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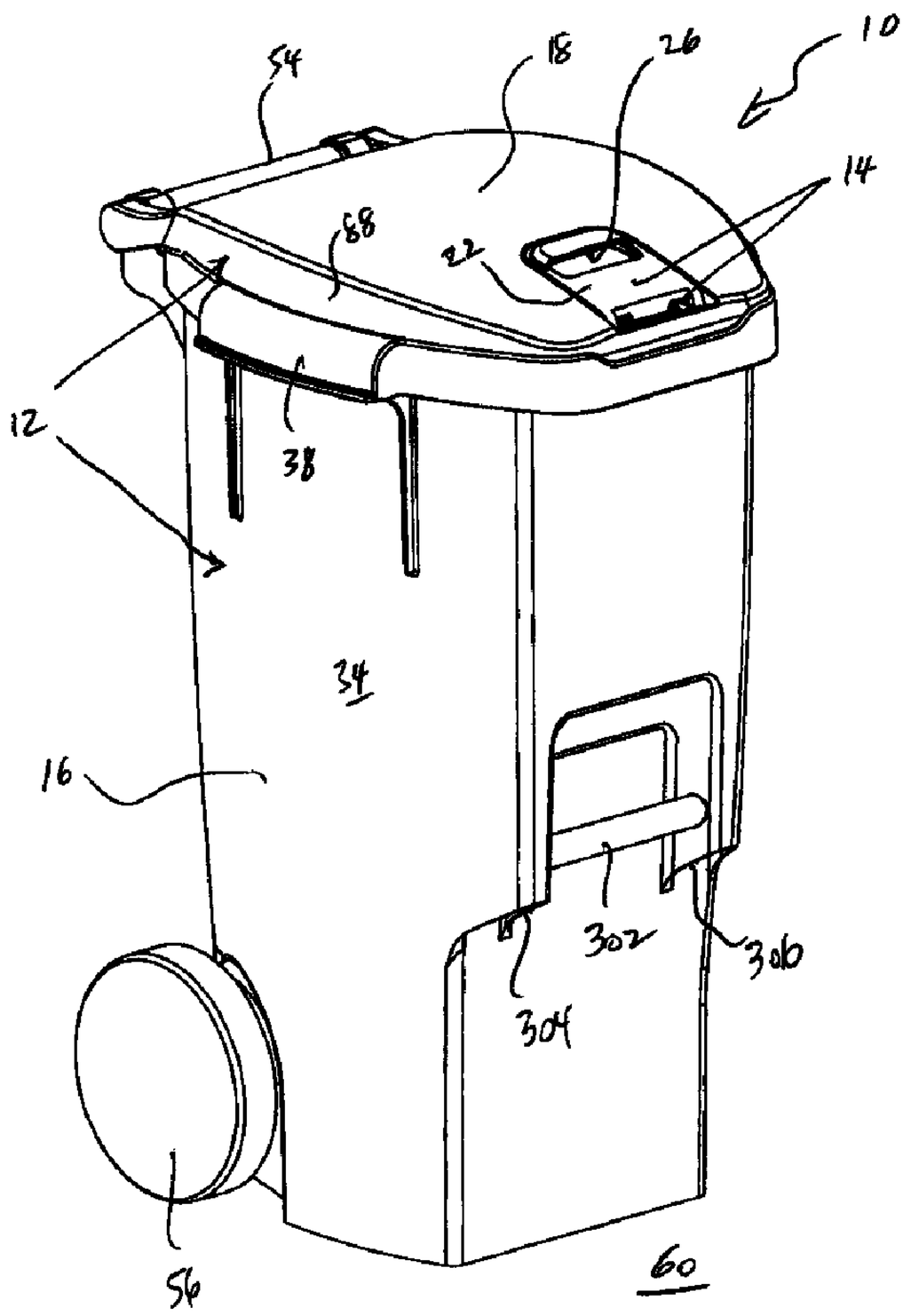


(57) Abrégé/Abstract:
A refuse container has a container assembly. The container assembly has a bin, a lid rotatably coupled to the bin, a locking mechanism. The locking mechanism has latch and a detent. The latch has a handle and is moveable between a locked position

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(57) Abrégé(suite)/Abstract(continued):
and an unlocked position. The detent acts between the bin and the lid and co-operates with the latch so as to effect locking of the lid to the bin. The latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle. The lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle. The unlocking force and the lid-opening force include a horizontal component and a vertical component.

# ABSTRACT

A refuse container has a container assembly. The container assembly has a bin, a lid rotatably coupled to the bin, a locking mechanism. The locking mechanism has latch and a detent. The latch has a handle and is moveable between a locked position and an unlocked position. The detent acts between the bin and the lid and co-operates with the latch so as to effect locking of the lid to the bin. The latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle. The lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle. The unlocking force and the lid-opening force include a horizontal component and a vertical component.

# REFUSE CONTAINER

## FIELD OF THE INVENTION

[0001] The present invention relates to containers for storing refuse, and particularly to containers configured for facilitating easier filling and emptying.

## BACKGROUND OF THE INVENTION

[0002] In modern, urban communities, refuse containers are used to store accumulated household refuse until such household refuse can be collected by garbage trucks or the like. Typically, such refuse containers includes a lid for concealing the household refuse collected therein, as well as to prevent wild animals from accessing this household refuse. With some containers, the lid is integrally mounted to a storage bin which contains the collected household refuse. Such containers, however, are awkward to use. For example, available latching mechanisms continue to be prone to opening by wild animals.

## SUMMARY OF THE INVENTION

[0003] In one aspect, there is provided a refuse container comprising a container assembly including a bin defining a cavity, a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity, and a closed position inhibiting access to the cavity; and a locking mechanism including a latch including a handle, and moveable between a locked position and an unlocked position, a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked position, wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle, and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle; and wherein the unlocking force includes a horizontal component and a vertical component, and wherein the lid-opening force includes a horizontal component and a vertical component, and wherein the direction of the horizontal component of

the lid-opening force is disposed at an angle of between about 90 degrees and about 270 degrees in a clockwise direction about a vertical axis and relative to the direction of the horizontal component of the unlocking force.

[0004] In another aspect, there is provided a refuse container comprising a container assembly including a bin defining a cavity, a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity and a closed position inhibiting access to the cavity; and a locking mechanism including a latch including a handle, and moveable between a locked position and an unlocked position, a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked position, wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle, and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle; and wherein the unlocking force includes a horizontal component and a vertical component, and wherein the lid-opening force includes a horizontal component and a vertical component, and wherein the direction of the horizontal component of the lid-opening force is substantially opposite to the direction of the horizontal component of the unlocking force.

[0005] In another aspect, there is provided a refuse container comprising a container assembly including a bin defining a cavity; a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity and a closed position inhibiting access to the cavity and a locking mechanism including a latch including a handle, and moveable between a locked position and an unlocked position a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked position, wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle; and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is

configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle, and wherein the unlocking force effects rotation of the latch in one of a clockwise or counterclockwise direction, and wherein the lid-opening force effects rotation of the latch in the other one of a clockwise or a counter clockwise direction relative to the same frame of reference as the direction of the unlocking force.

[0006] In another aspect, there is provided a refuse container comprising a container assembly including a bin defining a cavity; a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity and a closed position inhibiting access to the cavity, and a locking mechanism including a latch including a handle, and moveable between a locked position and an unlocked position, a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked position, wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle, and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle, and wherein, in moving from the locked position to the unlocked position, the latch rotates, relative to the container assembly, about a latch rotation axis, wherein the latch rotation axis and a longitudinal axis of the detent are substantially co-located.

[0007] In another aspect, there is provided a refuse container comprising a container assembly including a bin defining a cavity, a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity and a closed position inhibiting access to the cavity, and a locking mechanism including a latch including a handle, and moveable between a locked position and an unlocked position, a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked position, wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle, and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is

configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle, and wherein, when the latch is disposed in the locked position, the latch is disposed in a cavity provided in the container assembly.

[0008] In another aspect, there is provided a refuse container comprising a container assembly including a bin defining a cavity; a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity, and a closed position inhibiting access to the cavity, and a locking mechanism including a latch including a handle, and moveable between a locked position and an unlocked position, a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked position; wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle, and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle, and the latch is moveable to an unlocked indication position wherein the latch is locked to the container assembly such that the latch extends peripherally of the container assembly and thereby provides a visual indication that the latch is in the unlocked position.

[0009] In another aspect, there is provided a refuse container comprising a container assembly including a bin defining a cavity, and including: a lip defining an opening to the cavity, and a rim extending peripherally about the lip, a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity, and a closed position inhibiting access to the cavity, and a locking mechanism including a latch including a handle, and moveable between a locked position and an unlocked position, a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked position, wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle, and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is

configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle, and wherein the detent extends upwardly from the rim and is disposed below the lip.

[0010] In another aspect, there is provided a refuse container comprising a container assembly including a bin defining a cavity, and including a lip defining an opening to the cavity, and a rim extending peripherally about the lip, a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity, and a closed position inhibiting access to the cavity, and a locking mechanism including a latch including a handle and a detent co-operator, and moveable between a locked position and an unlocked position, a detent extending upwardly from the rim and acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked position, wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle, and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle, and wherein, when the latch is disposed in the locked position, the detent co-operator is disposed relative to the detent such that the detent interferes with movement of the detent co-operator along a vertical axis and thereby resists movement of the lid from the closed position to the open position, and a potential fouling space is defined between the detent co-operator and the detent, and wherein the container assembly includes a fouling guard extending from the rim and disposed between the detent and the peripheral edge of the container assembly and configured for reducing ingress of materials into the potential fouling space.

[0011] In another aspect, there is provided a refuse container comprising: a container assembly including a bin defining a cavity; a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity, and a closed position inhibiting access to the cavity, and a locking mechanism including a latch including a handle, and moveable between a locked position and an unlocked position, a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked position, and permit movement of the lid, relative to

the bin, from the closed position to the open position when the latch is in the unlocked position, wherein the latch is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle, and wherein, when the latch is disposed in the unlocked position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle, and wherein the container assembly includes an impact guard disposed below the locking mechanism for blocking physical contact with an external object when the latch is disposed in the locked position.

[0012] In another aspect, there is provided a refuse container comprising a bin defining a cavity, and including a lip defining an opening to the cavity, and a rim extending peripherally about the lip, and including a skirt seating surface and at least one impact pad seating surface, a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity, and a closed position inhibiting access to the cavity, and including a skirt, and at least one impact pad, wherein the skirt extends peripherally of and downwardly from the lid and includes a skirt contact surface configured to be seated upon the skirt seating surface, and wherein each one of the at least one impact pad extends downwardly from the lid and includes a respective contact surface configured to be seated upon a respective one of the at least one impact pad seating surface and thereby define at least one respective contact surface, wherein each one of the at least one respective contact surface corresponds to a respective one of the at least one impact pad; and wherein an operative impact surface is the sum of all of the at least one respective contact surface, and wherein the ratio of the surface area of the operative impact surface to the surface area of contact surface of the skirt is at least 0.1.

[0013] In another aspect, there is provided a refuse container comprising a bin defining a cavity, a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity, and a closed position inhibiting access to the cavity, and a lifting mechanism engagement system including a retention bar, wherein the retention bar is coupled to the bin and is disposed externally of the cavity.

## BRIEF DESCRIPTION OF DRAWINGS

[0014] The invention will be better understood when consideration is given to the following detailed description thereof. Such description makes reference the annexed drawings wherein:

[0015] Figure 1 is a front perspective view of a refuse container;

[0016] Figure 2 is a front elevation view of the refuse container in Figure 1;

[0017] Figure 3 is a rear elevation view of the refuse container in Figure 1;

[0018] Figure 4 is a side elevation view of one side of the refuse container in Figure 1;

[0019] Figure 5 is a top plan view of the refuse container in Figure 1;

[0020] Figure 6 is a top perspective view of the lid and the latch of the container in Figure 1, illustrating the latch in the locked position and in the unlocked indication position;

[0021] Figure 7 is a top perspective view of a front detail of the container in Figure 1, illustrating the latch in the locked position;

[0022] Figure 8 is a top plan view of a front detail of the container in Figure 1, illustrating the latch in the locked position;

[0023] Figure 9 is a further detail of the top plan view in Figure 8;

[0024] Figure 10 is a sectional side elevation view of the container, taken along the lines A-A in Figure 5, illustrating the latch in the locked position;

[0025] Figure 11 is front detail of the sectional side elevation view in Figure 10;

[0026] Figure 12 is a front detail of a sectional side elevation view of the container, taken along the lines A-A in Figure 5, illustrating the latch in the unlocked position;

[0027] Figure 13 is a front detail of a sectional side elevation view of the container, taken along the lines A-A in Figure 5, illustrating the latch in the unlocked indication position;

[0028] Figure 14 is a top detail of a sectional side elevation view of the container, taken along the lines A-A in Figure 5, illustrating the lid in an open position;

[0029] Figure 15 is a top perspective of the latch of the container in Figure 1 taken from the front;

[0030] Figure 16 is a bottom perspective view of the latch of the container in Figure 1, taken from the rear;

[0031] Figure 17 is a top plan view of the latch of the container in Figure 1;

[0032] Figure 18 is a top perspective view of the bin of the container in Figure 1, taken from the rear;

[0033] Figure 19 is a bottom perspective view of the bin of the container in Figure 1, taken from the front;

[0034] Figure 20 is a top perspective view of a front detail of the bin of the container in Figure 1, taken from the front;

[0035] Figure 21 is a top perspective view of a front detail of the bin of the container in Figure 1, taken from the rear;

[0036] Figure 22 is a bottom perspective view of a front detail of the bin of the container in Figure 1, taken from the front;

[0037] Figure 23 is a top plan view of a lid of the container in Figure 1;

[0038] Figure 24 is a bottom plan view of a lid of the container in Figure 1;

[0039] Figure 25 is a top perspective of the lid of the container in Figure 1, taken from the rear;

[0040] Figure 26 is a bottom perspective view of the lid of the container in Figure 1, taken from the rear;

[0041] Figure 27 is a top plan view of a front detail of the lid of the container in Figure 1;

[0042] Figure 28 is a bottom plan view of a front detail of the lid of the container in Figure 1;

[0043] Figure 29 is top perspective view of a front detail of the lid of the container in Figure 1;

[0044] Figure 30 is a schematic illustration of the stages of lifting and moving of the refuse container by a lifting mechanism engagement system;

[0045] Figure 31 is a front plan view of the latch of the refuse container of Figure 1;

[0046] Figure 32 is a top perspective view of one side of another embodiment of a refuse container, taken from the front;

[0047] Figure 33 is a bottom perspective view of the other side of the refuse container in Figure 32, taken from the front; and

[0048] Figure 34 is a bottom perspective view of the refuse container if Figure 32, taken from the front and from a perspective where the leading edges of each one of the sides of the container is visible.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0049] Referring to Figures 1 to 31, there is provided a refuse container 10 including a container assembly 12 and a locking mechanism 14.

[0050] For example, the material of the provided container is plastic, such as polyethylene or polyvinyl chloride.

[0051] The container assembly 12 includes a bin 16 and a lid 18. The lid 18 is coupled to the bin 16.

[0052] The bin 16 defines a cavity 20. The bin 16 includes a lip 74 which defines an opening 36 for effecting communication between the cavity 20 and the environment external to the bin 16 when the lid 18 is in an open position (see below). For example, the cavity 20 is configured for storing material including household organic waste.

[0053] For example, with respect to the bin 16, the bin 16 includes a floor 32 and a continuous upstanding sidewall 34 extending between the floor 32 and the lip 74 . For example, with respect to the continuous sidewall 34, the continuous sidewall 34 includes interior and exterior surfaces 41, 42. A rim 28 extends peripherally about the perimeter of the lip 74. For example, the rim 28 includes a seating surface 30 configured to co-operate with the lid 18, as will be explained below. For example, the seating surface 30 extends peripherally about the perimeter of the lip 74.

[0054] For example, with respect to the interior surface 41 of the continuous sidewall, the interior surface is tapered so as to facilitate nesting of an identical container within the container 10, and thereby facilitate stacking of multiple identical containers 10.

[0055] For example, with respect to the external surface 42 of the continuous sidewall 34, a pair of handles 38, 40 are mounted on opposite sides 44, 46 of the external surface 42 of the continuous sidewall 34. The handles 38, 40 are configured to be grasped by a human operator for effecting lifting of the container 10.

[0056] For example, with further respect to the external surface 42 of the continuous sidewall 34, a pair of brackets 48, 50 are mounted to a rear section 52 of the external surface 42 of the continuous sidewall 34. A handle 54 extends between the brackets 48, 50. The handle 54 is provided for grasping by a human operator for effecting lifting of the container. Alternatively, where the container 10 is provided with wheels 56, 58, the handle 54 facilitates grasping by a human operator for effecting rolling movement of the container 10 across a reaction surface 60.

[0057] For example, the lid 18 is rotatably coupled to the bin 16. For example, such rotational coupling can be accomplished by pivots incorporated in one of the lid 18 or the bin 16 and received within respective receptacles in the other one of the lid 18 or the bin 16, or through external pivots received within receptacles provided in each one of the lid 18 and the bin 16.

[0058] The lid 18 is configured for movement, relative to the bin 16, between an open position and a closed position. For example, the lid extends between and is rotatably coupled to each one of the brackets 48, 50. In this respect, for example, the lid includes pins 76, 78 extending from opposite sides. Each one of the pins 76, 80 is received within a respective aperture of a respective one of the brackets 48, 50.

[0059] For example, with respect to the lid 18,when the lid 18 is in the open position, depositing of household organic waste into the cavity 20 can be effected. As a further example, when the lid 18 is open, removal, from the cavity 20, of the contents of the cavity 20 is enabled. For example, when the lid 18 is in the closed position, removal or egress, from the cavity 20, of the contents of the cavity 20 is inhibited. As a further example, when the lid 18 is in the closed position, the contents of the cavity 20 are hidden from view. As a further example, when the lid 18 is in the closed position, egress of odours, from the cavity 20, and from the materials within the cavity 20, is inhibited.

[0060] Referring to Figures 24 and 29, for example, with respect to the lid 18, the lid 18 includes a downwardly extending rib 19. For example, the rib 19 extends internally about the perimeter of the lid 18.

[0061] The rib 19 is configured to be disposed opposite to an interior surface of the lip 74 (see Figures 18 and 20) when the lid 18 is in the closed position. As well, the lid 18 includes a skirt 88. For example, the skirt extends peripherally about the perimeter of the lid 18. The skirt 88 is configured to be seated or supported on the seating surface 30 of the rim 28 when the lid 18 is in the closed position. The lid 18 also includes one or more impact pads (two impact pads 90, 92 are shown in Figures 24 and 28) which are also configured to be seated or supported on a respective one of pad seating surfaces 94, 96 provided on the rim 28 (see Figures 18 and 20). For example, each one of the seating surfaces 94, 96 is provided in a respective one of receiving wells 98, 100 also provided on the rim 28.

[0062] The locking mechanism includes a latch 22 and a detent 24. The latch 22 is coupled (for example, mounted) to one of the bin 16 and the lid 18. The detent 24 is coupled (for example, mounted) to the other one of the bin 16 and the lid 18. For example, the latch 22 is coupled (for example, mounted) to the lid 18 (see Figure 6), and the detent is provided on the bin (see Figures 18, 20, 21, and 22). For example, the latch 22 includes a pair of pins 66, 68 disposed on opposite sides of the latch 22 (see Figures 15, 16, and 17). Each one of the pins 66, 68 is received within a respective one of latch apertures 70, 72 provided in the surface of the lid 18. In this respect, the latch 22 is snap-fit into the latch apertures 70, 72 (see Figures 25 and 26) of the lid 18 and the detent 24 is coupled (for example, mounted) to the bin 16.

[0063] For example, with respect to the latch 22, the latch 22 is rotatably coupled to the lid 18. For example, such rotational coupling can be accomplished by pivots incorporated in one of the lid 18 or the latch 22 and received within respective receptacles in the other one of the lid 18 or the latch 22, or through external pivots received within receptacles provided in each one of the lid 18 and the latch 22.

[0064] For example, with respect to the detent 24, the detent 24 is mounted to the rim 28 of the bin 16. For example, the detent 24 is mounted to the rim 28 at a front section 51 of the bin 16. For example, the detent 24 is mounted peripherally of the lip 74 of the rim 28.

[0065] The latch 22 includes a handle 26. The latch 22 is moveable between a locked position and an unlocked position. When in the locked position, the latch 22 is locked to the bin 16. When in the unlocked position, the latch 22 is unlocked relative to the bin 16. The detent 24 acts between the bin 16 and the lid 18. Further, the detent 24 co-operates with the latch 22. In one respect, the detent 24 co-operates with the latch 22 so as to effect locking of the lid 18 to the bin 16 when the latch 22 is in the locked position. In another respect, the detent 24 co-operates

with the latch 22 so as to permit movement of the lid 18, relative to the bin 16, from the closed position to the open position when the latch 22 is in the unlocked position relative to the bin.

[0066] The latch 22 is configured to move from the locked position to the unlocked position in response to an application of an unlocking force to the handle 26. When the latch 22 is disposed in the unlocked position, and the lid 18 is disposed in the closed position, the lid 18 is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle 26.

[0067] For example, with respect to the handle 26, the handle 26 is configured for grasping by a human operator and effecting translation of a force applied by the human operator into movement of the latch 22.

[0068] For example, with respect to the latch 22 includes a detent co-operator 106. When the latch 22 is disposed in the locked position, the detent co-operator 106 is disposed relative to the detent 24 such that the detent 24 interferes with movement of the detent co-operator 106 along a vertical axis and thereby resists movement of the lid 18 from the closed position to the open position. For example, with respect to the detent 24, the rim 28 includes a slot 202 configured to receive the detent co-operator 106 when the latch 22 is disposed in the locked position in order to enable the detent co-operator to be disposed relative to the detent 24 such that the detent 24 interferes with movement of the detent co-operator 106 along a vertical axis and thereby resists movement of the lid 18 from the closed position to the open position.

[0069] For example, when the latch 22 is coupled to the lid 18 and the detent 24 is disposed on the bin 16, in order to facilitate co-operation between the latch 22 and the detent 24 so as to facilitate locking and unlocking of the lid 18 relative to the bin 16, the lid 18 includes a detent receiving slot or aperture 142 through which extends the detent 24 of the bin 16.

(A) REFUSE CONTAINER WITH LATCH MECHANISM WHICH REQUIRES SEPARATE ACTIONS TO EFFECT UNLOCKING AND OPENING OF LID

[0070] In one aspect, there is provided a refuse container 10, as described above, wherein the latch 22 requires separate actions to effect unlocking and opening of lid 18.

[0071] In this respect, there is provided the refuse container10 including a container assembly and a locking mechanism.

[0072] The container assembly includes the bin 16 and the lid 18. The bin 16 defines the cavity 20. The lid is rotatably coupled to the bin 16, and configured for movement, relative to the bin 16, between an open position providing access to the cavity 20 and a closed position inhibiting access to the cavity 20.

[0073] The locking mechanism includes the latch 22 and the detent 24. The latch 22 includes the handle 26, and is moveable between a locked position and an unlocked position. The detent 24 acts between the bin 16 and the lid 18. The detent 24 co-operates with the latch 22 so as to effect locking of the lid 18 to the bin 16 when the latch 22 is in the locked position, and permit movement of the lid 18, relative to the bin 16, from the closed position to the open position when the latch 22 is in the unlocked position.

[0074] The latch 22 is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle 26. When the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the lid 18 is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle 26.

[0075] In one configuration, the unlocking force includes a horizontal component and a vertical component, and the lid-opening force includes a horizontal component and a vertical component. The direction of the horizontal component of the lid-opening force is disposed at an angle of between about 90 degrees and about 270 degrees in a clockwise direction about a vertical axis and relative to the direction of the horizontal component of the unlocking force.

[0076] In another configuration, the unlocking force includes a horizontal component and a vertical component, and the lid-opening force includes a horizontal component and a vertical component. The direction of the horizontal component of the lid-opening force is substantially opposite to the direction of the horizontal component of the unlocking force.

[0077] In yet another configuration, the unlocking force effects rotation of the latch 22 in one of a clockwise or counter clockwise direction, and the lid-opening force effects rotation of

the latch 22 in the other one of a clockwise or a counter clockwise direction relative to the same frame of reference as the direction of the unlocking force.

[0078] For example, in moving from the locked position to the unlocked position, the latch 22 rotates, relative to the container assembly, about a latch rotation axis 80. The latch rotation axis 80 and the longitudinal axis 82 of the detent 24 are substantially co-located. For example, the latch 22 includes the pair of pins 66, 68 disposed on opposite sides of the latch 22, wherein the axis joining the pins 66, 68 is substantially co-located with the axis 82 of the detent. Each one of the pins 66, 68 is received within a respective one of latch apertures 70, 72 provided in the surface of the container assembly 12. In this respect, the latch 22 is snap-fit into the latch apertures 70, 72.

[0079] For example, when the latch 22 is disposed in the locked position, the latch 22 is disposed in a cavity 84 provided in the container assembly. For example, the latch 22 is coupled to the lid 18, and the cavity 84 is provided in the lid 18, and the detent is disposed on the bin 16.

[0080] For example, the cavity 84 includes a recessed surface which functions as a seating surface 86, and when the latch 22 is disposed in the locked position, the latch 22 is seated or supported on the seating surface 86. For example, with respect to the coupling of the latch 22 to the lid 18, the latch 22 includes the pair of pins 66, 68 disposed on opposite sides of the latch 22. Each one of the pins 66, 68 is received within a respective one of the latch apertures 70, 72 provided in a surface of the cavity 84. In this respect, the latch 22 is snap-fit into the latch apertures 70, 72 of the cavity 84, and thereby effecting rotatable coupling of the latch 22 to the lid 18. To assist in retaining coupling of the latch 22 within the cavity 84, the lid 18 includes latch retainer 129. The latch retainer 129 co-operates with the latch 22 for limiting or interfering with displacement of the latch 22 along the axis 134 extending through the latch apertures 70, 72.

[0081] In this respect, the latch 22 is slotted such that the latch 22 receives the latch retainer 129 and the latch retainer 129 thereby limits or interferes with displacement of the latch 22 along the axis 134 extending through the latch apertures 70, 72.

[0082] For example, the latch retainer 129 includes latch retainer tabs 130, 132, and the latch 22 includes slots 136, 138, wherein each of the slots 136, 138 receives a respect one of the latch retainer tabs 130, 132 for limiting or interfering with displacement of the latch 22 along the axis 134 extending through the latch apertures 70, 72.. To spatially accommodate the latch

retainer tabs 130, 132, the detent receiving aperture 142 is disposed between the latch retainer tabs 130, 132, and the detent co-operator 106 is also disposed between the latch retainer tabs 130, 132, thereby permitting assumption of the locked and the unlocked positions by the latch 22.

[0083] For example, the latch 22 includes the detent co-operator 106. When the latch 22 is disposed in the locked position, the detent co-operator 106 is disposed relative to the detent 24 such that the detent 24 interferes with movement of the detent co-operator 106 along a vertical axis and thereby resists movement of the lid 18 from the closed position to the open position.

[0084] For example, when the latch 22 is coupled to the lid 18 and the detent 24 is disposed on the bin 16, in order to facilitate co-operation between the latch 22 and the detent 24 so as to facilitate locking and unlocking of the lid 18 relative to the bin 16, the lid 18 includes the detent receiving slot or aperture 142 through which extends the detent 24 of the bin 16.

[0085] For example, when the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the latch 22 is moveable to an unlocked indication position wherein the latch 22 is locked to the container assembly 12 such that the latch 22 extends peripherally of the container assembly 12 and thereby provides a visual indication that the latch 22 is in the unlocked position.

[0086] For example, the latch 22 extends vertically above the container assembly 12 when disposed in the unlocked indication position. For example, when disposed in the unlocked indication position, the latch 22 extends beyond the perimeter of the container assembly 12 by at least two (2) inches.

[0087] For example, when disposed in the unlocked indication position, the latch 22 extends beyond the perimeter of the container assembly 12 by at least four (4) inches.

[0088] For example, when disposed in the unlocked indication position, the latch 22 presents a side surface area of at least four (4) square inches.

[0089] For example, the presented side surface area is eight (8) square inches.

[0090] For example, the container assembly 12 is configured to define a latch receiving slotted surface 102 configured for receiving the latch 22 in an interference fit relationship when the latch 22 assumes the unlocked indication position.

[0091] For example, the latch 22 is coupled to the lid 18, and the lid is configured to define the latch receiving slotted surface 102.

[0092] For example, the latch receiving slotted surface 102 includes a pair of latch receiving slots 1022, 1024. Each one of the slots 1022, 1024 is defined in part by a respective one of leading wedges 1026, 1028. As the latch 22 enters each one of the slots 1022, 1024, the latch 22 engages each one of the leading wedges 1026, 1028 which urge the latch 22 into an interference fit relationship with a respective one of narrow channels 1030, 1032.

[0093] For example, the lid 18 includes a stop 140 to interfere with movement of the latch 22 further past the receiving slots 1022, 1024.

[0094] For example, each one of the latch retainer tabs 130, 132 assists in defining a respective one of the slots 1022, 1024.

(B) REFUSE CONTAINER WITH LATCH WHICH ROTATES ABOUT AN AXIS WHICH IS SUBSTANTIALLY CO-LOCATED WITH DETENT AXIS

[0095] In another aspect, there is provided a refuse container 10, as described above, wherein the latch 22 is configured to rotate about an axis 80 which is substantially co-located with the longitudinal axis 82 of the detent 24.

[0096] In this respect, there is provided the refuse container10 including a container assembly and a locking mechanism.

[0097] The container assembly includes the bin 16 and the lid 18. The bin 16 defines the cavity 20. The lid is rotatably coupled to the bin 16, and configured for movement, relative to the bin 16, between an open position providing access to the cavity 20 and a closed position inhibiting access to the cavity 20.

[0098] The locking mechanism includes the latch 22 and the detent 24. The latch 22 includes the handle 26, and is moveable between a locked position and an unlocked position. The detent 24 acts between the bin 16 and the lid 18. The detent 24 co-operates with the latch 24 so as to effect locking of the lid 18 to the bin 16 when the latch 22 is in the locked position, and permit movement of the lid 18, relative to the bin 16, from the closed position to the open position when the latch 22 is in the unlocked position.

[0099] The latch 22 is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle 26. When the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the lid 18 is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle 26.

[00100] In moving from the locked position to the unlocked position, the latch 22 rotates, relative to the container assembly, about the latch rotation axis 80. The latch rotation axis 80 and the longitudinal axis 82 of the detent 24 are substantially co-located. For example, the latch 22 includes the pair of pins 66, 68 disposed on opposite sides of the latch 22, wherein the axis joining the pins 66, 68 is substantially co-located with the axis 82 of the detent. Each one of the pins 66, 68 is received within a respective one of latch apertures 70, 72 provided in the surface of the container assembly 12. In this respect, the latch 22 is snap-fit into the latch apertures 70, 72.

(C) REFUSE CONTAINER WITH LATCH SEATED IN A CAVITY WHEN THE LATCH IS IN THE LOCKED POSITION.

[00101] In another aspect, there is provided a refuse container 10, as described above, wherein, when the latch 22 is in the locked position, the latch 22 is seated in a cavity 84 provided within the container assembly 12.

[00102] In this respect, there is provided the refuse container10 including a container assembly and a locking mechanism.

[00103] The container assembly includes the bin 16 and the lid 18. The bin 16 defines the cavity 20. The lid is rotatably coupled to the bin 16, and configured for movement, relative to the bin 16, between an open position providing access to the cavity 20 and a closed position inhibiting access to the cavity 20.

[00104] The locking mechanism includes the latch 22 and the detent 24. The latch 22 includes the handle 26, and is moveable between a locked position and an unlocked position. The detent 24 acts between the bin 16 and the lid 18. The detent 24 co-operates with the latch 24 so as to effect locking of the lid 18 to the bin 16 when the latch 22 is in the locked position, and permit movement of the lid 18, relative to the bin 16, from the closed position to the open position when the latch 22 is in the unlocked position.

[00105] The latch 22 is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle 26. When the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the lid 18 is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle 26.

[00106] When the latch 22 is disposed in the locked position, the latch 22 is disposed in the cavity 84 provided in the container assembly 12. For example, when the latch 22 is disposed in the locked position, at least a portion of the latch 22 is substantially flush with respect to adjacent surfaces of the container assembly 12.

[00107] For example, the latch 22 is coupled to the lid 18, and the cavity 84 is provided in the lid 18, and the detent 24 is disposed on the bin 16. For example, the cavity 84 includes the recessed surface which functions as the seating surface 86, and when the latch 22 is disposed in the locked position, the latch 22 is seated or supported on the seating surface 86. In order to effect co-operation between the latch 22 and the detent 24 to facilitate locking and unlocking of the lid 18 relative to the bin 16, the lid 18 includes the detent receiving aperture 142 through which extends the detent 24 of the bin 16. For example, the latch 22 includes the detent co-operator 106. When the latch 22 is disposed in the locked position, the detent co-operator 106 is disposed relative to the detent 24 such that the detent 24 interferes with movement of the detent co-operator 106 along a vertical axis and thereby resists movement of the lid 18 from the closed position to the open position.

[00108] To assist in retaining coupling of the latch 22 within the cavity 84, the lid 18 includes the latch retainer 129. The latch retainer 129 co-operates with the latch 22 for limiting or interfering with displacement of the latch 22 along the axis 134 extending through the latch apertures 70, 72. In this respect, the latch 22 is slotted such that the latch 22 receives the latch retainer 129 and the latch retainer 129 thereby limits or interferes with displacement of the latch 22 along the axis 134 extending through the latch apertures 70, 72. For example, the latch retainer 129 includes the latch retainer tabs 130, 132, and the latch 22 includes the slots 136, 138, wherein each of the slots 136, 138 receives a respect one of the latch retainer tabs 130, 132 for limiting or interfering with displacement of the latch 22 along the axis 134 extending through the latch apertures 70, 72.. To spatially accommodate the latch retainer tabs 130, 132, the detent

receiving aperture 142 is disposed between the latch retainer tabs 130, 132, and the detent co-operator 106 is also disposed between the latch retainer tabs 130, 132, thereby permitting assumption of the locked and the unlocked positions by the latch 22.

(D) REFUSE CONTAINER WITH LATCH WHICH IS MOVEABLE INTO AN UNLOCKED INDICATION POSITION.

[00109] In another aspect, there is provided a refuse container 10, as described above, wherein the latch 22 is moveable into an unlocked indication position.

In this respect, there is provided the refuse container10 including a container assembly and a locking mechanism.

[00110] The container assembly includes the bin 16 and the lid 18. The bin 16 defines the cavity 20. The lid is rotatably coupled to the bin 16, and configured for movement, relative to the bin 16, between an open position providing access to the cavity 20 and a closed position inhibiting access to the cavity 20.

[00111] The locking mechanism includes the latch 22 and the detent 24. The latch 22 includes the handle 26, and is moveable between a locked position and an unlocked position. The detent 24 acts between the bin 16 and the lid 18. The detent 24 co-operates with the latch 24 so as to effect locking of the lid 18 to the bin 16 when the latch 22 is in the locked position, and permit movement of the lid 18, relative to the bin 16, from the closed position to the open position when the latch 22 is in the unlocked position.

[00112] The latch 22 is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle 26. When the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the lid 18 is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle 26.

[00113] When the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the latch 22 is moveable to the unlocked indication position wherein the latch 22 is locked to the container assembly 12 such that the latch 22 extends peripherally of the container assembly 12 and thereby provides a visual indication that the latch 22 is in the unlocked position. For example, the latch 22 extends vertically above the container assembly 12

when disposed in the unlocked indication position. For example, when disposed in the unlocked indication position, the latch 22 extends beyond the perimeter of the container assembly 12 by at least two (2) inches. For example, when disposed in the unlocked indication position, the latch 22 extends beyond the perimeter of the container assembly 12 by at least four (4) inches. For example, when disposed in the unlocked indication position, the latch 22 presents a side surface area of at least four (4) square inches. For example, the presented side surface area is eight (8) square inches.

[00114] For example, the container assembly 12 is configured to define the latch receiving slotted surface 102 configured for receiving the latch 22 in an interference fit relationship when the latch 22 assumes the unlocked indication position.

For example, the latch 22 is coupled to the lid 18, and the lid is configured to define the latch receiving slotted surface 102. For example, the latch receiving slotted surface 102 includes the pair of latch receiving slots 1022, 1024. Each one of the slots 1022, 1024 is defined in part by the respective one of leading wedges 1026, 1028. As the latch 22 enters each one of the slots 1022, 1024, the latch 22 engages each one of the leading wedges 1026, 1028 which urge the latch 22 into an interference fit relationship with a respective one of narrow channels 1030, 1032. The lid includes the stop 140 to interfere with movement of the latch further past the receiving slots 1022, 1024. For example, each one of the latch retainer tabs 130, 132 assists in defining a respective one of the slots 1022, 1024.

(E) REFUSE CONTAINER WITH DETENT DISPOSED SO AS TO MITIGATE INTERFERENCE WITH DISCHARGE OF CONTENTS FROM CAVITY

[00115] In another aspect, there is provided a refuse container 10, as described above, wherein the detent is disposed so as to mitigate interference with the discharge of contents from the cavity 20.

[00116] In this respect, there is provided the refuse container10 including the container assembly 12 and the locking mechanism 14.

[00117] The container assembly 12 includes the bin 16 and the lid 18. The bin 16 defines the cavity 20. The bin 16 also includes the lip 74 defining an opening to the cavity 20, and a rim 28 extending peripherally about the lip 74. The lid 18 is rotatably coupled to the bin 16, and

configured for movement, relative to the bin 16, between an open position providing access to the cavity 20 and a closed position inhibiting access to the cavity 20.

[00118] The locking mechanism 14 includes the latch 22 and the detent 24. The latch 22 is coupled to the lid 18. The latch 22 includes the handle 26, and is moveable between a locked position and an unlocked position. The detent 24 acts between the bin 16 and the lid 18. The detent 24 co-operates with the latch 24 so as to effect locking of the lid 18 to the bin 16 when the latch 22 is in the locked position, and permit movement of the lid 18, relative to the bin 16, from the closed position to the open position when the latch 22 is in the unlocked position. The detent 24 extends upwardly from the rim 28 and is disposed below the lip 74. For example, the detent 24 is disposed below the lip 74.

[00119] The latch 22 is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle 26. When the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the lid 18 is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle 26.

(F) REFUSE CONTAINER WITH GUARD FOR REDUCING FOULING OF LOCKING MECHANISM

[00120] In another aspect, there is provided a refuse container 10, as described above, wherein a fouling guard 104 is provided for reducing fouling of the locking mechanism 14.

In this respect, there is provided the refuse container10 including a container assembly and a locking mechanism.

[00121] The container assembly includes the bin 16 and the lid 18. The bin 16 defines the cavity 20. The bin 16 also includes the lip 74 defining an opening to the cavity 20, and a rim 28 extending peripherally about the lip 74. The lid 18 is rotatably coupled to the bin 16, and configured for movement, relative to the bin 16, between an open position providing access to the cavity 20 and a closed position inhibiting access to the cavity 20.

[00122] The locking mechanism includes the latch 22 and the detent 24. The latch 22 includes the handle 26 and a detent co-operator 106, and is moveable between a locked position and an unlocked position. The latch 22 is coupled to the lid 18 The detent 24 acts between the

bin 16 and the lid 18. The detent 24 co-operates with the latch 24 so as to effect locking of the lid 18 to the bin 16 when the latch 22 is in the locked position, and permit movement of the lid 18, relative to the bin 16, from the closed position to the open position when the latch 22 is in the unlocked position. The detent 24 extends upwardly from the rim 28.

[00123] The latch 22 is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle 26. When the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the lid 18 is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle 26.

[00124] When the latch 22 is disposed in the locked position, the detent co-operator 106 is disposed relative to the detent 24 such that the detent 24 interferes with movement of the detent co-operator 106 along a vertical axis and thereby resists movement of the lid 18 from the closed position to the open position. A potential fouling space 108 is defined between the detent co-operator 106 and the detent 24. The container assembly 12 includes a fouling guard 104 extending from the rim 28 and disposed between the detent 24 and the peripheral edge 1202 of the container assembly 12 and configured for reducing ingress of materials into the potential fouling space 104.

(G) REFUSE CONTAINER WITH IMPACT GUARD FOR BLOCKING PHYSICAL CONTACT WITH THE LOCKING MECHANISM

[00125] In another aspect, there is provided a refuse container 10, as described above, and including an impact guard 110 for blocking physical contact with the locking mechanism 114.

In this respect, there is provided the refuse container10 including a container assembly and a locking mechanism.

[00126] The container assembly includes the bin 16 and the lid 18. The bin 16 defines the cavity 20. The lid is rotatably coupled to the bin 16, and configured for movement, relative to the bin 16, between an open position providing access to the cavity 20 and a closed position inhibiting access to the cavity 20.

[00127] The locking mechanism includes the latch 22 and the detent 24. The latch 22 includes the handle 26, and is moveable between a locked position and an unlocked position.

The detent 24 acts between the bin 16 and the lid 18. The detent 24 co-operates with the latch 24 so as to effect locking of the lid 18 to the bin 16 when the latch 22 is in the locked position, and permit movement of the lid 18, relative to the bin 16, from the closed position to the open position when the latch 22 is in the unlocked position.

[00128] The latch 22 is configured to move from the locked position to the unlocked position in response to application of an unlocking force to the handle 26. When the latch 22 is disposed in the unlocked position and the lid 18 is disposed in the closed position, the lid 18 is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle 26.

[00129] The container assembly 12 includes the impact guard 110 disposed below the locking mechanism 14 for blocking physical contact between the locking mechanism 14 an external object when the latch 22 is disposed in the locked position.

For example, the detent 24 extends from the rim 28 of the bin 16. Co-operatively, the latch 22 is coupled to the lid 18. In this respect, the impact guard 110 is disposed on the exterior surface 42 of the bin 16.

[00130] For example, the impact guard includes a lower surface 29 of the rim 28, and also includes a plurality of ribs111 extending between and connecting the external surface 42 and the lower surface 29.

(H) REFUSE CONTAINER WITH LID CONFIGURED TO DISTRIBUTE IMPACT FORCES

[00131] In another aspect, there is provided a refuse container 10 with the lid 18 configured to distribute impact forces.

In this respect, there is provided the refuse container 10 including the bin 16 and the lid 18.

[00132] The bin 16 defines the cavity 20. The bin 16 includes the lip 74 and the rim 28. The lip 74 defines an opening to the cavity 20. The rim 28 extends peripherally about the lip 74. The rim 28 includes a skirt seating surface 112 and one or more impact pad seating surfaces. For example, the impact pad seating surface is a impact pad receiving well.

[00133] The lid 18 is rotatably coupled to the bin 16. The lid 18 is configured for movement, relative to the bin 16, between an open position providing access to the cavity 20,

and a closed position inhibiting access to the cavity 20. The lid 18 includes the skirt 88 and an impact pad assembly 116 including at least one impact pad (two impact pads 90, 92 are shown). The skirt 88 extends peripherally of and downwardly from the lid 18 and includes a skirt contact surface 122 configured to be seated upon the skirt seating surface 30. Each one of the impact pads 90, 92 includes a respective one of the contact surfaces 124, 125, and each one of the contact surfaces 124, 125 is configured to be seated upon a respective one of two impact pad seating surfaces 94, 96 (in the illustrated embodiment, a respective one of impact pad wells 98, 100 is provided for each one of the pads 90, 92). The skirt contact surface 122 includes a respective surface area. As well, each one of the contact surfaces 124, 125 includes a respective surface area to define two surface areas (in this case, two surface areas). The sum of the two surface areas defines an operative impact surface area. The ratio of the operative impact surface area to the surface area of contact surface 122 of the skirt 88 is at least 0.1. For example, this ratio is 0.2.

(J) REFUSE CONTAINER WITH LIFTING MECHANISM ENGAGEMENT SYSTEM INCLUDING RETENTION BAR

[00134] In another aspect and referring particularly to Figures 19 and 30, there is provided a refuse container 10 including a lifting mechanism engagement system 300 for engaging a lifting mechanism 400.

In this respect, there is provided the refuse container 10 including the bin 16 and the lid 18. The bin 16 defines the cavity 20. For example, the lid 18 is rotatably coupled to the bin 16. The lid 18 is configured for movement, relative to the bin 16, between an open position providing access to the cavity 20, and a closed position inhibiting access to the cavity 20.

[00135] The refuse container 10 includes a lifting mechanism engagement system 300. The lifting mechanism engagement system 300 includes a retention bar 302. The retention bar 302 is coupled to the sidewall 34 and is disposed externally of the cavity 20. For example, brackets 304, 306 are mounted to external surface 42 of the sidewall 34. Each one of the brackets 304, 306 includes a respective aperture for receiving a respective end of the retention bar 302. For example, the retention bar 302 is snap-fitted within the apertures. The retention bar 302 is configured to be hooked by the lifting mechanism 400.

[00136] For example, the lifting mechanism engagement system 300 includes the ribs 111 of the impact guard 110 which is configured to engage and become supported by the lifting mechanism 400.

[00137] (K) REFUSE CONTAINER WITH BAG HOOK

[00138] In another aspect, and referring specifically to Figures 32, 33 and 34, there is provided another embodiment of a refuse container 500, identical to the refuse container 10, with the exception that each side of refuse container 500 includes a respective one of two pairs of spaced-apart liner retainer or hooks 502a, 504a and 502b, 504b extending downwardly from the rim 28 of the bin 16. Each one of the spaced-apart liner retainers 502, 504 is provided and configured for supporting liners which are inserted within the cavity 20 to line the cavity 20 and function as a container liner for containing the refuse. For example, the liner is a plastic bag.

[00139] Each one of the liner retainers 502, 504 present an inverted "V" shaped shaped retainer surface configured for receiving and retaining a liner.

[00140] Although the disclosure describes and illustrates various embodiments of the invention, it is to be understood that the invention is not limited to these particular embodiments. Many variations and modifications will now occur to those skilled in the art of headwear. For full definition of the scope of the invention, reference is to be made to the appended claims.

What is claimed is:

1. A refuse container comprising:

a container assembly comprising:

a bin defining a cavity; and

a lid rotatably coupled to the bin, and rotatable in a first direction relative to the bin to effect an open position providing access to the cavity, and rotatable in a second direction to effect a closed position inhibiting access to the cavity; and

a locking mechanism including:

a latch pivotally attached to the lid and comprising a handle, and rotatable in the second direction to effect a locked lid position and ~~the~~ rotatable in the first direction to effect unlocked lid position;

a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked lid position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked lid position;

wherein the latch is configured to move from the locked position to the unlocked lid position in response to application of an unlocking force to the handle;

and wherein, when the latch is disposed in the unlocked lid position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle;

and wherein the unlocking force includes a horizontal component and a vertical component, and wherein the lid-opening force includes a horizontal component and a vertical component, and wherein a direction of the horizontal component of the lid-opening force is substantially opposite to the direction of the horizontal component of the unlocking force.

2. A refuse container comprising:

a container assembly including:

a bin defining a cavity; and

a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity and a closed position inhibiting access to the cavity; and

a locking mechanism including:

a latch including a handle, and moveable between a locked lid position and an unlocked lid position;

a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked lid position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked lid position;

wherein the latch is configured to move from the locked position to the unlocked lid position in response to application of an unlocking force to the handle;

and wherein, when the latch is disposed in the unlocked lid position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle;

and wherein the unlocking force effects rotation of the latch in one of a clockwise or counterclockwise direction, and wherein the lid-opening force effects rotation of the latch in the other one of a clockwise or a counterclockwise direction relative to a same frame of reference as a direction of the unlocking force.

3. A refuse container comprising:

a container assembly including:

a bin defining a cavity; and

a lid rotatably coupled to the bin, and configured for movement, relative to the bin, between an open position providing access to the cavity, and a closed position inhibiting access to the cavity; and

a locking mechanism including:

a latch comprising a handle, and moveable between a locked lid position and an unlocked lid position;

a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked lid position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked lid position;

wherein the latch is configured to move from the locked position to the unlocked lid position in response to application of an unlocking force to the handle;

and wherein, when the latch is disposed in the unlocked lid position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle;

and wherein, in moving from the locked lid position to the unlocked lid position, the latch rotates, relative to the container assembly, about a latch rotation axis, wherein the latch rotation axis and a longitudinal axis of the detent are substantially co-located when the latch is in the locked lid position.

4. A refuse container comprising:

a container assembly including:

a bin defining a cavity, and including:

a lip defining an opening to the cavity; and

a rim extending peripherally about the lip;

a lid rotatably coupled to the bin, and movable relative to the bin between an open position providing access to the cavity, and a closed position inhibiting access to the cavity; and

a locking mechanism including:

a latch including a handle, and moveable between a locked lid position and an unlocked lid position;

a detent acting between the bin and the lid, and co-operating with the latch so as to effect locking of the lid to the bin when the latch is in the locked lid position, and permit movement of the lid, relative to the bin, from the closed position to the open position when the latch is in the unlocked lid position;

wherein the latch is configured to move from the locked position to the unlocked lid position in response to application of an unlocking force to the handle;

and wherein, when the latch is disposed in the unlocked lid position and the lid is disposed in the closed position, the lid is configured to move from the closed position to the open position in response to an application of a lid-opening force to the handle;

and wherein the detent extends upwardly from the rim and is disposed below the lip.

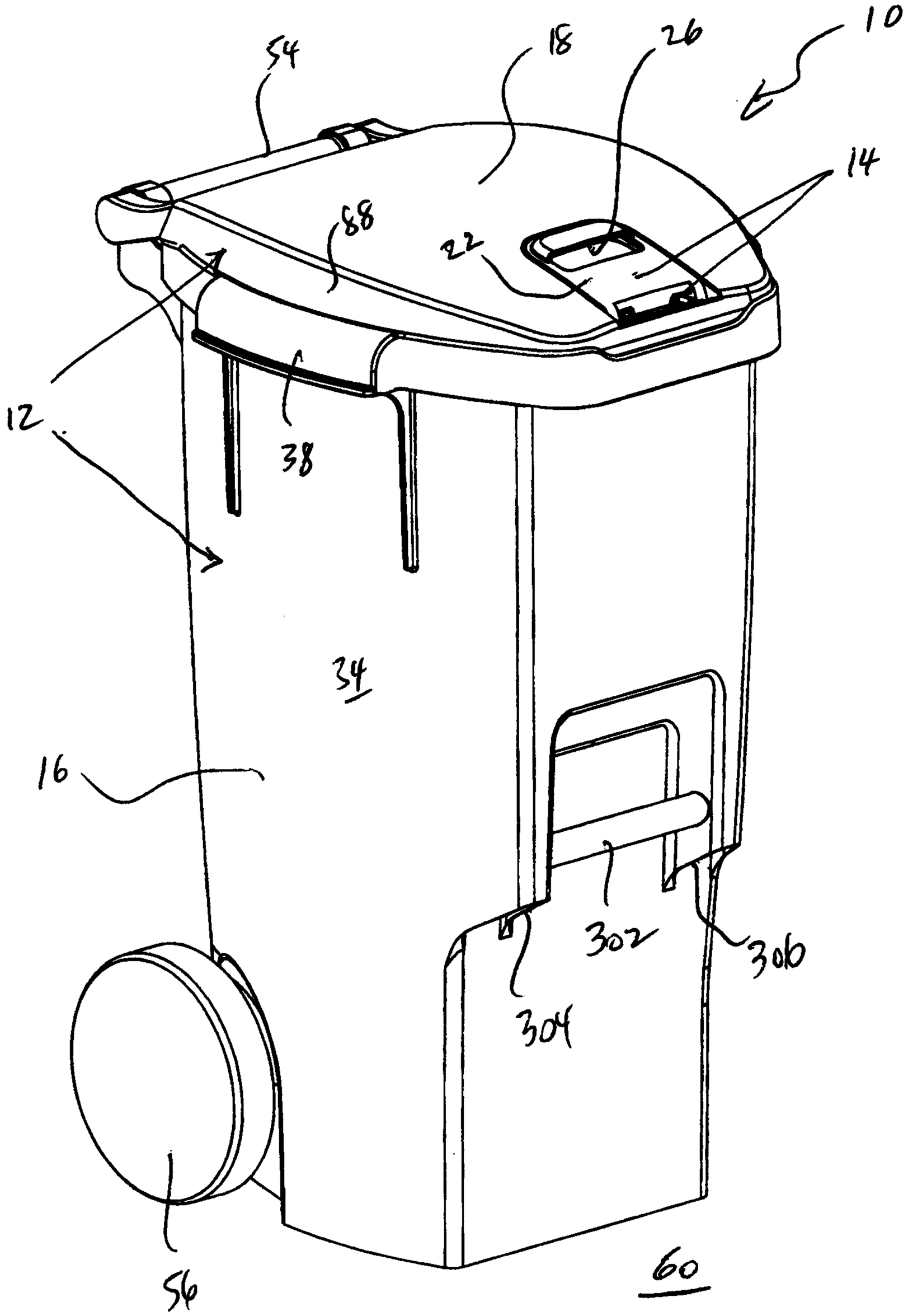



FIGURE 1

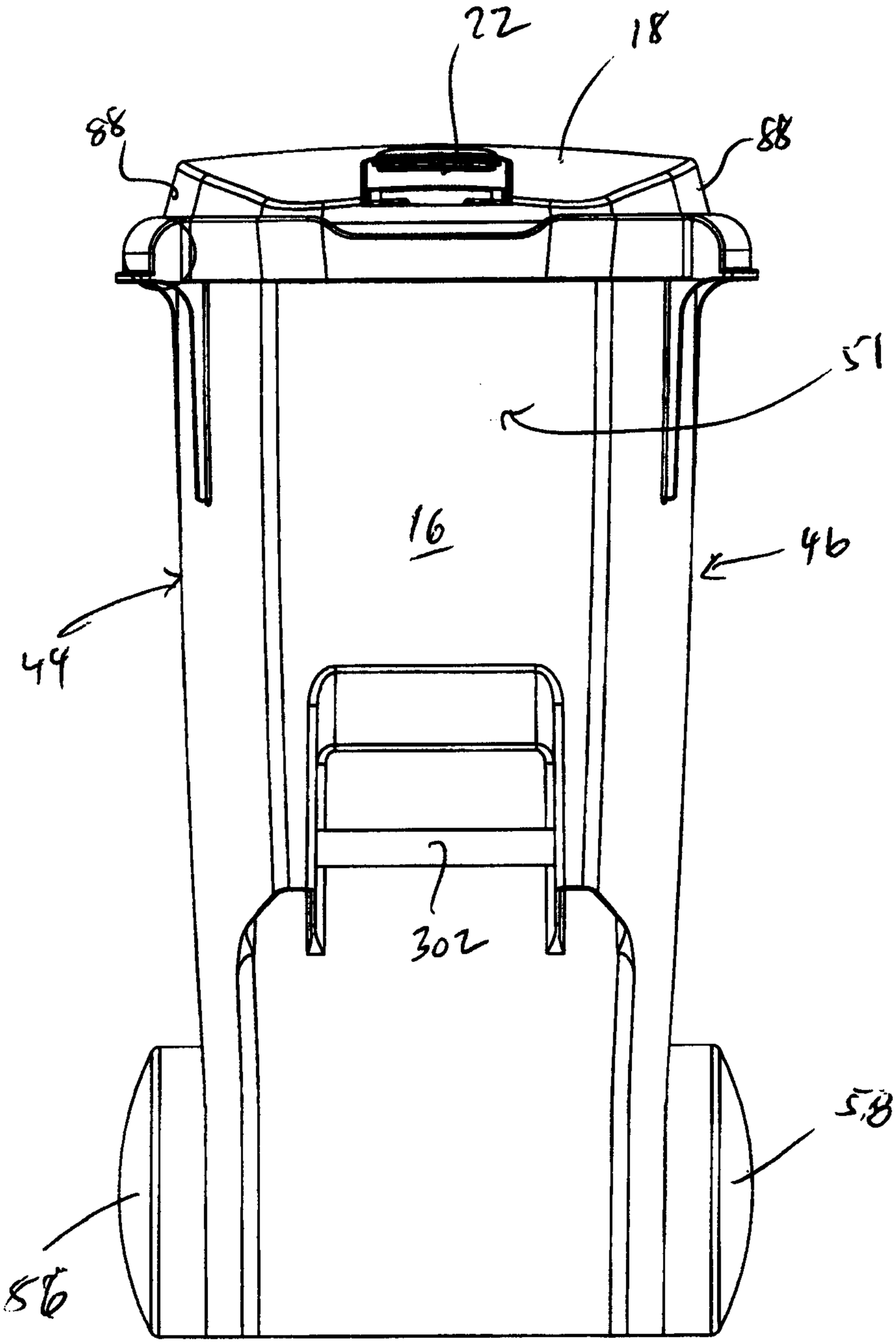



FIGURE 2

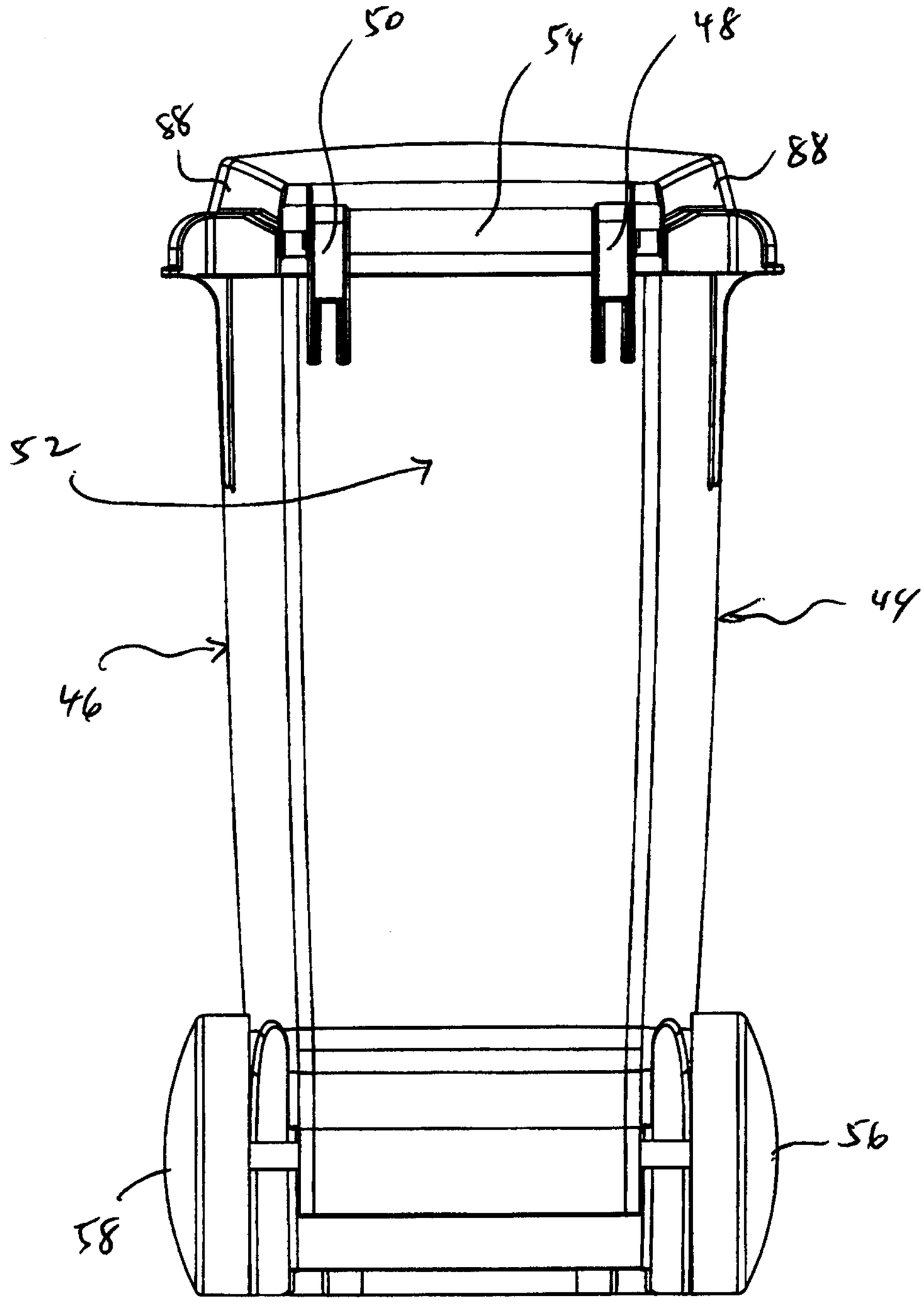



FIGURE 3

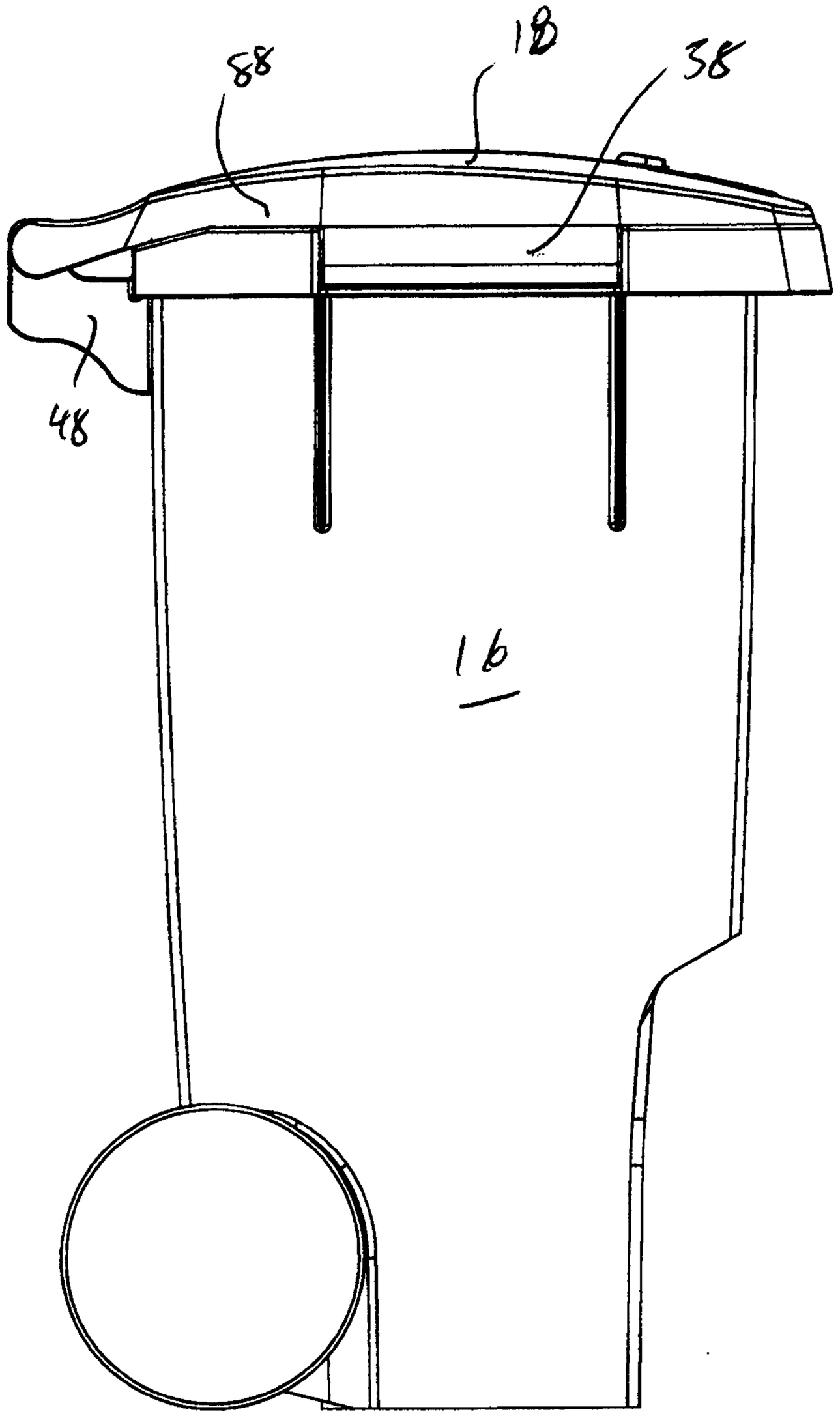
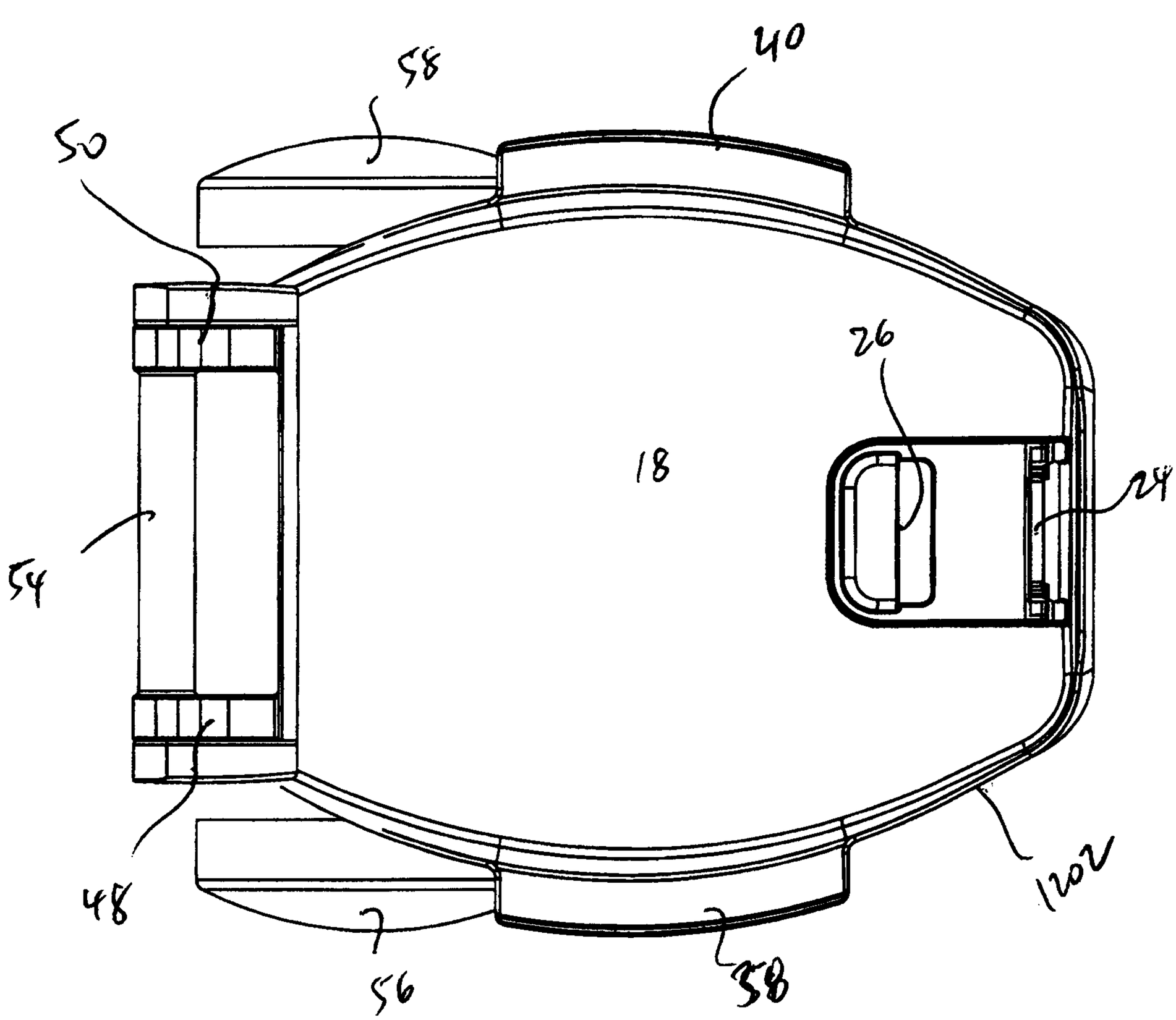



FIGURE 4

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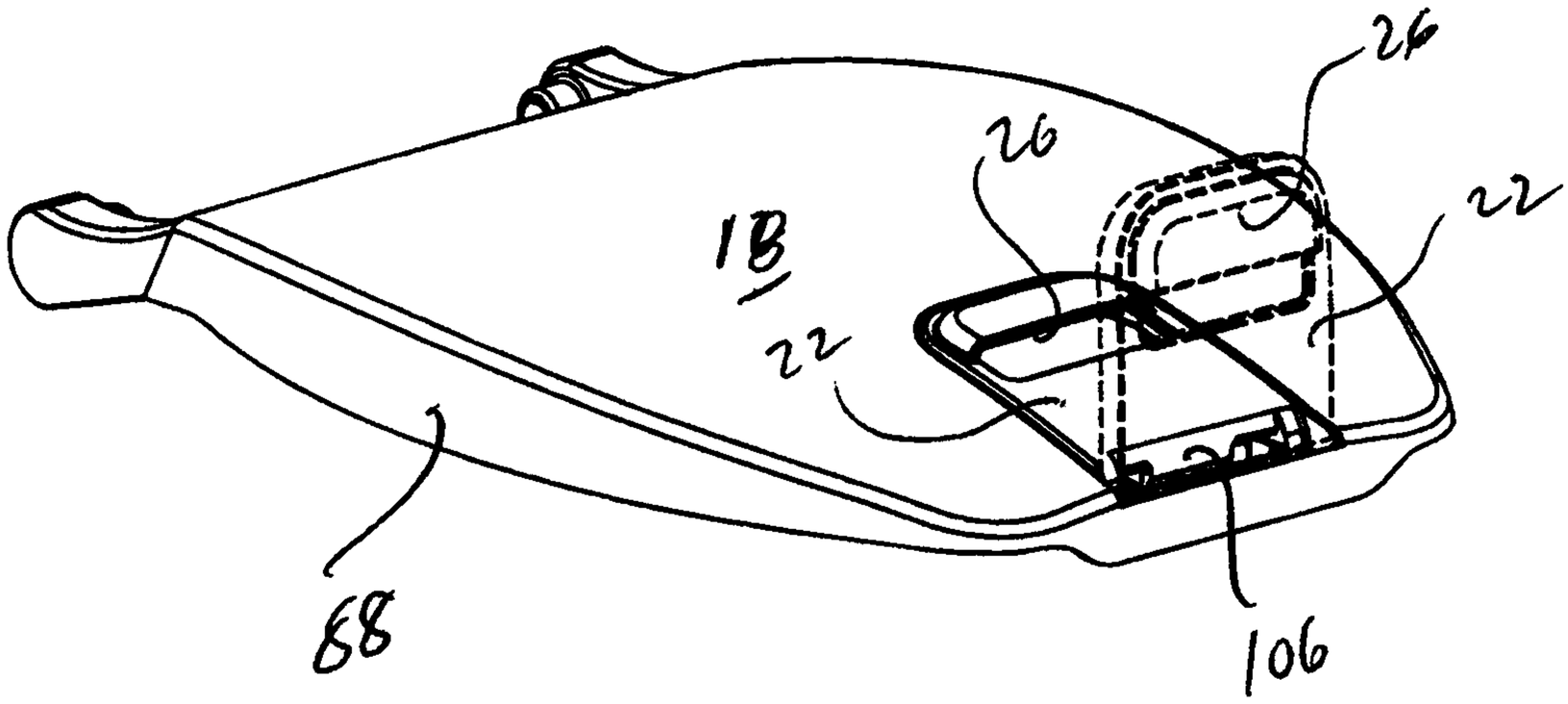


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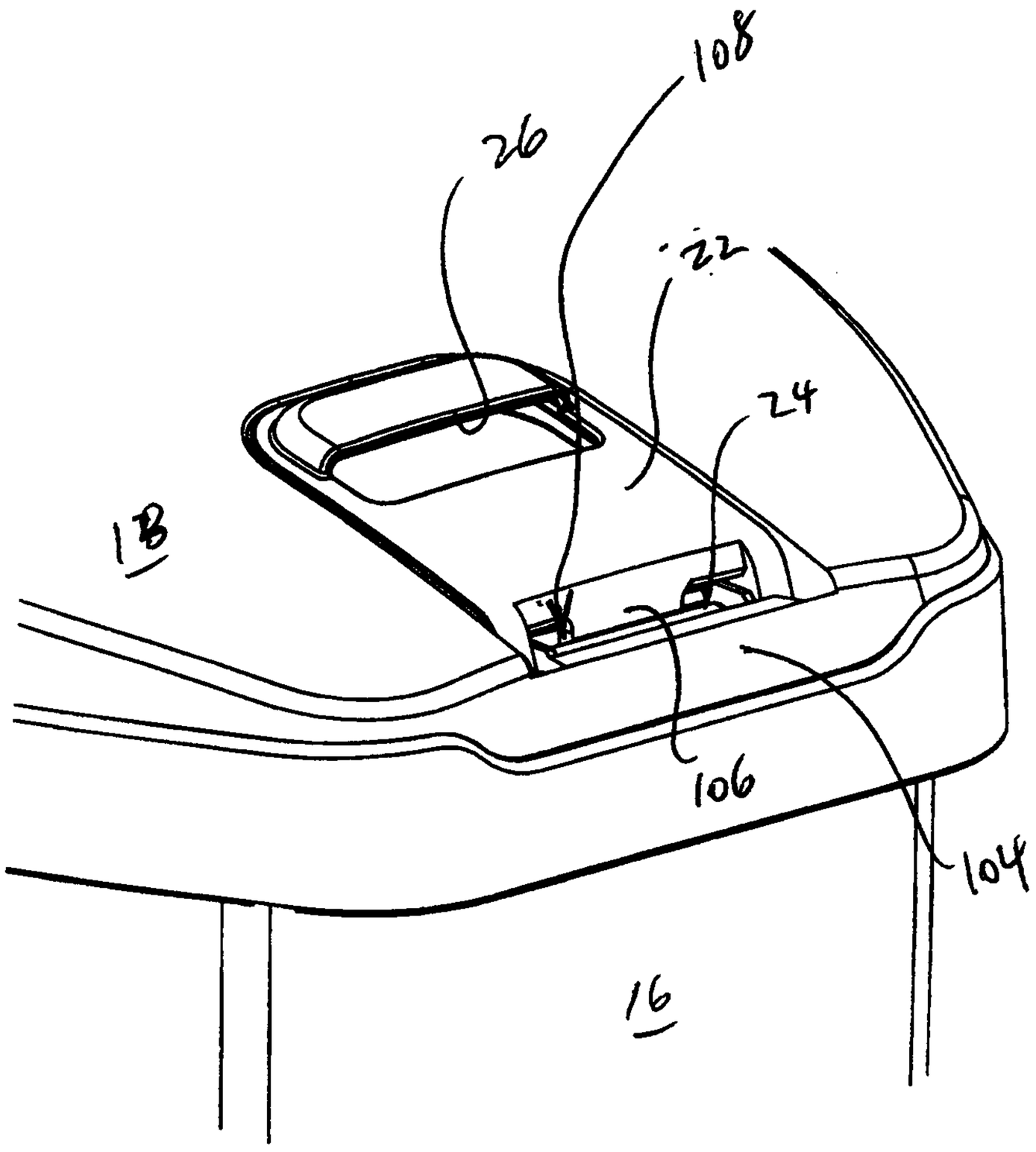


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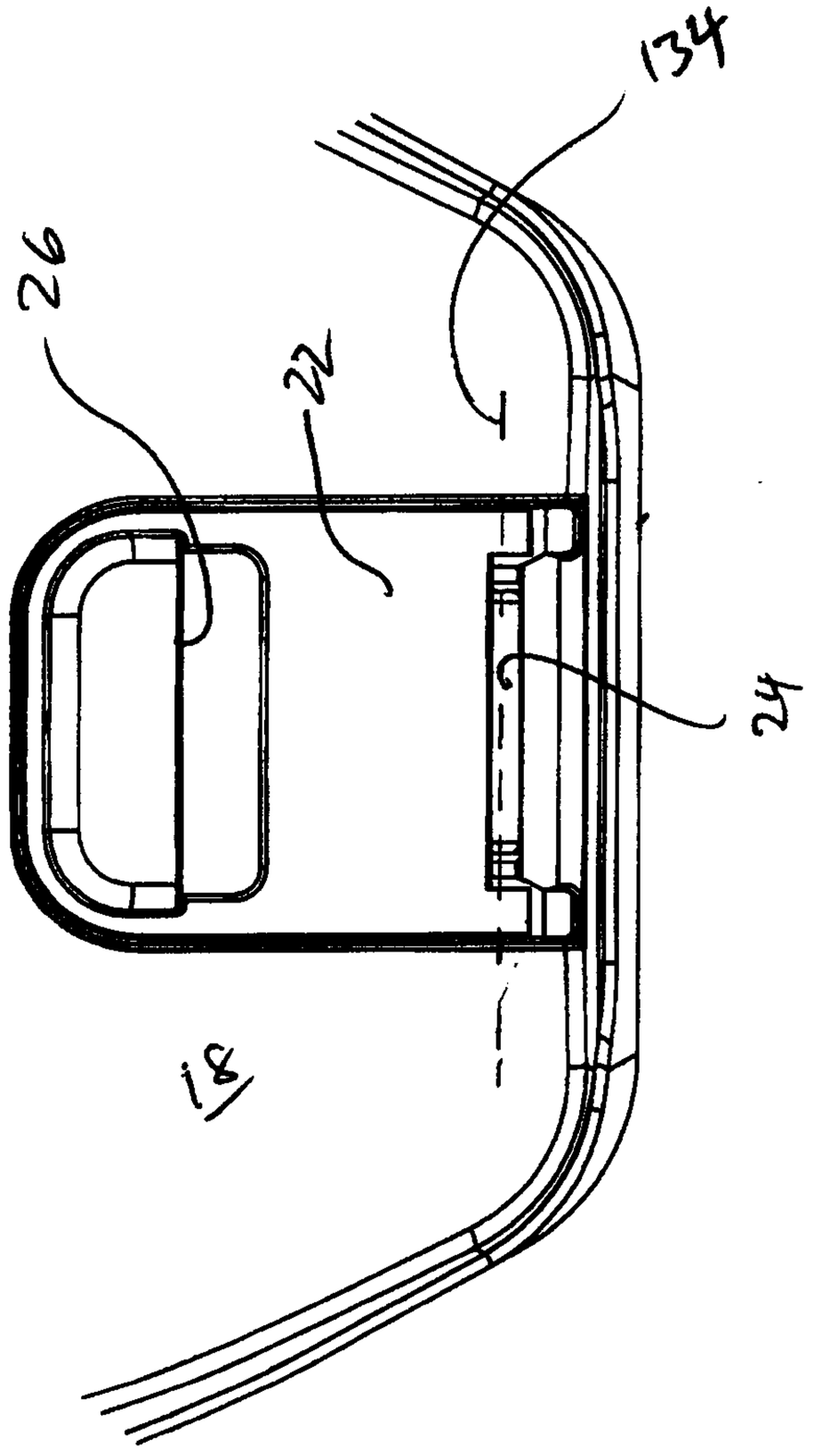


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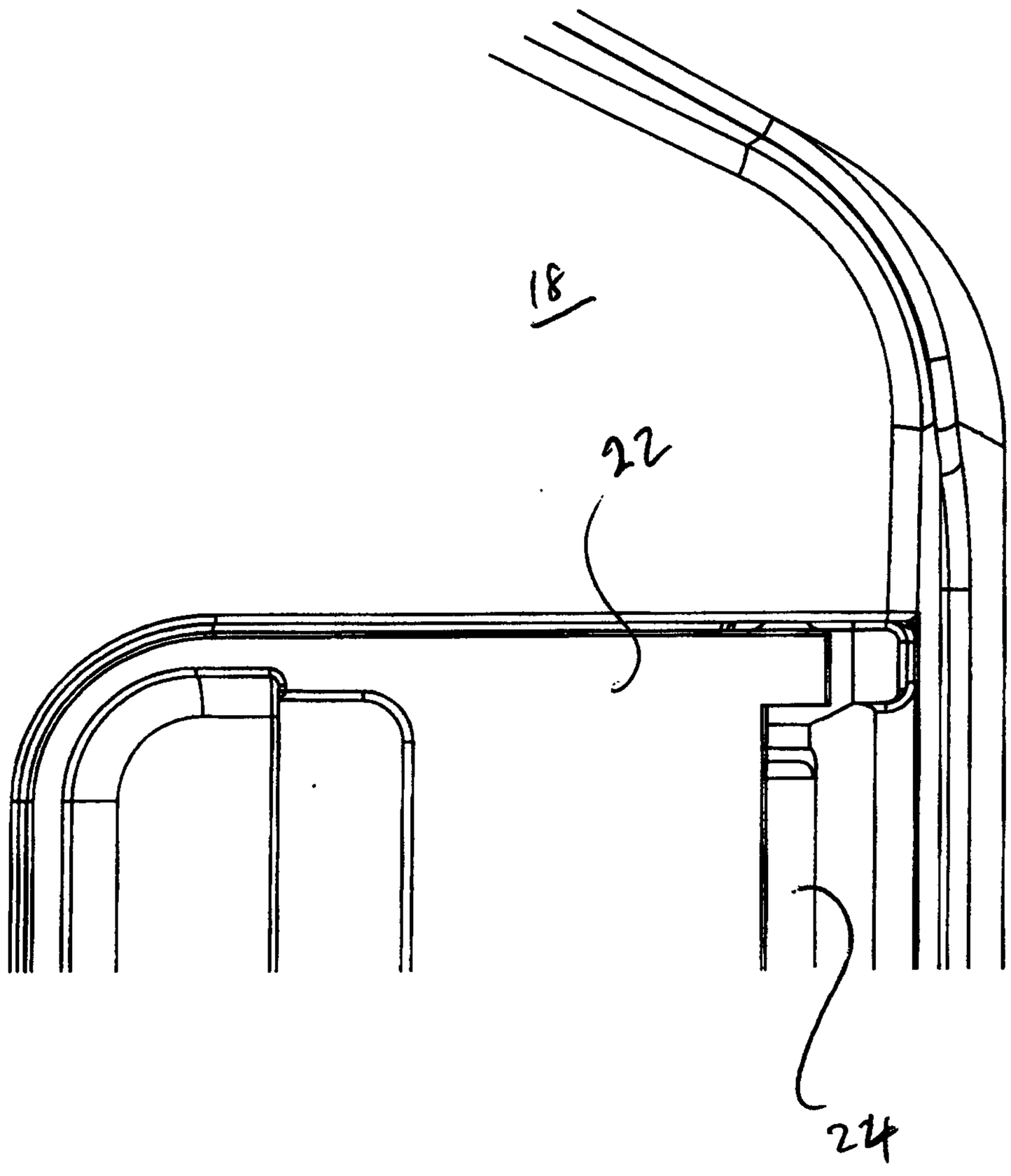


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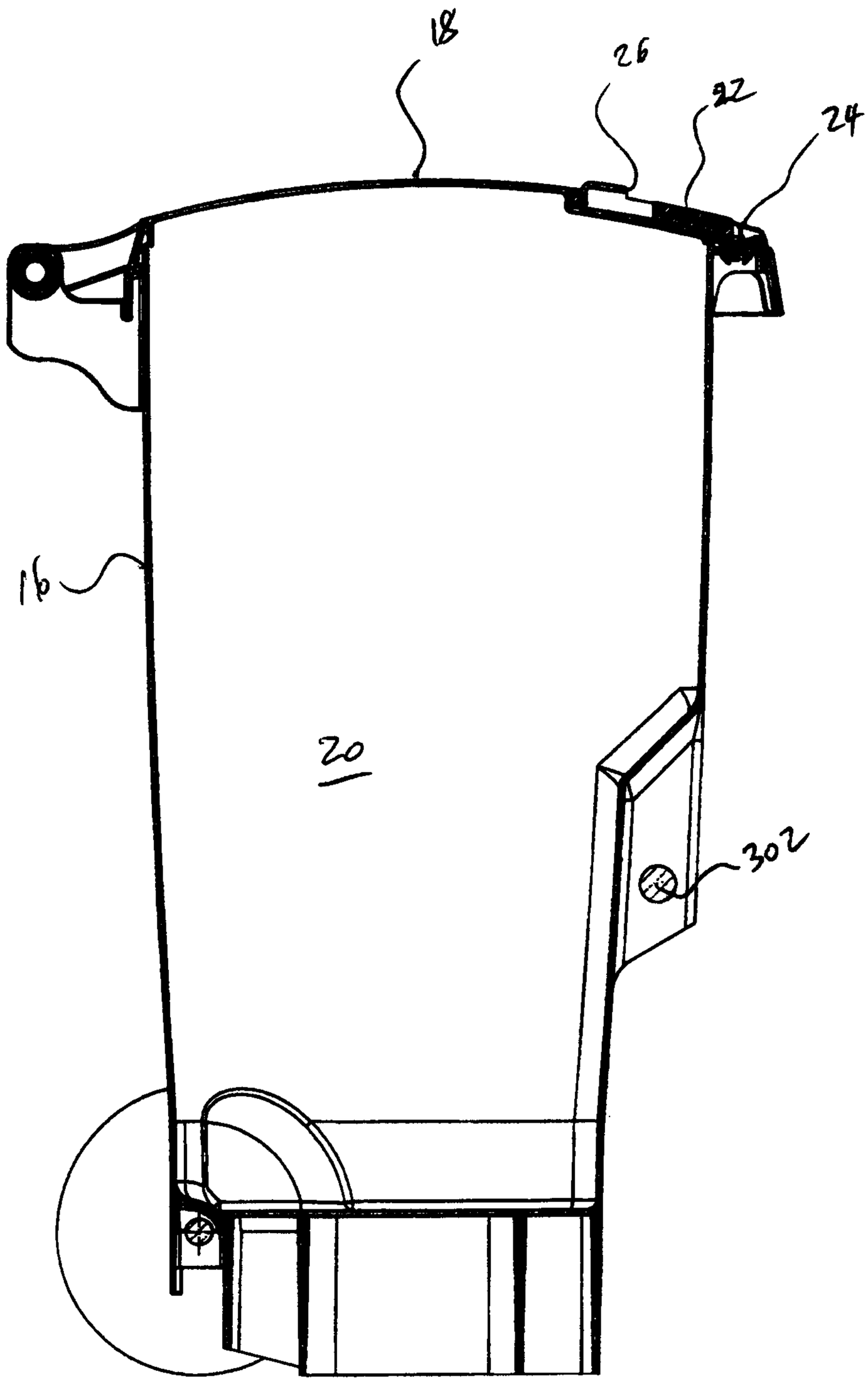


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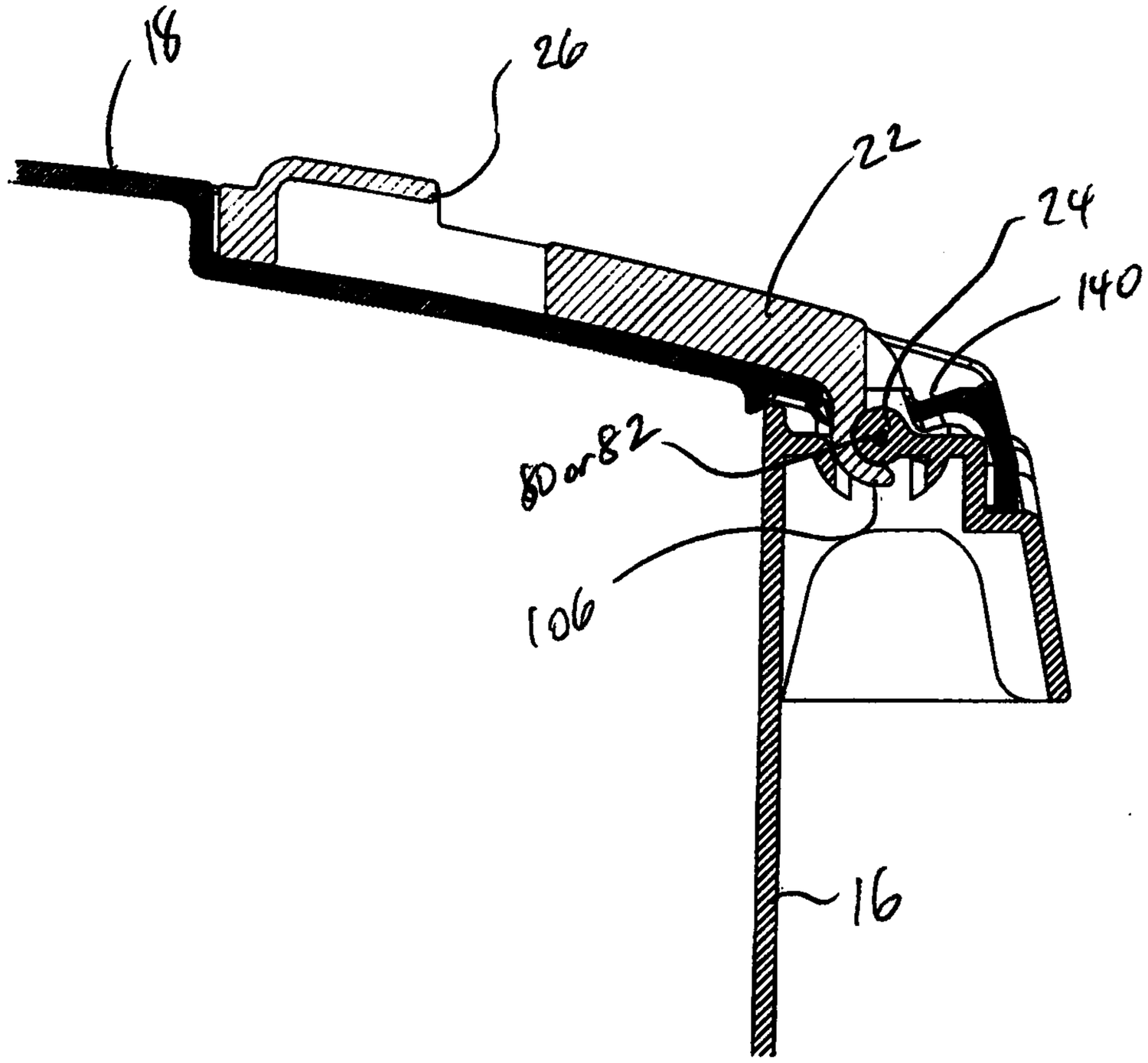


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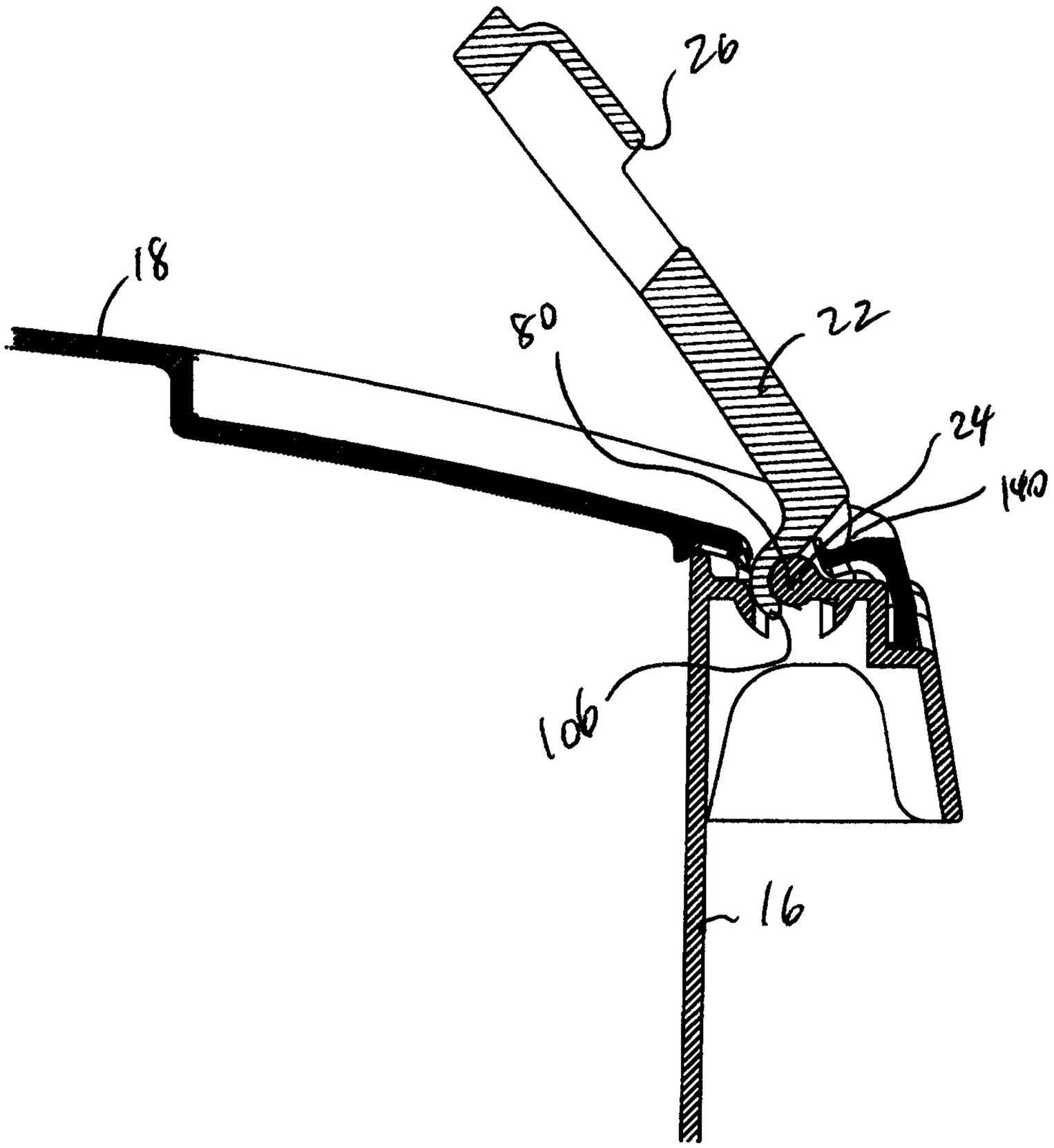


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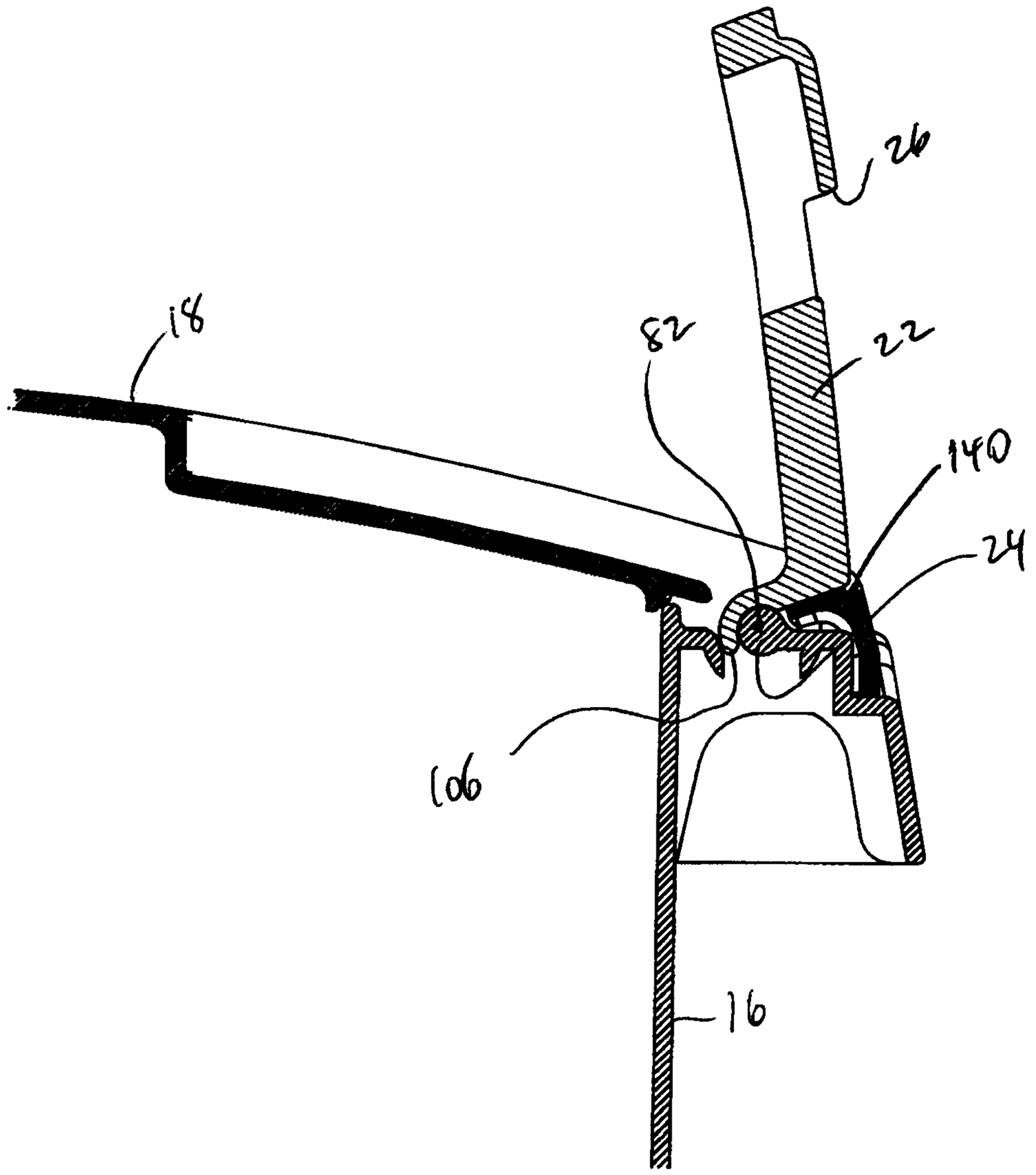


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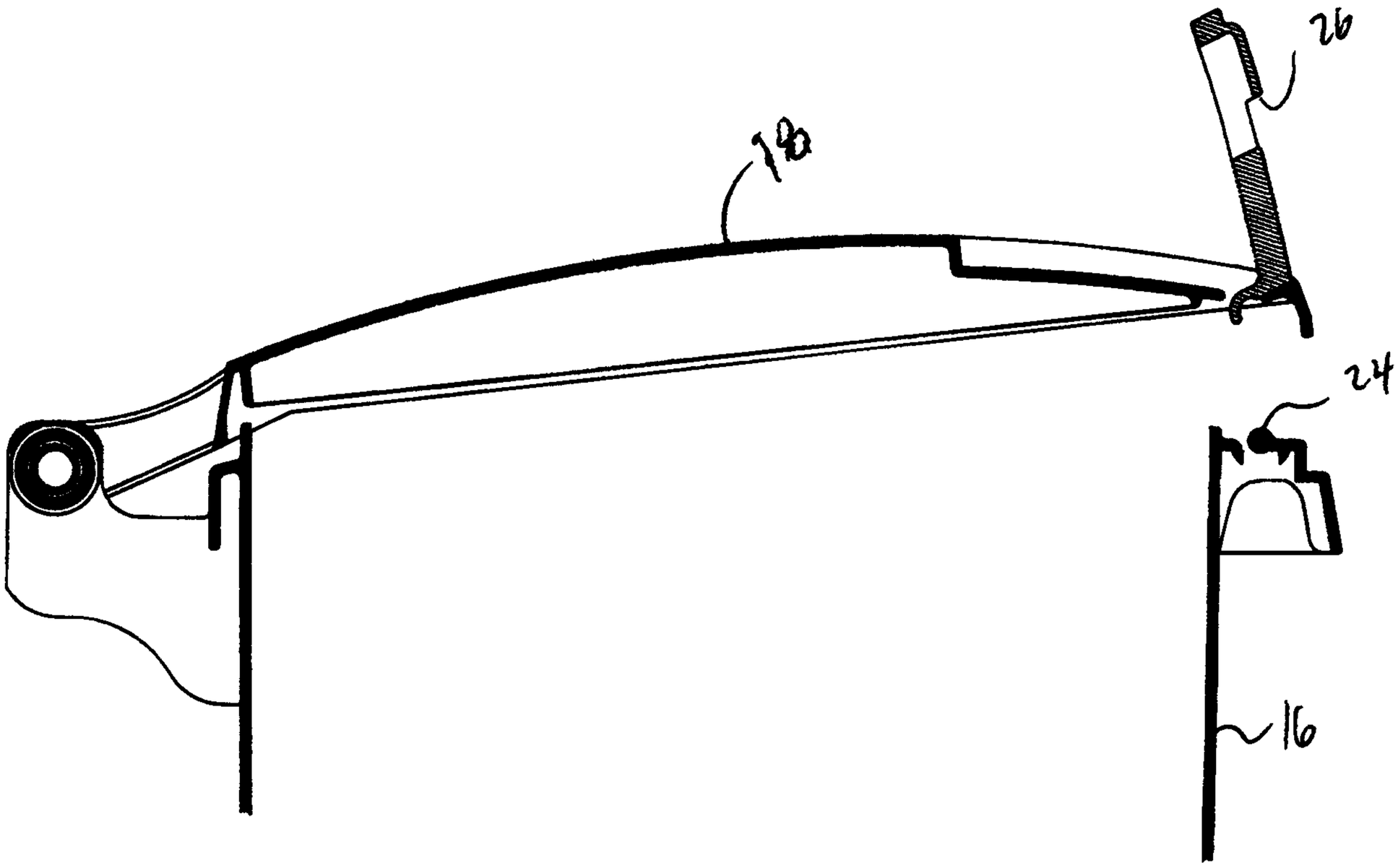


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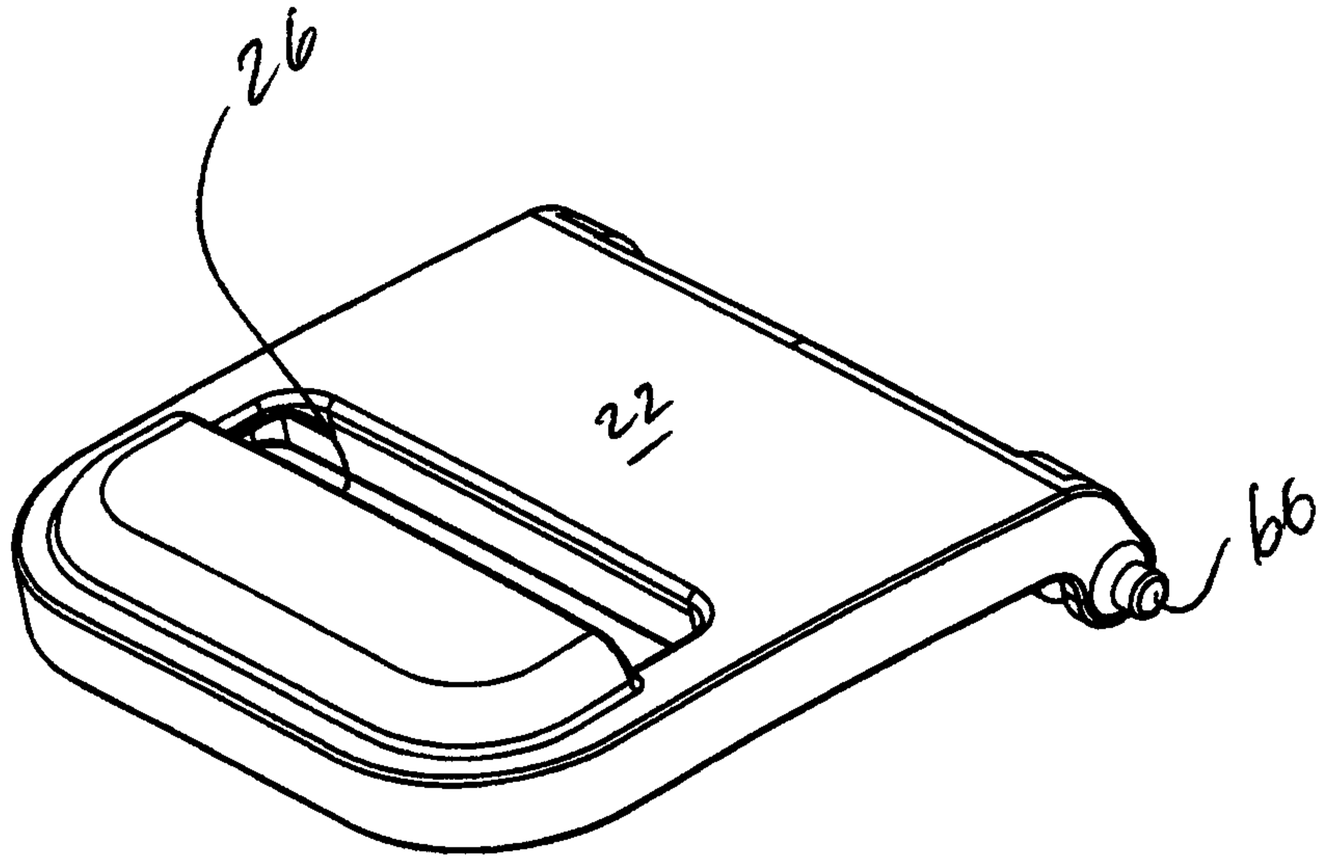


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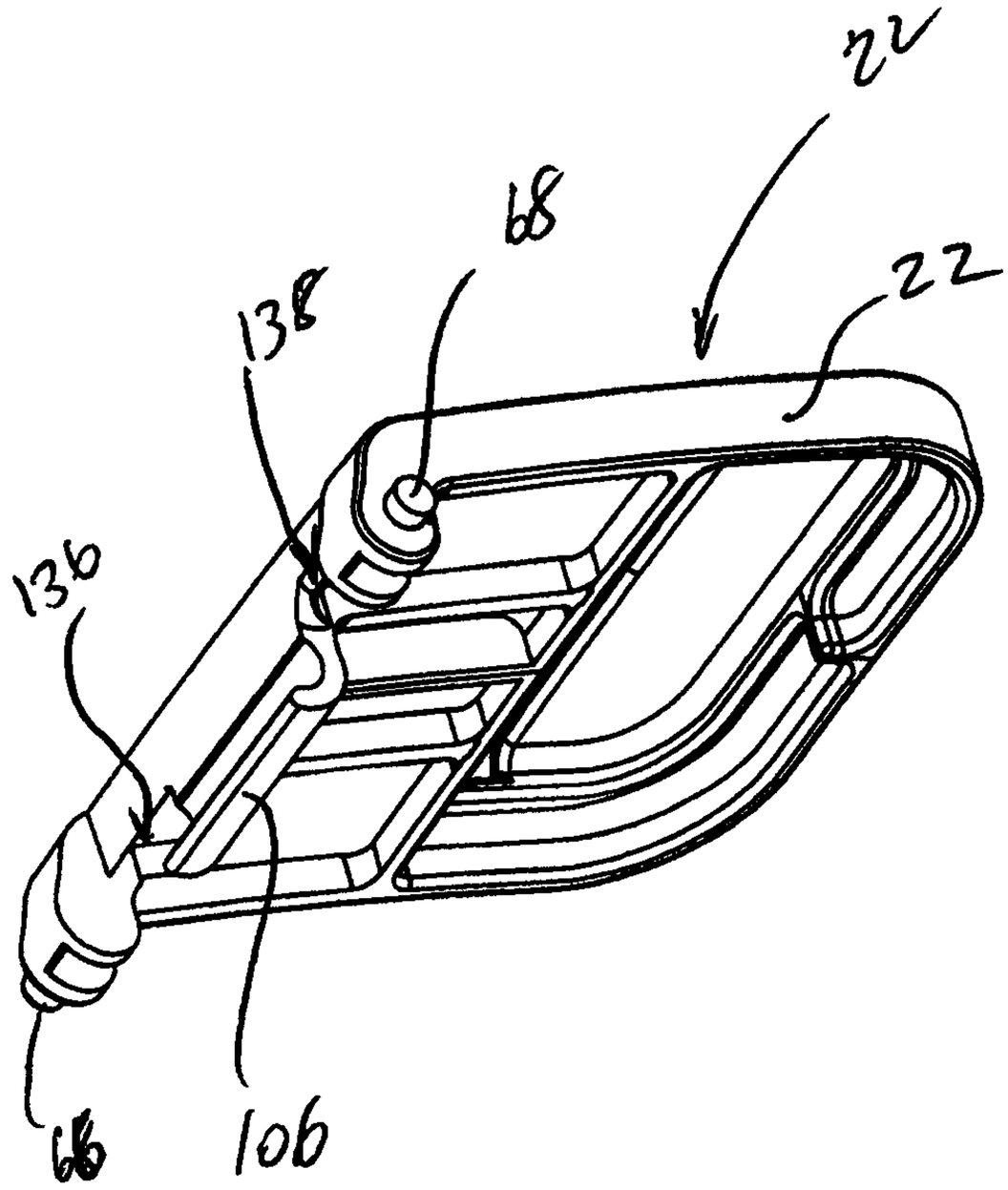


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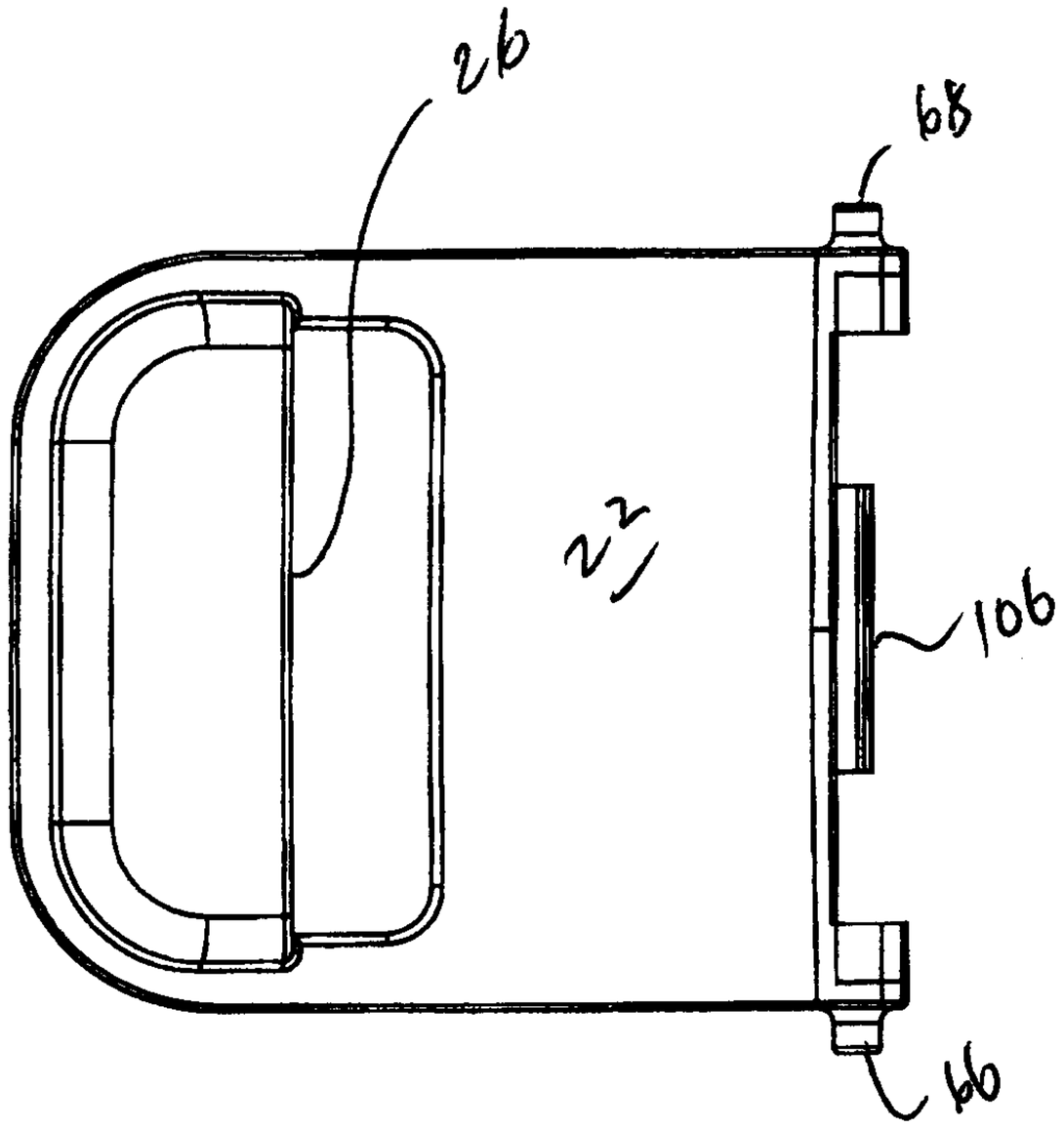


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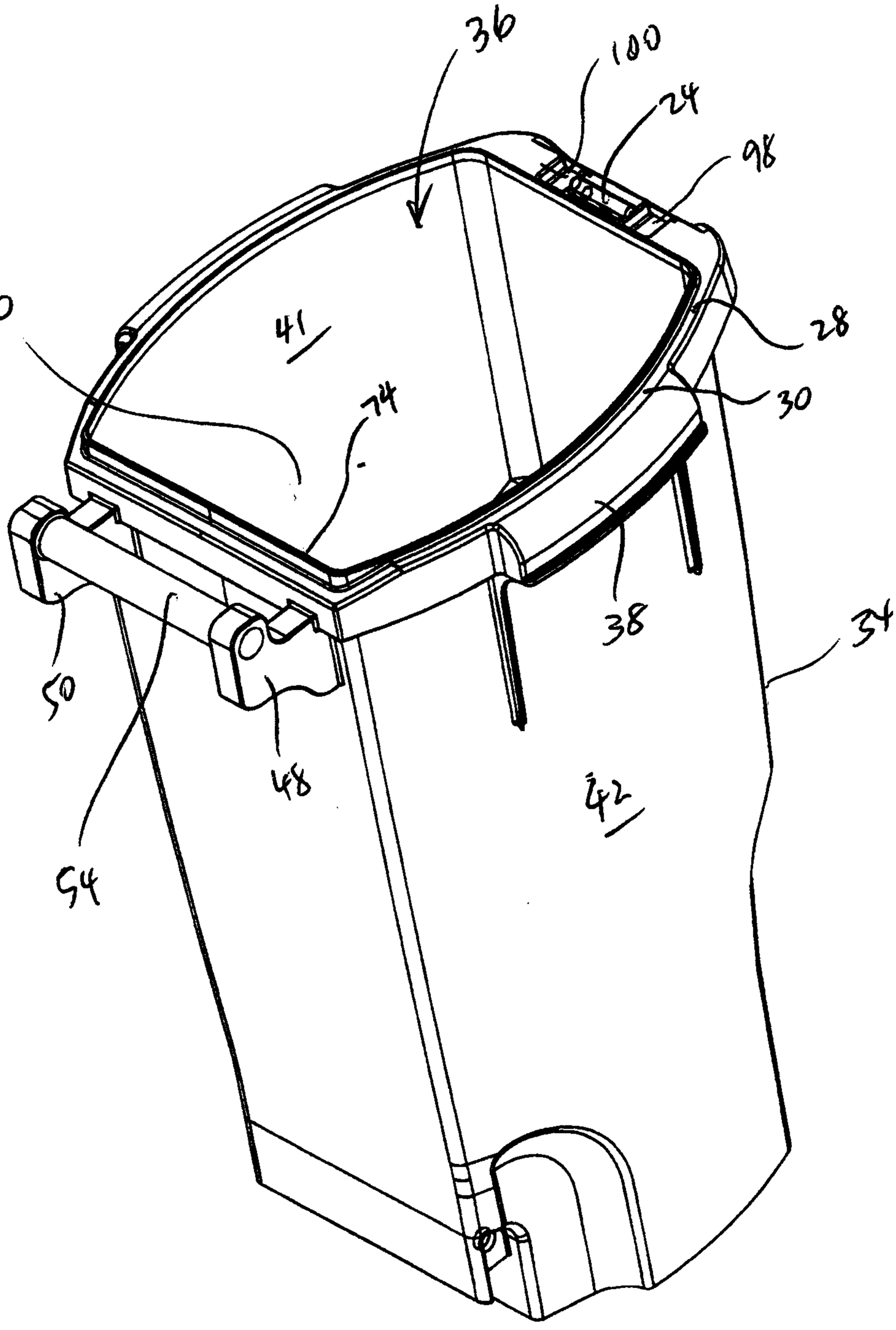


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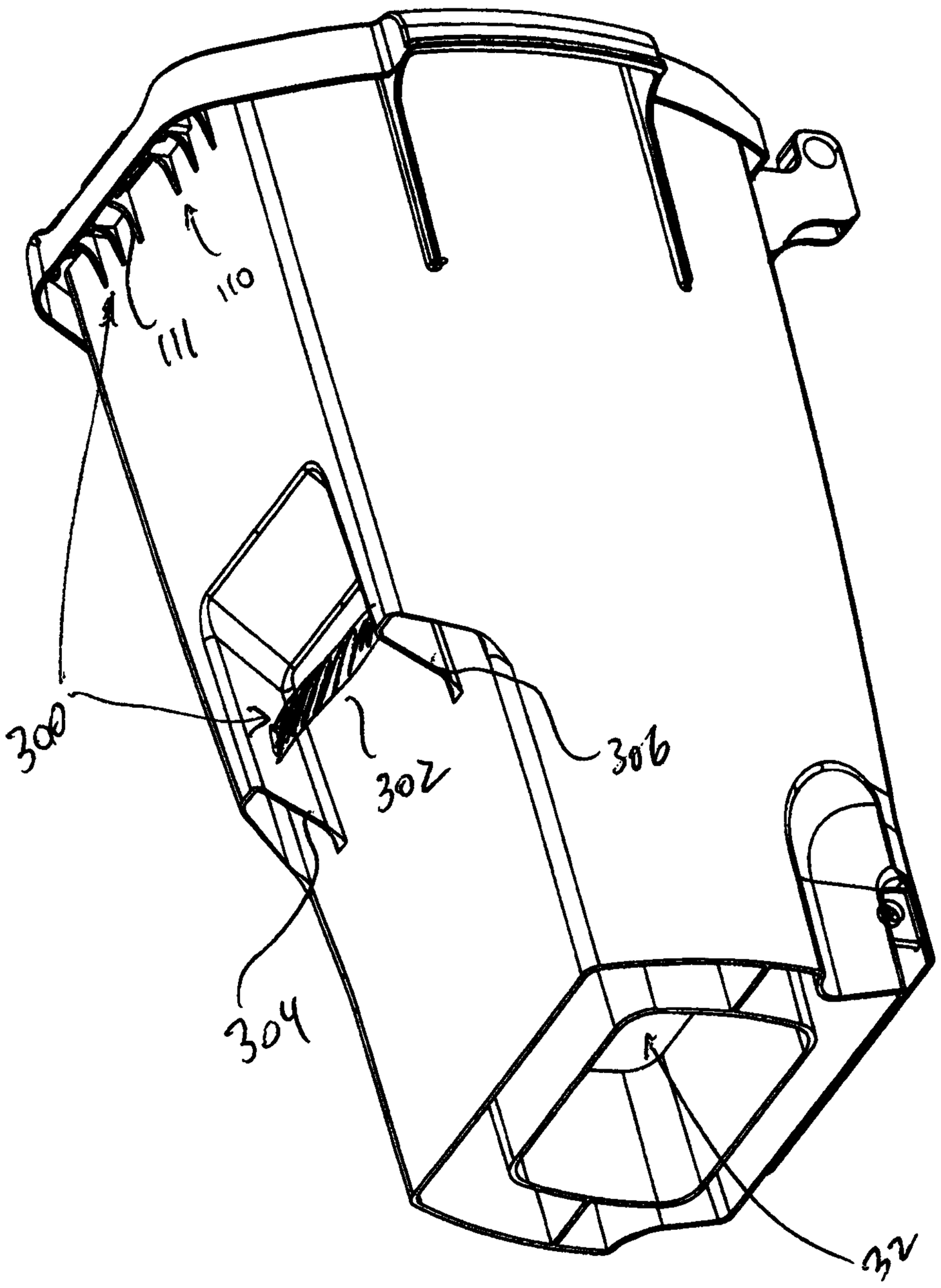


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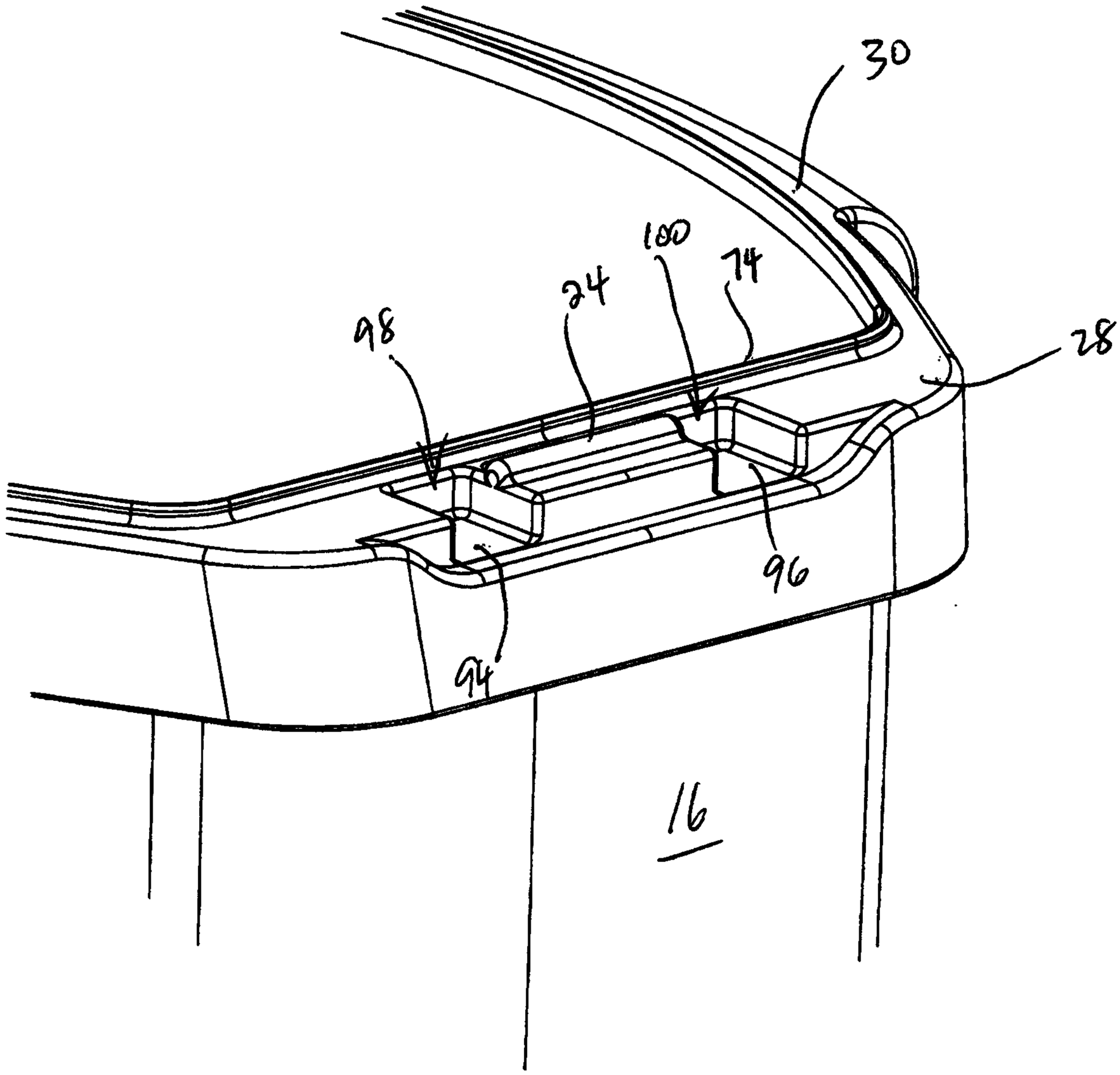


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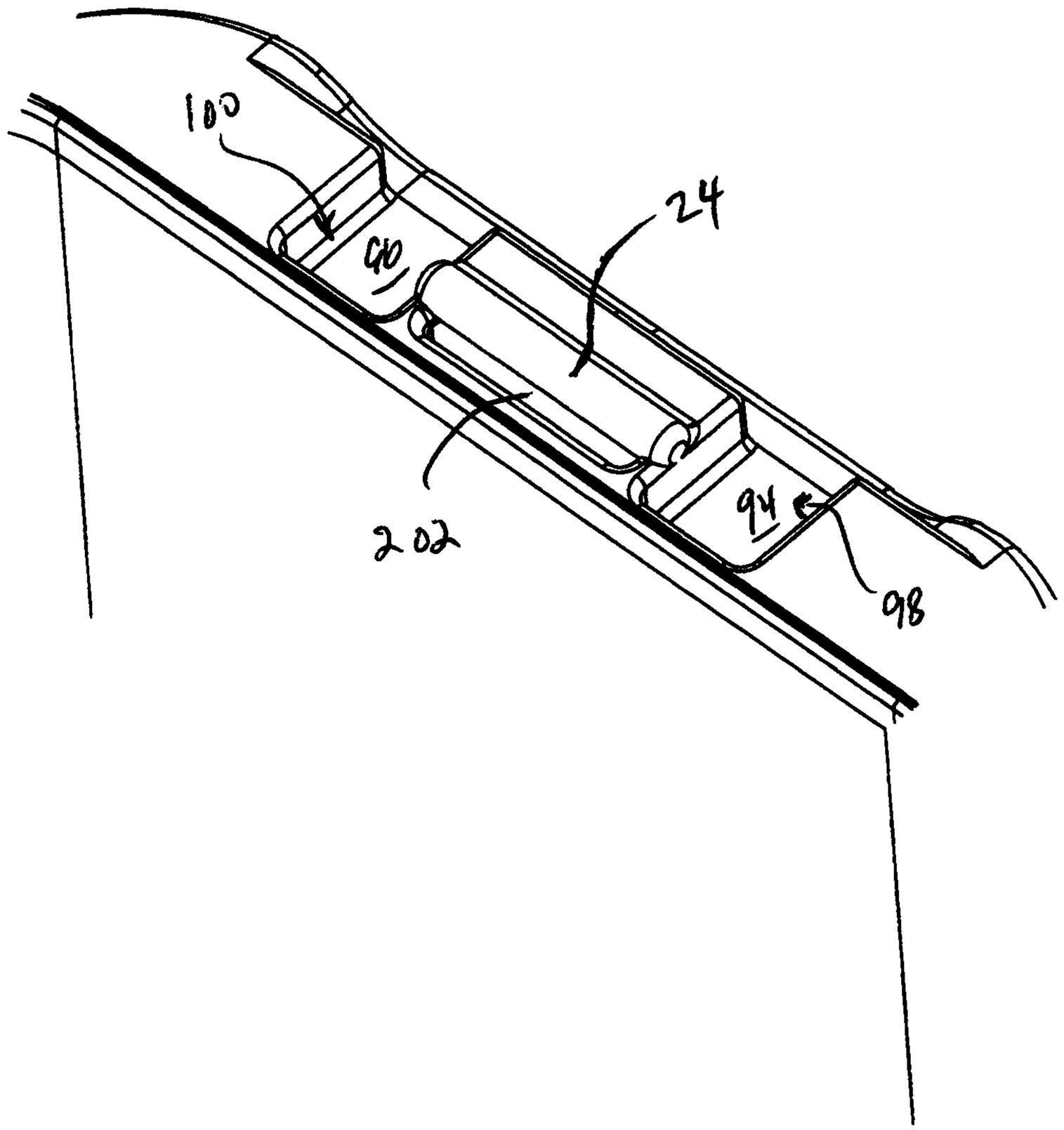


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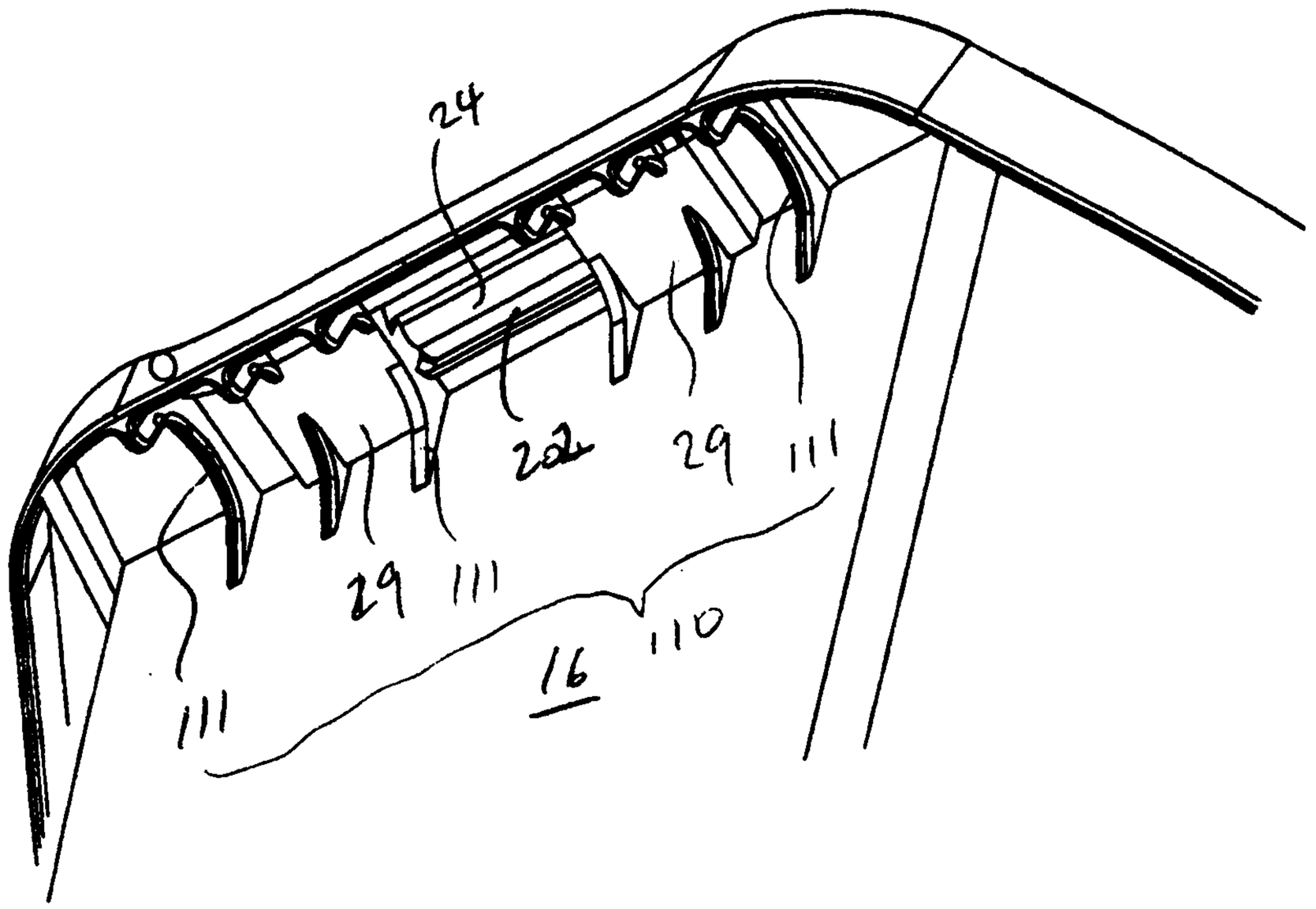


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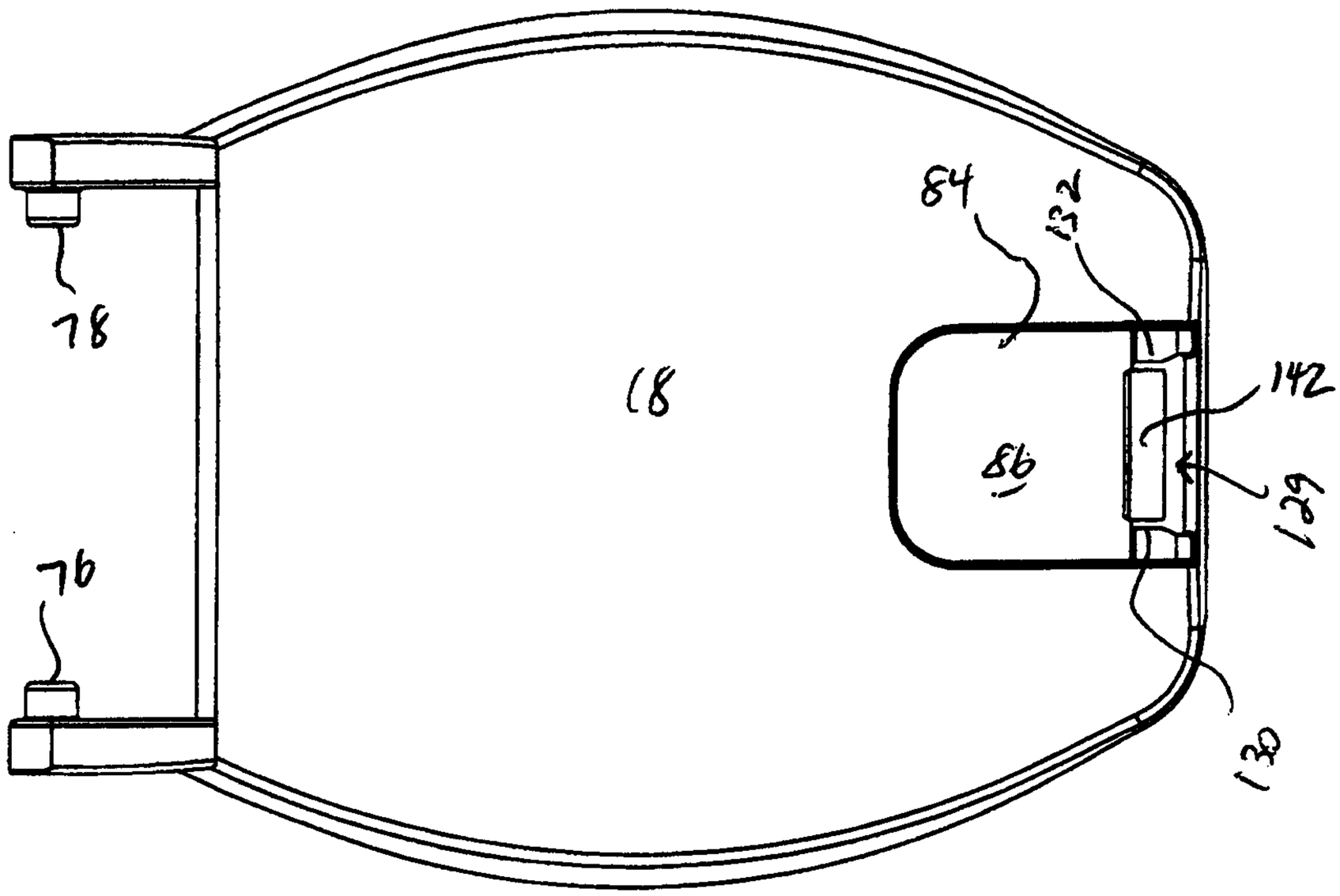


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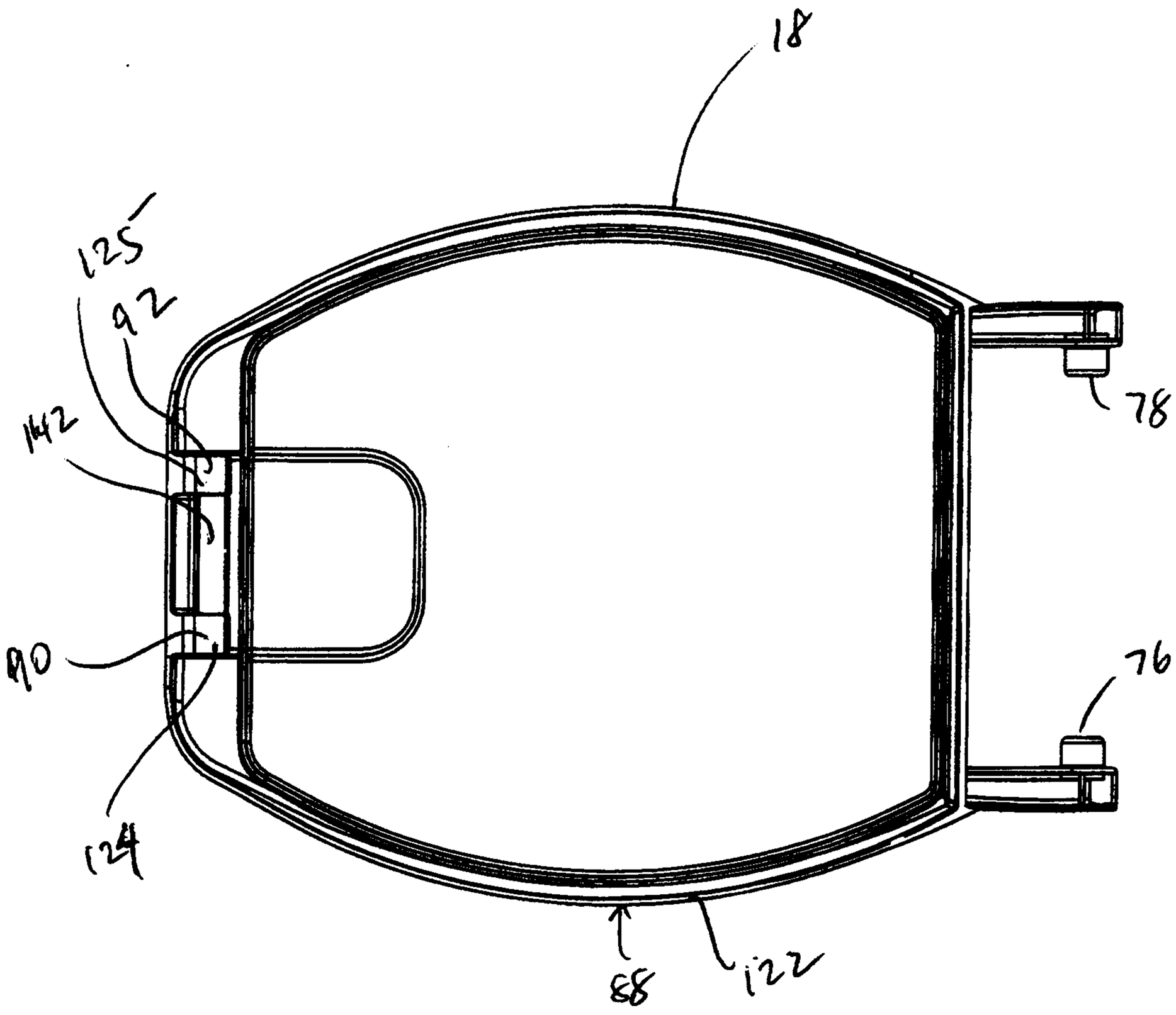


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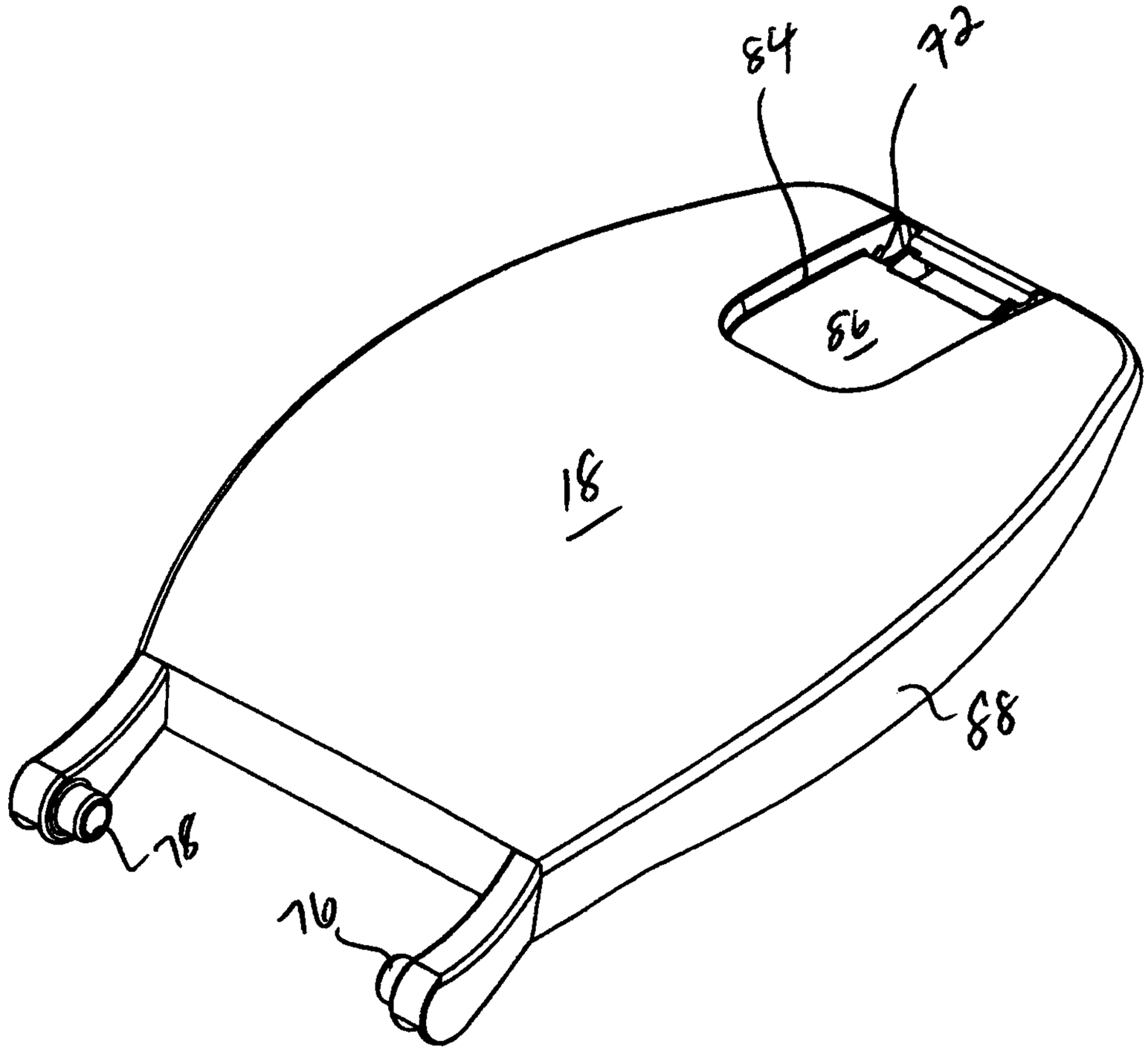


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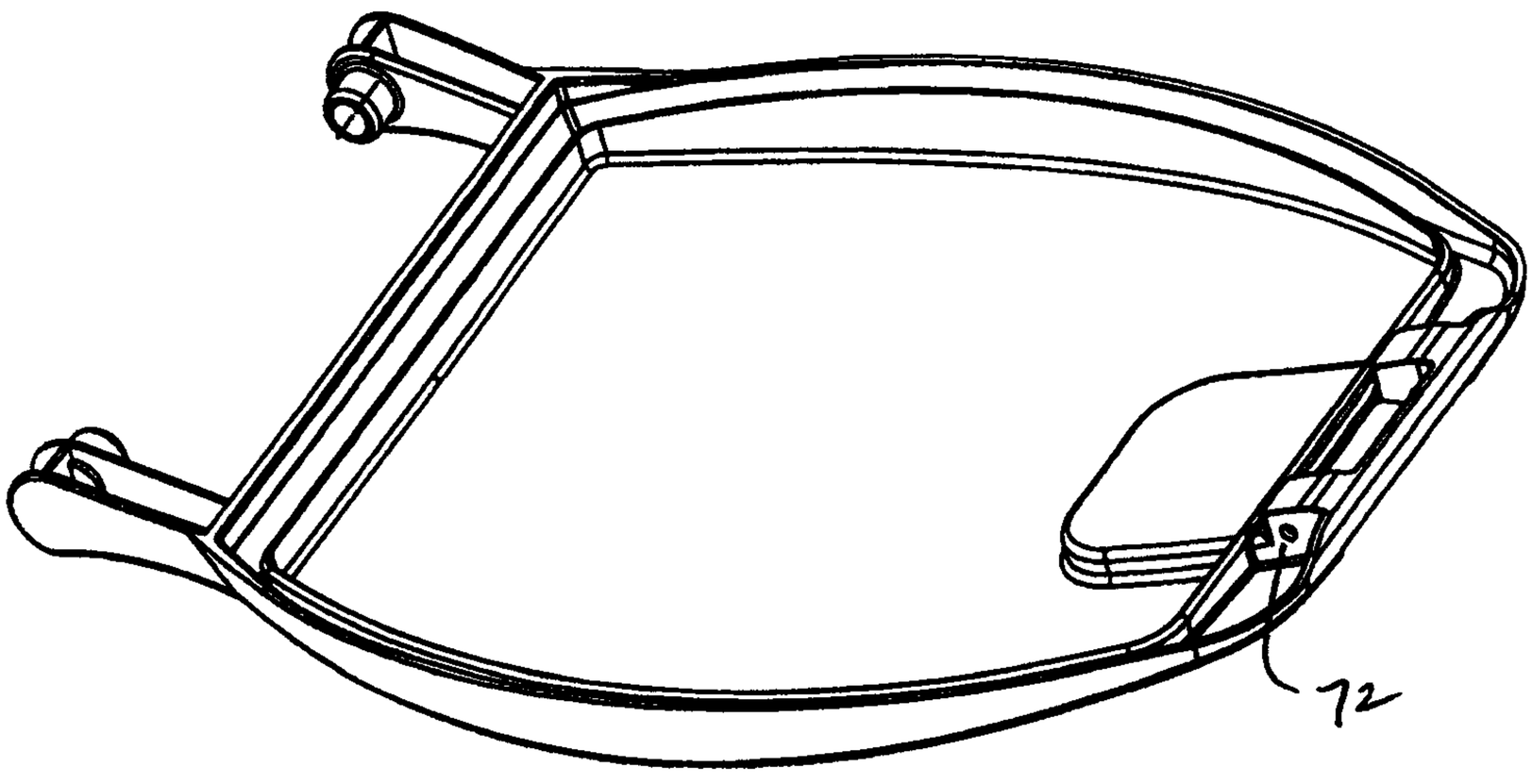


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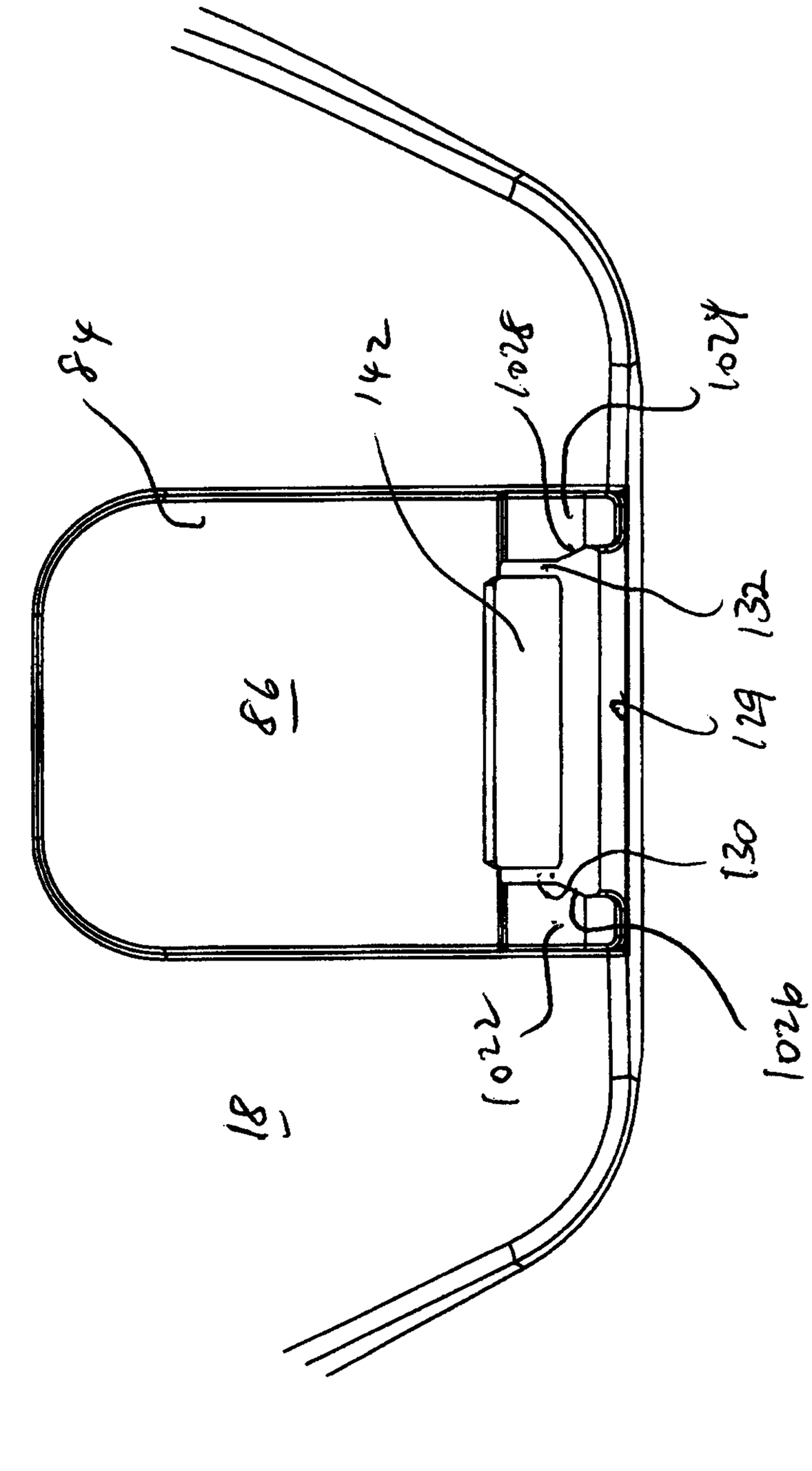


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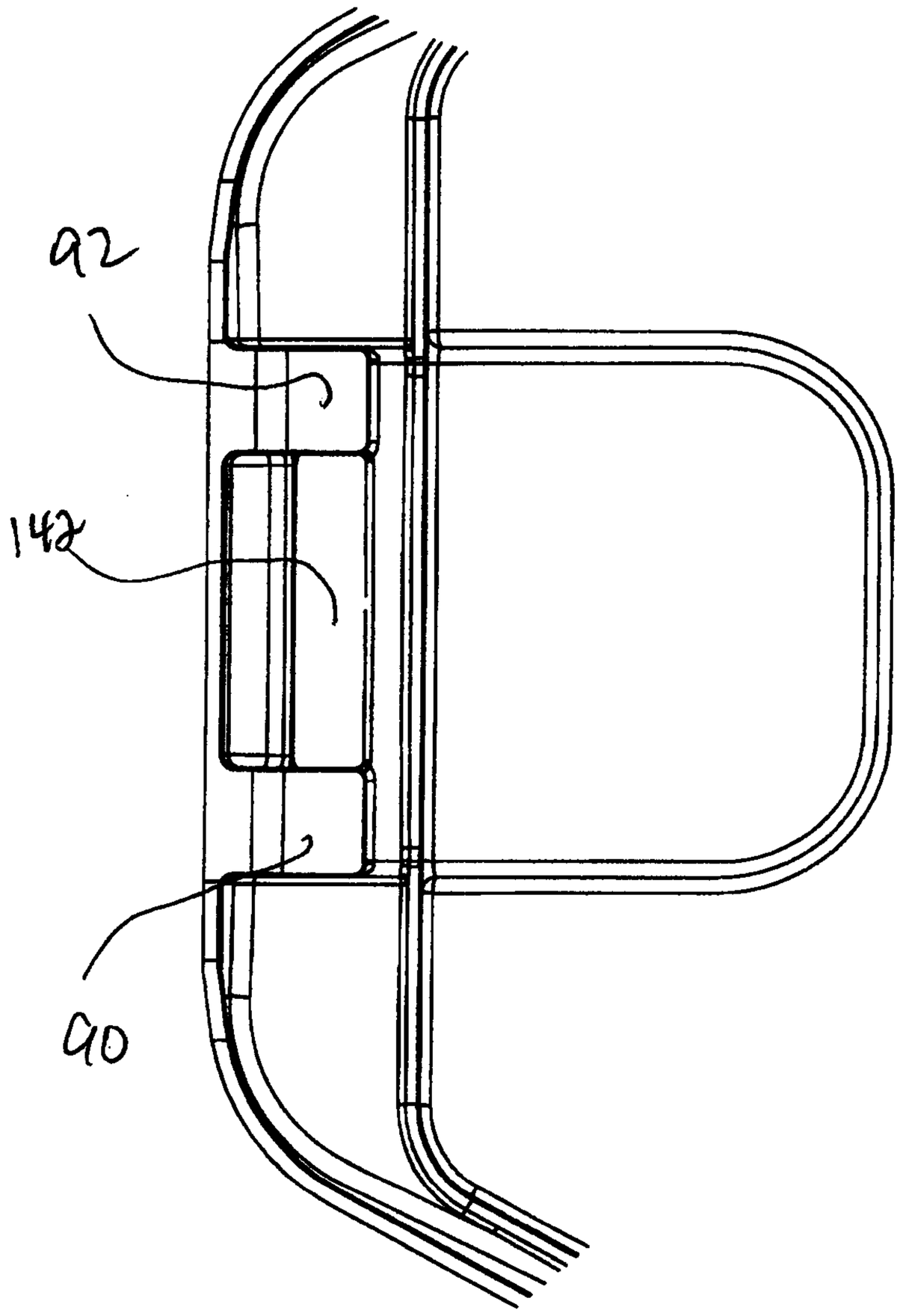


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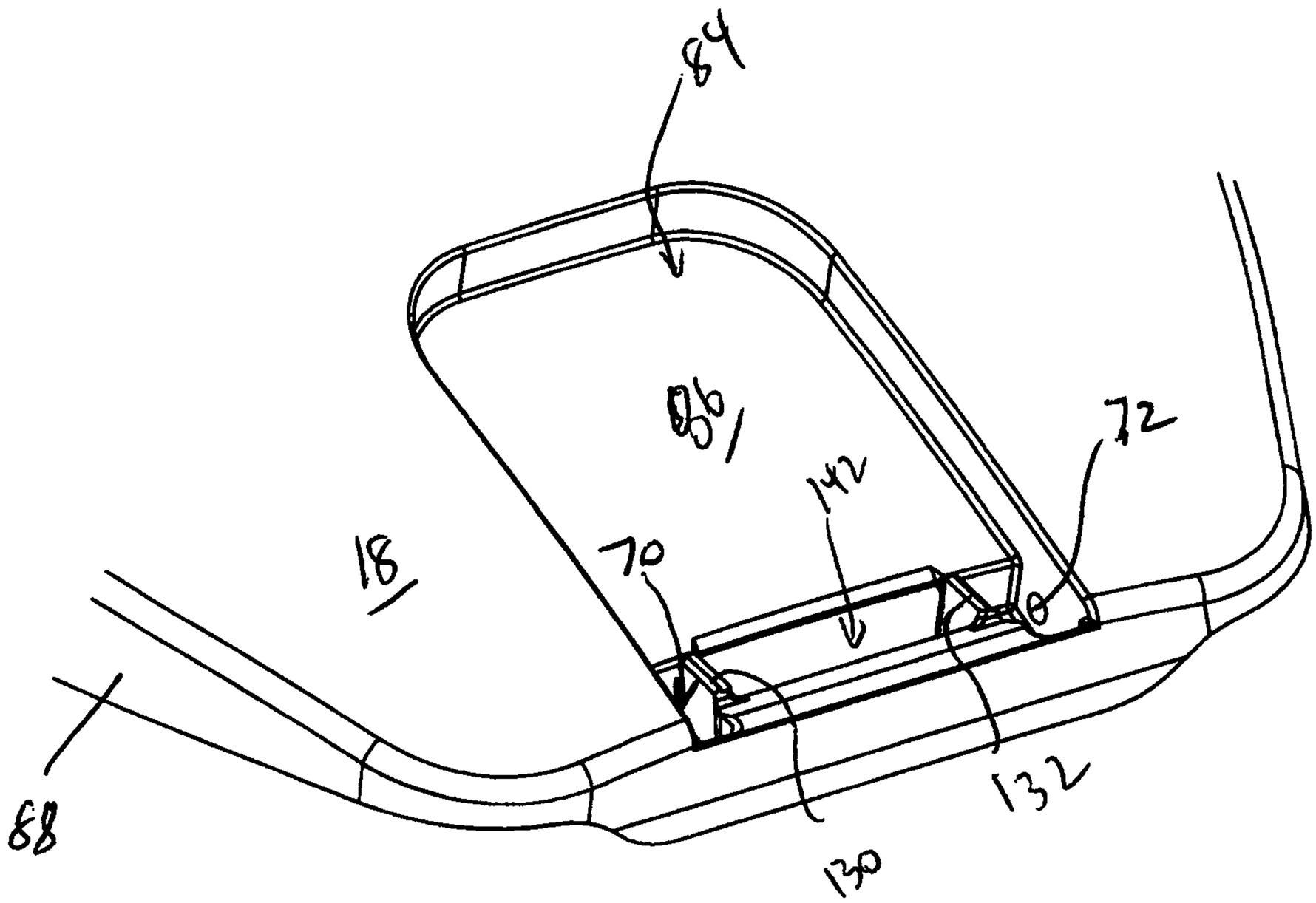


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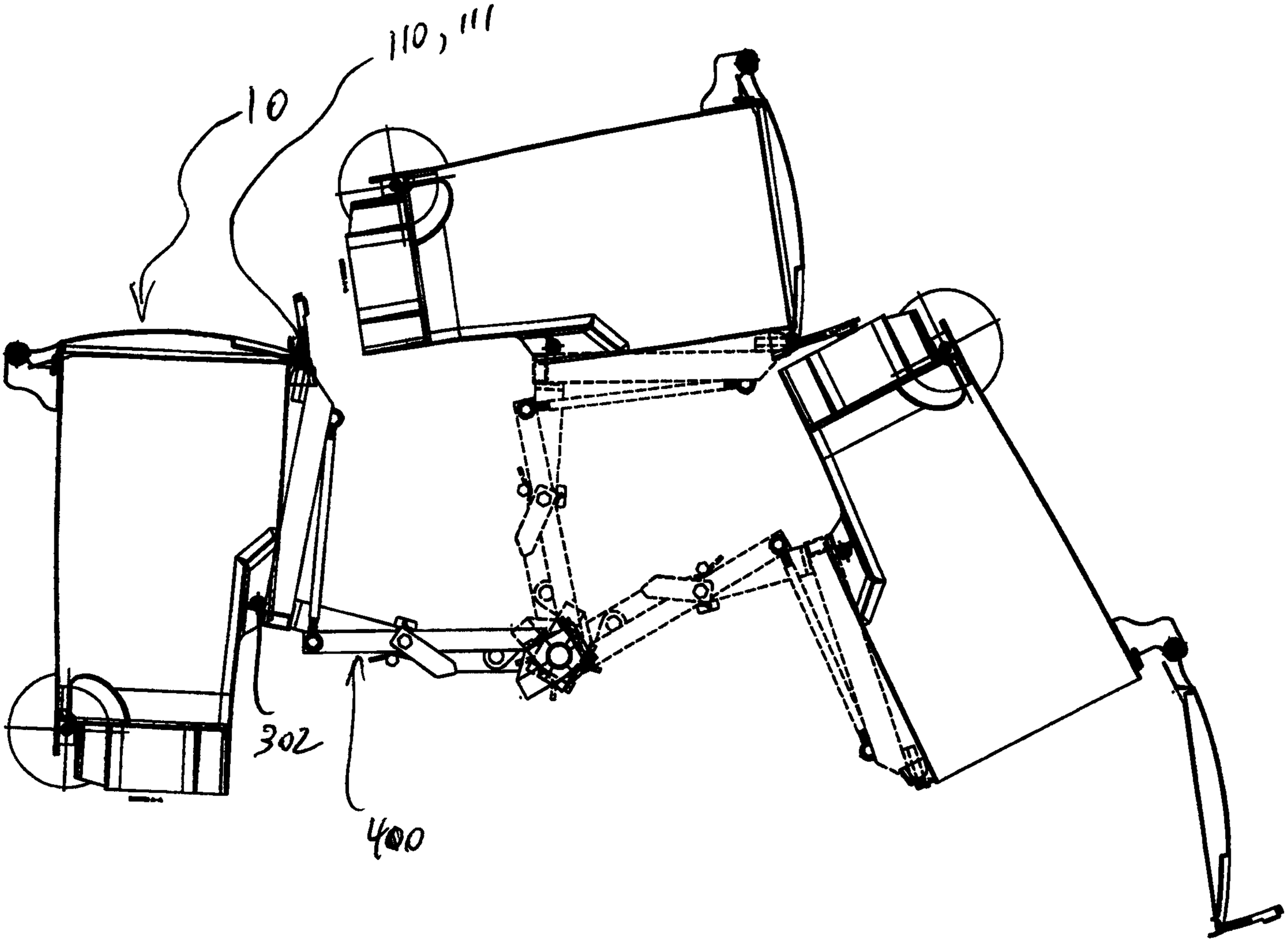



FIG 30

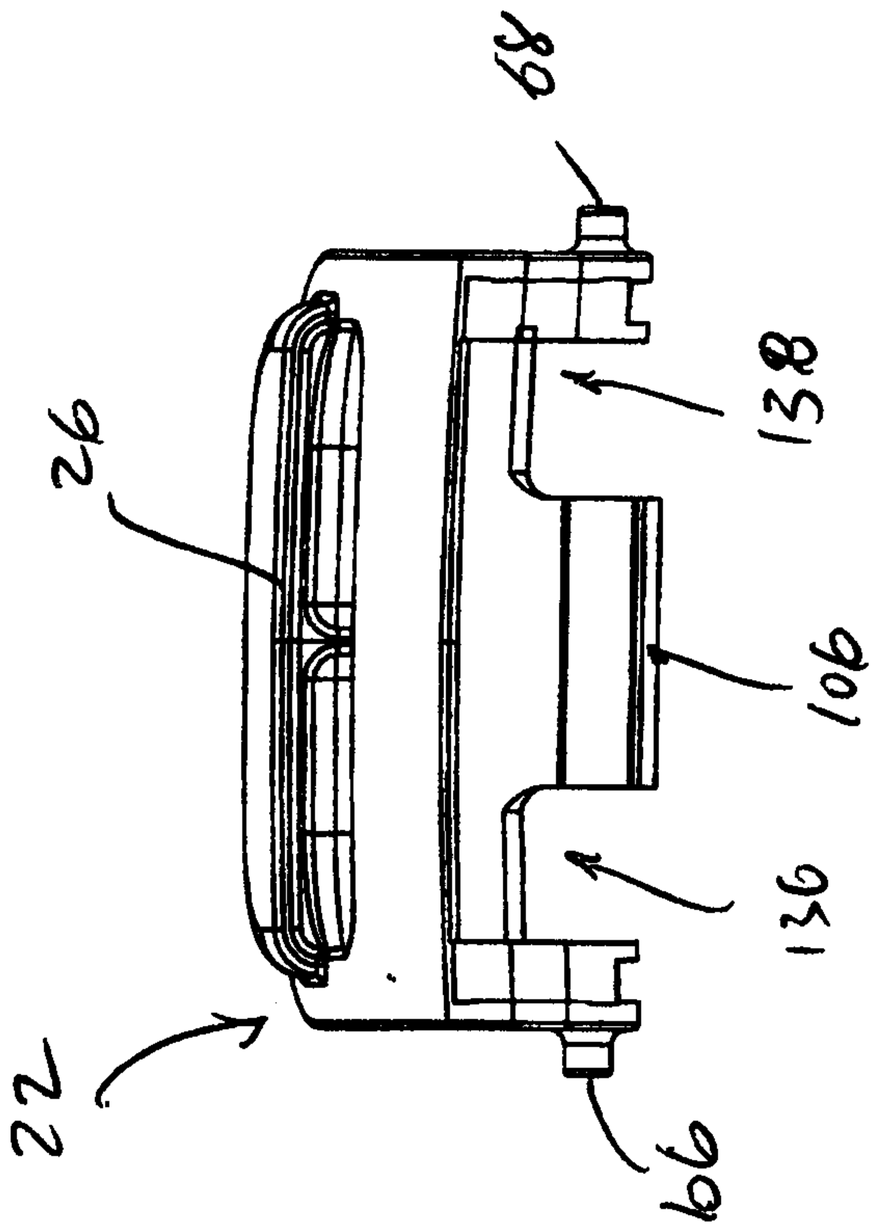
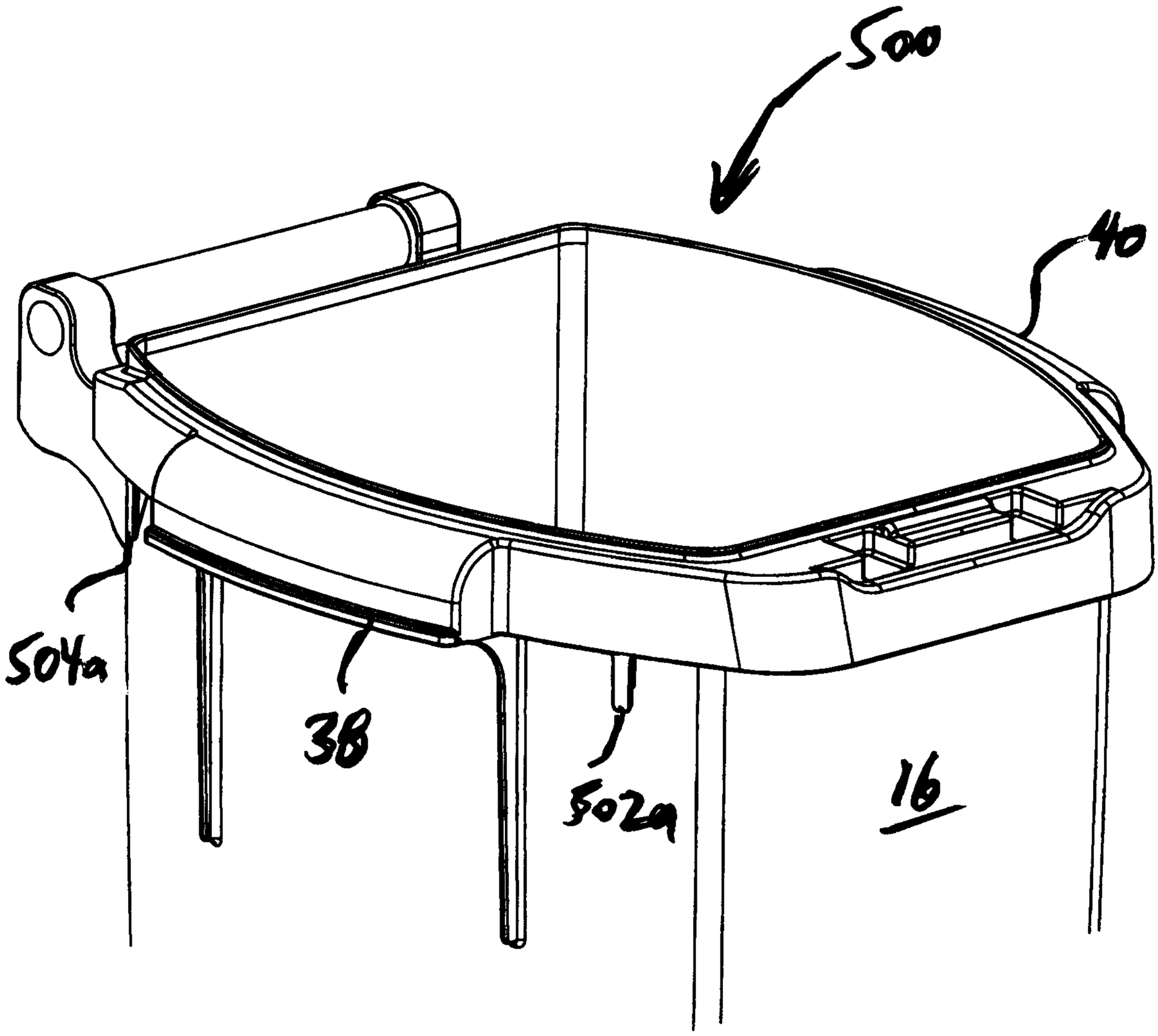



FIGURE 3C

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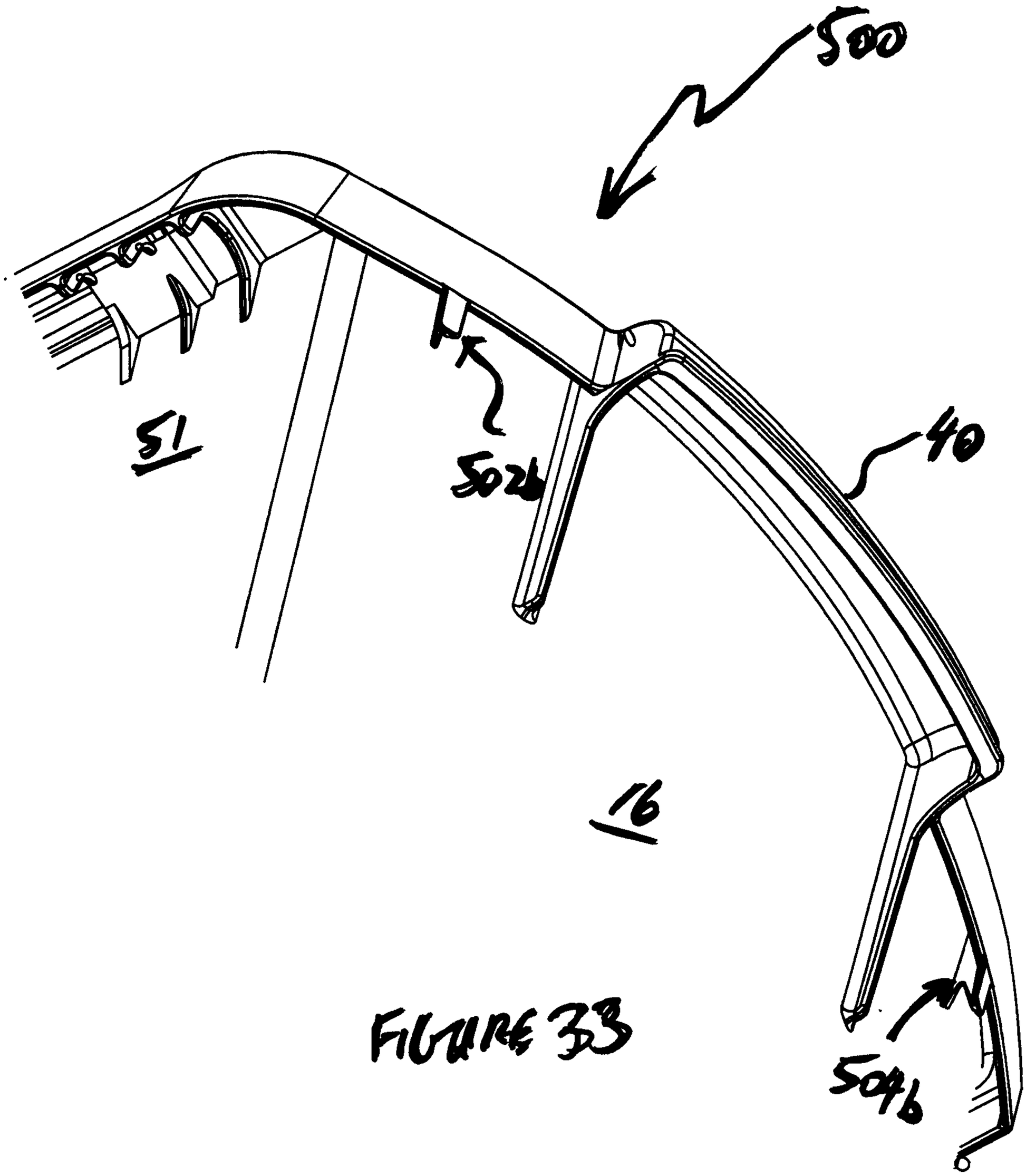


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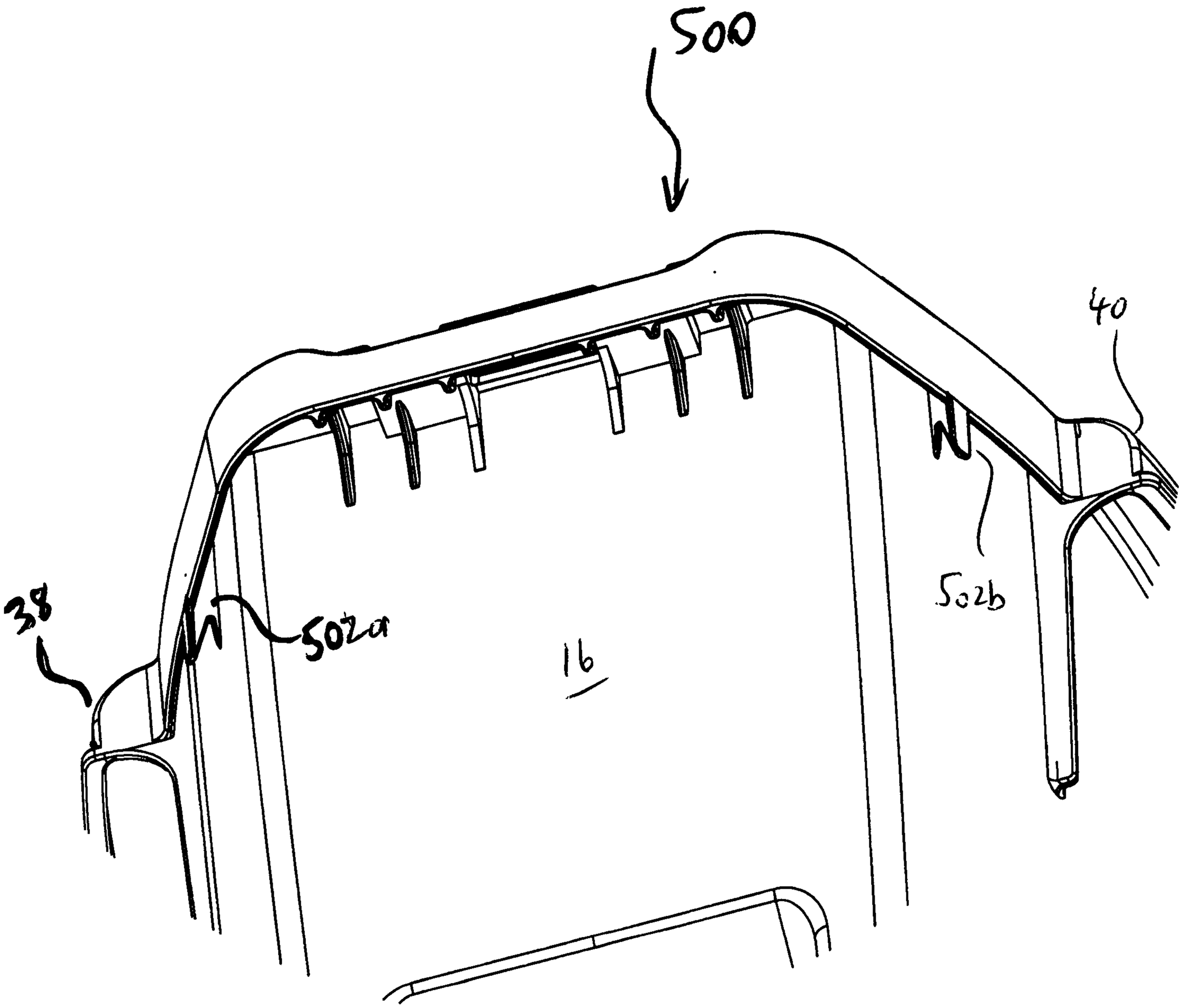


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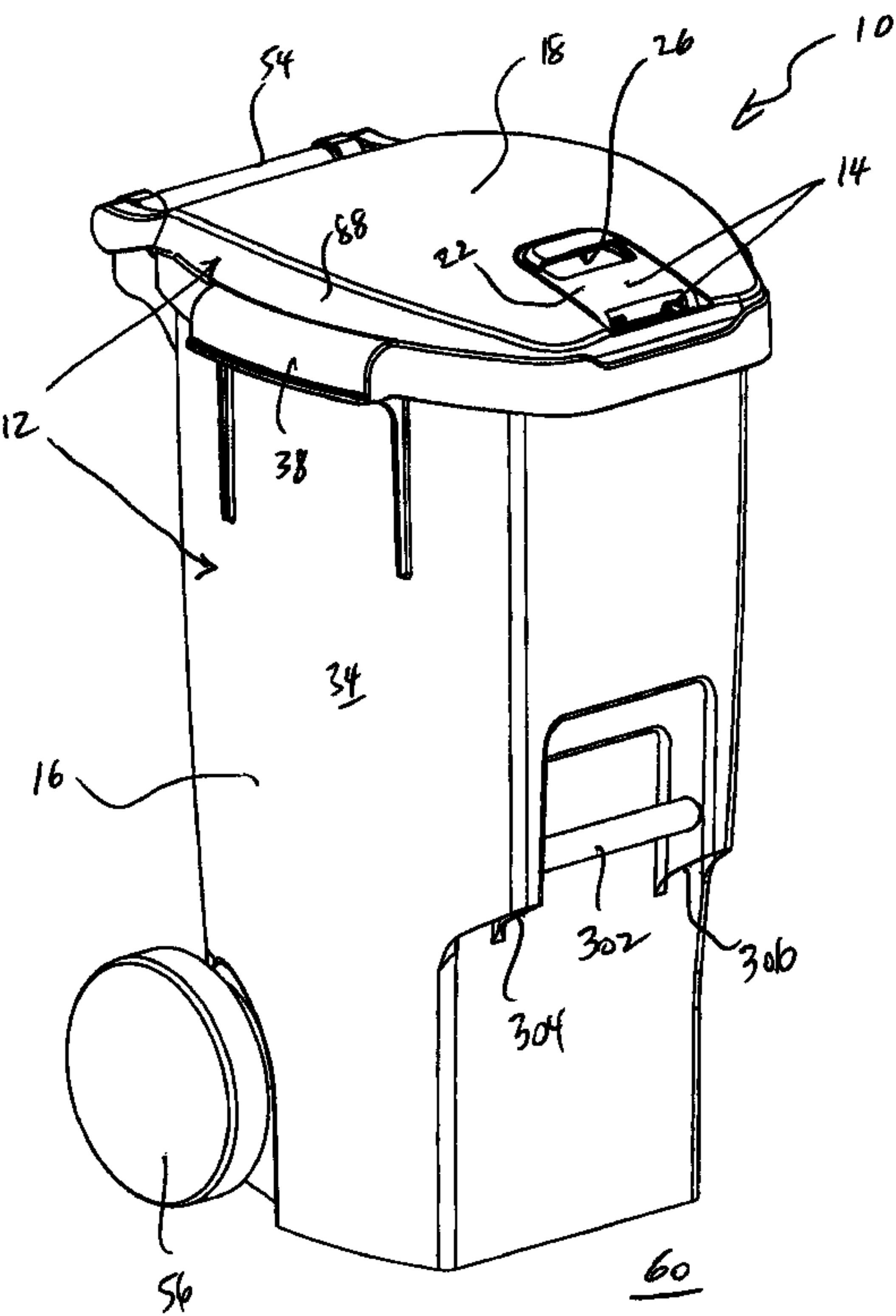
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