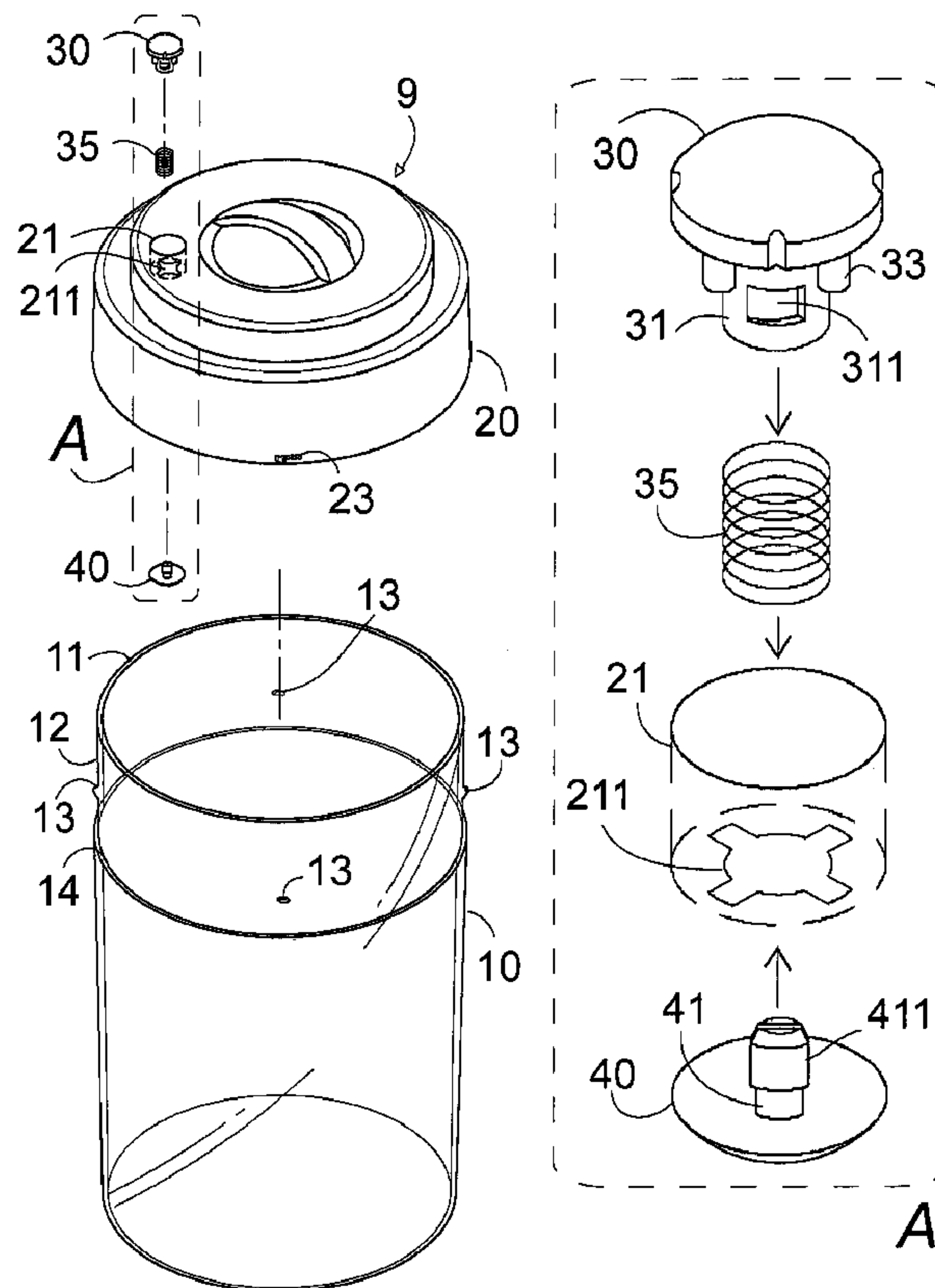




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(72) **Inventeurs/Inventors:**
TARLOW, JORDAN, S., US;
WANG, JUI-TE, TW
(73) **Propriétaire/Owner:**
TARLOW, JORDAN, S., US
(74) **Agent:** ADE & COMPANY INC.

(54) **Titre : CONTENEUR A VIDE COMPORTANT UN CAPOT A SOUPAPE DE LIBERATION D'AIR**
(54) **Title: VACUUM CONTAINER HAVING AIR RELEASE VALVE COVER**



(57) **Abrégé/Abstract:**

A cover for a container fits with a sliding air tight fit over the container body. A cover air release valve allows escape of air from the container when removing and installing the cover to create a vacuum seal fit. A handle positioned adjacent to the air release valve



(57) Abrégé(suite)/Abstract(continued):

enables a user to remove and install the cover with a single hand gripping the handle and pressing the air release valve. Protrusions extending from opposite sides of the container sleeve engage mating L-shaped openings in a bottom edge of the cover to lock the cover in place. Special dual sided cradles engage a top of a vacuum sealed container below each cradle and a bottom of a vacuum sealed container above each cradle so that a series of cradles are used to vertically stack a number of vacuum sealed containers.

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(71) Applicant and

(72) Inventor: **TARLOW, Jordan, S.** [US/US]; 600 Courtland St., Venice, CA 90291 (US).

(72) Inventor: **WANG, Jui-Te**; No. 23-45, Lane 940, Chung Cheng Rd, Wu Fong Hsiang, Tichang Hsien (TW).

(74) Agent: **MEEKER, Donald**; 924 East Ocean Front #E, Newport Beach, CA 92661 (US).

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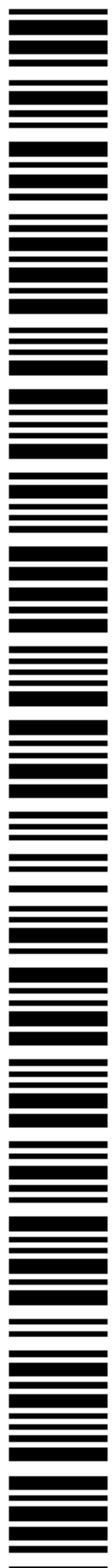
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(54) Title: VACUUM CONTAINER HAVING AIR RELEASE VALVE COVER

(57) **Abstract:** A cover for a container fits with a sliding air tight fit over the container body. A cover air release valve allows escape of air from the container when removing and installing the cover to create a vacuum seal fit. A handle positioned adjacent to the air release valve enables a user to remove and install the cover with a single hand gripping the handle and pressing the air release valve. Protrusions extending from opposite sides of the container sleeve engage mating L-shaped openings in a bottom edge of the cover to lock the cover in place. Special dual sided cradles engage a top of a vacuum sealed container below each cradle and a bottom of a vacuum sealed container above each cradle so that a series of cradles are used to vertically stack a number of vacuum sealed containers.



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VACUUM CONTAINER HAVING AIR RELEASE VALVE COVER

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to a cover, and more particularly to a cover fit
5 onto a container with a sliding air tight fit, the cover having an air release valve to
allow escape of air from the container when the cover is pressed onto the container
with the air release valve held open during the installation to release air from the
container to create a vacuum seal with at least a partial vacuum in the container with
the cover fully installed on the container with a tight vacuum seal fit and the cover
10 only releasable for removal by opening the air release valve to admit air back into the
container to break the vacuum seal and allow a user to slide the cover off with the air
release valve held open.

Description of Related Art

15 Closed container keep items fresher within the container with a vacuum or
partial vacuum within the container so that there is less air in the container to cause
contained items to spoil, thereby preventing or prolonging spoilage. Prior art
containers fail to provide a simple vacuum closure with a sliding cover rather than a
threaded cover and a simple air release valve rather than a vacuum pump.

20 The closest prior art of which applicants are aware is their prior U.S. Patent
No. 5,397,024 to Wu et al. The cover includes a valve depressible inward of the cover
for allowing air to flow inward or outward of the cover. However, the valve assembly
includes a screw secured to the plug rod and engaged with the cover for preventing
the valve assembly from disengaging from the cover. The screw is normally made of
25 metal and may not be easily threaded into place. In addition, the screw which is made
of metal material may not closely enclose the opening of the cover such that a rubber

ring and a gasket are required to be engaged on the screw for engaging with the cover so as to enclose the opening. Furthermore, the inner thread of the plug rod may be easily damaged by the metal screw. The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional covers for containers.

5 Another related prior art U.S. Patent No. 5,697,510, issued December 16, 1997 to Wang et al., provides a container including a cover engaged on an open top. A channel and an opening are formed in the cover. A knob is slidably engaged in the channel and includes a tube having a pair of shoulders. A plug has a pair of hooks engaged into the tube and engaged with the shoulders so as to secure the plug to the
10 tube. A spring is biased between the knob and the plug for biasing the knob partially outward of the cover and for forcing the plug against the cover to enclose the orifice. The plug can be made of plastic material instead of metal material.

The prior art patents fail to provide a means for carrying the container or means for stacking a number of the containers or means for securely locking the cover on the
15 container body.

What is needed is a cover fit precisely over a container with an air-tight sliding fit and an air release valve to create a vacuum seal fit with a vacuum or partial vacuum in the container by installing the cover thereon and a twist lock for the top with a top handle and adjacent air release valve to carry the container by the top handle.

20

BRIEF SUMMARY OF THE INVENTION

One aspect of the present invention is to provide a cover fit precisely over a container with an air-tight sliding fit and an air release valve to create a vacuum or partial vacuum in the container by installing the cover thereon.

25

A related aspect of the present invention provides a container cover with an interior wall and a precisely matching exterior face around a container opening to receive the cover, the exterior face having a slightly angled truncated conical tapered upper portion with a smaller diameter adjacent to a top rim of the container opening and
5 extending outwardly down to a straight vertical cylindrical lower portion having an cylindrical outer surface spaced apart from the rim to allow the cover to slip easily over the rim down onto the mating cylindrical portion wherein the air release valve is required to install the cover over the outer cylindrical portion of the container sleeve.

Another aspect provides a cover and container further comprising a twist lock
10 for the top with a top handle and adjacent air release valve to carry the container by the top handle.

An alternate aspect of the present invention provides a cover having a sliding vacuum fit on a container wherein an air release valve is positioned on a side of the cover adjacent to the top and the top of the cover is flat so that several covered
15 containers can be stacked together.

A further aspect of the present invention provides plural container supports for the support of the vacuum sealed containers to form a virtual rack for stacking a number of the vacuum sealed containers vertically.

Another aspect of the present invention provides a cover of a container which
20 includes no screws therein.

According to an aspect of the invention, there is provided a vacuum sealed container comprising: a container body, including an open top encircled by an outer body sleeve, where the outer body sleeve further comprises at least one protrusion on each of two opposite sides thereof; a cover, engaged on top of the container body for
25 enclosing the open top of the container body, the cover comprising a handle for manipulating attachment and detachment thereof with respect to the container body, an air release valve in an upper portion of the cover adjacent to the handle, and an interior cover sleeve structured with at least one L-shaped opening on each of two

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opposite sides thereof, where the protrusions each engages the corresponding L-shaped opening once the interior cover sleeve is mated with the outer body sleeve with an air tight slide fit over the mating outer body sleeve so that it is necessary to open the air release valve to slide the cover onto the container body releasing air through the air release valve to create a vacuum seal, producing at least a partial vacuum in the container, with the cover fully installed on the container body and so that it is necessary to open the air release valve to admit air into the container to release the vacuum seal to enable the cover to be removed from the container body.

According to another aspect of the invention, there is provided a container support for stacking the vacuum sealed containers as described above, comprising a pair of horizontally spaced brackets interconnected by a plurality of dowels for rigidly interconnecting the brackets, where the vacuum sealed containers each oriented horizontally in a vertical stacked array, each of the brackets having a top surface for engaging and supporting a bottom of a vacuum sealed container and a bottom surface for resting on a top of a an adjacent vacuum sealed container so that a container support is positioned under a bottommost vacuum sealed container and between all the other adjacent vacuum sealed containers in the vertical stacked array.

According to a further aspect of the invention, there is provided a vacuum sealed container comprising:

- 20 a container body, including an open top encircled by an outer body sleeve;
- a cover, engaged on top of the container body for enclosing the open top of the container body, the cover comprising a handle for manipulating attachment and detachment thereof with respect to the container body, an air release valve in an upper portion of the cover adjacent to the handle, and an interior cover sleeve;
- 25 wherein the outer body sleeve of the container comprises a tapered conical upper portion adjacent a rim at the open top of the container and a cylindrical lower portion below the conical upper portion, the conical upper portion having a first diameter at the open top and extending outwardly down to the cylindrical lower portion having a second diameter, the first diameter being narrower than the second diameter to allow
- 30 the cover to slip easily over the rim at the open top down onto the mating cylindrical

lower portion with an air tight slide fit therebetween in which it is necessary to activate the air release valve to install the cover over the cylindrical lower portion of the outer body sleeve of the container body;

the air tight slide fit creating a vacuum seal when the cover is mated with the cylindrical lower portion and the vacuum seal producing at least a partial vacuum in the container body so that it is necessary to activate the air release valve to admit air into the container body to release the vacuum seal to enable the cover to be removed from the container body.

Preferably the outer body sleeve comprises an interior wall and matching exterior face shaped to define the conical upper portion and the cylindrical lower portion of the outer body sleeve, and a diameter of the interior wall is smaller at the conical upper portion of the outer body sleeve than at the cylindrical lower portion thereof.

Preferably the outer body sleeve further comprises at least one protrusion on each of two opposite sides of the cylindrical lower portion of the sleeve and the interior cover sleeve is structured with at least one L-shaped opening on each of two opposite sides thereof, each protrusion engaging the corresponding L-shaped opening when the interior cover sleeve is mated with the cylindrical lower portion of the outer body sleeve.

According to a further aspect of the invention there is provided a container support for vertically stacking at least two vacuum sealed containers, each container comprising a container body, the container support comprising:

a pair of horizontally spaced brackets, each bracket having a top surface arranged for engaging and supporting the container body of a first one of the vacuum sealed containers resting in a horizontal orientation thereon and a bottom surface arranged for resting on the container body of an adjacent one of the vacuum sealed containers thereunder;

a plurality of dowels connected between the brackets;

wherein the pair of brackets provide support for the first vacuum sealed container resting thereon by engagement of the adjacent vacuum sealed container thereunder so as to form a virtual rack for vertically stacking the at least two vacuum sealed containers.

Preferably, the container support further comprises a container edge support

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protruding from a back edge of the bracket, the container edge support configured to receive and support a bottom edge of the vacuum sealed containers to prevent the vacuum sealed container from sliding off a back of the virtual rack so that the covers are able to be installed on and removed from the vacuum sealed containers to access
5 contents of the vacuum sealed containers while remaining in the virtual rack.

According to a further aspect of the invention, there is provided a container support for vertically stacking at least two vacuum sealed containers, each container comprising a container body, including an open top encircled by an outer body sleeve; a cover, engaged on top of the container body for enclosing the open top of the
10 container body, the cover comprising a handle for manipulating attachment and detachment thereof with respect to the container body, an air release valve in an upper portion of the cover adjacent to the handle, and an interior cover sleeve; the outer body sleeve of the container body comprising a tapered conical upper portion adjacent a rim at the open top of the container and a cylindrical lower portion below
15 the conical upper portion, the conical upper portion having a first diameter at the open top and extending outwardly down to the cylindrical lower portion having a second diameter, the first diameter being narrower than the second diameter to allow the cover to slip easily over the rim at the open top down onto the mating cylindrical lower portion with an air tight slide fit over the cylindrical lower portion so that it is necessary
20 to open the air release valve to slide the cover onto the container body releasing air through the air release valve to create a vacuum seal, producing at least a partial vacuum in the container body, with the cover fully installed on the container body and so that it is necessary to open the air release valve to admit air into the container to release the vacuum seal to enable the cover to be removed from the container body;
25 the container support comprising: a pair of horizontally spaced brackets, each bracket having a top surface arranged for engaging and supporting the container body of a first one of the vacuum sealed containers resting in a horizontal orientation thereon and a bottom surface arranged for resting on the container body of an adjacent one of

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the vacuum sealed containers thereunder; a plurality of dowels connected between the brackets; wherein the pair of brackets are arranged to provide support for the first vacuum sealed container resting thereon by engagement of the adjacent vacuum sealed container thereunder so as to form a virtual rack for vertically stacking the at least two vacuum sealed containers. In brief, a cover for a container fits with a sliding air tight fit over the container body with an inner cover sleeve adjacent to the cover opening forming an air tight slidable fit with an outer container sleeve around the top opening of the container. The cover has an air release valve to allow escape of air from the container when the cover is pressed onto the container body with the air release valve held open during the installation to release air from the container to create a vacuum seal fit with at least a

partial vacuum in the container with the cover fully installed on the container. The cover is only releasable for removal by opening the air release valve to admit air back into the container to break the vacuum and allow a user to slide the cover off with the air release valve held open. A handle positioned adjacent to the air release valve
 5 enables a user to remove and install the cover with a single hand gripping the handle and pressing the air release valve with a thumb of the same hand.

To further secure the cover at least a pair of protrusions extending from opposite sides of the container sleeve engage mating L-shaped openings in a bottom edge of the cover to lock the cover in place.

10 Special dual sided cradles engage a top of a vacuum sealed container below each cradle and a bottom of a vacuum sealed container above each cradle so that a series of cradles are used to vertically stack a number of vacuum sealed containers.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

15 These and other details of the present invention will be described in connection with the accompanying drawings, which are furnished only by way of illustration and not in limitation of the invention, and in which drawings:

FIG. 1 is an exploded perspective view of the vacuum sealed container of the present invention with the container body, cover and air release valve components
 20 all aligned for assembly;

FIG. 2 is a perspective view of the vacuum sealed container of FIG. 1 with the cover on the container body showing the locking element;

FIG. 3 is a partial cross sectional view of the vacuum sealed container of the present invention of FIG. 5 with the cover removed from the container body showing
 25 the combined pressing of the air release valve and the rotary motion of the cover to release the lock mechanism;

FIG. 4 is a partial cross sectional view of the vacuum sealed container of the present invention of FIG. 5 with the cover sealed on the container body;

FIG. 5 is a perspective view of the vacuum sealed container of the present invention showing a hand of a user simultaneously gripping the handle and pressing
5 the air release valve with a single hand;

FIG. 6 is a perspective view of one of the container supports of the present invention used for stacking a vertical array of the vacuum sealed containers of the present invention;

FIG. 7 is a perspective view of a stacked vertical array of the vacuum sealed
10 containers of the present invention using the container supports of FIG. 6;

FIG. 8 is a partial cross-sectional view of the cover of FIG. 1 having a top handle and air release valve, the cover aligned for installation on a container having a tapered conical upper portion of the cylindrical sleeve around the top opening of the container;

FIG. 9 is a partial cross-sectional view of the cylindrical cover of FIG. 1 having
15 a top handle and air release valve, the cover installed on the container having a tapered conical upper portion of the cylindrical sleeve around the top opening of the container.

FIG. 10 is a perspective view of an alternate embodiment of the vacuum
20 sealed container of the present invention having a flat topped cover with the air release valve on the side of the cover adjacent to the top;

FIG. 11 is a partial cross-sectional view of the cover of FIG. 10 aligned for installation on a container having a tapered conical upper portion of the cylindrical sleeve around the top opening of the container;

FIG. 12 is a partial cross-sectional view of the cylindrical flat top cover of FIG.
25 8 installed on the container having a tapered conical upper portion of the

cylindrical sleeve around the top opening of the container.

DETAILED DESCRIPTION OF THE INVENTION

In FIGS. 1-12, a vacuum sealed container 9 comprises a container body 10
 5 including an open top 11 encircled by an outer body sleeve 12 and a cover 20 engaged
 on top of the container body 10 for enclosing the open top of the container body with
 a vacuum seal.

The cover 20 comprises an air release valve 30 in an upper portion of the cover
 20 above the container body 10 and an interior cover sleeve 22 structured to mate with
 10 the outer body sleeve 12 with an airtight force fit over the mating outer body sleeve
 12 so that it is necessary to open the air release valve 30 to slide the cover 20 onto the
 container body 10 releasing air through the air release valve 30 to create a vacuum
 seal, producing at least a partial vacuum in the container 9, with the cover 20 fully
 installed on the container body 10 as in FIGS. 2, 3, 5, 8, 10, and 12, and so that it is
 15 necessary to open the air release valve 30 to admit air into the container 9 to release
 the vacuum seal to enable the cover 20 to be removed from the container body 10 as
 in FIGS 1, 4, 9, and 11.

In FIG. 1, exploded detail A, the air release valve 30 with a knob comprises a
 channel 21 formed in the cover 20 and an air opening 211 formed through the cover
 20, the air opening 211 communicating with the channel 21 so that air can pass
 through the channel 21 into the container 9. The knob slidably engaged in the channel
 21 has a top portion normally protruding above the top of the cover 20 for engaging
 the knob to activate the air release valve 30, as shown in FIG. 3. A hollow tube 31
 extends from the knob into the channel 21. The hollow tube 31 has side wall openings
 25 311. The knob includes four projections 33 for engaging with the cover 20 so as to
 prevent the knob from engaging into the channel 21 of the cover 20.

A bottom plug 40 engages the upper knob through the air opening 211, the bottom plug 40 having a flat top surface for covering the air opening 211 to block the air. A shaft 41 extends upwardly from the bottom plug 40 with an expanded partially tapered head 411 on the top of the shaft 41. The shaft 41 is inserted into the hollow tube 31 of the knob and the head 411 snaps out into the side wall openings 311 to lock the bottom plug 40 to the knob through the air opening 211 to allow the bottom plug 40 to be quickly and easily secured to the knob. A coil spring 35 is engaged on the hollow tube 31 and is biased between the knob and the bottom plug 40 so as to bias the knob partially outward of the cover 20 and so as to force the bottom plug 40 against the cover 20 for enclosing the air opening 211, as shown in FIG. 3, to normally seal the air opening 211 through the cover 20 to prevent air from passing therethrough until the bottom plug 40 is pushed by a user to release the bottom plug 40 and admit the air through the air opening 211.

In operation, as shown in FIG. 4, when the knob is depressed inward of the channel 21, the bottom plug 40 is disengaged from the air opening 211 such that the air opening 211 is opened and such that air is allowed to flow inward or flow outward of the cover 20.

It is to be noted that the bottom plug 40 can be easily made by molding processes and can be made with plastic materials instead of metal material that is used for making the typical fastening screw. In addition, the bottom plug 40 can be easily and quickly secured to the knob. Furthermore, the bottom plug 40 itself is good enough to be used for closely enclosing the air opening 211.

The biasing means biased between the knob and the bottom plug 40 for biasing the knob partially outward of the cover 20 and for forcing the bottom plug 40 against the cover 20 is preferably a spring 35 but may be a different type of biasing means.

The cover 20 is further locked onto the container body 10 by at least one

protrusion 13 on a side of the outer body sleeve 12 interlocking with at least one mating L-shaped opening 23 on a bottom edge of the cover 20 to mate with the protrusion 13. As the cover 20 is installed on the container body 10, while activating the air release valve 30, a vertical edge portion 24 of each of the L-shaped openings 23 engages the mating protrusion 13 and as the protrusion 13 reaches a horizontal portion 25 of the L-shaped opening 23 the cover 20 is turned to fully insert the protrusion 13 in the horizontal portion 25 to lock the cover 20 onto the container body 10 to enable the container 9 to be lifted by the cover 20, as in FIG. 5. The cover 20 is turned in an alternate direction to align the vertical edge portion 24 of the L-shaped opening 23 with the protrusion 13 and the cover 20 lifted while activating the air release valve 30 to remove the cover 20 from the container body 10, as shown in FIG. 4.

A handle 50 extends out from the top of the cover 20 with a gripping space 51 between the handle 50 and the cover 20 to grip the handle 50 to maneuver the cover 20 onto and off of the container body 10. The handle 50 is positioned adjacent to the air release valve 30 so that the air release valve 30 may be activated by a hand of a user holding the handle 50, as in FIG. 5 with the fingers of the user around the handle and the thumb of the user pushing the air release valve 30. The handle 50 on the cover 20 is also used to lift the container 9 with the cover 20 locked on, as in FIG. 5.

In FIGS. 6 and 7, the container supports 60 each is an independent structure and many of them further form a virtual rack by vertically stacking plural vacuum sealed containers 9 and plural container supports 60 interlaced one with the other, as in FIG. 7, with each oriented horizontally in a vertical stacked array. The virtual rack comprises a plurality of container supports 60, each container support 60 comprising a pair of horizontally spaced brackets 61 interconnected by a pair of dowels 62 or other means for rigidly interconnecting the brackets 61. Each of the brackets 61 comprises an elongated member having a top surface 64 for engaging and supporting a bottom of a

vacuum sealed container 9 and a bottom surface 65 for resting on a top of a vacuum sealed container 9 so that a container support 60 is positioned under a bottommost vacuum sealed container 9 and between all the other adjacent vacuum sealed containers 9 in the vertical stacked array, as shown in FIG. 7.

5 Each of the container supports 60 further comprises a container edge support 63 protruding from a back edge of the bracket 61. The container edge support 63 is configured to receive and support a bottom edge of the vacuum sealed containers 9 to prevent it from sliding off a back of the stacked array, as in FIG. 7, so that the covers 20 may be installed on and removed from the container bodies 10 to access
10 contents of the vacuum sealed containers 9 while remaining in the vertical stacked array.

In FIG. 8, the cover of FIG. 1 has a top handle 50 and top pressure release button 30. The cover 20 is aligned for installation on a container body 10 having a tapered conical upper portion 12A of the cylindrical sleeve 12B around a rim of the
15 open top 11 of the container body 10 to allow the cover 20 to slip easily over the rim of the open top 11 down past the tapered conical upper portion 12A onto the mating cylindrical portion 12B wherein the air release valve 30 is required to install the cover 20 over the outer cylindrical portion 12B of the outer body sleeve 12 of the container body 10.

20 In FIG. 9, the cylindrical cover 20 of FIG. 8 is installed on the container body 10 having the tapered conical upper portion 12A of the cylindrical sleeve 12B.

In FIG. 10, an alternate embodiment of the vacuum sealed container 9 of the present invention has an air release valve 30 on the side of the cover 20 adjacent to the top and a flat top surface 7 so that the covered containers 9 may be stacked on
25 top of each other with a bottom 8 of one container body 10 resting on a top 7 of the cover 20 of another covered container 9.

In FIG. 11, the cover 20 of FIG. 10 is aligned for installation on a container body 10 having a tapered conical upper portion 12A of the cylindrical sleeve 12B around the rim of the open top 11 of the container body 10 to allow easy insertion of the container cover 20 with an interior cover sleeve 22 and a precisely matching
5 cylindrical exterior cylindrical sleeve 12B around the container opening to receive the cover 20. The exterior face of the cylindrical sleeve 12B has a slightly angled truncated conical tapered upper portion 12A with a smaller diameter adjacent to the rim of the open top 11 of the container opening and expanding outwardly down to a straight vertical cylindrical sleeve 12B spaced apart from the open top 11 to allow the
10 cover 20 to slip easily over the rim of the open top 11 down over the tapered upper portion 12A onto the mating cylindrical sleeve 12B wherein the air release valve 30 is required to install the cover 20 over the outer cylindrical sleeve 12B of the container sleeve.

In FIG. 12, the flat top cover 20 of FIG. 10 is installed over the outer body
15 sleeve 12 of the container body 10.

The vacuum sealed containers 9 may be made in a variety of sizes including large 10 liter sizes containers to house any desired contents to maintain the contents in a fresh condition due to the vacuum seal.

The scope of the claims should not be limited by the preferred embodiments
20 set forth in the examples, but should be given the broadest interpretation consistent with the description as a whole.

CLAIMS

1. A vacuum sealed container comprising:
 - a container body, including an open top encircled by an outer body sleeve;
 - a cover, engaged on top of the container body for enclosing the open top of the
 - 5 container body, the cover comprising a handle for manipulating attachment and detachment thereof with respect to the container body, an air release valve in an upper portion of the cover adjacent to the handle, and an interior cover sleeve;
 - the outer body sleeve of the container body comprising a tapered conical upper portion adjacent a rim at the open top of the container and a cylindrical lower portion
 - 10 below the conical upper portion, the conical upper portion having a first diameter at the open top and extending outwardly down to the cylindrical lower portion having a second diameter, the first diameter being narrower than the second diameter to allow the cover to slip easily over the rim at the open top down onto the mating cylindrical lower portion with an air tight slide fit over the cylindrical lower portion so that it is
 - 15 necessary to open the air release valve to slide the cover onto the container body releasing air through the air release valve to create a vacuum seal, producing at least a partial vacuum in the container body, with the cover fully installed on the container body and so that it is necessary to open the air release valve to admit air into the container to release the vacuum seal to enable the cover to be removed from the
 - 20 container body.
2. The vacuum sealed container of claim 1 wherein the outer body sleeve comprises an interior wall and matching exterior face receiving the cover thereon that is shaped to define the conical upper portion and the cylindrical lower portion of the outer body sleeve, and a diameter of the interior wall is smaller at the conical upper
- 25 portion of the outer body sleeve than at the cylindrical lower portion thereof.
3. The vacuum sealed container of claim 1 wherein the air release valve comprises:
 - a channel formed in the cover and an air opening formed through the cover, the opening communicating with the channel so that air can pass through the channel into
 - 30 the container;

a knob slidably engaged in the channel, the knob comprising a top portion for engaging the knob to activate the air valve, a hollow tube extended from the knob into the channel, the hollow tube having side wall openings, and at least one projection from the knob for engaging with the cover to prevent the knob from engaging into the
5 channel;

a bottom plug engaging the knob through the air opening, the bottom plug having a flat top surface for covering the air opening to block the air and a shaft extending upwardly from the bottom plug with an expanded partially tapered head on the top of the shaft, the shaft inserted through the air opening and into the hollow tube
10 of the knob and the head snaps out into the side wall openings to lock the bottom plug to the knob through the air opening; and

a biasing means biased between the knob and the bottom plug for biasing the knob partially outward of the cover and for forcing the bottom plug against the cover to normally seal the air opening through the cover to prevent air from passing
15 therethrough until the bottom plug is pushed by a user to release the bottom plug and admit the air through the opening,

wherein the handle is positioned adjacent to the air release valve so that the air release valve is able to be activated by a thumb of a same hand that holds the handle on the cover, and the container is able to be carried simply by holding the handle.

20 4. The vacuum sealed container of claim 3 wherein the biasing means comprises a spring.

5. The vacuum sealed container of claim 1 wherein the outer body sleeve further comprises at least one protrusion on each of two opposite sides of the cylindrical lower portion of the sleeve and the interior cover sleeve is structured with at
25 least one L-shaped opening on each of two opposite sides thereof, each protrusion engaging the corresponding L-shaped opening when the interior cover sleeve is mated with the cylindrical lower portion of the outer body sleeve.

6. The vacuum sealed container of claim 1 in combination with a container support, wherein there is provided at least two of said vacuum sealed containers and

the container support vertically stacks said at least two of the vacuum sealed containers, the container support comprising:

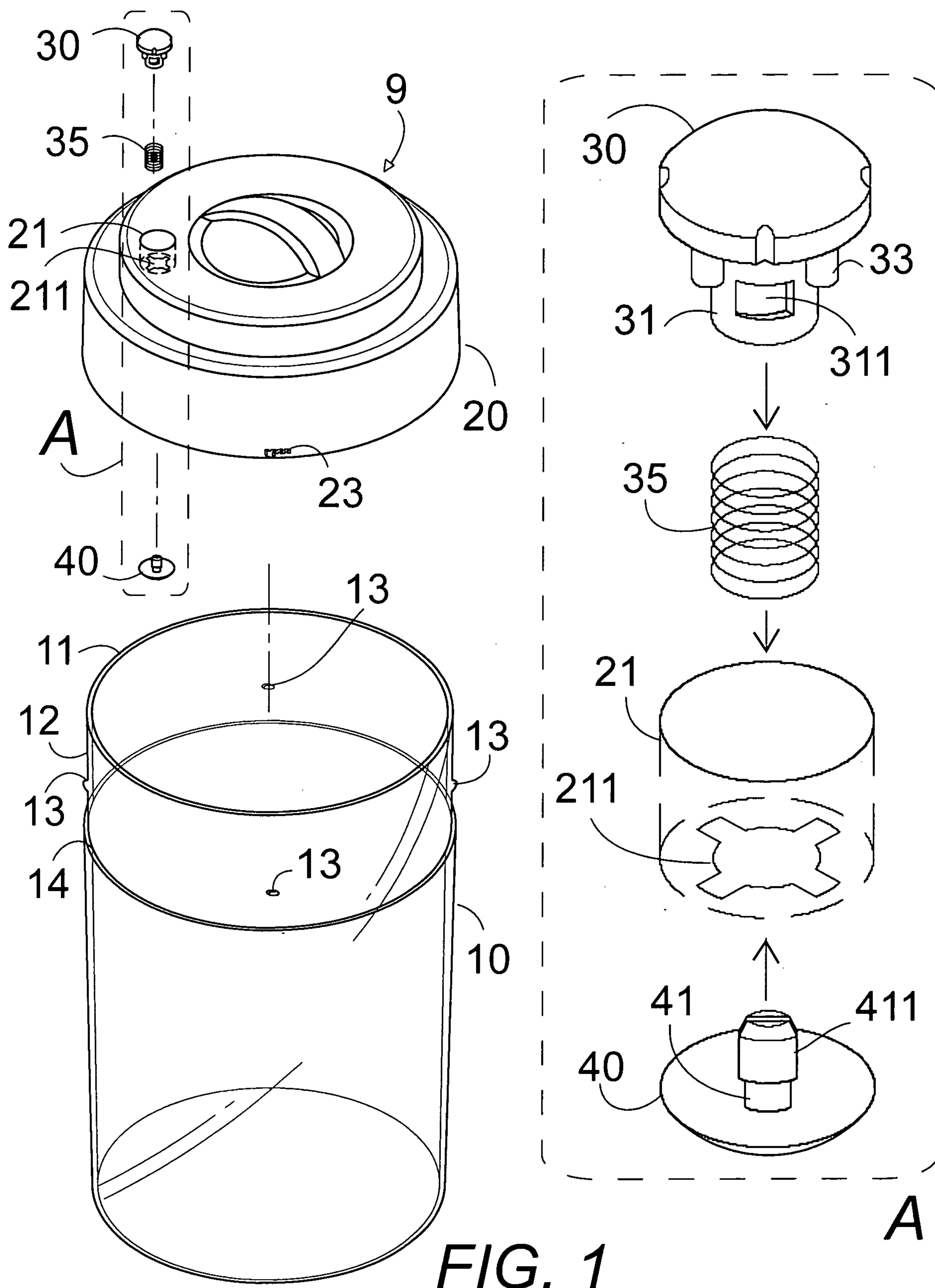
5 a pair of horizontally spaced brackets, each bracket having a top surface arranged for engaging and supporting the container body of a first one of said at least two of the vacuum sealed containers resting in a horizontal orientation thereon and a bottom surface arranged for resting on the container body of an adjacent one of said at least two of the vacuum sealed containers thereunder;

a plurality of dowels connected between the brackets;

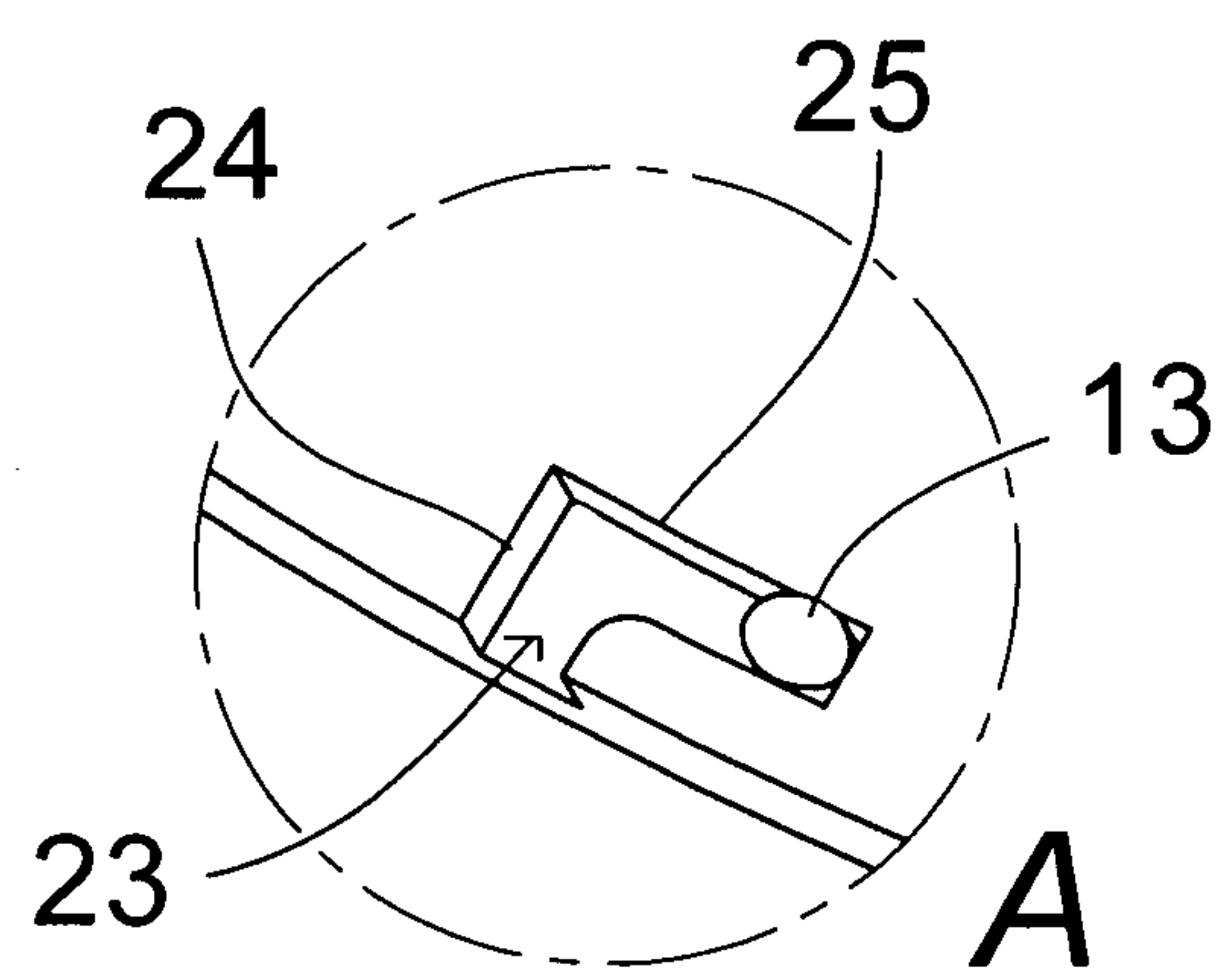
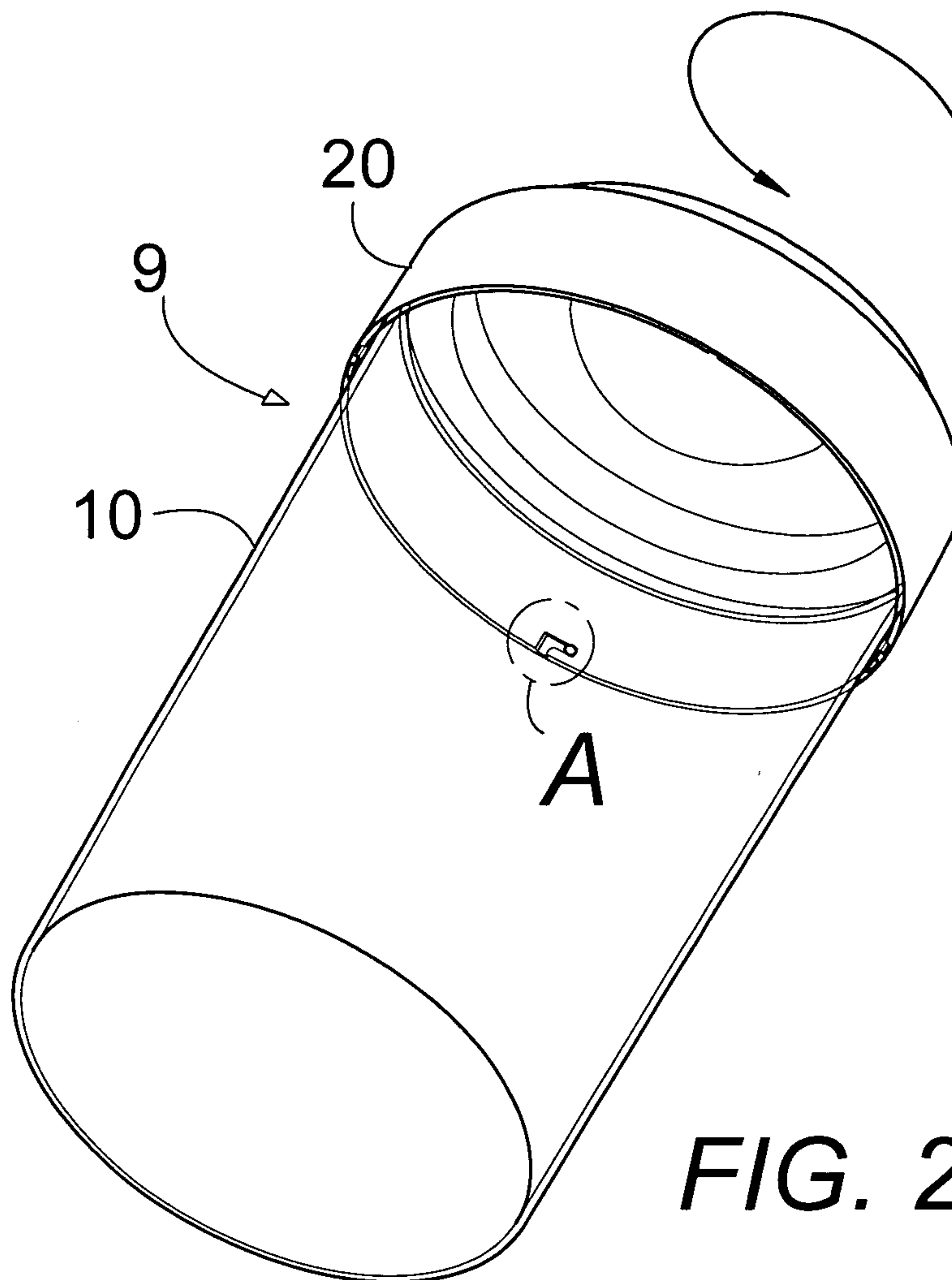
10 wherein the pair of brackets are arranged to provide support for the first one of said at least two of the vacuum sealed containers resting thereon by engagement of the adjacent one of said at least two of the vacuum sealed containers thereunder so as to form a virtual rack in which said at least two of the vacuum sealed containers are vertically stacked.

7. The vacuum sealed container of claim 6 wherein the container support
15 includes a container edge support protruding from a back edge of the bracket, the container edge support configured to receive and support a bottom edge of the vacuum sealed containers to prevent the vacuum sealed container from sliding off a back of the virtual rack so that the covers are able to be installed on and removed from the vacuum sealed containers to access contents of the vacuum sealed
20 containers while remaining in the virtual rack.

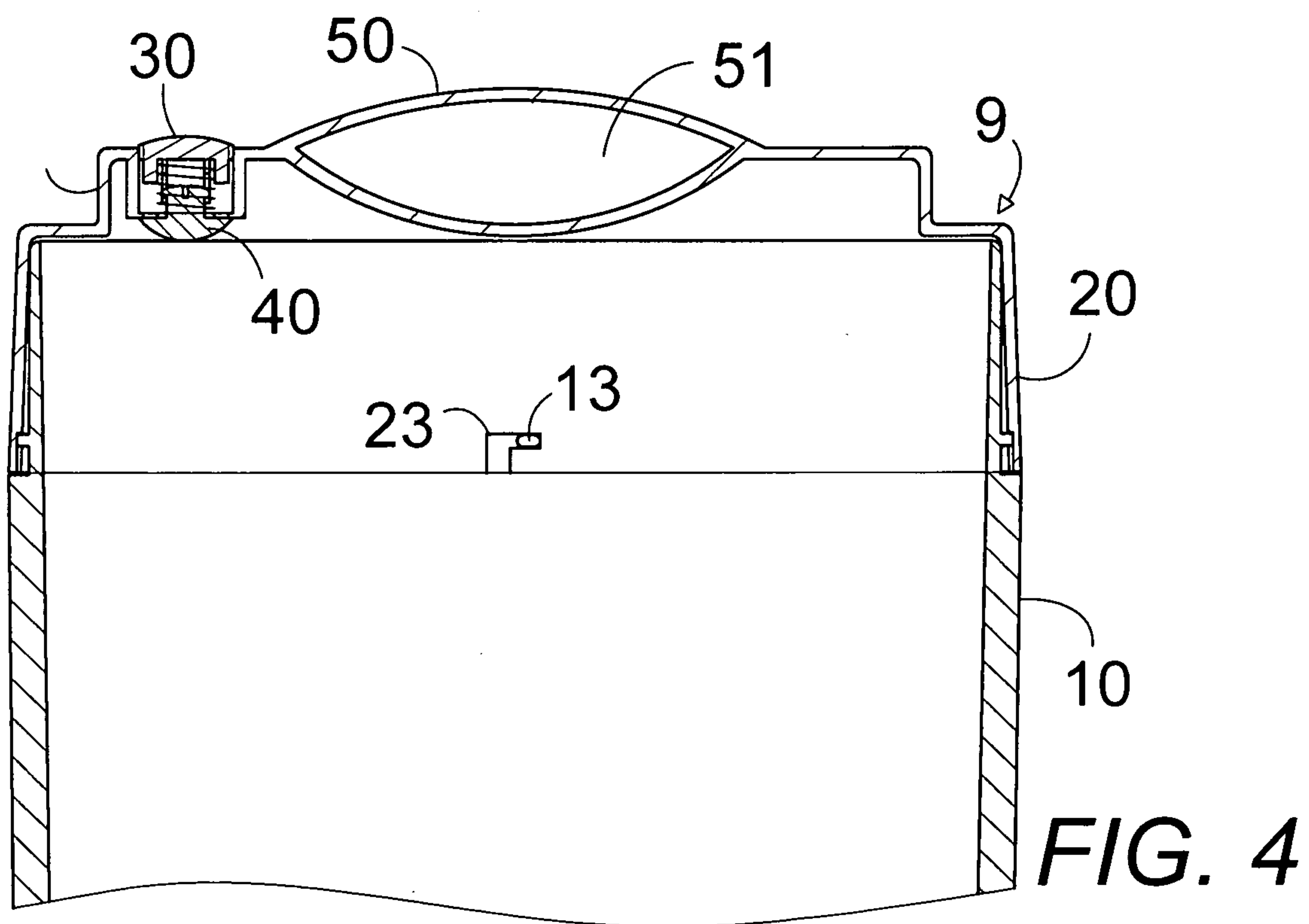
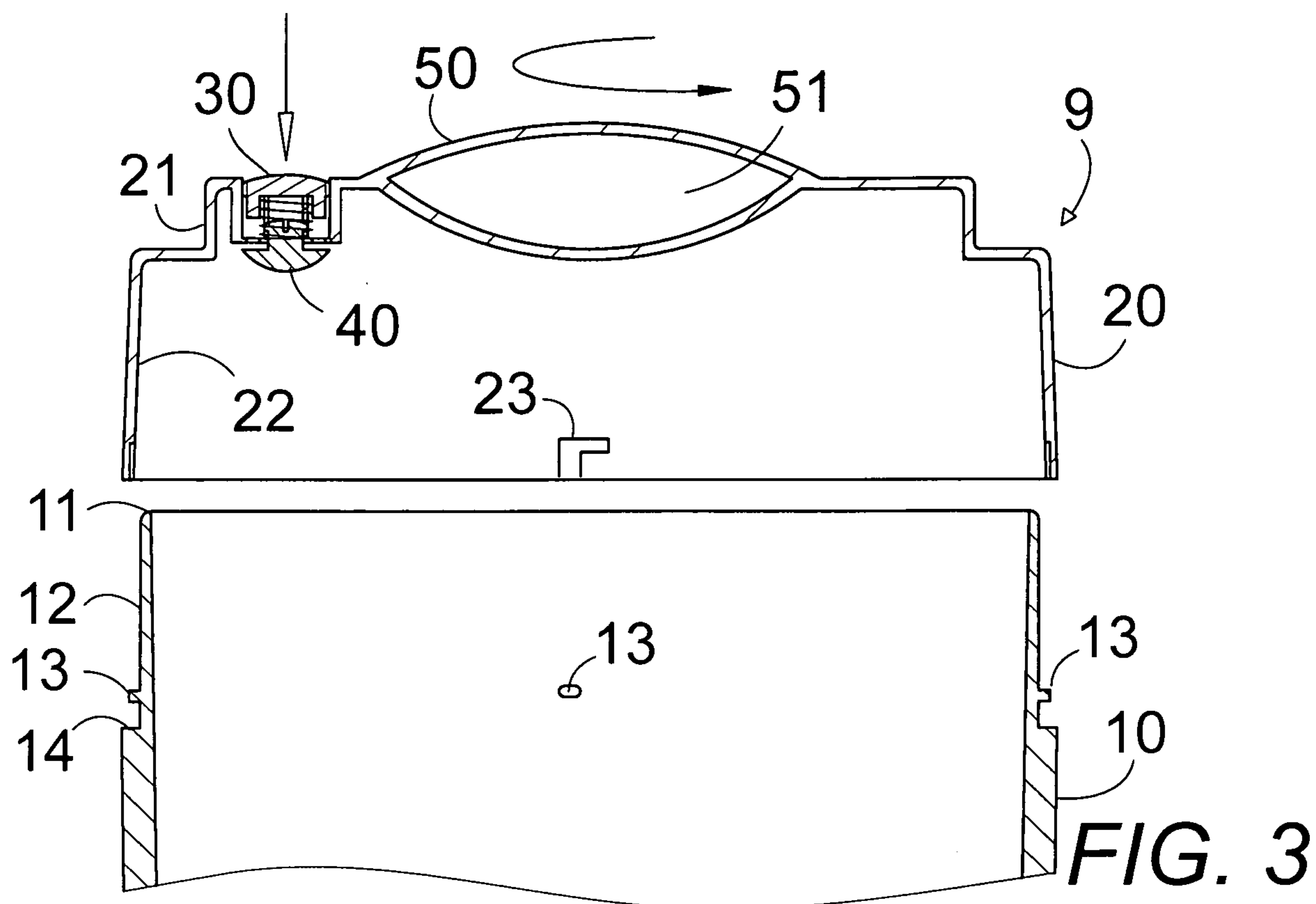
1/9



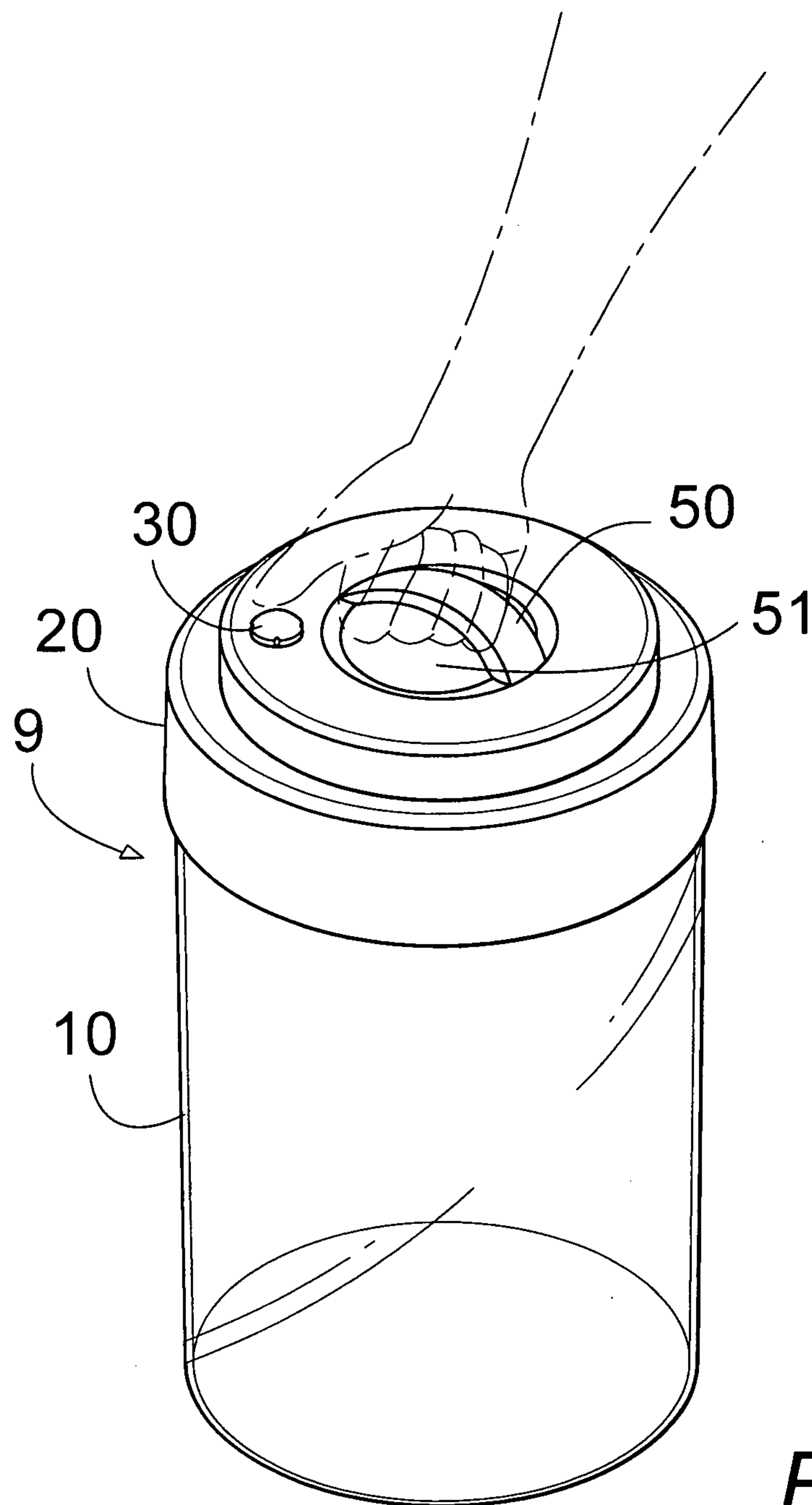
2/9



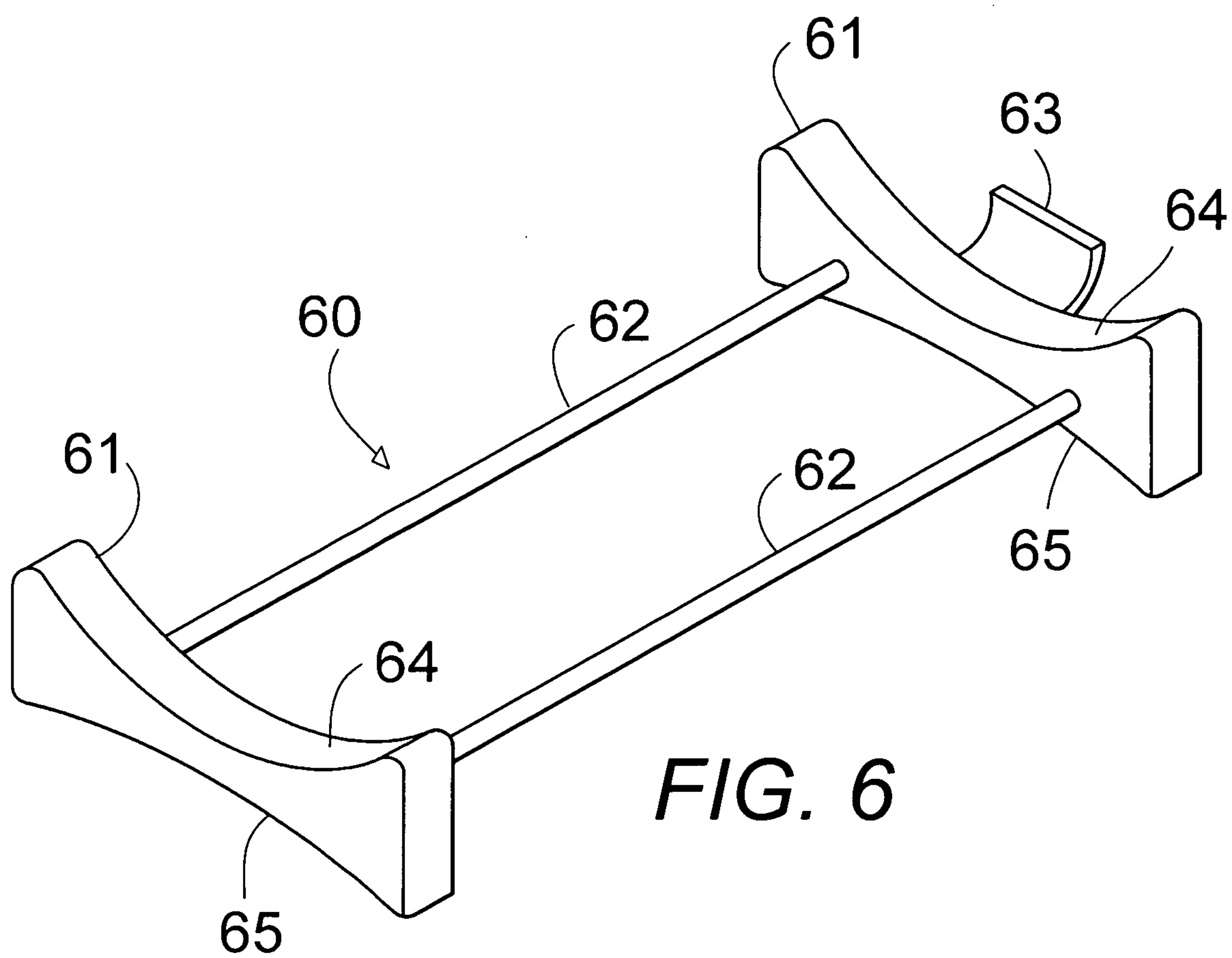
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**FIG. 5**

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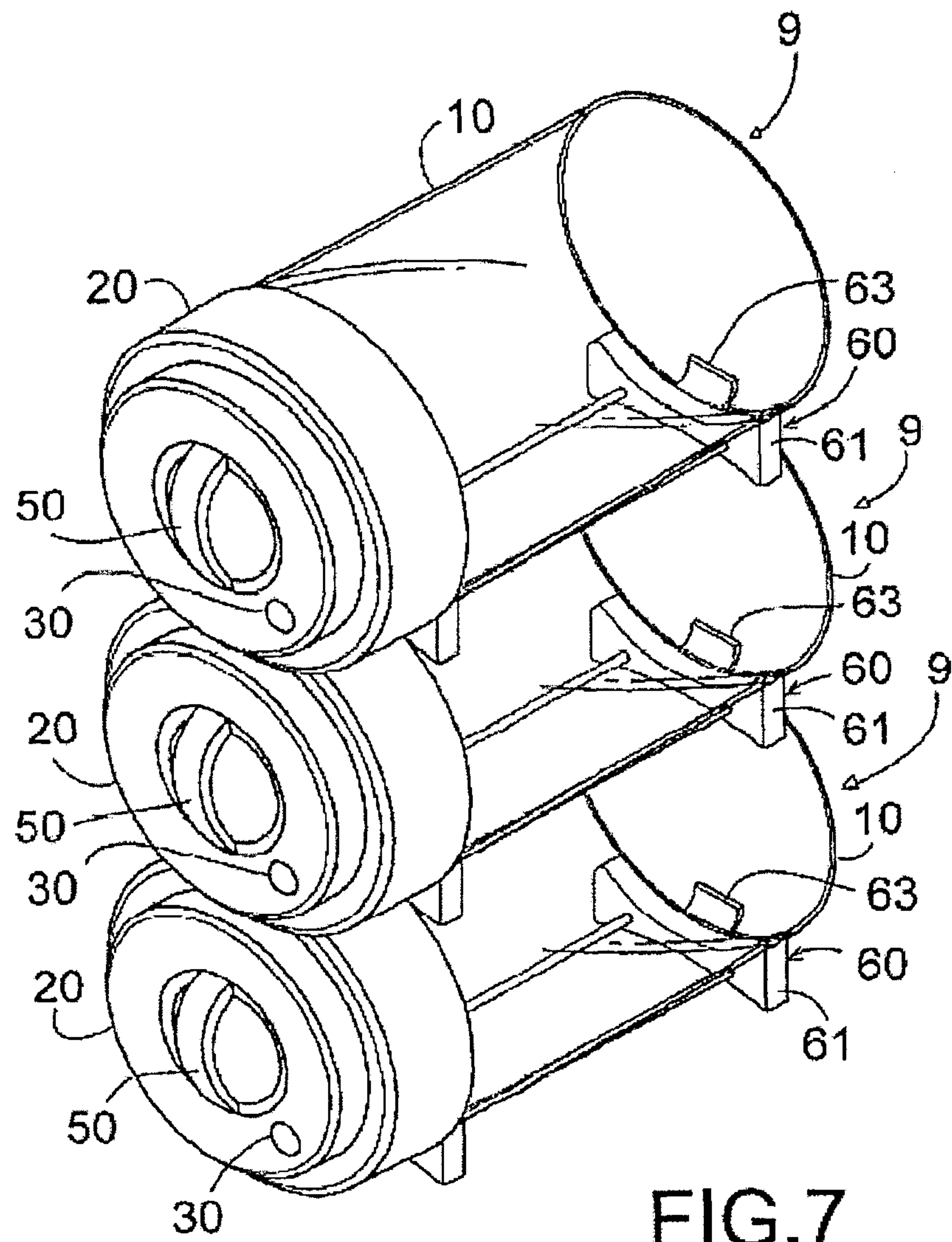
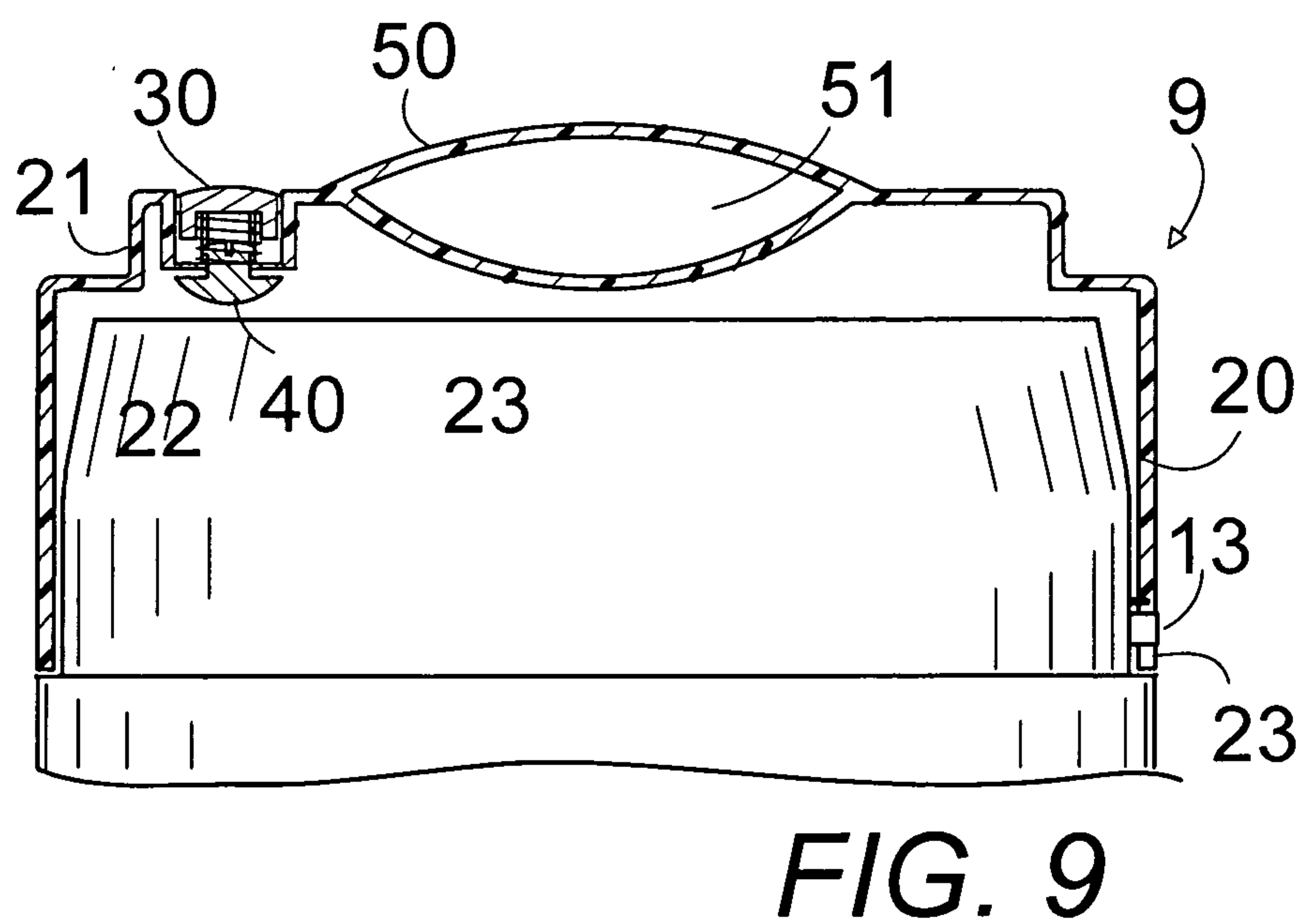
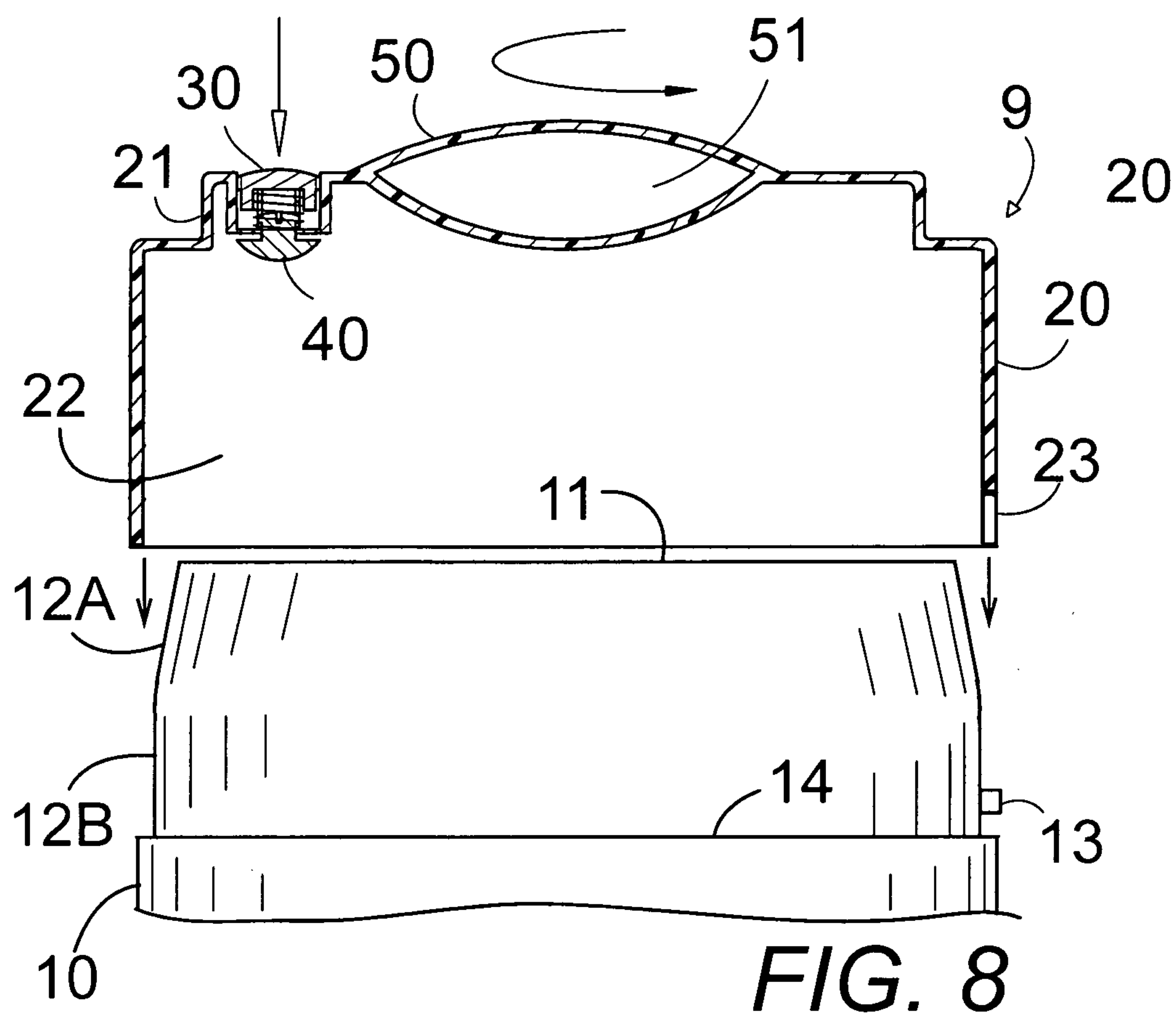
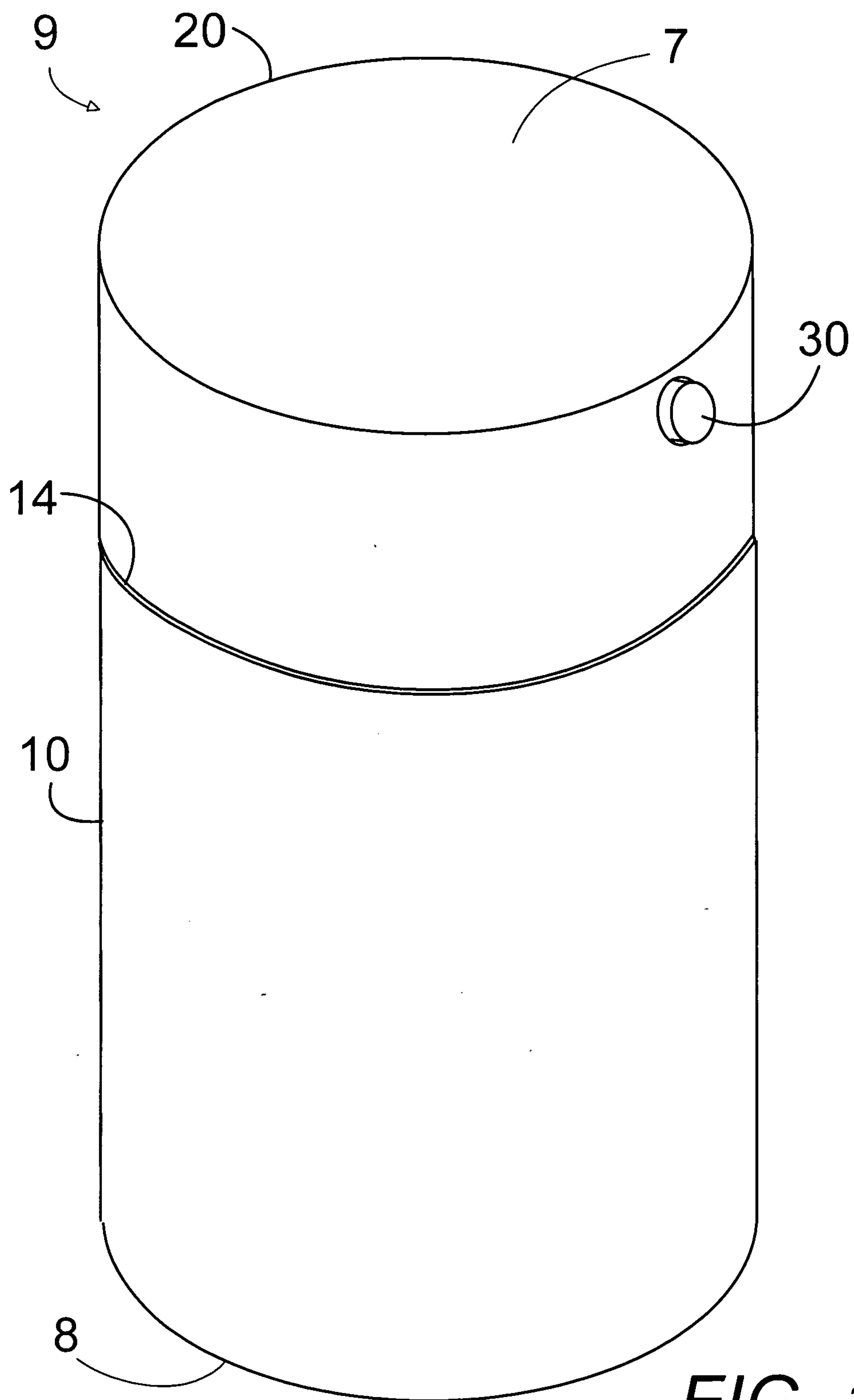


FIG.7

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**FIG. 10**

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