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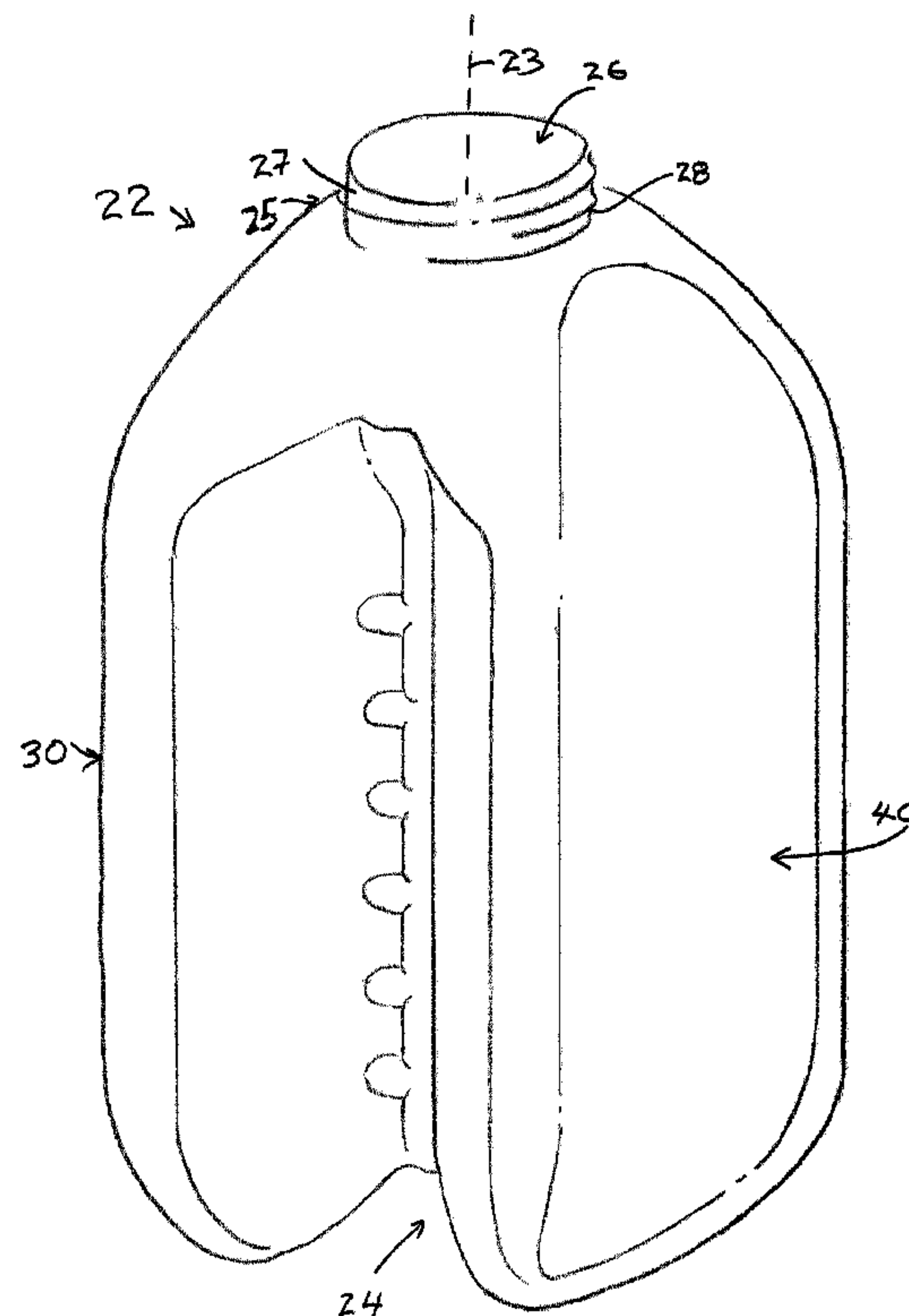
(71) Demandeur/Applicant:
HYGIENE-TECHNIK INC., CA

(72) Inventeur/Inventor:
OPHARDT, HEINER, CA

(74) Agent: RICHES, MCKENZIE & HERBERT LLP

(54) Titre : BOUTEILLE SOUPLE A PLUSIEURS COMPARTIMENTS

(54) Title: MULTI COMPARTMENT COLLAPSIBLE BOTTLE



(57) Abrégé/Abstract:

A collapsible bottle having at least two independent compartments each connected to provide communication with each other and, preferably, with a non-collapsible channelway leading to an outlet opening for the bottle.

ABSTRACT

A collapsible bottle having at least two independent compartments each connected to provide communication with each other and, preferably, with a non-collapsible channelway leading to an outlet opening for the bottle.

Title

MULTI COMPARTMENT COLLAPSIBLE BOTTLE

Scope of the Invention

[0001] This invention relates to collapsible containers for fluids from which fluid may be dispensed in fluid containers and, more particularly, to a collapsible bottle having at least two collapsible compartments in communication with each other.

Background of the Invention

[0002] Collapsible dispensers for soap and other fluids are known as for use, for example, in fluid dispensers such as that taught by the applicant's U.S. Patent 5,836,482 entitled *Automated Fluid Dispenser*, issued November 17, 1998, the disclosure of which is incorporated herein by reference. While the collapsible container may comprise a flexible bag which is not self-supporting, preferred collapsible containers comprise containers which are self-supporting as when filled with material yet are provided to collapse upon themselves. Such a collapsible container is, for example, illustrated in the applicant's U.S. Design Patent 350,070 and in Figure 1 of U.S. Patent 5,836,482 as comprising a bottle having a generally rectangular cross-section with side walls with folds provided therein such that opposing side walls become bent inwardly in a pleated manner towards each other facilitating the movement of opposite side walls inwardly towards each other.

[0003] A disadvantage of previously known collapsible containers is that the containers sometimes collapse in a manner which traps fluid therein. For example, whether a self-supporting container or a bag-like container, the collapsible container may collapse prematurely at an intermediate portion with the collapse at the intermediate portion preventing withdrawal from the container as from an outlet disposed at the bottom of the container of material in the container spaced from the outlet by the prematurely collapsed intermediate portion. This disadvantage is particularly acute when the fluid to be dispensed is expensive or under circumstances where the dispensing of fluid is critical to be maintained.

Summary of the Invention

[0004] To at least partially overcome these disadvantages of previously known devices, the present invention provides a collapsible bottle having at least two independent compartments each connected to provide communication with each other and, preferably, with a non-collapsible channelway leading to an outlet opening for the bottle.

[0005] In one aspect, the present invention provides a collapsible container having an outlet opening and two collapsible tubular compartments,

[0006] each compartment extending beside the other compartment from a respective open end of each compartment opening into the outlet opening away from the outlet opening to a respective closed end of each compartment,

[0007] each compartment having a outboard side and an opposed inboard side with the inboard side of one compartment facing the inboard side of the other compartment,

[0008] each compartment being collapsible from an inflated condition in which the container is filled with fluid toward a collapsed condition by the withdrawn of fluid from the outlet opening,

[0009] wherein in the inflated condition, the inboard side and outboard side of each compartment are spaced, and

[0010] wherein in collapsing from the inflated condition toward the collapsed condition the outboard side and inboard side of each compartment move relatively towards each other,

[0011] a shunt bridging between the inboard sides of the compartments placing the two compartments in communication through their inboard sides.

[0012] In another aspect, the present invention provides a collapsible container having an outlet opening and two collapsible tubular compartments,

[0013] each compartment extending beside the other compartment from a respective open end of each compartment opening into the outlet opening away from the outlet opening to a respective closed end of each compartment,

[0014] each compartment having a outboard side and an opposed inboard side with the inboard side of one compartment facing the inboard side of the other compartment,

[0015] each compartment being collapsible from an inflated condition in which the container is filled with fluid toward a collapsed condition by the withdrawn of fluid from the outlet opening, wherein in the inflated condition and the inboard side and outboard side of each compartment are spaced, and

[0016] wherein in collapsing from the inflated condition toward the collapsed condition the outboard side and inboard side of each compartment move relatively towards each other,

[0017] an elongate shunt located between the inboard sides of the compartments placing the two compartments in communication through their inboard sides along the length of the shunt with an end of the shunt open to the outlet opening,

[0018] in collapsing of the compartments from the inflated condition toward the collapsed condition the shunt maintaining communication between the two compartments and the outlet opening substantially along length of the compartments.

[0019] In a third aspect, the present invention provides a collapsible container having an outlet opening and at least two collapsible tubular compartments,

[0020] each compartment extending from a respective open end of each compartment opening into the outlet opening away from the outlet opening to a respective closed end of each compartment,

[0021] each compartment adapted to collapse laterally with withdrawal of fluid from the outlet opening of the container,

[0022] a central elongate shunt channelway located between the two compartments extending therebetween with an open end at one end open to the outlet opening,

[0023] the channelway open laterally at a plurality of locations along its length to the each of the compartments at a plurality of locations along the length of each compartment,

[0024] the channelway being substantially non-collapsible whereby the channelway maintains the two compartments in communication with the outlet opening along the length of the compartments as the compartments collapse.

[0025] In a fourth aspect, the present invention provides a collapsible container having an outlet opening and two collapsible tubular compartments,

[0026] each compartment extending beside the other compartment from a respective open end of each compartment opening into the outlet opening,

[0027] a shunt channelway between the compartments placing the two compartments in communication laterally at a plurality of locations along the length of the compartments from the open end substantially to the closed end.

Brief Description of the Drawings

[0028] Further aspects and advantages of the present invention will become apparent from the following description taken together with the accompanying drawings in which:

[0029] Figure 1 is an exploded pictorial view of a prior art dispenser;

[0030] Figure 2 is a pictorial view of a collapsible bottle in accordance with a first embodiment of the present invention;

[0031] Figure 3 is a side view of the bottle shown in Figure 2;

[0032] Figure 4 is a cross-sectional view along section line 4-4' in Figure 3;

[0033] Figure 5 is a cross-sectional view along section line 5-5' in Figure 3;

[0034] Figure 6 is a cross-sectional view similar to that shown in Figure 5, however, with the bottle in a collapsed condition;

[0035] Figure 7 is a cross-sectional view of a portion of the container along section line 7-7' in Figure 5;

[0036] Figure 8 is a pictorial view of a collapsible bottle in accordance with a second embodiment of the present invention;

[0037] Figure 9 is a cross-sectional view along section line 9-9' in Figure 8;

[0038] Figure 10 is a cross-sectional view similar to that in Figure 4 but through a collapsible bottle in accordance with a third embodiment of the present invention;

[0039] Figure 11 is a cross-sectional view similar to that in Figure 4 but through a collapsible bottle in accordance with a fourth embodiment of the present invention; and

[0040] Figure 12 is a cross-sectional view similar to that in Figure 4 but through a collapsible bottle in accordance with a fifth embodiment of the present invention.

Detailed Description of the Drawings

[0041] Reference is made first to Figure 1 which illustrates an exploded pictorial view of a prior art dispenser similar to that taught in U.S. Patent 5,836,482. The dispenser comprises a support plate 10 for mounting to a wall, a replaceable sealed reservoir and pump unit 12 and a housing cover 14. The reservoir and pump unit 12 is adapted to be horizontally removably slidably engaged on the support plate 10, following which the cover 14 may be secured to the support plate 10 to hide the reservoir and pump unit 12 and the workings of the dispenser from view. The reservoir and pump unit 12 comprises a collapsible container 16 having an outlet opening about which a closure cap 15 is secured. The closure cap 15 carries a replaceable, disposable pump 20 adapted to be coupled and driven by a motor 17 carried by the support plate 10 for dispensing fluid from an outlet nozzle 18 as when a person's hand is sensed below the nozzle by an infrared sensing system not shown. While the prior art dispenser shown is for automated dispensing, prior art collapsible containers 16 are also known for use in manual dispensing as with a manually operated pump disposed in its outlet as taught by U.S. Patent 5,676,277 to Ophardt, issued October 14, 1997, the disclosure of which is incorporated herein by reference.

[0042] In dispensing of fluid from the container 16, the container is to collapse upon itself.

[0043] Reference is made to Figures 2 to 7 which illustrate a first embodiment of a collapsible container 22 in accordance with the present invention. The container 22 is illustrated to extend along a central axis generally indicated 23 from a closed end 24 to an open end 25. The container has an outlet opening 26 at the open end 25 with the container having a cylindrical neck 27 about the outlet opening 26 carrying external threads 28.

[0044] The container 22 has two compartments 30 and 40, each of which extend generally about a respective container axis 31 and 41 beside each other from a closed end 32, 42 to an open end 33, 43 open to the outlet opening 26. The compartment axes 31 and 41 are shown in Figure 3 as parallel to each other and parallel to the container axis 23 centered therebetween.

[0045] As seen in Figure 4, each compartment 30, 40 has an inboard side wall 34, 44 adjacent to the other compartment and an outboard side wall 35, 45 opposite from the respective inboard side walls 34 and 44.

[0046] A shunt member 50 couples the two compartments 30 and 40 together at their middle and provides for communication between the two compartments. The shunt member 50 comprises a cylindrical channelway 51 extending coaxially about the container axis 23. Two laterally extending slotways 52 and 53 extend from the channelway 51 through the inboard side walls 34, 44 of the compartments 30, 40 to provide communication between the interior of each compartment 30, 40 and the channelway 51. The slotways are widened at six locations as laterally extending cylindrical passageways best seen as 55 in Figure 7 which extend, respectively, from the channelway 51 to the compartment 30 and from the channelway 51 to the compartment 40. The passageways 55 in the preferred embodiment are illustrated as being provided as pairs of passageways which extend about common passageways axes 56 best seen in Figures 3 and 4 normal to the container axis 23 at axially spaced locations.

[0047] The shunt member 50 is formed between two spaced side walls 57 and 58 which bridge between the inboard side walls 34 and 44 of the compartments and with the inboard side walls 34 and 44 of the compartments defining openings 36 and 46 through the inboard side walls 34, 44 opening into the interior of the shunt member 50.

[0048] The side walls 57 and 58 have a part cylindrical portions 59 and 60 disposed about the container axis 23 where the side walls 57 and 58 border on the cylindrical channelway 51. The two spaced side walls 57 and 58 also have part cylindrical side wall portions 61 and 62 disposed about the passageway axes 56 where the side walls 57 and 58 are about the passageways 55. On each side of the part cylindrical portions 59 and 60 and between the spaced part cylindrical portions 61 and 62, the side walls 57 and 58 are generally planar as flat side wall portions 63 and 64 extending parallel to each other and spaced on either side from a plane containing the passageway axes 56 of each of the passageways and the container axis 23 such that slotways 52 and 53 are provided between the flat side wall portions 63 and 64 between the channelway 51 and each of the compartments.

[0049] The side walls 57 and 58 of the shunt member 50, each have a three-dimensional shape including the part cylindrical portions 59 and 60 and the part cylindrical portions 61 and 62. This three dimensional shape provides an inherent tendency to resist collapsing and provides for communication from the interior of each compartment 30 and 40 into the channelway 51 and via the channelway 51 axially to the outlet opening 26 at all times, even when the two compartments 30 and 40 may collapse upon themselves.

[0050] As seen in Figure 4, each compartment 30 and 40 is indicated as having a thickness indicated as T and a width indicated as W. The thickness T is measured between the outboard side wall 35, 45 and the inboard side wall 34, 44 of each compartment normal to the compartment longitudinal axis 31, 41. The width W is measured normal to both the thickness T of the compartment and its longitudinal axis 31, 41. As seen in cross-section in Figure 4 normal to the longitudinal axes 23, 31 and 41, each compartment is elongate in its width W relative to its thickness T. As seen in Figure 4, the container has a generally H-shape in cross-section normal to the longitudinal axes with the shunt member 50 forming the cross member of the H-shape and each compartment 30 and 40 forming the legs of the H-shape. Each of the compartments 30 and 40 are generally tubular in configuration and extend beside each other.

[0051] Reference is made to Figure 6 which illustrates a cross-section the same as that in Figure 4, however, shows in dashed lines a condition of the container 22 in Figure 4 when in an inflated condition as filled with liquid and shows in solid lines the container 22 in a collapsed condition.

[0052] As seen in Figure 6, in collapsing from the inflated condition of Figure 4 towards the collapsed condition of Figure 6, the outboard side walls 35 and 45 and the inboard side walls 34 and 44 move relatively towards each other so as to collapse upon each other. Each compartment 30 and 40, by reason of being elongate in its width W relative to its thickness T, has a predisposition to collapse in the manner as illustrated in Figure 6 with the outboard side walls to move relatively towards the inboard side walls. The shunt member 50 does not collapse but continues to provide communication laterally from the central channelway 51

into the interior of each compartment 30 and 40 in all conditions of the containers 30 and 40 in collapsing from the inflated condition of Figure 4 to the collapsed condition of Figure 6.

[0053] In Figure 6, the side walls 57 and 58 of the shunt member 50 are illustrated as being drawn together, for example, to an extent that the flat side wall portions 63 and 64 between the passageways 55 while not shown may be drawn together into abutment, however, the passageways 55 provide in a collapsed condition for the continued communication between the channelway 51 and the compartments 30 and 40. The container 22 may be configured such that on collapsing, the distance between the flat planar portions 63 and 64 of the side walls are not collapsed but at least may be maintained as, for example, by reason of the compartments 30, 40 being configured such that on collapsing with drawing of the outboard side walls 35, 45 inwardly, the inboard side walls 34, 44 have forces applied thereto which tends to draw the two halves of each inboard side wall on either side of the openings 36 and 46 away from the openings, thus tending to widen the openings 36 and 46.

[0054] Reference is made to Figures 8 and 9 which illustrate a second embodiment of a container 22 in accordance with the present invention. The container 22 illustrated in Figures 8 and 9 is substantially identical to that illustrated in Figures 1 to 5, however, has the shunt member 50 formed merely with its side walls 57 and 58 being flat and planar, each extending in a plane which is disposed parallel to a plane between the longitudinal axis 31, 41 of the compartments. The shunt member 50 provides a channelway 51 providing communication between the two compartments 30 and 40. Each of the compartments will collapse in a similar manner to that illustrated in Figure 6. The embodiment illustrated in Figures 8 to 9 can be useful whether or not in collapsing of the container, the channelway 51 may collapse by having its side walls 57 and 58 drawn completely together. Even if the channelway 51 may collapse at any portion along its length, the channelway 51 provides the opportunity for communication between the compartments 30 and 40 at other locations and, thus, in the event of the premature collapse of an intermediate portion of one of the compartments along its length, an opportunity is still offered for flow of fluid which would otherwise be trapped in a separated portion of the compartment to be drawn laterally via the channelway 51 into the uncollapsed portion of another compartment. Therefore, in the absence of premature

collapsing of the two intermediate portions of both compartments at the same location longitudinally, there is an increased opportunity for fluid to be drawn outwardly past a prematurely collapsed portion of one of the compartments.

[0055] Various configurations can be adopted to maintain a continuous communication laterally through the channelway 51 between the compartments in accordance with the embodiment illustrated in Figures 8 and 9. In one configuration, each of the compartments 30 and 40 is configured with their side walls arranged such that on collapse of a compartment, the two halves of the inboard side walls 34, 44 of each container are drawn away from the channelway 51 such that with collapsing, the spacing between the side walls 57 and 58 of the channelway 51 may increase or at least stays the same. This can be arranged by suitable selection of the shape of the compartment and the inherent flexibility of different portions of these side walls forming each compartment.

[0056] As contrasted with the second embodiment in Figures 8 and 9, the first embodiment illustrated in Figures 2 to 5, provides for the side walls 57 and 58 of the shunt member 50 to have a three-dimensional configuration which does not collapse and ensures there is communication between the compartments through the shunt member 50 even when the member is collapsed. In the embodiment illustrated in Figures 8 and 9, modifications may be provided so as to provide a three-dimensional structure to each side wall 57, 58 which prevents its collapsing and ensures that even in the event the side walls 57, 58 are drawn together that communication therebetween will still be permitted.

[0057] Preferably, a configuration is adopted for the side walls 57, 58 of the shunt member 50 such that in a collapsed condition, a minimum of fluid will remain in the shunt member 50 which cannot be dispensed.

[0058] The embodiment illustrated in Figures 2 to 5 illustrate communication conduits which extend vertically via the cylindrical channelway 51 and horizontally via the passageways 55. It is to be appreciated that similar passageways may be provided, for example, diagonally or in other directions.

[0059] The container 22 is preferably formed by blow molding and the container's compartments therefore preferably are formed in a manner such that by a conventional blow

molding process, the blow mold may be conveniently opened for removal of the compartment.

[0060] In the preferred embodiments, the compartments are illustrated to have a cross-section when filled as illustrated in Figure 4 which is substantially the same throughout a significant portion of the length of the container 22, however, with the thickness T of each compartment tapering towards the closed ends 32, 42. In accordance with a preferred aspect of the invention, the thickness T of each compartment may increase towards the open ends 33, 43 of each compartment and may reduce towards the closed ends 32, 42 and this can assist in selective collapsing of each container, first at its closed end and, subsequently, with collapsing progressively successively towards the open end. As well, the container may have its side walls formed in the blow molding process so as to have a thinnest wall membrane at portions proximate its closed end so as to facilitate initial collapsing proximate the closed end and to collapse successively towards its open end.

[0061] The container 22 may be adapted to be received within dispensers having, for example, housings configured to receive prior art containers such as 12 shown in Figure 1 which have a predefined size and shape. For example, the prior art container 12 in Figure 1 has a rectangular shape illustrated schematically with the dashed lines indicated as 12 in Figure 4. The container 22 in accordance with the present invention is illustrated as being adapted to be received within this square shape and, therefore, adapted for use directly with the prior art dispenser, albeit providing for improved collapsing.

[0062] Collapsing dispensers in accordance with the present invention may, however, be provided to have various other cross-sectional and three-dimensional shapes.

[0063] Reference is made to Figure 10 which shows a third embodiment of a collapsible container 22 in accordance with the present invention. Figure 10 schematically illustrates a cross-sectional view similar to that shown in Figure 4 with the first embodiment. The embodiment in Figure 10 schematically illustrates a container 22 similar to that shown in the first embodiment, however, in which three different compartments 30, 40 and 90 are illustrated with a third center compartment 90 intermediate compartments 30 and 40. Each compartment functions substantially the same as that illustrated in the first embodiment and

two shunt members 50 are provided so as to provide communication between the interiors of each two adjacent compartments.

[0064] Figure 11 illustrates a fourth embodiment of an invention in accordance with the present invention and illustrating a cross-sectional view similar to Figure 4 but of a container 22 comprising three compartments 30, 40 and 90, each disposed aside each other but spaced about a central shunt member 50 having a channelway 51 opening laterally into each compartment. Each compartment is to collapse by its outboard side walls 35, 45 and 95 moving generally inwardly relative to the inboard side walls 34, 44 and 94.

[0065] Figure 12 illustrates a fifth embodiment in accordance with the present invention illustrating a cross-section similar to that in Figure 4, however, in a container having four compartments 30, 40, 90 and 100, each adapted to separately collapse and with communication being provided between each of the compartments via a central shunt member 50 having a channelway 51 opening into each of the compartments.

[0066] The containers 22 illustrated in the preferred embodiments have a variety of shapes and may be sent to have shapes in cross-section normal its longitudinal selected from a preferred racetrack shape, elliptical shape or diamond shape as, for example, in the first and second embodiments of Figures 1 to 9 or more diamond or triangular shapes as illustrated in Figures 11 and 12.

[0067] While the invention has been described with reference to preferred embodiments, many modifications and variations will now occur to persons skilled in the art. For a definition of the invention, reference is made to the following claims.

I CLAIM:

1. A collapsible container having an outlet opening and two collapsible tubular compartments,

each compartment extending beside the other compartment from a respective open end of each compartment opening into the outlet opening away from the outlet opening to a respective closed end of each compartment,

each compartment having a outboard side and an opposed inboard side with the inboard side of one compartment facing the inboard side of the other compartment,

each compartment being collapsible from an inflated condition in which the container is filled with fluid toward a collapsed condition by the withdrawn of fluid from the outlet opening,

wherein in the inflated condition, the inboard side and outboard side of each compartment are spaced, and

wherein in collapsing from the inflated condition toward the collapsed condition the outboard side and inboard side of each compartment move relatively towards each other,

a shunt bridging between the inboard sides of the compartments placing the two compartments in communication through their inboard sides.

2. A collapsible container as claimed in claim 1 wherein the shunt comprises a plurality of shunt passageways bridging between the inboard sides of the compartments placing the two compartments in communication through their inboard sides at a plurality of locations from the open end to their closed end.

3. A collapsible container as claimed in claim 1 wherein the shunt places the two compartments in communication continuously from their open ends substantially to their closed ends.

4. A collapsible container as claimed in claim 1 wherein in collapsing the outboard side and inboard side of each compartment are drawn together.
5. A collapsible container as claimed in claim 1 wherein each compartment extends about a longitudinal axis from their open end to their respective closed end with the longitudinal axis of each compartment being parallel.
6. A collapsible container as claimed in claim 1 wherein each compartment extending about a longitudinal axis from their open end to their respective closed end with the longitudinal axis of each compartment being parallel, the shunt comprises a plurality of shunt passageways bridging between the inboard sides of the compartments placing the two compartments in communication through their inboard sides at a plurality of spaced locations from the open ends to the closed ends, the passageways spaced from each other in a direction the longitudinal axes extend.
7. A collapsible container as claimed in claim 1 wherein the shunt provides communication between containers in all conditions of the containers in collapsing from the inflated condition to the collapsed condition.
8. A collapsible container as claimed in claim 7 wherein the shunt is not collapsible.
9. A collapsible container as claimed in claim 2 wherein the passageways provide communication between containers in all conditions of the containers in collapsing from the inflated condition to the collapsed condition.
10. A collapsible container as claimed in claim 2 wherein the passageways are not collapsible.

11. A collapsible container as claimed in claim 5 wherein the container has a generally H-shape in cross-section normal to the longitudinal axes with the shunt forming a cross member of the H-shape.
12. A collapsible container as claimed in claim 1 wherein
each compartment extending about a longitudinal axis from its open end to its respective closed end,
each compartment having a thickness measured between the outboard side and inboard side normal the longitudinal axis, and a width measured normal to both the thickness and the longitudinal axis,
in cross-section normal to its longitudinal axis, each tubular compartment being elongate in its width relative to its thickness.
13. A collapsible container as claimed in claim 12 wherein
a maximum width of each container is greater than a maximum depth of each container.
14. A collapsible container as claimed in claim 12 wherein each container has a shape in cross section normal its longitudinal axis selected from a racetrack shape, an elliptical shape, and a diamond shape.
15. A collapsible container as claimed in claim 1 wherein the container is blow molded from plastic material as a unitary element.
16. A collapsible container as claimed in claim 5 wherein the shunt includes a continuous elongate channelway extending parallel to the longitudinal axis of the compartments between the compartments, the channelway open at one end to the outlet opening, the channelway open on a first side of the channelway through the inboard side of

one of the compartment into the one compartment and open on a second side of the channelway through the inboard side of a second of the compartments into the second compartment.

17. A collapsible container as claimed in claim 16 wherein the channelway is generally cylindrical about a channelway axis parallel the longitudinal axes of the compartments,

a plurality of cylindrical passageways spaced along the channelway,

a first set of the passageways extending from a first side of the channelway about an axis transverse to the channelway axis from the channelway through the inboard side of the one compartment into the one compartment,

a second set of passageways extending from a second side of the channelway about an axis transverse to the channelway axis from the channelway through the inboard side of the second compartment into the second compartment, the plurality of passageways placing each of the two compartments in communication with the channelway through their inboard sides at a plurality of locations from their open ends substantially to their closed ends.

18. A collapsible container as claimed in claim 17 wherein the channelway being substantially non-collapsible and the passageways being substantially non-collapsible such that in the compartments collapsing from the inflated condition toward the collapsed condition,

each compartment remains in communication with the outlet opening via the passageways and channelway at multiple locations spaced along their length where the passageways connect with the compartments.

19. A collapsible container having an outlet opening and two collapsible tubular compartments,

each compartment extending beside the other compartment from a respective open end of each compartment opening into the outlet opening away from the outlet opening to a respective closed end of each compartment,

each compartment having a outboard side and an opposed inboard side with the inboard side of one compartment facing the inboard side of the other compartment,

each compartment being collapsible from an inflated condition in which the container is filled with fluid toward a collapsed condition by the withdrawn of fluid from the outlet opening, wherein in the inflated condition and the inboard side and outboard side of each compartment are spaced, and

wherein in collapsing from the inflated condition toward the collapsed condition the outboard side and inboard side of each compartment move relatively towards each other,

an elongate shunt located between the inboard sides of the compartments placing the two compartments in communication through their inboard sides along the length of the shunt with an end of the shunt open to the outlet opening,

in collapsing of the compartments from the inflated condition toward the collapsed condition the shunt maintaining communication between the two compartments and the outlet opening substantially along length of the compartments.

20. A collapsible container having an outlet opening and at least two collapsible tubular compartments,

each compartment extending from a respective open end of each compartment opening into the outlet opening away from the outlet opening to a respective closed end of each compartment,

each compartment adapted to collapse laterally with withdrawal of fluid from the outlet opening of the container,

a central elongate shunt channelway located between the two compartments extending therebetween with an open end at one end open to the outlet opening,

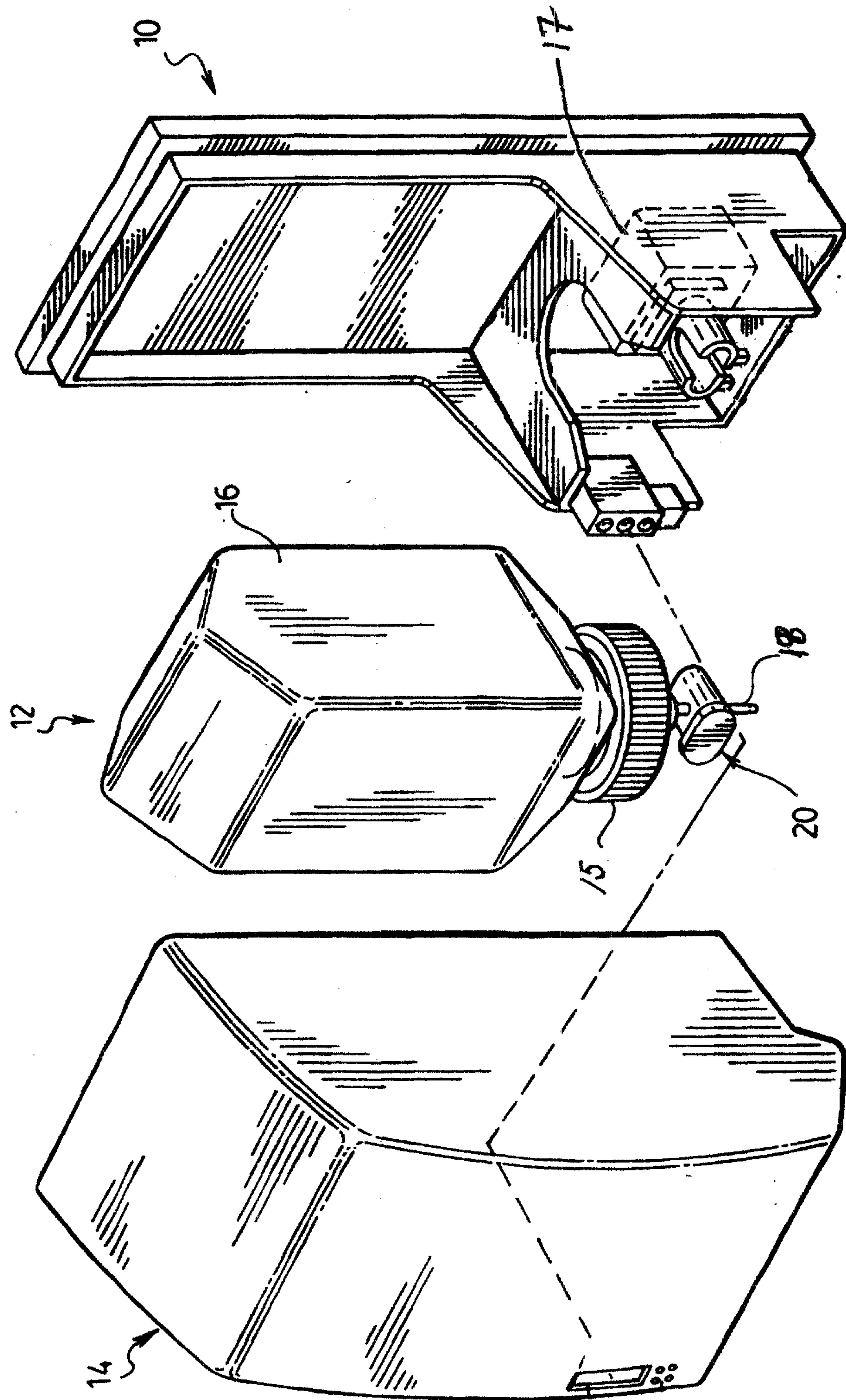
the channelway open laterally at a plurality of locations along its length to the each of the compartments at a plurality of locations along the length of each compartment,

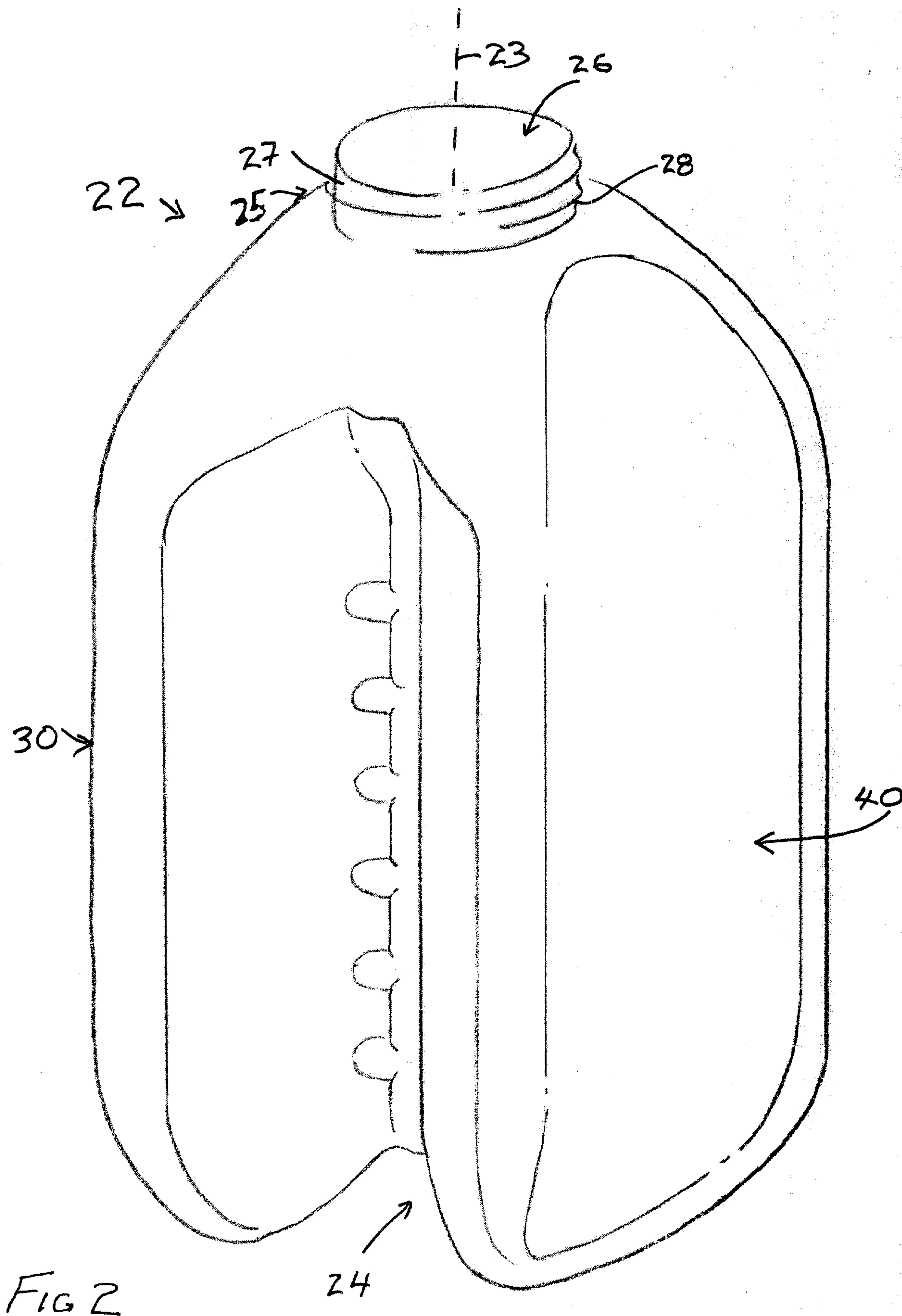
the channelway being substantially non-collapsible whereby the channelway maintains the two compartments in communication with the outlet opening along the length of the compartments as the compartments collapse.

21. A collapsible container having an outlet opening and two collapsible tubular compartments,

each compartment extending beside the other compartment from a respective open end of each compartment opening into the outlet opening,

a shunt channelway between the compartments placing the two compartments in communication laterally at a plurality of locations along the length of the compartments from the open end substantially to the closed end.





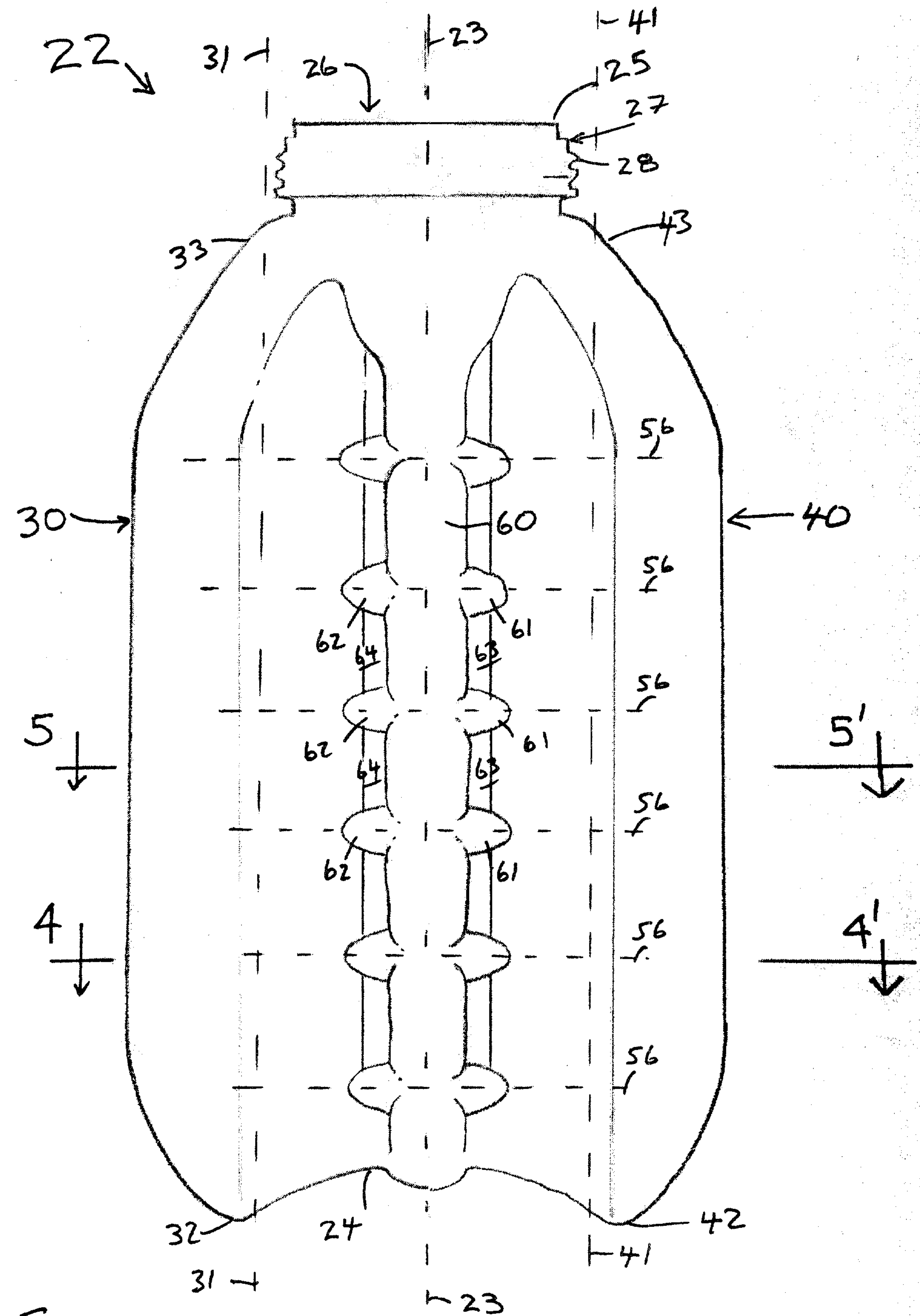


FIG 3

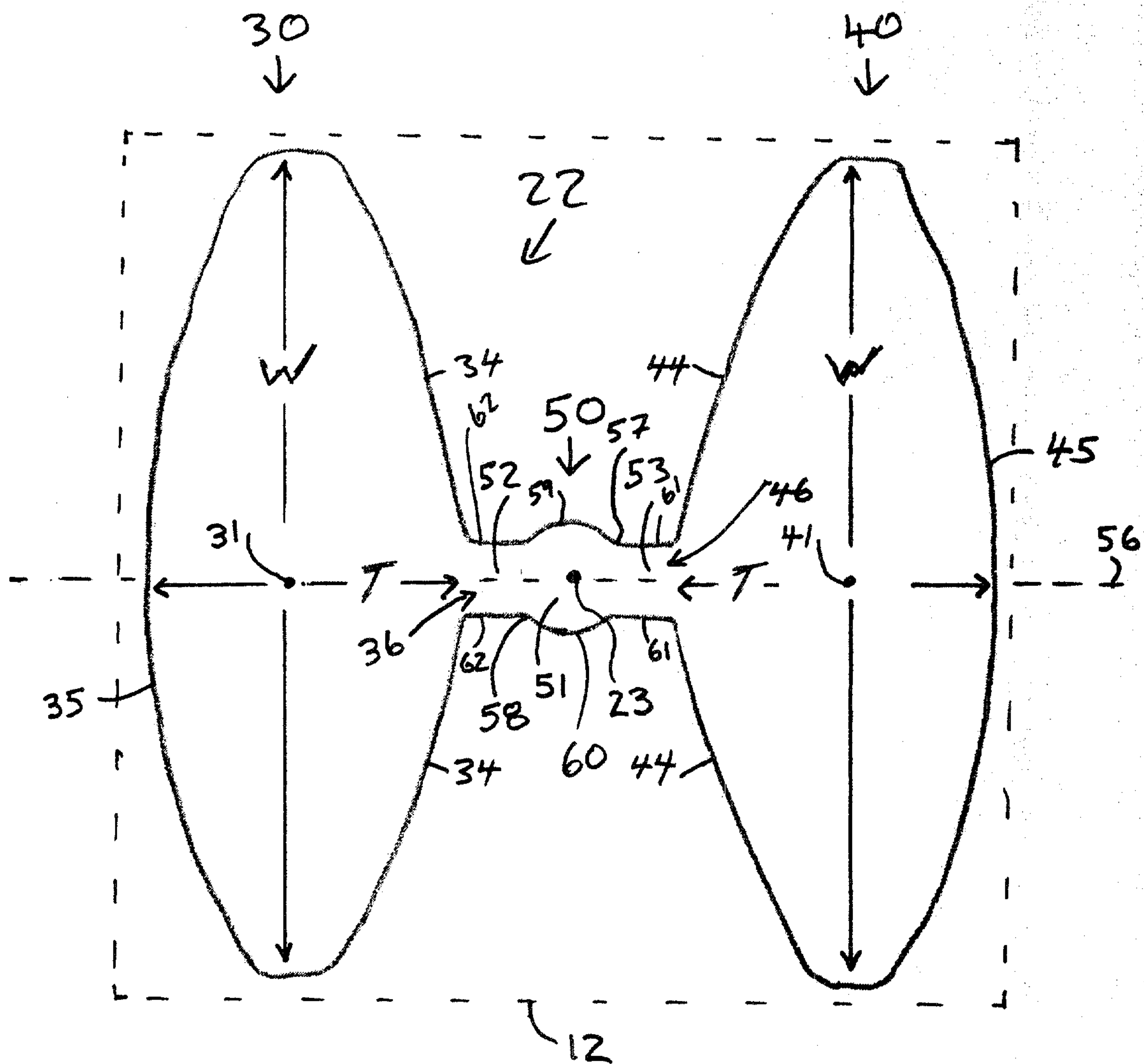


FIG 4

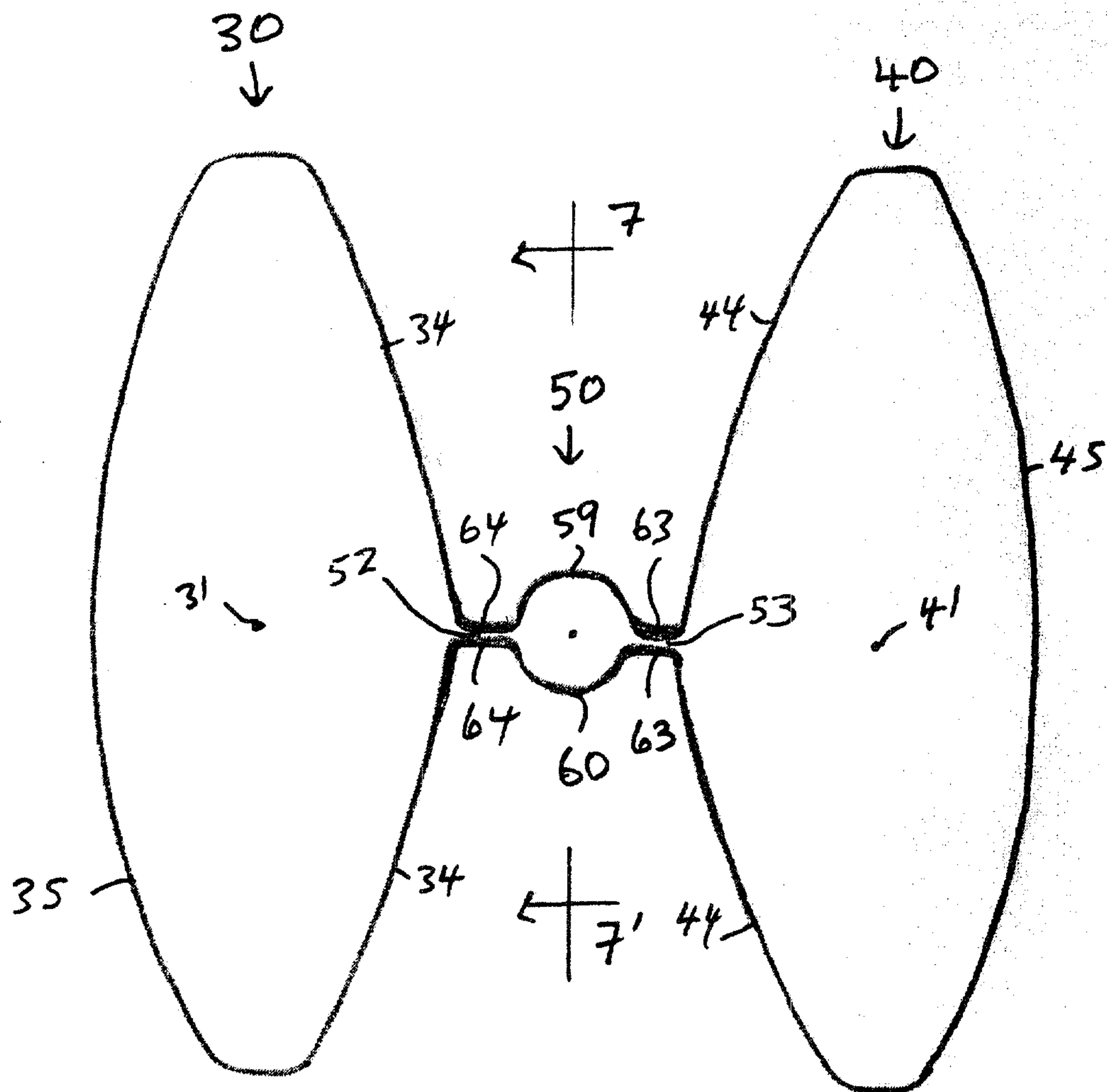


FIG 5

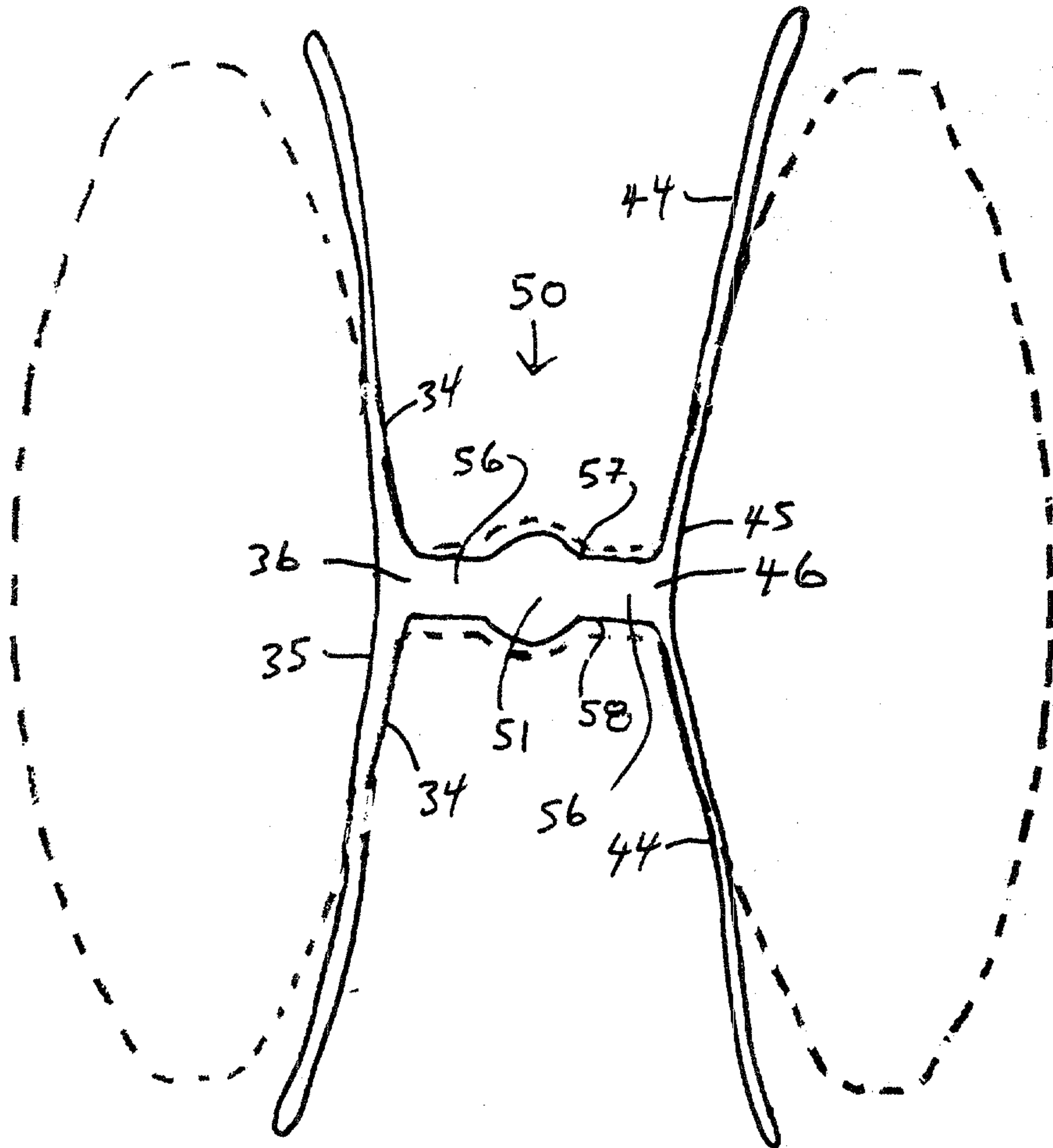


FIG 6

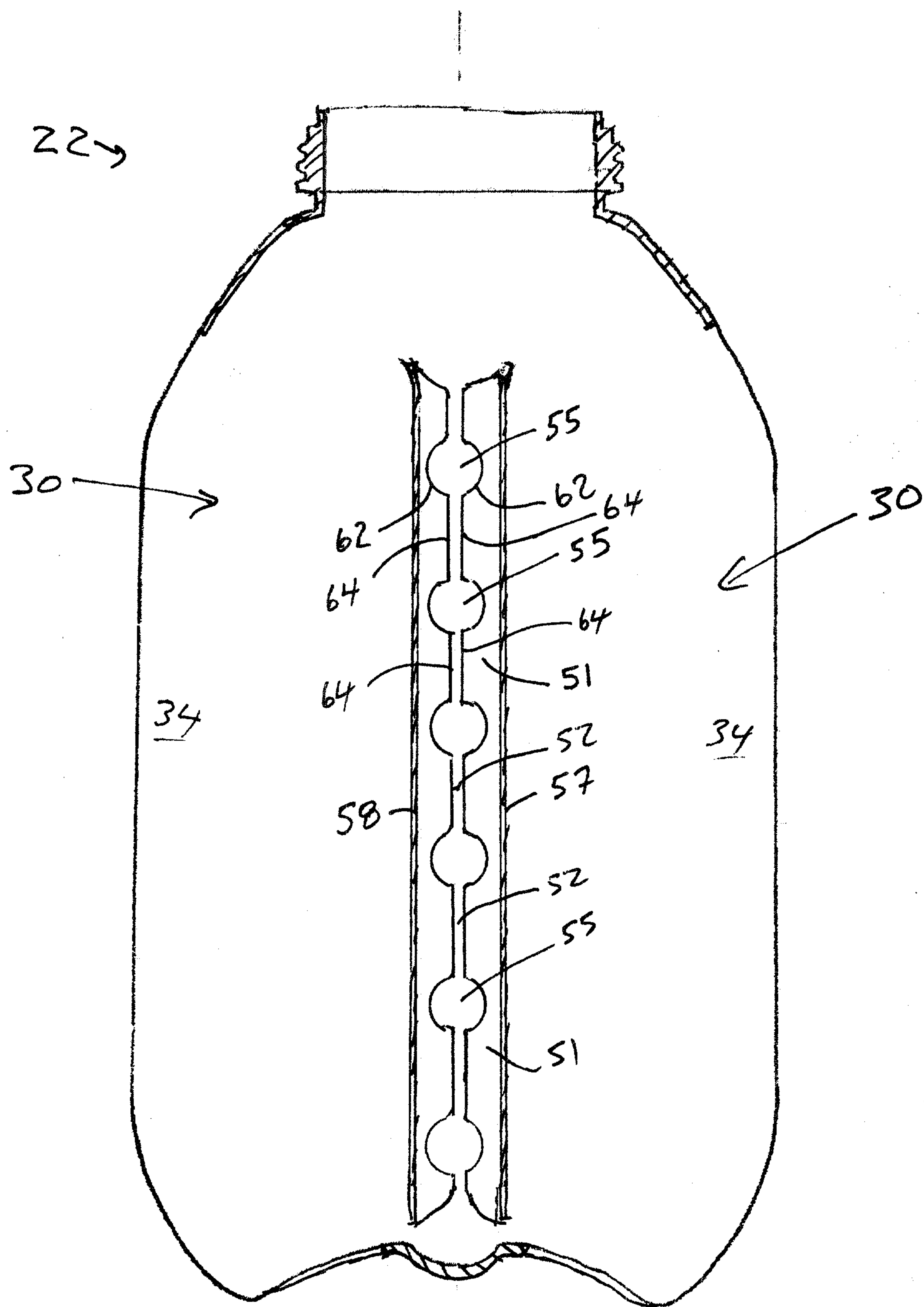


FIG 7

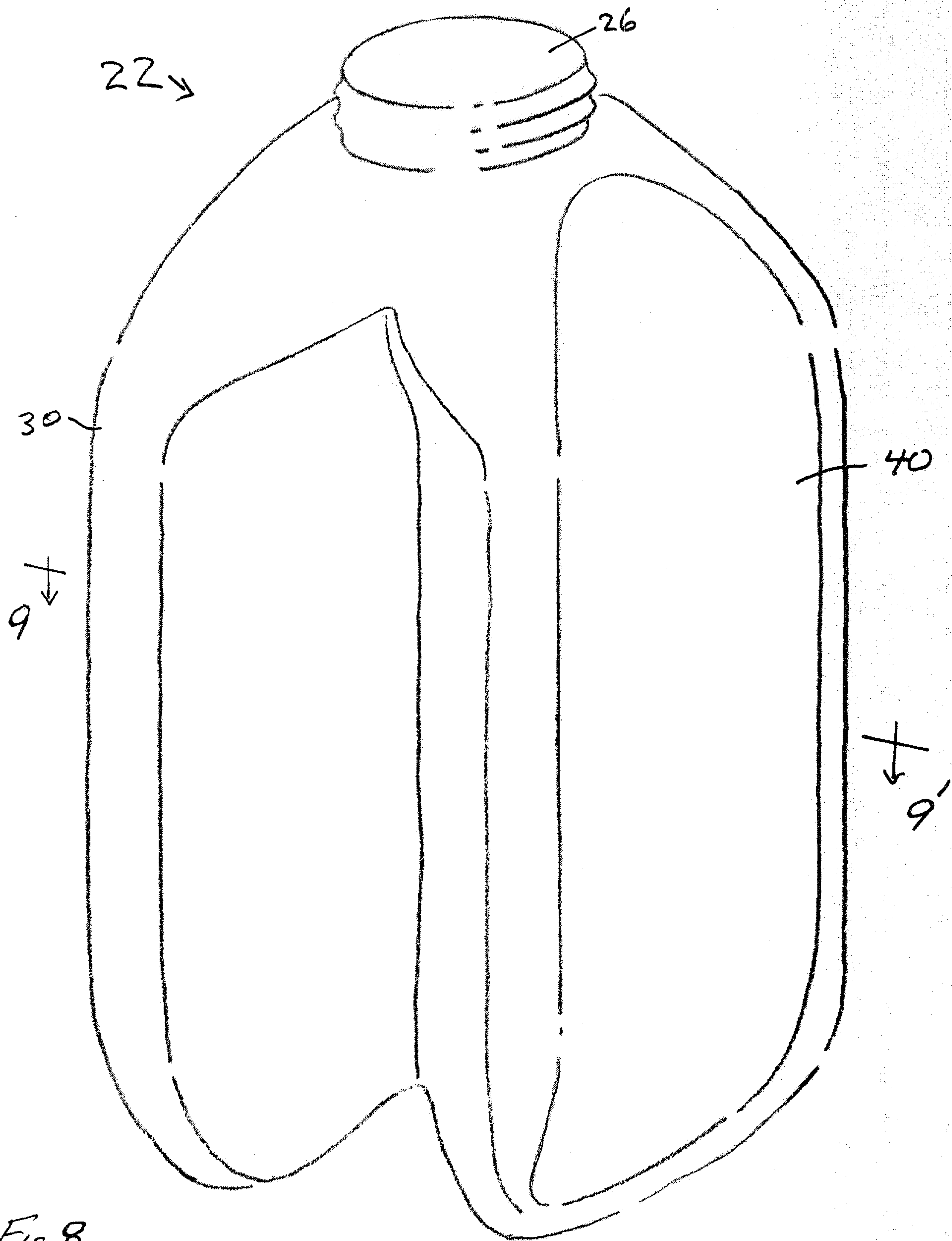


FIG 8

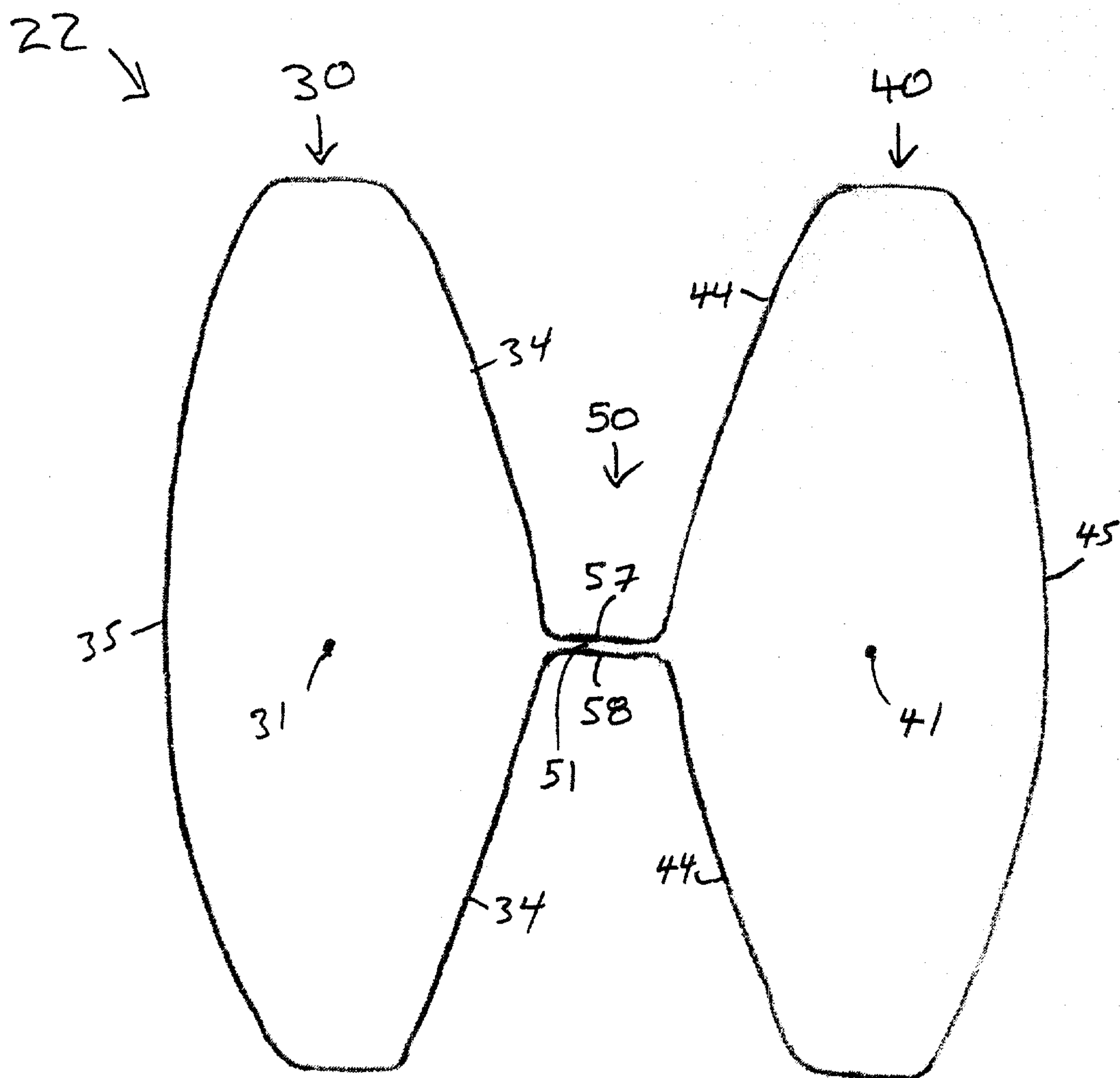


FIG 9

