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(54) **STEP TRASH CAN HAVING INTEGRATED BASE AND BASE LINER**

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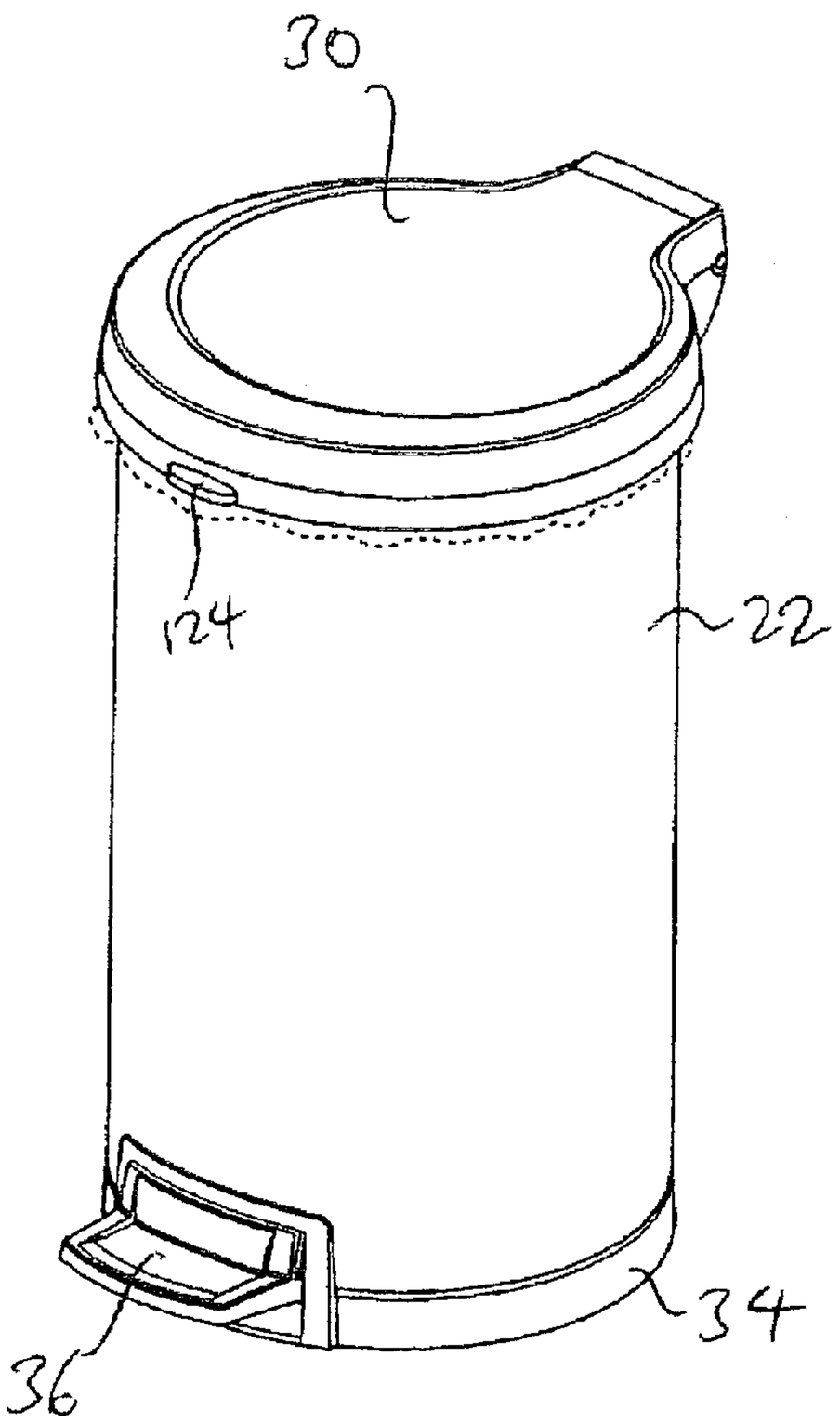
(57) **ABSTRACT**

A step trash can assembly includes a base assembly having an integrated base and base liner. The base includes several parts, including a base, a pedal bar with a foot pedal end and a linkage end for coupling to a link rod for operating the lid, and a pivot axle supported by the base, which pivotally supports the pedal bar. In addition, a separate base liner is provided above the base, concealing the components in the base after installation in the canister body. The foregoing components are pre-assembled to form the base assembly prior to attachment to the inside bottom trash can body.



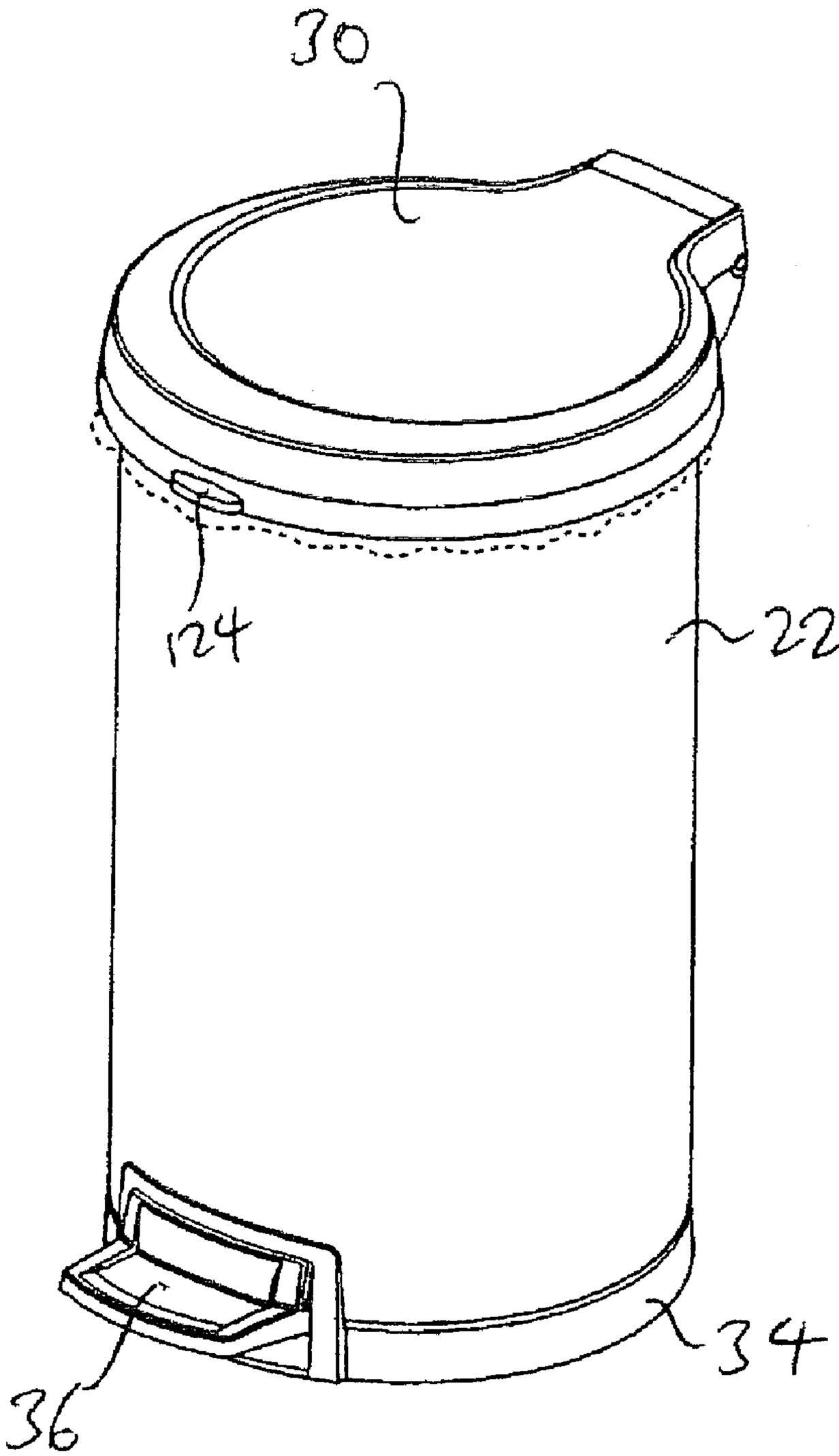


FIG. 1

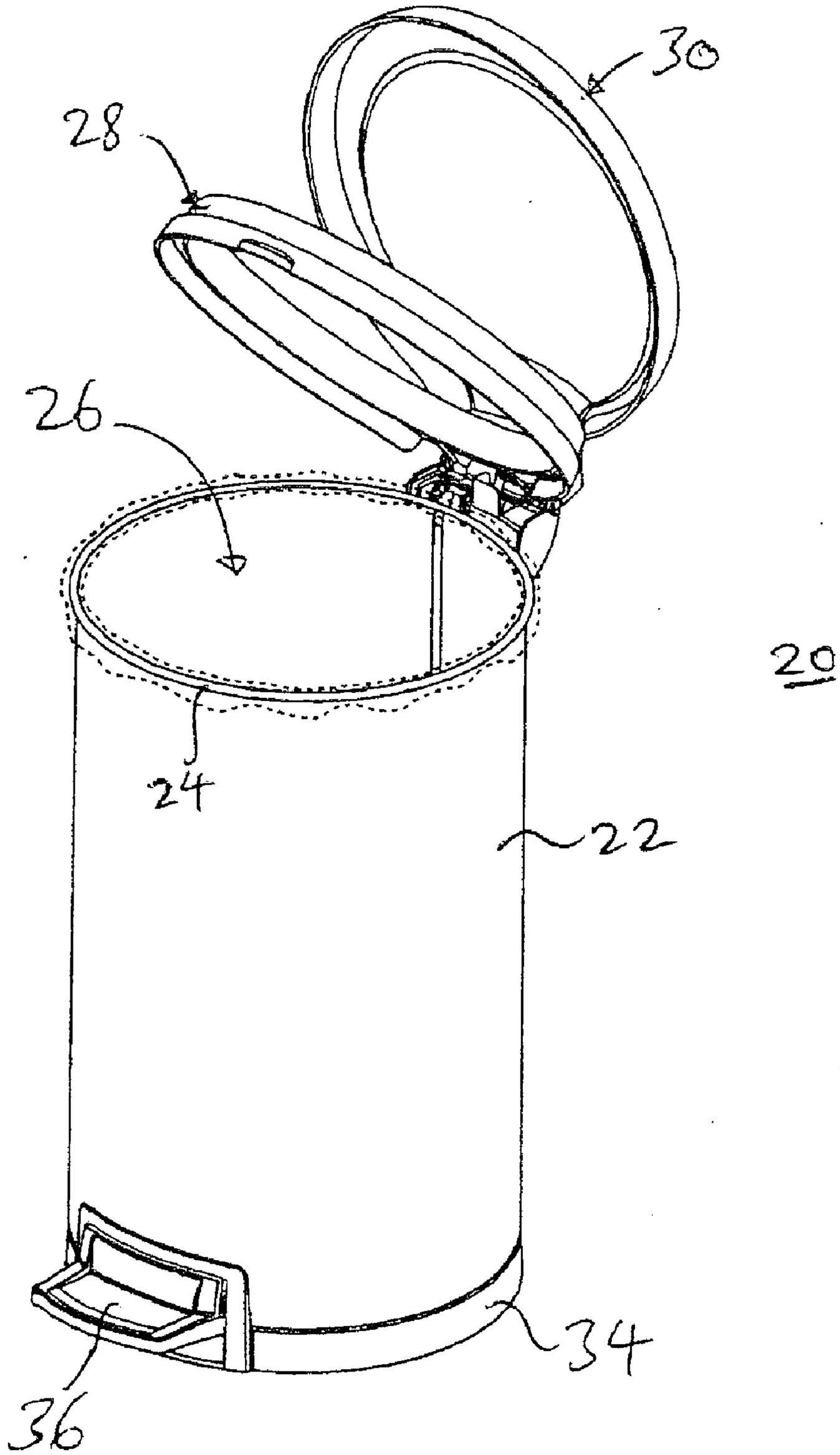


FIG. 2

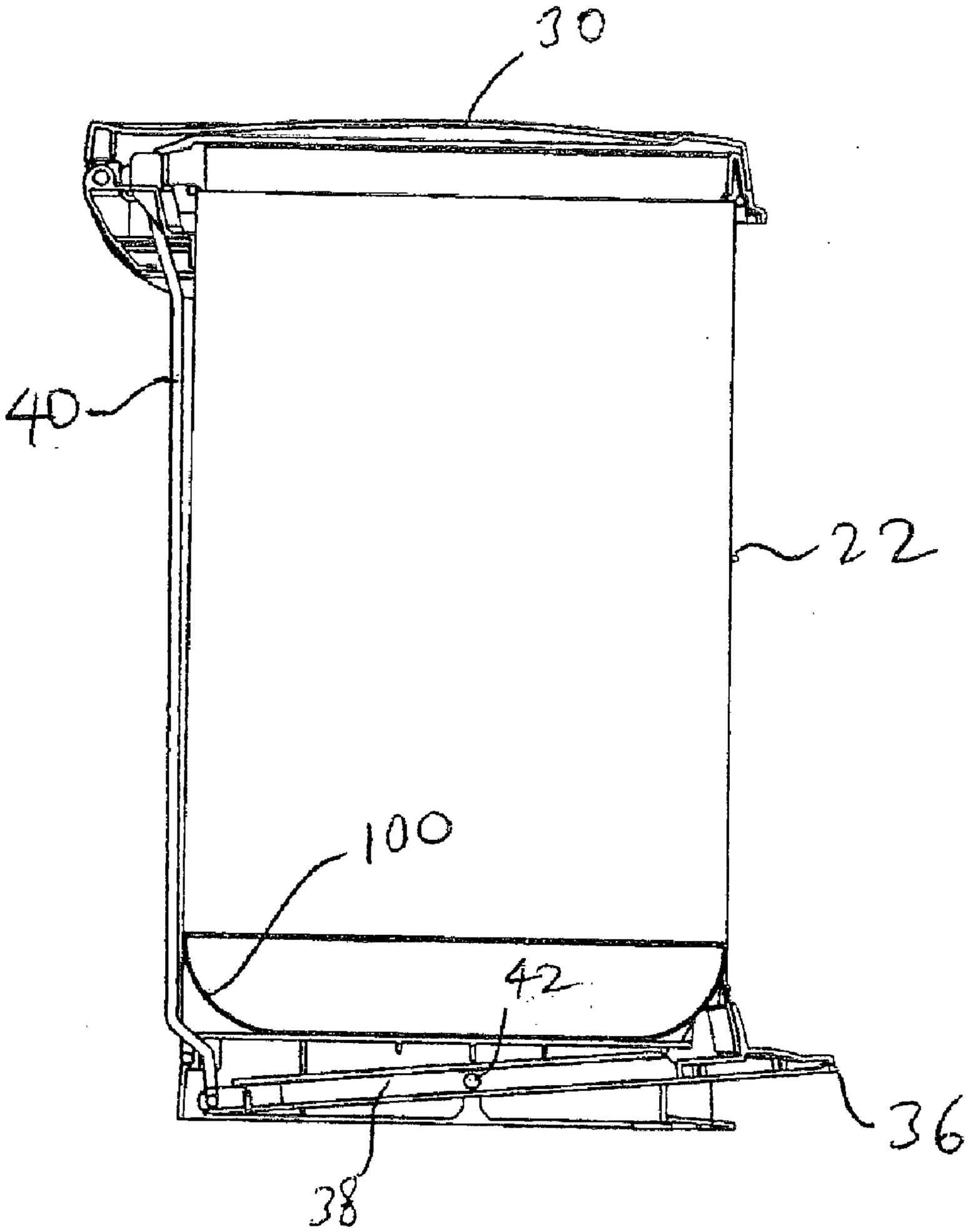


FIG. 3

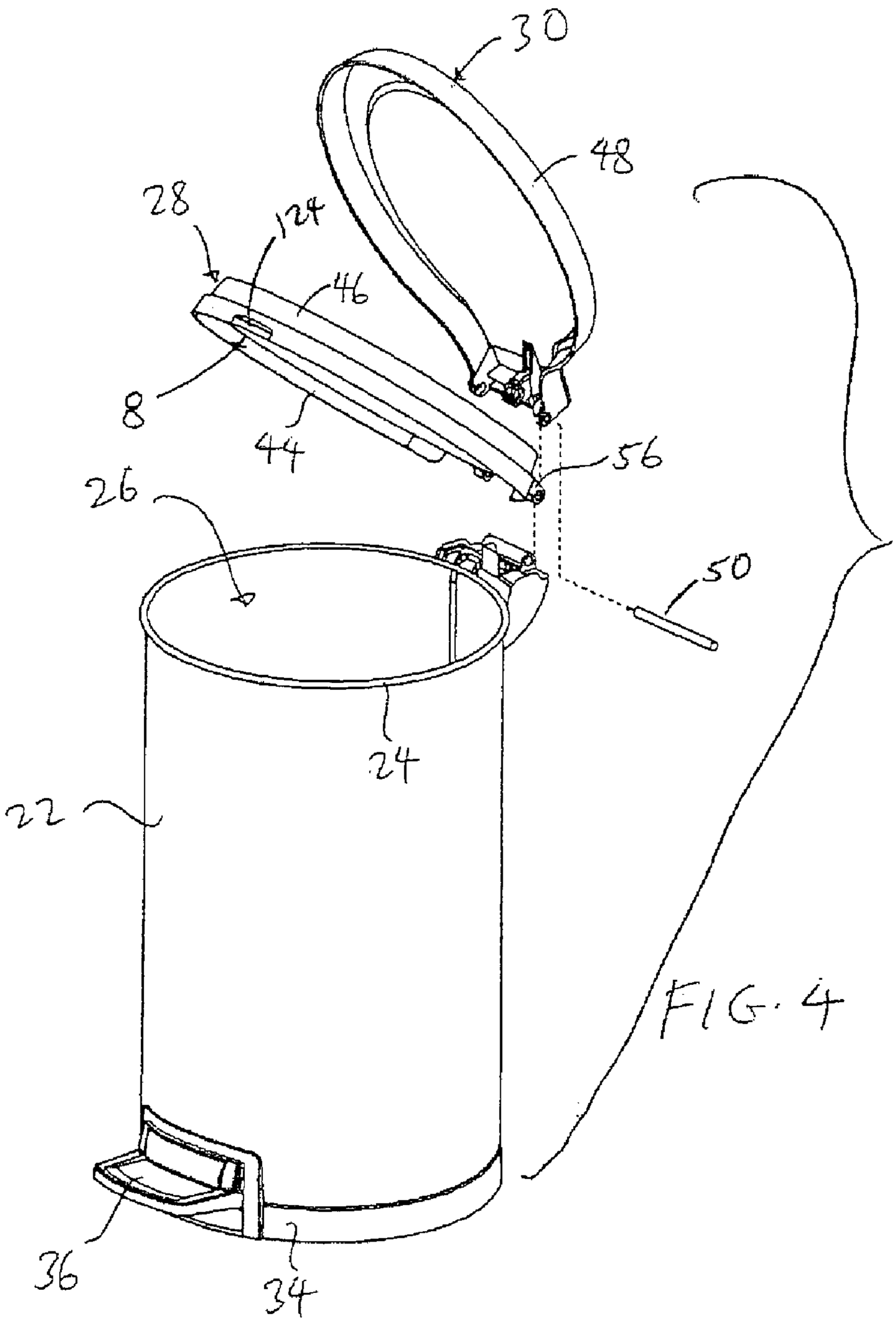


FIG. 4

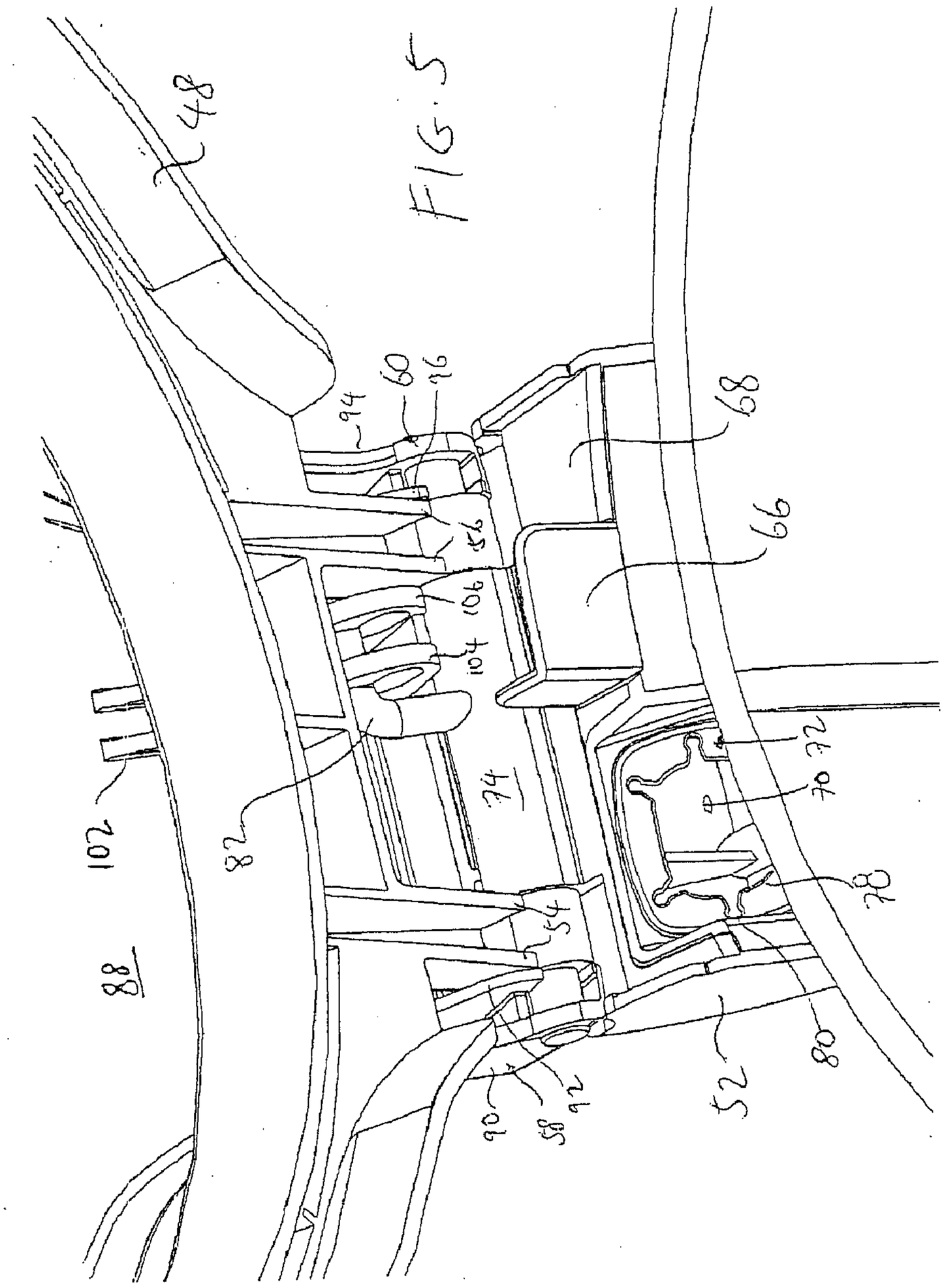


FIG. 5

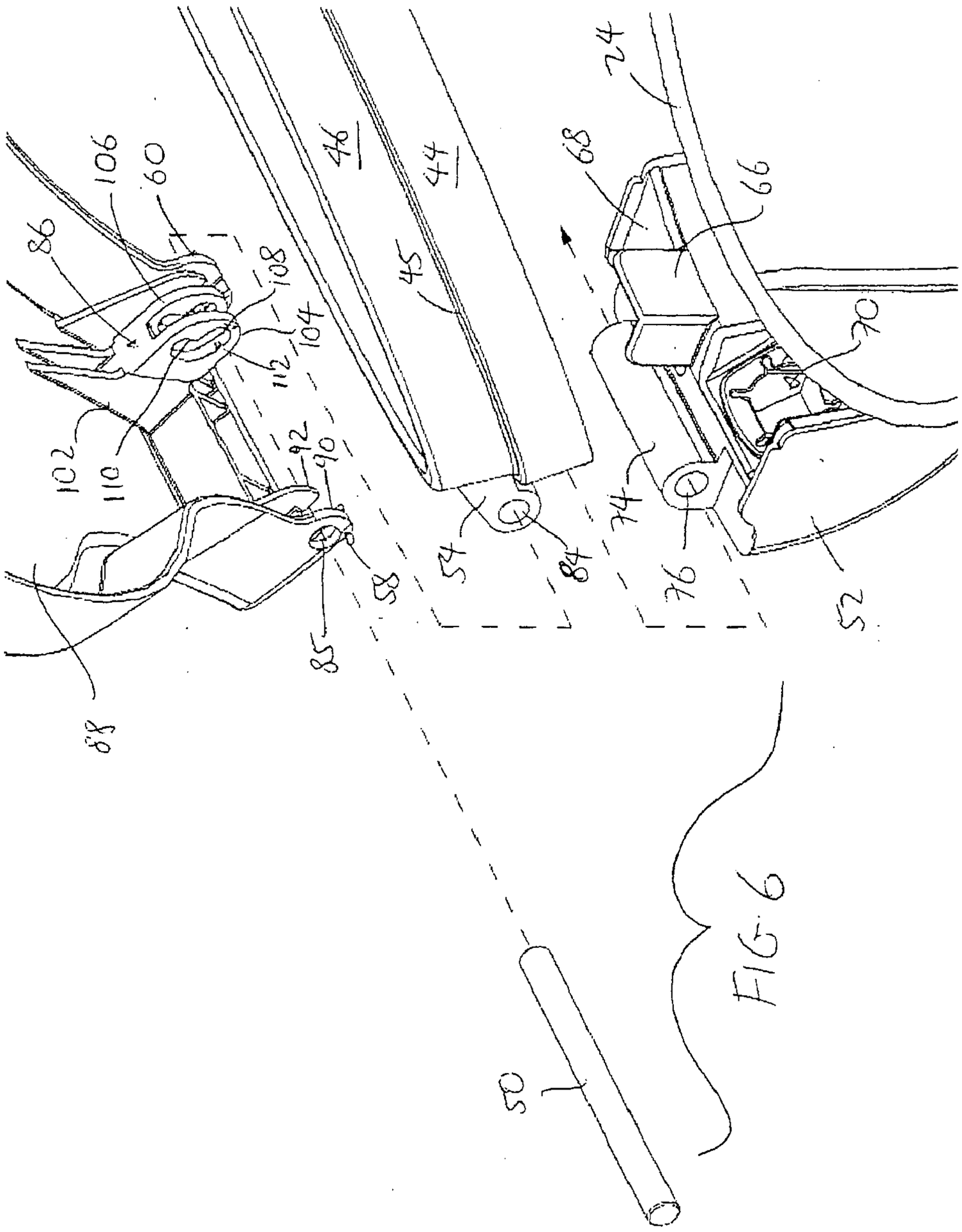

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FIG. 6

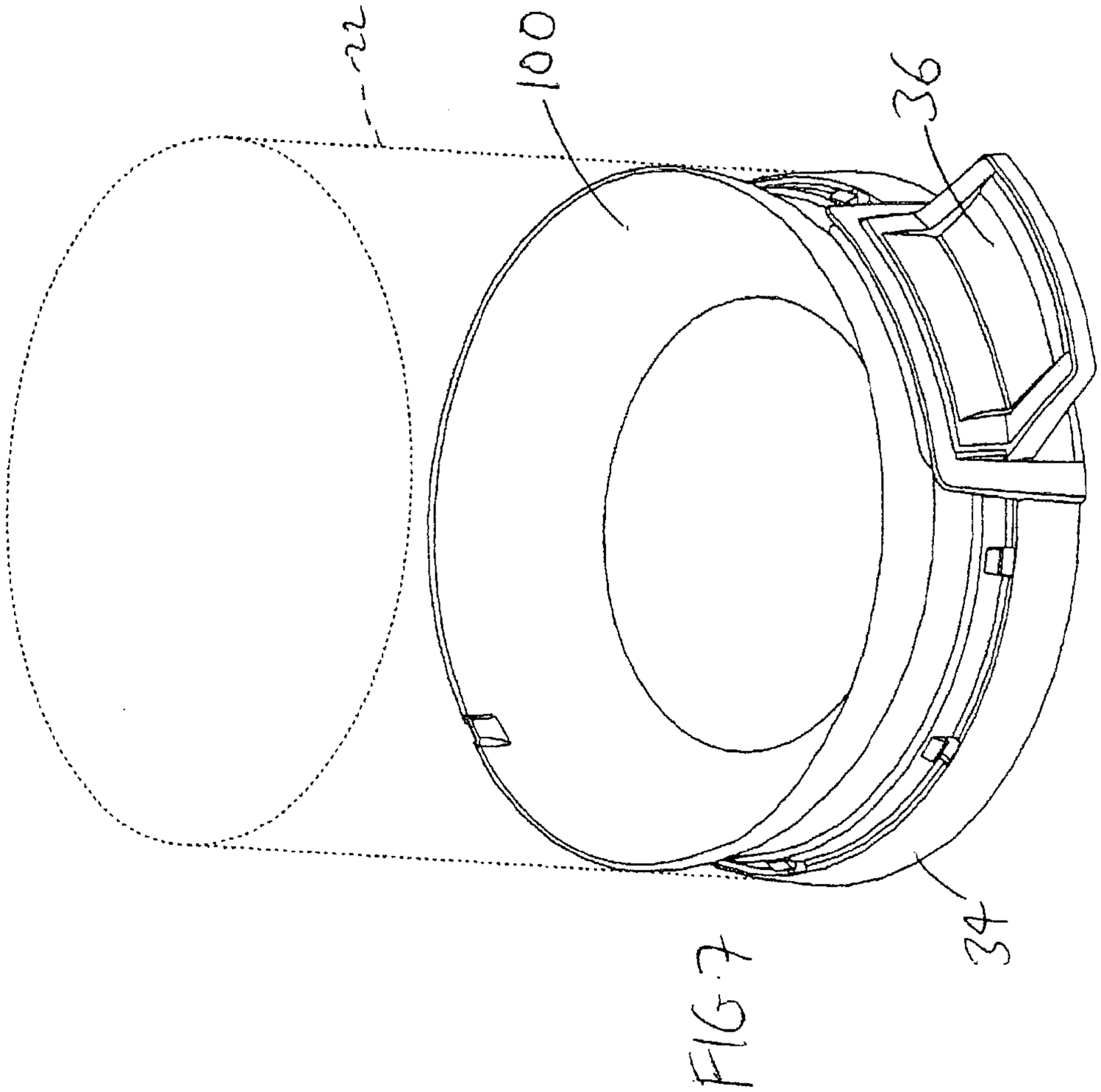


FIG. 7

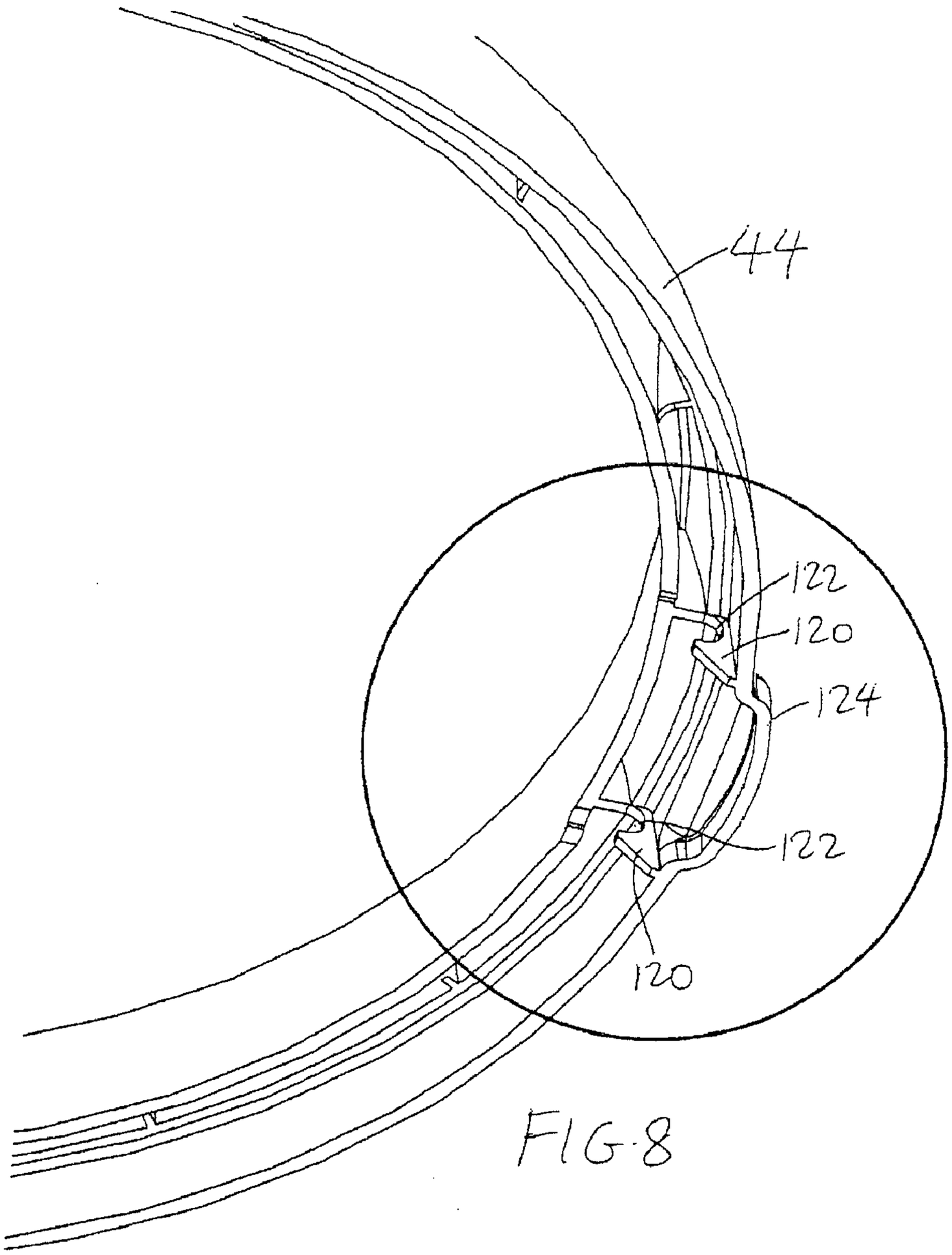
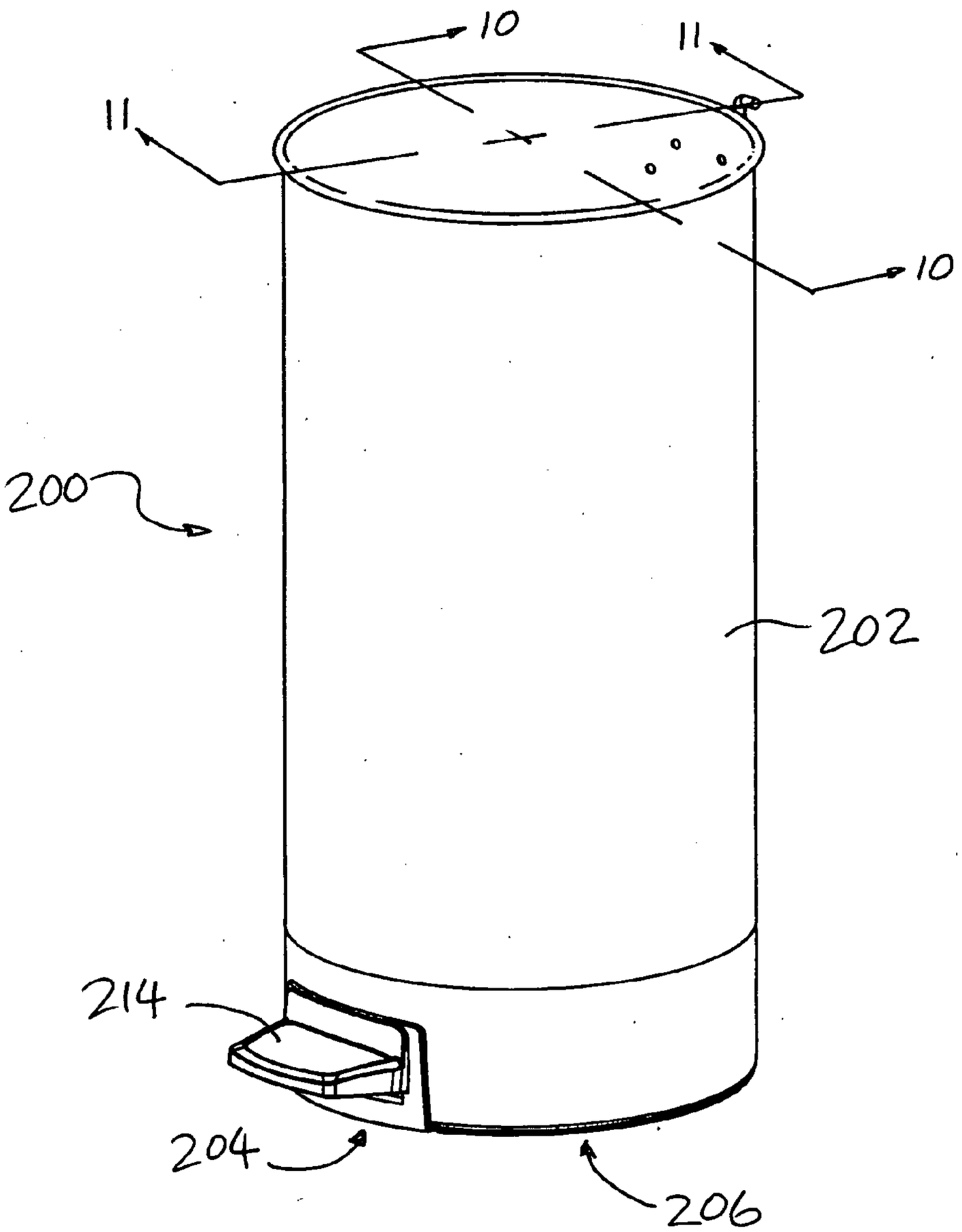


FIG-8

FIG. 9



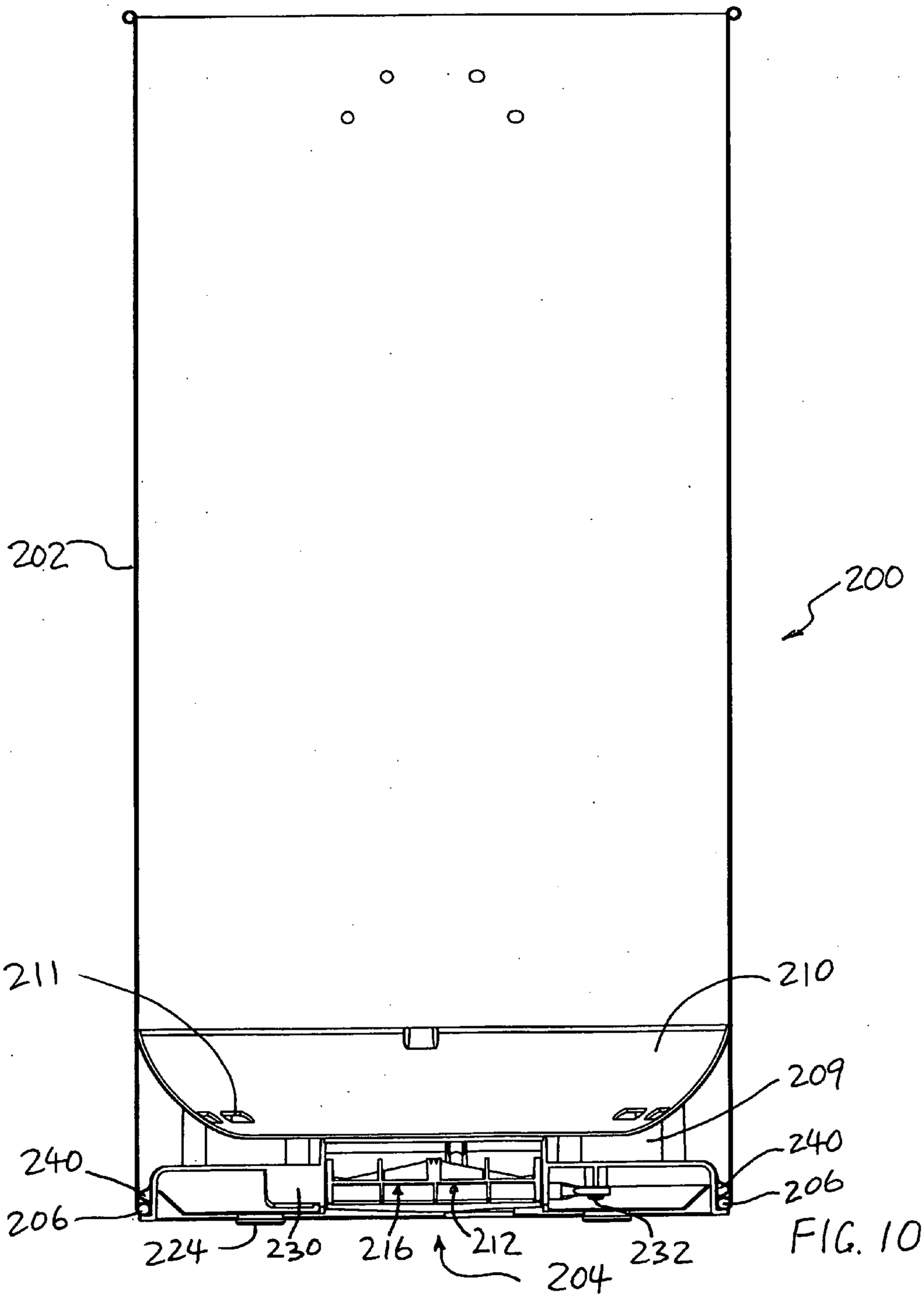
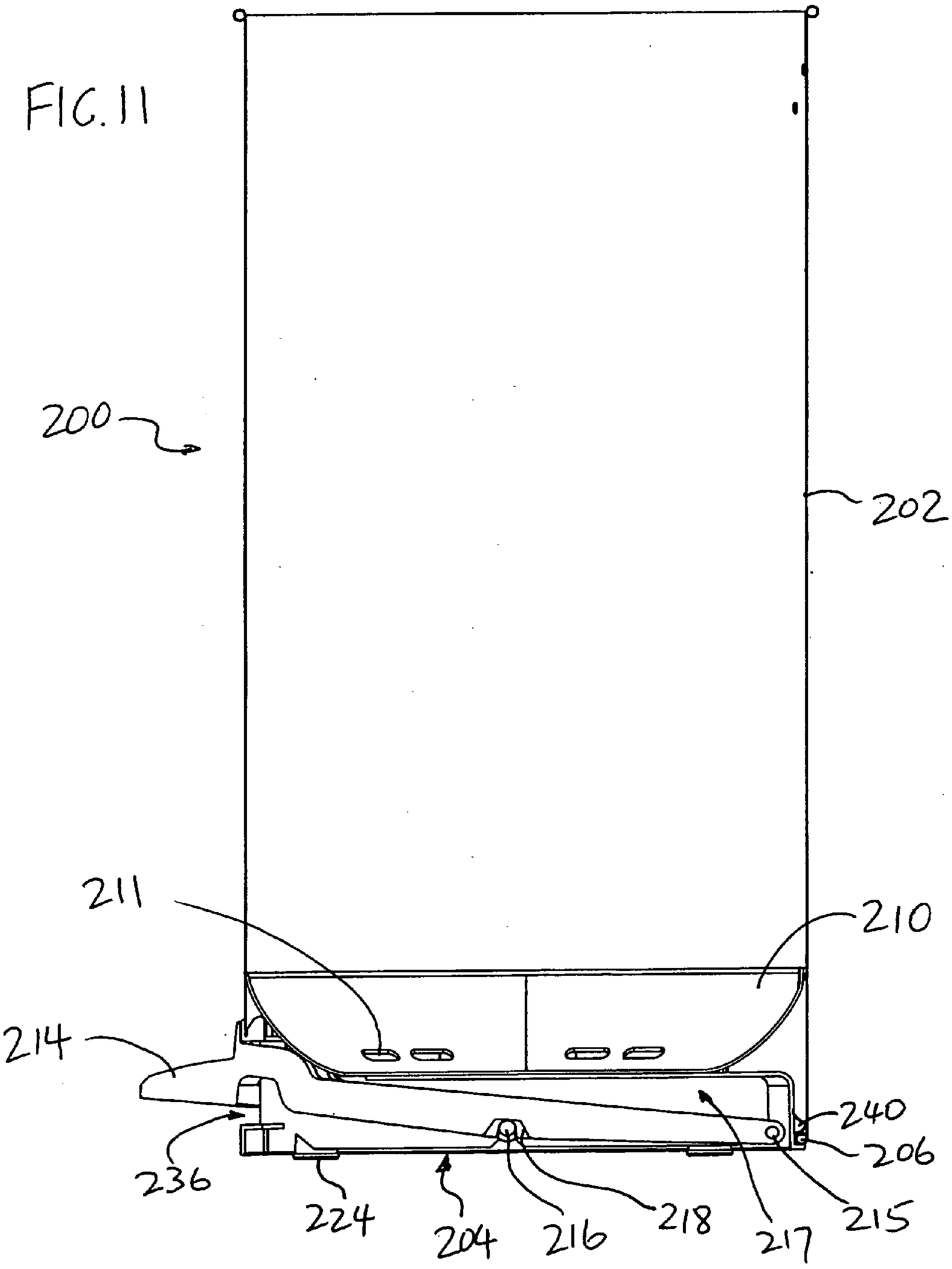


FIG. 10

FIG. 11



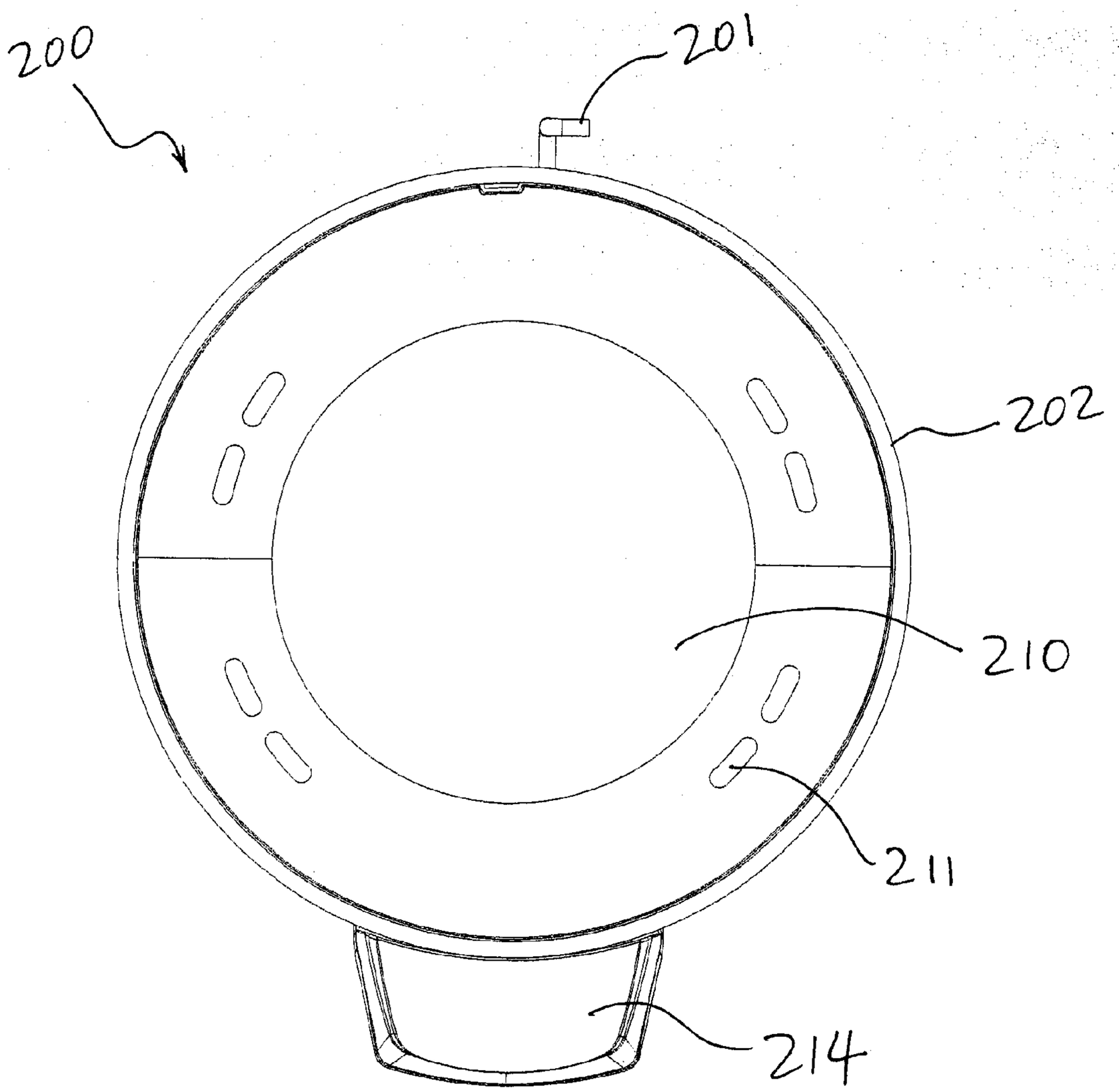


FIG. 12

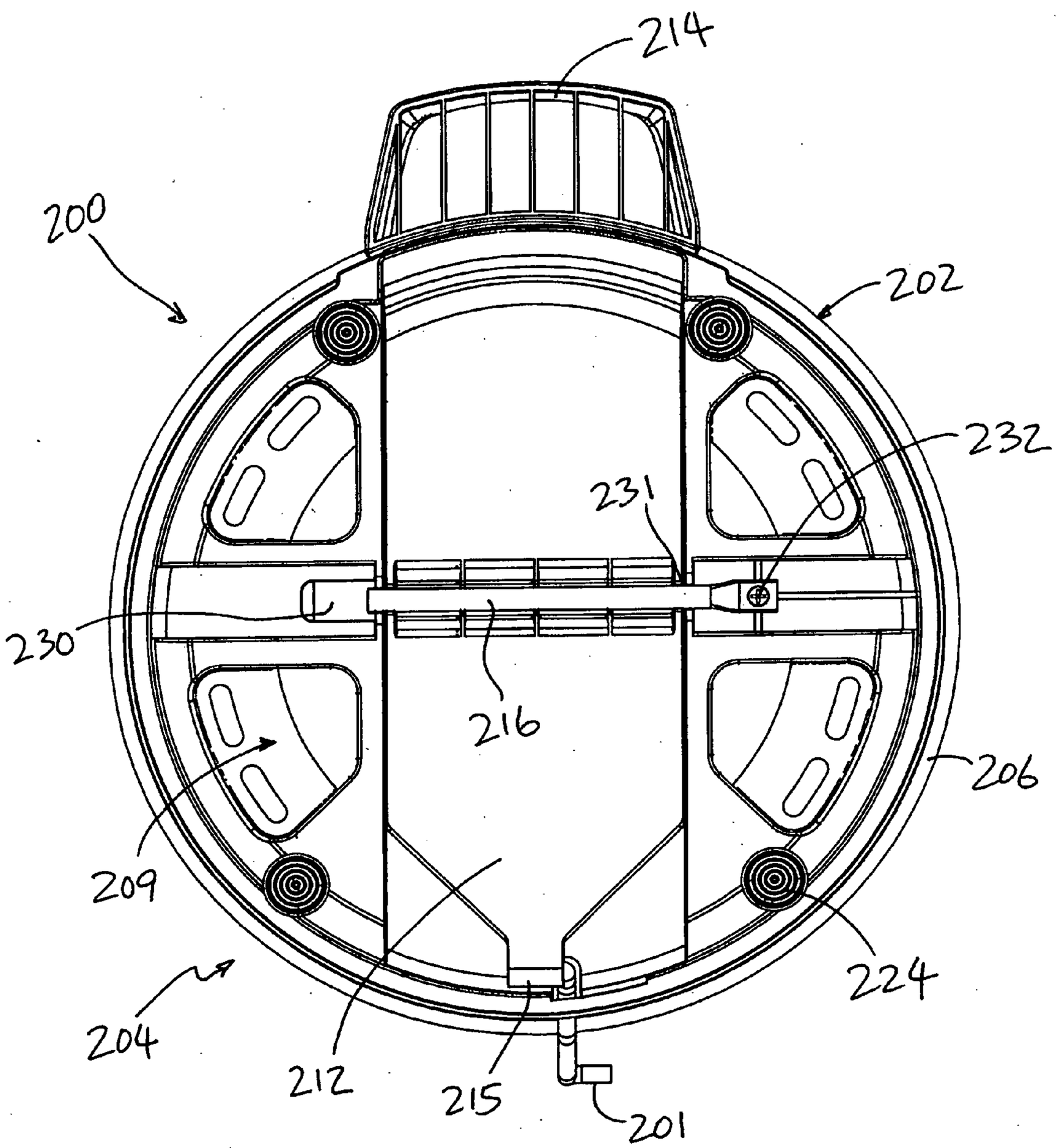


FIG. 13

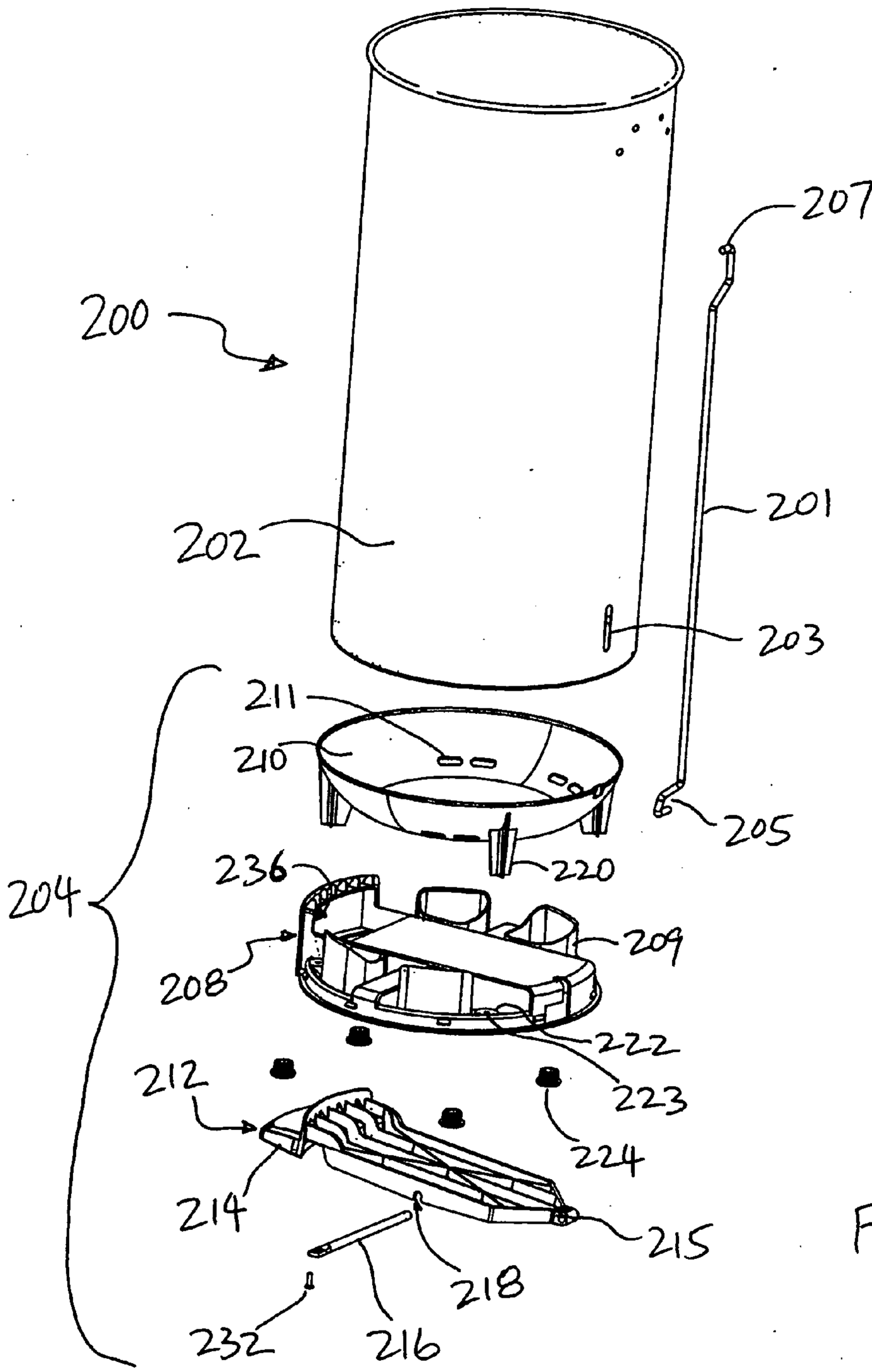

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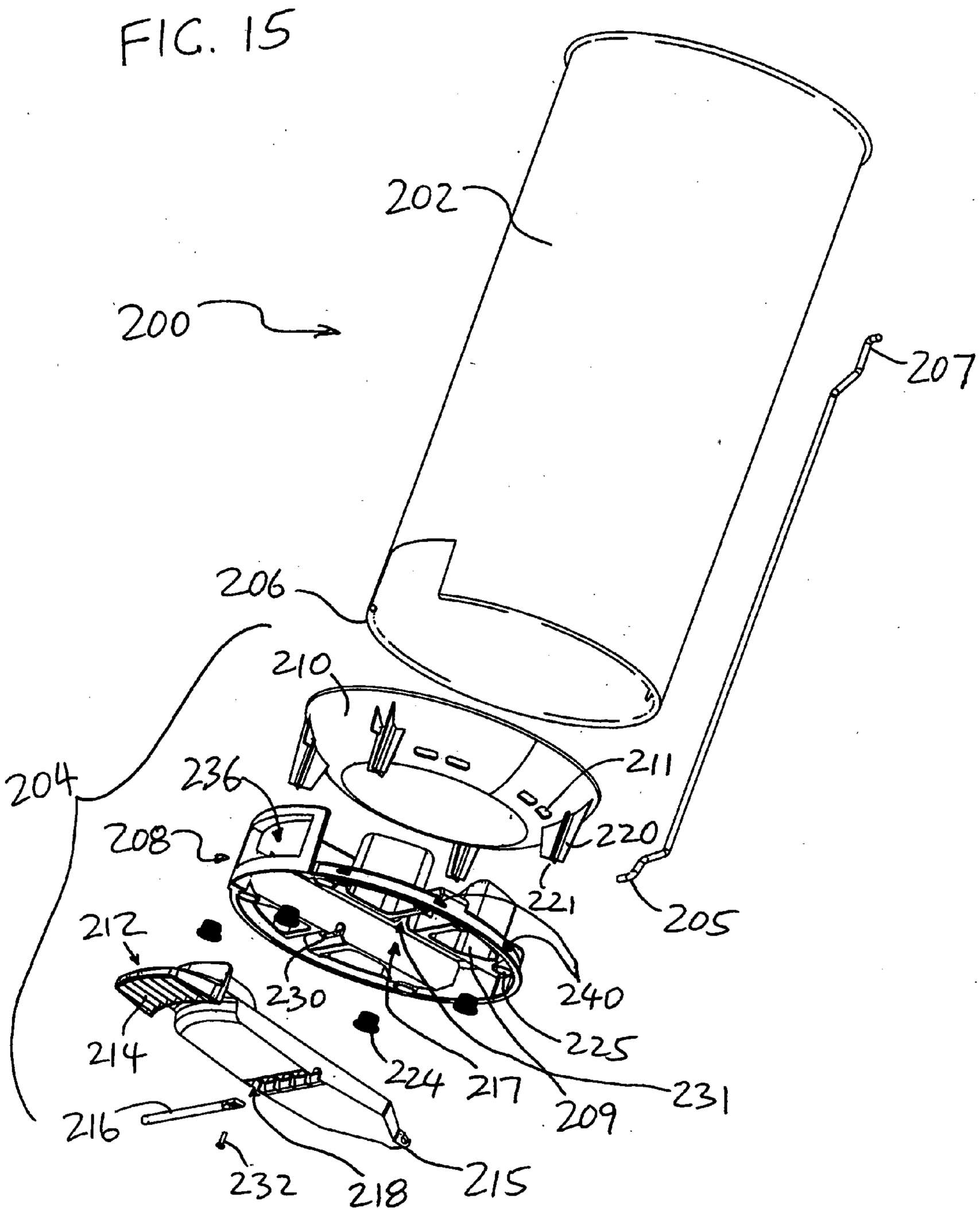
FIG. 14

FIG. 15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STEP TRASH CAN HAVING INTEGRATED BASE AND BASE LINER

CROSS REFERENCE

[0001] This application claims priority of U.S. Provisional Patent Application No. 61/215,062, entitled "Integrated Step Trash Can Base Assembly," filed on May 1, 2009, and a Continuation-in-part of U.S. patent application Ser. No. 11/602,081, entitled "Trash Can Assembly with Bag Trim," filed on Nov. 20, 2006. These applications and other applications and documents referenced herein are fully incorporated by reference as if fully set forth herein.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to trash can assemblies, and in particular trash cans having a lid that can be opened by operation of a foot pedal.

[0004] 2. Description of Related Art

[0005] A major concern for both the home and the workplace is containing and holding wastes, refuse, and trash until permanent disposal. Trash cans act as containers for holding trash and other wastes that are produced in any typical home or office. Trash and garbage cans often employ lids and covers to contain the trash and its associated odor, to hide the trash from view, and to prevent the trash from contaminating areas beyond the lid.

[0006] Conventional trash cans have been improved over the years to make them more user-friendly, sanitary, and hygienic. For example, many trash cans are now provided with a foot pedal positioned adjacent the base of the trash can so that a user can step on the foot pedal to open the lid of the trash can, thereby freeing up the user's hands to toss trash, or to change the plastic liner or bag that is used to line the trash can. Other trash cans have even provided an internal metal or plastic liner that fits inside the trash can, and which can be removed to be washed. However, these conventional trash cans still suffer from a number of drawbacks.

[0007] A number of these drawbacks are associated with the deployment, use and removal of the trash bag. A common problem is associated with maintaining the trash bag suspended at the top of the trash open with the mouth of the trash bag opened. For example, a user typically needs to fold the top edge of the trash bag over the top edge of the trash can or its internal liner to maintain the mouth of the trash bag opened at the top of the trash can or an internal liner. Unfortunately, the weight of the waste materials deposited into the trash bag often causes the trash bag to slip from the mouth of the trash can and fall crumpled into the interior of the trash can. This can result in the undesirable spillage of the waste material inside the trash bag.

[0008] Further, prior art step trash cans require a number of components requiring various steps in the assembly process.

[0009] Thus, there remains a need for a trash can that facilitates the convenient and effective deployment, use and removal of a trash bag. Further, there remains a need for a step trash can structure that requires less number of parts and provides ease of assembly.

SUMMARY OF THE INVENTION

[0010] It is an object of the present invention to provide a trash can assembly that allows for a trash bag to be conveniently and effectively deployed, used and removed.

[0011] It is another object of the present invention to provide a trash can assembly that securely retains a trash bag at the mouth of the trash can.

[0012] In order to accomplish the objects of the present invention, the present invention provides a trash can assembly that includes a shell having an enclosing wall that has an upper edge, a trim pivotably connected to the upper edge, and a lid pivotably connected to the upper edge. The trim is seated on the upper edge, and the lid is seated on the trim, when the lid is closed. In addition, the trim and the lid pivot about the same pivot axis.

[0013] According to another aspect of the present invention, the assembly can also include a locking element on the trim that removably engages a portion of the upper edge. According to another aspect of the present invention, the upper edge has an annular lip which extends outwardly beyond the wall of the shell.

[0014] According to another aspect of the present invention, the shell includes a bag tuck opening provided adjacent the upper edge.

[0015] According to another aspect of the present invention, a bowl-shaped liner is attached inside the shell adjacent the base of the shell.

[0016] According to a further aspect of the present invention, the assembly includes a base assembly having an integrated base and base liner. In this aspect, a step trash can includes a base assembly attached to a cylindrical canister body. The base includes several parts, including a base, a pedal bar with a foot pedal end and a linkage end for coupling to a link rod for operating the lid, and a pivot axle supported by the base, which pivotally supports the pedal bar. In addition, a separate base liner is provided above the base, concealing the components in the base after installation in the canister body. The foregoing components are pre-assembled to form the base assembly prior to attachment to the inside bottom trash can body.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] For a fuller understanding of the nature and advantages of the invention, as well as the preferred mode of use, reference should be made to the following detailed description read in conjunction with the accompanying drawings. In the following drawings, like reference numerals designate like or similar parts throughout the drawings.

[0018] FIG. **1** is a perspective view of a trash can assembly according to one embodiment of the present invention shown with the lid closed, and with a trash bag shown in phantom.

[0019] FIG. **2** is a perspective view of the trash can assembly of FIG. **1** shown with the lid opened, and with a trash bag shown in phantom.

[0020] FIG. **3** is a cross-sectional side view of the trash can assembly of FIG. **1**.

[0021] FIG. **4** is an exploded perspective view of the trash can assembly of FIG. **1** shown with the lid opened.

[0022] FIG. **5** is an enlarged sectional view illustrating the hinge mechanism of the trash can assembly of FIG. **1**.

[0023] FIG. **6** is an exploded view of FIG. **5**.

[0024] FIG. **7** is a perspective sectional view of the lower portion of the trash can assembly of FIG. **1**.

[0025] FIG. **8** is a bottom perspective view of the portion **8** of the trim shown in FIG. **4**.

[0026] FIG. **9** is a perspective view of a trash can assembly according to another embodiment of the present invention, shown without a lid.

[0027] FIG. **10** is a sectional view taken along line **10-10** in FIG. **9**.

[0028] FIG. **11** is a sectional view taken along line **11-11** in FIG. **9**.

[0029] FIG. **12** is a top view of the trash can assembly of FIG. **9**.

[0030] FIG. **13** is a bottom view of the trash can assembly of FIG. **9**.

[0031] FIG. **14** is an exploded top perspective view of the trash can assembly of FIG. **9**.

[0032] FIG. **15** is an exploded bottom perspective view of the trash can assembly of FIG. **9**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0033] The present description is of the best presently contemplated modes of carrying out the invention. This description is made for the purpose of illustrating the general principles of the invention and should not be taken in a limiting sense. The scope of the invention is best determined by reference to the appended claims. The invention has been described herein in reference to various embodiments and drawings. It will be appreciated by those skilled in the art that variations and improvements may be accomplished in view of these teachings without deviating from the scope and spirit of the invention.

[0034] FIGS. **1-8** illustrate one embodiment of a trash can assembly **20** according to the present invention. The assembly **20** has a shell or canister body **22** that can be made from either plastic or metal. The shell **22** is an enclosing wall which can have any desired shape, including oval, triangular, rectangular, square or circular (among others), although the shell **22** is illustrated in FIGS. **1-7** as being generally circular. The top edge of the shell **22** has an annular lip **24** which defines an opened mouth **26**. The annular lip **24** extends outwardly beyond the wall of the shell **22**, and has a generally rounded cross-section.

[0035] A trim **28** is pivotably coupled to the lip or top edge **24**, and can be made from plastic or metal. The trim **28** and the shell **22** can be made from the same or different materials. The trim **28** has an annular base **44** that is adapted to be seated on the lip **24** of the shell **22**, and an annular wall **46** extending vertically from the base **44**, and which is recessed from the base **44** to define a shoulder **45** between the wall **46** and the base **44**. A lid **30** is pivotably connected to the upper portion of the shell **22** using a hinged connection that is described below. The lid **30** can be made of a solid and stable material, such as a metal, plastic, etc. The lid **30** has an annular wall **48** that is adapted to be seated on the annular base **44** of the trim **28** when the lid **30** is closed, with the walls **46** and **48** positioned side-by-side such that the outer surfaces of the wall **48** and the base **44** are flush (see FIG. **1**).

[0036] The shell **22** has a base **34**, and a foot pedal **36** is pivotably secured to the base **34**. The base **34** of the shell **22** can define a generally annular and curved skirt. In a non-limiting embodiment of the present invention, the skirt can be formed in one plastic piece. The shell **22** can be attached to the top of the skirt of the base **34** by a groove snap-on, glue, welding, screws, and similar attachment mechanisms. Referring to FIGS. **3** and **7**, a bowl-shaped liner insert **100** is attached to the base **34** at the bottom of the shell **22**, and forms a seal or lower wall for the interior of the shell **22**. The liner insert **100** can be made of plastic, and defines a smooth base for the interior of the shell **22**. The liner insert **100** is particularly advantageous where the trash can assembly **20** does not utilize a rigid inner liner.

[0037] Referring to FIG. **3**, a link assembly extends from the foot pedal **36** along the base **34** and then upwardly along the shell **22** to the lid **30**. The link assembly operates to translate an up-down pivot motion of the pedal **36** to an up-down pivot motion for the lid **30**. The link assembly includes a pedal bar **38** having a rear end that is pivotably coupled to the bottom end of a vertical link rod **40**. The pedal bar **38** is pivotably coupled to the base **34** for pivoting movement about a pivot axis **42**, and is connected at its front end to the foot pedal **36**. The bottom of the link rod **40** is housed inside the base **34**, and the link rod **40** extends through the base **34** to the exterior of the shell **22**, and then extends vertically along the rear of the shell **22** to the location of the lid **30** at the upper edge **24**.

[0038] The trash can assembly **20** has a hinge assembly that pivotably couples the lid **30** and the trim **28** along the same pivot axis that is defined by a pivot shaft **50**. The hinge assembly is illustrated in greater detail in FIGS. **5** and **6** and includes a hinge housing **52** that is provided on the shell **22**, a pair of pivot ears **54** and **56** provided at the rear of the trim **28**, and a pair of pivot ears **58** and **60** provided at the rear of the lid **30**.

[0039] The hinge housing **52** is secured to the outer surface of a rear part of the shell **22** adjacent the lip **24**, and includes an L-shaped shield **66** extending vertically from a horizontal top surface **68** of the hinge housing **52**, a bag tuck opening **70** provided in a region **72** that is recessed from the top surface **68**, and a pivot tube **74** positioned at the rear of the hinge housing **52** on the top surface **68**. The pivot tube **74** has a bore **76** which is adapted to receive the pivot shaft **50**. In some embodiments, the bag tuck opening **70** functions to grip and hold portions of a trash bag, and is defined by a border **78** that has cut-out sections **80**. Portions of the trash bag can be tucked into one or more of the cut-out sections **80** so that these cut-out sections **80** can grip the tucked portions of the trash bag. In some embodiments, the bag tuck opening **70** comprises a circular opening to receive and hold portions of a trash bag. The shield **66** encircles an opening (not shown) in the top surface **68**, and functions to shield or separate the hooked end **82** at the top of the link rod **40**.

[0040] The trim **28** has a pair of pivot ears **54** and **56** that are spaced apart at the rear of the trim **28**. The pivot ears **54** and **56** are spaced so that the pivot tube **74** is snugly fitted between the ears **54**, **56**, as best shown in FIG. **5**. Each ear **54**, **56** has a through-hole **84** that is adapted for receiving the pivot shaft **50**.

[0041] The lid **30** has a pair of pivot ears **58**, **60** that are spaced so that the pivot ears **54**, **56** are snugly fitted between the ears **58**, **60**, as best shown in FIG. **5**. Specifically, the ear **58** has two parallel walls **90** and **92**, with the inner wall **92** positioned snugly next to the pivot ear **54**, and the ear **60** has two parallel walls **94** and **96**, with the inner wall **96** positioned snugly next to the pivot ear **56**. Each ear **58**, **60** has a through-hole **85** that is adapted for receiving the pivot shaft **50**. A pivot holder **86** extends from the inner surface **88** of the lid **30** via a vertical support **102** that is secured to the inner surface **88**. The pivot holder **86** has two parallel vertical walls **104** and **106**, with an L-shaped slot **108** provided in each wall **104**, **106**.

[0042] Thus, the pivot shaft **50** extends through the through-holes **84**, **85** and the bore **76** to pivotably connect the trim **28** and the lid **30** along the same pivot axis.

[0043] The top of the link rod **40** has a hooked end **82** that extends through the hinge housing **52**, and in particular, the opening shielded by the shield **66**. The hooked end **82** is received for pivoting motion inside the slots **108** of the walls **104**, **106**, as best shown in FIG. **5**. Each slot **108** has an upper leg **110** and a lower leg **112**. The hooked end **82** is normally retained for pivoting motion in the upper leg **110** of each slot **108**. When the lid **30** is fully opened, the user can manually push the hooked end **82** into the lower leg **112** of each slot **108**, which will then secure the lid **30** in the opened position until the hooked end **82** is disengaged from the lower leg **112** of each slot **108**.

[0044] Referring now to FIG. **8**, the trim **28** includes a lock mechanism that functions to secure the trim **28** to the lip **24** of the shell **22**. The lock mechanism includes at least one hook element **120** that is secured to the inside of the base **44** of the trim **28**. The hook element **120** has an inner curved surface **122** that is adapted to receive the rounded lip **24**, thereby securing the lip **24** (and the shell **22**) to the trim **28**. A handle **124** can be provided on the outside of the base **44** adjacent the location of the lock mechanism, so that a user can grip the handle **124** to lift the trim **28** from the shell **22**.

[0045] In use, the user can step on the foot pedal **36** to cause the lid **30** to open. The user can adjust the hooked end **82** into the lower leg **112** of the slots **108** to lock the lid **30** in the opened position. The user can then grip the handle **124** to lift (i.e., separate) the trim **28** from the lip **24** of the shell **22**, with the trim **28** pivoting about the same pivot axis as the lid **30**. Next, the user can insert a trash bag into the interior of the shell **22**, and then invert the mouth of the trash bag over the annular lip **24**. The outwardly-extending, rounded construction of the lip **22** is effective in retaining the inverted mouth of the trash bag at the lip **24**. This is illustrated in FIG. **2**. In addition, part of the trash bag can be inserted into the bag tuck opening **70**. The trim **28** is then pivoted downwardly until it is rested on top of the lip **24**, with the lip **24** secured inside the hook element(s) **120**. The mouth of the trash bag will essentially be sandwiched by the trim **28** and the lip **24**, thereby ensuring that the mouth of the trash bag is always opened during use, and that the trash bag will be retained at the top of the shell **22**. The user can then move the hooked end **82** into the upper leg **110** and pivot the lid **30** downwardly to be closed, as shown in FIG. **1**. To replace the trash bag, the user can open the lid **30** and lift the trim **28** in the manner described above, and then lift the trash bag from the shell **22** before replacing it with a new trash bag.

[0046] Thus, the trash can assembly **20** provides several features that are effective in retaining a trash bag at the mouth of the shell **22**. For example, the outwardly-extending lip **24** of the shell **22** makes it easy for the user to invert the mouth of the trash bag to retain the trash bag at the lip **24**. The trim **28** securely retains the mouth of the trash bag at the lip **24** of the shell **22**. The locking element ensures that the trim **28** is secured to the lip **24** of the shell **22** so that the trash bag cannot be inadvertently disengaged from the lip **24**. In addition, the user can tuck a portion of the trash bag into the bag tuck opening **70**. All of these features ensure that the trash bag is retained securely at the lip **24** of the shell **22**.

[0047] Referring to FIGS. **9-15**, an alternate embodiment of an integrated base assembly is illustrated, further to the embodiment shown in FIGS. **3** and **7**. In accordance with this embodiment, the step trash can assembly **200** is similar to assembly **20** in the earlier embodiment, with the exception of the base assembly **204**. In particular, the step trash can assembly **200** includes a hollow canister body **202**, a pivotally supported lid (not shown, but can be similar the lid **30** in the earlier embodiment), and the base assembly **204**. The base assembly **204** comprises a base **208**, a liner **210** supported on the base **208**, and a step mechanism supported at bottom of the base **208**.

[0048] The canister body **202** may be made of brushed, polished, painted or otherwise finished plastic or metal. In the illustrated embodiment, the canister body **202** is cylindrical of a circular cross-section and made of polished steel. Other cylindrical canister body of other cross-sectional geometry may be structured without departing from the scope and spirit of the present invention. The top of the canister body **202** is covered by a hinged lid (not shown), which may be the same or different material and/or finish as the canister body **202**. The bottom of the canister body **202** has a smooth inwardly rolled flange **206** (or another inwardly extending flange), through which the base assembly **204** is installed. Optionally, an inner bucket (not shown) may be provided as a liner for holding a plastic trash bag. As shown in the earlier embodiment, trim ring may be provided for securely retaining a plastic bag against the opening of the canister body **202**, or the inner bucket if one is provided.

[0049] The base assembly **204** includes a base **208**, which supports a bowl-shaped liner **210**. The base **208** is inserted through the bottom section of the canister body **202**. In this embodiment, the base **208** is inserted into the canister body **202** such that the bottom of the base is substantially flushed with the bottom edge of the canister body **202**. With the base **208** substantially concealed inside the bottom of the canister body **202**, the overall aesthetics of the trash can assembly **200** is improved. With the canister body **202** made of polished steel, the overall trash can assembly looks cleaner, with the polished steel canister body **202** extending top to bottom.

[0050] The liner **210** provides a smooth or finished base for the interior of the canister body **202**. The liner **210** is sized to extend substantially across a horizontal planar section within the cylindrical wall of the canister body **202**, such that one viewing from the top of the canister body **202** would see the liner **210** only, with the other components of the base assembly **204** substantially concealed from view (top view in FIG. **12**). The bowl-shaped liner **210** does not extend significantly upwardly inside the canister body **202**, but provides a concave bottom wall of a low height, compared to the height of the canister body **202**. The bowl-shaped liner **210** protects the step mechanism from trash and provides an effective catchment for trash dropped directly into the trash can (e.g, from a broken trash bag). The liner **210** is provided with several small openings **211** for bleeding air within the canister body **202**. In some embodiments, air can be expelled through the small openings **211** and the base assembly **204** when a plastic trash bag is placed into the canister body **202**, so as to facilitate placement of the plastic trash bag. Furthermore, the small openings **211** prevent forming of a vacuum between the plastic trash bag (full of trash) and the canister body **202** and/or the liner **210**. This facilitates removal of a trash bag since vacuum between the plastic trash bag and the canister body **202** and/or the liner **210** may make it hard to pull up and remove the plastic trash bag. At the bottom side of the liner **210**, several legs **220** extend towards the base **208**. In the illustrated embodiment, four legs **220** are shown. The number

of legs may be more or less than four. Each leg **220** has a bore **221**. The base **208** is provided with complementary leg pads **222**, each having a center through-hole **223**. When the liner **210** is mounted on the base **208**, each bore **221** of each leg **220** is aligned with the through-hole **223** in each leg pad **222**. A screw (e.g., a self-tapping screw, not shown) is applied through the through-hole **223** of the foot pad **222** and fastened to the bore of the leg **220**. Feet **224** (each in the form of a rubber cap insert) are provided for standing the trash can. Each foot **224** is inserted into an opening **225** provided at the bottom of each leg pad **222**.

[0051] A number of hollow pedestals or openings **209** are provided on the base **208**, to provide additional support of the liner **210**. The top of the pedestals **209** form a concave profile to conform to and accommodate the convex bottom of the liner **210**. Also, the pedestals **209** provide open access to the small openings **211** of the liner **210** from the bottom of the trash can. This access makes it easier to clean portions of the bottom of the liner **210** and the small openings **211** from bottom of the trash can.

[0052] The step mechanism comprises a pedal bar **212** having a foot pedal **214** at one end and a hinge **215** at another end. A pivot axle **216** is supported at the bottom of the base **208**. The pivot axle **216** has one end inserted into slot **230** on one side of the cavity **217** at the bottom of the base **208**, and another end held at the notch **231** and fastened to the bottom of the base **208** by a screw **232** at the other side of the cavity **217**, so that the end inserted into the slot **230** would not retract from the slot **230**. The pivot axle **216** so assembled would withstand a user's foot pressure on the pedal bar. The pedal bar **212** is support for pivoting on the pivot axle **216**, within the cavity **217** defined at the bottom of the base **208**. The pedal bar **212** has a bottom pivot channel **218** across the width of the pedal bar **212**, which receives the pivot axle **216**. The pivot axle **216** may be positioned relative to the foot pedal **214** and the hinge end **215** to provide the required leverage to operate a link rod **201** to lift the lid of the trash can.

[0053] The pedal bar **212** and the foot pedal **214** may be separate pieces (see, for example, U.S. Pat. No. 7,044,323, which is fully incorporated by reference herein). The foot pedal **214** can be attached to the end of the pedal bar **212** after the base assembly **204** has been installed in the cavity **217** at the bottom of the canister body **202**. In the illustrated embodiment, an opening **236** is provided at the edge of the base **208**, through which the foot pedal **214** extends. The foot pedal end can be inserted through the opening **236** to attach to the end of the pedal bar **212** after the latter is supported on the pivot axle **216**. Alternatively, the pedal bar **212** and foot pedal **214** may be a unitary piece.

[0054] Prior to assembling the base **208** onto the bottom of the canister body **202**, the components of the base **208** may be fully assembled or partially assembled, depending on the desired packaging and shipping. For example, the pedal bar **212** and pivot axle **216** are installed at the bottom of the base **208**, and the bowl liner **210** is fastened at the legs **220** to the base **208** (using screws through holes **223** in the leg pads **222**). This fully assembled base assembly **204** may be maintained separate from the canister body **202** in the product packaging, to be shipped to a customer and finally assembled by the end user at the site of use. Alternatively, the assembled base assembly **204** may be shipped fully assembled with the canister body **202**. The integral base assembly improves manufacturability and costs of manufacturing. Since the base assembly **204** is pre-manufactured as a fully assembled module, it can be easily assembled to the canister body **202** at the point of manufacture by end users.

[0055] The base assembly **204** can be attached to the canister body **202** by several alternative methods. The preferred method would be to apply a fastener-less mechanical fit between the base assembly **204** and the canister body **202** to securely assemble the parts. For example, a number of protruding tabs **240** are provided along the rim of the base **208** (e.g., integrally molded with the rim of the base **208**), which securely latch onto the inwardly rolled flange **206** at the bottom edge of the canister body **202**. Alternatively, a setting fasteners (e.g., a screw) may be used to secure the base assembly **204** on the canister body **202**, for example, through the side of the canister body **202**. However, this would be less aesthetic appealing, especially when the canister body **202** is made of polished steel finish.

[0056] The hinge **215** end of the pedal bar **212** is hingedly attached to one end **205** of the link rod **201** for operating the lid (not shown in FIGS. **9-15**, but may be similar to lid **30** in the earlier described embodiment). In the illustrated embodiment, the link rod **201** extends through an opening **203** in the canister body **202** and runs outside of the canister body **202** vertically to the lid (see, FIG. **3**). The other end **207** of the link rod **201** is hingedly connected to the lid (see FIG. **3**). The link rod **201** may be positioned on the inside of the canister body **202**, in an alternate embodiment.

[0057] The base assembly may be made primarily of durable plastic material, such as ABS, polyeurathane, vinyl, etc. The pivot axle **216** is made of more durable metal.

[0058] In accordance with the present invention in reference to the illustrated embodiment, there is significantly less number of parts required to provide a sturdy base assembly for foot pedal operation. A separate bucket liner is not required as a trash bag can be secured to the trash can and shielded from moving parts on the bottom portion of the trash can without a complete bucket liner. The assembly process requires minimal use of fasteners. In the illustrated embodiment, screw **232** is applied to secure the pivot axle **216**, and screws for fastening the liner **210** to the base **208**. The rest of the components in the base assembly **204** do not require separate fasteners, and the attachment of the base assembly **204** to the canister body **202** does not require separate fasteners.

[0059] While the invention has been particularly shown and described with reference to the preferred embodiments, it will be understood by those skilled in the art that various changes in form and detail may be made without departing from the spirit, scope, and teaching of the invention. Accordingly, the disclosed invention is to be considered merely as illustrative and limited in scope only as specified in the appended claims.

1. A step trash can assembly, comprising:
a canister body, having an edge at the bottom of the canister; and
a base assembly, which comprises:
a base,
a liner supported on the base, the liner sized to extend substantially across a horizontal planar section within the canister body; and
a step mechanism supported at the bottom of the base,
wherein the base assembly is attached to inside bottom of the canister body.

2. The step trash can assembly of claim **1**, wherein the base, liner and step mechanism are structured to be assembled prior to attachment to the canister body.

3. The step trash can assembly of claim **2**, wherein the base assembly is attached to the canister body without using a separate fastener piece.

4. The step trash can assembly of claim **3**, wherein the base assembly is attached to the canister body by means of protruding tabs provided around the base, and wherein the tabs latch onto an edge at the bottom of the canister body.

5. The step trash can assembly of claim **4**, wherein the edge at the bottom of the canister body comprises a rolled flange, on which the tabs latch.

6. The step trash can assembly of claim **1**, wherein liner is bowl-shaped.

7. The step trash can assembly of claim **6**, wherein the liner is provided with small openings for bleeding air.

8. The step trash can assembly of claim **6**, wherein the base, liner and step mechanism are structured to be assembled prior to attachment to the canister body.

9. The step trash can assembly of claim **8**, wherein the base assembly is attached to the canister body without using a separate fastener piece.

10. The step trash can assembly of claim **9**, wherein the base assembly is attached to the canister body by means of protruding tabs provided around the base, and wherein the tabs latch onto an edge at the bottom of the canister body.

11. The step trash can assembly of claim **10**, wherein the edge at the bottom of the canister body comprises a rolled flange, on which the tabs latch.

12. The step trash can assembly of claim **1**, wherein the step assembly comprises:

a pedal bar, having a foot pedal at one end and a hinge at another end; and

a pivot axle supported at the bottom of the base, providing pivotal support of the pedal bar.

13. The step trash can assembly of claim **12**, wherein the base comprises a cavity at the base, in which the step mechanism is installed.

14. The step trash can assembly of claim **12**, wherein the base, liner and step mechanism are structured to be assembled prior to attachment to the canister body.

15. The step trash can assembly of claim **13**, wherein the base assembly is attached to the canister body without using a separate fastener piece.

16. The step trash can assembly of claim **15**, wherein the base assembly is attached to the canister body by means of protruding tabs provided around the base, and wherein the tabs latch onto an edge at the bottom of the canister body.

17. The step trash can assembly of claim **16**, wherein the edge at the bottom of the canister body comprises a rolled flange, on which the tabs latch.

18. The step trash can assembly of claim **7**, wherein the base comprises openings corresponding to the small openings of the liner.

19. A base assembly module for use in a step trash can, comprising:

a base,

a liner supported on the base, the liner sized to extend substantially across a horizontal planar section within the canister body; and

a step mechanism supported at bottom of the base,

wherein the base, liner and step mechanism are structured to be assembled in a module prior to attachment to the step trash can.

20. The step trash can assembly of claim **19**, wherein liner is bowl-shaped.

21. The step trash can assembly of claim **20**, wherein the step assembly comprises:

a pedal bar, having a foot pedal at one end and a hinge at another end; and

a pivot axle supported at the bottom of the base, providing pivotal support of the pedal bar.

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