March 23, 1937. A. KARLSSON-YGGER 2,074,824

CONTAINER

Filed March 16, 1935 2 Sheets-Sheet 1

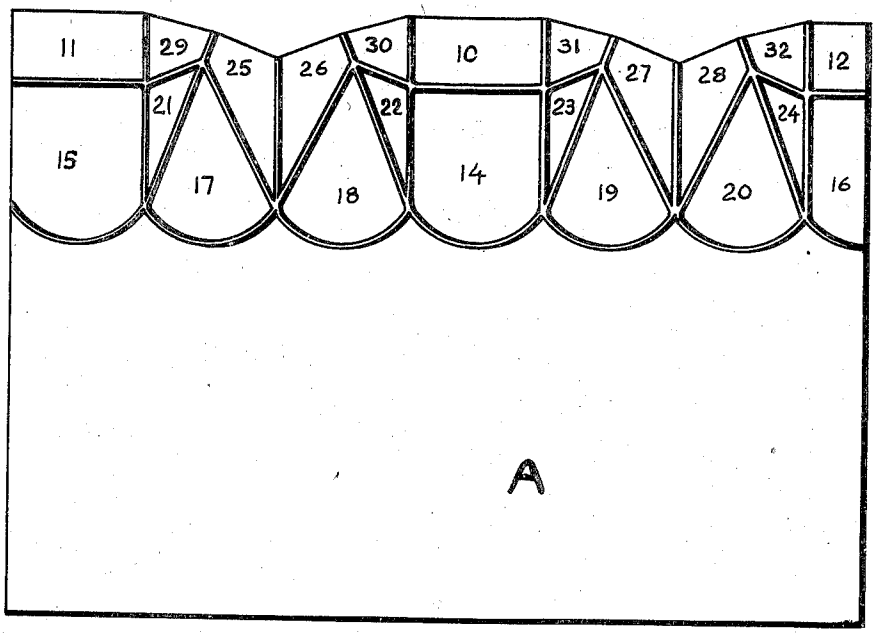


Fig. 1

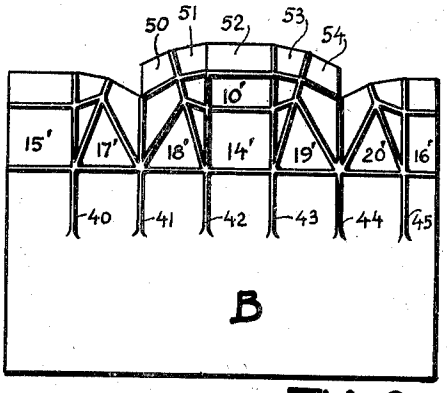


Fig. 2

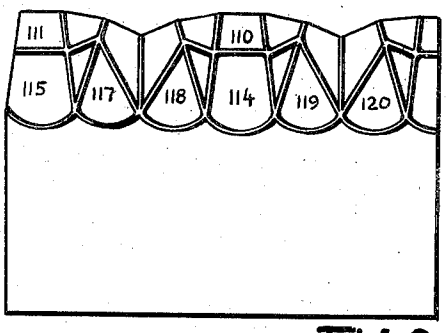
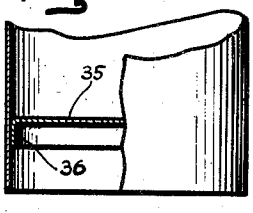


Fig. 3

Fig. 10



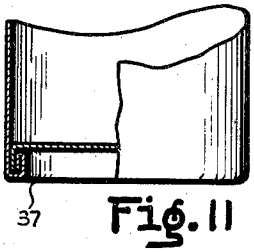


Fig. 11

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CONTAINER

Filed March 16, 1935 2 Sheets-Sheet 2

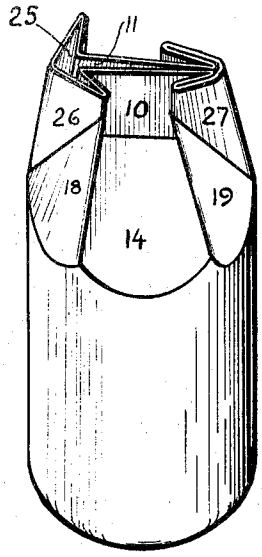


Fig. 4

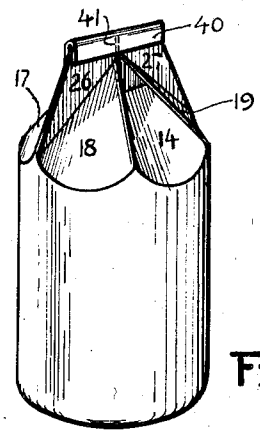


Fig. 5

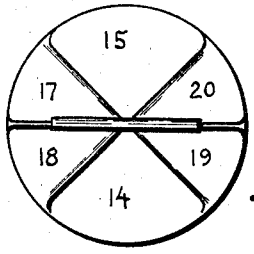


Fig. 6

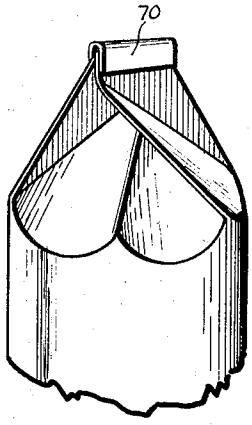


Fig. 8

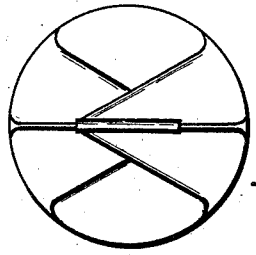


Fig. 9

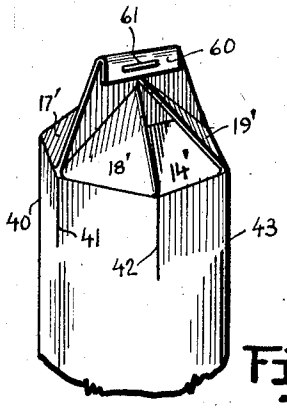


Fig. 7

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CONTAINER

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Application March 16, 1935, Serial No. 11,400

8 Claims. (Cl. 229—4.5)

This invention relates to containers, and more particularly to containers formed of paper or similar suitable material.

The object of the invention is to provide a new, simple, and efficient container made of flexible material so shaped that the upper part thereof is folded into intermediate opposite contacting portions relative to which the remaining parts of the upper portion are overlapped.

Another object of the invention is to provide a container of the foregoing character in which the closed top part can be sealed in a substantially straight line.

An additional object of the invention is to provide a container of the foregoing character in which contacting oppositely disposed parts are so dimensioned that the overlapping parts are dimensioned to overlap both the contacting parts and each other.

A further object of the invention is to provide in a container of the foregoing character, a top portion so folded and bent that the major portion of the container maintains a substantially uniform cylindrical shape both in sealed and unsealed condition.

A further object of the invention is to provide a container of the foregoing character in which the upper part of the generally cylindrical body portion is slightly folded into polygonal form.

A still further object of the invention is to provide a container of the foregoing character in which a portion of the top part is provided with extensions which are adapted to be folded over the remaining parts in sealed position to aid in sealing the container.

In accordance with the invention, a blank of paper or other suitable material has its upper portion shaped or scored or otherwise treated to form fold or bend lines about which this upper part can be folded or bent to seal the container when the container has been rolled and secured in cylindrical form. Broadly speaking, the invention provides score lines so fashioned that a pair of oppositely disposed intermediate portions are provided in the topmost part of the blank. Extending downwardly from these portions are portions the bottom of which determine the top boundary of the generally cylindrical part of the container. These extensions of the intermediate parts may have parallel longitudinal edges or may have slightly flared longitudinal edges, and the bottom edge of these extending portions may be either curved or straight, as desired. Between the intermediate portions and their extensions are a number of portions, some of which are of triangular shape, some of which are of sector-like shape, and some of which are of irregular shape. A pair of triangular portions are provided between the extensions with one side of each triangular portion contiguous with another and with the extensions to complete the top boundary of the generally cylindrical body part of the container.

When the blank has been formed into a cylinder and a bottom inserted therein, the container can be closed by so folding the upper scored portion thereof that the two oppositely disposed intermediate portions are brought together into substantially flat contact one with another. This contact will be along a diameter of the container, but the length of the contact will be considerably shorter than the diameter of the container. When these two rectangular portions have been brought together, the expanse of scored top part between the ends of the intermediate portions and their extensions are folded so that they overlap the intermediate portions and their extensions on each side of the container. When the extensions of the intermediate portions have substantially parallel longitudinal walls, the overlapping parts between the intermediate portions and their extensions will promptly meet at the center line of the intermediate portions. However, when the extensions of the intermediate portions have tapering longitudinal walls, one expanse of scored top part between intermediate portions will overlap each side of the intermediate portions approximately the full length of the intermediate portions, while the other expanse of scored part between the intermediate portions will in turn lap over the intermediate portions and the previously overlapped parts. In either condition, the overlapped parts may be held in place by a suitable metallic clip by reason of which a good air-tight and liquid-tight sealing is secured. If desired, however, substantially half of the upper part of the blank may be provided with longitudinally extending tab parts which, when the parts are folded into sealing position, can be bent over the parts not provided with tabs, and the entire sealing area locked in place by means of wire staples or other suitable fastening devices.

In the arrangement just described, it will be understood that the top boundary of the generally cylindrical portion is in effect scalloped, the scallops being formed by curved boundary lines of the extensions of the intermediate portions and curved boundary lines of the contiguous triangular portions, while triangular portions closely resemble sectors, and which may be

called for clarity "sector-like portions". If desired, however, the extensions of the intermediate portions and the separating contiguous triangular portions may have flat bases, thereby defining a straight top boundary for the body of the container, and in order that the top part can be folded into proper sealing condition, it may be necessary to score the body part of the container with longitudinal score lines for a short distance as a result of which the generally cylindrical part of the body of the container merges into a polygonal shaped body part.

Other features, objects, and advantages of the invention will become apparent by reference to the following detailed description of the accompanying drawings, wherein Fig. 1 is a plan view of a blank scored for proper folding;

Fig. 2 is a similar view of a modified form of blank;

Fig. 3 is a similar view of a still further modification;

Fig. 4 is a perspective view in partially closed position of a container made from the blank shown in Fig. 1;

Fig. 5 is a perspective view of a container made from a blank as shown in Fig. 1 in sealed position;

Fig. 6 is a plan view of the container shown in Fig. 5;

Fig. 7 is a perspective view of part of a container made from a blank of a type shown in Fig. 2;

Fig. 8 is a similar view of a container made from a blank as shown in Fig. 3 in which the sealing tabs have been omitted;

Fig. 9 is a plan view of the device shown in Fig. 8;

Fig. 10 is a fragmentary showing of the manner of inserting a bottom in the container; and

Fig. 11 is a similar view of the device with the bottom locked in place.

Referring now to the drawings and particularly to Fig. 1, A indicates a blank of paper, cardboard, or some other suitable flexible material. This blank has its upper part scored or otherwise treated to provide a plurality of fold or bend lines. These lines are so disposed as to provide opposite intermediate rectangular portions **10** and **11**, and a fragmentary portion **12**. Extending downwardly of the blank from the portions **10** and **11** are what may be termed extension portions **14** and **15** respectively, and a fragmentary portion **16**. These fragmentary portions **12** and **16** are provided to overlap the portions **11** and **15** respectively when the blank is rolled into cylindrical form, thereby providing a short strip to which adhesive material can be secured for holding the blank in cylindrical form. The bottom edges or boundaries of portions **14** and **15** are curved as shown.

Contiguous to each portion **14** and **15** and situated therebetween are pairs of sector-like portions, one pair being represented at **17** and **18**, and another pair at **19** and **20**. Separating the converging walls of the sector-like portions from the extension portions, are triangular portions **21**, **22**, **23**, and **24**. Between the pairs of sector-like portions **17** and **18** are irregular shaped portions **25** and **26**, while similar portions **27** and **28** are disposed between the pairs of sector-like portions **19** and **20**. Still further irregular shaped portions are found at the ends of the rectangular parts **10** and **11**, such portions being indicated at **29**, **30**, **31**, and **32**.

With the upper part of the blank provided with fold lines as shown and described, the blank is in condition to be formed into a cylinder. Such operation is accomplished by rolling it into cylindrical form, in which form it is secured by suitable adhesive material applied to an area, the width of which is defined by the fragmental portions **12** and **16**, which, as before stated, overlap the parts **11** and **15**. Previous to rolling into cylindrical form, a strip of the bottom part of the blank may be treated with adhesive material for the attachment of a bottom member in the following manner. As shown in Figs. 11 and 12, the bottom may be made of a disc **35** having a depending annular flange **36**. This disc is inserted into the cylinder until the top surface thereof reaches the top edge of the portion treated with adhesive material. When so properly positioned, the flange adheres to the inner wall of the cylinder, and the bottom part of this wall may be folded upon itself and then secured to the inner wall of the flange by adhesive material into the position indicated at **37** in Fig. 12. This arrangement provides a good air-tight and liquid-tight seal for the bottom of the container.

The container may be treated with paraffin or any other suitable material for protecting the material of the container from attack by the liquid to be held in the container.

Suitable liquid may be introduced into a container so made to the proper level, which level will, under ordinary conditions, be approximately at the scalloped top boundary of the generally cylindrical part or body portion of the container. When the container has been filled to the proper height, it may be closed in the following manner. First, the intermediate rectangular portions **10** and **11** are drawn together until they are in substantially flat contact along a diameter of the cylinder, as shown in Fig. 4. Due to this drawing together of the rectangular portions, their extensions **14** and **15** become slightly concaved, and at the same time the expanse of scored top portion between the ends of the rectangular parts and their extensions become folded into overlapping relation, as shown in Fig. 4. The respective positions of the above parts may be followed by comparison between the reference characters of Fig. 1 and those of Fig. 4. Finally, the overlapping of these expanses is completed, at which time the overlapping parts approximately meet at the center line of the contacting rectangular portions, in which position they may be secured by means of a metal clip **40** which is of substantially U-shaped cross-section. This clip may be weakened along a center line **41**, whereby a part thereof can be spread and then bent back upon the remaining part to liberate half of the overlapped portions so that the contents of the container can be dispensed.

In the folding of the parts to the positions shown in Figs. 4 and 5, various portions are so folded that a seal along a substantially straight line can be obtained. The irregular shaped portions **29** and **30** are folded flat against the outside of the rectangular portions **11** and **10** respectively. The same is true of similar portions **32** and **31**. The triangular portion **22** is folded under the sector-like portion **18**; triangular portion **21** under the sector-like portion **17**; the triangular portion **23** under the sector-like portion **19**; and the triangular portion **24** under the sector-like portion **20**. The portions **25**, **26**, **27**, and **28** are folded flat against the irregular shaped portions **29**, **30**, **31**, and **32** respectively and partially against each other in pairs. In the final

condition, that is in sealed condition, all of the sector-like portions 17, 18, 19, and 20, and the extensions 14 and 15, are concaved so that the uniform cylindrical shape of the body of the container can be maintained.

In Fig. 2 a blank somewhat similar to that of Fig. 1 is shown, the blank B having score lines similar to those of blank A, with the exception that the bottom boundary lines of the portions 15', 17', 18', 14', 19', 20', and 16' are straight instead of curved. In addition, score lines 40, 41, 42, 43, 44, and 45 extending downwardly into the body of the blank a slight distance are provided. The folding of this blank after it has been secured in cylindrical form is accomplished in the same way as that described in connection with Figs. 1, 4, and 5; the only different result being that the uppermost part of the body portion of the container assumes a somewhat polygonal shape due to the score lines 40 to 45 inclusive before described and to the straight boundary lines. In addition, the blank of Fig. 2 is provided with upstanding tabs 50, 51, 52, 53, and 54, which, as shown, extend over half of the portions of the folded part of the container, or in other words, extend over one side of the folded portions, considering the extension 14' and the intermediate rectangular portion 10' as the midsection of one side. The purpose of these tabs is evident from Fig. 7, wherein it is shown that when the container is folded to sealed position the tabs may be folded over as indicated at 60 and locked in place by means of a wire staple 61 or any other suitable arrangement. These tabs may be omitted, however, and a metal clip used in the manner previously described.

In the modification shown in Fig. 3, the parts are closely similar to those shown in Fig. 1, with the exception that the walls of the extension 114 are tapered instead of being parallel as in the case of the walls of extension 14, and the same is true of the walls of the intermediate portion 110. This follows also in the portions 111 and 115. Due to this tapering wall arrangement, it becomes necessary to change the shape of the portions 117, 118, 119, and 120 a slight bit, in that one side of each portion is made longer than in the portions shown in Fig. 1. The container of this form is folded in the same manner as that described in connection with Figs. 1, 4, and 5, but since the portions 110 and 111 are of shorter lateral length than the portions 10 and 11, it follows that the parts or portions separating the parts 110 and 111 and parts 114 and 115 overlap the parts 110 and 111 to a greater extent than in the previous embodiment. Thus, one group of connected portions are folded to substantially completely overlap the contacting parts 110 and 111, and in turn the other connected portions are folded to almost completely overlap these same contacting parts 110 and 111, but also to overlap the previously mentioned parts which are in engagement with these intermediate portions. This overlap arrangement is shown clearly in Fig. 8, wherein the parts are held together by a clip 70.

From the foregoing it will be seen that the present invention in any form illustrated provides a container the top portion of which is provided with folded lines so disposed that opposite intermediate portions can be brought into flat contact with each other, and with the connecting portions between these contacting portions folded to overlap the flat contact parts. In this way, a substantially linear seal can be made.

It will be apparent that the invention can be modified to include changes not shown in any of the figures of the drawings, in view of which the invention is to be limited only by the scope of the following claims.

I claim:

1. A container of the class described having a generally cylindrical body portion and having a top part scored for folding to close the container, said top part having oppositely disposed intermediate portions movable into substantially flat contact one with the other, and connecting portions between said intermediate portions, said connecting portions being movable into overlapping relation to said contacting intermediate portions.

2. A container of the class described having a generally cylindrical body portion and having a top part scored for folding to close the container, said top part having oppositely disposed intermediate portions movable into substantially flat contact one with the other and having extensions of said intermediate portions extending from the bottoms of the intermediate portions to the top of the body portion, said top part being provided with connecting portions between said intermediate portions and between their extensions, said connecting portions being foldable into overlapping relation to said intermediate portions and their extensions.

3. A container of the class described having a generally cylindrical body portion and having a top part scored for folding to close the container, said top part having oppositely disposed intermediate portions movable into substantially flat contact one with the other and having longitudinal extensions of said intermediate portions extending from the bottoms of the intermediate portions to the top of the body portion, said top part having portions connecting said intermediate portions and connecting their extensions, said connecting portions being movable into overlapping relation to said intermediate portions and their extensions, parts of said connecting portions being of substantially sector-like shape, said extensions having curved bottom edges contiguous with the curved edges of said sector-like portions whereby said cylindrical body portion is provided with a scalloped top boundary edge.

4. A container of the class described having a generally cylindrical body portion and having a top part scored for folding to close the container, said top part having oppositely disposed intermediate portions movable into substantially flat contact one with the other and having extension portions extending from the bottoms of said intermediate portions to the top of the generally cylindrical body portion, said top part having connecting portions between said intermediate portions and between their extensions, said connecting portions being foldable to overlap said intermediate portions and their extensions on each side thereof with one set of connecting portions substantially meeting another set intermediate the ends of said intermediate portions.

5. A container of the class described having a generally cylindrical body portion and having a top part scored for folding to close the container, said top part having oppositely disposed intermediate portions movable into substantially flat contact one with the other and having extension portions, said extension portions extending from the bottoms of the intermediate portions to the top of the body portion, said intermediate por-

tions and their extensions having longitudinally slanting side edges, said top part having connecting portions between the intermediate portions and between their extensions, said connecting portions being foldable to overlap the contacting intermediate portions and their extensions and to partially overlap one connecting portion with the other.

6. A container of the class described having a generally cylindrical body portion and having a top part scored for folding to close the container, said generally cylindrical body portion being provided with longitudinal score lines extending partially downwardly from the top thereof, said top part being provided with oppositely disposed intermediate portions movable into substantially flat contact one with another and with longitudinally extending extensions of said intermediate portions connecting the bottoms of the intermediate portions with the top of the body portion, said top part being provided with connecting portions between said intermediate portions and between their extensions, said connecting portions being foldable to overlap said intermediate portions and their extensions on each side thereof, the bottom of said foldable portions lying in a single plane cross-axially of the container whereby when the container is closed the upper part of the generally cylindrical portion is modified into a polygonal cross-sectional shape.

7. A container of the class described having a generally cylindrical body portion and having a top part scored for folding to close the container, said generally cylindrical body portion being provided with longitudinal score lines extending partially downwardly from the top thereof, said top part being provided with oppositely disposed intermediate portions movable into substantially flat contact one with another and with longitudinally extending extensions of said intermediate portions connecting the bottoms of the intermediate portions with the top of the body portion, said top part being provided with connecting portions between said intermediate portions and between their extensions, said connecting portions being foldable to overlap said intermediate portions and their extensions on each side thereof, the bottom of said foldable portions lying in a single plane cross-axially of the container whereby when the container is closed the upper part of the generally cylindrical portion is modified into a polygonal cross-sectional shape, a part of the top of said container being provided with tabs foldable over the opposite parts of the container, and means for locking said tabs in folded-over position to seal the container.

8. A container of the class described having a generally cylindrical body portion and having a top part scored for folding to close the container, said top part having oppositely disposed intermediate portions movable into substantially flat contact one with the other and having extension portions extending from the bottoms of said intermediate portions to the top of the generally cylindrical body portion, said top part having connecting portions between said intermediate portions and between their extensions, said connecting portions being foldable to overlap said intermediate portions and their extensions on each side thereof with one set of connecting portions substantially meeting another set intermediate the ends of said intermediate portions, a part of the top of said container being provided with tabs foldable over the opposite parts of the container, and means for locking said tabs in folded-over position to seal the container.

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