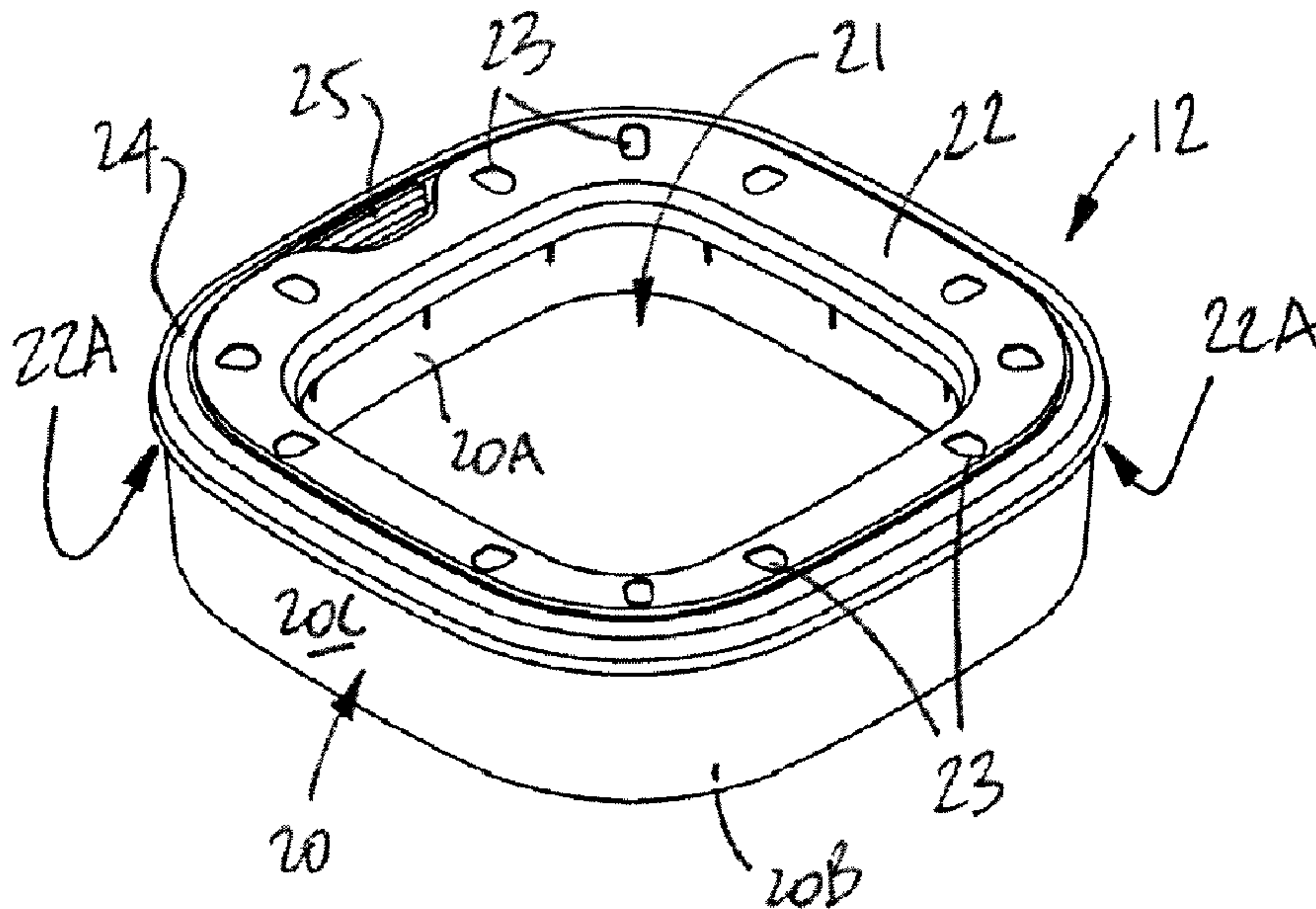




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(54) **Titre :** CASSETTE DISTRIBUTRICE DE FILMS ET SAC ENCADRE POUR RECIPIENT A ORDURES
 (54) **Title:** FILM-DISPENSING CASSETTE AND RIMMED BAG FOR WASTE-DISPOSAL UNIT



(57) **Abrégé/Abstract:**

A film-supporting device is used with a waste-disposal unit. A central opening of the device in a transverse plane of the device has variable diametrical dimensions with a first diameter of greater dimension than the second diameter. The outline of the central opening has a shape optimized for receiving tubular film and for transportation costs, by having two of the first diameter of generally equal dimension and two of the second diameter of generally equal dimension, with the first diameter being the maximum diameter of the outline in the transverse plane, and with the second diameter being the minimum diameter of the outline in the transverse plane. The device has tubular film about an outward radial surface of the annular body. The free annular end is closed to form a bag. The opening of the bag is accessible through the central opening.

FILM-DISPENSING CASSETTE AND RIMMED BAG
FOR WASTE-DISPOSAL UNIT

ABSTRACT

A film-supporting device is used with a waste-disposal unit. A central opening of the device in a transverse plane of the device has variable diametrical dimensions with a first diameter of greater dimension than the second diameter. The outline of the central opening has a shape optimized for receiving tubular film and for transportation costs, by having two of the first diameter of generally equal dimension and two of the second diameter of generally equal dimension, with the first diameter being the maximum diameter of the outline in the transverse plane, and with the second diameter being the minimum diameter of the outline in the transverse plane. The device has tubular film about an outward radial surface of the annular body. The free annular end is closed to form a bag. The opening of the bag is accessible through the central opening.

FILM-DISPENSING CASSETTE AND RIMMED BAG
FOR WASTE-DISPOSAL UNIT

FIELD OF THE APPLICATION

The present application relates to film-dispensing
5 cassettes and rimmed bags of the type supported at an opening
of a waste-disposal unit and dispensing tubular film in the
form of a closed-end bag, or supporting such closed-end bag.

BACKGROUND OF THE ART

Waste-disposal units of the type having an
10 internal mechanism used with a film-dispensing cassette are
commonly used to throw away odorous waste, such as diapers
and litter. In such waste-disposal units, the film-
dispensing cassettes are supported at an opening of a bin and
dispense tubular film projecting into the inner cavity of the
15 bin of the waste-disposal unit. The free end of the tubular
film is closed, thereby defining a bag. The internal
mechanism in the waste-disposal unit presses the bag shut,
thereby isolating the waste in the bag below the internal
mechanism, and capturing the odors in the bag.

20 However, the refill cassettes are costly for the
consumer, whereby it is desired to increase the amount of
tubular film per cassette, without increasing drastically
the dimensions of the cassette, for instance to be
compatible with existing formats of waste-disposal units.
25 By increasing the quantity of bag per cassette for similar
dimensions, the transportation costs and shelving costs may
also be reduced.

In some instances, it is desired to facilitate the
disposal of the waste, for instance to reduce the amount of
30 by-products such as dust created in the disposal.

SUMMARY OF THE APPLICATION

It is therefore an aim of the present disclosure
to provide a novel film-dispensing cassette for waste-
disposal unit.

It is a further aim of the present disclosure to provide a novel rimmed bag for waste-disposal unit.

It is a still further aim of the present disclosure to provide a novel method for dispensing waste in
5 a film-dispensing cassette.

Therefore, in accordance with the present application, there is provided A film-supporting device for use with a waste disposal unit comprising: an annular body removably insertable in the waste-disposal unit and
10 including an inner annular wall delimiting a central opening of the annular body, an outer annular wall, a bottom horizontal wall at a bottom end of the annular body to form a cavity in the annular body, outlines of each of the central opening and the outer annular wall in a transverse
15 plane of the device having variable diametrical dimensions with a first diameter being of greater dimension than a second diameter, the outlines each having, in the transverse plane of the device, at least two of the first diameter of generally equal dimension and at least two of the second
20 diameter of generally equal dimension, with the first diameter being the maximum diameter of the outline in the transverse plane, and with the second diameter being the minimum diameter of the outline in the transverse plane, a central perimeter of the cavity defined between the outlines
25 in the transverse plane being greater than a central perimeter of a similarly-defined cavity of a circular film-supporting device, where a circular outer annular wall and a circular central opening of the rounded film-supporting device each have a constant diameter respectively equal to
30 said minimum diameter of each said outline in the transverse plane; and tubular film accumulated in the cavity between the inner annular wall and the outer annular wall, with a free annular end dispensed outwardly from the inner annular wall, the free annular end being adapted to be closed to
35 form a bag with an opening of the bag being accessible through the central opening, wherein a quantity of said tubular film in the cavity is greater than a quantity of tubular film in said circular film-supporting device.

In accordance with another embodiment of the present disclosure, there is provided a film-supporting device for use with a waste-disposal unit comprising: an annular body having at least an inner annular wall and a radial wall projecting at least partially radially outwardly from the inner annular wall, with an inward radial surface defining a central opening of the annular body, an outline of an outer periphery of the annular body in a transverse plane of the device having a diagonal being of greater dimension than a radial width, the outline having in the transverse plane of the device two of the diagonal of generally equal dimension and two of the radial width of generally equal dimension; and tubular film about an outward radial surface of the inner annular wall, with a free annular end dispensed outwardly from the inner annular wall, the free annular end being adapted to be closed to form a bag with an opening of the bag being accessible through the central opening.

In accordance with still another embodiment of the present disclosure, there is provided a method for disposing of waste on a scooping tool comprising: providing a bag supported by an annular body with a closed end of the bag accessible through a central opening of the annular body, the outline of the central opening having a first axial dimension larger than a second axial dimension in a transverse plane of the annular body; positioning the scooping tool with waste over the central opening; orienting the scooping tool such that a width of the scooping tool is generally parallel to the first axial dimension of the central opening; lowering the scooping tool into the central opening of the cassette with a width of the scooping tool remaining generally parallel to the first axial dimension; and pivoting the scooping tool such that waste in the scooping tool slides out of the scooping tool and into the bag.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a film-dispensing cassette for waste-disposal unit, in accordance with an embodiment of the present disclosure;

5 Fig. 2 is a perspective view of the film-dispensing cassette of Fig. 1, as dispensing film;

Fig. 3 is a top plan view of the film-dispensing cassette of Fig. 1;

10 Fig. 4A is a sectional view of an annular body of the film-dispensing cassette of Fig. 1, with outer annular wall and with clearance;

Fig. 4B is a sectional view of an annular body of the film-dispensing cassette of Fig. 1, with outer annular wall and without clearance;

15 Fig. 4C is a sectional view of an annular body of the film-dispensing cassette of Fig. 1, without outer annular wall and with clearance;

Fig. 4D is a sectional view of an annular body of the film-dispensing cassette of Fig. 1, without outer
20 annular wall and without clearance;

Fig. 5 is a perspective view of the film-dispensing cassette of Fig. 1 as used with a scooping tool;

25 Fig. 6A is a top plan view of the film-dispensing cassette in accordance with another embodiment of the present disclosure, with a rectangular outline for central opening;

Fig. 6B is a top plan view of the film-dispensing cassette in accordance with another embodiment of the present disclosure, with an oval outline for central
30 opening;

Fig. 6C is a top plan view of the film-dispensing cassette in accordance with another embodiment of the present disclosure, with a hexagonal outline for central opening;

35 Fig. 6A is a top plan view of the film-dispensing cassette in accordance with another embodiment of the

present disclosure, with a trapezoidal outline for central opening;

Fig. 7 is a schematic view of the film-dispensing cassette of Fig. 1 in a waste-disposal unit;

5 Fig. 8 is a schematic view of a rimmed bag in accordance with another embodiment;

Fig. 9 is a comparative view of the film-dispensing cassette of Fig. 1/rimmed bag of Fig. 8 and of a film-dispensing cassette of the prior art; and

10 Fig. 10 is a schematic view of another rimmed bag in accordance with yet another embodiment.

DESCRIPTION OF THE EXEMPLARY EMBODIMENTS

Referring to the drawings and more particularly to Fig. 7, there is illustrated a waste-disposal unit 10 of the type having a bag-closing mechanism 11 used with a film-dispensing cassette 12, recipient or cartridge (hereinafter cassette 12), or alternatively used with a rimmed bag 12' (described hereinafter for Figs. 8 and 10). The waste-disposal unit 10 may be used for any type of waste items, but is well suited for the disposal of cat litter and hygienic items such as diapers. The waste-disposal unit 10 is shown as having a bin, but the waste-disposal unit 10 may have any other configuration capable of supporting the cassette 12 (such as a wire rack), and having the mechanism 11.

The cassette 12 is of the type having an annular shape with tubular film 13 dispensed from a top of the cassette 12, passing through the central opening of the cassette 12, and into the inner cavity of the waste-disposal unit 10. The free end of the tubular film 13 is closed, for instance with a knot 13A (shown in Fig. 2), to define a bag to receive the waste, with the central opening of the cassette 12 forming the opening of the bag. The free end of the tubular film 13 may be closed in any other suitable way, for instance by using a sealing unit to form a sealing joint at the free end of the tubular film 13. The mechanism 11 is

actuatable to press the bag of the tubular film 13 shut, thereby keeping odors in the bag of the tubular film 13.

It is also possible to have the tubular film 13 dispensed from a bottom of the cassette 12, instead of being dispensed from the top. In such a case, the central opening of the cassette 12 defines the opening of the bag of tubular film 13.

The cassette 12 is therefore held by a support 14 adjacent to a top opening of the waste-disposal unit 10, above the mechanism 11. The support 14 may be of any possible shape or configuration to support the cassette 12. The tubular film 13 may be of any suitable material. In an embodiment, the tubular film 13 is made of a polymer, or numerous layers thereof. In another embodiment, the polymer is made of a barrier material generally odor-proof, such as EVOH. Moreover, the mechanism 11 may be a lid 15 sealingly secured to a top of the cassette 12 or to a top of the waste-disposal unit 10 to hold odors in the bag of the cassette 12.

Referring concurrently to Figs. 1 to 3, the cassette 12 is shown in greater detail. The cassette 12 has an annular body 20 that is a recipient of the tubular film 13, held in an accumulated condition (e.g., pleated) radially outward of an inner annular wall 20A. The annular body 20 also has a bottom wall 20B, and may have an outer annular wall 20C, with the tubular film 13 being respectively on top of the bottom wall 20B and radially inward of the outer annular wall 20C. As explained hereinafter, the inner annular wall 20A, the bottom wall 20B and/or the outer annular wall 20C may be arranged to define clearances or the like.

The inner annular wall 20A also defines a central opening 21 of the annular body 20. As shown in Fig. 2, the tubular film 13 exits from a top of the annular body 20, and then projects below the annular body 20 by passing through the central opening 21. The closed end of the tubular film 13 is knotted at 13A, thereby forming a bag whose length is deployed from the cassette 12, until the bag is full.

Referring to Figs. 1 to 3, a cover 22 is connected to a top edge of the inner annular wall 20A, and defines an outward flange with respect to the inner annular wall 20A, to help retain the tubular film 13 in the annular body 20 in the accumulated condition. The cover 22 may also/alternatively be connected to a top edge of the outer annular wall 20C if the cassette 12 has such a wall, or extend beyond the outer annular wall 20C to define a peripheral shoulder 22A. Alternatively, as shown in Fig. 4A, the peripheral shoulder 22A may be part of the annular wall 20C. From a plan view, the peripheral shoulder 22A projects radially beyond the bottom wall 20B or beyond the outer annular wall 20C. Moreover, the cassette 12 may not have the cover 22, with the tubular film 13 being retained solely by the inner annular wall 20A, or may only have a portion of a cover 22.

The cover 22 may have a plurality of throughbores 23. The throughbores 23 are provided to help press the accumulated tubular film 13 down with fingers contacting the film therethrough, while the cover 22 is being connected to the annular body 20. The cover 22 may be welded, glued, or mechanically retained to the annular body 20.

Referring to Figs 1 and 3, a tear-off strip 24 may be provided in the cover 22. The tear-off strip 24 is secured to a remainder of the cover 22 by a frangible joint, whereby a pulling action on tab 25 causes a rupture of the frangible joint and thus the removal of the strip 24. As shown in Fig. 2, the removal of the strip 24 defines a radial gap that exposes the tubular film 13, whereby a user may pull a free end of the accumulated tubular film 13 out of the annular body 20 to form a knotted bag, as explained above.

Referring to Fig. 8, there is shown another embodiment of non-circular self-supported bag, in the form of a rimmed bag 12'. The rimmed bag 12' has several components in common with the cassette 12, whereby like numerals will refer to like elements. The rimmed bag 12' supports a closed-end bag 13' by way of an annular body 20'.

The closed-end bag 13' is welded, glued, snapped or connected to the annular body 20' in any appropriate manner. Moreover, the bag 13' may simply be folded over the annular body 20' as shown in Fig. 10, without the necessity of welding or gluing the bag 13' to the annular body 20'. In Fig. 10, the annular body 20' is a square-sectioned tube.

In Fig. 8, the annular body 20' is shaped as a flat ring, and is made of a rigid or semi-rigid material, as it structurally supports a bag and its content. However, it may have other shapes, such as a cylinder (Fig. 10) or a circle of metallic wire. The annular body 20' has a central opening 21, by which an interior of the bag 13' is accessed. The annular body 20' may be constituted of a pair of parts foldable toward one another to seal the bag shut. Once the rimmed bag 12' is filled, it is discarded. Although not shown, the annular body 20' may have tabs on its periphery or connector holes adjacent the periphery, so as to be clipped or secured to a waste disposal unit.

Referring to Fig. 3, Fig. 8 and Fig. 10, the central openings 21 of the cassette 12 and of the rimmed bag 12' are shown having a generally square outline 30, with rounded corners. More specifically, the generally square outline 30 may be a squircle. Accordingly, the central opening 21 has at least one axial dimension (or diameter, axis, namely passing through the center of the outline shape) that is larger than another axial dimension, in a transverse plane of the cassette 12. This is shown as A1 being of greater dimension than A2 in Fig. 3 ($A1 > A2$), in the transverse plane of the cassette 12. The generally square outline of the central opening 21 shown in Fig. 3 (i.e., not perfectly square because of the rounded corners), has two diagonals (represented by A1) of the same dimension, and two minimum widths (represented by A2) of the same dimension. It is observed that the outline of the outer periphery of the cassette 12 (as shown in Fig. 3) and the outline of the central opening 21 are similar figures.

Referring to Figs. 6A to 6D, other outlines respecting the rule $A1 > A2$ are illustrated at 30A to 30D, for

one or both of the contour of the central opening 21 and outer periphery of the cassette 12/rimmed bag 12'. The outlines 30A to 30D may be used as shapes for the central opening 21 and/or outer periphery of either one of the cassette 12 and rimmed bag 12', as may the outline 30 of Fig. 3. Other shapes are considered as well, such as super-ellipses and squircles (i.e., a specific type of super-ellipse). In an embodiment, it is preferred that the central opening 21 and/or outer periphery of the cassette 12 have an outline shape having at least two axes of symmetry in the transverse plane, such as the square outline 30 (Fig. 3), the rectangular outline 30A (Fig. 6A), the oval or elliptical outline 30B (Fig. 6B), and the hexagonal outline 30C (Fig. 6C). Other outlines with an $A1 > A2$ outline and at least two axes of symmetry include octagonal outlines, decagonal outlines, and the like. The trapezoidal outline 30D of Fig. 6D does not have two axes of symmetry in the plan view (transverse plane).

With $A1 > A2$ outlines, the cassette 12 has a greater amount of tubular film than cassettes without such outlines, for a same minimum axial dimension $A2$. Moreover, as shown in Fig. 5, cassettes with $A1 > A2$ outlines allow tools T to be fitted into the central opening 21 while minimizing the size of the cassette 12 or rimmed bag 12'. In other words, a cassette without an $A1 > A2$ outline will be of greater dimension than a cassette with $A1 > A2$ outline, if it must receive a tool T in the central opening 21, in the manner shown in Fig. 5. The tool T is illustrated as being a scooping tool, with a width W.

Referring to Fig. 9, there is illustrated a comparative view between the cassette 12/rimmed bag 12', and a cassette 12'' of the prior art. The cassette 12'' does not have an $A1' > A2$ outline for its central opening 21', but rather an $A1' = A2$ outline. Therefore, when comparing the cassette 12/rimmed bag 12' with the cassette 12'' as superposed in Fig. 9, it is observed that dimension $A1$ in the cassette 12/rimmed bag 12' is greater than dimension $A1'$ in the cassette 12'', for the same minimum axial dimension

A2. Accordingly, for similar inner and outer dimensions, the cassette 12 can support more tubular film than the cassette 12". As the outlines of the central opening 12 and of the outer periphery of the cassette 12/rimmed bag 12' are similar figures, the A1, A1' and A2 representations in Fig. 9 are only for the central opening 12 for clarity of illustration, but could also be made for the outer periphery.

According to the arrangement of Fig. 5, a sequence of manipulations is performed to dispose of waste in the bag formed of the tubular film 13 dispensed by the cassette 12/rimmed bag 12'. The tool T is positioned over the central opening 21 of the cassette 12/rimmed bag 12'. The tool T is rotated or oriented such that a width W of the tool is generally parallel to the A1 dimension of the central opening 21. The tool T is then lowered into the central opening 21 with the width W of the tool T remaining generally parallel to the A1 dimension. The tool T is then lowered into the central opening 21 with the width W of the tool T remaining generally parallel to the A1 dimension. The tool T is then pivoted approximately about the A1 dimension, or about an axis generally parallel to the A1 dimension, such that waste slides out of the tool T, through the central opening 21, and into the bag of tubular film 13 of the cassette 12/rimmed bag 12'.

The sequence of manipulations is advantageously used when the waste has a volatile solid component, such as dust. For instance, when the waste is cat litter, it is desired to reduce the movement of the cat litter from the scoop T to the bag of tubular film 13, to minimize the creation of dust from the disposal action.

Referring to Figs. 4A to 4D, various sections considered for the annular body 20 are illustrated, as dispensing the tubular film 13. Figs. 4A and 4C show a clearance 40. The clearance 40 is used in combination with a projection in the support 13 of the waste-disposal unit 10, to ensure that the cassette 12 is properly inserted into the waste-disposal unit 10. The clearance 40 may also be at

the junction of the bottom wall 20B and the outer annular wall 20C, any may take any suitable form, such as screw-in slots (for complementary engagement with retainer tabs), threading, etc. If the cassette 12 dispenses the tubular
5 film 13 from its bottom, the clearance may not be required. According to another embodiment, the bottom wall 20B projects radially inwardly into the central opening 21. In such a case, the bottom wall 20B may serve as a support for the cassette 12.

CLAIMS:

1. A film-supporting device for use with a waste disposal unit comprising:

an annular body removably insertable in the waste-disposal unit and including an inner annular wall delimiting a central opening of the annular body, an outer annular wall, a bottom horizontal wall at a bottom end of the annular body to form a cavity in the annular body, outlines of each of the central opening and the outer annular wall in a transverse plane of the device having variable diametrical dimensions with a first diameter being of greater dimension than a second diameter, the outlines each having, in the transverse plane of the device, at least two of the first diameter of generally equal dimension and at least two of the second diameter of generally equal dimension, with the first diameter being the maximum diameter of the outline in the transverse plane, and with the second diameter being the minimum diameter of the outline in the transverse plane, a central perimeter of the cavity defined between the outlines in the transverse plane being greater than a central perimeter of a similarly-defined cavity of a circular film-supporting device, where a circular outer annular wall and a circular central opening of the rounded film-supporting device each have a constant diameter respectively equal to said minimum diameter of each said outline in the transverse plane; and

tubular film accumulated in the cavity between the inner annular wall and the outer annular wall, with a free annular end dispensed outwardly from the inner annular wall, the free annular end being adapted to be closed to form a bag with an opening of the bag being accessible through the central opening, wherein a quantity of said tubular film in the cavity is greater than a quantity of tubular film in said circular film-supporting device.

2. The film-supporting device according to claim 1, wherein an outer periphery of the annular body as defined by the outer annular wall has an outline geometrically similar to the outline of the central opening.

3. The film-supporting device according to claim 1, further comprising a cover wall projecting radially outwardly from the inner annular wall.

4. The film-supporting device according to claim 3, wherein an outer periphery of the annular body as defined by the cover wall has an outline geometrically similar to the outline of the central opening.

5. The film-supporting device according to claim 3, wherein the cover wall comprises a tear-off portion to access the free end of tubular film.

6. The film-supporting device according to claim 1, further comprising a flange on the outer annular wall, with an undersurface of the flange defining a shoulder for seating the film-supporting device.

7. The film-supporting device according to claim 1, wherein the outline of the central opening is a super-ellipse.

8. The film-supporting device according to claim 7, wherein the outline of the central opening is a squircle.

9. The film-supporting device according to claim 3, wherein the cover wall has a plurality of throughbores spaced apart along a circumference of the cover wall.

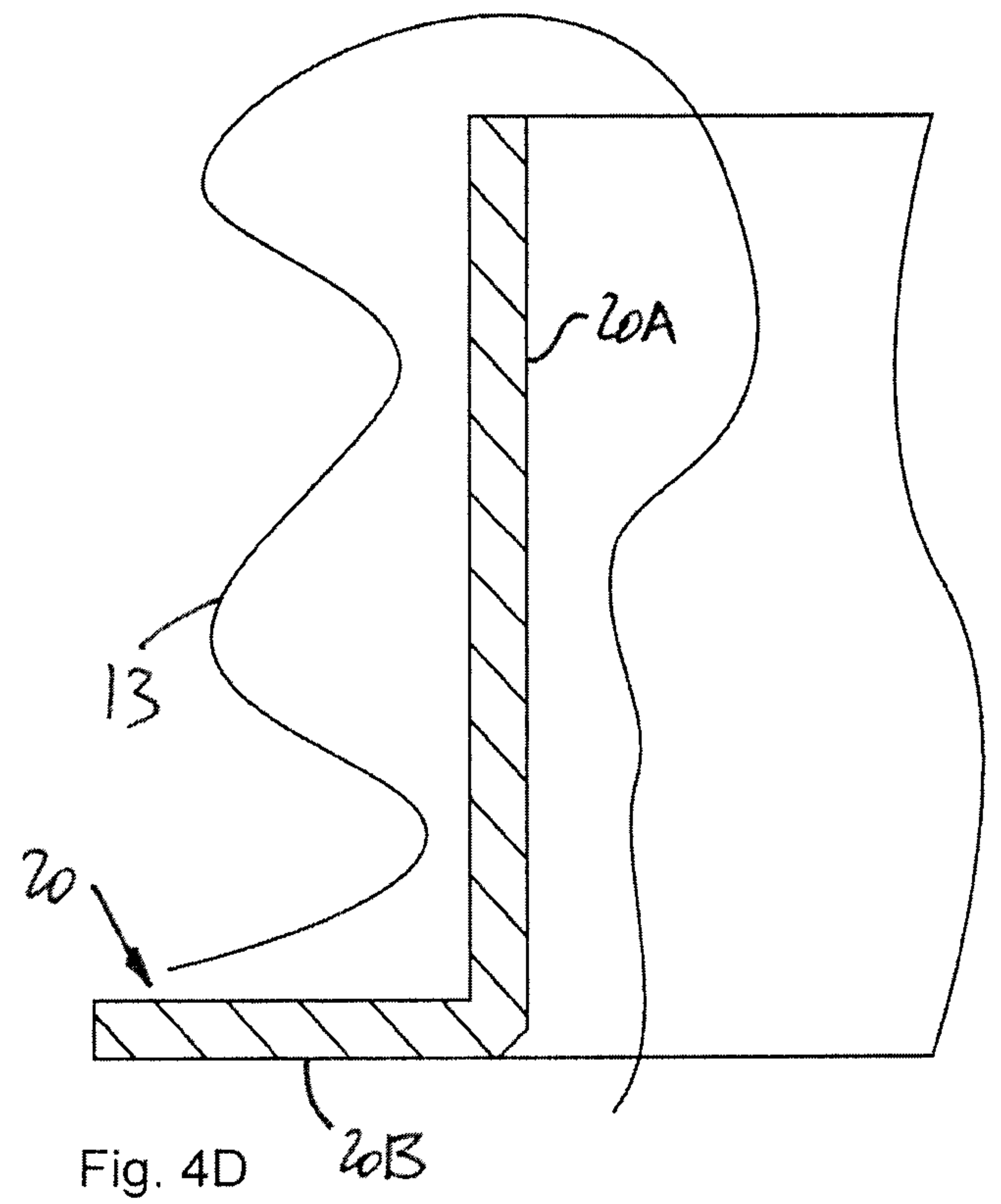
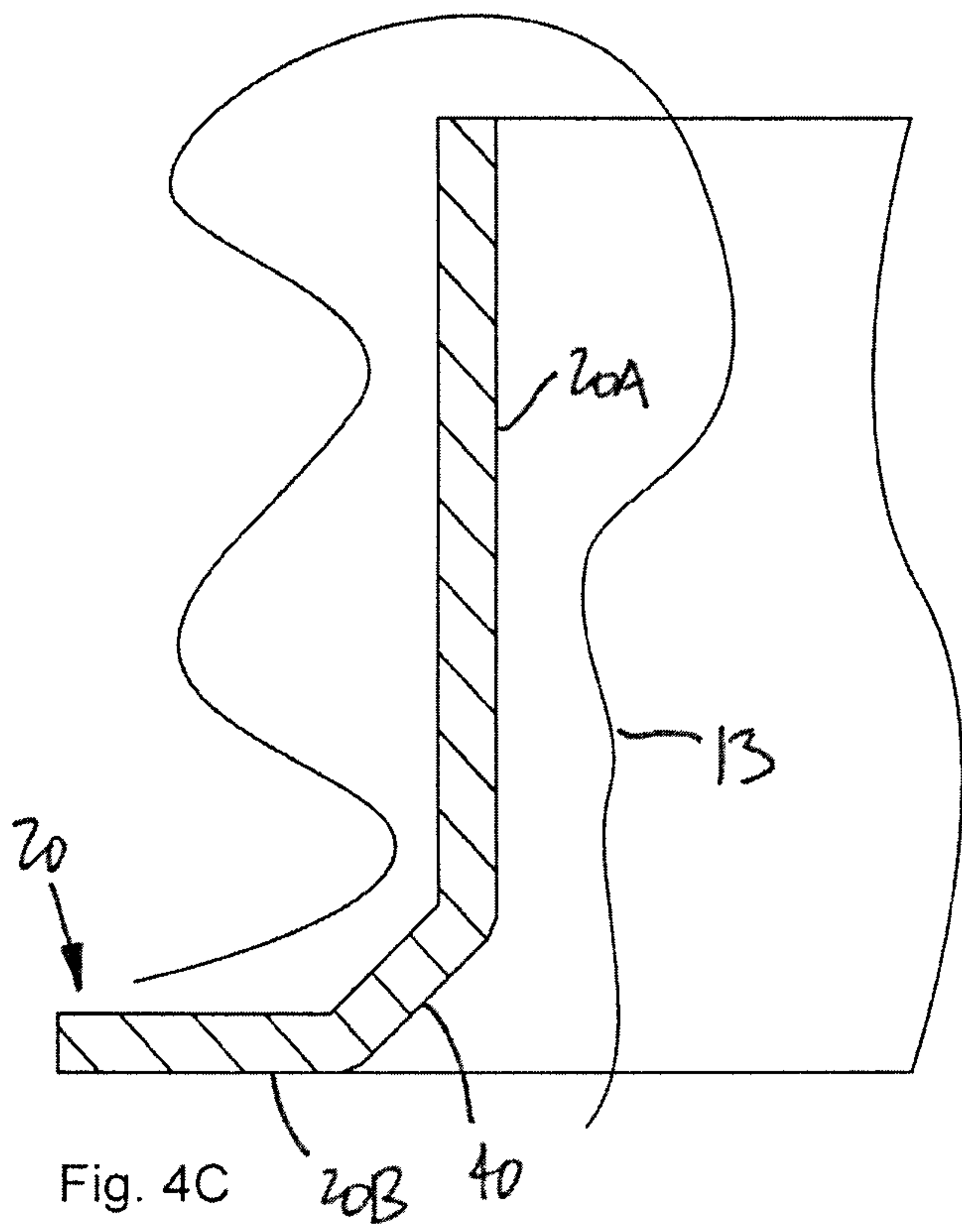
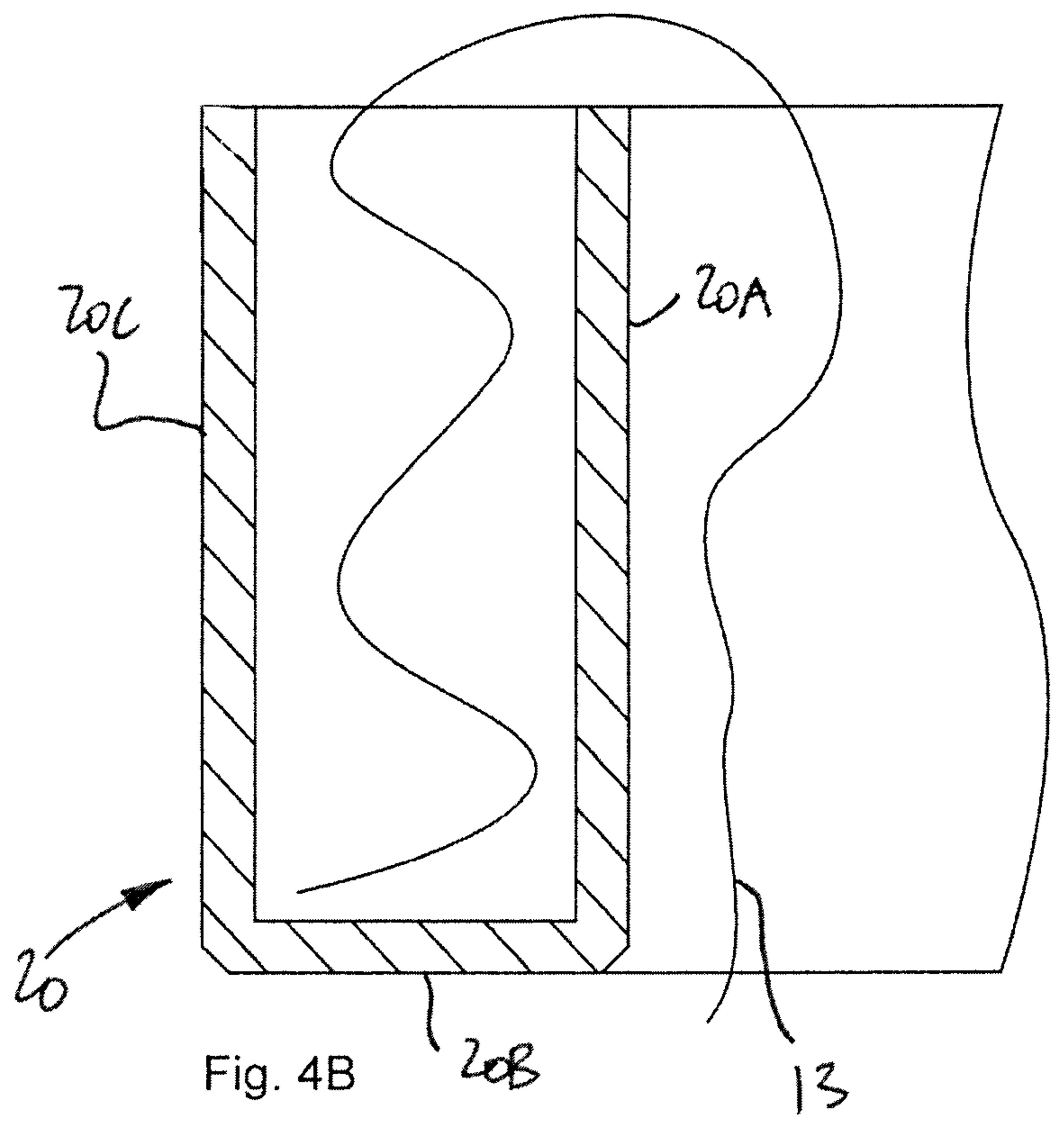
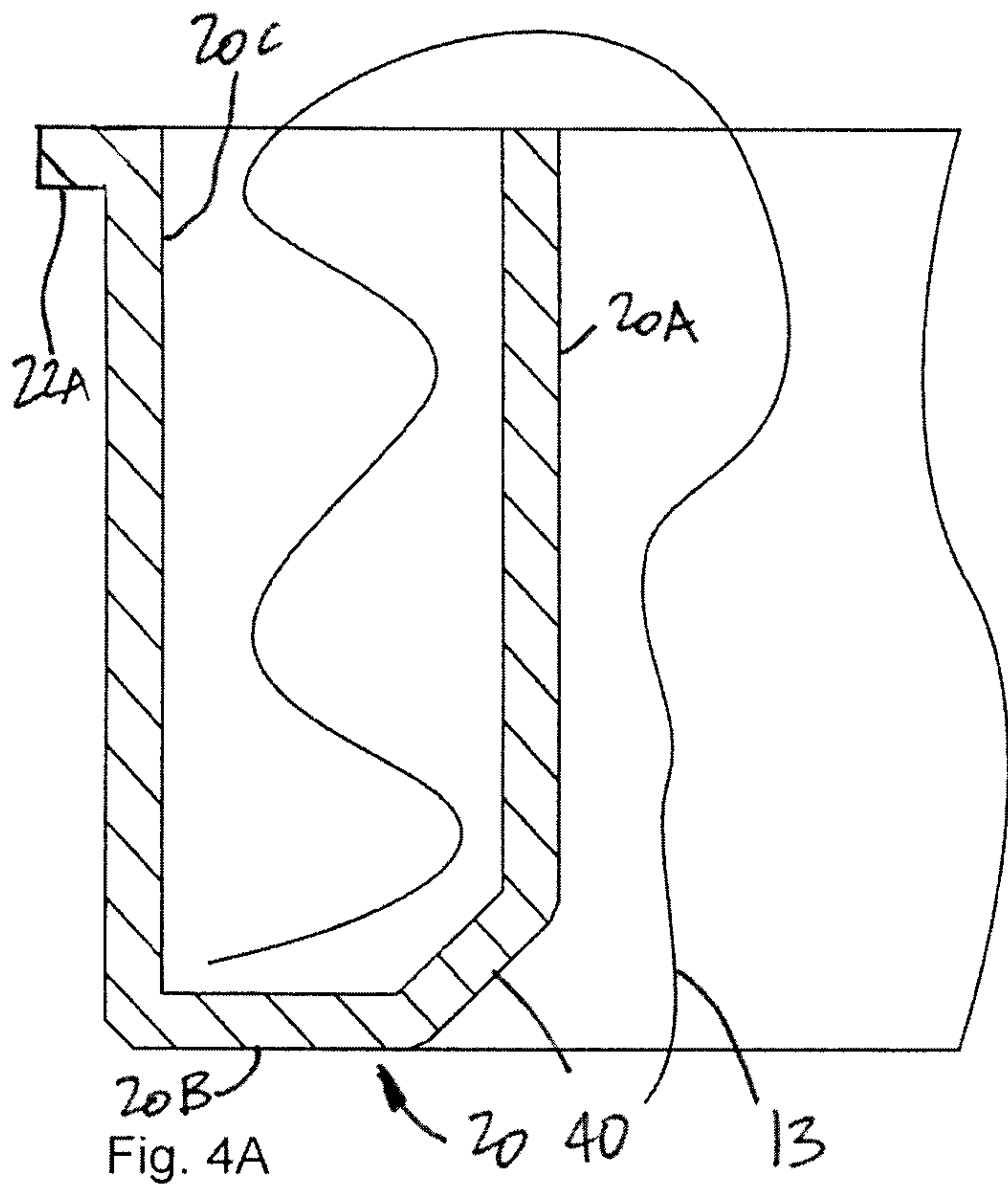
10. The film-supporting device according to claim 1, further comprising a clearance defined by a portion of the inner annular wall extending obliquely upward from a junction with the bottom horizontal wall, said portion of the inner annular wall joining with an upright portion of the inner annular wall whereby the clearance opens into the central opening.

11. The film-supporting device according to claim 1, wherein the outline of at least one of the central opening and an outer periphery of the annular body is one of hexagonal, octagonal, and decagonal.

12. A waste disposal unit for packaging soiled diapers in a tubular film, comprising the film-supporting cassette as defined in claim 1.

13. The waste disposal unit according to claim 12, further comprising a bag-closing mechanism in closing a bag of the tubular film extending into a cavity of the waste disposal unit.

14. The waste disposal unit according to claim 12, wherein the film-supporting device comprises a clearance defined by a portion of the inner annular wall extending obliquely upward from a junction with the bottom horizontal wall, said portion of the inner annular wall joining with an upright portion of the inner annular wall whereby the clearance opens into the central opening, and further wherein the waste-disposal unit has a projection received in the clearance when the film-supporting device is in the waste-disposal unit.



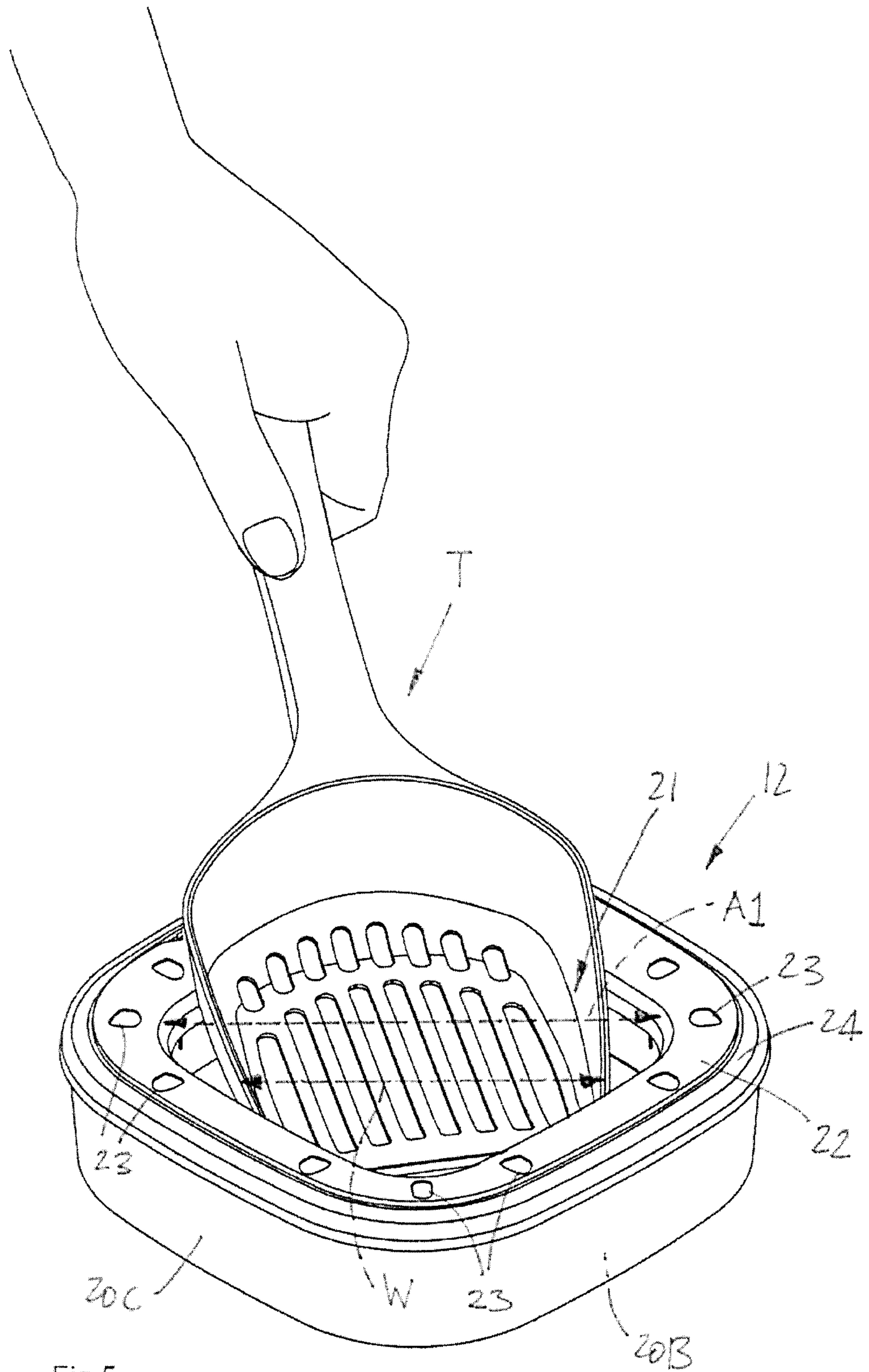


Fig.5

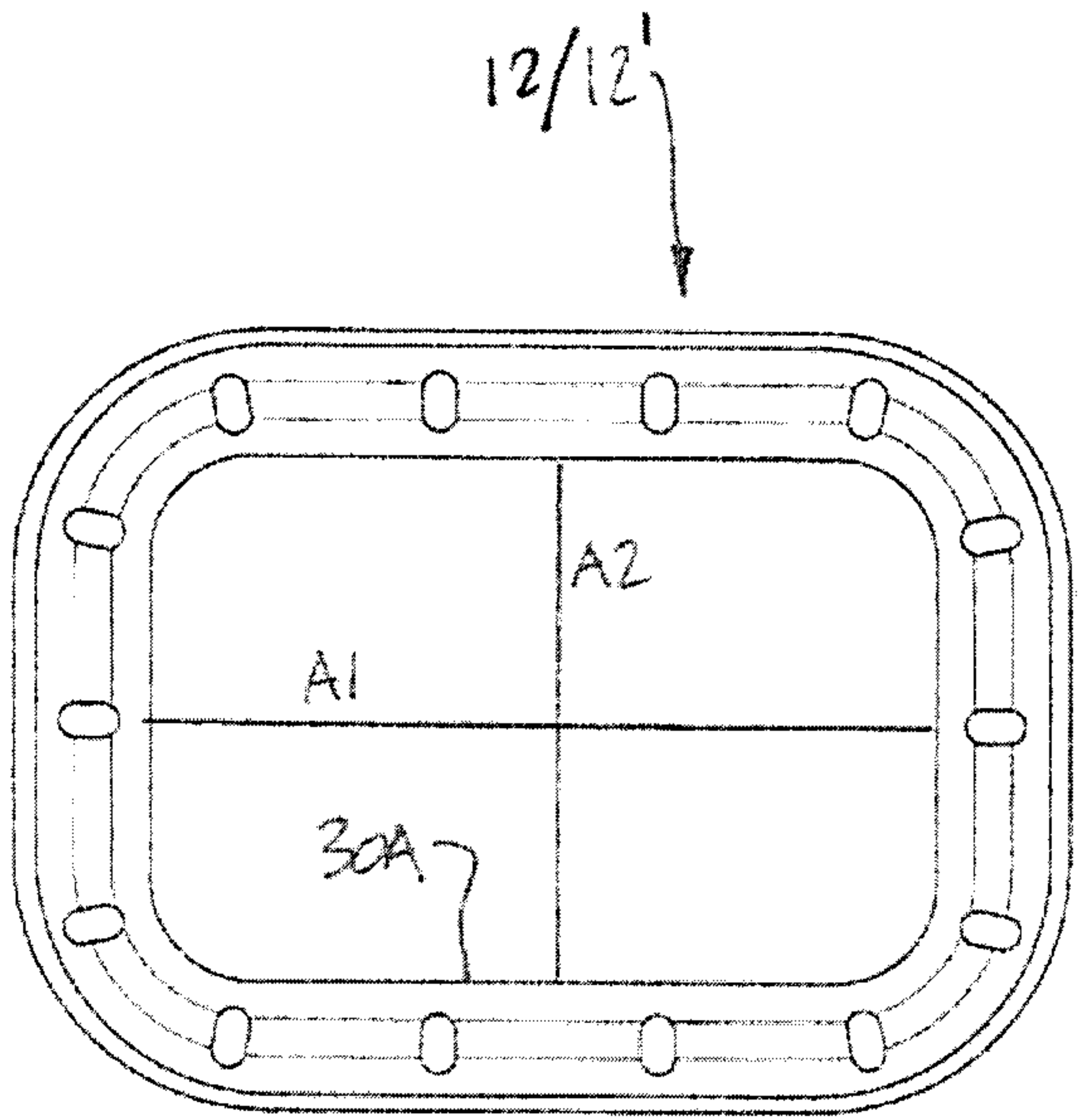


Fig. 6A

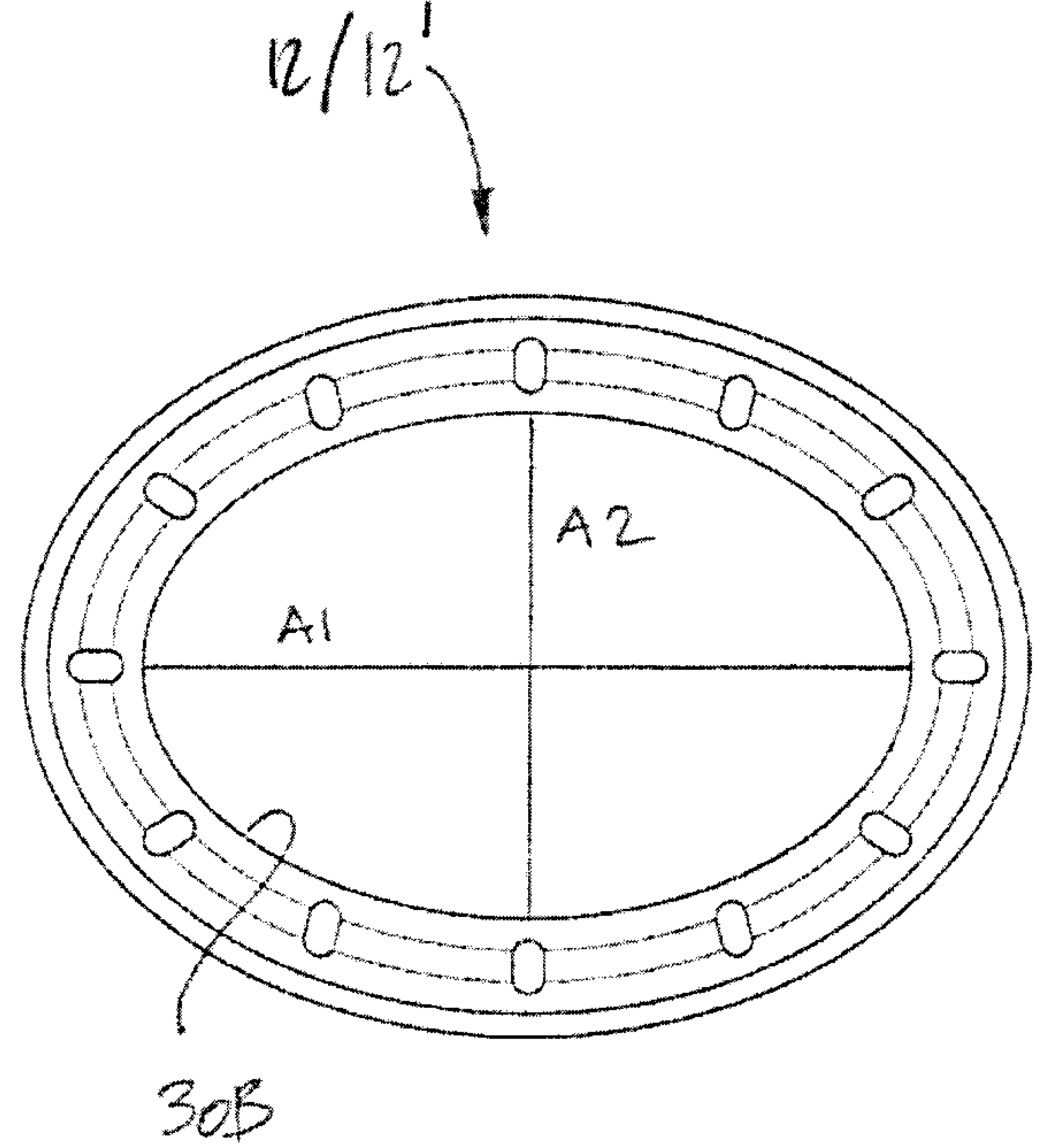


Fig. 6B

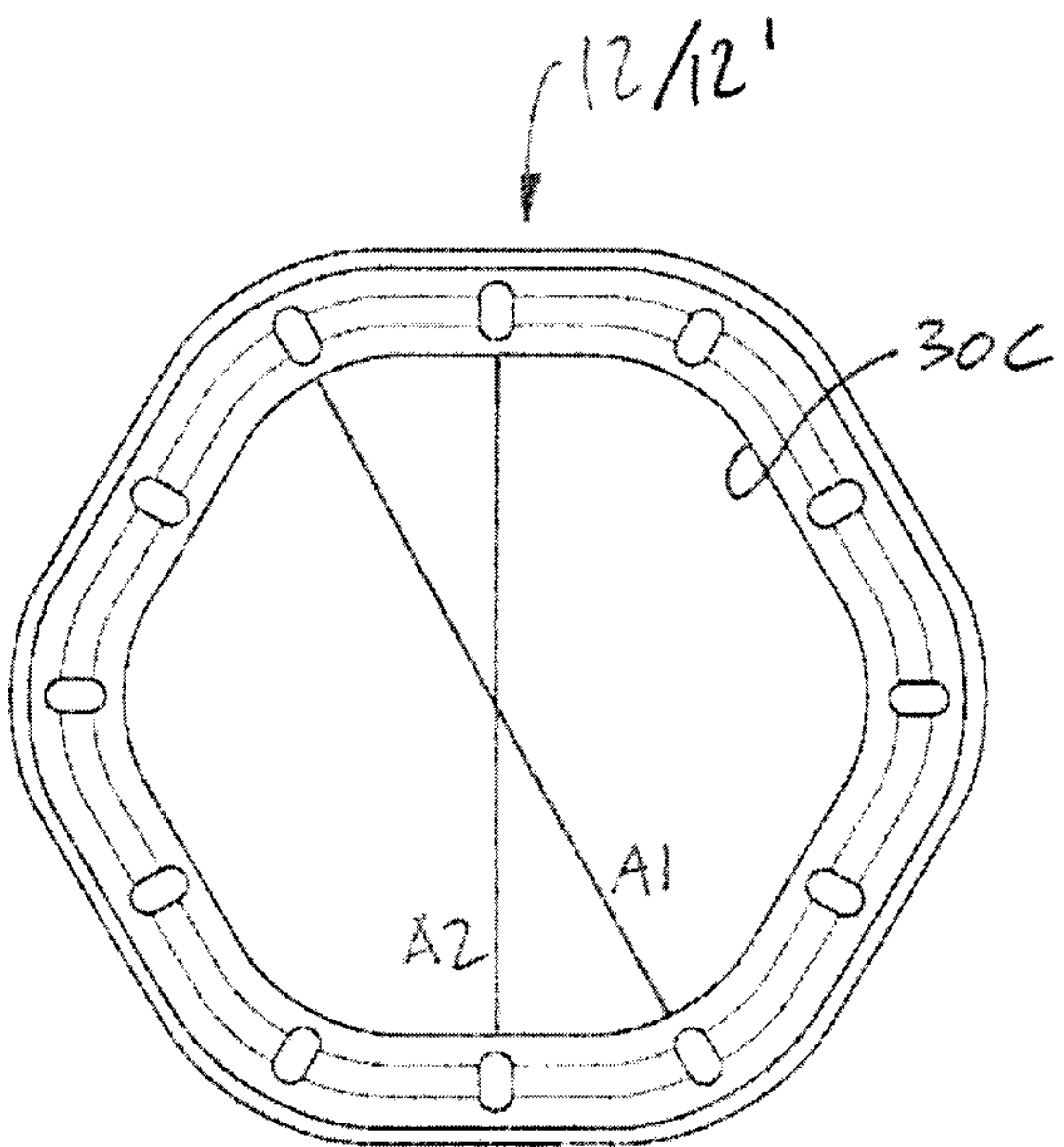


Fig. 6C

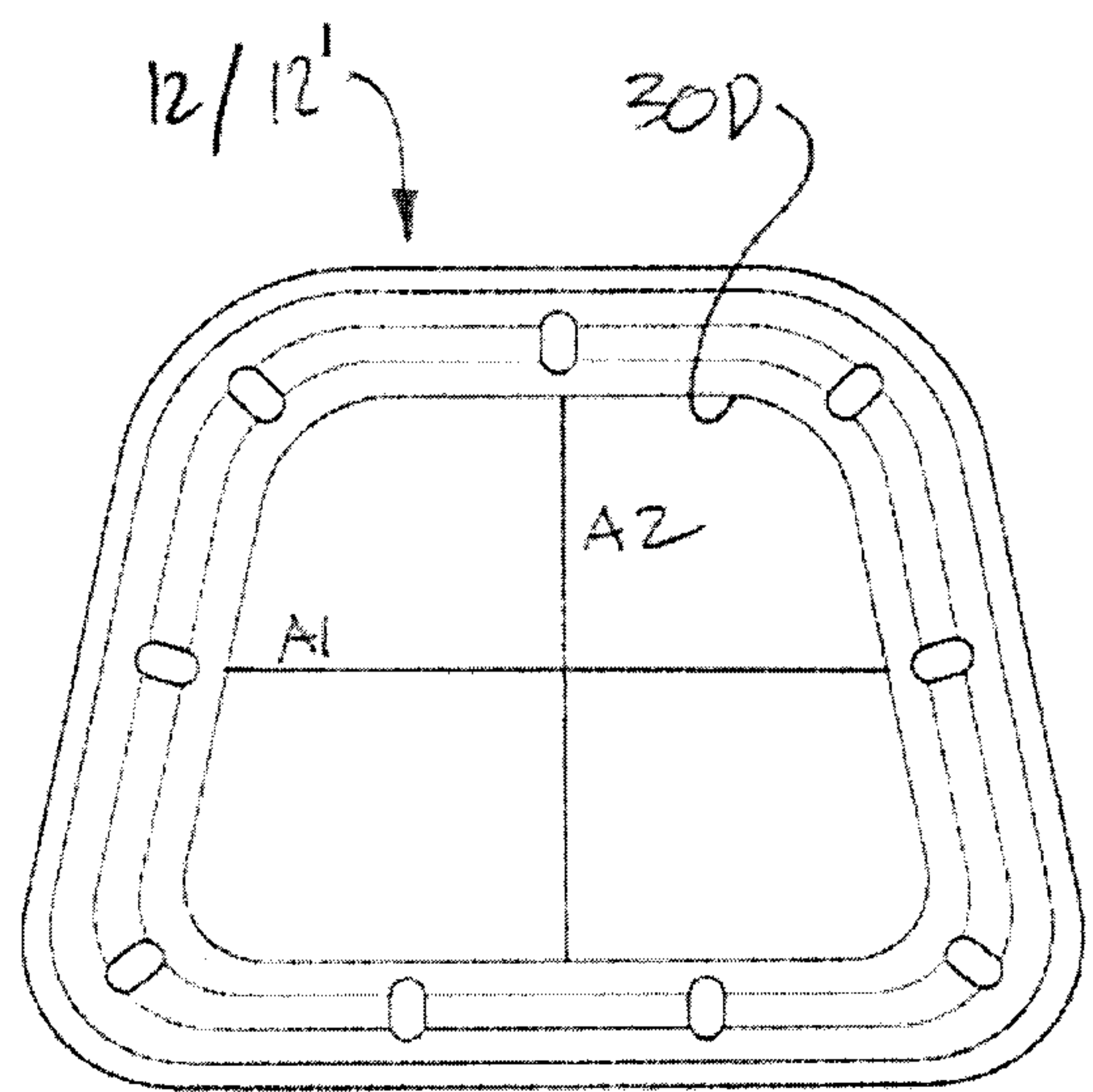


Fig. 6D

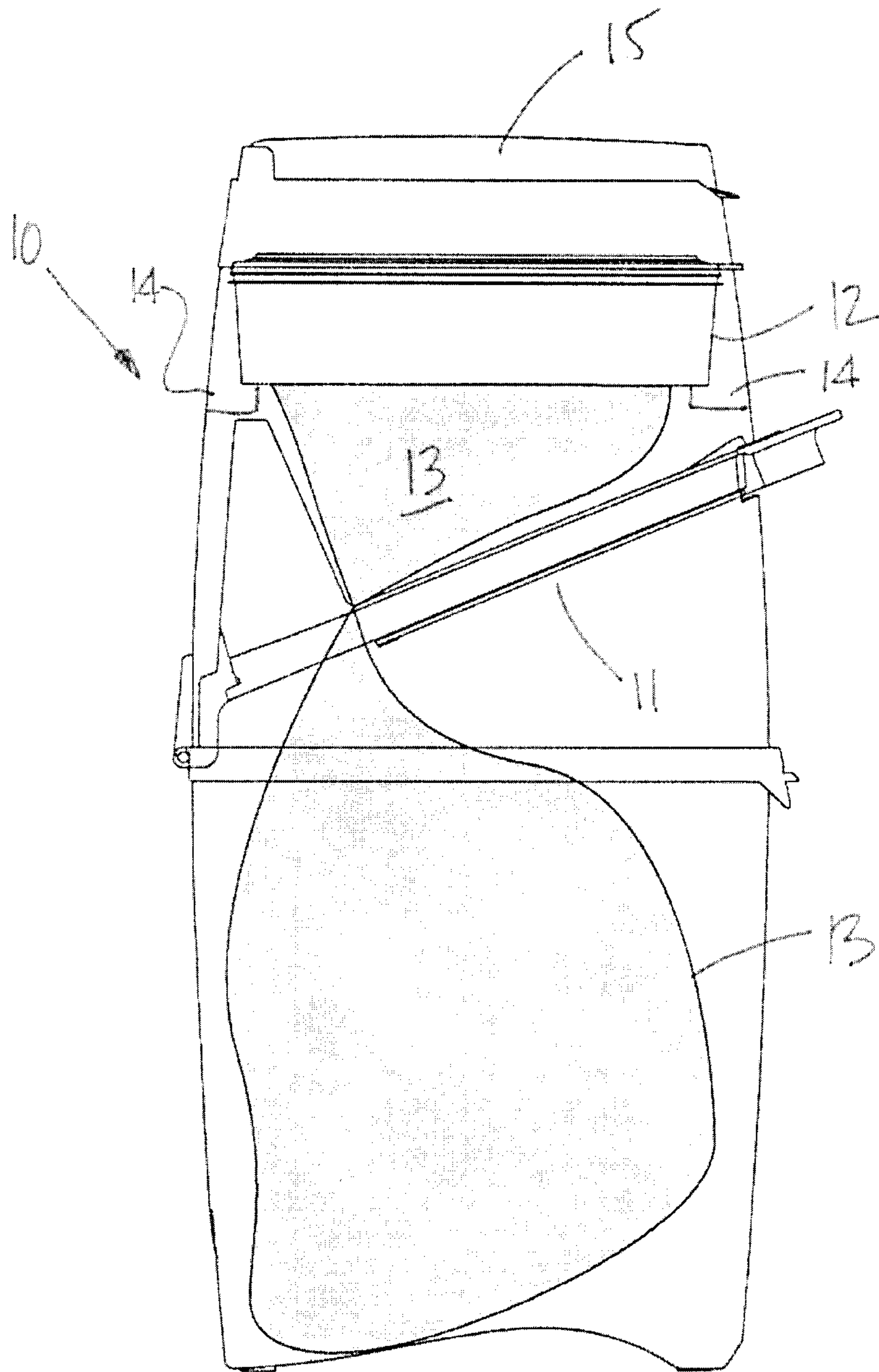


Fig. 7

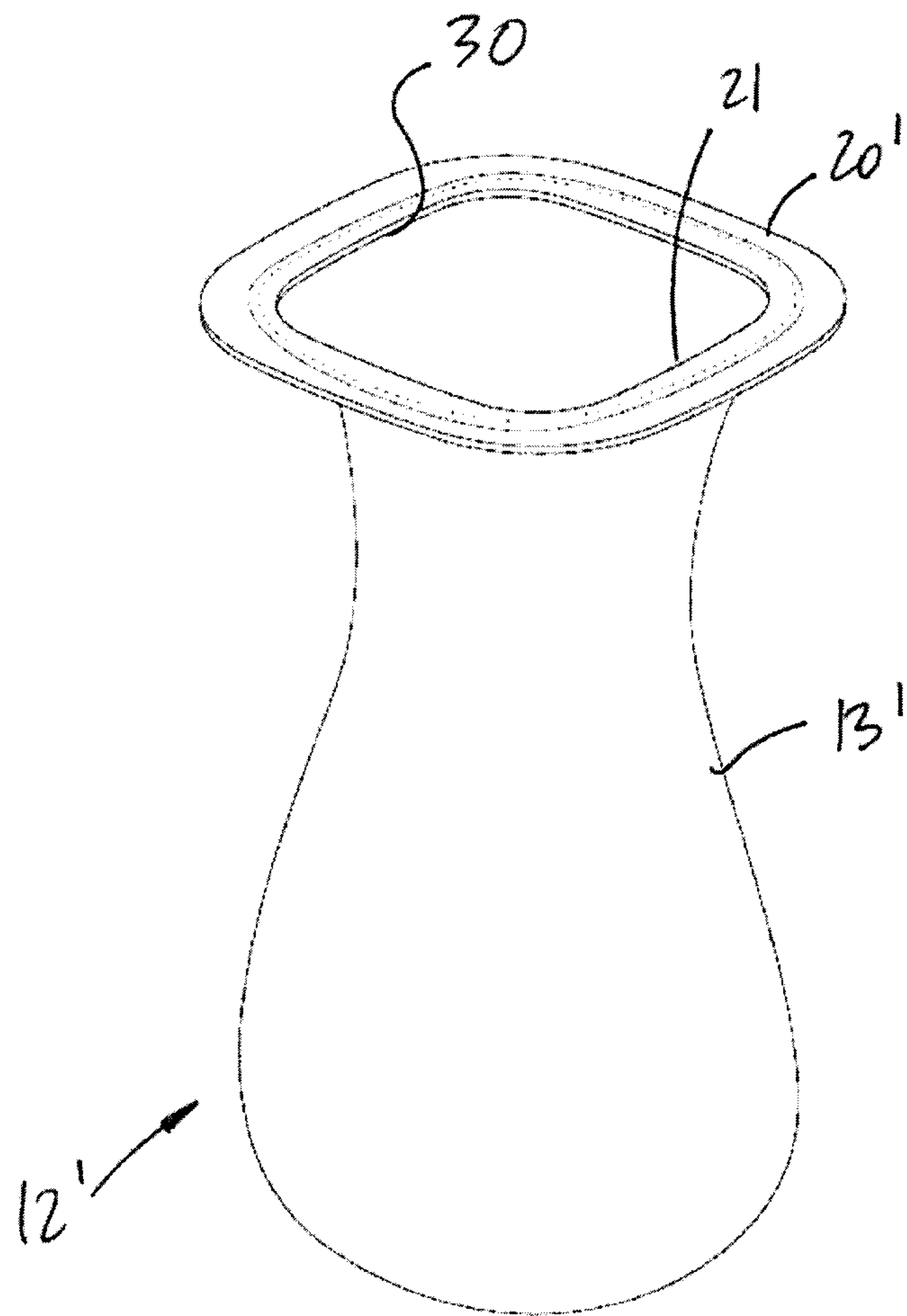


Fig. 8

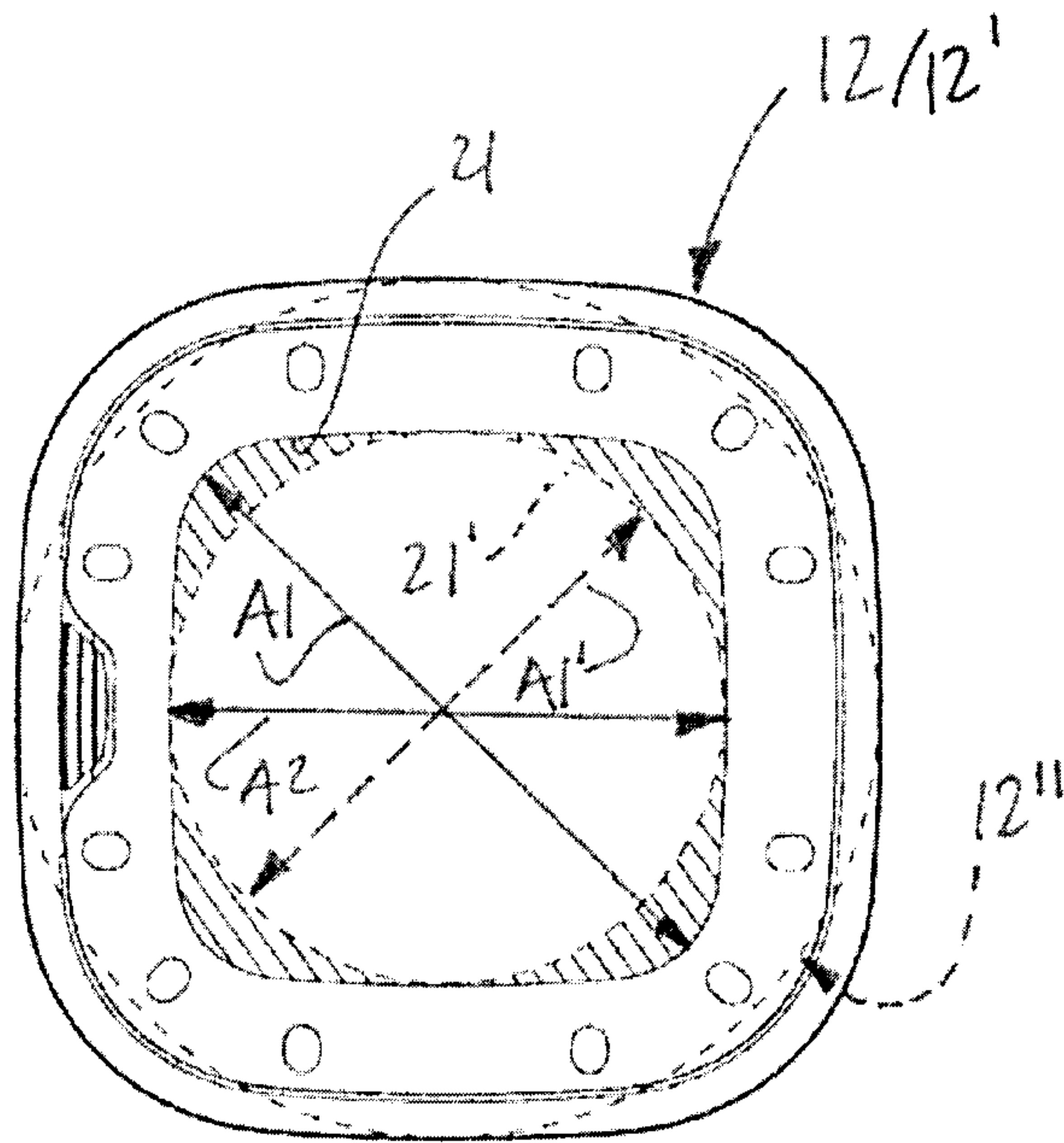


Fig. 9

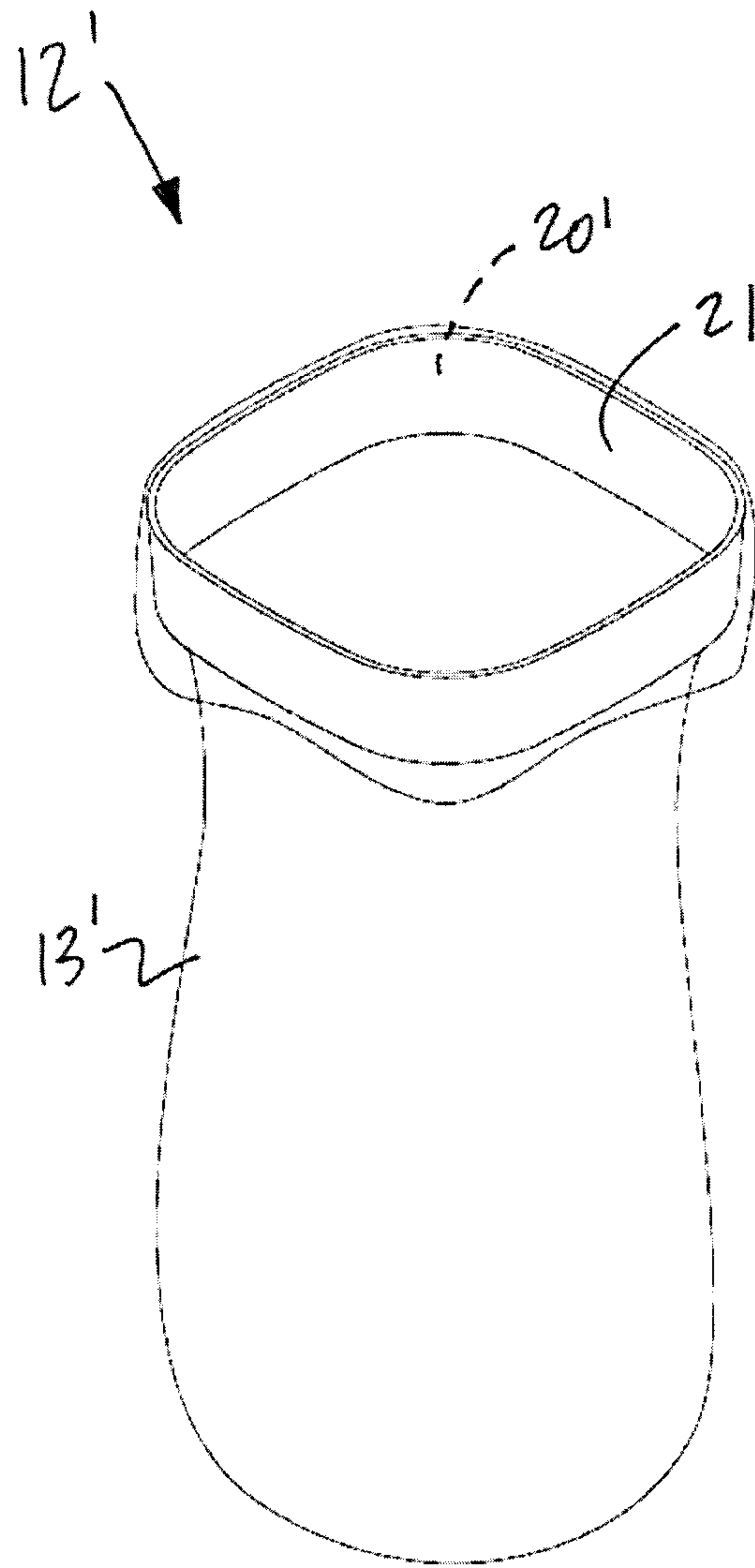


Fig. 10

