

Oct. 27, 1936.

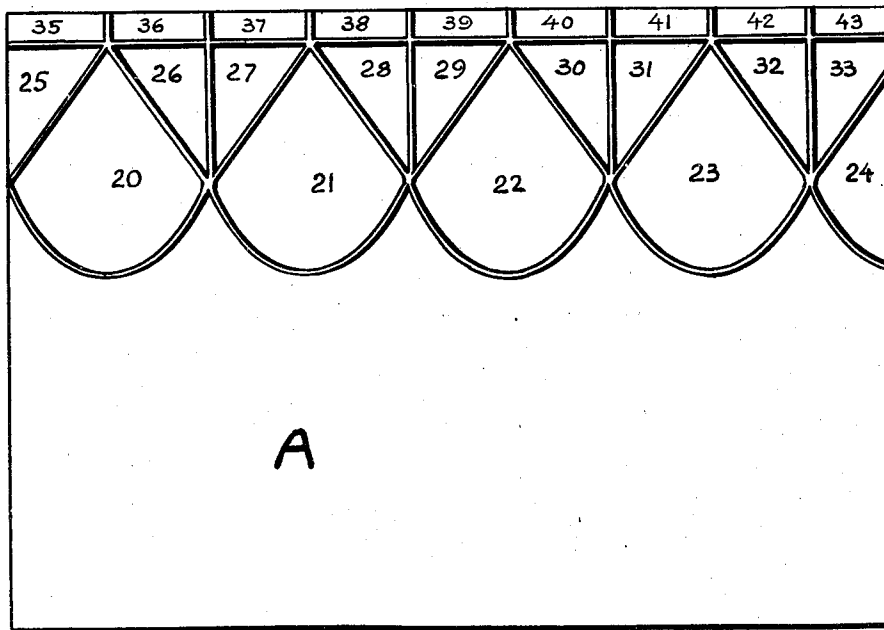
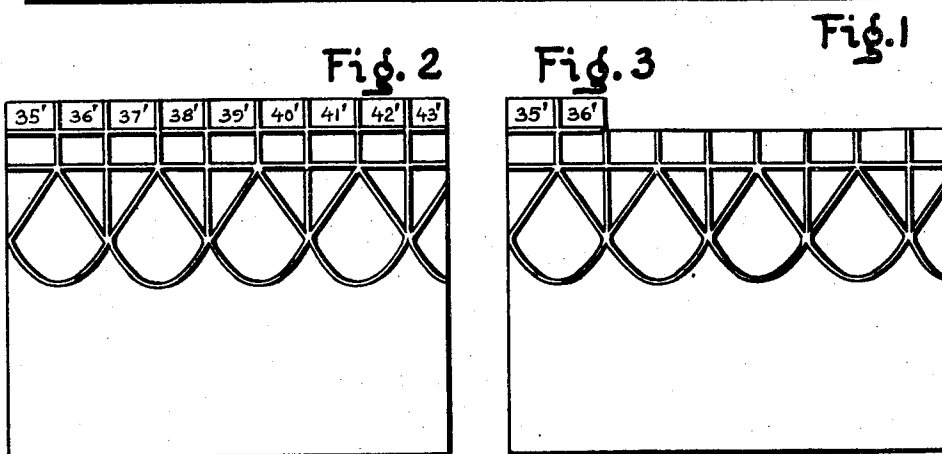
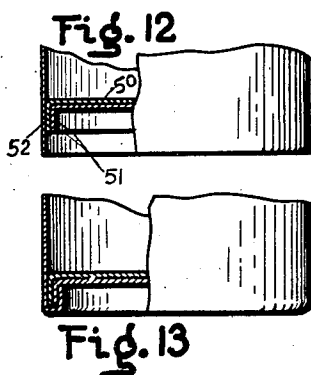
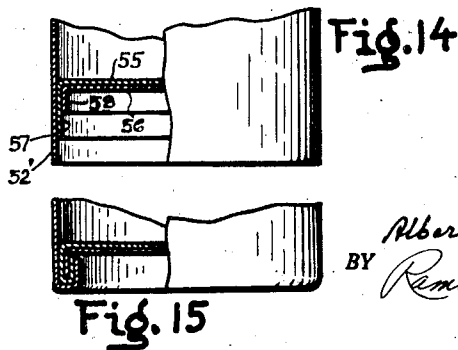
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2,058,592

CONTAINER

Filed March 16, 1935

2 Sheets-Sheet 1



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CONTAINER

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2 Sheets-Sheet 2

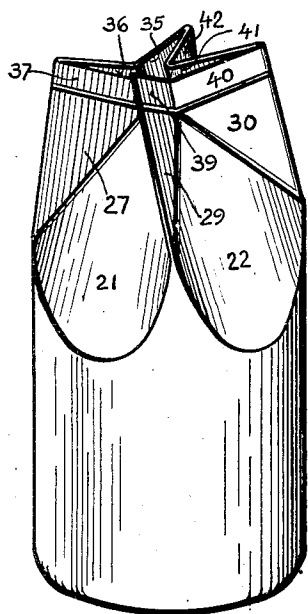


Fig. 4

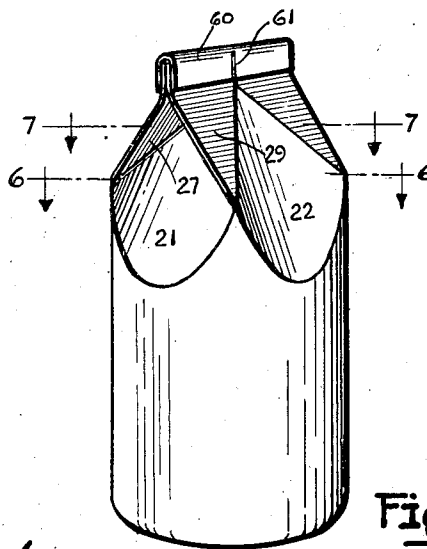


Fig. 5

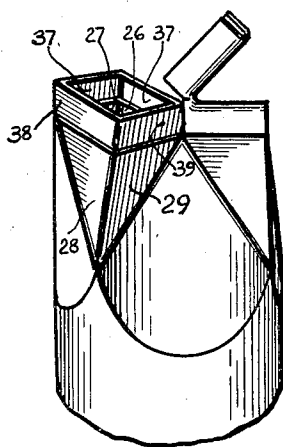


Fig. 8

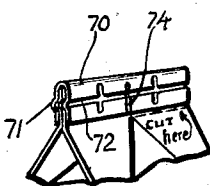


Fig. 9

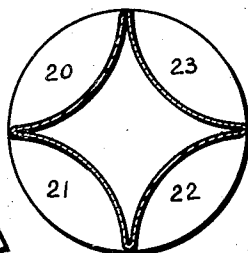


Fig. 6

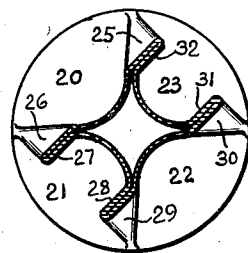


Fig. 7

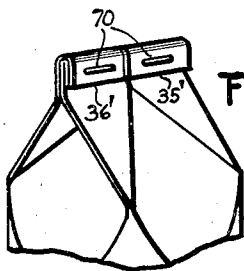


Fig. 10

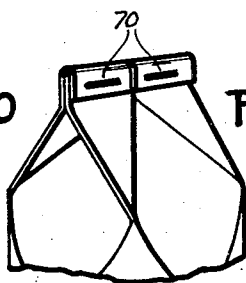


Fig. 11

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2,058,592

CONTAINER

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Application March 16, 1935, Serial No. 11,401

13 Claims. (Cl. 229-4.5)

This invention relates to improvements in containers and more particularly to improvements in containers formed of paper or other material having similar characteristics.

5 An object of the invention is to provide a new form of container which is simple and inexpensive to manufacture.

10 Another object of the invention is to provide a container of such character that the major portion thereof is of generally uniformly cylindrical form.

A further object of the invention is to provide a container of the foregoing type so constructed that it may be readily sealed.

15 An additional object of the invention is to provide a container of the foregoing character, wherein the upper portion thereof above the generally cylindrical part is folded and creased for sealing along a substantially straight line.

20 A further object of the invention is to provide in a container of the foregoing character an improved bottom.

25 A still further object of the invention is to provide a container so constructed that when sealed a portion thereof may be unsealed for pouring the contents without affecting the remaining portion of the seal.

30 In carrying out the objects stated hereinbefore and such other additional objects as follow, an improved container is constructed from a rectangular blank of paper or other material having suitable properties for the purpose set forth. The upper part of the blank is scored or otherwise treated to form lines along which the blank may bend. These scores or fold lines are so arranged as to present a plurality of sector-like portions having the arc-like lines thereof directed toward the bottom of the blank, such sector-like portions being separated by pairs of triangular shaped portions. The uppermost part of the blank is so scored as to present a plurality of rectangles which are utilized specifically in sealing the container. The sector-like portions and the triangular portions, together with the rectangular portions, are so arranged that when the blank is rolled into generally cylindrical form the uppermost portion thereof can be folded until the triangular portions of each pair are brought together in flat contact, permitting the container to be sealed by means of a suitable clip of substantially U-shaped cross-section. As a result of such folding, the sector-like portions which are spaced around the container become slightly concaved, while the triangular portions between the sector-like portions are brought into flat contact with

each other with their outer surfaces oppositely disposed and with the pairs of surfaces so oppositely disposed lying substantially in converging common planes.

If it is desired to dispense with the added sealing clip, the container may be sealed in other fashions, such as by, for example, providing additional duplicate rectangular portions, which additional portions are bent over on the first rectangular portions and secured in such folded-over position by means of staples or other suitable devices. If desired, however, only a selected number of additional rectangular portions may be provided, such additional portions being so disposed that they may be folded over the first rectangular portions not provided with extensions and so locked in place by means of staples or other suitable means.

The improved bottom of the container consists of a disc-like member having an annular flange, the outer surface of which engages the inner surface of the cylindrical container. Preferably, a predetermined belt of the bottom of the container blank has applied thereto suitable adhesive material prior to the blank being rolled into cylindrical form. The disc member with its flange is inserted into the cylindrical member with the flange extending toward the bottom and with the lower edge of the flange spaced above the bottom of the cylinder. The adhesive material on the cylinder wall serves to hold the flange and disc in place. To insure against leakage around the bottom, the additional cylinder wall below the bottom of the flange is turned upwardly and inwardly against the inner wall of the flange in which position it is held by the adhesive material. This bottom disc and flange may be made of a single layer of material, or of a double layer of material if desired, and when double layers of material are used, the two layers of the flange may be arranged in stepped relation with the outermost flange in completed position, folded against the inner surface of the innermost flange and with the container wall in turn folded against the so in-turned flange. By this construction, a good leak-proof joint is formed.

Other features, objects and advantages of the invention will become apparent by reference to the following detailed description taken in conjunction with the accompanying drawings illustrating the same, wherein

Fig. 1 is a view of a blank with the lines of scoring, or bend lines, indicated thereon.

Fig. 2 is a similar view on a smaller scale of a modified blank.

Fig. 3 is a view similar to Fig. 2 of a still further modified blank.

Fig. 4 is a perspective view of a container in partially closed position.

Fig. 5 is a similar view of the same container in completely closed and sealed condition.

Fig. 6 is a section taken substantially on the line 6-6 of Fig. 5.

Fig. 7 is a section taken substantially on the line 7-7 of Fig. 5.

Fig. 8 is a view of the same device shown in Fig. 5 in unsealed or pouring position.

Fig. 9 is a fragmentary view showing the top of a container with a slightly modified form of sealing clip.

Fig. 10 is a fragmentary showing of a top of a container formed from the blank shown in Fig. 2.

Fig. 11 is a similar view of a container formed from the blank shown in Fig. 3.

Fig. 12 is a fragmentary view, partially in section, of a container during the installation of a bottom therein.

Fig. 13 is a similar view of the container with the bottom completely installed.

Fig. 14 is a view similar to Fig. 12 of a modification; and

Fig. 15 is a view similar to Fig. 13 of the modification of Fig. 14.

Referring now to the drawings and particularly to Fig. 1, A indicates generally a blank in the nature of a rectangular strip of paper, flexible cardboard, or some other suitable flexible material. This blank A is scored or otherwise treated to produce fold lines therein as shown. As the result of the scoring or other treatment, the upper part of the blank is in effect divided into a number of portions. These portions consist of sector-like portions 20, 21, 22 and 23, as well as a fragmentary sector-like portion 24. In addition, triangular portions 25, 26, 27, 28, 29, 30, 31 and 32 are formed in the position shown, together with a fragmentary portion 33. Above the triangular portions are found rectangular portions which are indicated at 35, 36, 37, 38, 39, 40, 41, 42, together with a fragmentary portion 43. The fragmentary portions 24, 33 and 43 are provided to permit overlapping of the edges of the blank when the blank is rolled into cylindrical form, with the result that these fragmentary portions will underlie parts of the portions 20, 23 and 35. As shown in the drawings, the bottom edges of the portions 20 to 23 inclusive are not true arcs of radii corresponding to the length of the converging side edges. Consequently, the term "sector-like" has been used herein to describe these portions.

After the blank has been scored or otherwise treated to form the fold lines therein, the blank can be rolled into cylindrical form as shown in Fig. 4 and fastened in such form by some suitable adhesive material. When the cylinder is thus formed, it will be evident that the top part of the cylinder is divided by the fold lines into a plurality of contiguous sector-like portions separated by pairs of triangular portions, which triangular portions in turn have rectangular extensions.

After the blank has been formed into a cylinder it is provided with a bottom. One type of bottom is shown in Figs. 12 and 13. In this arrangement a disc 50 having a down-turned annular flange 51 is inserted within the cylinder with the bottom of the flange 51 spaced from the bottom of the cylinder. While the disc 52 is shown as being made of two layers of material.

it will be evident that a single layer can be used equally as well. Preferably, before the blank is rolled into a cylinder, a strip or belt of the bottom portion thereof is treated with a suitable adhesive material, such strip extending upwardly to the line of the desired position of the top surface of the disc. As the result of such pre-treatment with adhesive material, it is possible to insert the flanged bottom disc into the cylinder, and when properly positioned, this disc is sealed in place by the adhesive material between the wall 52 of the cylinder and the outer surface of the flange, and also by folding the lower portion of the cylinder wall inwardly into engagement with the inner surface of the flange as shown in Fig. 13. This arrangement provides a very good liquid-proof and air-proof seal.

An alternative arrangement is shown in Figs. 14 and 15. In this arrangement the disc comprising the actual bottom is made up of two layers 55 and 56, each of which has a depending flange indicated at 57 and 58 respectively, the flange 57 being wider than the flange 58. The additional expanse of the flange 57 may be folded over the flange 58 either before or after the disc is inserted into the cylinder, and held in such folded position by means of suitable adhesive material. As a final step, the lower end 52' of the cylinder is again folded inwardly and held in place by adhesive material as shown in Fig. 15.

After the container has been rolled into cylindrical form and the bottom has been positioned therein, the container may be treated with some material to render the same liquid-proof. When the container is to be used in conjunction with ordinary liquid, such as milk, etc., the material of the container is impregnated or coated in some suitable fashion by paraffin or a material having similar suitable characteristics.

The container is now in condition for folding and for sealing. When the proper quantity of liquid contents has been introduced into the container, the upper, or scored portion thereof, is folded, first as shown in Fig. 4. Due to the various fold lines in the upper part of the container, this upper part can be folded so that the apices of the sector-like portions 20, 21, 22 and 23 are brought together. To accomplish this movement of the sector-like portions, it becomes necessary to fold the pairs of triangular portions separating the sector-like portions against each other. In other words, the two portions 26 and 27 of one pair are folded toward each other along the line separating them, and the same is true of the portions of the other pairs. The final step of the folding brings the top edges of the contacting pairs of triangular portions into engagement, one pair with an opposite pair, and as a result of this movement, the rectangular extensions of the triangular portions are also brought into flat engagement, one with another, and pairs with pairs. When this folding step has been completed, the rectangular portions which are pressed together in substantially linear shape may be secured together by means of a metallic clip member 60 which is substantially U-shaped in cross-section. The sector-like portions which have their apices brought together must be concaved longitudinally thereof to permit the folding of all the parts in the manner shown. This concavity of the sector-like portions permits the body portion proper to retain its substantially uniform cylindrical shape. This shape so far as applicant is aware cannot be maintained without having the sector-like por-

tions curved inwardly toward the axis of the cylinder. Since the pairs of triangular portions are folded together and since the sector-like portions have their apices brought together, it follows that the outer surfaces of four of the triangular portions are arranged in pairs with the surfaces of one pair lying substantially in a common plane convergent with the common plane of the surfaces of the other pair. In other words, referring to Fig. 5, it will be seen that the surfaces of the triangular portions 29 and 30 lie substantially in a common plane, which plane is at an angle to the plane of surfaces of the triangular portions 25 and 26 on the opposite side of the container.

In order that the container may be partially unsealed to permit dispensing the contents thereof, the metal clip 60 is weakened intermediate the ends thereof as shown at 61. Due to this weakening it is possible to spread the clip over a portion thereof and then bend the spread part backwardly as shown in Fig. 8. When this portion has been bent backwardly the formerly confined parts of the container may be expanded to provide a substantially rectangular or square pouring spout as shown in Fig. 8. In other words, the pairs of triangular portions 29 and 28, and 27 and 26, are separated, together with the corresponding rectangular parts 39, 38, 37 and 36. The contents of the container may then readily be dispensed in whole or in part, and if desired, the expanded parts may be again folded and the clip pushed down and pressed into engaging relation.

A modified form of clip arrangement is shown in Fig. 9, wherein the metallic clips 70 are provided with ribs 71 and 72 oppositely disposed in some suitable configuration. When the clip is pressed to retain the top part of the container, these corresponding ribs cause the top portion of the container to assume similar configurations. Such distortion of the top part of the container serves effectively to prevent removal of the clip without spreading the same. In this embodiment, the clip is again weakened as at 74, and if desired, the container may be cut along the dotted lines indicated, after which a part of the clip with the clamped top portion of the container therein may be bent backwardly as before. With this arrangement, however, resealing is not possible, since a part of the container has been completely severed from the remainder thereof.

In the modification shown in Figs. 2 and 10 a slightly different arrangement is utilized. The blank shown in Fig. 2 is similar to that of Fig. 1, with the exception that additional rectangular portions 35' and 43' are provided immediately above the respective rectangular portions 34 to 43 inclusive. The blank is shaped into cylindrical form and provided with a bottom in the same manner as that previously described. Also the top portion of the cylinder is folded for sealing in the same manner. Due to this folding, the two series of rectangular portions extend straight upwardly. The additional portions may then be bent over upon themselves as indicated in Fig. 10, in which position they may be locked by means of suitable wire staples 70, or by any other desired fastening means. By reference to Fig. 10 it will be noted that the additional rectangular portions 35' and 36' extend directly over the top of the container.

In the modification shown in Figs. 3 and 11 only two additional rectangular portions 35' and

36' are provided. When a container made from the blanks shown in Fig. 3 is folded for sealing these two additional rectangular portions are bent over the tops of the main rectangular portions and locked in place by means of staples 70 as in the embodiment previously described.

To open either one of the containers shown in the last two embodiments, such opening can be accomplished either by removing the staples, or else by cutting across the container beneath the overlapped part in the same manner as suggested in Fig. 9.

From the foregoing it will be seen that the improved container in any of the forms shown herein consists of a generally uniformly cylindrical body portion having the top part thereof so bent and folded as to permit sealing of the top edge of the container in a substantially straight line, or, in other words, in a diametric fashion. The uniform cylindrical shape of the container in the major portion thereof is maintained even after the container is sealed by so shaping and sizing the various portions of the upper part thereof that the sector-like portions are of substantially concave form when the device is sealed. The generally uniformly cylindrical portion may be defined as having a scalloped top boundary, the scallops being formed by bottoms of the sector-like portions, such sector-like portions having their apices drawn together.

It is to be understood that modifications beyond those shown may be made without departing from the spirit and scope of the invention, in view of which any limitations imposed upon the invention are to be only those set forth in the following claims.

I claim:

1. A container of the class described having a generally cylindrical body portion and having a top strip foldable laterally and foldable longitudinally at spaced intervals, the folds of said strip being brought together in substantially a straight line, means for holding said folds in their straight line relation, said strip being joined to said body portion by a plurality of sector-like portions connected by pairs of triangular portions.

2. A container of the class described having a generally cylindrical body portion, and having an upper part scored to provide contiguous sector-like portions connected by pairs of triangular portions, and top rectangular portions foldable into substantially flat contact, and means for securing said rectangular portions together to seal the container.

3. A container of the class described having a generally cylindrical body portion and having an upper part scored to provide contiguous sector-like portions connected by pairs of triangular portions, rectangular portions above said sector-like portions and said pairs of triangular portions, said rectangular portions being foldable into substantially flat contact, means for holding said rectangular portions in contact, said sector-like portions sloping upwardly toward said contacting rectangular portions with the sector-like portions concaved.

4. A container of the class described having a generally cylindrical body portion and having an upper part scored for closing the container, a strip of said upper part being foldable into substantially flat contact along a diameter of the container for closing the container, said strip being joined to the body portion by contiguous

sector-like portions connected by pairs of triangular portions, said sector-like portions having their apices drawn together when the container is closed and having their surfaces concaved to preserve the generally uniformly cylindrical shape of said body portion.

5. A container of the class described having a generally cylindrical body portion and having an upper part scored for closing the container, a strip of said upper part being foldable into substantially flat contact along a diameter of the container for closing the container, said strip being joined to the body portion by contiguous sector-like portions connected by pairs of triangular portions, said sector-like portions having their apices drawn together when the container is closed and having their surfaces concaved to preserve the generally uniformly cylindrical shape of said body portion, said triangular portions of each pair being foldable flatly one against the other.

6. A container of the class described having a generally cylindrical body portion and having an upper part scored for closing the container, a strip of said upper part being foldable into substantially flat contact along a diameter of the container for closing the container, said strip being joined to the body portion by contiguous sector-like portions connected by pairs of triangular portions, said sector-like portions having their apices drawn together when the container is closed and having their surfaces concaved to preserve the generally uniformly cylindrical shape of said body portion, said triangular portions of each pair being foldable flatly one against the other to provide opposite pairs of surfaces lying in a pair of converging planes.

7. A container of the class described having a generally cylindrical body portion and having an upper part scored to provide contiguous sector-like portions connected by pairs of triangular portions and top rectangular portions foldable into substantially flat contact, certain of said rectangular portions being provided with similarly shaped extensions, said extensions being foldable into overlapping relation to said rectangular portions in the closed position of the container, and means for securing said rectangular portions together to seal the container.

8. A container of the class described having a generally cylindrical body portion and having an upper part scored to provide contiguous sector-like portions connected by pairs of triangular portions and top rectangular portions foldable into substantially flat contact, all of said rectangular portions being provided with similarly shaped extensions foldable into overlapping relation to the rectangular portions in closed position to the container, and means for securing said rectangular portions together to seal the container.

9. A container of the class described having a generally cylindrical body portion and having an upper part scored to provide contiguous sector-like portions connected by pairs of triangular portions and top rectangular portions foldable into substantially flat contact, two of said rec-

tangular portions being provided with similarly shaped extensions foldable over the remainder of the rectangular portions in closed position of the container, and means for securing said rectangular portions together to seal the container.

10. A container of the class described having a generally uniformly cylindrical body portion and having an upper part scored for folding, said upper part being foldable with the top edge extending substantially diametrically of the container and having parts of the scored portion extending toward the top edge with the surfaces thereof concaved.

11. A container of the class described having a generally cylindrical body portion and having an upper part scored for closing the container, a strip of said upper part being foldable into substantially flat contact along a diameter of the container for closing the container, said strip being joined to the body portion by contiguous sector-like portions connected by pairs of triangular portions, said sector-like portions having their apices drawn together when the container is closed and having their surfaces concaved to preserve the generally uniformly cylindrical shape of said body portion, and a metallic clip of substantially U-shaped cross-section for holding said container in closed position, said clip being weakened intermediate its ends to permit a portion thereof to be moved into unclamping position whereby the released parts of the container can be expanded to permit dispensing of the container contents.

12. A container of the class described having a generally cylindrical body portion and having a top strip foldable laterally and foldable longitudinally at spaced intervals, the folds of said strip being brought together in substantially a straight line, means for holding said folds in their straight line relation, said strip being joined to said body portion by a plurality of portions each having upwardly converging side edges of equal length and having a downwardly extending bottom edge connecting the lower ends of said side edges, said last-mentioned portions being connected by pairs of triangular portions.

13. A container of the class described having a generally cylindrical body portion and having a top strip foldable laterally and foldable longitudinally at spaced intervals, the folds of said strip being brought together in substantially a straight line, means for holding said folds in their straight line relation, said strip being joined to said body portion by a plurality of portions each having upwardly converging side edges of equal length and having a downwardly extending bottom edge connecting the lower ends of said side edges, said last-mentioned portions being connected by pairs of triangular portions, the expanse of material between said converging edges being bent inwardly toward the axis of the body portion and the points of convergence of said converging edges being brought together substantially along the axis of the body portion when the container is closed.

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