which could be easily and quickly applied thereto. The present invention provides a container in which the closure may be attached to the body of the container by wire stitching or stapling.

My container comprises a body 10 open at its ends which is closed at the lower end by means of a bottom 11 and which is adapted to be closed at its upper end by means of a closure 12. The body 10 is preferably constructed tapered in form so that the contents thereof may be easily removed from the container and is most advantageously constructed polysided, preferably with a number of sides greater than four. In the drawings a container having eight sides has been shown, though it can be readily comprehended that any number may be used. The various parts of the container will now be described in detail.

The parts of my improved container are constructed of any suitable kind of paper board, fiber or other similar material and are secured together by stitching or stapling. The body 10 is

constructed from a blank 13 illustrated in Fig. 2 which is elongated and arcuate in form. Blank 13 is scored transversely along lines 14, 15, 16, 17, 18, 19, 20, and 21 and is sheared at its ends along lines 22 and 23, all of said lines converging at a single point, not shown in the drawings. The blank is further sheared along an irregular line 25 which is similar to the arc of a circle having as its center the center of convergence of the score lines and shear lines but which consists of a number of rectilinear parts 26 which are at right-angles to the median lines between the shear line 22 and the various score lines 14 to 21. The blank is further sheared along a line 27 similar to the line 25 which bounds the blank at the upper end thereof. In addition to the score lines 14 to 21 the blank is constructed with a longitudinal score line 24 which is parallel to the shear line 27 and which intersects the score lines 14 to 21. The blank is also constructed with a number of short slits 38 which extend along the score line 24 and which intersect the score lines 14 to 20 inclusive. By means of the various score lines and shear lines, the blank is formed with tapered side walls 28, 29, 30, 31, 32, 33, 34, and 35 and an end flap 36 which constitute the wall structure of the container, in addition to a flange 37 which is disposed at the ends of the side walls 28 to 35.

The various score lines in the blank are all formed upon the inner surface of the container. In erecting the container the blank 13 is folded simultaneously along the score lines 14 to 21 inclusive and the score line 24, the flange 37 being folded in the opposite direction to the folds of the walls of the container. This causes the flange 37 to overlie the wall structure of the container upon the exterior thereof. When the parts have been properly folded, flap 36 is stitched to the side wall 28 by means of staples 42.

The ends of the flange 37 are telescoped as best shown in Fig. 6. To cause the rim of the container indicated at 40 and formed by the fold of the flange 37 along score line 24 to lie in a single plane, a slot 39 is cut in the flap 36 and the flange 37 which slot extends from the free edge 22 of the blank up to the score line 21 and which is disposed medially with respect to the score line 24. This slot is of a width substantially equal to twice the thickness of the paper board or other material from which the container is constructed. This leaves a tongue 41 on the end of the flange 37 which is inserted between the other end of said flange and the wall 28. These various overlapping parts are held in position by means of a staple 43 which passes jointly through all of said parts.

In forming the flange 37 it is necessary to fold the stock in the opposite direction from that in which it was folded to form the various walls of the container. Due to the score lines all being made upon the interior of the container, such folding causes an accumulation of stock upon the interior of the fold which holds said flange away from the surface of the body of the container and leaves a space 44 between it and the wall structure of the container. In addition, the arrangement of the score lines 14 to 21 inclusive in converging manner causes the flange 37 to further gap with respect to the side walls of the container at the lowermost part thereof. This permits of readily inserting the anvil of a stitching machine in between said flange and the wall structure of the container to permit of securing the closure to the container, as will be hereinafter more fully described.

Due to the fact that the length of the flange 37 at its lower edge is only slightly greater than the perimeter of the wall structure of the container and at its upper edge and along the score line 28 is exactly the same length, it becomes necessary to make provision for the surplus stock which is occasioned through the folding of the various parts as described. The slits 38 in the blank 13 separate the flange 37 from the wall structure of the container at the various score lines 14 to 21 inclusive. This permits the wall structure of the container to buckle or gather at such localities as shown in detail in Fig. 5. The surplus stock is indicated in this figure by the reference numeral 63 and takes the shape illustrated in said figure. This gather engages the wall structure of the container and assists in maintaining the space 44 previously referred to between flange 37 and said wall structure.

The bottom 11 of the container is constructed from a blank 60 shown in Fig. 4 which is polygonal in form. The blank 60 is scored along lines 46 parallel to the edges thereof and is notched as indicated at 47 to provide a polygonal bottom proper 45 and flanges 48 issuing outwardly therefrom. These flanges are folded outwardly as indicated in Fig. 1. The bottom 11 with the flanges 48 folded is inserted into the container through the open end thereof and forced downwardly until the said bottom occupies the position illustrated in Fig. 1. The flanges 48 are then stitched to the side walls of the body 10 of the container by means of staples 61.

The closure for the container is constructed in identically the same manner as the bottom 11 excepting that the same is of suitable dimensions to fit about the exterior of the flange 37. The closure 12 is constructed from a polygonal blank 50 which is scored along lines 51 and notched at 52 to form a polygonal top 49 and flanges 53 projecting outwardly therefrom. When the closure 12 is to be applied, the same is placed upon the rim 40 of the body of the container and the flanges 53 folded downwardly therefrom. As the flanges are brought into position the same may be stitched to the flange 37 by means of staples 56 which is accomplished by inserting the anvil of the stitching machine into the space 44 and operating the stitching machine while the parts are so arranged. It will thus be seen that the entire container may be easily and quickly closed and when the closure is applied, the container is permanently closed.

Where exceptionally heavy material is used in the formation of the container, I have found it necessary in order to prevent cracking of the material in the formation of the flange 37 to make provisions for the gathering of a greater amount of the material than could be accomplished by the use of a single score line. In Fig. 7 I have shown a portion of one of the blanks to procure the desired result and in Fig. 8 a detailed view of the structure formed thereby. Inasmuch as the construction shown in this form of the invention is practically the same as that previously illustrated, the description thereof will not be repeated and the same reference numerals will be used to illustrate corresponding parts. In this form of the invention portions of the score lines 14 to 21 adjacent score line 24 are dispensed with and twin score lines 57 used in place thereof which extend up to the slits 38. These score lines form a part 58 of gathered material similar to

the construction illustrated at **63**, but considerably wider and involving a greater amount of stock. Due to the use of the twin score lines, the stock indicated at **58** projects inwardly into the container extending in the opposite direction as compared to the structure indicated at **63**. The slits **38** are in such case constructed slightly longer so as to permit of sufficient gathering of the stock to form the construction illustrated without tearing.

My invention is highly advantageous in that an extremely simple and practical construction is provided whereby paper containers may be formed which can be used for the shipment of various commodities and which can be closed by the ordinary stitching or stapling machine after the commodities have been placed within the containers. My container can be constructed at an extremely low cost as compared to wooden tubs and similar containers. Due to the low cost of my container the same may be discarded after each use, thereby eliminating the disadvantage of having to return and recondition the containers for further use. My container is extremely sturdy in construction and will withstand the severe handling and usage which containers of this type are subject to. By means of the slits formed along the score line between the flange and wall structure of the container, the surplus stock in the vertical corners of the body is permitted to gather, thereby preventing tearing or breaking of the stock in the formation of the flange. By bending the stock in the reverse manner to form the flange, the flange may be completely doubled back upon the wall structure of the container without breakage. My container is extremely neat and attractive in appearance and fulfills all shipping and transportation requirements.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A container having a wall structure open at one end, a narrow member extending about said wall structure and overlying the wall structure upon the exterior thereof, said member being secured to the wall structure at one of its edges and being free from the wall structure throughout the remainder thereof, a closure for the container, means on said closure overlying said narrow member and means for securing said last-named means and said narrow member together.

2. A paper container having upwardly diverging walls and open at the top, a flange folded back from the upper ends of said walls, and overlying the outer surface of said walls, said flange due to the divergence of said walls being spaced at its free edge from the walls to provide a gap into which the anvil of a stitching machine may be inserted, a closure for the container, and means on the closure overlying said flange and adapted to be stitched thereto.

3. A paper container constructed from a blank scored transversely along diverging lines to form a number of contiguous walls and scored longitudinally near the edge of the blank at which the walls are the wider to form a flange at the ends of said walls, the end walls of the blank being secured together to form a container open at the larger end and the flange being folded back upon said walls on the exterior thereof, said flange due to the divergence of the walls being spaced from said walls at the free edge thereof to provide gaps into which the anvil of a stitching machine may be inserted, a closure for the container, and means on the closure overlying said flange and adapted to be stitched thereto.

4. A paper container constructed from a blank scored transversely along diverging lines to form a number of contiguous walls and scored longitudinally near the edge of the blank at which the walls are the wider to form a flange at the ends of said walls, said blank being formed with slits disposed along said second-named score line and intersecting the first-named score line, the end walls of the blank being secured together to form a container open at the larger end and the flange being folded back upon said walls on the exterior thereof, said flange due to the divergence of the walls being spaced from said walls at the free edge thereof to provide gaps into which the anvil of a stitching machine may be inserted, a closure for the container, and means on the closure overlying said flange and adapted to be stitched thereto.

5. A paper container constructed from a blank scored transversely to form a number of contiguous walls, and scored longitudinally near one edge to form a flange at the ends of said walls, said blank being formed with slits disposed along said second-named score line and intersecting said first-named score line, said flange being folded back upon the blank and overlying said walls upon the exterior thereof, a closure for the container, a flange formed on the closure and overlying the flange on the walls, said second-named flange being disposed with its free edge contiguous with the free edge of said first-named flange, and fasteners extending jointly through said flanges for securing the closure to the walls of the container.

6. A paper container having a wall structure and a flange extending about said wall structure and folded back from said wall structure and overlying said wall structure upon the exterior thereof, the perimeter of said wall structure and the length of said flange being substantially equal, the fold between said wall structure and flange being slit in the direction of the perimeter of said wall structure at intervals along said flange to form inwardly extending gathers on the wall structure disposed at said slits.

7. A paper container constructed from a blank scored transversely along diverging lines to form a number of contiguous walls and scored longitudinally near the edge of the blank at which the walls are the wider to form a flange at the ends of said walls, the walls at the sides of the blank being secured together to form a container open at the larger end and the flange being folded back upon said walls on the exterior thereof.

8. A paper container constructed from a blank scored transversely along diverging lines to form a number of contiguous walls and scored longitudinally near the edge of the blank at which the walls are the wider to form a flange at the ends of said walls, said blank being formed with slits disposed along said second-named score line and intersecting the first-named score lines, the end walls of the blank being secured together to form a container open at the larger end and the flange being folded back upon said walls on the exterior thereof.

9. A paper container constructed from a blank scored transversely to form a number of contiguous walls, and scored longitudinally near one edge to form a flange at the ends of said walls, said blank being formed with slits disposed along

said second-named score line and intersecting said first-named score line, said flange being folded back upon the blank and overlying said walls upon the exterior thereof.

10. A paper container constructed from a blank scored transversely to form a number of contiguous walls, and scored longitudinally near one edge to form a flange at the ends of said walls, all of said scores being made by forming lineal indentations upon the interior of the container, said blank being folded along said transverse scores with the indentations of the scores innermost to bring the end walls together and being folded along the longitudinal score with the indentations of the score outermost to cause the flange to overlie the exterior of the wall structure.

11. A paper container constructed from a blank scored longitudinally near one edge to form a wall structure and a flange, and scored transversely across said flange and wall structure to within a short distance of said longitudinal score line with single scores to divide the wall structure into walls and scored transversely along said second-named score lines up to the longitudinal score line with double scores to form portions adapted to gather upon folding of the walls and flange, said blank being slit along the longitudinal score line at the localities of the double scores to facilitate the gathering of the stock in the formation of the container.

PAUL F. BOEYE.