

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLUME DISTRIBUTORS, INC.,

Petitioner,

v.

SIMPLEHUMAN LLC,

Patent Owner

Case IPR2024-00050

U.S. Patent No. 10,683,165 B2

Title: TRASH CAN ASSEMBLY

DECLARATION OF PROF. STEVE VISSER FOR THE

PETITION FOR *INTER PARTES* REVIEW OF

U.S. PATENT NO. 10,683,165 B2

LIST OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 10,683,165 B2 to Yang, et al. (filed October 13, 2017, issued June 16, 2020) (“’165 patent”)
1002	Public file history of the ’165 Patent
1003	Declaration of Prof. Visser
1004	Public File History of App. 13/787,638 (Pat. 9,790,025)
1005	Pat. 4,953,740 to Koda (“Koda”)
1006	US Pat. 4,753,367 to Miller (“Miller”)
1007	Publication 2010/0147865 to Yang (“Yang ’865”)
1008	Publication 2009/0194532 to Yang (“Yang ’532”)
1009	Simplehuman’s Disclosure of Asserted Claims and Infringement Contentions
1010	Order Setting Pretrial Deadlines (Dkt. 22)
1011	Simplehuman’s Proposed Constructions for Identified Patent Claim Terms
1012	U.S. Patent No. 2,888,307 to Graves et al.

Declaration of Prof. Visser for the Petition of IPR for Pat. 10,683,165

1013	U.S. Patent No. Patent 4,996,467 to Day
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Declaration of Prof. Visser for the Petition of IPR for Pat. 10,683,165

1. My name is Steven Carl Visser. My primary residence is 2472 Gala Court, West Lafayette, IN 47906. I am over 18 years of age and I am competent to testify as to the matters set forth herein if I am called upon to do so at trial, hearing, or deposition. In this declaration, I give my opinions on the validity of claims 1, 2, 7, 10, 11, and 15 of U.S. Patent No. 10,683,165 ('165 Patent) (Exhibit 1001). I also give the basis of my opinions.

2. This declaration contains statements of my opinions formed to date, and the bases and rationale for these opinions. I reserve the right to offer supplemental or amended opinions based on further review of materials in this case, including additional evidence, opinions, discovery argument, testimony and/or other information that may be provided to me after the date of this declaration.

3. I am being compensated at my usual consulting rate per hour for time spent on this matter, plus reimbursement for reasonable expenses. My compensation is in no way dependent on the opinions I reach or the outcome of this case. I have no financial interest in the outcome of this proceeding or in either of the parties.

4. I have considered the '165 Patent, its prosecution history, and the following documents in preparing my declaration:

Declaration of Prof. Visser for the Petition of IPR for Pat. 10,683,165

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1013	U.S. Patent No. Patent 4,996,467 to Day

I. QUALIFICATIONS AND EXPERIENCE

5. My background, qualifications, and experience relevant to the issues in this proceeding are summarized below. My *Curriculum Vitae* is attached as Exhibit A.

6. I received an MFA in Industrial Design in 1988 from the University of Illinois at Urbana-Champaign. I have also received a Bachelor of Art with a major in Fine Art in 1982 from Northwestern College, Orange City, Iowa.

7. I have been involved in the industrial design for 37 years and have experience in both the practical and academic areas of the industrial design field, which is detailed in my curriculum vitae.

8. I am currently a tenured Full Professor at Purdue University in the Industrial Design Program. I have been teaching at Purdue since 1989. In 1996–97, I served as a Fulbright Professor at the University of Art and Design Helsinki. Before teaching, I worked as an industrial designer at Hari and Associates in Skokie, Illinois.

9. Industrial designers focus on the integration of the functional and psychological requirements of products. We consider the functional needs of both the manufacturing process and the functional needs of the consumer. We consider various manufacturing processes and materials in the design of a product, with the goal of creating a design that can be profitably produced and still fulfill the

consumers' needs. Using the tools of production, we create new products that fulfill the ever-changing needs of society. At the same time, we design for the psychological requirements of the consumer. We create the interface and aesthetics that help the consumer understand how to use the product as well as appreciate it. One way to conceptualize what industrial designers do is to compare industrial design to architecture. Architects design buildings and industrial designers design objects to be produced by industry.¹

10. I have designed a variety of products as an industrial designer, ranging from furniture to consumer products, as detailed on my curriculum vitae. I have designed furniture and other product designs during my 30+ years of design experience, a few examples are: cell phones for Samsung, a folding bassinet for Redmon, a felt trivet, an interactive play table, a knock down stool, a wheel chair lift for BraunAbility, and several other products.

11. Of relevance to the present matter, I have designed several products made with sheet metal and injection molded construction: I have specifically designed: a sheet metal housing for a coulter blood analyzer in 1989, the Boilermaker Special V, Purdue Universities mascot in 1992 and rebuilt in 2011 as

¹ Paraphrased from "What is Industrial Design," Industrial Designers Society of America, available at <http://www.idsa.org/events/what-id>.

the Special VII which is still in use today. A support structure for a chair which receive a design patent in 2002. Wardrobe valets for Proman Products LLC in 2005-2006, a MXR programable light designed with sheet metal construction in 2006, and track lighting and pendant lamps for Omega Lighting (now part of Philips Lighting) in 2006-2007. More recently, I have designed: a stamped steel vertical channel for BraunAbility for which I received a design patent in 2017, an injection molded hand controller, and a neonatal crib and Kangaroo Mother Care Hospital bed designed for Save The Children in Malawi Africa in 2018-2019.

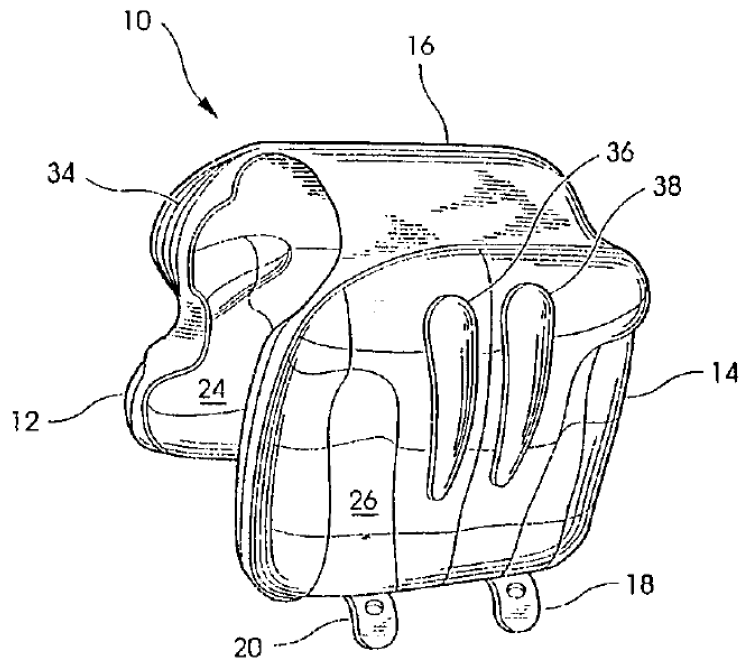
12. From 1992-1995, I worked on the design, patenting, and production of Compliers fishing pliers. The production version shown below had a one-piece plastic design. Ashok Midha and I are the inventors of the compliant pliers, U.S. Patent No. 5,522,290. The production version of *Compliers*, which is a one-piece design that flexes to grip the hook for fishing.



13. In 1993 I designed a poster panel for an exhibition for the IDSA National Conference. The panel was one of several attached to a freestanding panel

system. The exhibition was highlighting the design of the compliant fishing pliers which had won a Silver Industrial Design Excellence Award.

14. In 1996, Bruce Munson and I received a U.S. design patent US5,568,928 for a video game controller. It had flexible straps with a series of holes to attach the controller to exercise equipment. The early prototype brought to me by Bruce Munson was a series of buttons attached with Velcro to the handlebar of exercise equipment. Together we developed the design shown below.



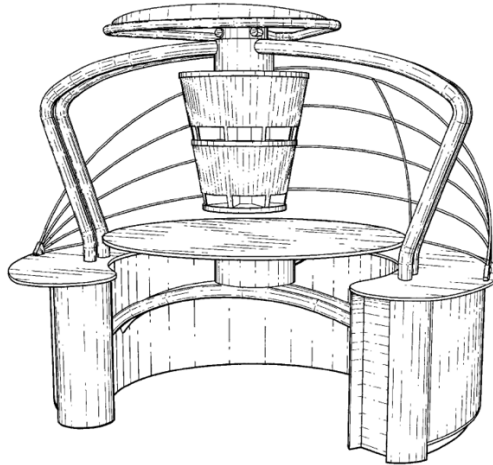
15. In 1996-1997, I designed a bassinet for the Redmon Company. The bassinet was for babies between birth and 6 months of age. It was made of a plastic and fabric structure that would fold up for storage.



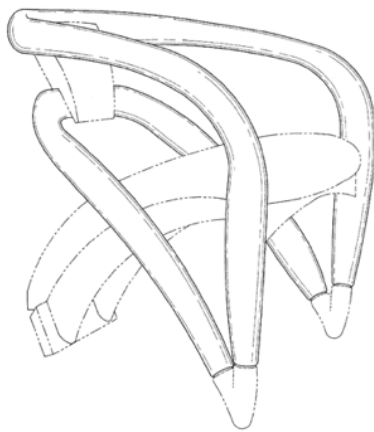
16. In 1997, Kyle Bennet and I received U.S. patent 5,625,931 for the design of a resilient clamp. It was a one-piece plastic construction with soft rubber over-molded portions. It relied upon the resilient flexibility of the plastic to open and to clamp.



17. In 2001, I and a group of students received the US Patent D440,786 for the design of a rotary assembly table. The furniture included an expandable partition that provided protection to divide the rotating table from those around. The design also included a modesty panel under the table.



18. In 2002, I received the US Patent D463,925 for a *Support Structure* for a chair. The design claimed the ornamental design of the structure of the chair. Figure 6 of the *Support Structure* is shown below on the left. Below, on the right, is the *Quantum Chair*, which is a prototype from 2001 version of the patented design. It was designed with a wood, metal and upholstery construction.



19. In 2003, I designed a KD pedestals for use in the IN design exhibition at the Lafayette Art Museum. The pedestals used a slot and groove construction technique and were used to display products on the top surface in an exhibition.

20. In 2004, I designed the Giwa Gift Box. It was produced with die-cut flexible rubber sheet. It was a selected design in the International Travel Souvenir Design Competition in Korea. The design included flat pieces which could be folded and attached to change from flat into 3-D.



21. In 2006, we designed a cell phone for Samsung called *Clip* that rotated open and closed and could clip onto a pocket. It also had a trim piece around the keypad.

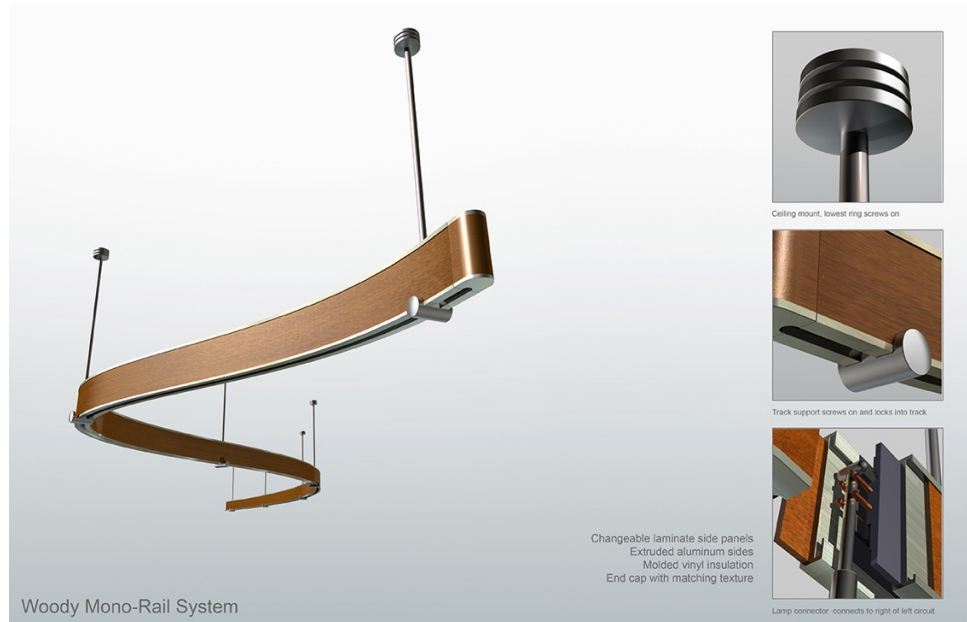
Clip

Problem: Mobile phones in a pocket are uncomfortable, especially if jeans are tight. It is so difficult to get a phone out of your pocket while driving.

Solution: The *Clip* phone "clips" to the edge of your clothing for convenience, comfort, and style.



22. In 2006-2007, we designed *Woody*, a track lighting that could be flexed to be adjusted various curved shapes, to define the lighting space. The design was created for Omega Lighting from Tupelo MS.



23. In 2007 we designed *Umbrella* a pendant lamp for Omega lighting that was made with a creased surface in the fabric that looked like a folded umbrella.



24. In 2015-2016, I co-designed the *QLD Wheelchair Lift*. The wheelchair lift that was targeted for the European market. The design would dynamically fold in and out of the back of a vehicle. In 2017, the system was awarded four design patents. The design also won a gold award in the A' Design Competition in Italy, and an International Design Award (IDA) gold award in California.



25. In 2018-2019, I designed a neonatal crib for use with premature babies in Malawi Africa. Save the Children sponsored the project. I worked with doctors,

nurses, and engineering students at Purdue and in Malawi to develop a better neonatal crib to encourage more skin to skin contact for premature babies.

26. My design work has been recognized nationally and internationally. My designs have received recognition at various international design competitions, including Award of Excellence in the Taiwan International Design Competition, Finalist in the Korean International Travel Souvenir Design Competition, Second Place in Neste Forma Finlandia 3 International Plastic Design Competition, and Silver Winner in Idea95 Industrial Designers Excellence Award, A'Design Gold 2017, and an IDA Gold 2018.

27. My designs have been exhibited both nationally and internationally, including at the Museum of Modern Art in New York, the Chicago Athenaeum: Museum of Architecture and Design, the Cooper Hewitt National Design Museum (Smithsonian) in New York, the Groninger Museum (Netherlands), Veletržni Palác Prague (Czech Republic), and the Biennale Internationale Design 2000 and 2002, which was sponsored by the Museum of Modern Art in Saint-Étienne (France), KSBDA exhibition in Moscow in 2019.

28. I am a named inventor (with co-inventors) on 12 U.S. patents. My *Curriculum Vitae*, attached as Exhibit A, lists all publications that I have authored or co-authored in the previous 10 years, as well as the patents on which I am a named inventor.

29. I believe I am qualified to testify as an expert witness with respect to the inventions at issue in this matter. Particularly relevant is my experience designing and manufacturing furniture and products that are made with injection molded plastic and sheet metal fabrication. My role as a professor at Purdue University, where I teach students to design innovative new consumer products, taking into account aesthetics, function, structure, and manufacturing techniques; and my experience both in personally designing and in instructing students in the design and manufacture of products, like the trash cans at issue in this case.

30. As a professor, I introduce design for sheet metal fabrication and injection molded products in the second year. In the junior and senior years students I give projects in which they can use various manufacturing processes combined. For example, I arranged a junior level project with National Furniture in which the students presented their final designs. They incorporated plastic, wood, metal and soft goods in their designs.

II. GROUND ON WHICH MY OPINION IS SOUGHT

31. It is my understanding that Volume Distributors is asking for my opinion on the validity of the '165 Patent based on the following grounds. I have been asked to assume for purposes of this IPR that the '165 patent is entitled to a priority date of March 9, 2012.

32. **Ground 1:** Whether Claims 1, 2, 10, 11, and 15 are obvious over Publication 2010/0147865 to Yang (“Yang ’865”) in view of U.S. Pat. 4,753,367 to Miller (“Miller”) under 35 U.S.C. § 103.

33. **Ground 2:** Whether Claims 7 and 13 is obvious over Yang ’865 and Miller in view of Publication 2009/0194532 to Yang (“Yang ’532”) under 35 U.S.C. § 103.

34. **Ground 3:** Whether Claims 1, 2, 10, 11, and 15 are obvious over Patent 4,953,740 to Koda (“Koda”) in view of Miller under 35 U.S.C. § 103.

35. **Ground 4:** Whether Claim 7 is obvious over Koda and Miller in view of Yang ’532 and under 35 U.S.C. § 103.

36. I have been asked to assume that these references all have dates such that they qualify as prior art.

III. LEGAL STANDARDS

37. I am not an attorney and will not offer opinions on the law, but I have been instructed in and applied the law as described in this section.

A. Prior Art

38. I understand that a patent or other publication must first qualify as prior art before it can be used to invalidate a patent claim.

39. I am informed by counsel that the applicable law in this case for prior art is 35 U.S.C. § 102 as written before the America Invents Act.

40. I further understand that the “priority date” of a patent is the date on which it is filed, or the date on which an earlier-filed patent application is filed if the patentee claims the benefit of priority to that earlier-filed patent application. I further understand that the priority date is significant because patents, systems, or documents that are public prior to the priority date may invalidate the claims.

41. I understand that a U.S. patent may qualify as prior art to an asserted patent if the date of publication or issuance is prior to the invention in the asserted patent. I further understand that a printed publication, such as a book or an article published in a magazine or trade publication, may qualify as prior art to an asserted patent if the date of publication is prior to the invention of the asserted patent. A paper or presentation may also qualify as prior art if presented at a publicly available seminar, conference, or trade show prior to the invention in the asserted patent.

42. I understand that a U.S. patent or published patent application may qualify as prior art to the asserted patent if the application for that U.S. patent or published patent application was filed in the United States before the invention of the asserted patent.

43. I understand that to qualify as prior art, a reference must contain an enabling disclosure that allows one of ordinary skill to practice the claims without undue experimentation.

44. I understand that documents and materials that qualify as prior art can be used to invalidate a patent claim as anticipated or as obvious.

B. Anticipation Under § 102

45. I understand that once the claims of a patent have been properly construed, determining anticipation of a patent claim requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

46. I understand that a prior art reference “anticipates” an asserted claim, and thus renders the claim invalid, if all elements of the claim are disclosed in that prior art reference, either explicitly or inherently (i.e., necessarily present or implied).

47. I understand that a patent is anticipated if before such person’s invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.

48. I have written this report with the understanding that in an *inter partes* review proceeding, anticipation must be shown by a preponderance of the evidence.

C. Obviousness Under § 103

49. I have been instructed by counsel on the law regarding obviousness, and understand that even if a patent is not anticipated, it is still invalid under 35 U.S.C. § 103, as written before the America Invents Act, if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole

would have been obvious at the time the invention was made to a person of ordinary skill in the pertinent art.

50. I understand that a person of ordinary skill in the art provides a reference point from which the prior art and claimed invention should be viewed. This reference point prevents a person of ordinary skill from using one's insight or hindsight in deciding whether a claim is obvious.

51. I also understand that an obviousness determination includes the consideration of various factors such as (1) the scope and content of the prior art, (2) the differences between the prior art and the challenged claims, (3) the level of ordinary skill in the pertinent art, and (4) the existence of secondary considerations such as commercial success, long-felt but unresolved needs, failure of others, etc.

52. I am informed that secondary considerations of non-obviousness may include (1) a long felt but unmet need in the prior art that was satisfied by the invention of the patent; (2) commercial success or lack of commercial success of processes covered by the patent; (3) unexpected results achieved by the invention; (4) praise of the invention by others skilled in the art; (5) taking of licenses under the patent by others; and (6) deliberate copying of the invention. I also understand that there must be a relationship or "nexus" between any such secondary indicia and the invention. I further understand that contemporaneous and independent invention by others is a secondary consideration supporting an obviousness determination.

53. I understand that an obviousness evaluation can be based on a combination of multiple prior art references. I understand that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but other times the link between two or more prior art references is simple common sense. I further understand that obviousness analysis recognizes that market demand, rather than scientific literature, can drive innovation, and that a motivation to combine references may be supplied by the direction of the marketplace.

54. I understand that if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

55. I also understand that practical and common-sense considerations should guide a proper obviousness analysis, because familiar items may have obvious uses beyond their primary purposes. I further understand that a person of ordinary skill in the art looking to overcome a problem will often be able to fit the teachings of multiple publications together like pieces of a puzzle, although the prior art need not be like two puzzle pieces that must fit perfectly together. I understand that obviousness analysis therefore considers the inferences and creative steps that a person of ordinary skill in the art would employ under the circumstances.

56. I understand that a particular combination may be proven obvious by showing that it was obvious to try the combination. For example, when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp because the result is likely the product not of innovation but of ordinary skill and common sense.

57. I understand that the combination of familiar elements according to known methods may be proven obvious when it does no more than yield predictable results. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, obviousness likely bars its patentability.

58. It is further my understanding that a proper obviousness analysis focuses on what was known or obvious to a person of ordinary skill in the art, not just the patentee. Accordingly, I understand that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. Additionally, a reference outside of the field of endeavor may still be prior art if the reference is reasonably pertinent to the particular problem being solved by the patentee.

59. I understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not found explicitly or inherently in the reference can be supplied by the common sense and knowledge of one of skill in the art.

60. I understand that a person of ordinary skill could have combined two pieces of prior art or substituted one prior art element for another if the substitution can be made with predictable results, even if the swapped-in element is different from the swapped-out element. In other words, the prior art need not be like two puzzle pieces that must fit together perfectly. The relevant question is whether prior art techniques are interoperable with respect to one another, such that that a person of skill would view them as a design choice, or whether a person of skill could apply prior art techniques into a new combined system. The person of ordinary skill would use ordinary creativity and is not limited like an automaton.

61. In sum, my understanding is that prior art teachings are properly combined where a person of ordinary skill in the art having the understanding and knowledge reflected in the prior art and motivated by the general problem facing the inventor, would have been led to make the combination of elements recited in the claims. Under this analysis, the prior art references themselves, or any need or problem known in the field of endeavor at the time of the invention, can provide a

reason for combining the elements of multiple prior art references in the claimed manner.

62. I have been informed and understand that the obviousness analysis requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis. As well as the analysis of obviousness to a person of skill in the art as of the priority date.

63. I have written this report with the understanding that in an *inter partes* review, obviousness must be shown by a preponderance of the evidence.

D. Claim Construction

64. I have been instructed by counsel on the law regarding claim construction and patent claims and understand that a patent may include two types of claims, independent claims and dependent claims. An independent claim stands alone and includes only the limitations it recites. A dependent claim can depend from an independent claim or another dependent claim. I understand that a dependent claim includes all the limitations that it recites in addition to all of the limitations recited in the claim from which it depends.

65. It is my understanding that in proceedings before the USPTO, claims are construed similarly as in district court litigation, and that this standard is sometimes referred to as the *Phillips* standard. Under this standard, it is my understanding that claim terms are given the ordinary and customary meaning the

term would have to a person of ordinary skill in the art (POSITA) at the time of the invention, in view of the specification and file history.

66. I have been asked to apply the following claim constructions provided by Patent Owners in Exhibit 1011.

<u>Term</u>	<u>Construction</u>
“trim member,” claims 1, 7, 10	Plain and ordinary meaning, which is an externally visible ornamentation member
“detent,” claim 2	Plain and ordinary meaning, which is a catch that prevents motion until released
“longitudinal axis,” claims 10	Plain and ordinary meaning, which is the long axis
“power,” claims 1, 13, 15	Plain and ordinary meaning (opposing the more limited proposal “electric power”)
“power transmission device” in claims 1, 13, 15	Plain and ordinary meaning
All other terms	Plain and ordinary meaning; not indefinite.

67. I do not totally agree with the patent owner’s construction, however, I have applied the patent owner’s construction for the sake of my analysis in my declaration for this *inter partes* review.

68. I have formed my opinions regarding the validity of the asserted patent using the claim construction proposals in this section. I am not offering an opinion on indefiniteness in this declaration. I have otherwise formed my opinions regarding the validity of the asserted patent based on the ordinary and customary meanings of claim terms.

E. Level of Ordinary Skill in the Art

69. I have been informed that a person of ordinary skill in the art at the time of the invention is a hypothetical person who is presumed to be familiar with the relevant field and its literature at the time of the invention. This hypothetical person is also a person of ordinary creativity, capable of understanding the scientific principles applicable to the field.

70. It is my opinion that the person of ordinary skill in the art (POSITA) would have an undergraduate BA degree in Industrial Design or Mechanical Engineering with two years of experience. More education or 5-10 years of professional experience in designing products of similar complexity to that described in the patent could also be a POSITA.

71. The basis of my opinion of this level of skill includes my general experience, including my teaching, design work, interaction with students, designers, and engineers, and discussions with people working in industrial design and related engineering aspects (e.g., mechanical engineers). In reaching this

opinion, I have considered the types of problems encountered in the art, the prior art solutions to those problems, the complexity of the technology, and the educational and professional levels of people typically working in the field.

IV. FILE HISTORY

72. I reviewed the file history of the '165 Patent. After the application was filed, Examiner Luo issued a notice of allowance on October 17, 2019. Ex. 1002 page 224. I did not find any rejections before the examiner provided this notice of allowance.

73. The file history, Exhibit 1002 pages 237-242 include time stamps for the examiners search. According to the time stamps the examiner searched from 15:02-19:11 on October 8, 2019. That means the examiner states that just over 4 hours were spent searching for the prior art references. The search terms include over 653 references cited in the applicant's Information Disclosure Statement (IDS). Amazingly, the examiner states at the bottom of pages 243-269 of the applicant's IDS forms the examiner states "all references considered except where lined through /D.L./" none of the 653 references over the 26 pages are lined through. Ex. 1002 pages 243–269. Therefore, the examiner is stating that in one day he or she has reviewed all of these references. I don't know any POSITA or expert witness who could meaningfully review that many references in that short of a time.

74. In my opinion, that the examiner could not have effectively examined all 653 references in the one day that is suggested by the timestamps and the same date make the statement “all references considered”.

V. SUMMARY OF THE '165 PATENT (EX. 1001)

75. The '165 Patent is titled “trash can assembly.” Ex. 1001, title. Figure 1 of the '165 Patent shows a picture of the trash can. When claim 1 begins with “A trash can assembly comprising: a body component,” Figure 1 shows an example. The body component is labeled with “22.”

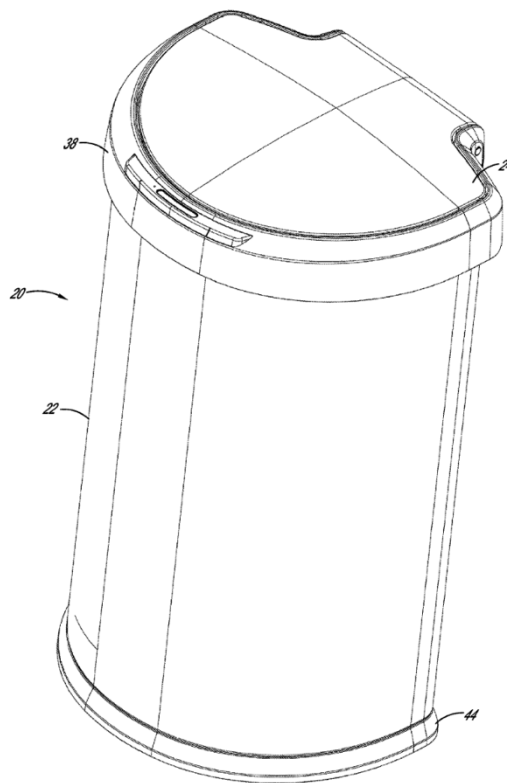
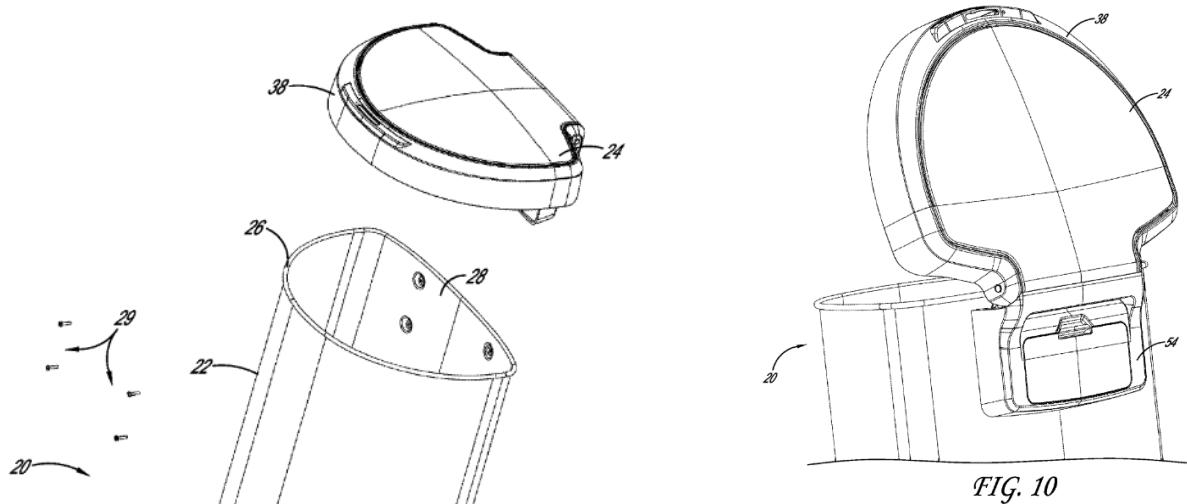


FIG. 1

76. Figures 2, 4, and 10 below show example of the claimed “lid assembly” on top of the trash can. The lid assembly includes two parts: a lid and a trim member.

Figure 2 shows the lid rotating up. Figure 10 shows the lid and trim member rotating up together.



77. Figure 2 of the '165 Patent shows how the lid of the trash rotates or pivots about its hinge at the back to open up.

78. When the trim member is in the open position, a retaining mechanism maintains the trim in the open position against the force of gravity. Ex. 1001 at 17:31-33. This way, a user can change the trash bag before closing the trim. See Columns 10:1-5, 10:29-10:35.

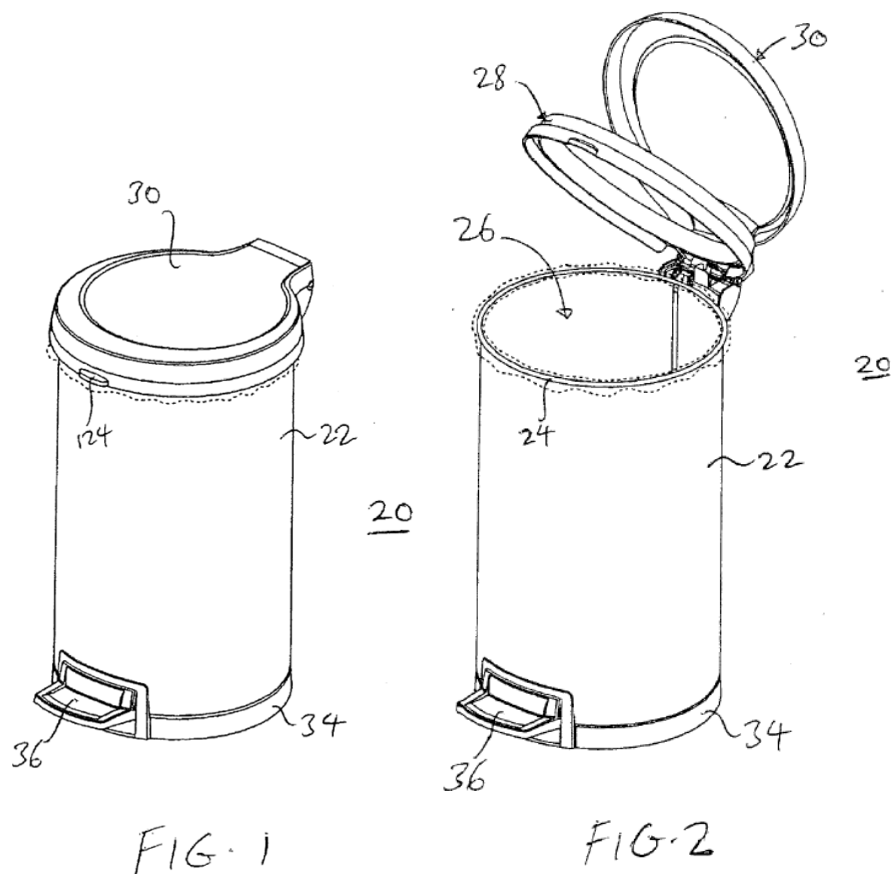
79. The trash can assembly of claim 1 also includes “a power transmission device configured to drive the lid between the lower position and the upper position.” Ex. 1001 at 17:29-30. Examples of lid driving mechanisms include a drive motor, shaft, axel, transmission member, and foot pedal. See Columns 11:42-12:5, 18:13-18:14, 18:22-18:23.

VI. SUMMARY OF THE PRIOR ART

A. Yang '865 (Ex. 1007)

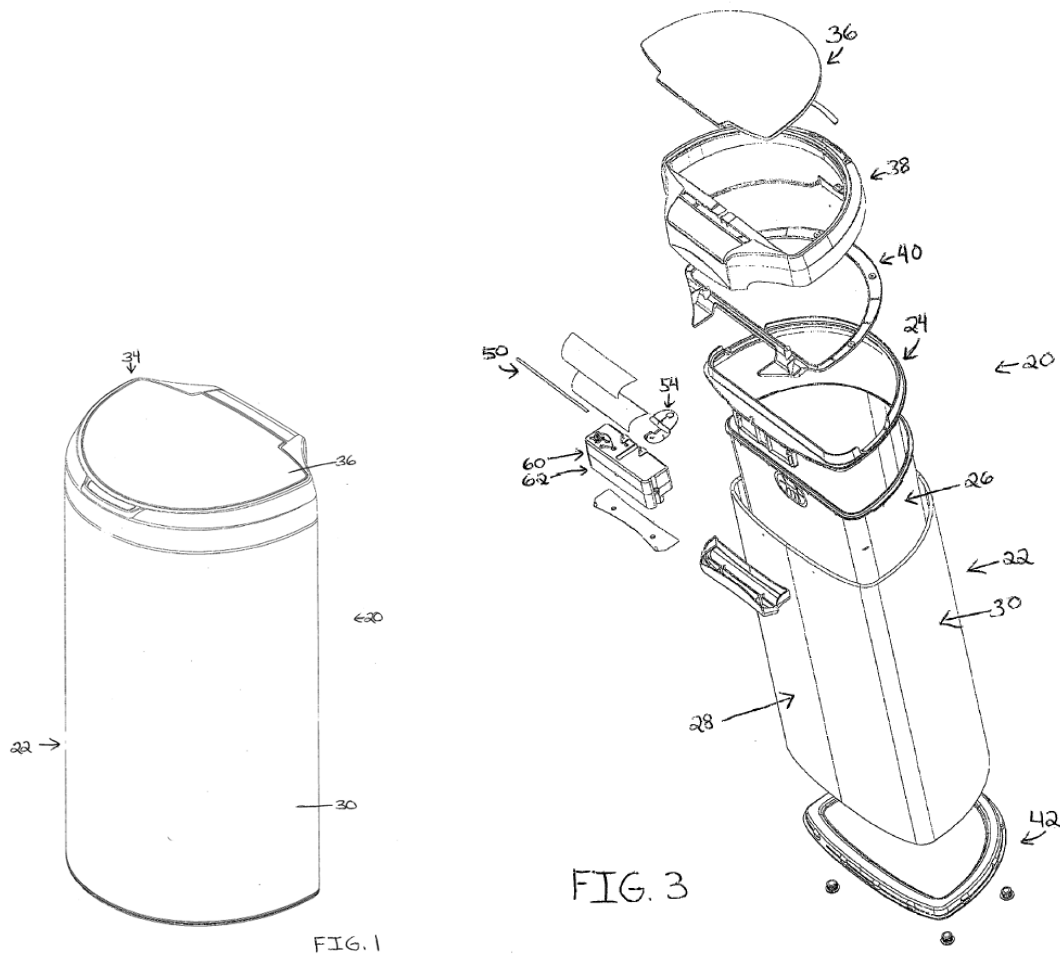
80. I have personally reviewed and studied the patent application known as the Yang '865 Publication. It discloses a Step Trash Can Having Integrated Base and Base Liner. The application was published on June 17, 2010, which is more than a year before the priority date I understand is being asserted in this case.

81. Figure 1 of the Yang '865 publication shows a trash can assembly 20, which includes a lid 30, trim 28, and shell 22. It also has a foot pedal 36 and a pivot shaft 50 that the trim 28 and lid 30 rotate to open as shown in Figure 2.



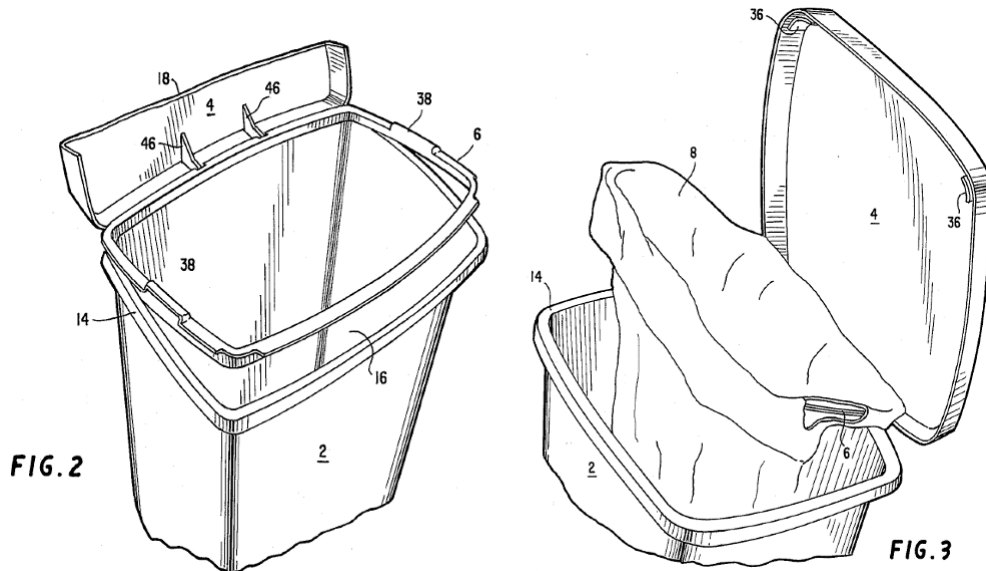
B. Yang '532 (Ex. 1008)

82. The Yang '532 reference is a trash can with a power operated lid. It is similar to Yang '865 in that both are trash cans, both have lids and trim members that pivot open as well as a container for trash. The major difference is the way the lid opens, in Yang '865 a foot pedal is pushed to open the lid and in Yang '532, a motor is used to lift the lid (called a door component 36). See figures 1 and 3 below.



C. Miller (Ex. 1006)

83. Miller is a patent for a trash can with a lid 4 and a bezel 6. Both the lid and the bezel rotate as seen in figures 2 and 3. Miller's bezel rotated to secure and release a trash bag in the container 2 (shell).



84. Miller teaches a way to lock the bezel in the open position for changing the bag. The protruding portions 62 of the hinge on the bezel can flex the vertical wall when rotated open and then rest on beveled corner 66 to hold the bezel up at an angle. Then when the user wants to lower the bezel, one simply presses down and the resilient wall flexes to allow the bezel to return to the lower position. See the text from column 5: 42-68 and figures 14-17.

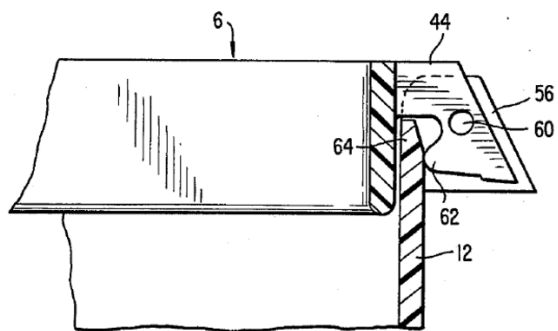


FIG. 14

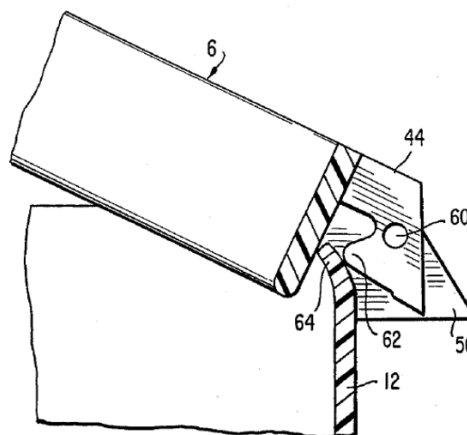


FIG. 15

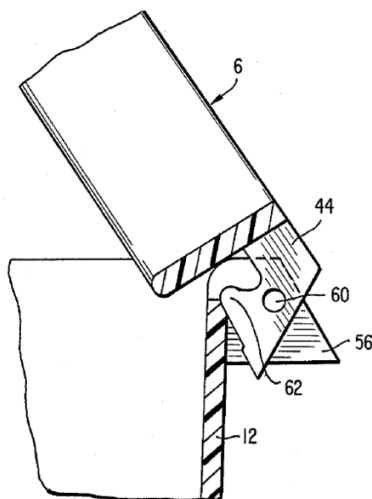


FIG. 16

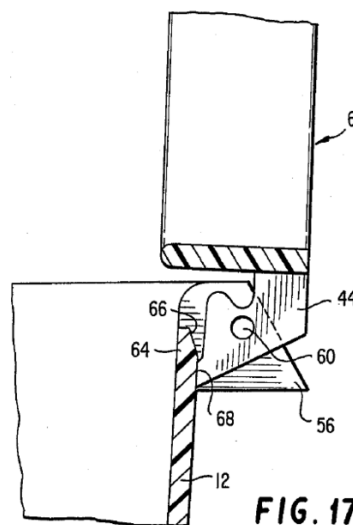


FIG. 17

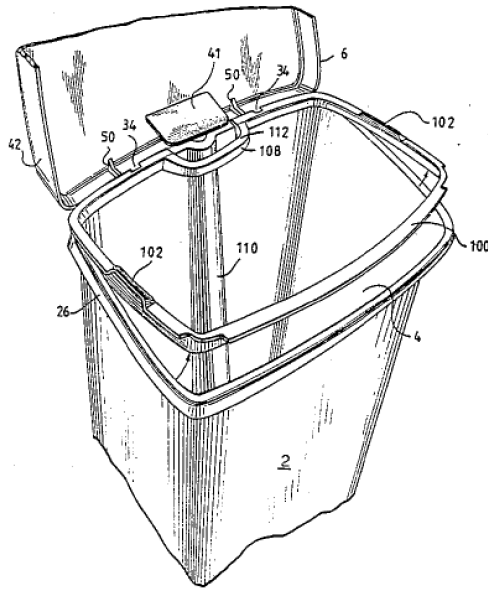
As the bezel 6 is raised from the container rim 14, the protruding portions 62 of its hinge elements move in a radial path about the pivot axis of the bezel and slidably engage respective container side wall portions 64, 45 which portions are in the protruding member's radial path of movement. As a result, the side wall portions 64 are displaced slightly inwardly of the container 2, as illustrated by FIG. 15. Thus, the resiliently yieldable side wall portions 64 exert a force on the protruding 50 portions 62 of the bezel hinge elements.

When the bezel is in the raised position shown in solid lines in FIG. 16, the protruding members 62 pass the upper ends of the side wall portions 64 which, due to their resiliency, return to their original position. The 55 underside surface of the protruding members 62 come to rest on the bevelled corner 66 of the side wall portions. In this manner, the bezel 6 is supported in a locked, raised position so that user has both hands free to position the inner liner 8. The user must exert a suffi- 60 cient downward force on the bezel to overcome the force exerted by the resilient side wall portions 64 on the protruding members 62 to lower the bezel onto the container rim 14, as the force between the bezel and member when the bezel is inbetween the raised and 65 lowered positions is greater than that existing when the bezel is resting on the bevelled corner of the side wall portion.

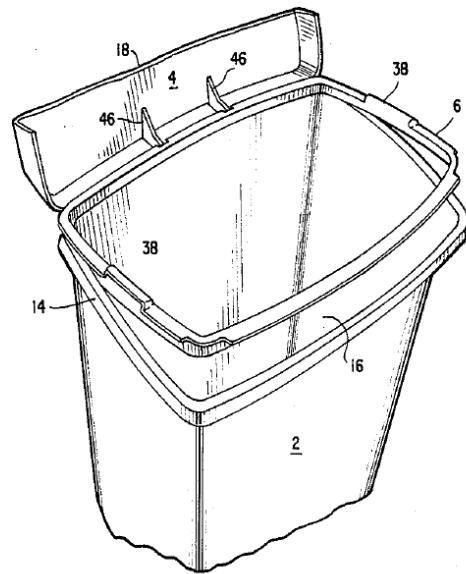
D. Koda (Ex. 1005)

85. Koda is very similar to Miller, and both are assigned to the same company. Koda adds a foot pedal mechanism to open and close the lid and it has the same hinge element 104 with the rounded protruding portion and a vertical wall

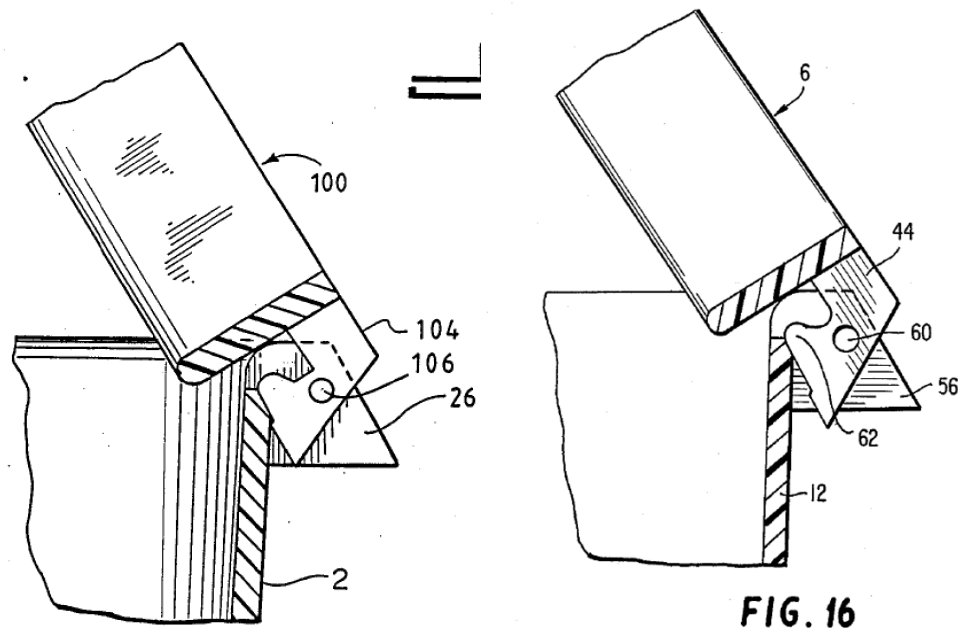
with a beveled edge for the hinge to rest on to hold the retainer ring 100 (bezel in Miller) in the upright position. It specifically references to the Miller patent in describing this section. As can be seen in the cover images Koda and Miller they are very similar. Also figure 17 of Koda is very similar to figure 16 of Miller.



Koda cover image



Miller cover image



Koda Figure 17

Miller Figure 16

VII. GROUND #1: YANG '865 AND MILLER MAKE CLAIMS 1, 2, 10, 11, AND 15 OBVIOUS.

A. Claim 1

86. In my opinion, Claim 1 is obvious under 35 U.S.C. § 103 over Yang '865 in light of Miller because it would have been obvious for a POSITA to modify the trash can of Yang '865 by modifying the shape of the trim hinge and by making the top of a rear wall flexible as taught by Miller Figures 15–17 and descriptions thereof. This modification lets a user temporarily lock the Yang '865 trim in a raised position when changing trash bags, as Miller says, freeing both hands to put in a new trash bag without having to manually hold the bezel up. Miller Columns 5:21–5:26, 6:18–6:22.

[1.Pre] A trash can assembly comprising:

87. I have not been asked to give an opinion on whether the preamble is limiting. I have been instructed to assume that it is. If the preamble is limiting, Yang '865 teaches a trash can assembly. Yang '865 is titled "*Step Trash Can Having Integrated Base and Base Liner*," and it describes a trash can.

[1.1] a body component comprising a lower base, an upper opening, and a front upper edge; and

88. In my opinion, Yang '865 teaches "a body component comprising a lower base, an upper opening, and a front upper edge," as claimed. Figure 2 of Yang '865 shows the body component (the container for the trash), including each at least each of the following parts: a shell 22, lower base 34, an upper opening 26 and a front upper edge at 24. I use the annotated figure below to show these parts. Throughout this declaration, color indicates annotations to the original figures.

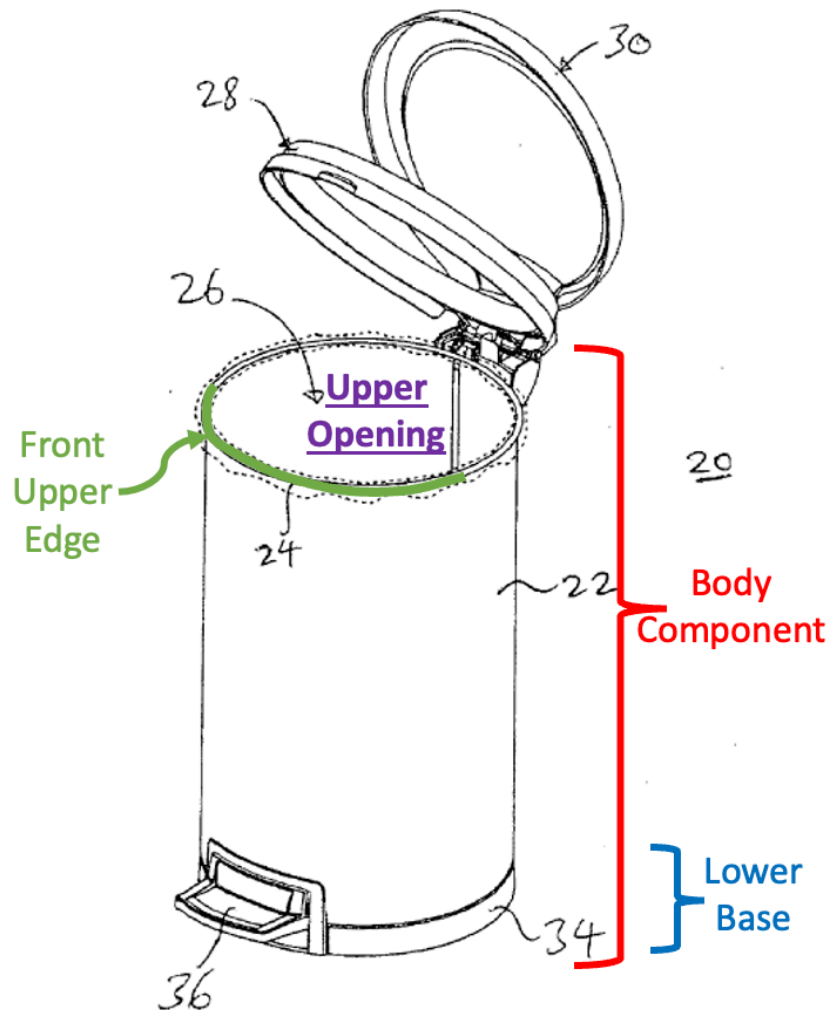


FIG. 2

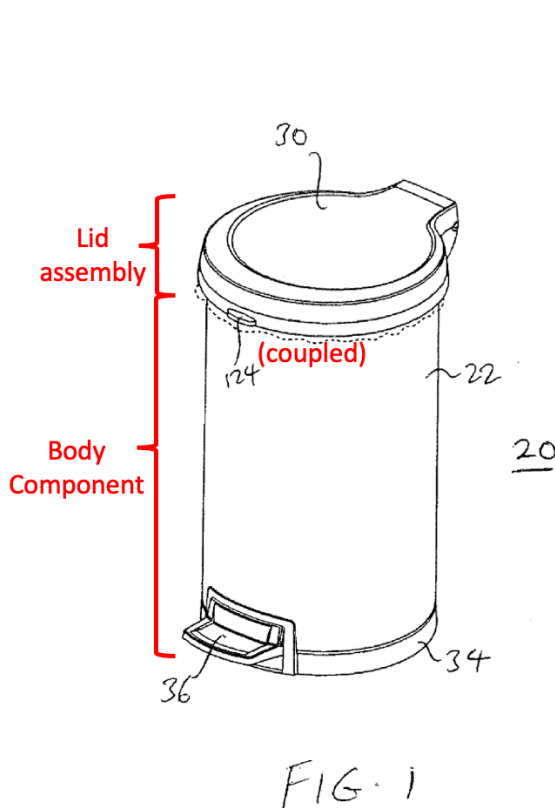
Yang '865 Figure 2

89. Yang '865 Figures 3, 4, 7, 9, 10–15 show these parts of the trash can from other perspectives. This trash assembly “includes a shell [body] having an enclosing wall that has an upper edge.” Yang '865 paragraph 12. The annular lip 24 defines the opening mouth 26 of the shell 22. See paragraph 34. The annular lip is an upper edge of the shell 22 that would be considered a body component. See

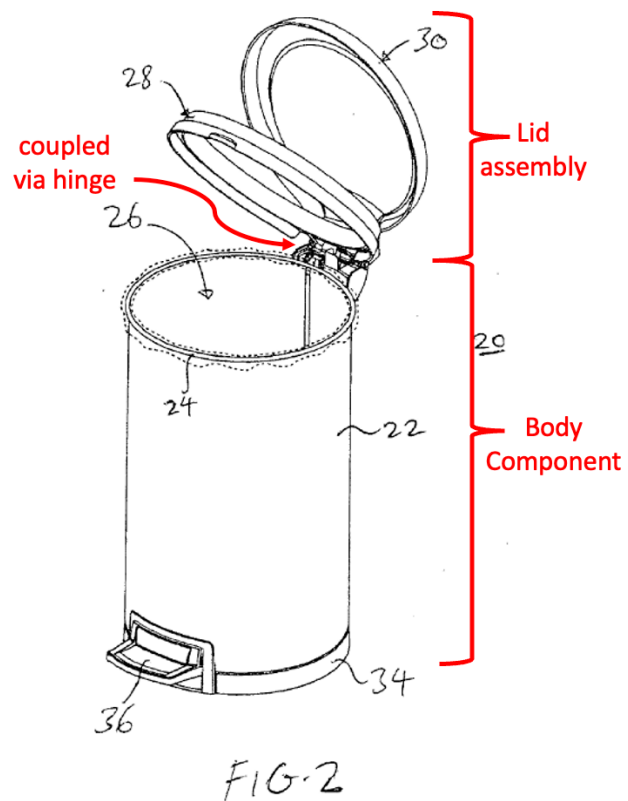
paragraph 34. “The shell 22 has a base 34.” See paragraph 35. Therefore, a POSITA would have understood that these elements are disclosed in Yang ’865.

[1.2] a lid assembly configured to couple with the body component, the lid assembly comprising:

90. In my opinion, the Yang ’865 trash can has “a lid assembly configured to couple with the body component,” as claimed. These elements are shown:



Yang ’865 Figure 1



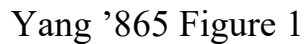
Yang ’865 Figure 2

91. Yang ’865 Figures 3–6 also show these components from different perspectives. The lid assembly further comprises the elements [1.3] (“a lid”) and [1.4] (“a trim member”) that I discuss in the next subsections.

92. Yang paragraphs 12, 35, and 38 explain that the trim and lid are both “pivotably connected to the upper edge” of the body, the result is that the lid assembly is configured to couple with the body component. The lid assembly is also coupled to the upper edge of the body component when the lid assembly is closed. Therefore, a POSITA would have understood that this element is disclosed in Yang ’865.

[1.3] a lid configured to rotate, relative to the body [component], between a lower position and an upper position; and

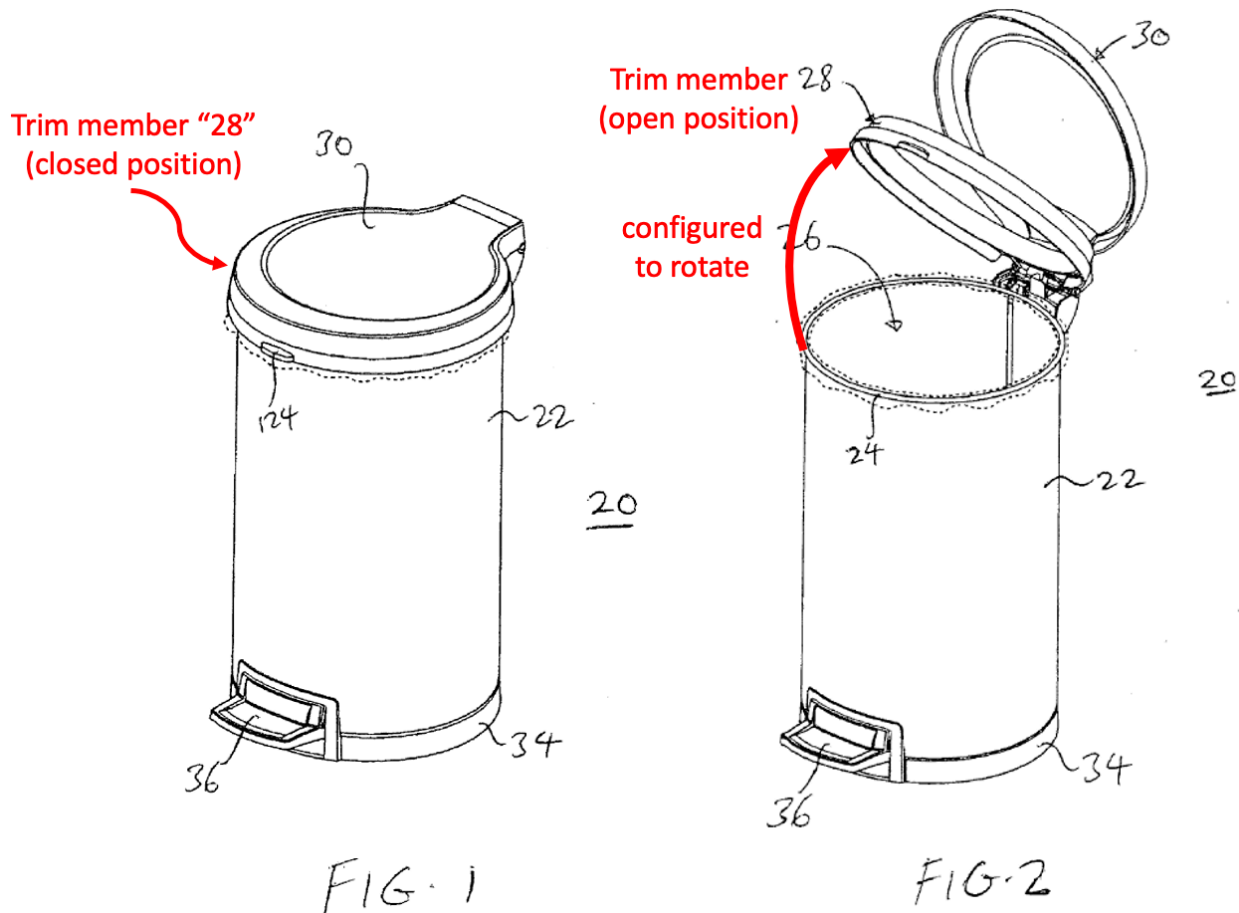
93. In my opinion, the lid assembly of Yang ’865 has “a lid configured to rotate, relative to the body [component], between a lower position and an upper position,” as claimed. The lid (30) and its rotation are shown in the annotated figures 1 and 2 below:



94. Yang '865 Figures 3–6 show different views of these components. Yang '865 explains that a lid 30 is pivotably connected to the upper edge of the trash can using a hinge. Yang '865 paragraphs 12, 35, 38. A POSITA would have understood from this description and the figures that when the lid pivots, it rotates between a lower position to an upper position. Yang '865 paragraphs 12, 35, 38. Therefore, a POSITA would have understood that this element is disclosed by Yang '865.

[1.4] a trim member configured to rotate between a closed position and an open position, wherein:

95. In my opinion, the lid assembly of Yang '865 includes “a trim member configured to rotate between a closed position and an open position,” as claimed. The trim member (28) and its rotation between a closed position as in figure 1 and the rotated about pivot shaft 50 to an open position in figure 2 are shown in the annotated figures 1 and 2 below:



Yang '865 Figure 1

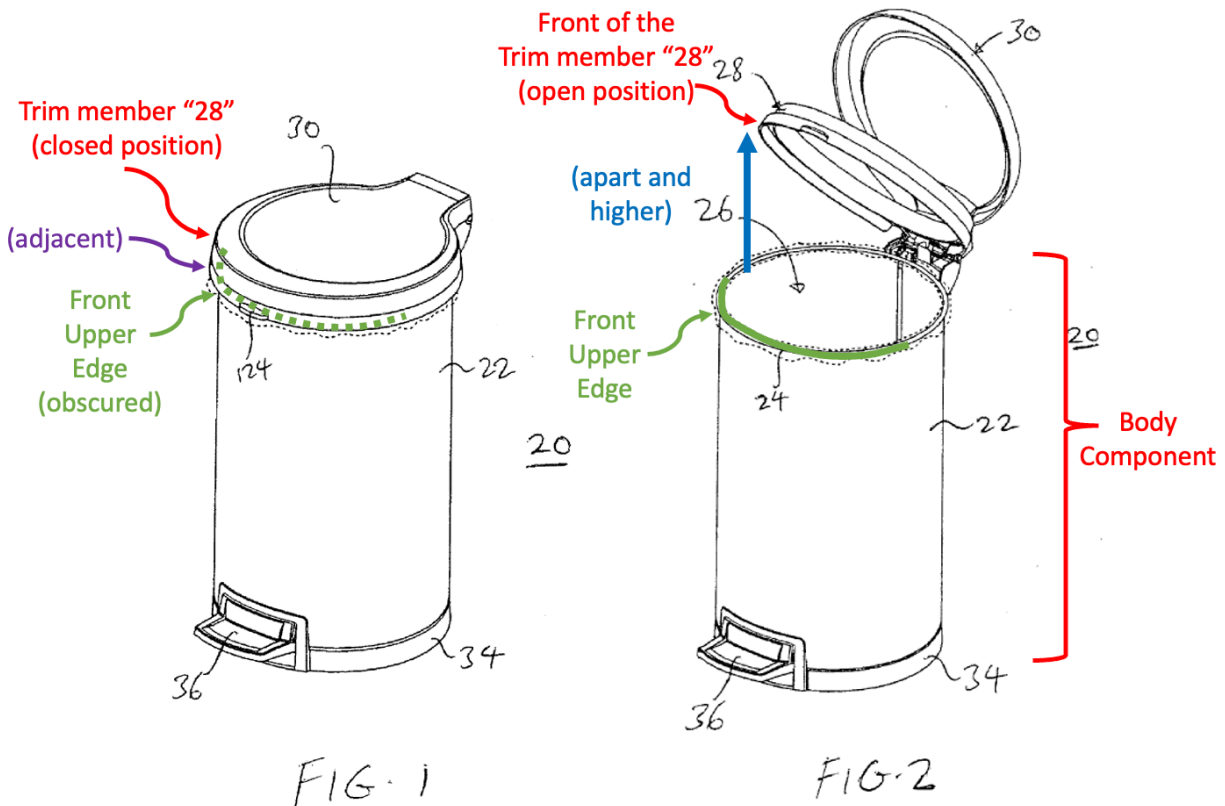
Yang '865 Figure 2

96. Yang '865 Figures 3–6 show additional views of these components. Yang '865 teaches that its trash can has “a trim pivotably connected to the upper

edge,” meaning that when the trim member pivots, it rotates between a closed position to an open position. Yang ’865 paragraphs 12–13, 35, 38. Therefore, a POSITA would have understood that this element is disclosed by Yang ’865.

[1.5] in the closed position, a front of the trim member is adjacent the front upper edge of the body component; and

97. In my opinion, Yang ’865 teaches that “in the closed position, a front of the trim member is adjacent the front upper edge of the body component,” as claimed. The front portion of trim 28 is adjacent to the front portion of the upper edge (annular lip 24) when the trim member is in the closed position as shown in figure 1. These annotated figures show the claimed positioning:



Yang ’865 Figure 1

Yang ’865 Figure 2

98. Yang '865 teaches that the trash can has “a trim pivotably connected to the upper edge,” and “[t]he trim is seated on the upper edge ... when the lid is closed.” See paragraphs 12–13, 35, 38. Paragraph 46 teaches that “The trim 28 is then pivoted downwardly until it is rested on top of the lip 24”). When the trim 28 rests on top of the lip 24, this means that trim member (including its front) is adjacent to the lip (including the front upper edge of the body component), like what is claimed. Paragraph 46 teaches that 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.” This description about the trim being secured to the lip of the shell further supports my opinion that “a front of the trim member is adjacent the front upper edge of the body component,” when the trim is closed. Therefore, a POSITA would have understood that this element is disclosed by Yang '865.

[1.6] in the open position, the front of the trim member is spaced apart from and vertically higher than the front upper edge of the body component; and

99. In my opinion, Yang '865 teaches that “in the open position, the front of the trim member is spaced apart from and vertically higher than the front upper edge of the body component,” as claimed. As can be seen in figure 2 the front of the trim member 28 when in the open position is raised above and higher than the front

of the annular rim 24. The figures show the claimed relative positions between the front of the trim member and the front upper edge of the body component:

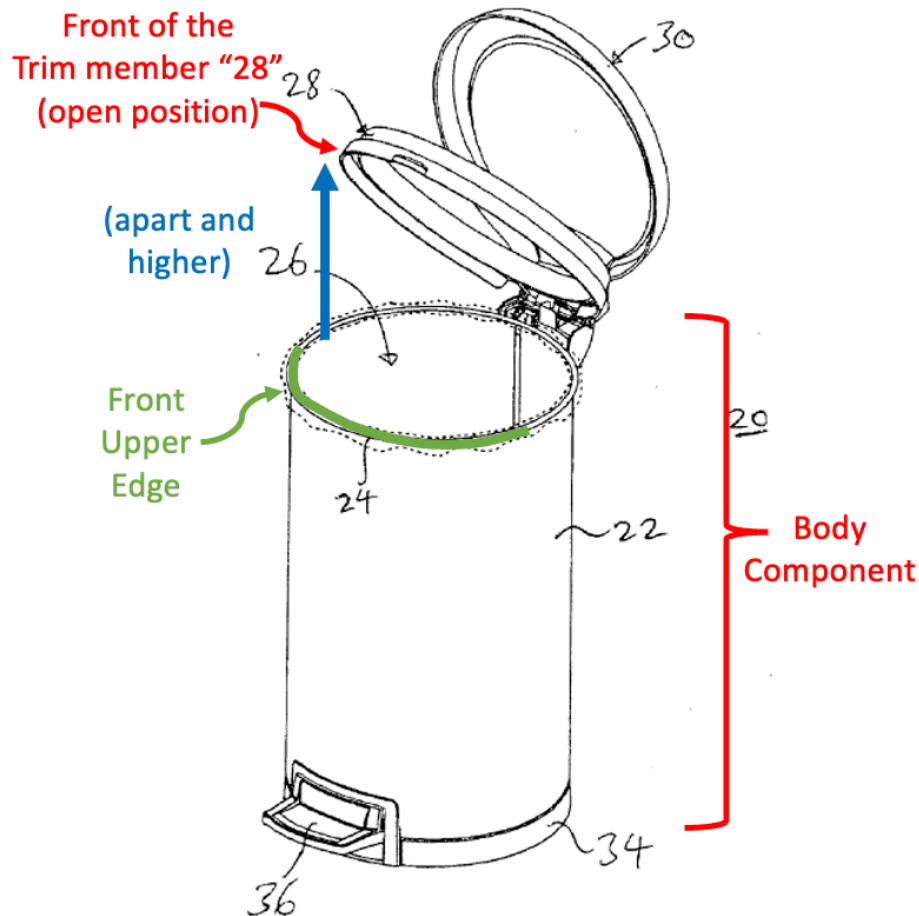


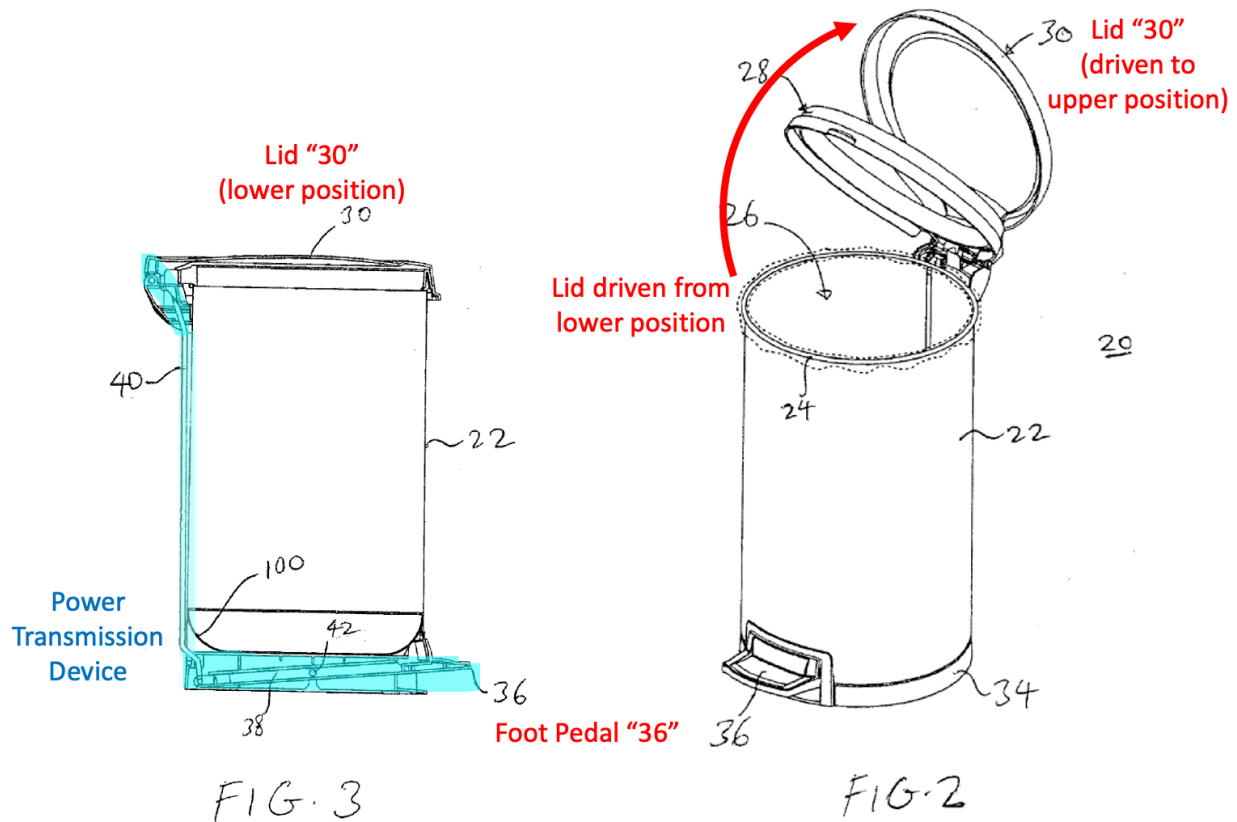
FIG. 2

100. According to Yang '865 paragraphs 44–45, when one wants to change the trash bag the trim member is lifted to rotate the trim 28 up and back away from the annular lip 24. This lifting will space the trim apart from and higher above the upper edge of the trash can opening so that the trash bag can be changed. Therefore, a POSITA would have understood that this element is disclosed by Yang '865.

[1.7] a power transmission device configured to drive the lid between the lower position and the upper position; and

101. In my opinion, Yang '865 teaches that “a power transmission device² configured to drive the lid between the lower position and the upper position,” as claimed. As can be seen below in the annotated figures 2 and 3, Yang '865 includes a manually powered foot pedal mechanism that drives the lid between a lower position as shown in figure 3 and an upper position as shown in figure 2. When applying Patent Owner’s construction, a POSITA would have understood that the Yang '865 trash can includes a power transmission device configured to receive foot power at the foot pedal to drive the lid between the lower position and the upper position, as shown in the annotated figure below:

² According to the patent owner’s construction of “power transmission device”



Yang '865 Figure 3

Yang '865 Figure 2

102. Yang '865 figures 4–7 and 9–15 show these components from other perspectives. Yang '865 paragraph 16 teaches that the trash can has “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.” Yang paragraph 37 teaches, “[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.” According to the Patent Owner’s construction of a “power transmission device”, the linkage assembly, including the foot pedal, pedal bar with

its pivot axis, and link rod would be considered a power transmission device by a POSITA because they transmit power from the foot pedal to drive the lid between the lower position and the upper position. Therefore, a POSITA would have understood that this element is disclosed by Yang '865.

[1.8] a retaining mechanism configured to maintain the trim member in the open position against the force of gravity.

103. The Yang '865 reference does not explicitly disclose a “retaining mechanism” for holding, securing, or otherwise maintaining the trim 28 open against gravity. However, it is my opinion that it would have been obvious to a POSITA at the priority date to modify the Yang '865 reference with the Miller reference. This is because Miller, way back in 1988, taught that a trim/bezel 6, which secures the trash bag, can be supported/held up against the force of gravity with a rounded protrusion 62 that flexes a nearby wall. It would have been obvious to POSITA to use a similar mechanism in Yang '865 to hold up Yang's trim 28 against the force of gravity. Yang's trim 28 secures the trash bag. The POSITA would have added a similar protrusion like protrusion 62 taught in Miller and a resilient nearby wall. Miller figures 14 and 16 of Miller below show how protrusion 62 holds up bezel 6.

104. Miller taught the advantage of keeping the trim up in the air to make it easy for users to have both hands free to change the trash bag. Miller Columns 1:21–1:53, 1:61–2:40, 5:20–5:28, 6:20–6:22. It is my opinion that a POSITA would have understood the benefits of having both hands free to change the bag and the obvious

application to changing trash bags in Yang '865. Yang '865 paragraph 44 teaches that "a user can grip the handle 124 to lift the trim 28 from the shell 22." Yang '865 goes on to explain in paragraph 45 that "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." If there is no way to retain the trim up against gravity, that means that the user has to place the trash bag in the trash can with one hand while the other hold the trim member in the open position against the force of gravity. The POSITA seeing the convenience of having the trim held up by protrusion 62 in the hinge of Miller would be motivated to include a similar protrusion in the hinge of Yang '865 to hold the trim member up to free up both hands to change the trash bag. See figures 14 and 16 of Miller below.

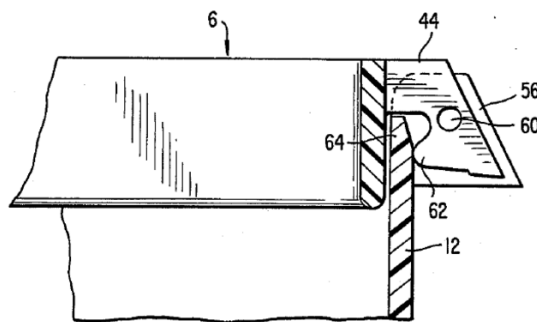


FIG. 14

Miller Figure 14

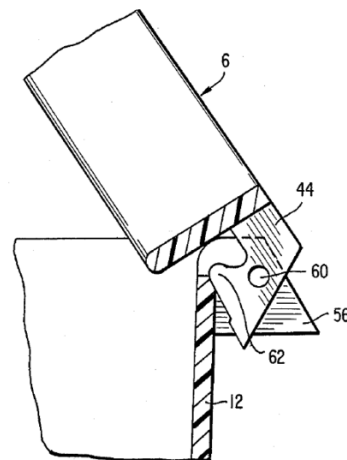
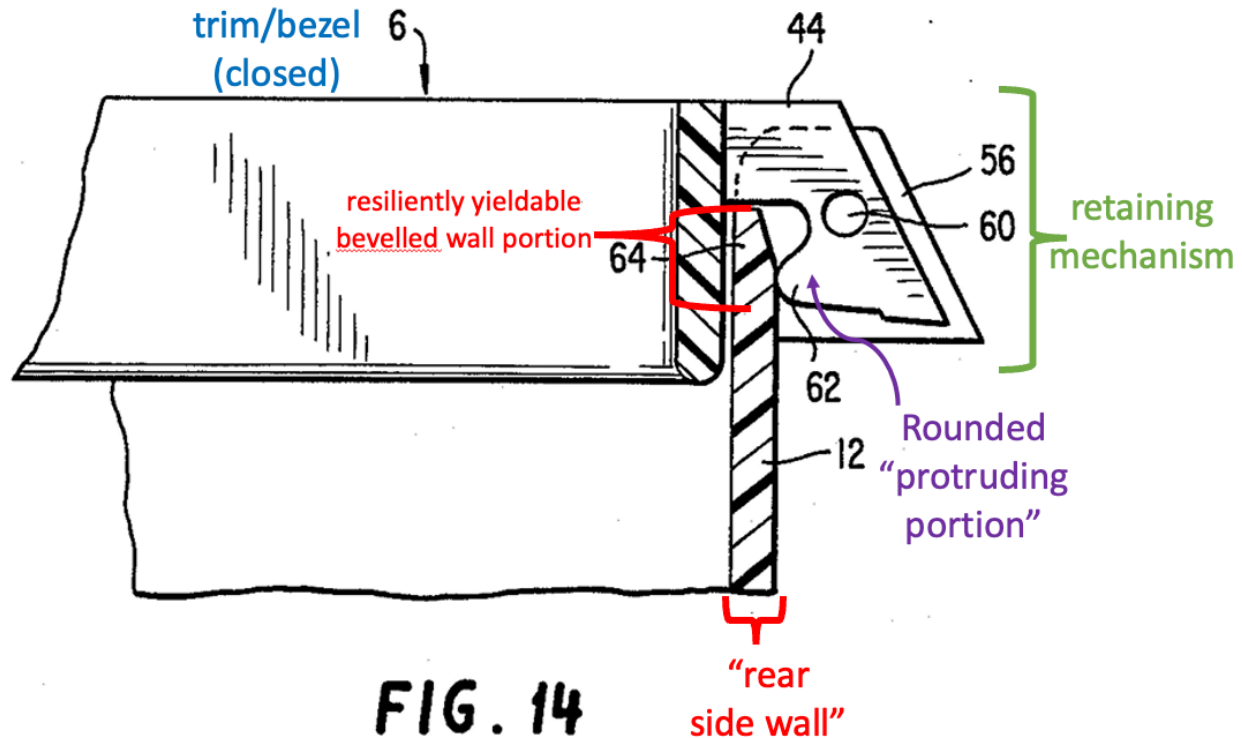


FIG. 16

Miller Figure 16

105. Miller teaches the claimed “retaining mechanism configured to maintain the trim member in the open position against the force of gravity” as claimed. Miller teaches a resiliently yieldable rear wall that is a portion of the trash can near the hinge. Miller Columns 2:25–2:36, 5:30–5:68. The upper edge of the resiliently yieldable wall is angled for the protrusion to flex and then rest on when the bezel is raised 30 to 60 degrees off the horizontal. Miller Column 5:20–5:68.

106. Miller taught using a vertical (resiliently yieldable) portion of the trash can with an angled upper edge for the protrusion to flex and then rest against when raised. “An important feature of the wastebasket of the present invention is its ability to lock the bezel 6 in a raised position, preferably at an angle of between 30 and 60° from the horizontal.” Miller Column 5:20-5:25.

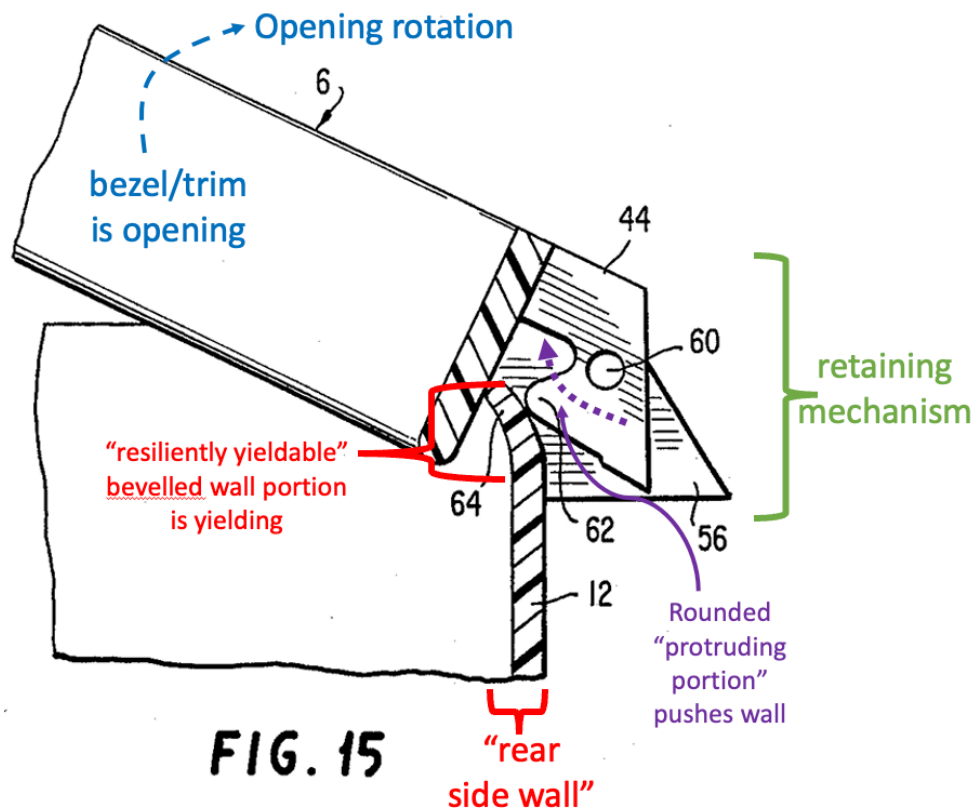


Miller Figure 14

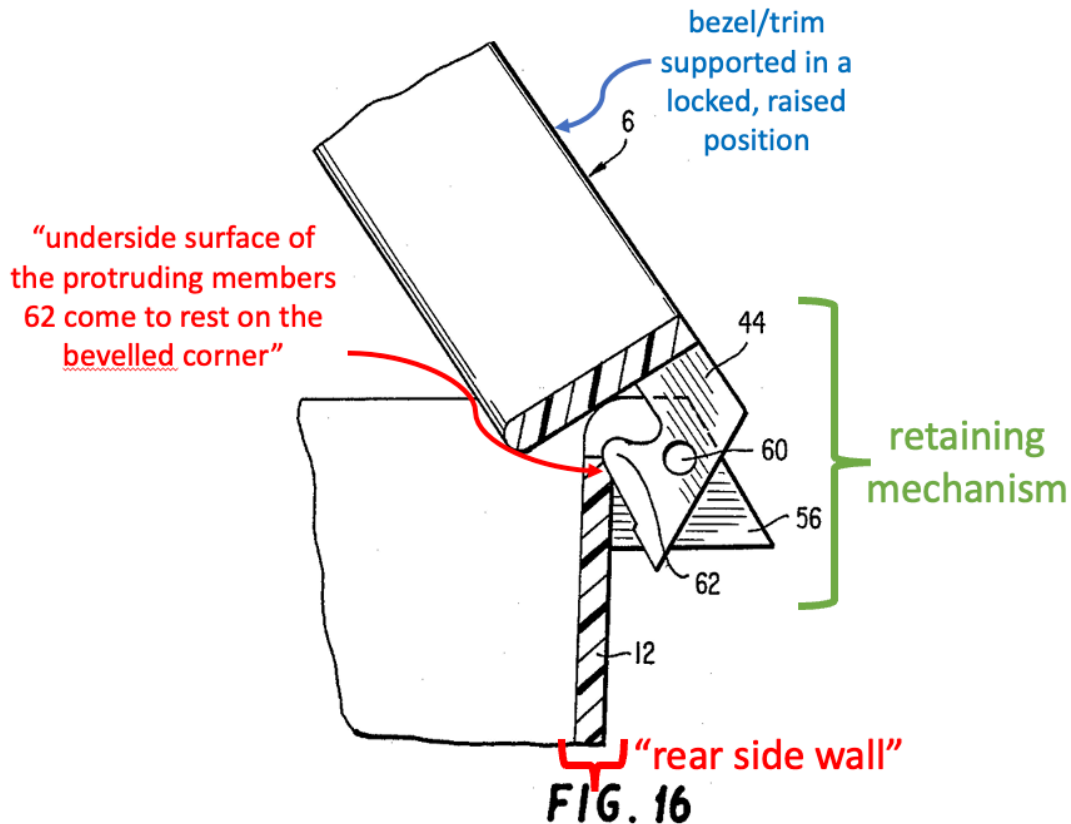
107. The parts I just discussed are shown in Miller Figure 14, above. These include the bezel 6, the rear side wall with a resiliently yieldable and beveled top, and a rounded protruding portion of the trim hinge flange.

108. As can be seen below, the upper portion 64 of wall 12 is flexible and when the bezel/trim is lifted. The rounded protrusion of the hinge flexes the wall forward and then once raised more the wall flexes back and the protrusion rests on the angled upper portion of the vertical wall. Then if the user pushed down firmly on the bezel/trim member the wall again flexes forward and allows the bezel trim member to close. “The user must exert a sufficient downward force on the bezel to overcome the force exerted by the resilient side wall portions 64 on the protruding

members 62 to lower the bezel onto the container rim 14.” Miller Column 5:60–5:64. I show these parts in the following figures:



Miller Figure 15



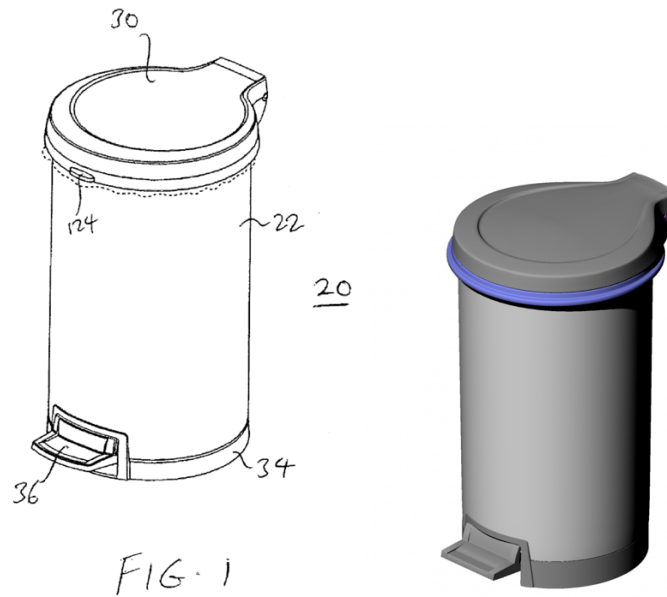
Miller Figure 16

109. The POSITA would have realized that the hinge housing 52 of Yang '865 would be an excellent place to incorporate the resiliently yieldable portion into. This is the closest rear wall to the hinge. Miller taught having the resiliently yieldable portion just in front of the hinge. This allows a relatively small deflection in the resiliently yieldable portion to absorb the forces from the hinge protrusion. The hinge housing has empty rear portions that would be ideal to incorporate such a vertical wall. A POSITA would realize that the hinge housing could be made of a polyurethane or other resiliently yieldable material or other plastic material.

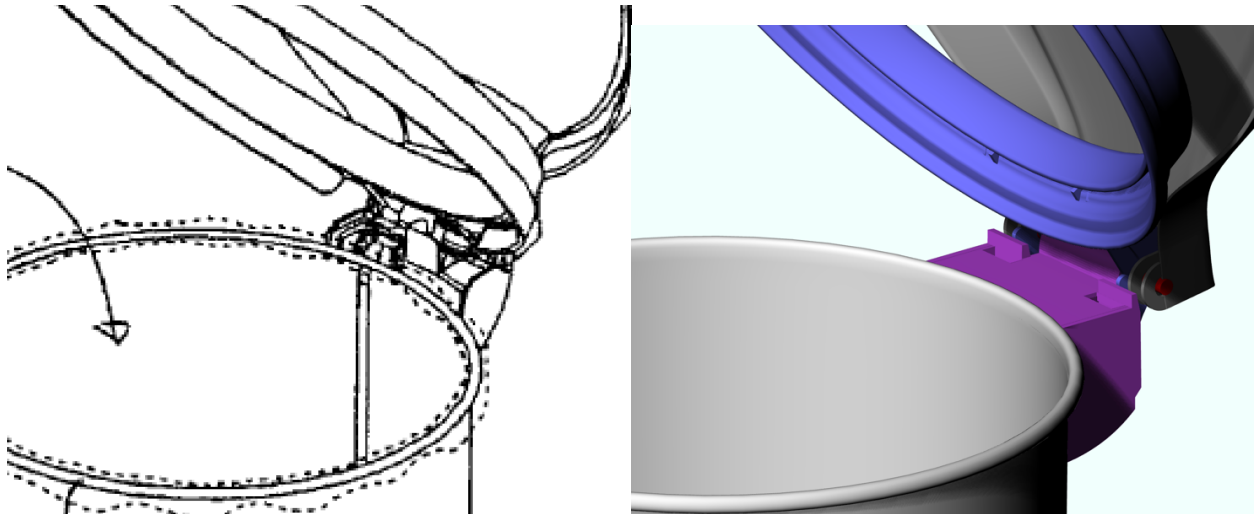
110. The POSITA would have expected this modification to work because both Miller's bezel and Yang '865's trim member operates similarly: they are similarly shaped members that pivot up and down using a hinge at one end near the upper backside of a trash can. Miller Column 5:41–5:57; Yang '865 paragraphs 35, 38–40. Both Miller's bezel and Yang '865's trim member pivot , and both have a lid that also pivots to open the trash can. Miller Columns 3:41–3:45, 4:46–4:52; Yang '865 paragraphs 35 and 37. The POSITA would find it obvious to combine the similar configuration of the bezel/trim members of Miller and Yang '865

111. Additionally, a POSITA would have also expected the proposed modification to work because the POSITA would have seen that it works when modeled by a computer.

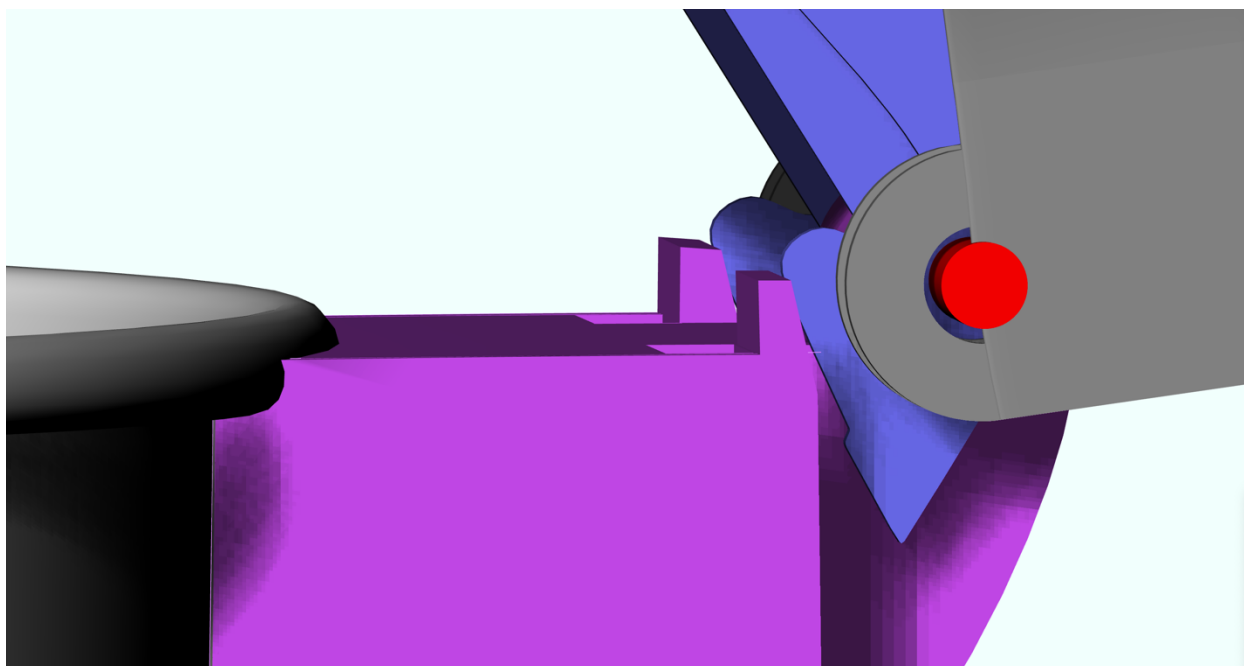
112. To demonstrate how a POSITA would likely modify Yang '865 in light of Miller, I have created a simple Computer Aided Design (CAD) model of the modification. Below on the left is figure 1 of the '865 patent, on the right is a simple computer model I created based on the patent drawings with the trim retainer of Miller incorporated. The trim member has been highlighted in blue.



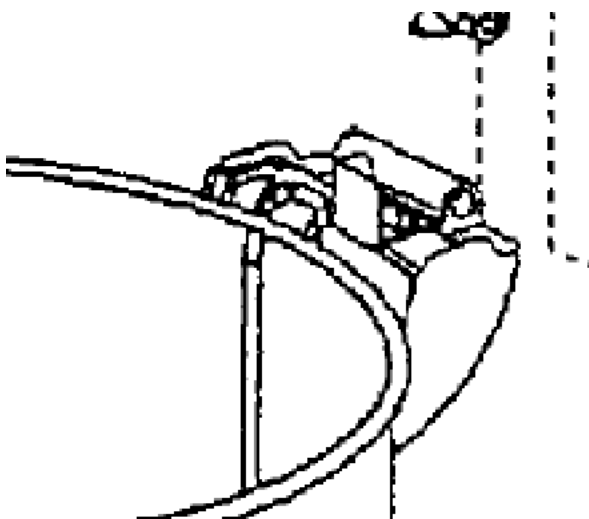
113. Below is a close up of the hinge housing highlighted in purple with the modification of the vertical resilient wall addition and the addition of the rounded protrusions to the hinge of the trim. To show the modification of adding the teachings of Miller more clearly, I have omitted link rod 40, the L-shaped wall 66, bag tuck opening 70, and other components inconsequential to this combination. As can be seen the partially from this view, the resiliently yieldable vertical wall sticks up slightly past the top surface.



114. In the model below, I have rotated the view slightly compared to figure 2 and zoomed in so the modification can be seen clearly. The hinge of Yang '865 with the added protrusions of Miller is highlighted in blue. The hinge housing of Yang '865 has been cut away in the corners so the back wall is vertical, and the upper edge of the wall is beveled for the hinge to rest on. The hinge pin is highlighted in red. See the closeup of figure 4 of Yang '865 and figure 16 of Miller to understand the combination.



Computer model showing
hinge in red, protrusions in blue, and hinge housing in purple



Yang '865 Figure 4 close up

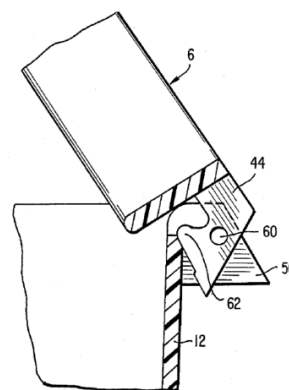
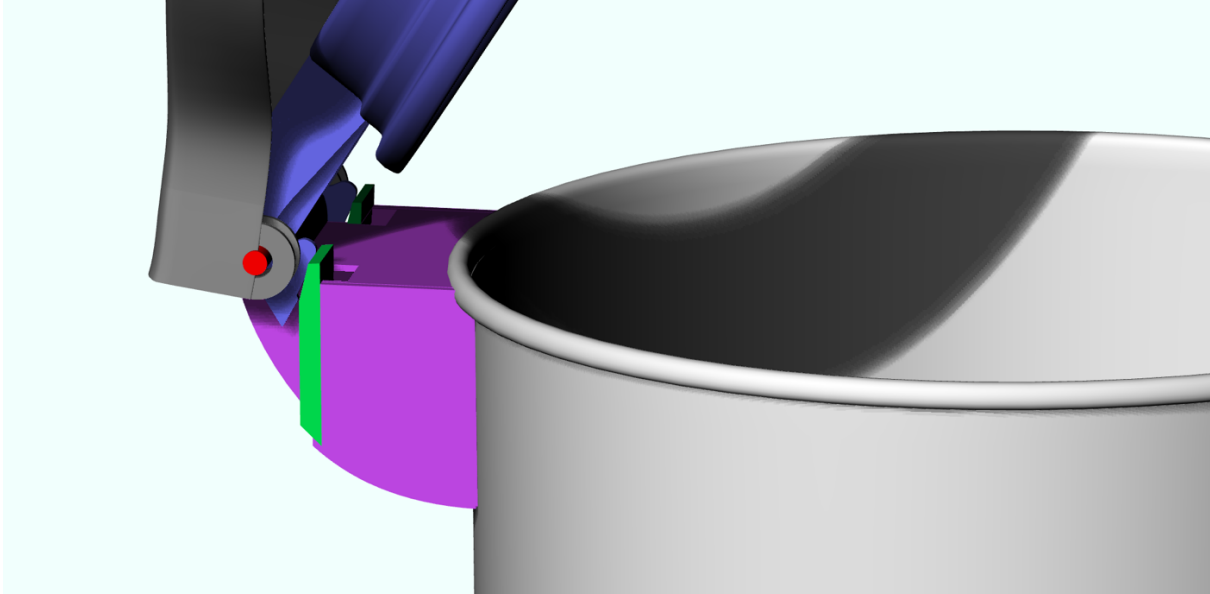


FIG. 16

Miller Figure 16

115. To show the modification more clearly, in the figure below, I have highlighted the resiliently yieldable wall in green. The rounded protrusion 62 (highlighted in blue) of Miller has been added to each side of the hinge of the trim member of Yang '865. To make this modification, I simply cut the outer curved end portions of the hinge housing and replaced them with the green vertical wall taught by Miller. I scaled the hinge protrusion and wall based upon hinge size to make it fit the hinge rod of Yang '865. Once the Miller drawing was placed into the CAD file I added the protrusion to the hinge member of Yang's trim, and as taught by Miller, the resilient vertical wall should be able to flex towards the front. To do this I removed a small rectangle the top surface directly in front of the flexible green walls. A POSITA would understand from Miller that the vertical resiliently yieldable need to have the beveled upper portion that can flex or bend to allow the protrusion 62 to pass.



Computer model showing the resiliently yieldable wall in green,
rounded protrusion in blue, and hinge housing in purple

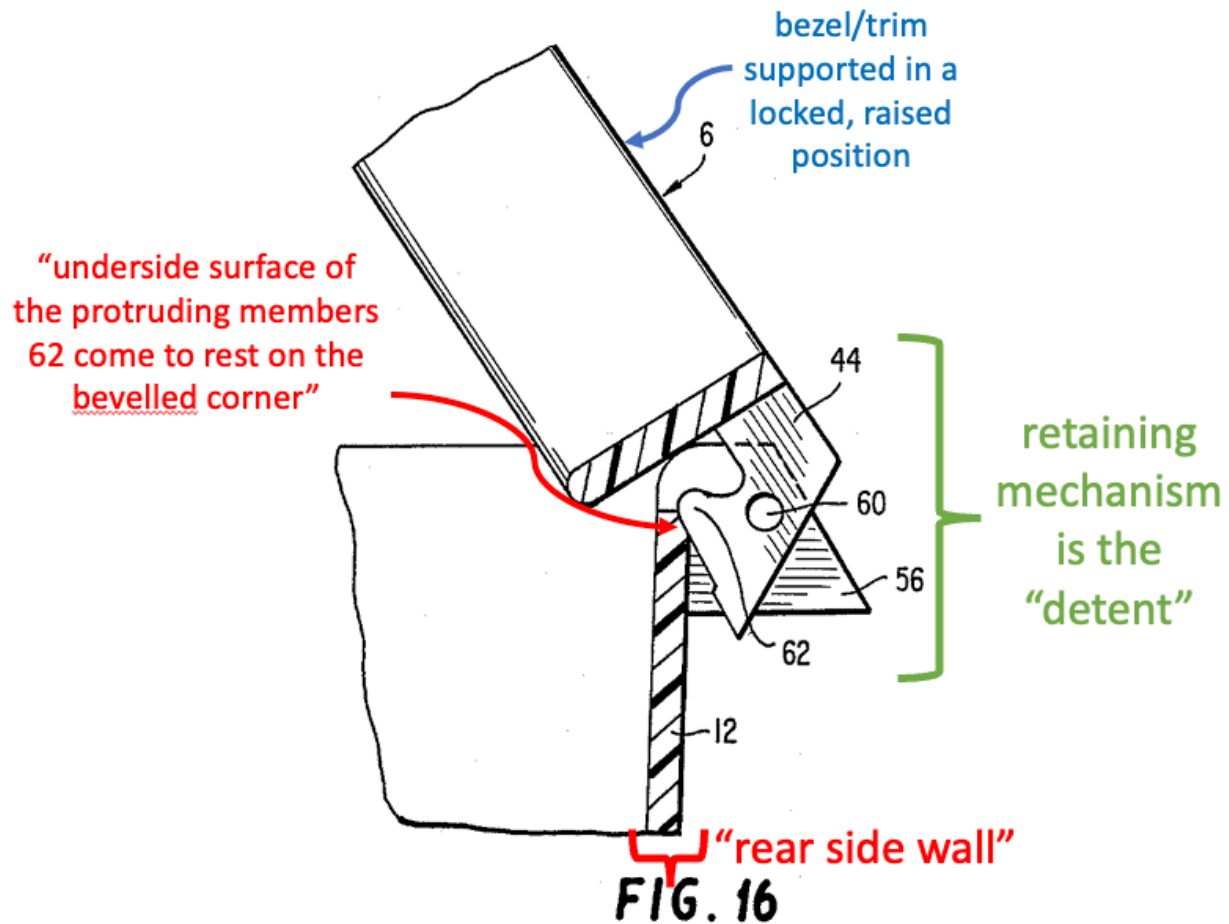
116. The end result would operate as described in Miller. This design locks the trim or bezel at about 30–60 degrees above the horizontal (which can vary depending on the angle of the resiliently vertical wall). Miller Column 5:20–6:30. Therefore, trim member would be supported in this position against gravity and would require a user to press down on the trim member to lower it back down.

B. Claim 2: The trash can assembly of claim 1, wherein the retaining mechanism comprises a detent.

117. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious.

118. In my opinion, A POSITA would have further understood that, in the proposed combination, “the retaining mechanism comprises a detent.”

119. The protrusion 62 acts as a lock to keep the bezel of Miller up at an angle. The combination of Miller and Yang '865 would include protrusion 62 which would also act as a catch to keep the trim member up at an angle. This catch would be released by pushing down on the trim/bezel as explained in Miller. Under the Patent Owner's construction of "detent," the protrusion 62 leaning against the beveled edge of a resiliently yieldable would act as a catch to temporarily hold up the trim member until pressed downward to close. Therefore, the combination of Miller and Yang '865 would have a "detent" which is a "catch that prevents motion until released" according to the patent owner's construction. Miller supports my opinion because column 5:60-5:64 teaches, "The user must exert a sufficient downward force on be bezel to overcome the force exerted by the resilient side wall portion 64 on protruding member 62 to lower the bezel onto the container rim 14."



C. Claim 10

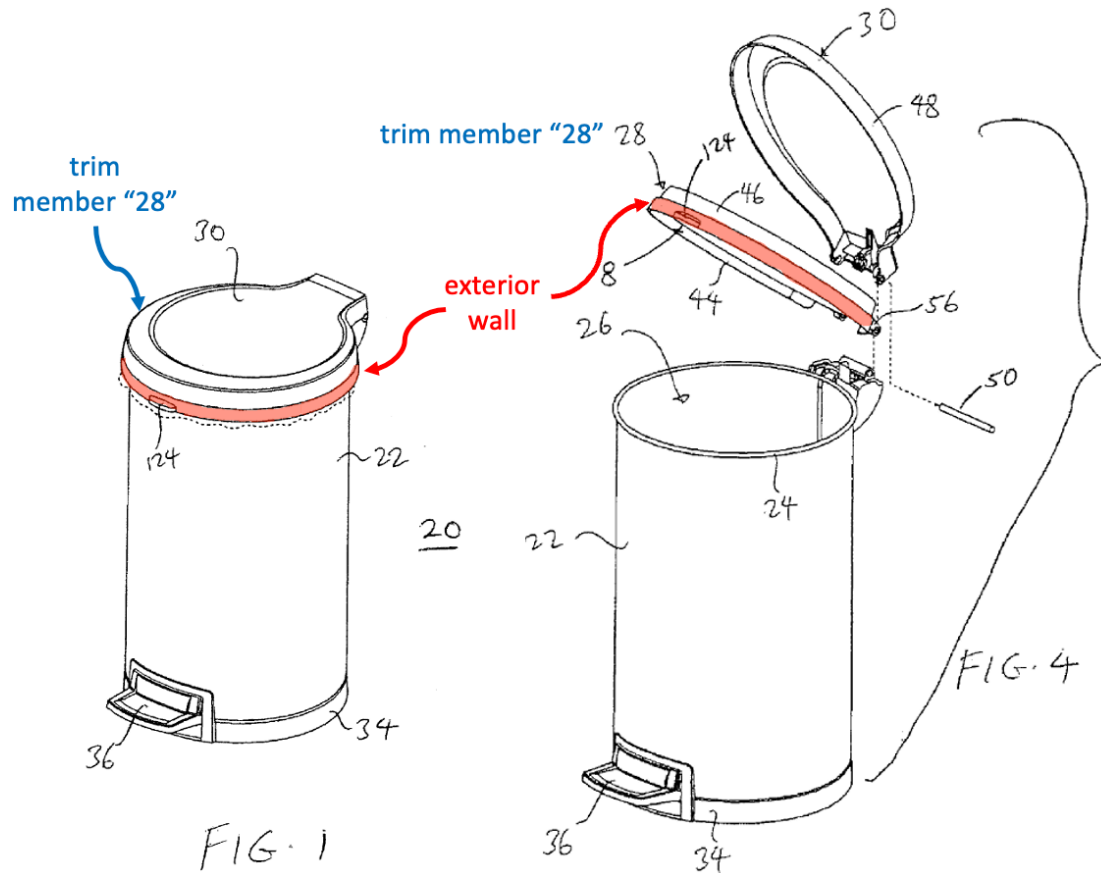
[10.Pre] The trash can assembly of claim 1,

120. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious.

[10.1] wherein the trim member further comprises an exterior wall that extends:

121. In my opinion, POSITA would have found the combination of Yang '865 and Miller obvious. This combination would have the protrusion of Miller modifying trim member of Yang '865, this combination would have "the trim

member further comprises an exterior wall that extends” as I further discuss in the following subsections. As can be seen in the annotated figures 1 and 4 of Yang ’865 below, an exterior wall of the trim member is highlighted in the following figure:



Yang ’865 Figure 1

Yang ’865 Figure 4

122. This exterior wall extends as discussed in the following subsections. Therefore, a POSITA would have found this element obvious.

[10.2] generally parallel with a longitudinal axis of the trash can;

123. In my opinion, a POSITA would have seen in the annotated figure 1 below, when the lid is closed, the exterior wall extends up and down, “generally parallel with a longitudinal axis of the trash can,” as claimed.

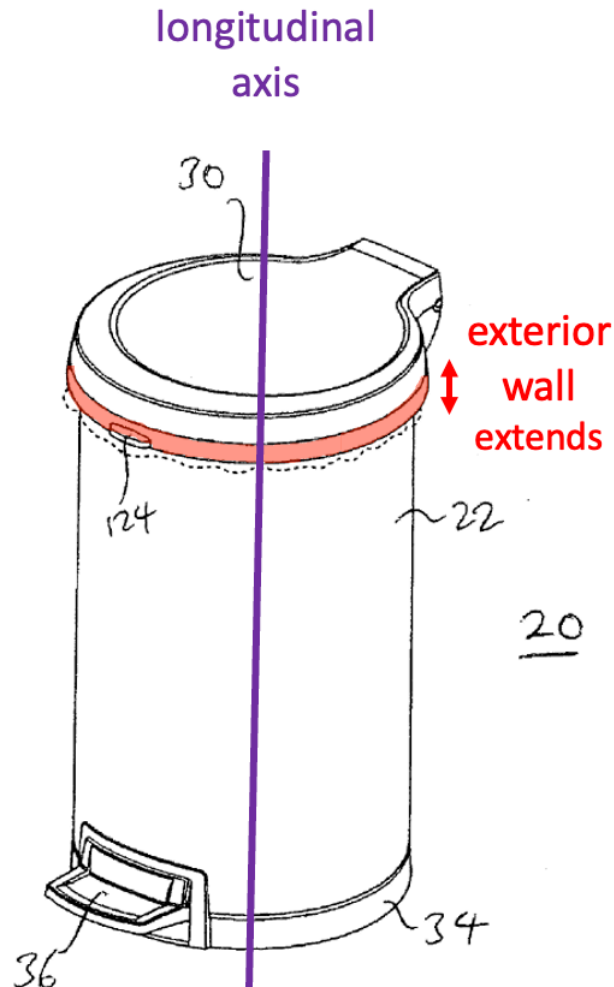
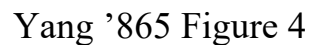


FIG. 1

Yang '865 Figure 1

[10.3] downward beyond an upper lip of the body component;

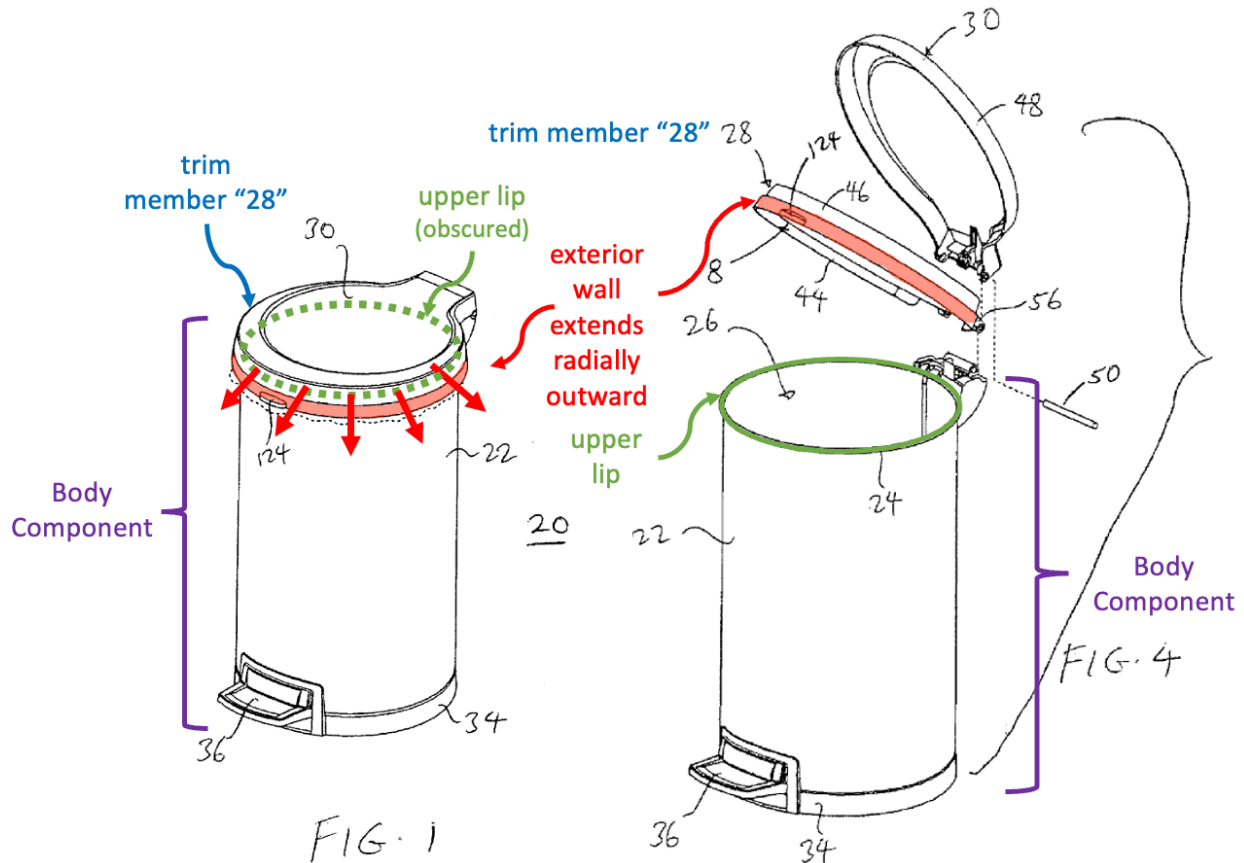
124. In my opinion, a POSITA would have understood from Figures 1 and 4 of Yang '865 that when the lid is closed, the exterior wall extends “downward beyond an upper lip of the body component,” as claimed. _____.



125. In Figure 1 above, the exterior wall of the trim member 28 obscures the upper lip 24, indicated with a green dotted line. This upper lip is visible in Figure 4 and indicated with a solid green line when the trim member is raised. When the trim member is closed as in figure 1, the portion of exterior wall highlighted in salmon color above, extends down past the upper lip 24 to obscure it. The combination with Miller to add the protrusion to the hinge and a resiliently yieldable rear wall would not change this portion of Yang '865. Therefore, a POSITA would have found this element obvious.

[10.4] and radially outward from the upper lip of the body component.

126. In my opinion, a POSITA would understand that Yang '865 includes an exterior wall that extends “radially outward from the upper lip of the body component.” As can be seen in figures 1, 3 and 4, an exterior portion of trim member 28 extend radially outward from the upper lip 24. The trim member sits on top of the upper lip of the shell 22 and extends radially outward and then downward outside of the upper lip.



Yang '865 Figure 1

Yang '865 Figure 4

D. Claim 11: The trash can assembly of claim 1, wherein the body component has a rectangular shape.

127. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious.

128. In my opinion, a POSITA would have found it obvious that “the body component has a rectangular shape” as claim 11 says. The figures of Yang ‘865 show a generally circular body for the trash can. Yang explicitly describes other shapes for the trash can including such as square and rectangular. Yang specifically states in paragraph 34 “The shell 22 is an enclosing wall which can have any desired shape, including oval, triangular, rectangular, square or circular.” A POSITA would have found it obvious to change the shape of the trash can to be of a rectangular shape, as Yang ‘865 taught could be done. The modified hinge with a protrusion and resiliently yieldable wall as taught by Miller, would not limit the desired shape of the body component. Therefore, a POSITA would have found this claim obvious.

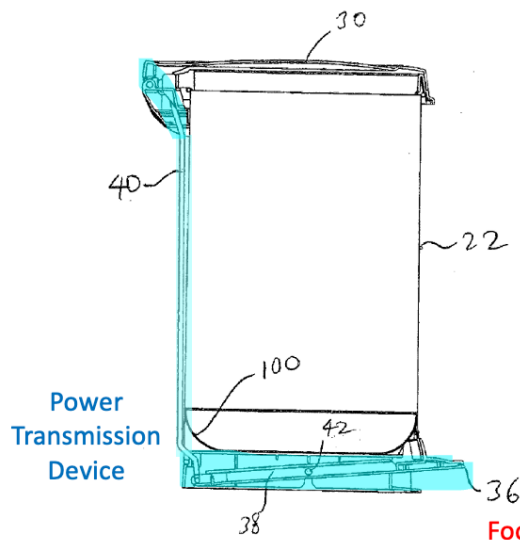
E. Claim 15: The trash can assembly of claim 1, wherein the power transmission device comprises a footpedal.

129. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious.

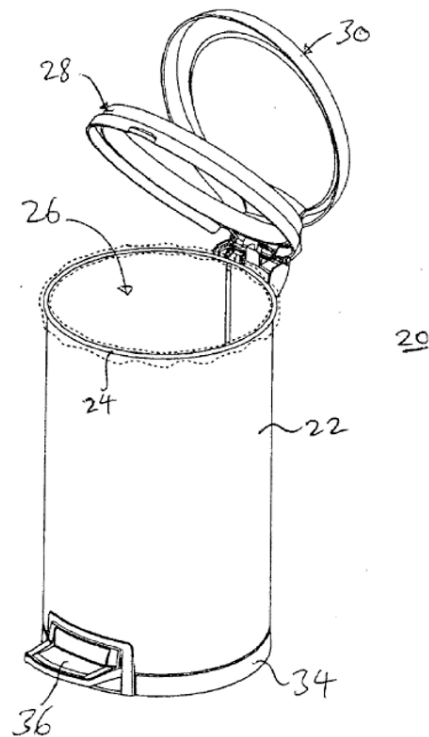
130. This element is obvious for the same reasons I discussed in Section 1.7. The power transmission device includes a foot pedal 36. The foot pedal described in Yang ‘865 is part of the “power transmission device” under the patent owner’s

construction. The fact that Yang '865 describes the "foot pedal" with two words and the '165 patent uses one word "footpedal" would not confuse the POSITA.

131. As can be seen below the foot pedal is included in the device that drives the lid 30 to be raised. Therefore, it is my opinion that the power transmission device comprises a footpedal. The obvious combination of Miller's protrusion 62 and resiliently yieldable rear wall to the hinge of Yang '865 would not change the way foot pedal is included in the power transmission device. Therefore, a POSITA would have found this claim obvious.



Yang '865 Figure 3



Yang '865 Figure 2

VIII. GROUND #2: YANG '865, MILLER, AND YANG '532 MAKE CLAIMS 7 AND 13 OBVIOUS.

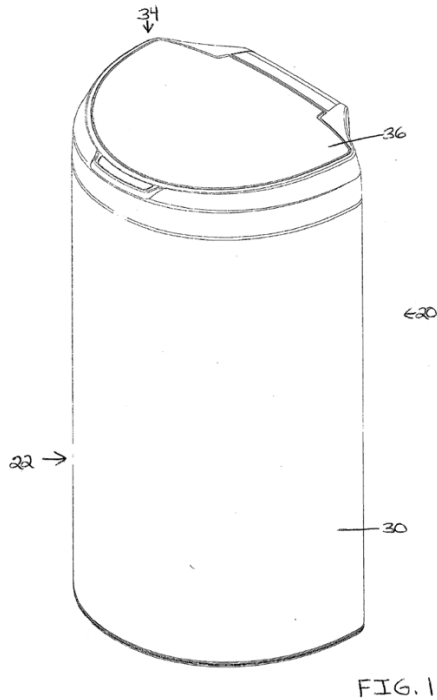
132. My opinion in Ground 2 builds upon my opinion from Ground 1 by further considering the Yang '532 reference.

A. Claim 7: [7.Pre] *The trash can assembly of claim 1, wherein:*

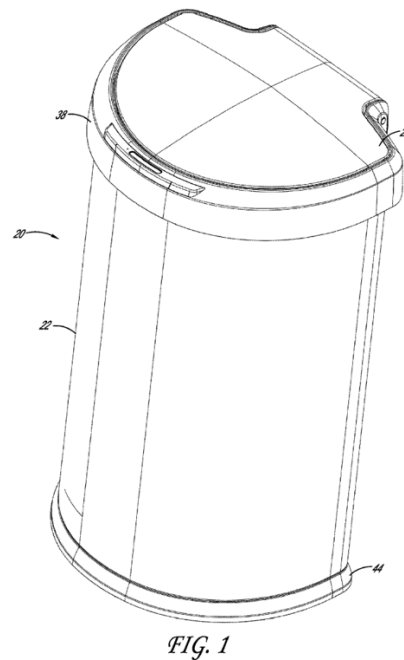
133. My discussion of claim 1 in Ground 1 above explains why the trash can assembly of claim 1 is obvious by '865 in light of Yang '865 and Miller.

[7.1] a majority of the periphery of the lid is received in the trim member when the trim member is in the closed position and the lid is in the lower position; and

134. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious. Claim 7 adds a limitation that the periphery of the lid is received in the trim member, when the trim is in the closed position and the lid is in the lower position. This feature (lid in the trim member) is disclosed in the same Yang inventor's 2009 public publication seen on the left below. Compared to figure 1 of the '165 patent on the right below. The lid 36 of Yang '532 has a periphery that is mostly received in the trim member 34 in the closed position when the lid is in the lower position.

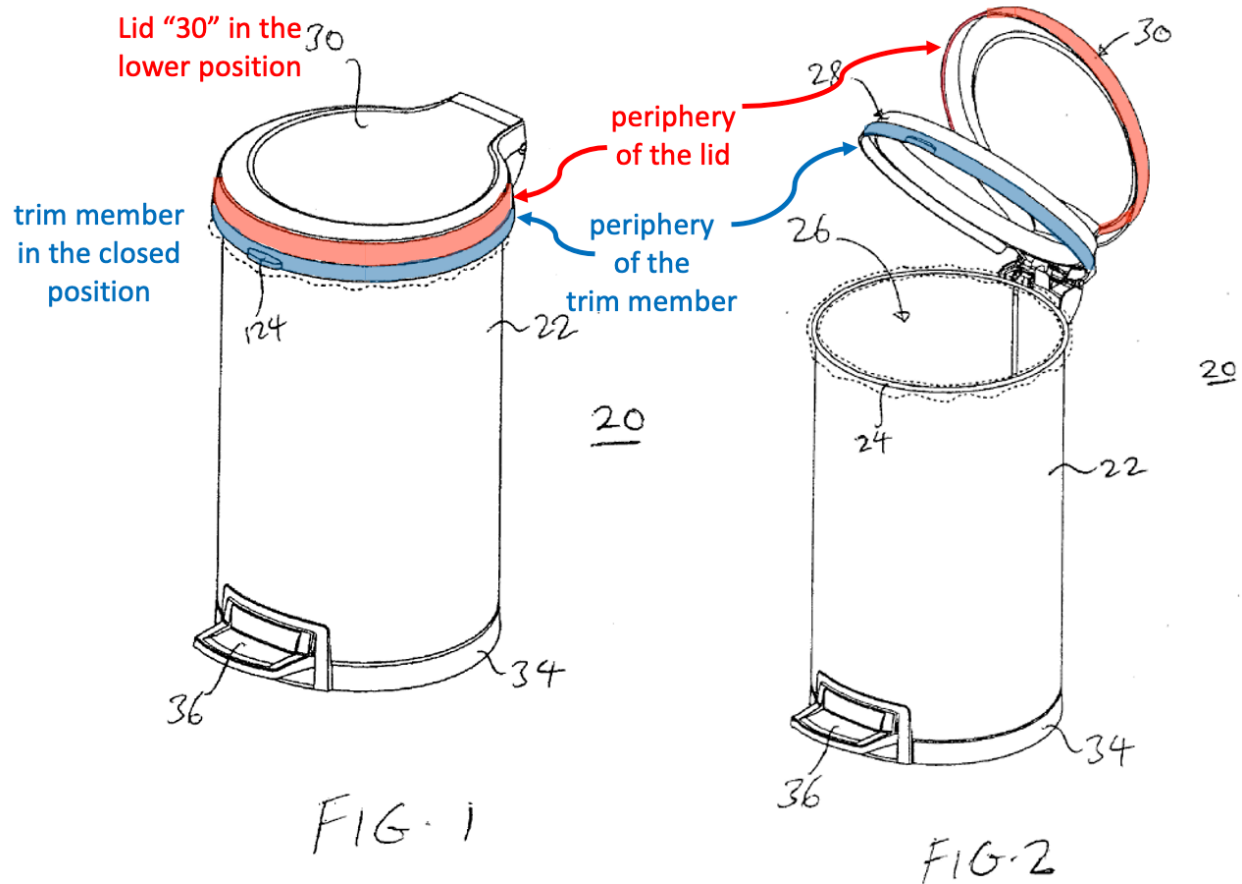


Yang '532 (2009)



'165 Patent to Yang

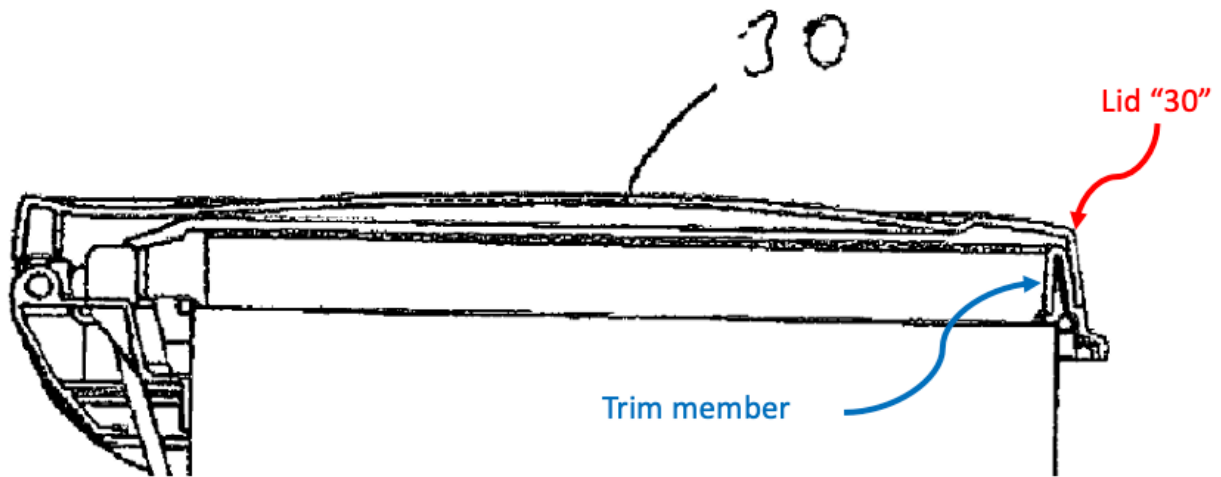
135. In Yang '532, the majority of the periphery of the lid is received on a groove around the trim member. In the annotated drawings below the periphery of the trim member 28 is shown highlighted in blue and the periphery of the lid 30 is shown in salmon color. The groove in trim member 28 is visible in figure 2 and 3. The periphery of the lid is just within the periphery of the trim member when the trim member and the lid are in the closed position (lower position).



Yang '865 Figure 1

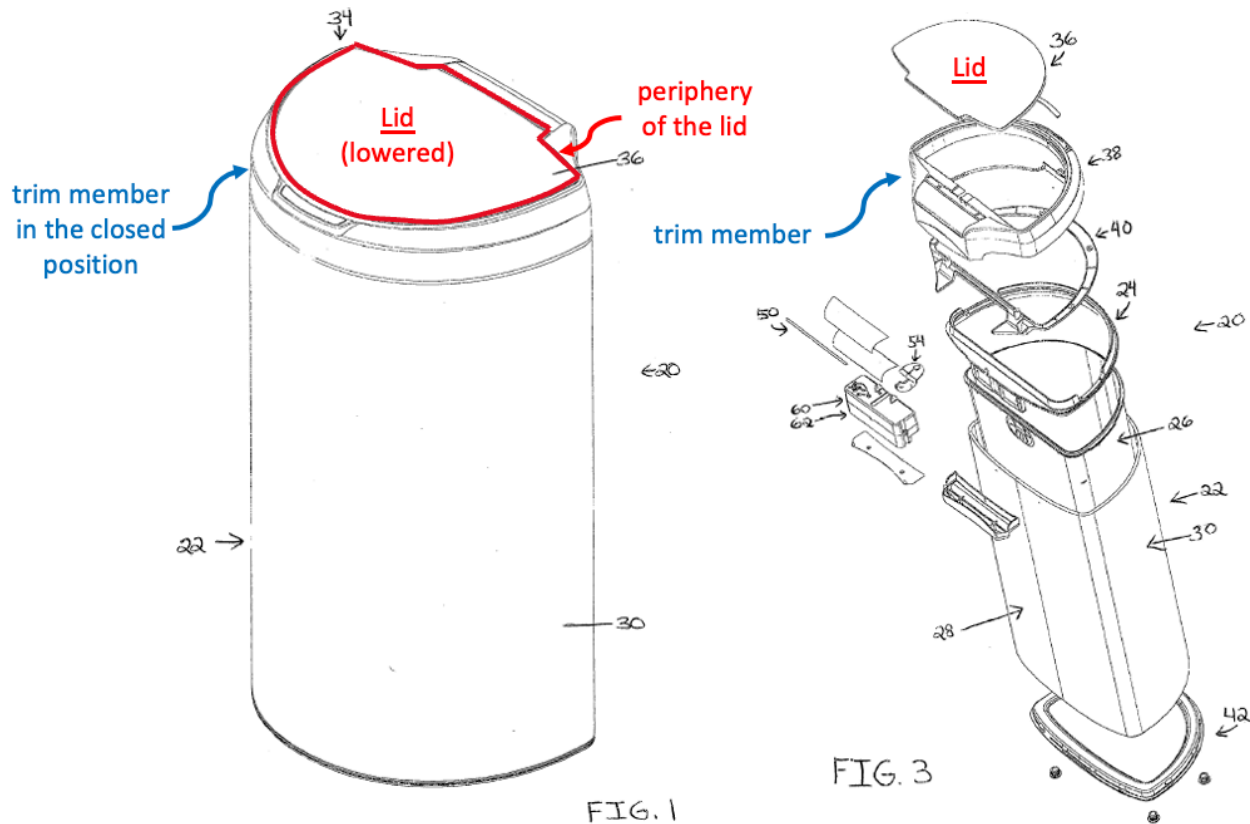
Yang '865 Figure 2

136. The Yang '865 figures 1 and 2 above and the closeup of figure 3 below, show that the trim has a recessed area that the lid fits into when in the lowered position resting on the trim.



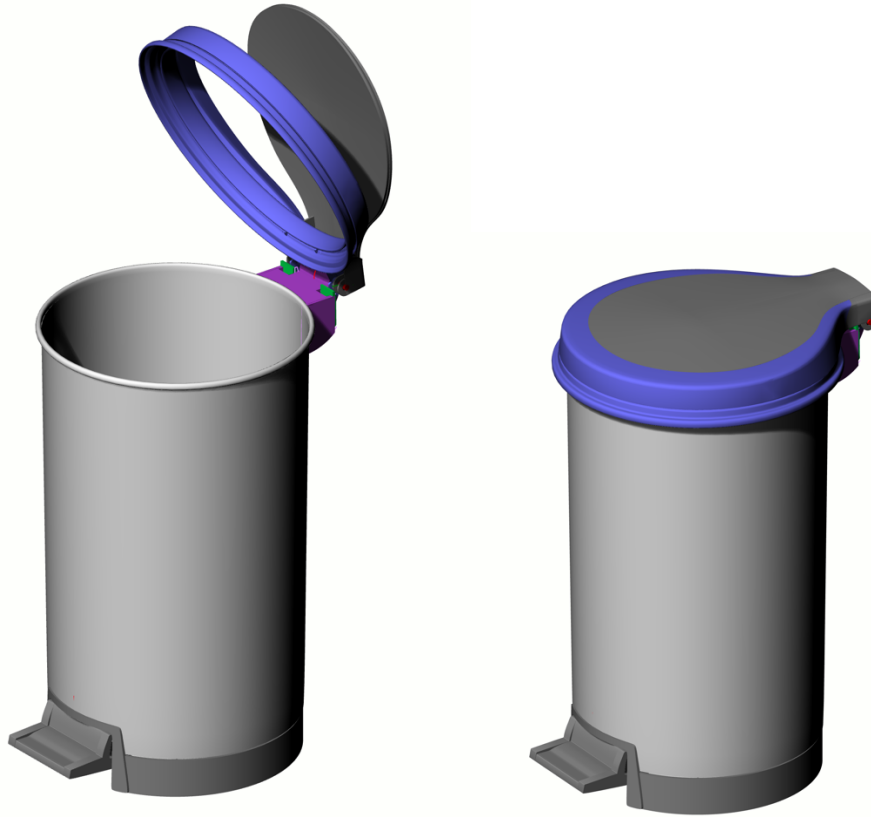
Yang '865 Figure 3 Close Up

137. If having the periphery in a recess on the outside portion of the trim member doesn't meet this claim element, then it would have been obvious to modify the trim member and lid to be in a recess on the inside of the trim member like that shown in the Yang '532 which is very similar to that shown and claimed in the '165 Patent.



138. Yang '532 illustrates "a majority of the periphery of the lid is received in the trim member when the trim member is in the closed position and the lid is in the lower position," as claimed. A POSITA would find it obvious to additionally modify the Yang '865 and Miller combination to have such a lid that is received inside the trim member. A POSITA would find it obvious to change to a purer aesthetic of a flatter design for the lid and a top of the whole lid assembly. As is seen below, I have made a simple model of how a POSITA would modify the combination of Yang '865/Miller to have the cleaner aesthetic of Yang '532 with an inset lid and a smooth top surface. I have drawn the inset lid in dark gray and the

matching trim member in blue. The change is a normal design variation for aesthetic purposes as inspired by the smooth top with an inset lid of Yang '532.



[7.2] a majority of the periphery of the lid is positioned outside of the trim member when the trim member is in the closed position and the lid is in the upper position.

139. In my opinion, it would have been obvious for a POSITA to make the changes shown above for aesthetic reasons. When the lid is open “a majority of the periphery of the lid is positioned outside of the trim member when the trim member is in the closed position and the lid is in the upper position.” As can be seen below, when the lid is lifted up, most of the periphery of the lid is outside the trim member:



B. Claim 13: The trash can assembly of claim 1, wherein the power transmission device comprises a motor.

140. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious. However, Yang '865 and Miller do not explicitly teach a “power transmission device comprises a motor.”

141. Yang '532 is titled “Trash Can with Power Operated Lid,” and it discloses the use of a motor to lift the lid. In the background of the invention paragraph 5 states, “When such a sensor is activated, a motor within the trash receptacle opens the lid or door and thus allows a user to place items into the receptacle. Afterwards, the lid can be automatically closed.”

142. To replace the foot pedal and linkage mechanism with a motor would have been obvious to a POSITA in light of Yang '532, which taught opening a trash can lid with a motor, gear assembly, sensors, battery, and a controller which together work to open and close the lid.

143. A POSITA would have been motivated to replace the foot pedal and linkage system of Yang '865 with an electric motor system because lithium-ion batteries had become widely accepted and provided a stable rechargeable system by 2006, replacing the less stable nickel hydride batteries. These batteries provided long lasting power for ease of portability with trash cans. Both foot-powered and motorized trash cans were commercially available before Yang '532 was published. Problems with the batteries wearing down is discussed in Yang '532 paragraphs 5-6. A POSITA would have been motivated to make motorized, battery-powered variations of trash cans as was the commercial trend to appeal to consumers desiring trash cans with automated lids because automated lids require less manual labor and the convenience of hands and foot-free activation. A POSITA would have looked to Yang '532 to replace the foot pedal mechanism with a motor driven system to lift the trash can lid. Therefore, this claim would have been obvious to a POSITA at the time of priority.

144. This dependent claim on a motorized trash cans is nothing new. Motorized trash can have been around longer than I have been alive. Two days

before I was born, Charles Bernard Graves received U.S. Patent 2,888,307 for a “Self Opening Receptacle for Refuse and Soiled Articles”. It used an electric motor to power the opening and closing covers. In 1991 Jong-Yih Day received U.S. Patent 4,996,467 (Day) for a “Garbage Container” that used an infrared ray transmitter to detect if a person was present and will “be opened automatically when the user is present in front of the container”. Day Column 1:7–1:8. It also had a stepping motor 3 to lift the lid 2 about a pivot axis 21. “At the backside of the lid 2 is extended out an extending portion 22. A stepping motor 3 is mounted at the bottom of the garbage container.” Day Column 1:64-1:68. I am not relying on the teachings of Graves or Day to form my opinion for this claim. I provide these simply as background context.

IX. GROUND #3: KODA AND MILLER MAKE CLAIMS 1, 2, 10, 11, AND 15 OBVIOUS.

145. In my opinion, a POSITA would have found claims 1, 2, 10, 11, and 15 obvious because the combination of Koda and Miller teach what is claimed.

A. Claim 1

146. In my opinion, a POSITA would have found Claim 1 to be obvious based on Koda and Miller. For the reasons that I explain below, the POSITA would have found that Koda already described most of the claimed elements. The POSITA would have then looked to Miller to understand how to implement Koda’s retainer ring because Koda explicitly directs the reader to look at Miller, which describes a bezel with a “similar construction” to Koda’s retainer ring. Koda Column 8:17–8:24.

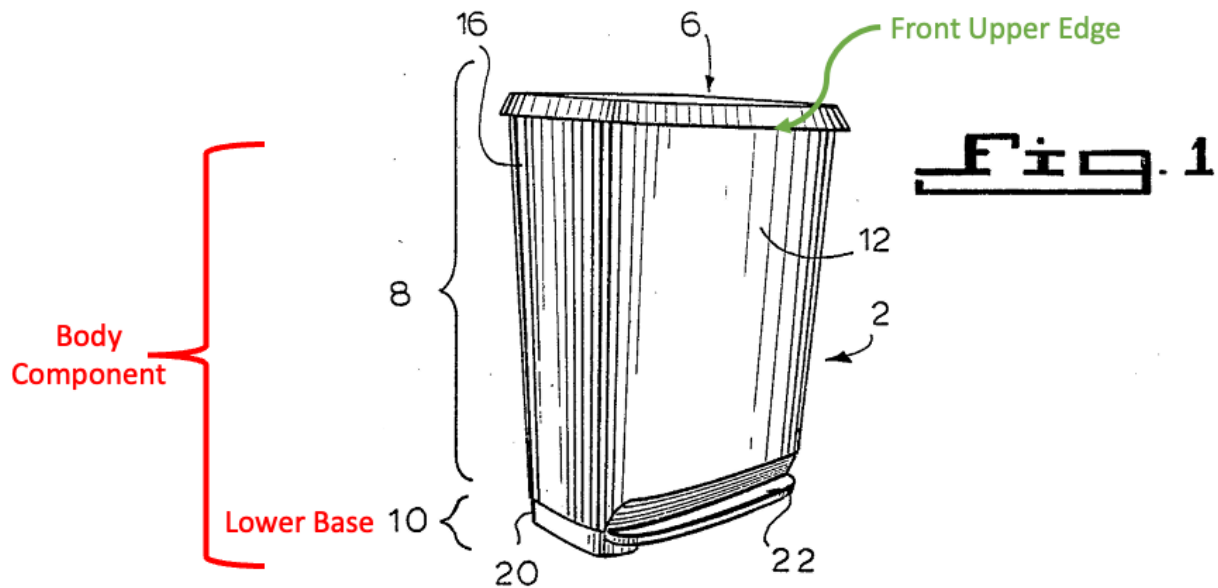
Based on these references, a POSITA would have understood that Koda's retainer ring to have the hinge and locking mechanism described in Miller and would have implemented Koda's retainer ring according to the disclosure of Miller.

[1.Pre] A trash can assembly comprising:

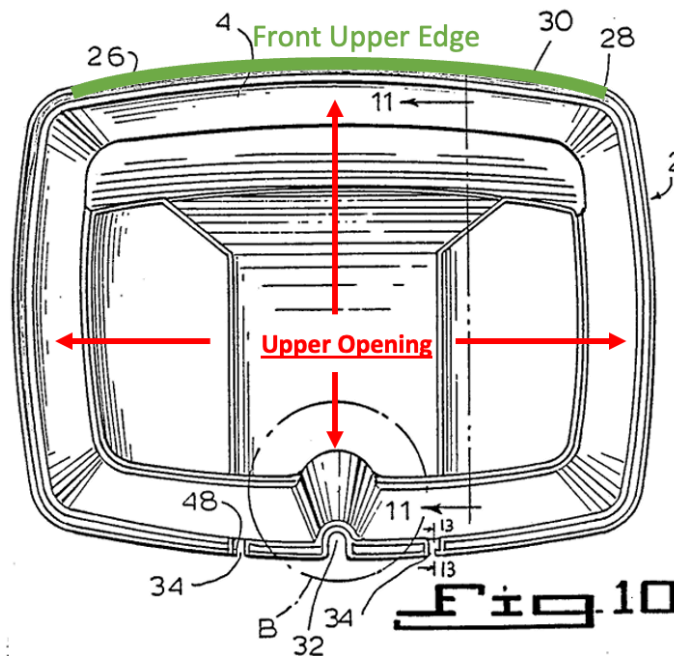
147. I have not been asked to give an opinion on whether the preamble is limiting. I have been instructed to assume that it is. If the preamble is limiting, Koda teaches a trash can assembly. Koda is titled "Wastebasket having lid hinge and actuating mechanism protector." This wastebasket is shown in Koda's Figures 1–18 and described in the corresponding written description.

[1.1] a body component comprising a lower base, an upper opening, and a front upper edge; and

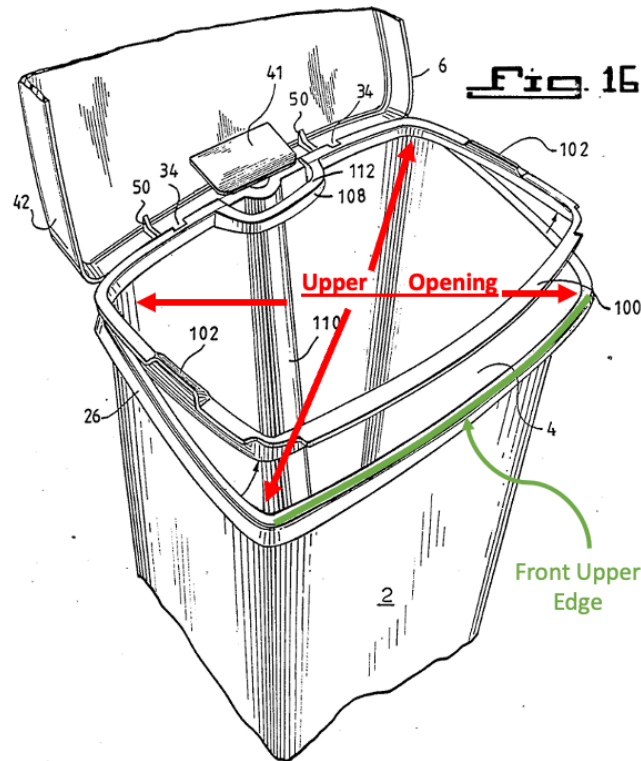
148. In my opinion, Koda's wastebasket has the claimed "a body component comprising a lower base, an upper opening, and a front upper edge." I use the following annotated figures to show each claimed part:



149. Here, Koda figure 1 shows the body component and the lower base. The front upper edge is indicated in green, but it is obscured by the edge of the lid. The front upper edge is unobscured and indicated in green in the next two figures from different perspectives.



Koda figure 10 (top down view).



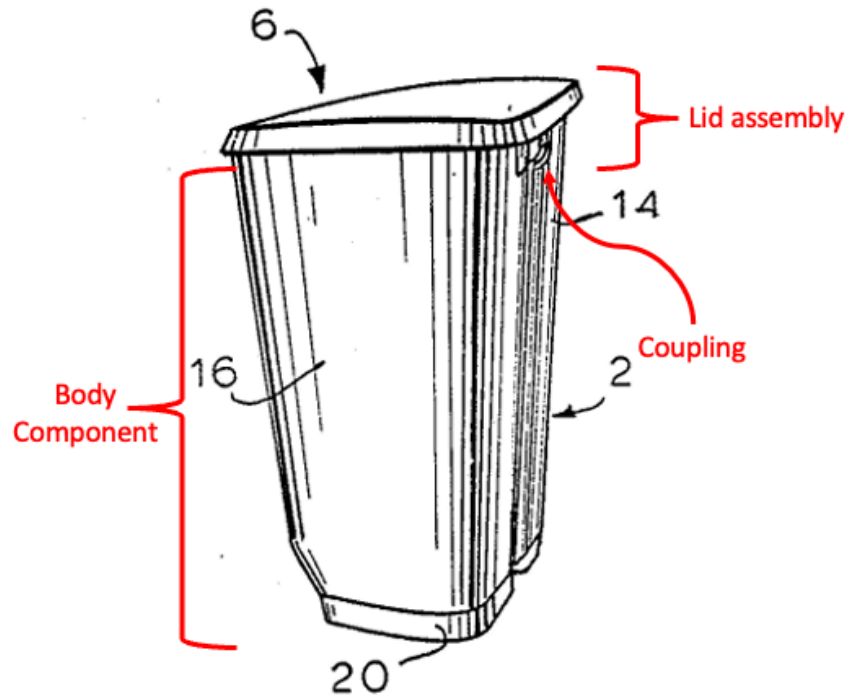
Koda figure 16 (perspective view).

150. Koda describes the details of these components in column 3:30–4:8, and 5:2–7:69. The “lower section 10” of Koda is the claimed “lower base.” Column 3:48–3:52. A POSITA would have understood that Koda’s container “rim 26” at “open end 4” defines the claimed “upper opening” of the body, the front part of which is the claimed “front upper edge.” Column 3:30–3:38, 3:53–3:65, 4:16–4:22.

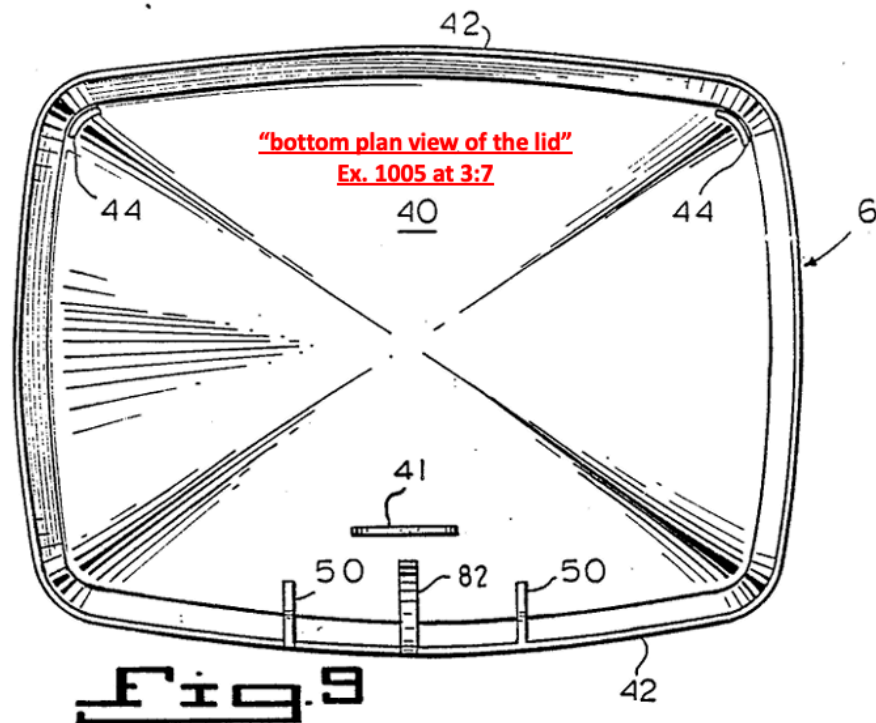
[1.2] a lid assembly configured to couple with the body component, the lid assembly comprising:

151. In my opinion, a POSITA would have understood or found it obvious that Koda’s wastebasket has a lid assembly configured to couple with the body component. I use the following annotated figures to show each claimed part:

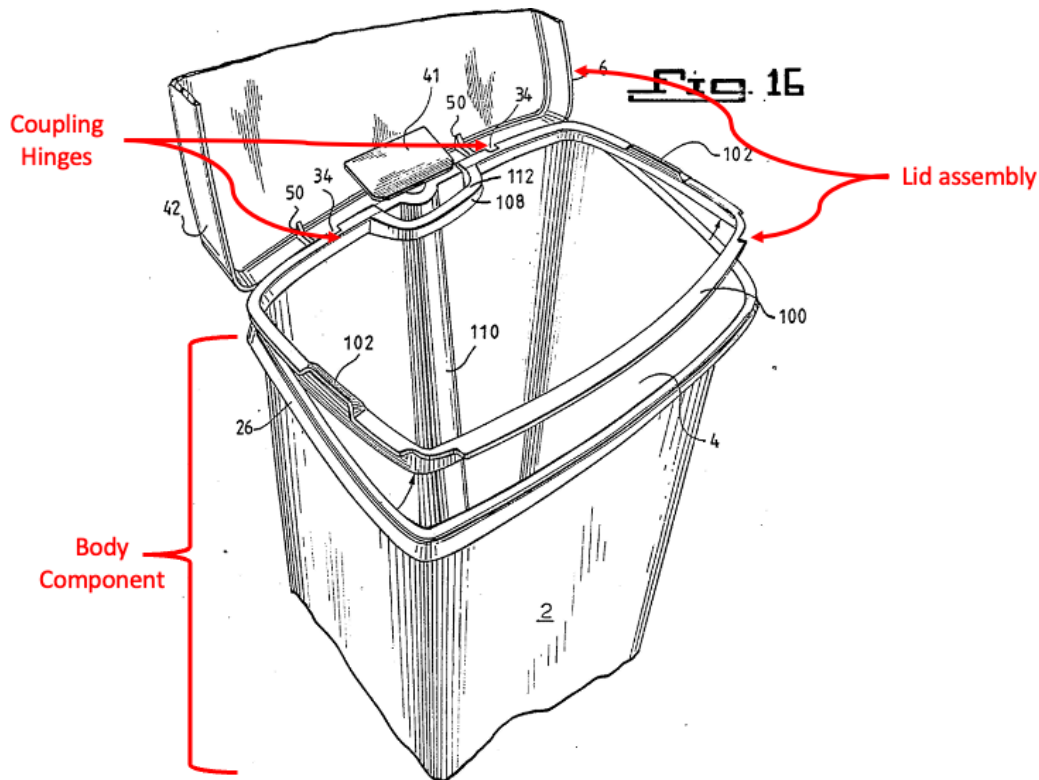
Fig. 2



Koda Figure 2



Koda Figure 9



Koda Figure 16

152. Koda describes these components in Column 3:30–5:2.

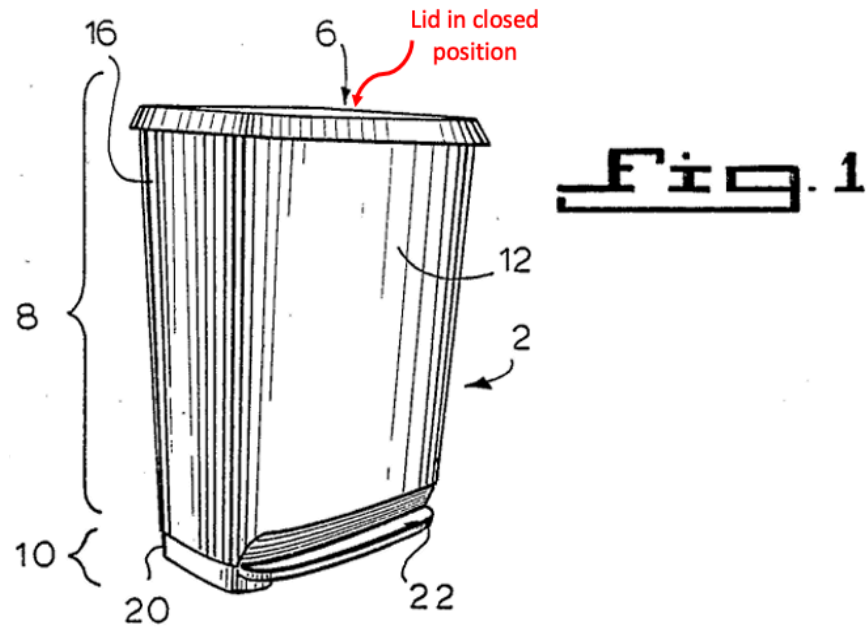
153. A POSITA would have understood that Koda’s “lid 6” and “retainer ring 100” (interchangeably referred to as “retainer ring” in the specification) form the claimed “lid assembly.”

154. In my opinion, a POSITA would also have understood that the lid and retaining ring of Koda are coupled to the body component in two ways. First, the lid and retainer ring rest on the body. Koda shows and describes how the lid and retainer ring are “seated closely on the container rim 26” when the lid is closed. Column 4:64–4:66 and figures 1, 2, 16. Second, Koda’s lid assembly is also coupled

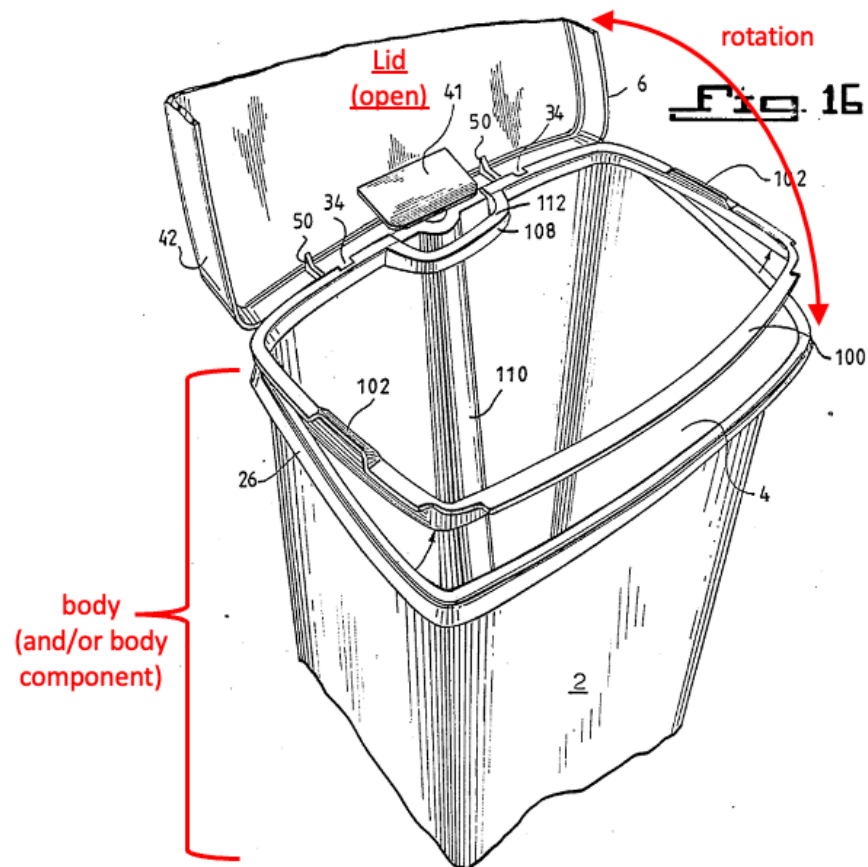
to the body because “the lid 6 is mounted on the container.” Column 3:30–3:38, 4:30–4:66. This part of Koda describes how the lid is attached using ribs 46, hinge elements 50, and pins 48. Koda’s retainer ring 100 is similarly coupled with the body because it is “pivotally mounted to the container 2” via hinge elements 104 and also rests on the body when in the closed position. Columns 8:25–49. Koda also refers the reader to Miller, which describes this in more detail. Koda Columns 8:17–8:24; Miller Columns 2:10–2:24, 3:47–3:55. Based on these parts of Miller, A POSITA would have understood that Koda’s retainer ring rests on the body when closed.

[1.3] a lid configured to rotate, relative to the body [component], between a lower position and an upper position; and

155. In my opinion, Koda teaches that the lid assembly of its wastebasket includes “lid 6.” This lid 6 is configured to rotate, relative to the body (or the previously recited body *component*), between a lower position and an upper position. In simple terms, this just means that the lid is hinged with the body so that it can rotate up and down to open and close. Koda’s figures show its lid doing opening and closing (“rotate, relative to the body, between a lower position and an upper position) in the following figures:



Koda Figure 1 shows the lid in the closed position.



Koda Figure 16.

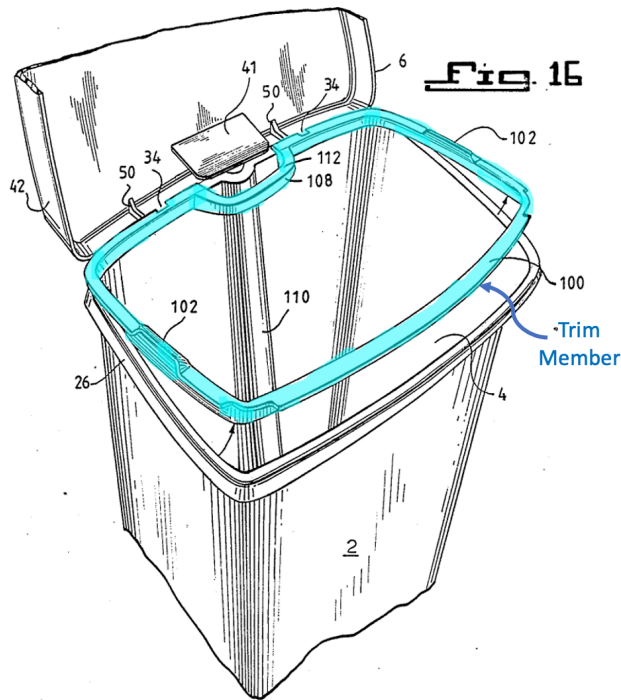
Koda Column 4:30–5:8 further describes the lid and how it is attached to the body using hinges in column so that it can rotate to open. Koda also describes how the lid and hinge operate in columns 6:58–7:26 and figures 15a–c, including how it actuates in response to the foot pedal and how the shape of the link and hinge groove work so that the lid can prop open.

156. In my opinion, a POSITA would know from in Koda’s Figure 1 that the lid has a closed position (the claimed “lower position”) and when the lid is open as in Figure 16 is in an upper position. The POSITA would have understood that the lid rotates relative to the body to move between these positions. The rotation would have been understood by the POSITA not only from the figures, but also because Koda’s “lid 6 is mounted on the container 2 and is pivotable between a closed position, covering the container’s open end 4, and an open position, where it is in a substantially upright, vertical disposition.” Koda Column 4:30–4:34. Specifically, the lid 6 has a pair of hinge elements 50 which each have an aperture 52 that receives mounting pin 48. Koda Column 4:48–4:59. The lid pivots about lid mounting pins to reach the vertical position. Column 7:1–7:8. Based on these descriptions of pivoting, the figures, and the explanation of the hinge, this element was taught by Koda.

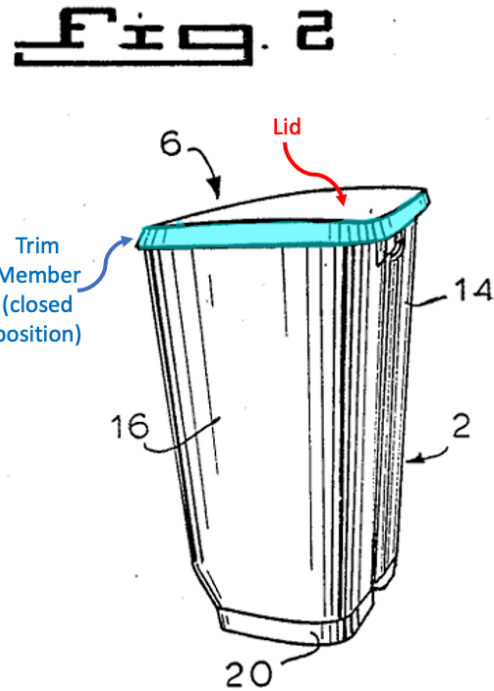
[1.4] a trim member configured to rotate between a closed position and an open position, wherein:

157. In my opinion, a POSITA under the plain and ordinary definition of trim member, the retainer ring 100 of Koda would be considered a trim member, because it is a trim around the upper edge of the trash container. However, the patent owner has suggested a construction of “an externally visible ornamentation member”. I do not agree with the patent owner’s construction. However, for the sake of this declaration I will apply this construction.

158. In my opinion, under the patent owner’s construction, a POSITA would have understood that two different parts of Koda’s trash would be a “trim member.” First, Koda’s retainer ring would have been a “trim member.” Second, the rim of Koda’s lid would have been a “trim member.” Because this chamfered edge of the lid is ornamental and is externally visible. I highlight the trim members using blue in the following figures:



Trim Member Option 1



Trim Member Option 2

159. In my opinion, both of these are externally visible ornamentation members, so they fit Patent Owner’s proposed claim construction from Section II(D) above. One does not need to be inside the trash can to see them. In fact, they are visible from perspectives external to the trash can, as shown in the figures above.

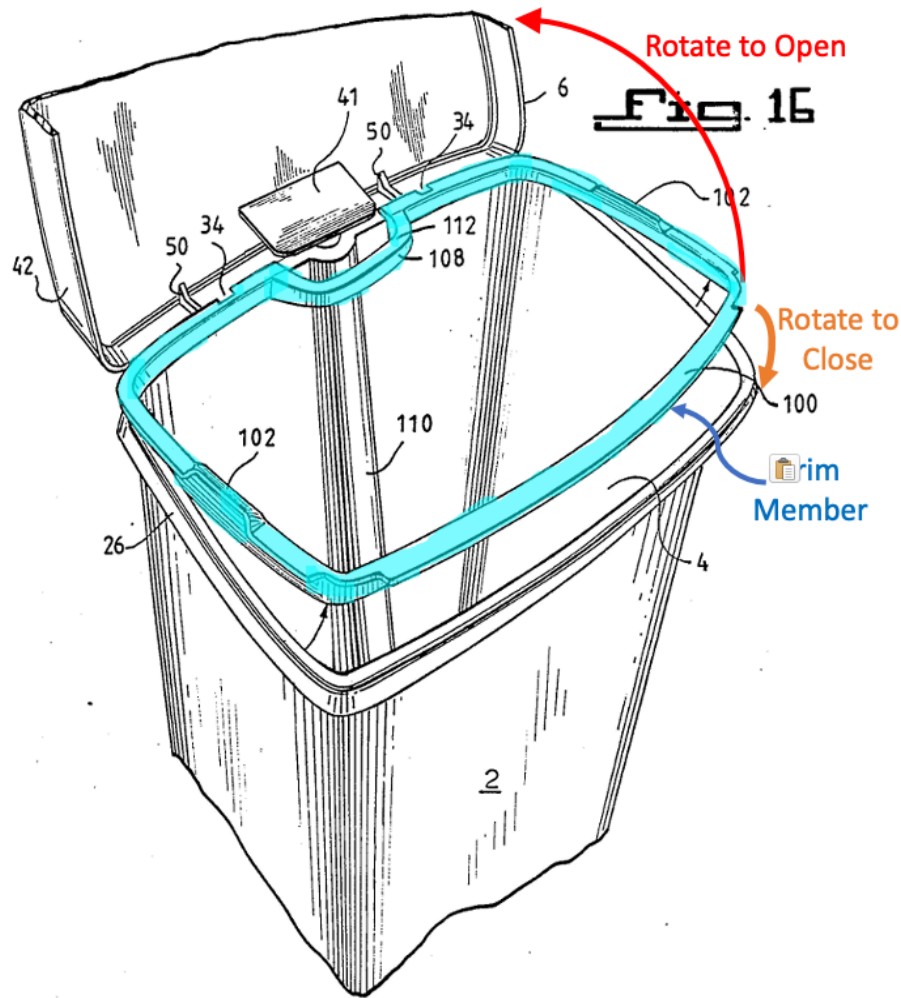
160. In my opinion, Trim Member Option 1 (the retaining ring) fits Patent Owner’s proposed construction of “trim member,” which does not require the lid to be in either the open or closed position, and a POSITA would not consider such any requirement of a lid position to be part of the meaning of “trim member.” Koda’s retaining ring is visible from an external perspective at least when the lid is raised during the ordinary operation of a trash can, when a user opens the lid to throw in trash.

161. In my opinion, Trim Member Option 2 (the edge of the lid) fits Patent Owner's proposed construction of "trim member," which does not require the trim member to be separated from the rest of the lid's top surface by any degree.

162. Where applicable, the rest of my declaration indicates which interpretation of "trim member" a POSITA applies.

Koda's Retainer Ring as the Trim Member

163. In my opinion, a POSITA would have understood that Koda's retainer ring 100 is a "trim member," as claimed. The POSITA would have further understood that this retainer ring is configured to rotate between a closed position and an open position, as shown in the following annotated figure 16 of Koda:



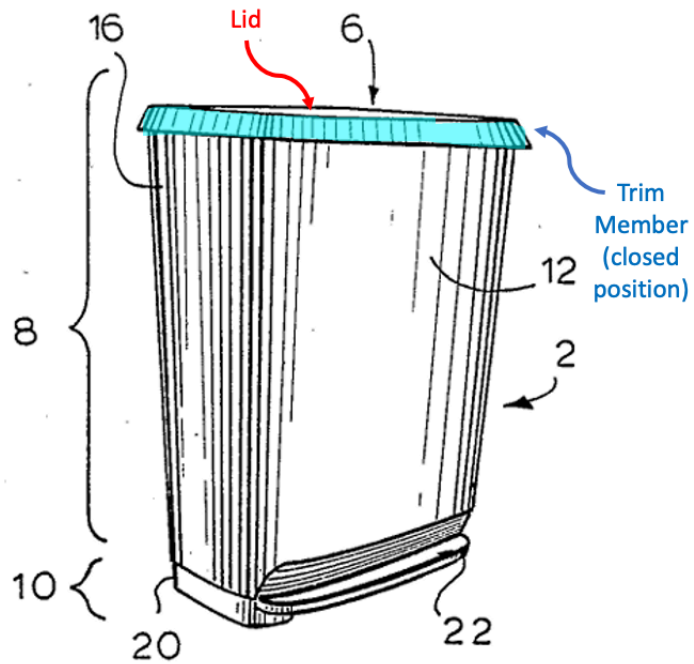
164. Koda describes the details of the retaining ring in column 8:17–8:49 and describes how it pivots in column 2:45–2:49. Specifically, these parts of Koda explain that the retainer ring “is pivotably mounted to the container 2” using “a pair of hinge elements 104 for securing it to the rim of the container,” meaning that it is configured to rotate between a closed position and an open position.

165. Koda also refers the reader to Miller, which provides additional details about this retaining ring (Miller refers to it as “bezel 6”) throughout its entire disclosure. Miller Column 3:49–3:55 further explains that its bezel is “pivotally

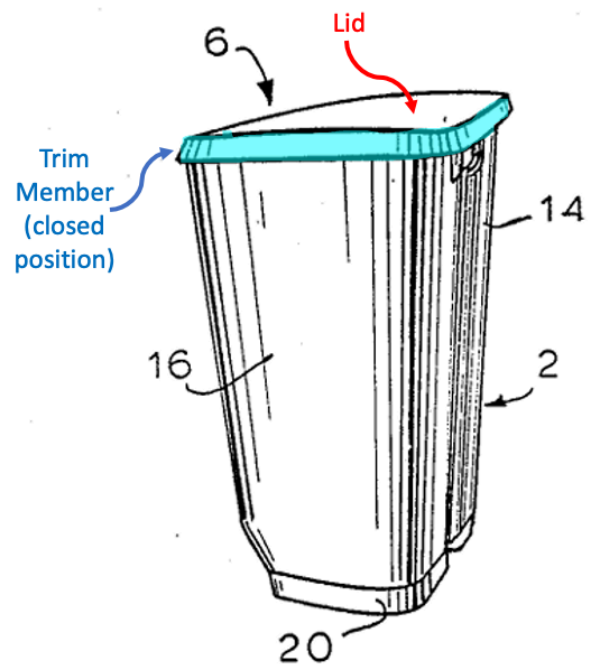
mounted on the container 2 at the container's open end. The bezel 6 is pivotable between an open position, where at least a portion of the bezel is raised above the rim 14 of the container, and a closed position, where the bezel 6 is disposed substantially co-planarly with the upper rim 14 of the container." This would have further supported the POSITA's understanding that Koda's retainer ring is a trim member configured to rotate between a closed position and an open position.

Koda's Lid Rim as the Trim Member

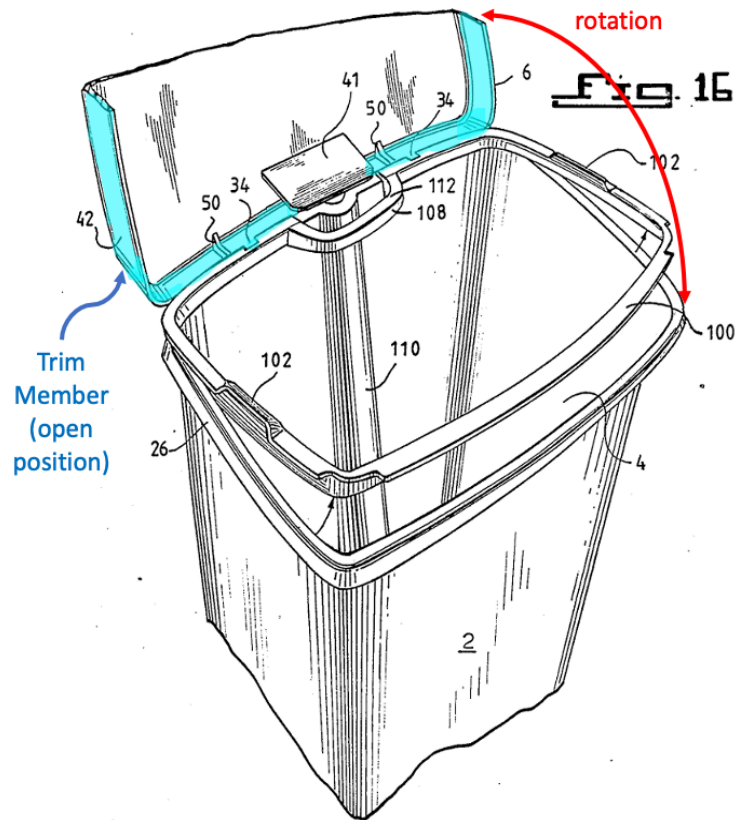
166. In my opinion, a POSITA would have additionally or alternatively understood that Koda's lid rim 42 is the claimed "trim member configured to rotate between a closed position and an open position." The following annotated figures show how this lid rim is an externally visible ornamentation member and how it rotates between the open and closed positions:



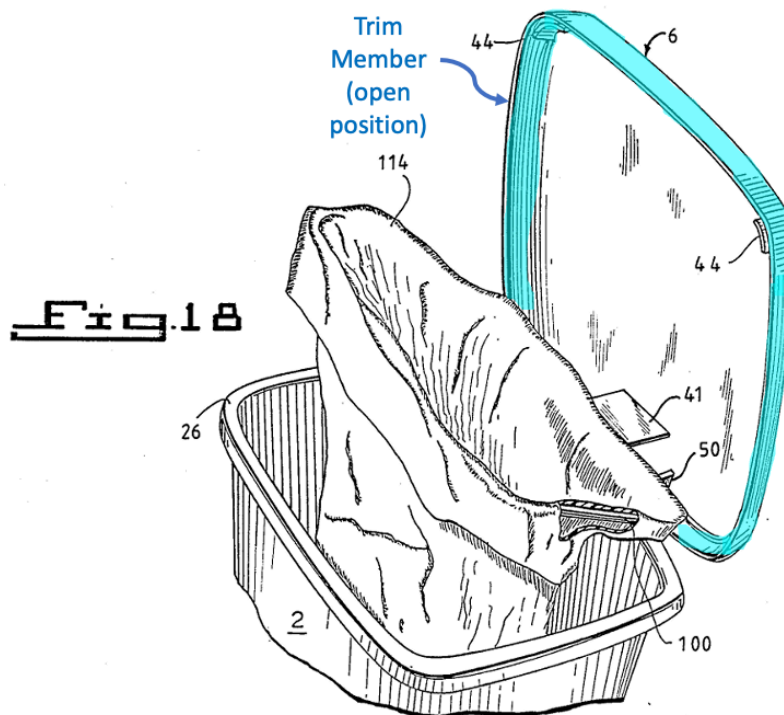
Koda Figure 1



Koda Figure 2



Koda Figure 16



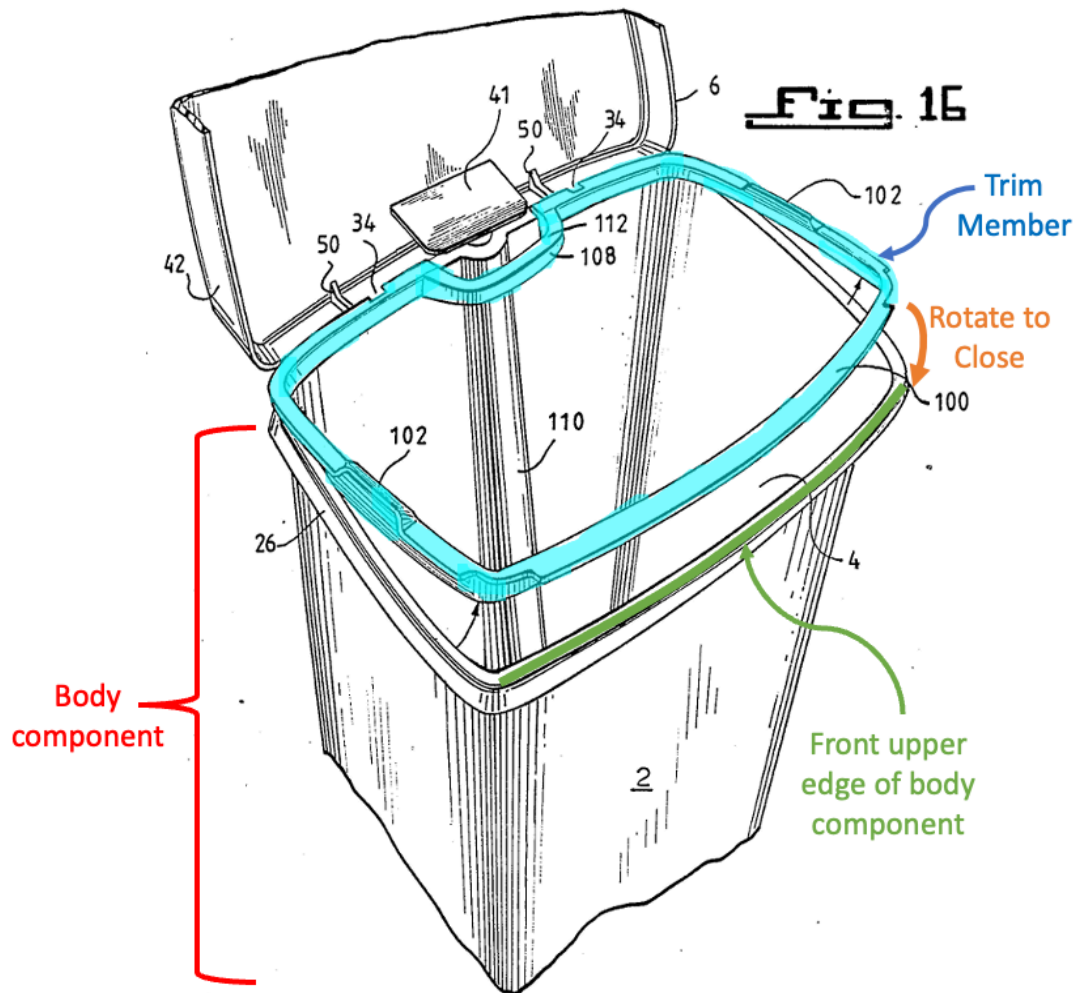
Koda Figure 18.

167. Koda Column 4:9–5:2 describes the lid rim 42 in more detail. From the pictures and this description, a POSITA would have understood the lid rim to be a trim member configured to rotate between a closed position and an open position, as claimed.

[1.5] in the closed position, a front of the trim member is adjacent the front upper edge of the body component; and

Koda's Retainer Ring as the Trim Member

168. In my opinion, under the interpretation that Koda's retaining ring 100 is a trim member), a POSITA would have understood that when the retaining ring closes, the front of the retaining ring 100 is adjacent the front upper edge of the body component. The following annotated figure shows how this would happen:



Koda Figure 16

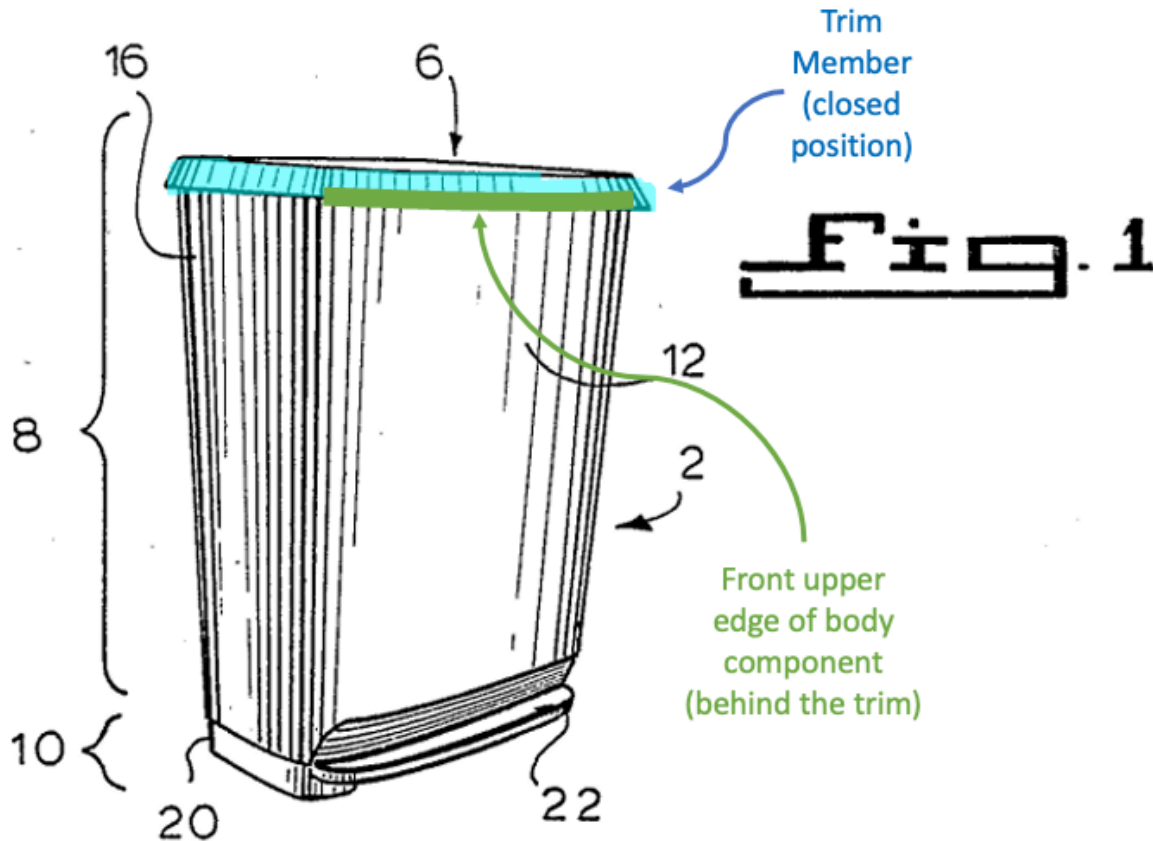
169. Koda column 2:45–2:49 and 8:17–8:49 describes how this retaining ring pivots. Because Koda’s retainer ring 100 “is pivotably mounted to the container 2,” at the backside, when it closes to pivot, the front would rotate downward until it is adjacent to and rests on the front upper edge of the body component.

170. In my opinion, this understanding about the closed position of Koda’s retainer ring would have been informed by Miller’s description of its bezel 6, which is the similarly corresponding component of Koda’s retainer ring. As I explained

above, Koda refers the reader to Miller, which further explains in column 3:49–3:55 that its bezel is “pivotally mounted on the container 2 at the container’s open end. The bezel 6 is pivotable between an open position ... a closed position, where the bezel 6 is disposed substantially co-planarly with the upper rim 14 of the container.” This means that when closed, the bezel rests on the upper rim of the body, including resting on (and being “adjacent to”) the front upper edge of the body. Miller columns 3:58–3:60 and 3:65–4:21 also describe how the bezel “includes a horizontal, flat seat portion 24 which is adapted to rest on the container rim 14 when the bezel is in the closed position.” A POSITA would have understood that Koda’s retainer ring operates the same way in terms of pivoting (rotating) to rest on (adjacent to) the container rim (front upper edge) when in the closed position because Koda’s retainer ring corresponds to Miller’s bezel.

Koda’s Lid Rim as the Trim Member

171. In my opinion, under the interpretation that Koda’s lid rim is the “trim member,” a POSITA would have understood that when the lid is in the closed position, a front of the lid rim is adjacent the front upper edge of the body component. This is shown in the following annotated figures:



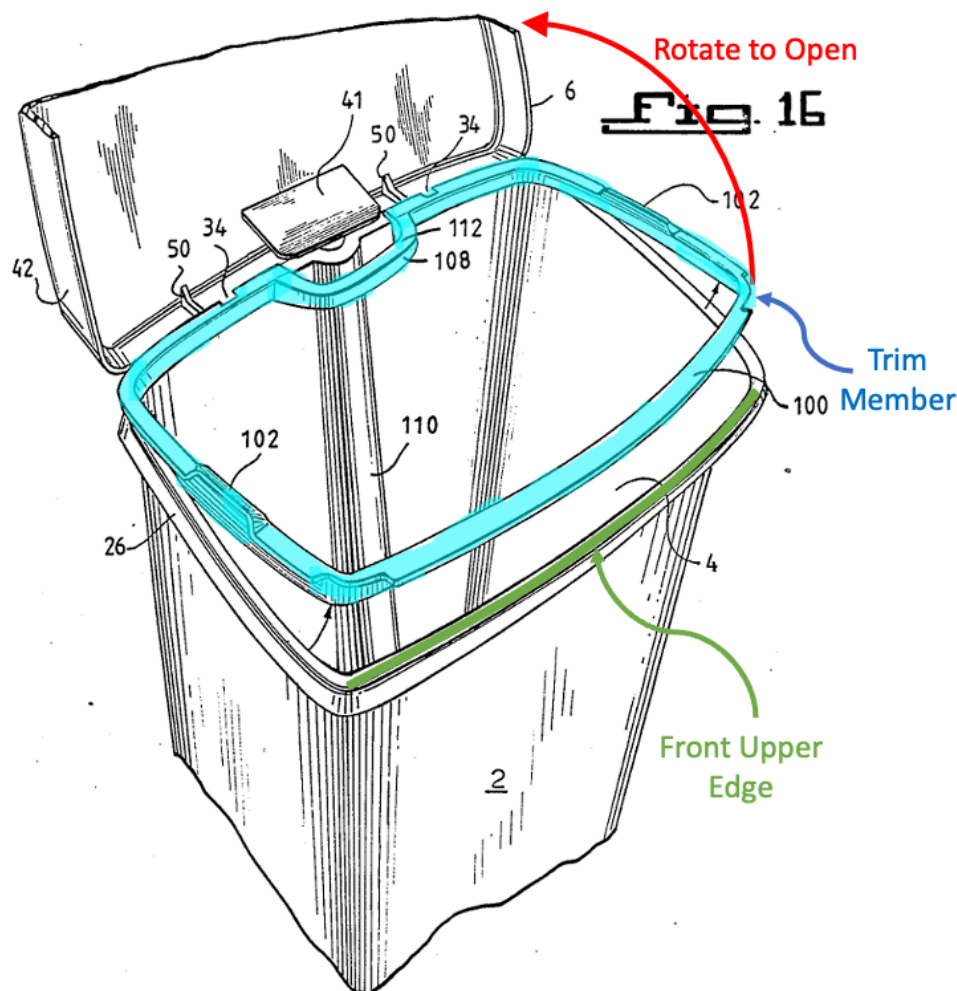
Koda Figure 1

172. As shown in this figure, the lid rim marked is adjacent to and obscures the front upper edge of the body marked in green. A POSITA would have had this understanding because the Koda's "lid rim 42 substantially parallels the edge portion 30 of the container rim and extends to or slightly below the edge of the container rim 26 so that it can mount closely on the container and hide the container rim from view when the lid is in the closed position." Koda Column 4:9–4:22. Based on this description, a POSITA would have understood that, when closed, the front of Koda's lid rim 42 (front of the trim member) extends to the front edge of the container rim 26 (front upper edge of the body component) such that they are adjacent, as claimed.

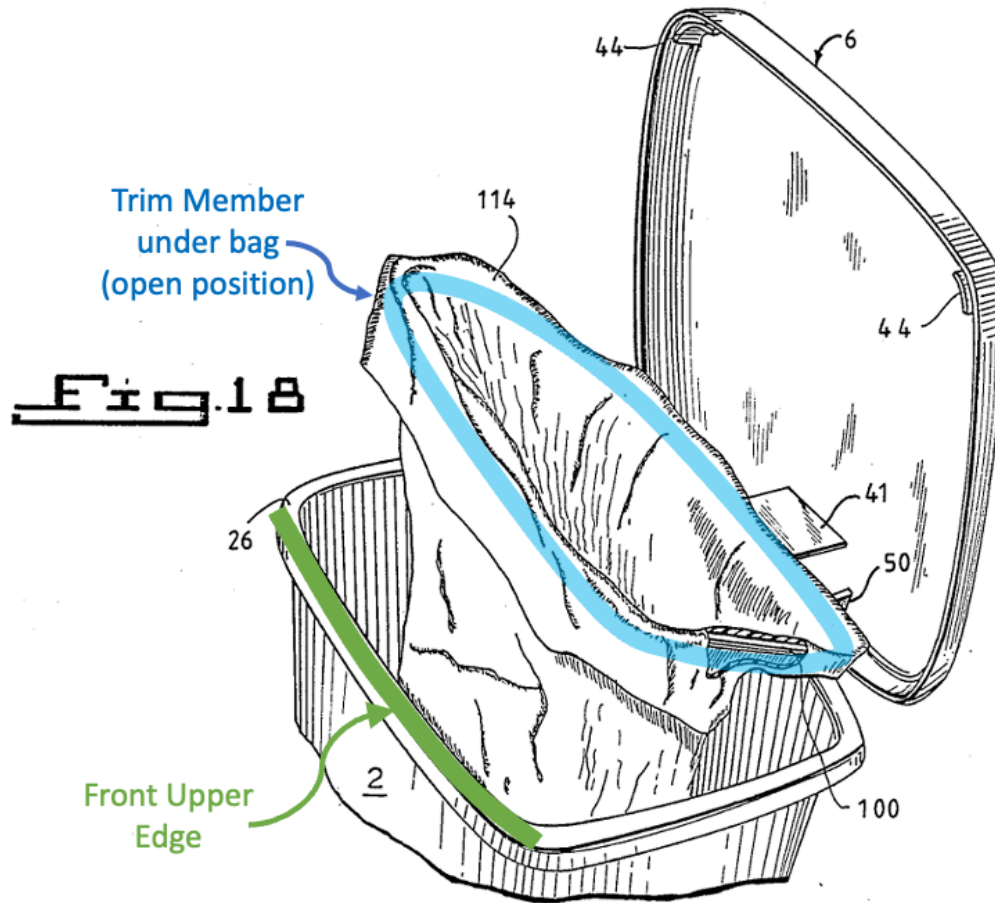
[1.6] in the open position, the front of the trim member is spaced apart from and vertically higher than the front upper edge of the body component; and

Koda's Retainer Ring as the Trim Member

173. In my opinion, under the first interpretation that Koda's retaining ring 100 is a trim member, a POSITA would have understood that when the retaining ring is in the open position, the front of the retaining ring would be apart from and vertically higher than the front upper edge of the body component. The following annotated figure shows how this would happen:



Koda Figure 16



Koda Figure 18

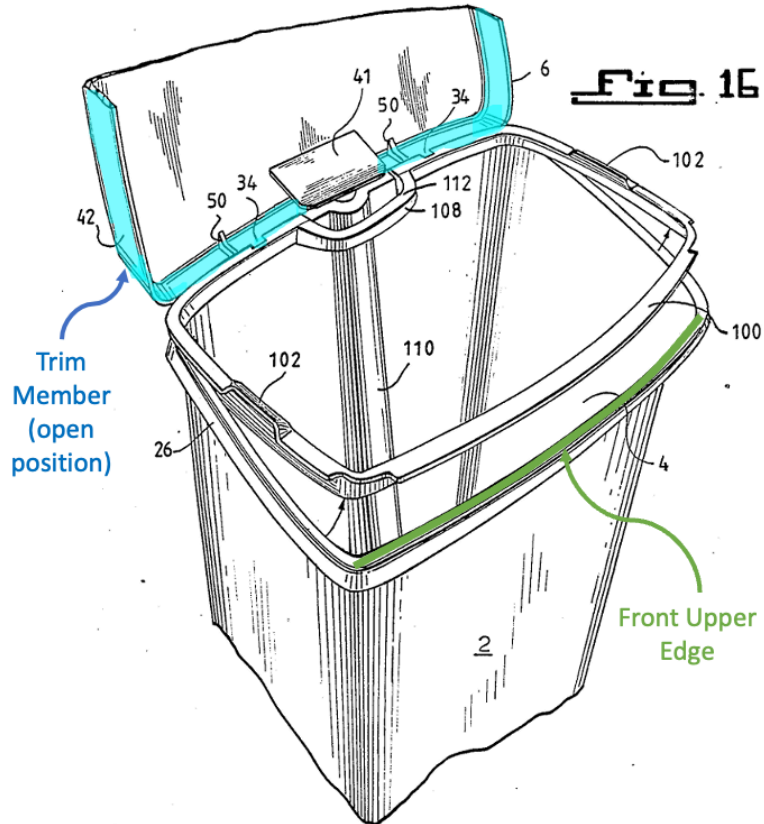
174. As I explained above, Koda Column 2:45–2:49 described how its retainer ring “is pivotably mounted to the container 2.” This means that when the retaining ring pivots to open, the front would rotate upward until it is apart from vertically higher than the front upper edge of the body component, like what is claimed.

175. In my opinion, this understanding of the POSITA would have been reinforced by Koda Column 8:17–8:49, which further describes details of “retainer ring 100” and directs the reader to Miller. As I explained above, the corresponding

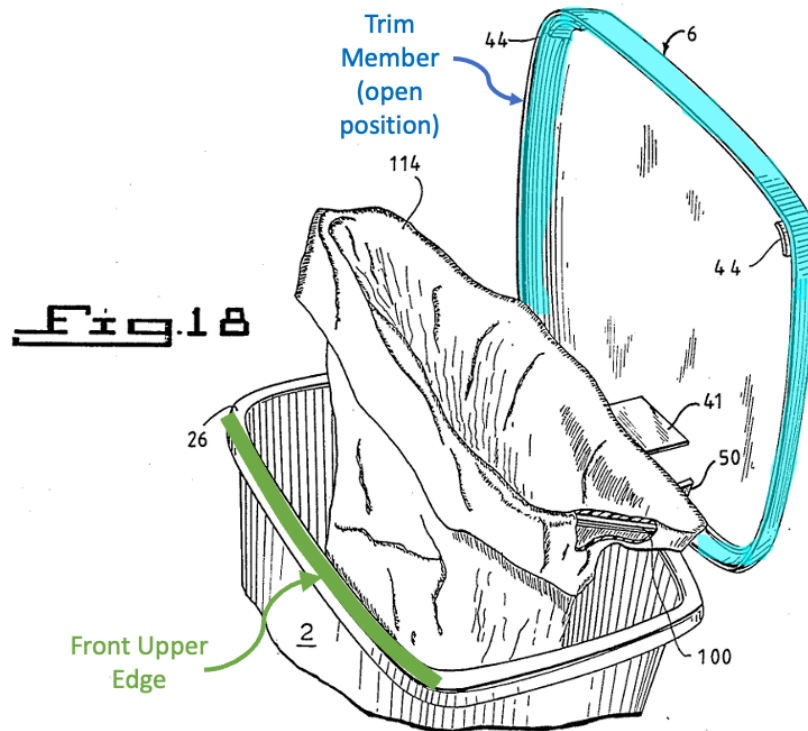
part of Miller is the bezel 6. Miller Column 3:49–3:55 explains that its bezel is “pivotally mounted on the container 2 at the container’s open end. The bezel 6 is pivotable between an open position where at least a portion of the bezel is raised above the rim 14 of the container.” Miller Column 5:21–5:29 also describes how the bezel has the ability to lock in the open position, at an angle between 30° to 60° above the horizontal. A POSITA would have understood that Koda’s retainer ring operates the same way in terms of pivoting (rotating) upward so that the front is raised above (space apart from and vertically higher than) the container rim (front upper edge) when in the open position at about 30° to 60° above the horizontal because Koda’s retainer ring corresponds to Miller’s bezel.

Koda’s Lid Rim as the Trim Member

176. In my opinion, under the interpretation that Koda’s lid rim is the “trim member,” a POSITA would have understood that in the open position, the front of the Koda’s lid rim is spaced apart from and vertically higher than the front upper edge of the body component. The following figures show this position:



Koda Figure 16



Koda Figure 18

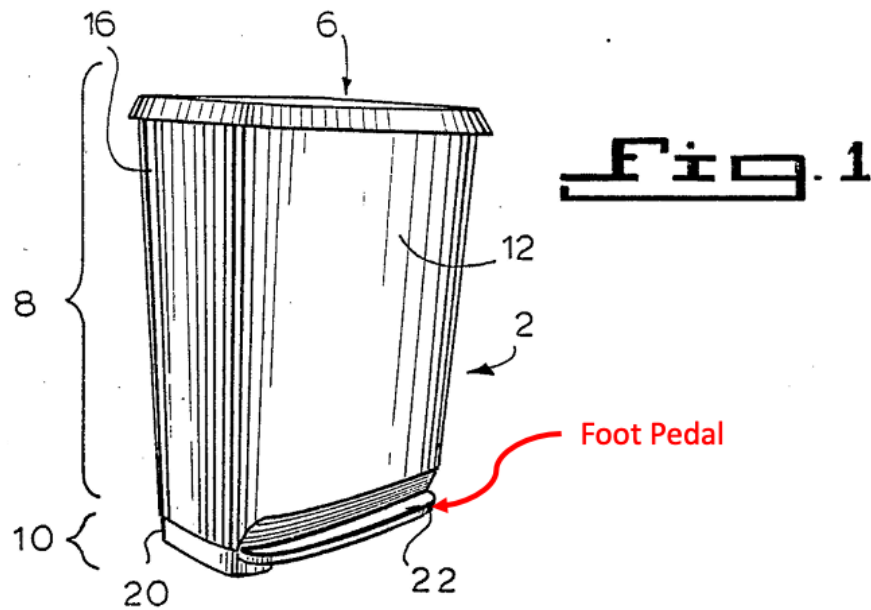
177. Koda describes the lid and the body in columns 4:30–5:8 and how the lid rotates in column 6:48–7:26 and Figures 15a–15c. Specifically, Koda column 4:30–4:34 explains how its “lid 6 is mounted on the container 2 and is pivotable between a closed position ... and an open position, where it is in a substantially upright, vertical disposition.” Because the lid rim (trim member) moves with the lid, In my opinion, a POSITA would have understood that, when Koda’s lid is in the open position, the front of the lid rim (front of the trim member) will be in an upright, vertical disposition so that it is spaced apart from and vertically higher than the front upper edge of the container (body component) as claimed and as show in the Figures above.

[1.7] a power transmission device configured to drive the lid between the lower position and the upper position; and

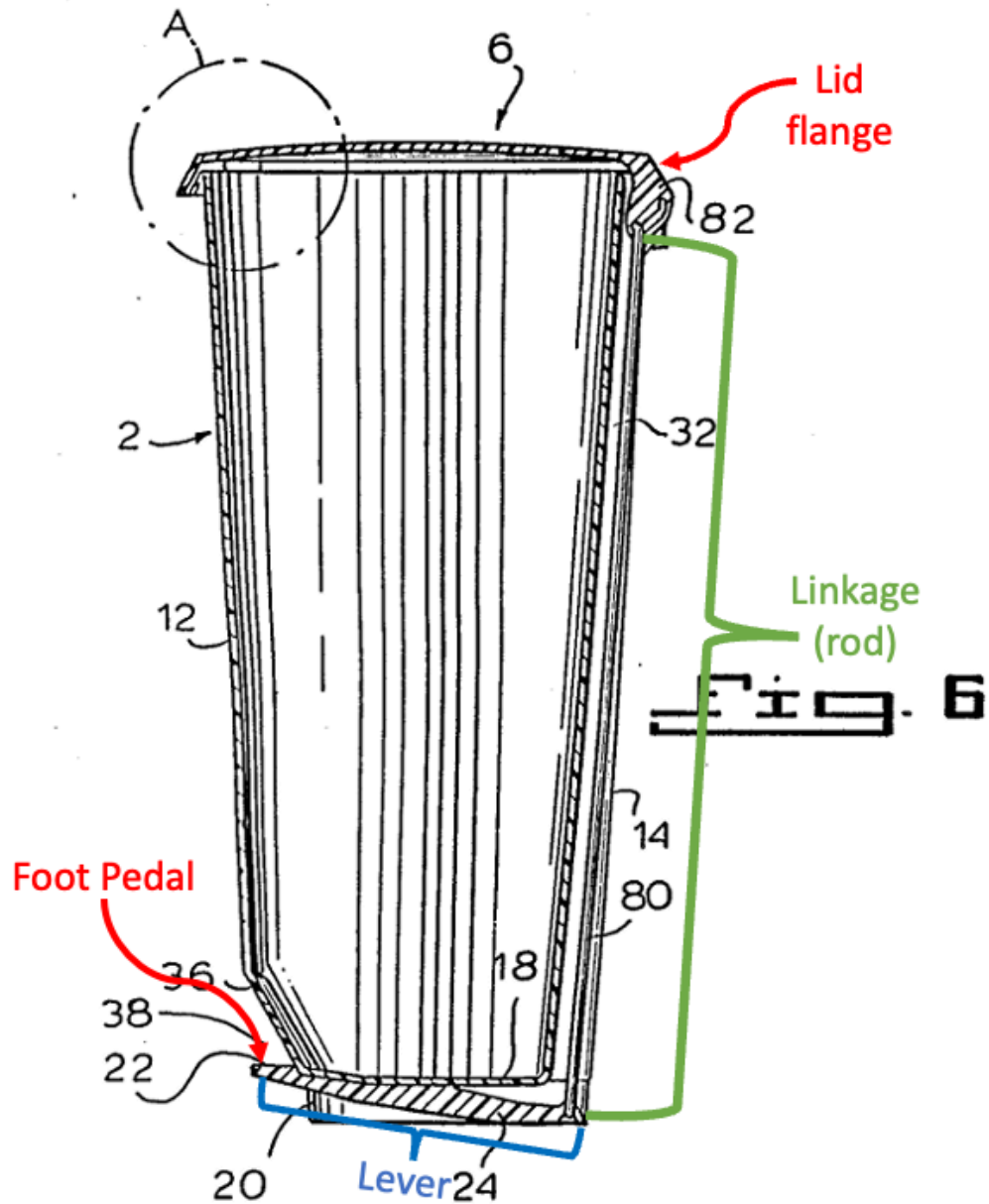
178. In my opinion, a POSITA would have understood these to be the claimed power transmission device configured to drive the lid between the lower position and the upper position, at least under the patent owner’s construction of “power transmission device”. This is because Koda’s wastebasket has a foot pedal that drives the lid.

179. Koda column 3:51–3:52 teaches that its trash can includes foot pedal 22 for “operating lever 24 for opening and closing the lid.” Koda column 5:3–6:4 then teaches this foot pedal operates to drive the lid. In summary, when a user steps on the foot pedal, it moves in a seesaw-type fashion such that the other end moves a

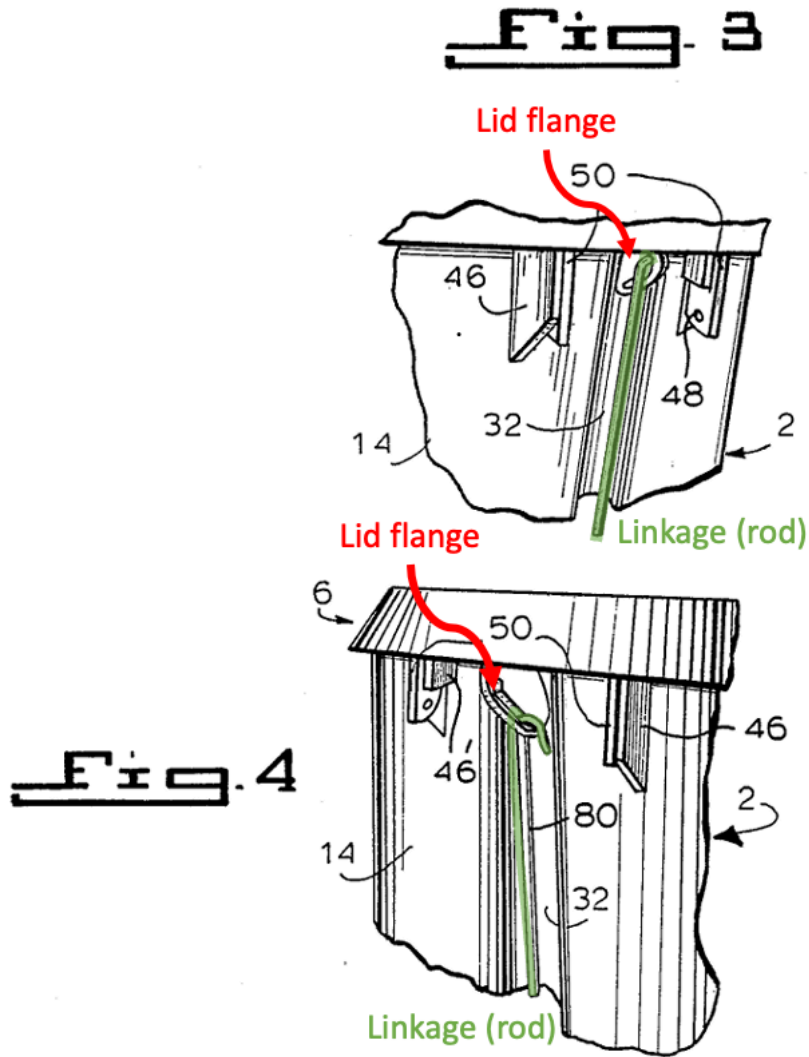
linkage (e.g., a rod), which moves up to push flanges at the back of the lid, causing the lid to open. Power from a user's foot is transmitted through these components to drive the lid between a lower/closed position and an open/upper position. Therefore, Koda teaches the claimed power transmission device. The following figures show these components:



Koda Figure 1



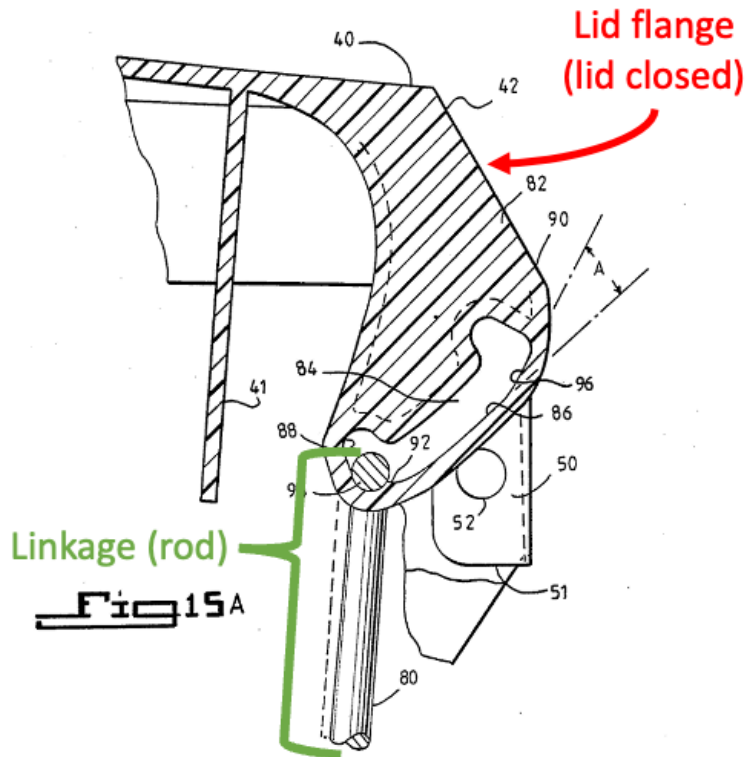
Koda Figure 6



Koda Figures 3, 4

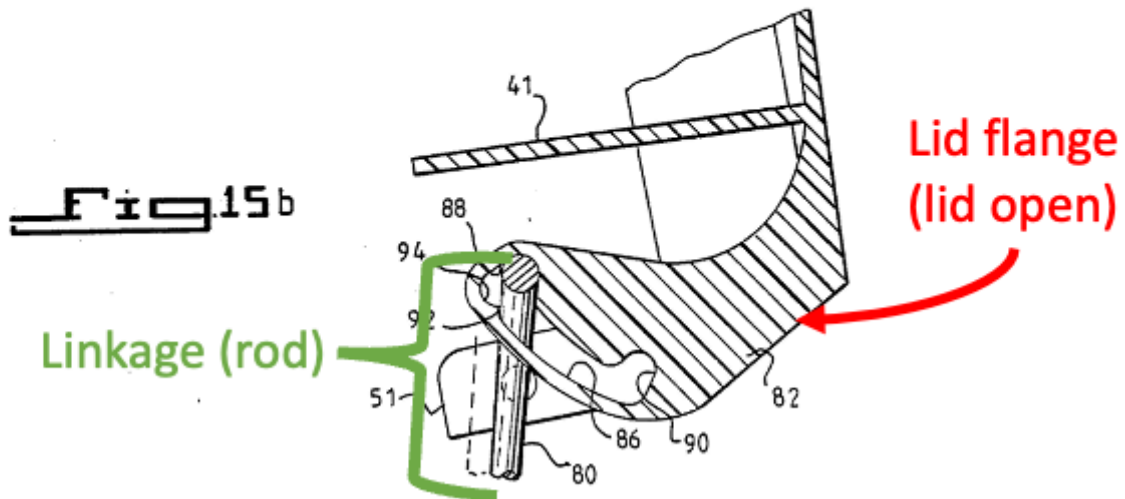
180. Koda column 5:9–5:62 describes in detail how, when a user steps on the foot pedal shown in figures 1 and 6 above, the stepping force causes the foot pedal to pivot with lever action in a see-saw manner. Koda 5:67–6:4 then explains that a “linkage is provided between the operating lever 24 and the lid to transmit the pivotal movement of the lever to the lid. Preferably the linkage is an elongated metal rod 80 having opposite hooked ends. One end of the rod 80 is received in the flange

aperture 72 of the operating lever, and the other end is joined to the lid.” From here, the rod interacts with the flange of the lid. I use the following figures 15a–d to show how this causes the lid to move.



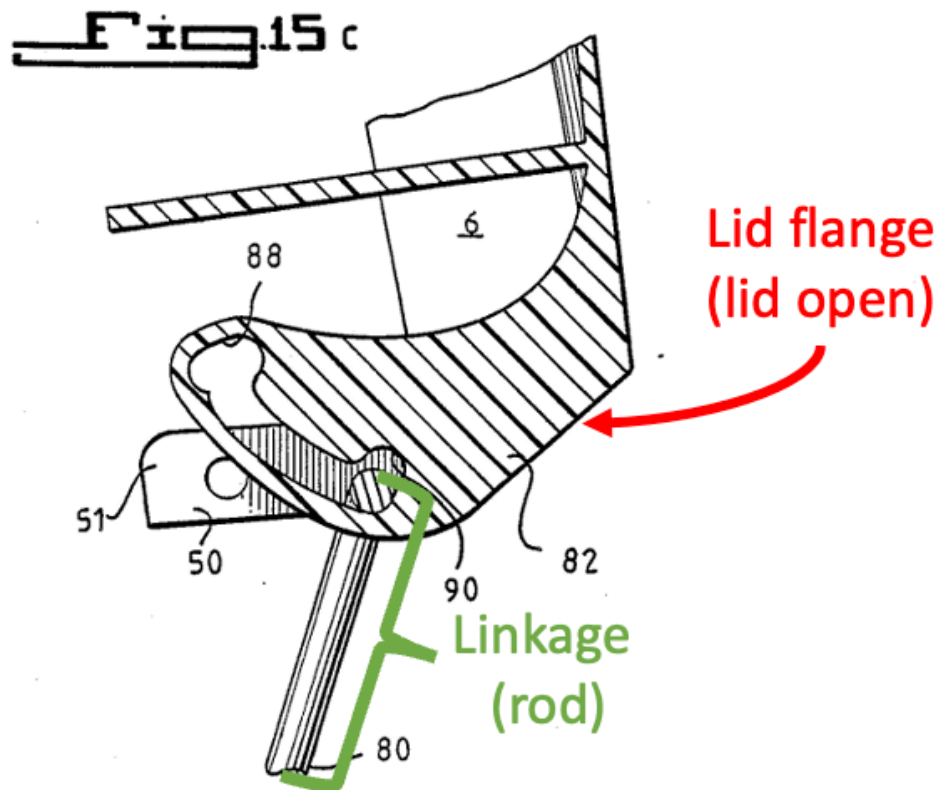
Koda Figure 15A

181. Here in Koda figure 15A, the lid is shown in the closed position. The rod rests at the bottom of a slot in the flange. Koda describes this column 6:16–6:66.



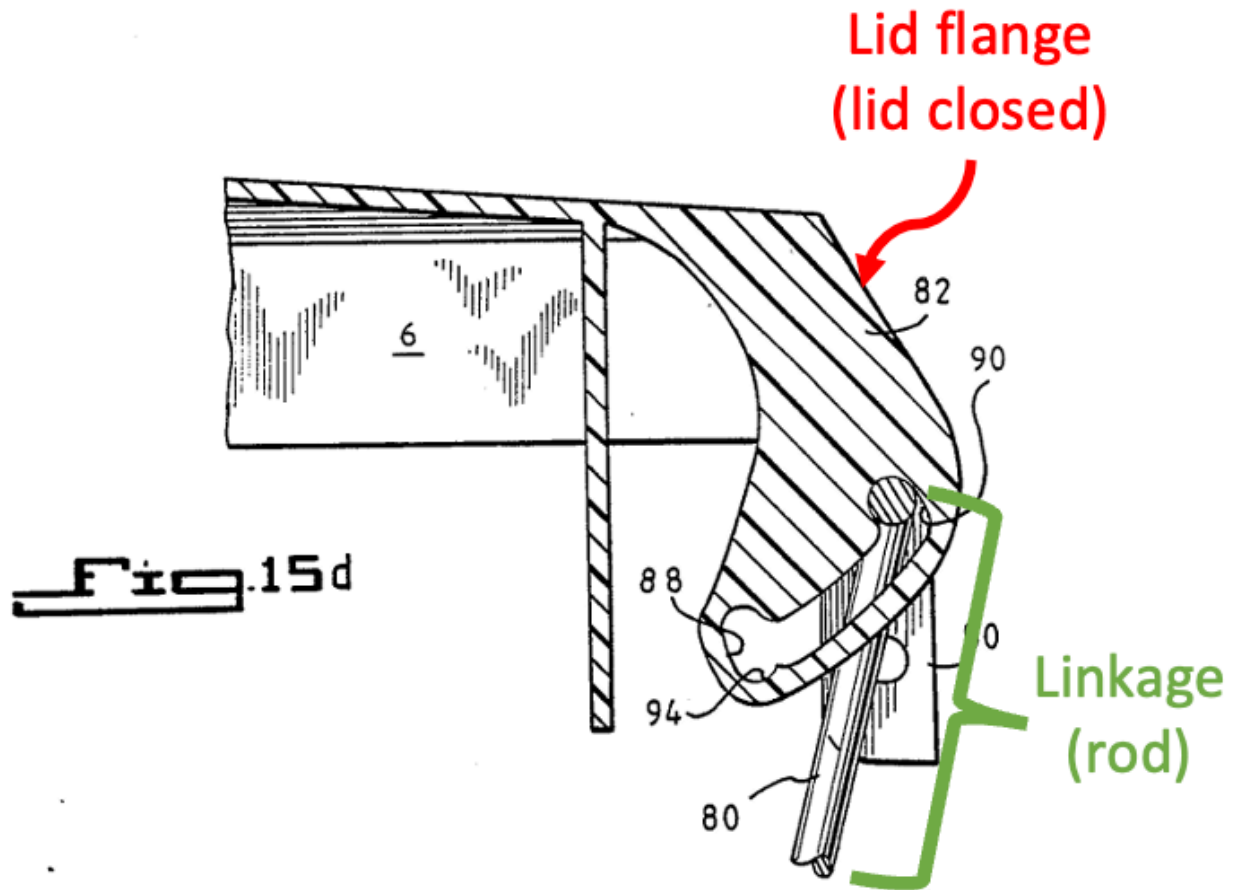
Koda Figure 15b

182. Here in Koda Figure 15b, the rod is being forced upward by the lever in response to a user's step. This upward motion pushes up in one groove, causing the lid to rotate and open. Koda describes this in column 6:67–7:8.



Koda Figure 15c

183. Figure 15c shows what happens after the foot pedal is released. Without upward lever action behind it, the rod now moves downward and falls to the other end of the slot. Koda describes this in column 7:9–7:14.



Koda Figure 15d

184. Finally, Figure 15d shows the result of the user stepping on the foot pedal a second time to close the lid. This time, the rod is force upward at the back of the slot, causing the lid to rotate the other way and close. Koda describes this in column 7:15–7:26.

185. In my opinion, a POSITA would have understood from these descriptions of Koda and the sequence of figures that Koda discloses power transmission device configured to drive the lid between the lower position and the upper position.

[1.8] a retaining mechanism configured to maintain the trim member in the open position against the force of gravity.

Koda's Retainer Ring as the Trim Member

186. In my opinion, under the interpretation that Koda's retaining ring 100 is a trim member, it would have been obvious to a POSITA that Koda's wastebasket includes a retaining mechanism configured to maintain the trim member in the open position against the force of gravity. This is because the POSITA would have understood that this disclosed Miller and is a part of Koda's design. The POSITA would have understood this because Koda column 8:17–8:31 refers the POSITA to Miller for additional details about the operation of Koda's retainer ring.

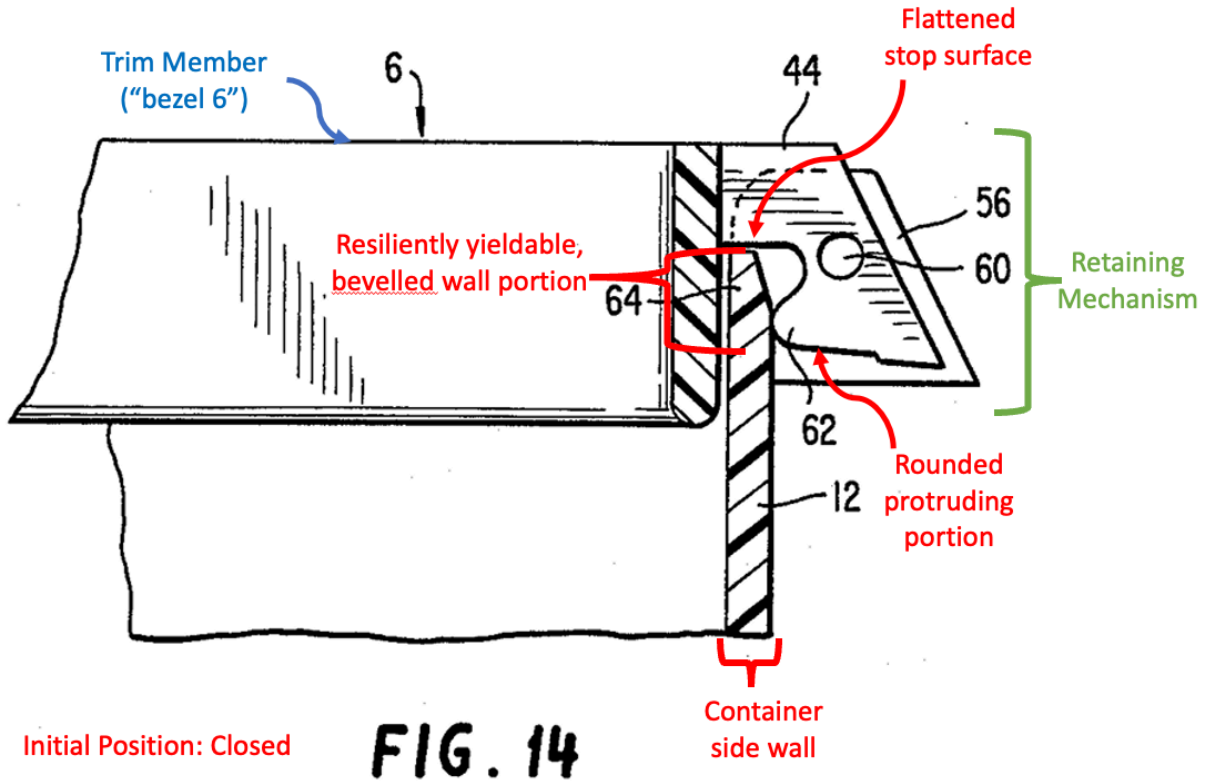
187. Moreover, in context, a POSITA would have recognized that Koda includes and builds on Miller's design by adding a foot pedal and by adding a bulge toward the rear. Otherwise, the POSITA would have understood that Koda uses and further improves upon the technology described in Miller, including the operation of Miller's bezel.

188. In my opinion, a POSITA would have recognized that Koda's retaining ring 100 corresponds to Miller's bezel 6. This is because they are both approximately the same size and shape, in the same position, and they are both described as being used to secure trash bags. Thus, the POSITA would have understood that Miller's descriptions of its bezel apply to Koda's retaining ring as well.

189. Miller columns 2:10–19, 3:47–55 explain that its bezel 6 is used for holding liners (trash bags) and pivotally mounted to open and close. Miller repeatedly describes how its bezel 6 is able to be retained in the raised, open position. Miller describes this in columns 1:56–1:66, 2:25–2:40, 5:20–5:25, 5:38–5:41, 5:58–5:60, 6:20–6:22. Miller provides details in column 5:20–6:29. The benefit of this is that by keeping the bezel raised, both of a user’s hands are free to change the trash bag. Miller describes this problem in column 1:21–28, 1:39–53 and provides the solution in columns 1:56–66, 5:21–5:56, 6:18–53.

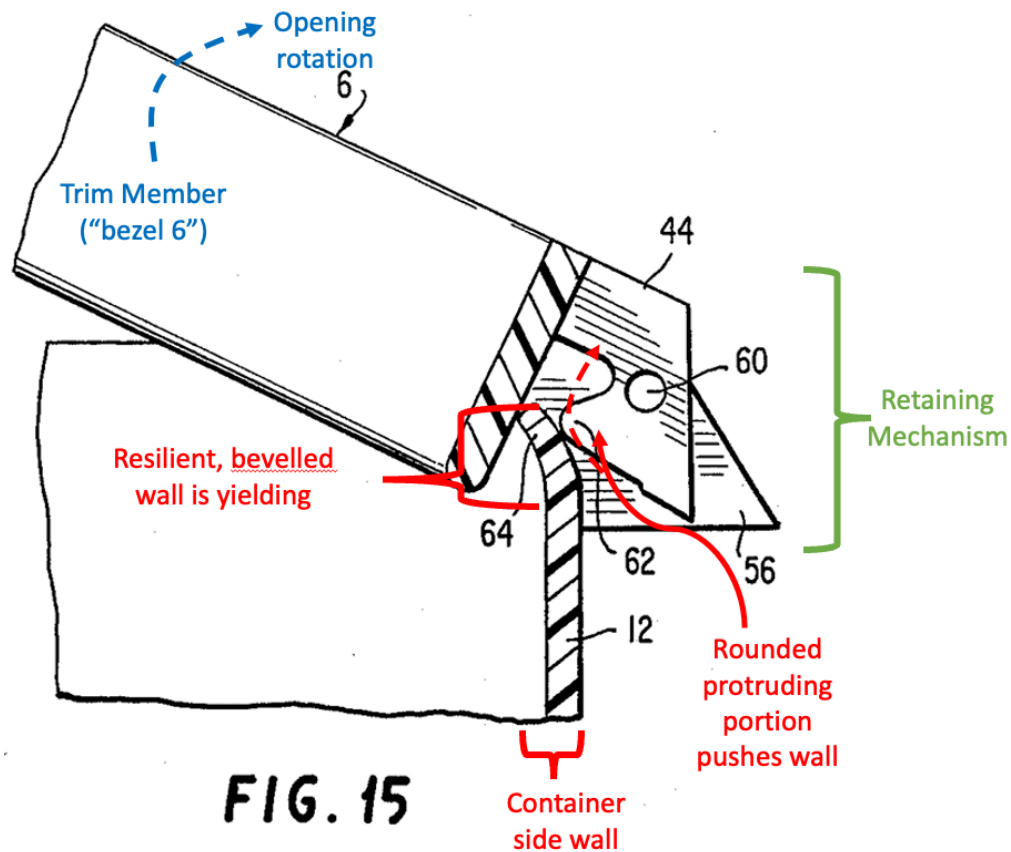
190. In my opinion, the POSITA would have understood that these descriptions from Miller also apply to Koda’s retaining ring, meaning that Koda’s retaining ring also able to be retained in the raised, open position. This way, Koda’s retaining ring could likewise be raised so that a user can replace the trash bag with two free hands, without needing to use one hand to hold up the retainer ring. So, even though Koda does not explicitly re-explain the Miller mechanism for its retainer ring to maintain the trim member in the open position against the force of gravity, it would have been obvious to a POSITA that this mechanism of Miller would have been implemented so that users have two free hands to change trash bags, especially in view of Koda’s explicit reference to Miller.

191. I use the following figures to describe how Miller that causes its bezel to stay open.



Miller Figure 14

192. Miller Figure 14 shows the bezel (trim member) in an initially closed state. Miller column 5:21–5:55 describes how bezel’s “hinge element” (surrounding hinge 60) is shaped with rounded protruding portion/member 62, which rests against the “side wall” of the body.



Miller Figure 15

193. Figure 15 of Miller shows how, as the bezel is raised, the rounded protruding members 62 push against the top of the side wall 64, which flexes because it is resiliently yieldable container side wall 64. Miller describes this in column 5:30–51.

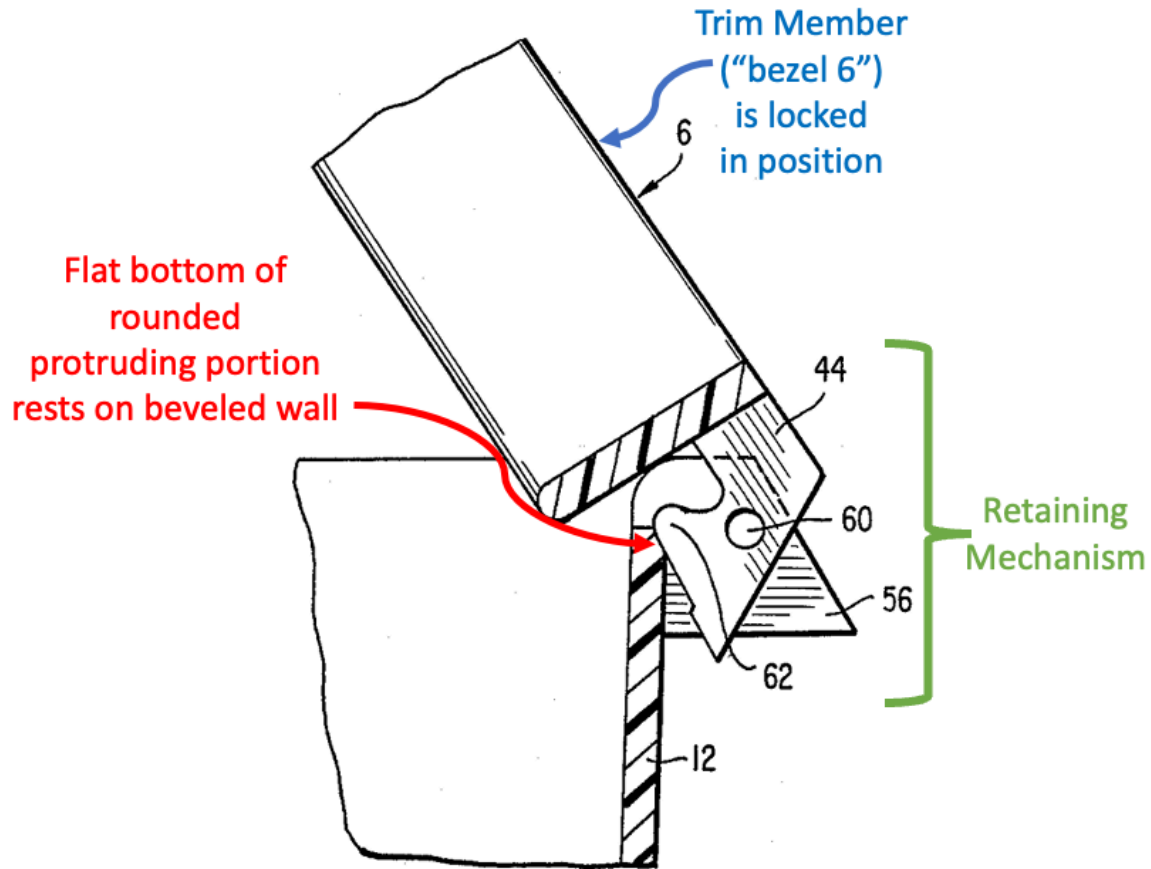
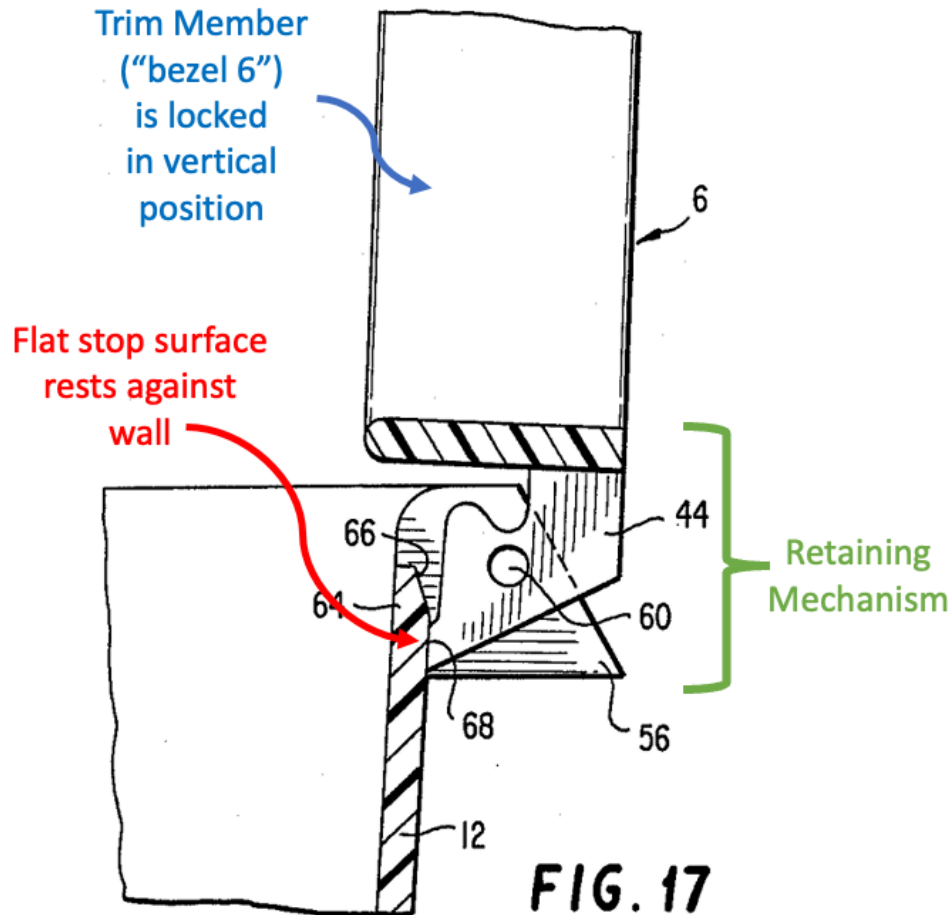


FIG. 16

Miller Figure 16

194. Figure 16 shows what happens as the trim member is pushed even further, to its raised and locked position. The rounded protruding portion has pushed upward, above the side wall. The side wall, being flexible and resilient, has returned to its original position, and the protruding portion now rests against it. The bezel/trim is now locked in place until more force is asserted. In other words, the bezel is held open against the force of gravity due because the protruding portion is resting on the side wall. Miller describes this in column 5:52–6:17.

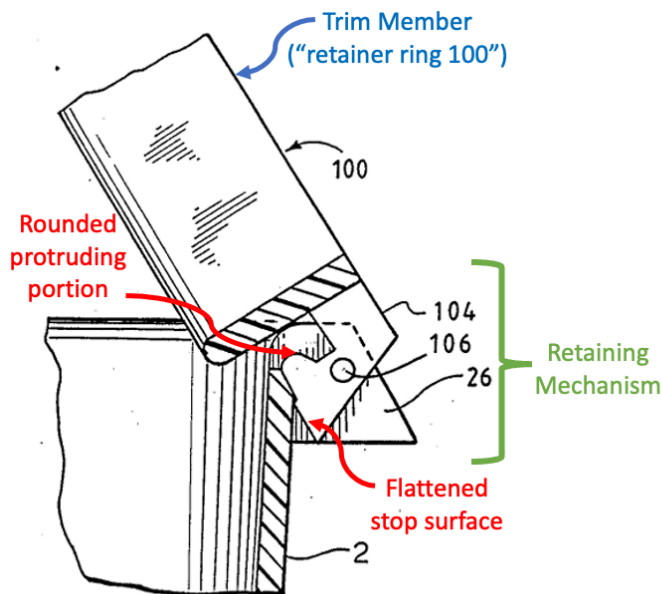


Miller Figure 17

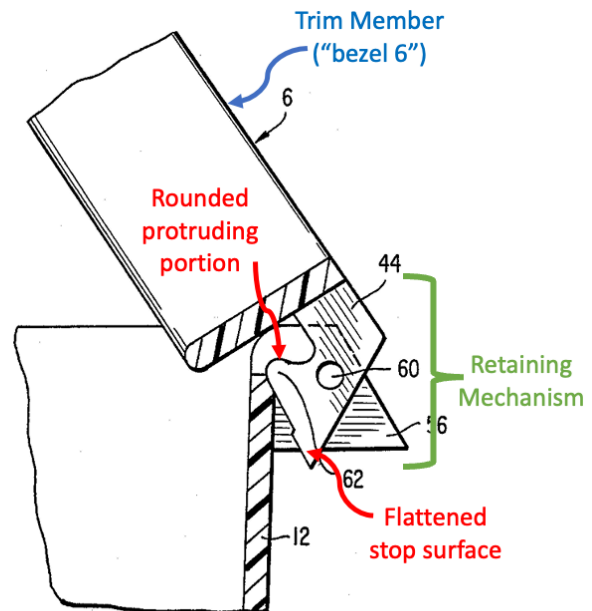
195. Miller Figure 17 shows what happens if the bezel is pushed even further, to a substantially vertical position. In this case, a flattened stop surface 68 of the hinge element engages the rear side wall of the container to stop movement. Miller describes this in column 6:1–6:17.

196. In my opinion, a POSITA would have understood these elements of Miller to be the claimed retaining mechanism, and that it would have been obvious to use this retaining mechanism in Koda's wastebasket. Indeed, Koda shows that its retainer ring 100 features hinge elements 104 that have the rounded protruding

members with the same shape as described in Miller, so these would operate the same way as described in Miller. *Id.* at ____.



Koda Figure 17



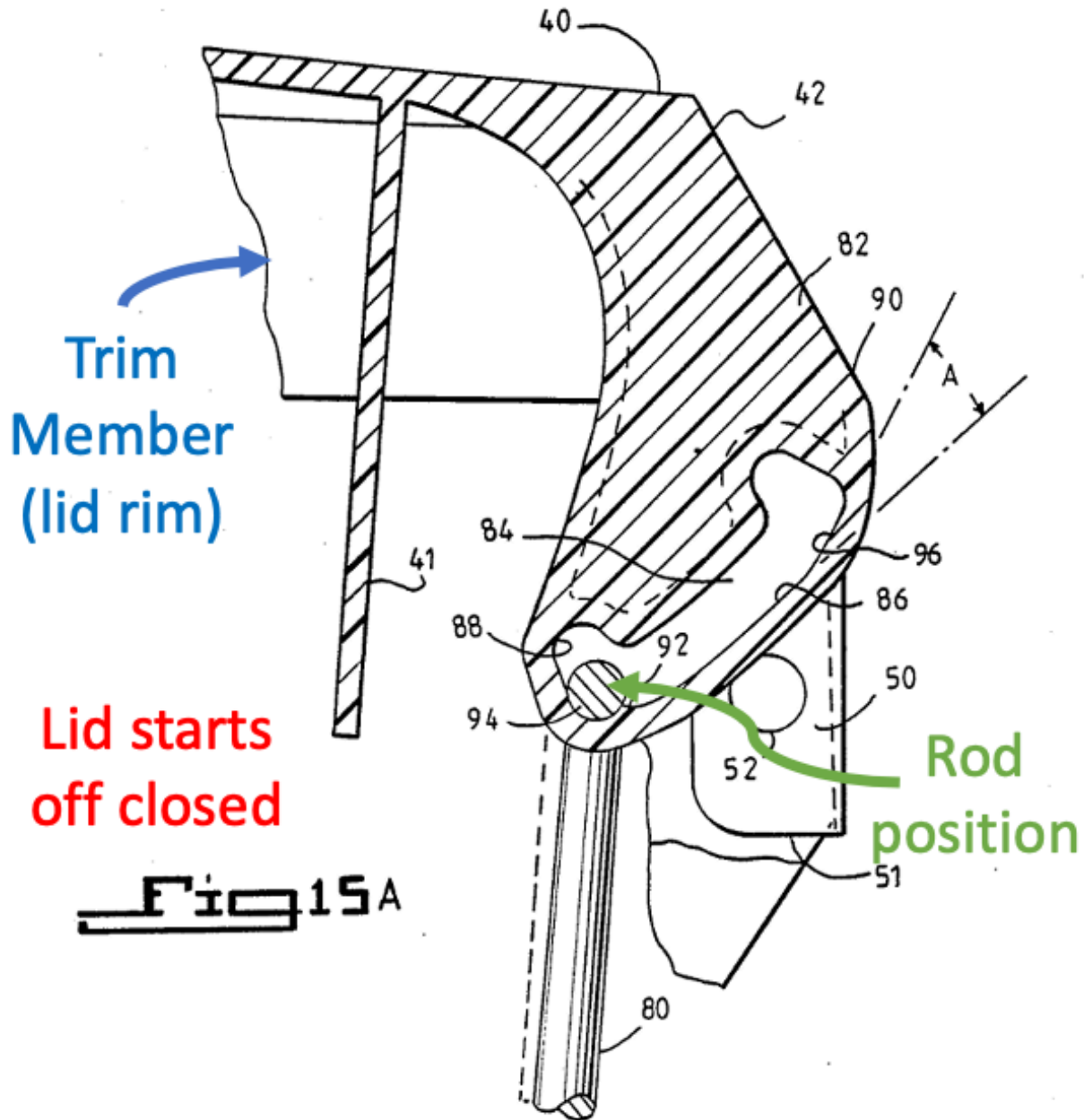
Miller FIG. 16

Koda's Lid Rim as the Trim Member

197. In my opinion, under the interpretation that Koda's lid rim is the "trim member," a POSITA would have understood that Koda includes a retaining mechanism configured to maintain the trim member in the open position against the force of gravity.

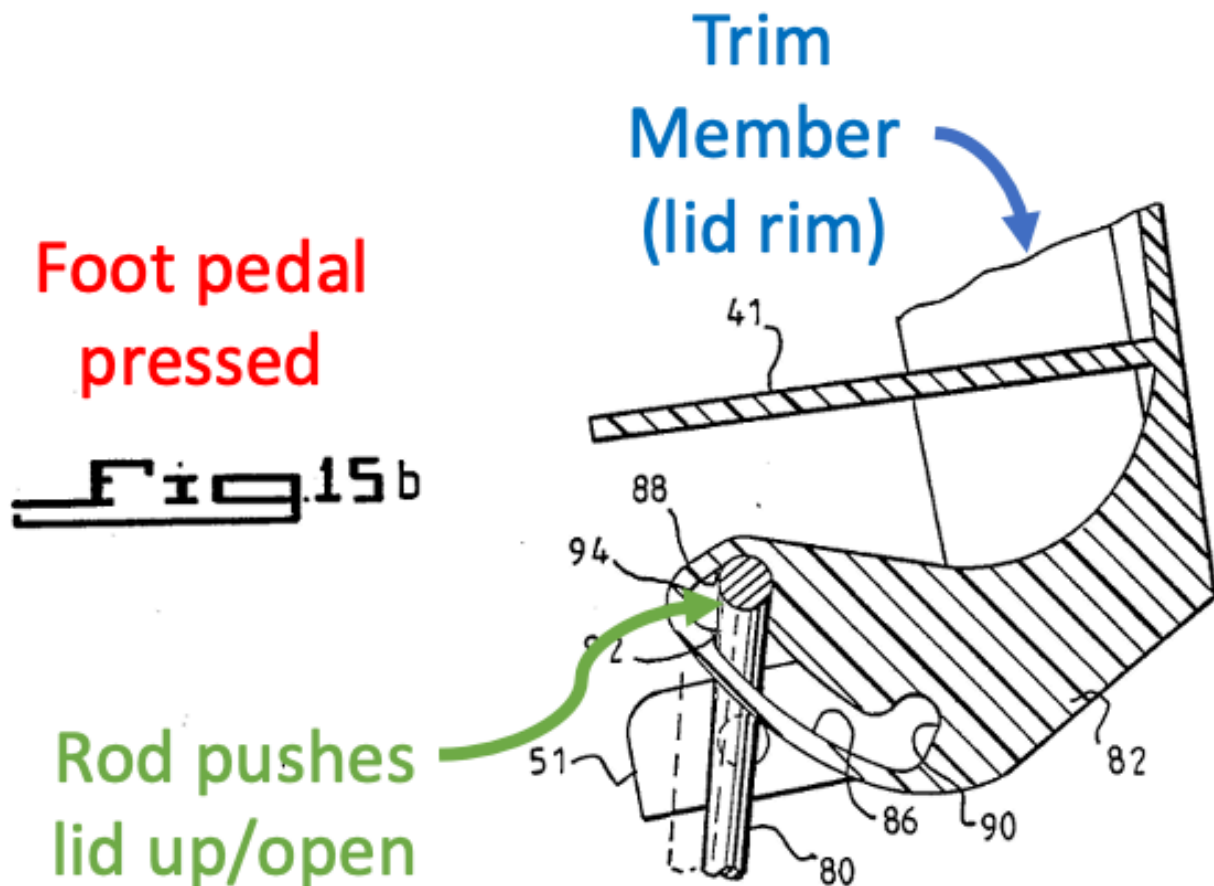
198. I just described for preceding element [1.7] how Koda's lid opens when a user steps on the foot pedal, and Koda's lid rim (the trim member) would move along with the lid in the same way, and stay open at the same time. As part of this, I explained how after the foot pedal is stepped on (Koda column 6:58–7:8 and Figure 15b) and released (Koda column 7:5–7:14 and Figure 15c), the lid (and its rim/trim

member) remains in the raised state until the foot pedal is stepped on again (Koda column 7:15–7:51 and Fig. 15d). The following figures of Koda show this again:



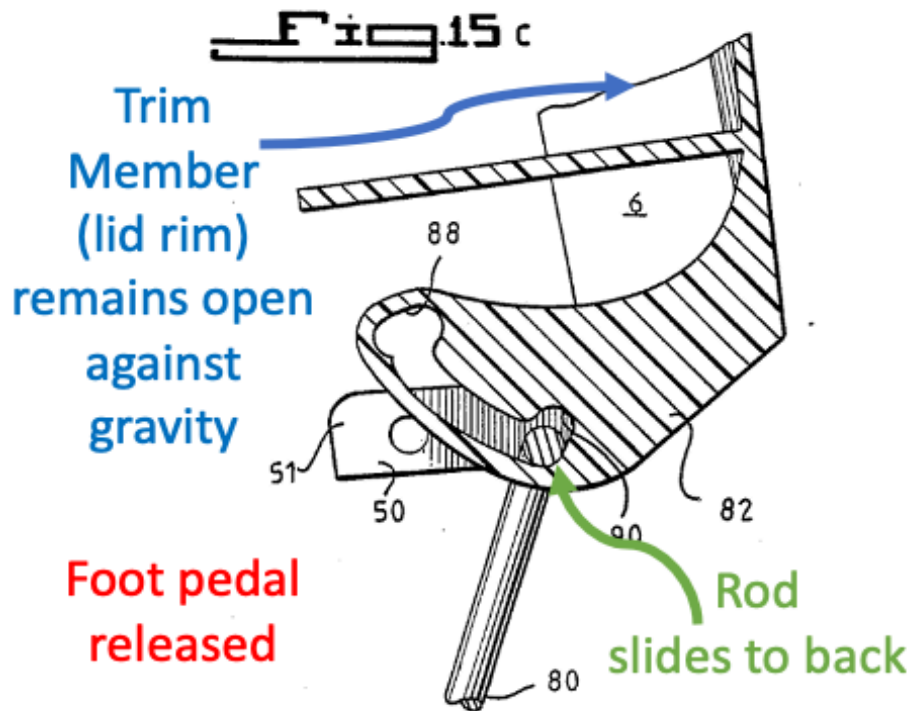
Koda Figure 15A

199. Here in Koda figure 15A, the lid (and the attached lid rim/trim member) is shown in the closed position. The rod rests at the bottom of a slot in the flange. Koda describes this column 6:16–6:66.



Koda Figure 15b

200. Here in Koda Figure 15b, the rod is being forced upward by the lever in response to a user's step. This upward motion pushes up in one groove, causing the lid (and the attached lid rim/trim member) to rotate and open. Koda describes this in column 6:67–7:8.



Koda Figure 15c

201. Figure 15c shows what happens after the foot pedal is released. Without upward lever action behind it, the rod now moves downward and falls to the other end of the slot. Koda describes this in column 7:9–7:14.

202. At this point, Koda column 7:9-7:12 explains that, “When pressure on the foot pedal is released, the rod 80 slides ... into the lower out enlargement 90, as shown in FIG. 15c, and the foot pedal returns to its raised state.” So, at this point, the lid and its rim (the claimed “trim member”) remain in the raised state shown in Figure 15c, against gravity. Koda column 7:15–7:21 explains that the lid and its rim will stay there until “the foot pedal is stepped on again,” at which time “the upper end of the rod linkage 80 will be raised The rod 80 exerts a force on the lid to

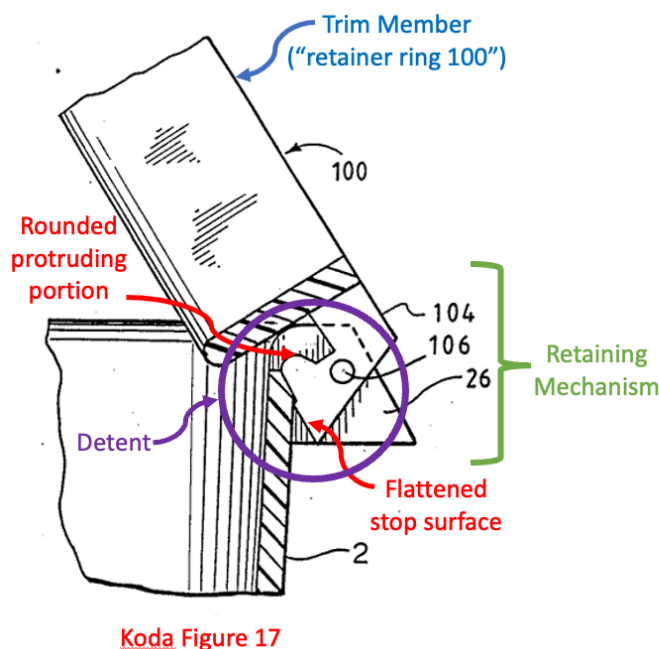
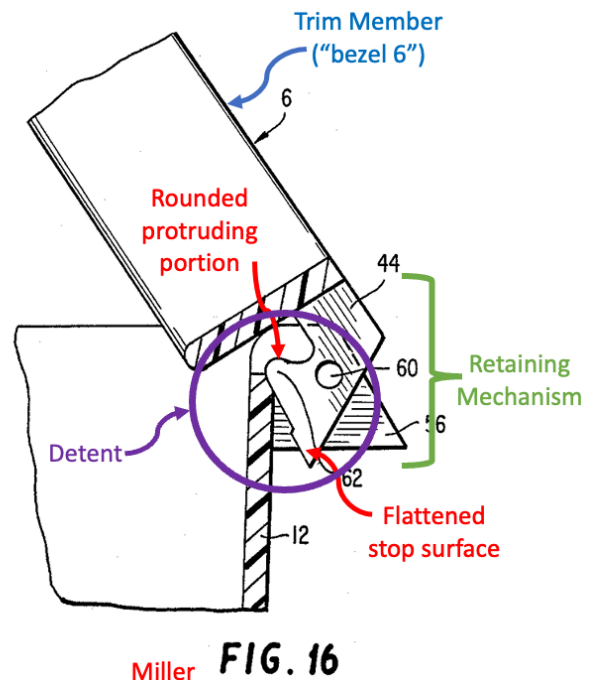
swing about the pivot axis in the opposite direction to a closed position ... as shown in FIG. 15d.” In my opinion, a POSITA would have recognized that this is a retaining mechanism that causes the lid rim (trim member) to stay in the open position against gravity.

B. Claim 2: The trash can assembly of claim 1, wherein the retaining mechanism comprises a detent.

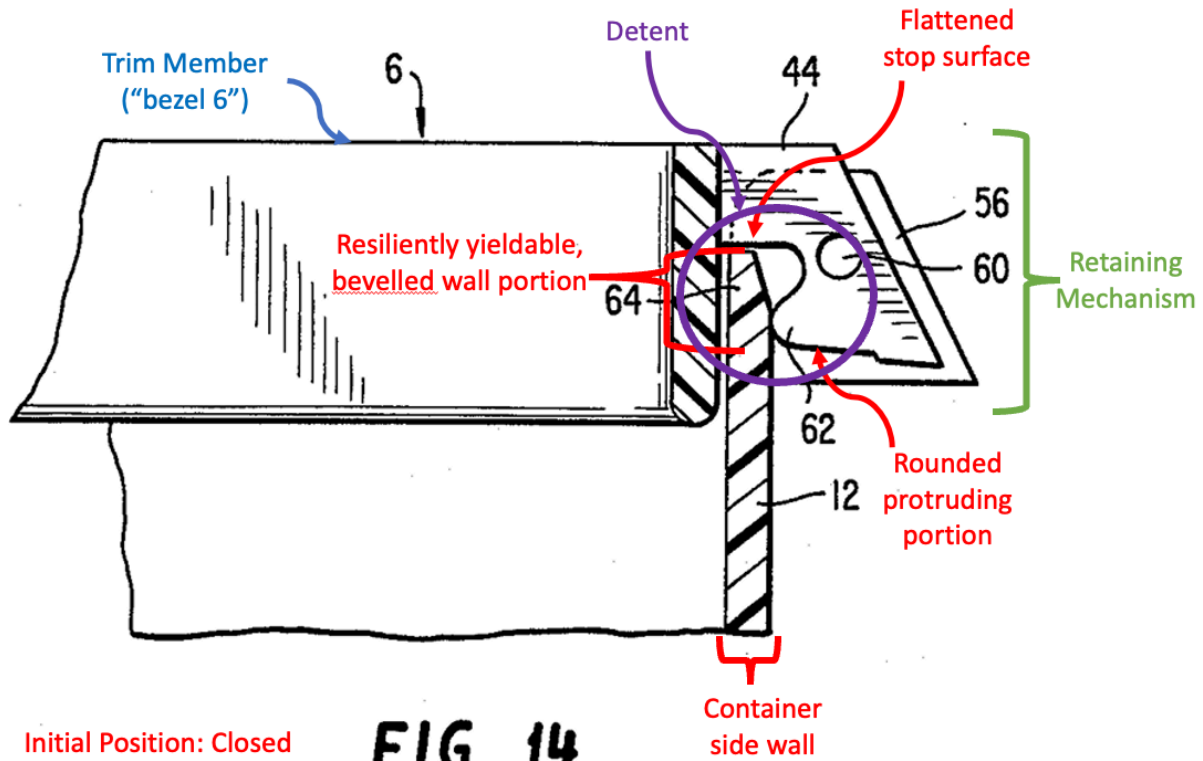
203. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious.

Koda's Retaining Ring is the Trim Member

204. In my opinion, under the interpretation that Koda's retaining ring 100 is a trim member, a POSITA would have further found it obvious that the retaining mechanism comprises a detent. The figures below circle the detent using purple.



205. I explained in Ground III above, for claim element 1.8, how Miller provides additional details about the retaining mechanism of Koda. Miller column 5:20–5:51 explains how a rounded portion of the protrusion (labeled above in red) pushes against the top of the container side wall (element 2 in Koda Figure 17, corresponding to element 12 in Miller Figure 16), causing the wall to flex. Miller column 5:52–5:68 further explains that once the rounded protruding portion rotates far enough, the side wall returns to its original position, causing the underside of the protruding portion to rest on and be supported by a beveled corner of the side wall until a user exerts a sufficient downward force to lower the bezel. This process is shown below:



Miller Figure 14

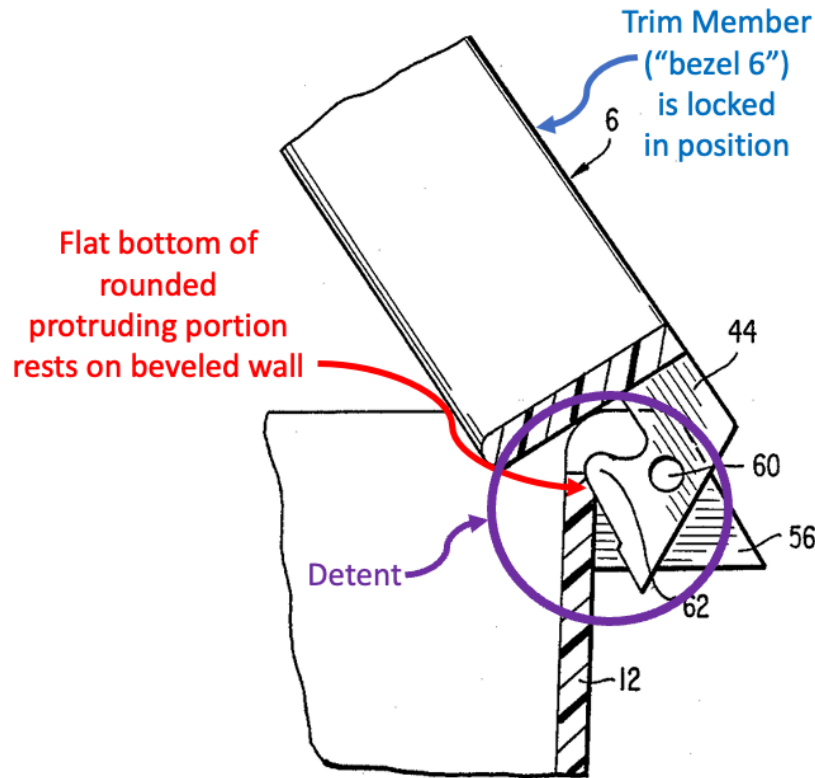


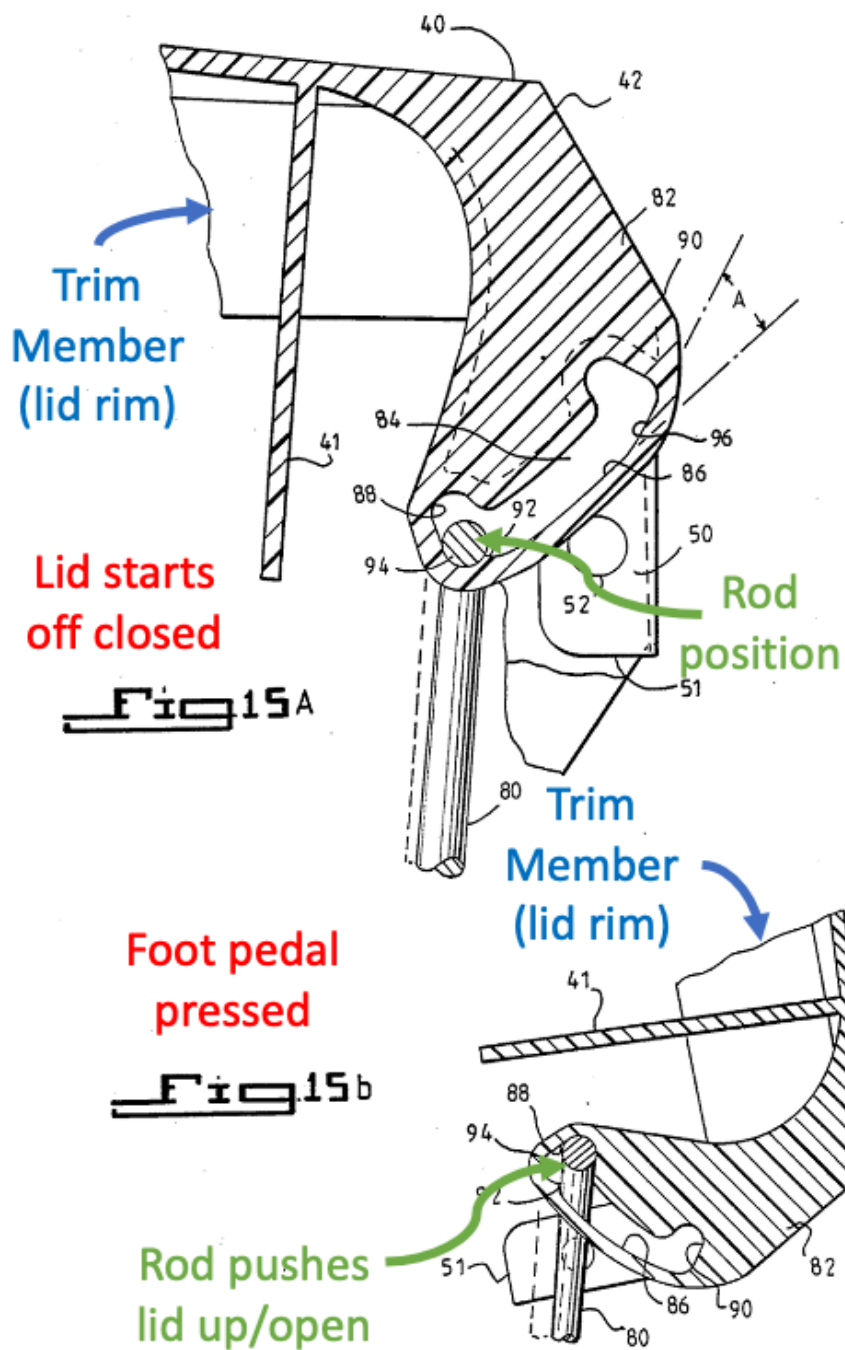
FIG. 16

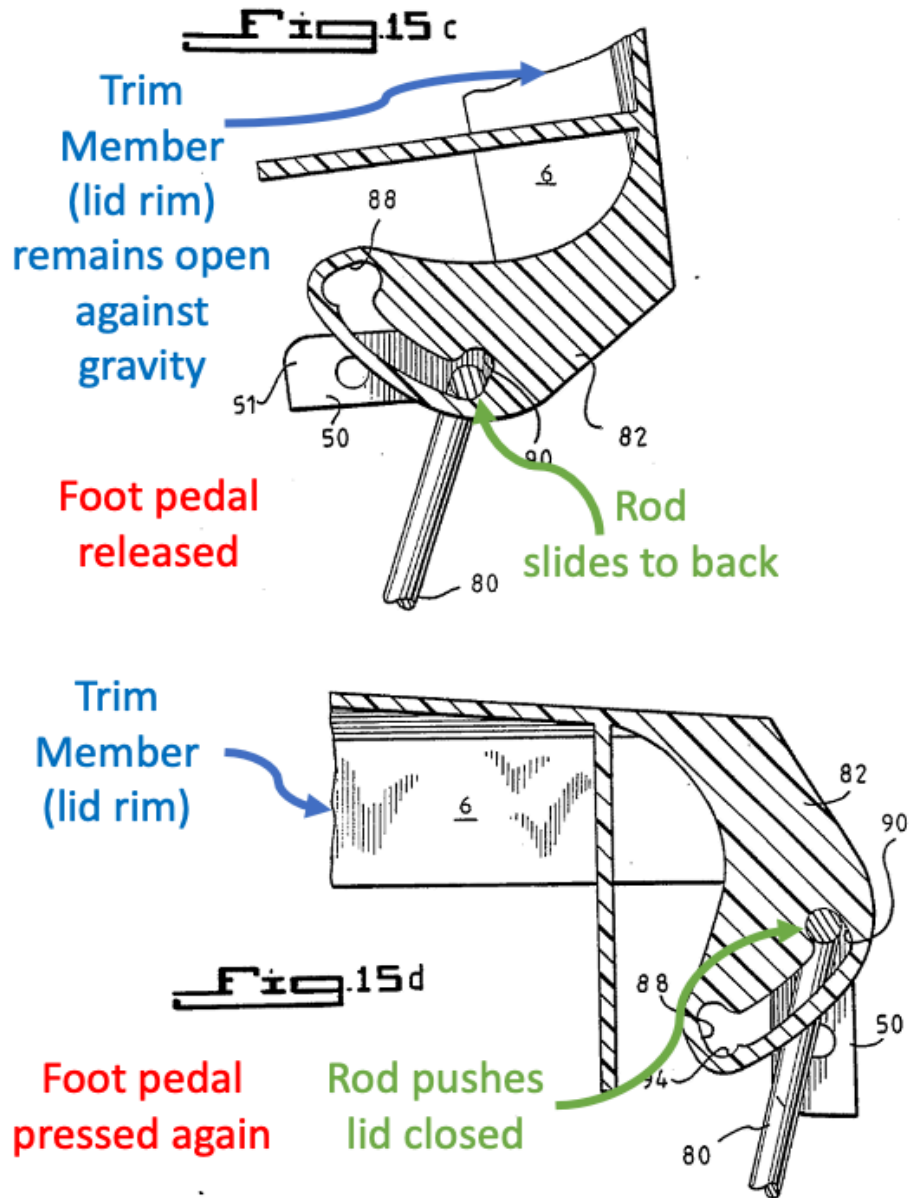
Miller Figure 16

206. In my opinion, a POSITA would have understood that the part circled in purple is the claimed detent. This satisfies the Patent Owner's construction of "a catch that prevents motion until released," because the protruding portion gets caught on the flexible sidewall to prevent further motion, until it is released. A POSITA would also understand the purple part to be a detent under any reasonable construction.

Koda's Lid Rim is the Trim Member

207. In my opinion, under the second interpretation that Koda's lid rim is a trim member, a POSITA would have also found it obvious that the retaining mechanism comprises a detent. As I explained above for element [1.8], Koda columns 6:58–7:8 and figures 15a-b describe and show how stepping on the foot pedal opens the lid and lid rim. Koda columns 7:5–7:14 and figures 15b-c describe and show that when the foot pedal is released, the rod moves to a new position, and the lid remains in the raised state. Then, the lid, lid rim (trim member), and rod remain in the position of Figure 15c until the user steps on the foot pedal again. Koda 7:15–7:26 explains that these parts will remain caught in place until and “[i]f the foot pedal 22 is stepped on again.” Until then the rod is caught and prevents motion of the trim member until the rod is released by stepping on the foot pedal again.





208. In my opinion, for these reasons, a POSITA would have found claim 2 to be obvious in view of Koda and Miller.

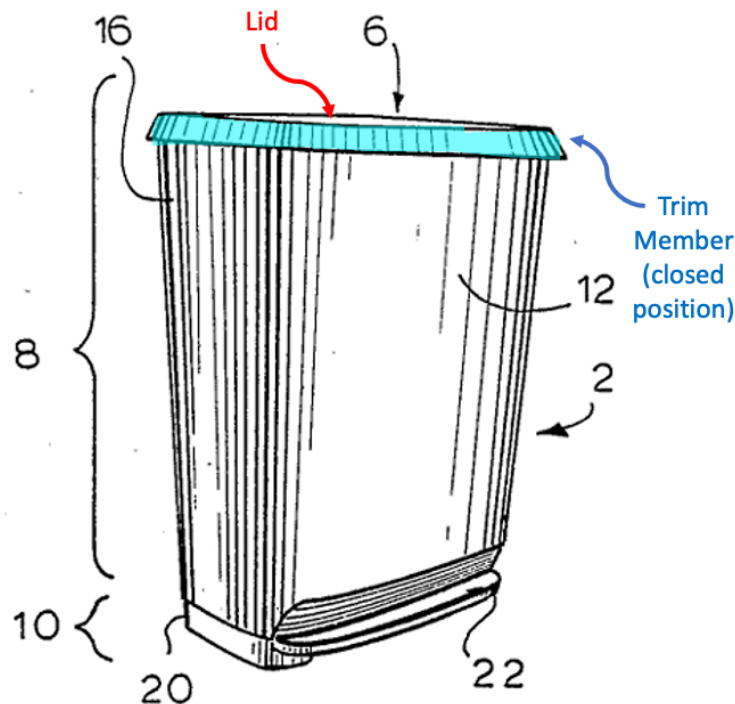
C. Claim 10

[10.Pre] The trash can assembly of claim 1,

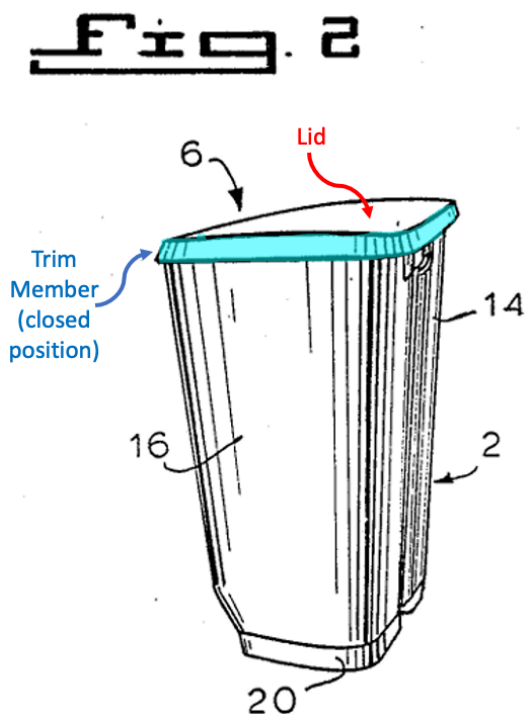
209. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious.

[10.1] wherein the trim member further comprises an exterior wall that extends:

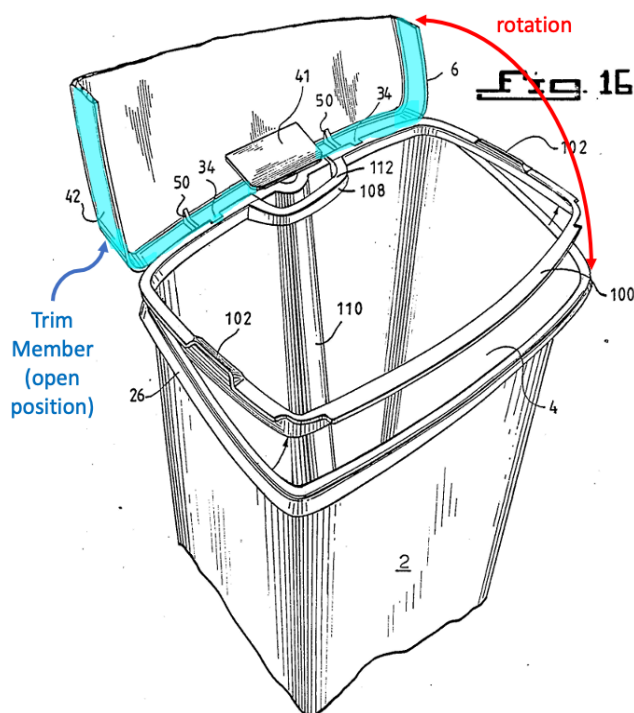
210. In my opinion, this element would have been obvious to a POSITA. Under the interpretation that the lid rim is the trim member discussed for element [1.5] above, the following figures of Koda show how the trim member forms an exterior wall that extends as described in the following subsections. This trim member highlighted below forms the exterior wall of the lid.



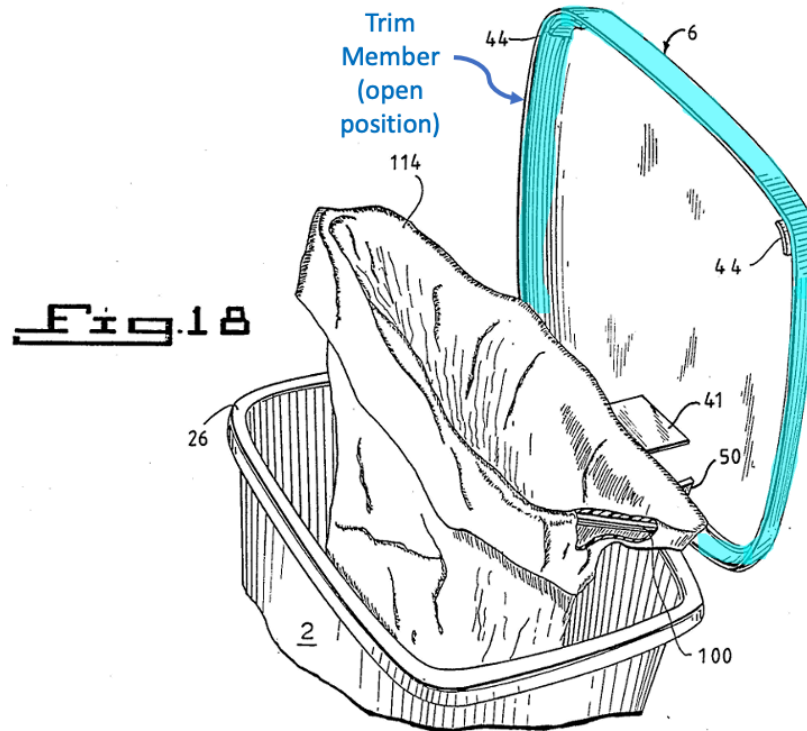
Koda Figure 1



Koda Figure 2



Koda Figure 16



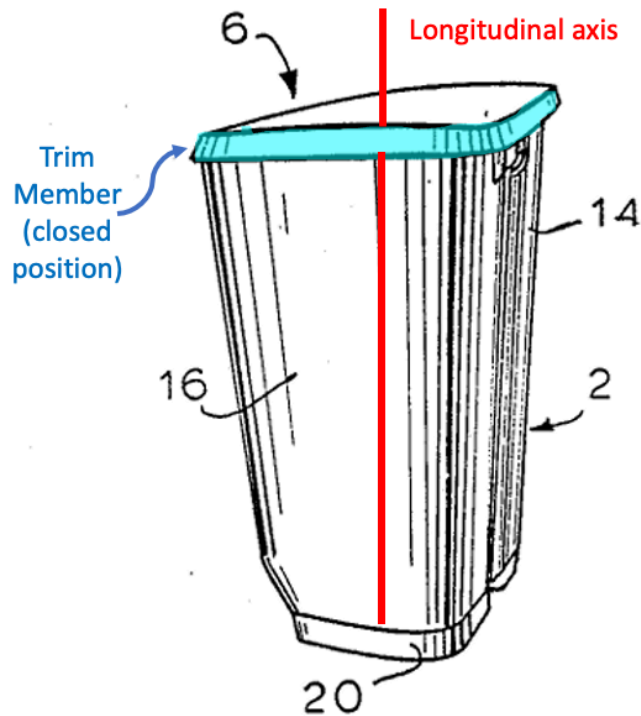
Koda Figure 18

211. In my opinion, a POSITA would have understood that Koda shows the trim member (lid rim) comprising an exterior wall as shown in these figures above. And, a POSITA would have understood the lid rim to be a trim member that forms an exterior wall that extends as I describe later for elements 7.2-7.3. Therefore, a POSITA would have found this element to be obvious in view of Koda and Miller.

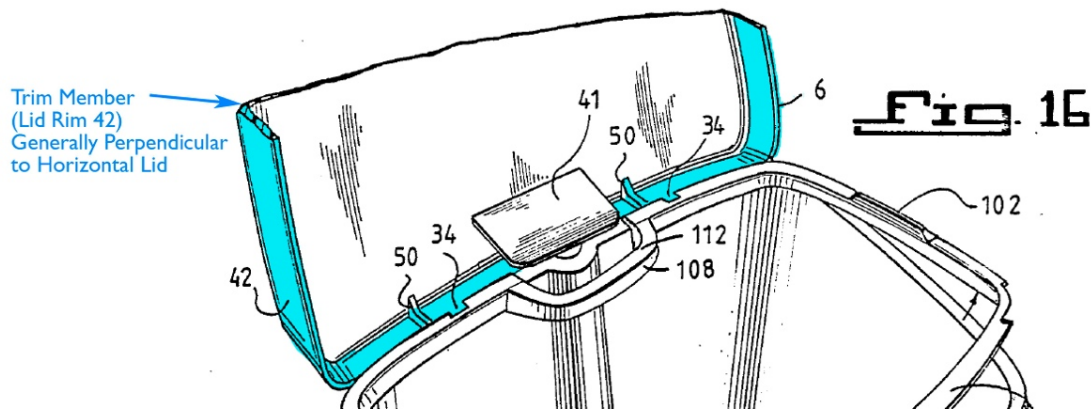
[10.2] generally parallel with a longitudinal axis of the trash can;

212. In my opinion, a POSITA would have understood from Figure 2 of Koda that the trash can has the longitudinal axis illustrated in Figure 2 below, and that the wall of the trim member runs generally parallel with the longitudinal axis when the trim is closed.

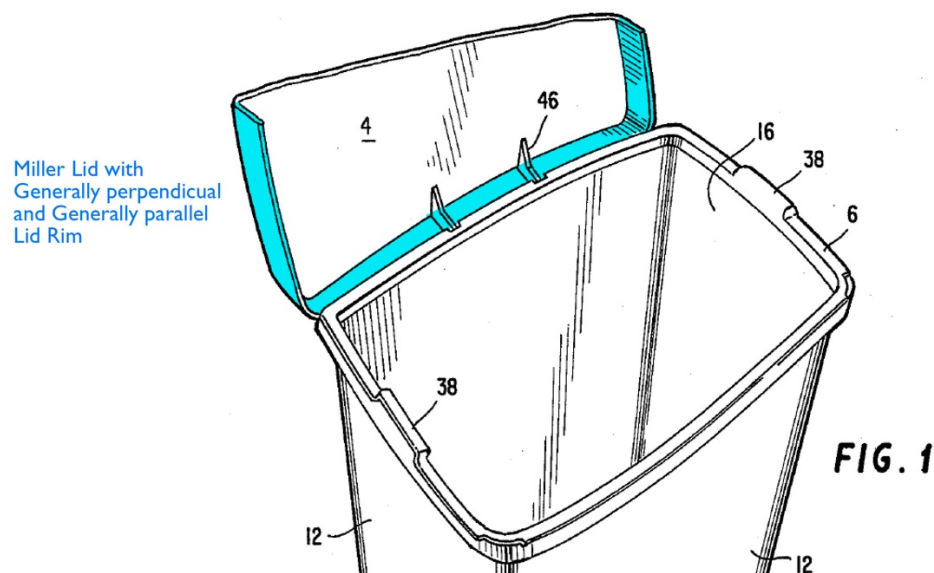
Fig. 2



213. In my opinion, as seen in the close-up of Koda figure 16 below, the lid rim 42 (trim member) is highlighted in blue. It can be seen that the Koda has a lid rim 42 is generally perpendicular to the flat top of the lid, which means it is generally vertical or parallel to the longitudinal axis of the trash can. At least this is true for the sides as seen in figure 16 below. Likewise in Miller figure 1 shows similar generally parallel lid rim with each other and that is generally perpendicular from the flat lid top. When closed the lid rim shown in these two figures would be generally parallel with the vertical axis of the trash can. Therefore, a POSITA would have found this element to be obvious in view of Koda and Miller, if not anticipated.



Koda Figure 16 Close-up

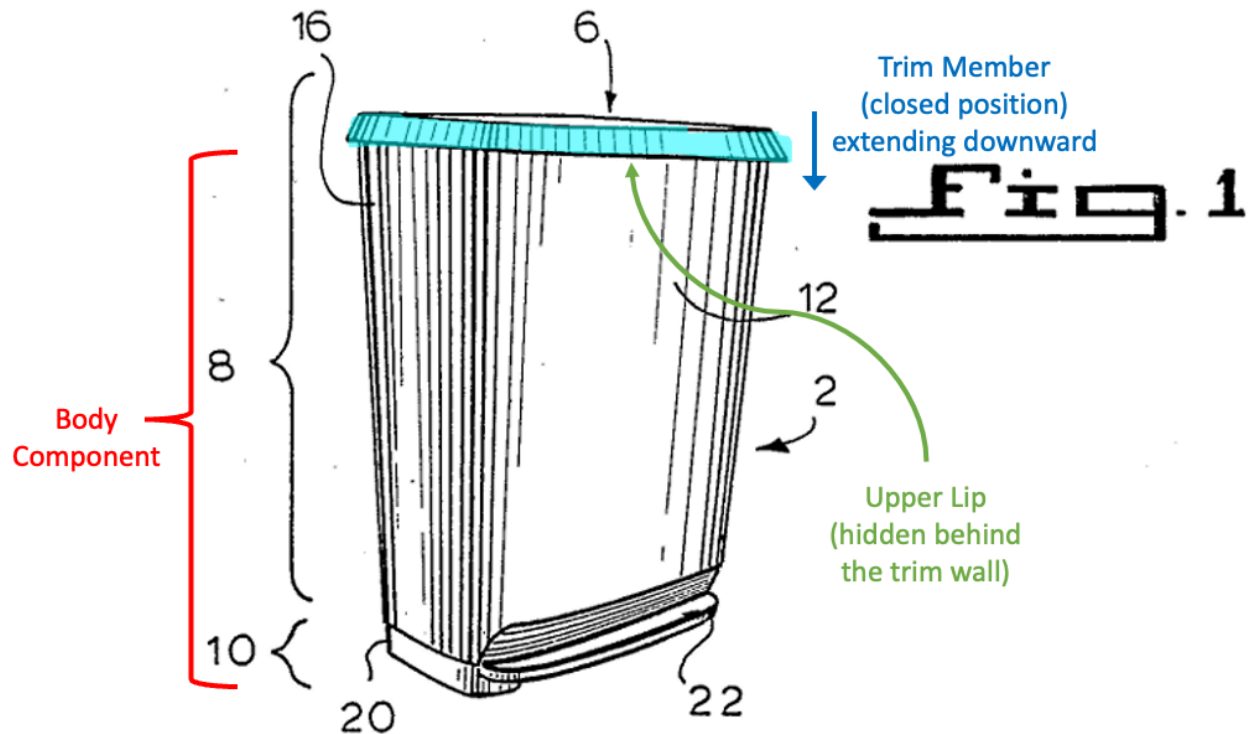


Miller Figure 1 Close-up

[10.3] downward beyond an upper lip of the body component;

214. In my opinion, a POSITA would have understood from Figure 2 of Koda that the trash can has the body component seen in Figure 1 below, and that the wall of the trim member runs downward beyond an upper lip (flat horizontal portion 28 of Koda or upper surface 30 of Miller) of the body component. Indeed, this is the case because Figure 1 shows that the exterior wall obscures the upper lip. *Id.*

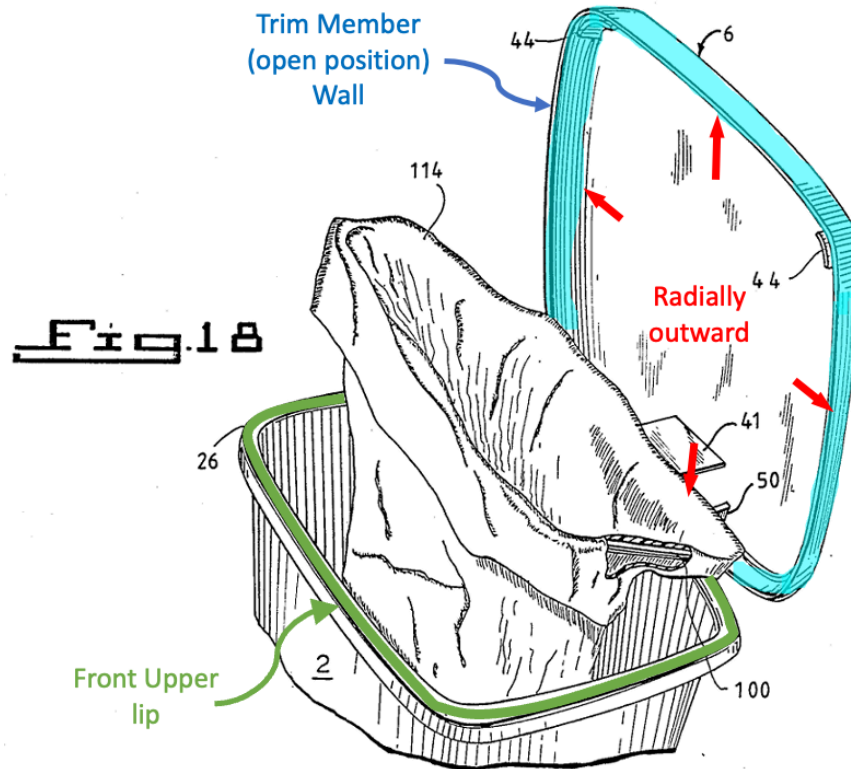
Moreover, Koda column 4:9–4:22 states that this part of the lid rim extends “slightly below the edge of the container rim 26,” meaning it extends downward beyond an upper lip of the body component, “so that it can mount closely on the container and hide the container rim from view when the lid is in the closed position.”



[10.4] and radially outward from the upper lip of the body component.

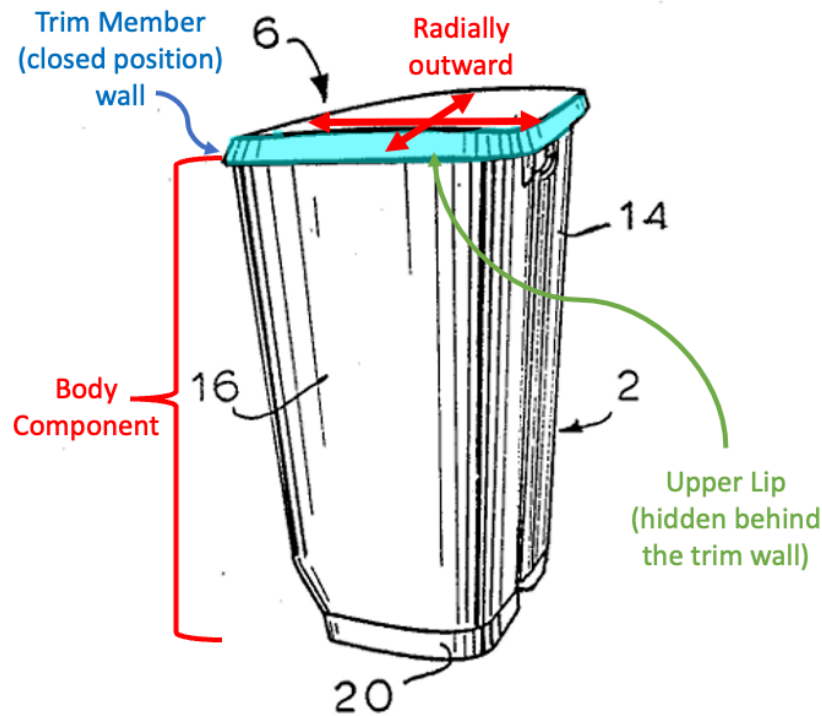
215. In my opinion, a POSITA would have understood from Figure 2 of Koda that the wall of the trim member extends radially outward from the upper lip of the body component. Koda states that this part of the lid rim extends “extends about the periphery of the top wall 40 and slopes ... outwardly from the top wall” such that it will “hide the container rim from view when the lid is in the closed position.” Koda Column 4:9–22. Which means that Koda’s lid rim extends about the

periphery and outward (radially outward) from the top wall (upper lip 28 of the body). The following annotated figures show these components:



Koda Figure 18

Fig. 2



Koda Figure 2

D. Claim 11: The trash can assembly of claim 1, wherein the body component has a rectangular shape.

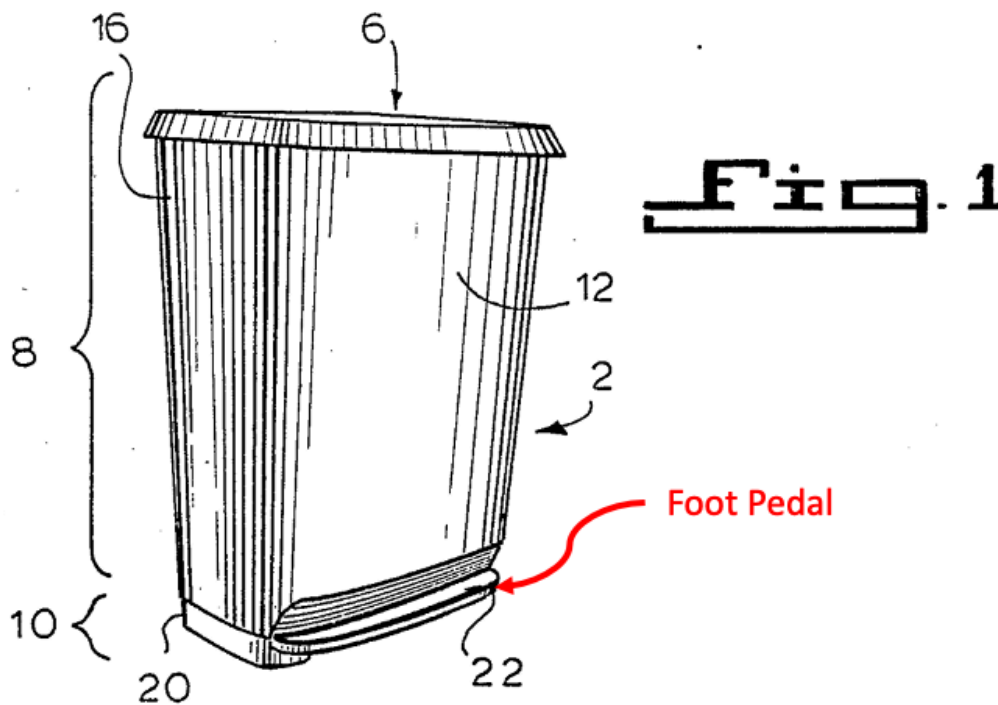
216. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious.

217. Koda states, “In its preferred form, the container 2 has an overall rectangular shape when viewed from above.” Koda Column 3:39-3:40 and figures 1, 2, 10, 16, 18 (showing rectangular shape). Therefore, in my opinion, a POSITA would have found this element obvious, if not anticipated.

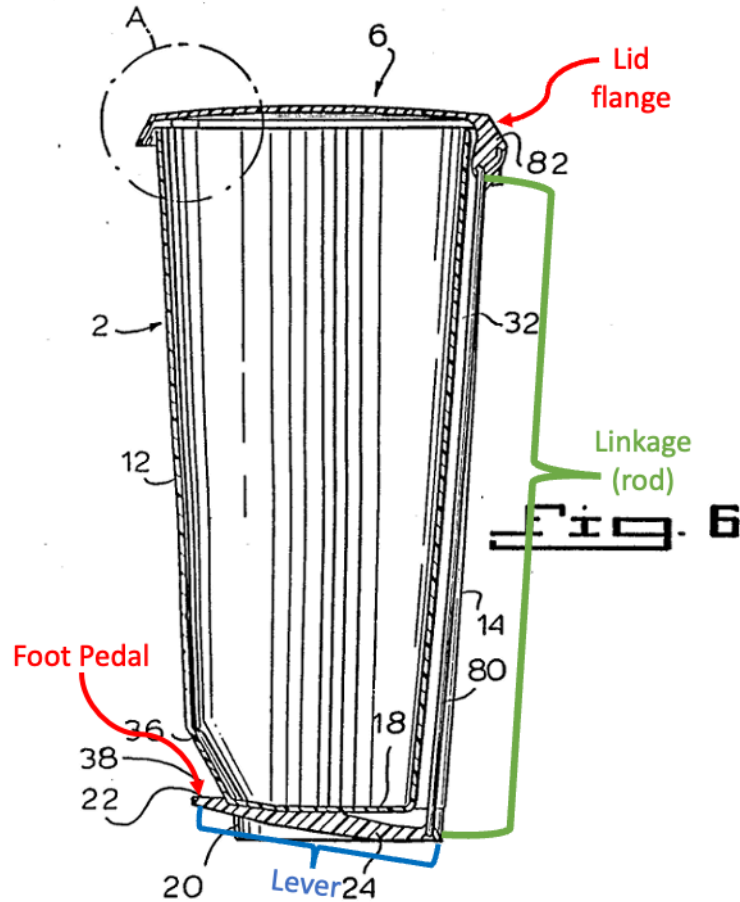
E. Claim 15: The trash can assembly of claim 1, wherein the power transmission device comprises a footpedal.

218. My discussion of claim 1 above explains why the trash can assembly of claim 1 is obvious.

219. In my opinion, for the reasons described above in Ground 3/1.7 the transmission device of Koda includes a footpedal. Koda states that its “wastebasket of the present invention is further provided with a foot operated pedal mechanism for both opening and closing the lid. This structure is shown generally in FIG. 6 and in greater detail in FIGS. 11-15. U.S. Pat. No. 4,785,964 also shows and describes this type of structure.” Koda Column 5:3-5:5, 5:27–5:43 (describing foot pedal), 5:44–6:5 (explaining the mechanism).



Koda Figure 1



Koda Figure 6

X. **GROUND #4: KODA, MILLER, AND YANG '532 MAKE CLAIMS 7 AND 13 OBVIOUS.**

220. As seen above in grounds #3 Koda and Miller make claims 1, 3, 10, 11, and 15 obvious. For dependent claims 7 and 13 below, a POSITA would have found it obvious, based on Yang '532, to make additional modifications.

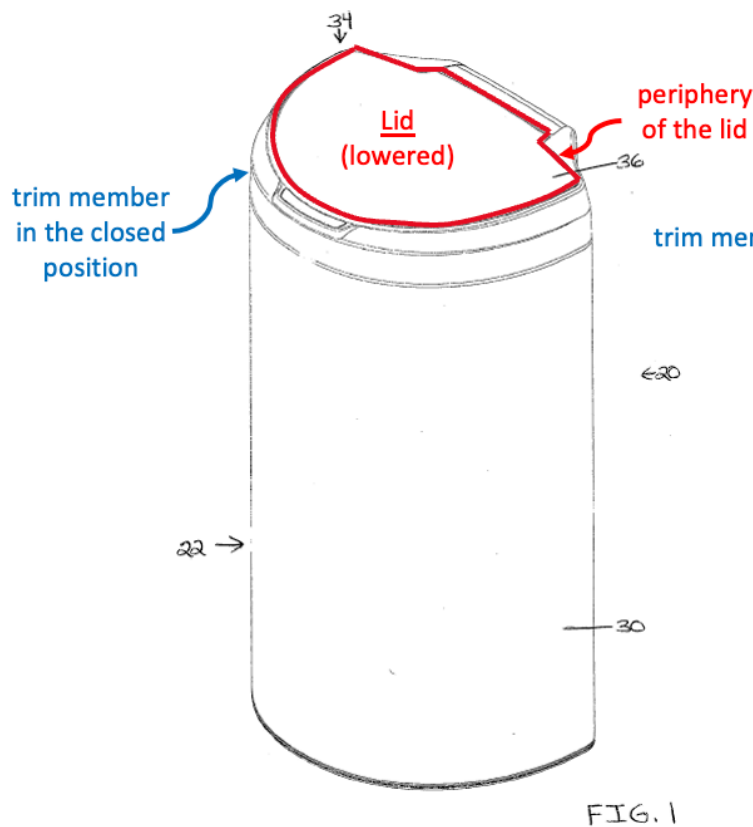
A. Claim 7

[7.Pre] The trash can assembly of claim 1, wherein:

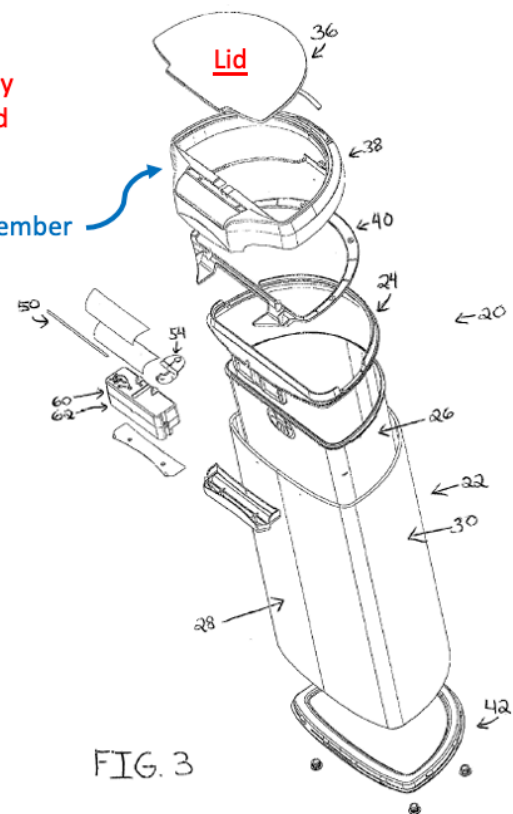
221. My discussion of claim 1 in Ground #3 explains why the trash can assembly of claim 1 is obvious in view of Koda and Miller, under the interpretation that Koda's retaining ring is the trim member.

[7.1] a majority of the periphery of the lid is received in the trim member when the trim member is in the closed position and the lid is in the lower position; and

222. Koda and Miller do not explicitly show this element. But as explained Grounds #2 above, Yang '532 does.



Yang '532 Figure 1



Yang '532 Figure 3

223. In my opinion, Yang '532 illustrates “a majority of the periphery of the lid is received in the trim member when the trim member is in the closed position and the lid is in the lower position,” as claimed. A POSITA would find it obvious to additionally modify the Koda/Miller combination to have such a lid that is received inside a separate ornamental trim member, similar to how I described the modification above in Ground #3. A POSITA would find it obvious to incorporate the ornamental trim member and the inset lid of Yang '532. To do this, Koda's lid would be slightly shrunk, except where it connects to the hinge, so that it fits inside the trim and rests on an inset of the trim. Koda taught the “trash bag is secured to the container by folding its edges over the rim of the container” as one way to use it. Column 2:43-2:44. The ornamental trim member would hide the trash bag and upper lip of the container, and a POSITA would realize from the teachings of Miller, that the ornamental trim member would need to be held up to change the trash bag. A POSITA would be motivated to use the same hinge protrusion and resiliently yieldable side wall to hold up the ornamental trim member, to assist in changing the trash bag.

[7.2] a majority of the periphery of the lid is positioned outside of the trim member when the trim member is in the closed position and the lid is in the upper position.

224. In my opinion, it would have been obvious to make the changes shown above for aesthetic reasons to add a separate ornamental trim member. A POSITA

would have found this obvious because when a user lifts Koda's lid, (modified in light of Yang '532) while the trim is closed, the lid is lifted outside of the trim member such that "a majority of the periphery of the lid is positioned outside of the trim member when the trim member is in the closed position and the lid is in the upper position," as claimed.

B. Claim 13: The trash can assembly of claim 1, wherein the power transmission device comprises a motor.

225. My discussion of claim 1 above in ground #3 explains why the trash can assembly of claim 1 is obvious.

226. In my opinion, Yang '532 is titled "trash can with power operated lid." Yang '532 teaches how "an enclosed receptacle can be provided with a power operated lid or door with a drive mechanism or motor and gear assembly." Yang '532 paragraph 11. The motor and gears are shown in Figure 4. Paragraphs 27 and 42 explain how the motor, gear assembly, battery, sensors, control algorithm, and other components work together. Specifically, how the motorized system automatically opens and closes the lid.

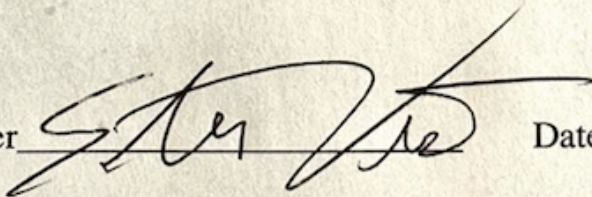
227. In my opinion, a POSITA would have found it obvious to replace the foot-powered transmission device of Koda with a motor, gear assembly, battery, sensors, control algorithm, and other components as described in Yang '532. Paragraphs 5 and 42 discuss the automating of the opening and closing of the lid, based sensing on nearby movement. A POSITA would have recognized that Koda

and Yang '532 both disclosed similar kitchen sized trash cans, they are merely foot-powered and motorized variations of the same basic design of a trash can that has a lid and trim. Both foot-powered and motorized trash cans were commercially available before Yang '532 was published. Problems with the batteries wearing down is discussed in Yang '532 paragraphs 5-6. A POSITA would have been motivated to make motorized, battery-powered variations of trash cans as was the commercial trend to appeal to consumers desiring trash cans with automated lids because automated lids require less manual labor and the convience of hands and foot-free activation. Therefore, this claim would have been obvious to a POSITA.

* * *

228. I HEREBY DECLARE under penalty of perjury that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. § 1001.

Steven C. Visser



Date

OCTOBER 16, 2023

EXHIBIT A

Curriculum Vitae

Steve Visser

2472 Gala Court
West Lafayette, IN 47907
svisser@purdue.edu
765-494-2295 office
765-491-9633 cell

Education

- 1988 **University of Illinois at Champaign-Urbana**
MFA in Industrial Design
- 1982 **Northwestern College**
BA in Fine Arts, Sculpture

Academic Appointments

- 2006-Present **Professor**
Industrial Design
Patti and Rusty Rueff School of Design, Art and Performance
Purdue University
- 1996-2006 **Associate Professor**
Industrial Design
Patti and Rusty Rueff School of Visual and Performing Arts
Purdue University
- 1990-1996 **Assistant Professor**
Industrial Design
Department of Visual and Performing Arts
Purdue University
- 1989-1990 **Visiting Assistant Professor**
Industrial Design
Department of Creative Arts
Purdue University
- 1986-1988 **Teaching Assistant**
University of Illinois at Champaign-Urbana

Professional Positions

- 1990-Present **Steve Visser Design**
Industrial Design Consultant
West Lafayette, IN
- 2005-2014 **DesigNapkin**
Co-Founder
West Lafayette, IN
- 1988-1989 **Hari and Associates**
Industrial Designer
Skokie, IL

Awards and Honors

2021	DAC World's Leading Designers World's 7 th Best Designer in 2021 Leading Expert in Differently Abled and Senior's Assistance Design
2019	Distinguished Professor (2019-2022) School of Art and Design, Wuhan University of Technology, Wuhan, China
2018	Appliance Design: Excellence in Design Award Gold Prize (see Design Competitions and Exhibitions)
2017	A'Design Award & Competition Gold Award (see Design Competitions and Exhibitions)
2015	SAI Faculty Fellow Domus Academy, Milan, Italy (see Fellowships and Residencies)
2014	Associate Fellow American Academy in Rome, Rome, Italy (see Fellowships and Residencies)
2007	Honorary Professor Nanjing University of Science and Technology, Nanjing, China
2005	Regional Competition: Indiana Venture Idol Winner: Coolest Idea (see Design Competitions and Exhibitions)
2004	National Design Competition: ID Magazine Honorable Mention (see Design Competitions and Exhibitions)
2003	Taiwan International Design Competition Award of Excellence (see Design Competitions and Exhibitions)
2003	International Eyewear Design Competition: Opus Design Award Award Winner (see Design Competitions and Exhibitions) Japan
1999	Malaysian Polytechnic Curriculum Development Project Politeknik Johor Bahru, Pasir Gudang, Malaysia (see Grants)
1997	Fulbright Scholar University of Art & Design Helsinki, Helsinki, Finland (see Fellowships and Residencies)
1995	National Design Competition: Idea95 Industrial Designers Excellence Award Silver Winner (see Design Competitions and Exhibitions)
1993	Neste Forma Finlandia 3 International Plastic Design Competition 2 nd Place (see Design Competitions and Exhibitions) Finland

Membership

1992-Present	Industrial Designers Society of America (IDSA)
--------------	---

Design Competitions and Exhibitions

- 2021 **Red Dot Award**
Finalist
4110 entries from 49 countries
Design Concept 2021
Category: Bathroom and Hygiene
July 4
Pompeii Washbasin
- 2019 2019 KSBDA World Culture and Shaping Invitational Exhibition
Russian State University
Moscow, Russia
August 20-30, 2019
Industrial Designer: Steve Visser
Herculano Coffee Table
- 2018 **Convergence Art & Design International**
Best Creativity Award
Professional Exhibition
Shaoxing, China
November 15-18
Industrial Designer: Steve Visser
Herculano Coffee Table
- 2018 **Appliance Design: Excellence in Design Award**
Gold Prize 2018
Medical Equipment and Devices Category
Troy, MI
June 1
Industrial Designers: Steve Visser, Max Cao
Engineers: Rob Bettcher, Justin Kline
BraunAbility Q Series Wheelchair Lift
Published online
<https://www.appliancedesign.com/articles/95865-autoadapt-q-series-mobile-access-lift>
- 2018 **11th Annual IDA Awards Competition**
Gold Award
1st place in Design for Society / Design for Elders
Thousands of entries from 95 countries
Los Angeles, CA
May 22
Industrial Designers: Steve Visser, Max Cao
Engineers: Rob Bettcher, Justin Kline
BraunAbility Q Series Wheelchair Lift
Published in
IDA Design Awards 2017, page 209
- 2018 **A'Design Award & Competition**
Bronze A'Design Award
Furniture, Decorative Items and Homeware Design Category
Milan, Italy
April 15
Industrial Designer: Steve Visser
Herculano Coffee Table
Published in
<https://competition.adesignaward.com/design.php?ID=58604>
A'Design Award & Competition Award Winning Designs 2017-2018, Page 1082

2017-2018

A'Design Award & Competition
Golden A'Design Award in Differently Abled and Seniors' Assistance Design Category
Golden awards given to the top 3%
Milan, Italy
April 15
Industrial Designers: Steve Visser, Max Cao
Engineers: Rob Bettcher, Justin Kline
BraunAbility Q Series Wheelchair Lift
Published in
A'Design Award Winning Entries 2016-2017 Award Winning Product Design. 160.

Traveling Exhibition: *A'Design Award Winning Entries 2016-2017*

Italy	MOOD Museum of Design, Como	June 6-26, 2017
India	Festival of Architecture and Interior Designing, Mumbai	September 22-23, 2017
Hungary	Budapest Projekt Galéria, Budapest	October 8-31, 2017
China	International Industrial Design Fair, Shezhen	November 5-7, 2017
China	Utopa International Design Exhibition, ZhuZhou City	December 26, 2017-March 20, 2018

2017

SOFA Exhibit
Co-lead group of 10 students who developed exhibit for *Connect* at the Sculptural Object
Functional Art and Design Expo at Navy Pier
2017 Connect Winner
Chicago, IL
November 2-5
Nature or Nurture: A 3D Printed Space

2016

Juror
1st Greater China Smart Home Appliances Design Competition
Hong Kong
November 4

2016

Juror
Appliance Design Excellence in Design Competition
Troy, MI

2016

Juror
International Housewares Association Student Design Competition
Chicago, IL
January 13-14

2015

One-Person Design Exhibition
Domus Academy/NABA
Milan, Italy
July 21-August 4
Inspirations from Ancient Rome

2013

Invitational International Design Exhibition
4th International Innovation Design and Education Forum Exhibition
Nanjing, China
September 18-19
Exclamation Stacking Chair
Published in
Cross-Disciplinary and Integration: Portfolio of "Nanjing Innovation" International Universities' Design Exhibition. Pages 20-24

2012-2013

Juror
Appliance Design Excellence in Design Competition
Troy, MI

- 2012 **Invitational International Exhibition**
Groovy Stuff Booth
International Casual Furniture and Accessories Market
The Merchandise Mart
Chicago, IL
September 20-23, 2012
Apple² Pedestal Table
- 2012 **Juror**
Nanjing Innovation Design Competition
Nanjing, China
August 13-14
- 2011 **Poster Session**
Mudd Design Workshop
Claremont, CA
May 28-30
Design for Relieving: Home-based Healthcare Products
Primary Author: Cheryl Qian
Poster Layout and Co-Author: Steve Visser
- 2009 **Invitational International Design Summit and Exhibition**
Nanjing, China
October 25-26
StoneStalk Bench
- 2009 **Juried National Exhibition**
BECA Gallery "Next" exhibition
New Orleans, LA
February 5-28
Woodstalk Bench
- 2007 **Invitational International Design Summit and Exhibition**
Nanjing, China
November 7-8
Astro Lounge Chair
- 2006 **Juried Exhibition at the Industrial Designers Society of America**
National Education Conference
Austin, TX
September 17-20
Astro Lounge Chair
- 2005 **Juried Exhibition at the Industrial Designers Society of America**
National Education Conference
Washington, D.C.
August 21-23
Giwa: Build-it-yourself Souvenir
BLU Network: Borrow Lend Unite
Safety Stove: for South Africa
Flip: Invertible Organizer
- 2005 **International Travel Souvenir Design Competition**
Selected Design (about 630 entries from 39 countries, 142 selected)
Ministries of: Culture & Tourism, Commerce, Industry & Energy,
Korean Association of Industrial Design, ICSID
Kintex Exposition Center
Gyeonggi, South Korea
April 14-17
Giwa: Build-it-yourself Souvenir
Published in
International Travel Souvenir Design Competition 2005 Korea
(Seoul, South Korea: Gyeonggi Tourism Organization), 41

- 2005 **Satellite Salone International Invitational Design Exhibition**
(Only two schools from the USA were invited to exhibit in the Satellite Salone, Purdue University and Pratt Institute)
Milan Furniture Fair
Milan, Italy
April 13-18
Giwa: Build-it-yourself Souvenir
Safety Stove: for South Africa
- 2004 **50th Annual International Design Competition: I.D. Magazine**
Honorable Mention (over 2000 entries/ 159 selected)
New York, NY
July
Design Team: Steve Visser and Scott Shim
BLU Network: Borrow Lend Unite
Published in
I.D. Magazine 50th Annual Design Review
Volume 52, number 5, (July 2004): 184
- 2004 **International Aluminum Extrusion Competition**
Selected for Exhibition (109 entries from 9 countries/ 36 selected)
ET Foundation
International Aluminum Extrusion Seminar and Exposition
Orlando, FL
May 18-21
Design Team: Scott Shim and Steve Visser
Birdie Aluminum Extrusion Concept
- 2003 **International Eyewear Design Competition: Opus Design Award 2003**
Award Winner (1771 entries from 62 countries/ 313 winners)
Eyeteck Co., Ltd.
Tokyo, Japan
December 1
Design Team: Steve Visser and Scott Shim
Shades Eyewear
- 2003 **Taiwan International Design Competition: Creating a Digital Culture Design**
Award of Excellence (356 entries from 25 countries/ 20 selected)
Taiwan Design Center
Taiwan Industrial Development Bureau
Taipei, Taiwan
November 8-30
Design Team: Steve Visser and Scott Shim
BLU Network: Borrow Lend Unite
Published in
Taiwan Design Center, 2003 Taiwan Creative Design Expo (Taipei, Taiwan: Taiwan Industrial Development Bureau), 115.
- 2002 **Invitational Exhibition at the Biennale Internationale Design 2002**
Museum of Modern Art, Saint-Étienne
Saint-Étienne, France
November 16-24
Civil Interactive Play Table
- 2001-2002 **29th Annual National Juried Toys Designed by Artists Exhibition**
Decorative Arts Museum
Arkansas Art Center
Little Rock, AR
November 22, 2001-January 6, 2002
Principal Designer: Steve Visser
Designer: Nicolé Visser
Herman the Dino

2001-2002	<p>National Furniture Design Competition: The Chair Show 4 Selected Design (234 entries, 45 selected) Southern Highland Craft Guild Asheville, NC <i>Quantum Armchair</i></p> <p>Traveling Exhibition: The Chair Show 4 Asheville, NC Folk Art Center September 30, 2001-January 13, 2002 Wausaw, WI L. Y. W. Art Museum February 2-April 7 Greenville, NC Wellington Gray Gallery June 6-September 21 Published in David McFadden, <i>The Chair Show 4</i> (Asheville, NC: Southern Highland), 44.</p>
2001	<p>International Eyewear Design Competition: Opus Design Award 2001 Award Winner (1639 entries from 30 countries/ 138 award winners) (The only winner from the USA) Eyetec Co., Ltd. Tokyo, Japan September 13-14 <i>Egypt Eyewear</i></p>
2001	<p>Herman Miller Office-Supply Creation National Competition Honorable Mention Herman Miller www.hermanmillerred.com Zeeland, MI Principal Designer: Steve Visser Designer: Nicolé Visser <i>Herman the Dino</i></p>
2000	<p>Biennale Internationale Design 2000 Invitational Exhibition Museum of Modern Art, Saint-Étienne Saint Étienne, France October 7-15 <i>Egypt Eyewear</i> <i>Demi Fruit Bowl</i></p>
2000	<p>2000 Objects for the New Millennium Juried Exhibition Gallery 91 New York, NY July-September <i>Forest Eyewear</i></p>
2000	<p>Mid-States Crafts Regional Juried Exhibition Evansville, IN January-March <i>Forest Eyewear</i></p>
1998-1999	<p>Unlimited by Design National Invitational Exhibition Cooper Hewitt National Design Museum (Smithsonian) New York, NY November 17, 1998-March 21, 1999 Principal Designer: Steve Visser Engineer: Ashok Midha <i>Compliers® Flexural Fishing Pliers</i></p>

- 1995-1997 **Mutant Materials in Contemporary Design International Invitational Exhibition**
Museum of Modern Art
New York, NY
May 24-August 22
Principal Designer: Steve Visser
Design Team: Miro Tasic and Brian McGreevy
Engineer: Ashok Midha
Compliant Fishing Pliers
Published in
Paola Antonelli, *Mutant Materials in Contemporary Design Exhibition Bulletin* (New York: Museum of Modern Art), 6.
- Traveling Exhibition: Mutant Materials
Netherlands Groninger Museum, Groninger September 13-December 7, 1997
Czech Republic Veletržní Palác, Prague May 15-August 17, 1997
- 1996-1997 **Innovations for Living/Industrial Design Excellence Awards 1989-1995**
National Invitational Exhibition
Brook Steven's Gallery at Milwaukee Institute of Design
Milwaukee, WI
October 18, 1996-August 23, 1997
Design Team: Kyle Bennett and Steve Visser
Kudo Crafters Clamp
- 1995-1996 **National Design Competition: Good Design Award Exhibition**
Selected Design (500 entries/ 120 selected)
The Chicago Athenaeum: Museum of Architecture and Design
Chicago, IL
October 24, 1995-January 13, 1996
Principal Designer: Steve Visser
Design Team: Don Herring, Dan Julian and Don Woods
ExerTron™ Video Game Controller
- 1995-1996 **National Design Competition: Good Design Award**
Good Design Award (Nearly 500 entries/ 80 selected)
The Chicago Athenaeum: Museum of Architecture and Design
Chicago, IL
October 24, 1995-January 13, 1996
Principal Designer: Steve Visser
Engineer: Ashok Midha
Compliers® Flexural Fishing Pliers
- 1995 **Idea95: National Design Competition**
Silver Winner for New Product Concepts (766 entries/ 56 selected)
Industrial Designers Excellence Award
IDSA National Conference
Santa Fe, NM
September 13-16
Design Team: Kyle Bennett and Steve Visser
Kudo Crafters Clamp
Published in
Innovation: Journal of the Industrial Designers Society of America, 14, no. 4, (Fall 1995): 207.
Cited in
Business Week (June 7, 1993): 102.
- 1995 **Permanent Collection**
The Chicago Athenaeum: Museum of Architecture and Design
Chicago, IL
Principal Designer: Steve Visser
Engineer: Ashok Midha
Compliers® Flexural Fishing Pliers

- 1994 **94 Nagaoka International Design Competition**
 Selected Design (615 entries from 40 nations/ 57 selected)
 Shinanogawa Technopolis
 Nagaoka City, Japan
 October 21-23
 Design Team: Bennett Kyle and Visser Steve
Kudo Crafters Clamp
 Published in
Interior Exterior International Design Competition 9 (Nagaoka, Japan: Shinanogawa Technopolis), 59
- 1994 **Permanent Collection**
 Museum Die Neue Sammlung (Invitational)
 Industrial Design Collection
 Munich, Germany
 Principal Designer: Steve Visser
 Design Team: Miro Tasic and Brian McGreevy
 Engineer: Ashok Midha
Compliant Fishing Pliers
- 1993 **Idea93: National Design Competition**
 Silver Winner, for New Product Concepts (678 entries/ 26 selected)
 Industrial Designers Excellence Award
 IDSA National Conference
 Atlanta, GA
 August 11-14
 Principal Designer: Steve Visser
 Designers: Miro Tasic and Brian McGreevy
 Engineer: Ashok Midha
Compliant Fishing Pliers
 Published in
Innovation: Journal of the Industrial Designers Society of America 12, no. 4 (Fall 1993): 125.
 Cited in
Business Week (June 7, 1993): 78.
- 1993 **Neste Forma Finlandia: International Plastics Design Competition 3**
 Second Prize \$18,000 (576 entries from 36 countries/ 2nd)
 Neste Corporation
 Espoo, Finland
 Principal Designer: Steve Visser
 Design Team: Miro Tasic and Brian McGreevy
 Engineer: Ashok Midha
Compliant Fishing Pliers
- | | | |
|---|--|-----------------|
| Traveling Exhibition: Neste Forma Finlandia 3 | | |
| Finland | Tapiola, Espoo | April 19-25 |
| Sweden | Svenska Måssan in Gothenburg | May 10-15 |
| France | Parc de la Villette, Paris | June 7-13 |
| Germany | Rhein Ruhr Center, Mulheim-Ruhr | June 21-27 |
| Belgium | Zuiderdokken, Antwerp | September 20-26 |
| Italy | Milan | October 4-10 |
| Portugal | Espinho, near Oporto | October 20-26 |
| UK | National Exhibition Center, Birmingham | November 7-11 |
- Published in
 David Vickery, *Neste Forma Finlandia International Plastic Design Competition 3* (Helsinki: Abbeygate), 12
- 1992 **Architectonics: Regional Juried Exhibition**
 Performing Arts Center
 Fort Wayne, IN
 October 22-November 20
Nurkka Corner Floor Lamp

1984 **Solo Exhibition of Recent Sculptures**
Concordia College
Seward, NE

Patents

2019 **Soft Tissue Therapy Tool**
Issued July 16
Design Patent Number D854,178
Inventors: Michael Cochard and Steven Visser

2018 **Vehicle Lift Platform Hand Switch**
Issued September 4
Design Patent Number D827,586
Inventors: Robert E. Bettcher, Justin M. Kline, Austin Metzger, Steven Visser, Yingxiao Cao

2017 **Vertical Channel Vehicle Lift Arm**
Issued October 31
Design Patent Number D801,619
Inventors: Robert E. Bettcher, Justin M. Kline, Steven Visser, Yingxiao Cao

2017 **Closed Vehicle Lift Arm**
Issued October 10
Design Patent Number D799,776
Inventors: Robert E. Bettcher, Justin M. Kline, Steven Visser, Yingxiao Cao

2017 **Vehicle Lift Platform**
Issued September 12
Design Patent Number D797,396
Inventors: Robert E. Bettcher, Justin M. Kline, Steven Visser, Yingxiao Cao

2002 **Support Structure for a Chair**
Issued October 8
Design Patent Number D463,925
Inventor: Steve Visser

2001 **Rotary Assembly Table**
Issued April 24
Design Patent Number D440,786
Inventors: Steve Visser, Sang-Gyeun Ahn, Laura Drake, Haolong Ma, Seung-Jo Park

1997 **Resilient Clamp**
Issued May 6
Patent Number 5,625,931
Inventors: Steve Visser and Kyle Bennett

1997 **Video Game Controller**
Issued August 19
Design Patent Number D382,604
Inventor: Steve Visser

1996 **Compliant Pliers**
Issued June 4
Patent Number 5,522,290
Inventors: Ashok Midha and Steve Visser

- 1996 **Video Game Controller**
 Issued November 12
 Design Patent Number D375,531
 Inventor: Steve Visser
- 1996 **Video Game Controller**
 Issued October 29
 Patent Number 5,568,928
 Inventors: Bruce Munson and Steve Visser

Designs Reproduced in Publications

- 2019 **Steve Visser, “Herculano” Coffee Table**
 Published in
 2019 KSBDA Purdue International Invitational Exhibition
 July 26, (West Lafayette, IN USA), 24-25
- 2018 **Steve Visser, “Herculano” Coffee Table**
 Published in
 2018 CADI Convergence Art & Design International
 November 11, 2018 (Shaoxing, China), 90
- 2013 **Steve Visser, “Exclamation” Chair**
 Published in
 Cross-Disciplinary and Integration: Portfolio of “Nanjing Innovation” International Universities’
 Design Exhibition
 July 25, 2013 (Nanjing, China), 20-21
- 2009 **Steve Visser, “StoneStalk” Pedestal**
 Published in
 Portfolio of '09 International Universities Design
 09 国际校际设计作品展组委会
 南京理工大学设计艺术系 2009 年 9 月 10 日 (Nanjing, China) 8-9
- 2008 **Steve Visser and Scott Shim, Timex Season and profile of DesignNapkin design firm**
 Published in
 Charlotte and Peter Fiell, *Design Now*
 (London: Taschen Publishing) 118-123
- 2004 **Steve Visser and Scott Shim “BLU Network: Borrow Lend Unite”**
 Published in
Design (Taipei, Taiwan)
 Vol.114 (December/January): 71
- 2002 **Steve Visser, “Quantum Armchair”**
 Published in
American Style Magazine
 (Winter 2001-2002): 16
- 2001 **Steve Visser, “Ateria Reliquary”**
 Published in
 Luisa Collina and Giuliano Simonelli, Eds.
Designing Designers: Training Strategies for the Third Millennium
 (Milan, Italy: Politecnico di Milano), 73
- 1997 **Steve Visser and Kyle Bennett, “Kudo Crafters Clamp”**
 Published in
 George Covington and Bruce Hannah, *Access by Design*
 (New York: Van Nostrand Reinhold), 201

- 1996 **Steve Visser and Kyle Bennett, “Kudo Crafters Clamp”**
Published in
Universal Design Excellence Project
(Takoma Park, MD: Universal Designers and Consultants, Inc. in cooperation with The National Endowment for the Arts and the National Building Museum) slides.
- 1996 **Steve Visser, and Ashok Midha, “Compliers™ Flexural Fishing Pliers”**
Published in
Design Report (Hamburg, Germany)
(January/February 1996)
- 1995 **Steve Visser, and Ashok Midha, “Compliers™ Flexural Fishing Pliers”**
Published in
Plastics
(May 1995): 7
- 1994 **Steve Visser, Miro Tasic, and Ashok Midha, “Compliant Fishing Pliers”**
Published in
Taka Sihvola, Mikko, *Design in Finland 1994*
(Helsinki: The Finnish Foreign Trade Association), 60
- 1994 **Steve Visser, Miro Tasic, and Ashok Midha, “Compliant Fishing Pliers”**
Published in
Innovation: Award-Winning Industrial Design
(Glen Cove, NY: PBC International, Inc.), 82
- 1993 **Steve Visser, Miro Tasic, and Ashok Midha, “Compliant Fishing Pliers”**
Published in
Paola Antonelli, *Mutant Materials in Contemporary Design*
(New York: Museum of Modern Art and Rizzoli Press), 35
- 1993 **Steve Visser, Miro Tasic, and Ashok Midha, “Compliant Fishing Pliers”**
Published in
Design (London) 534 (June 1993): 8
Form Function Finlandia (Helsinki) no. 2 (June 1993): 91
K Plastic & Kautscherl Zeikey (Germany) (May 1993): 10
Plastverarbeiter (Heidelberg, Germany) 44 no. 5 (1993): 73
Form (Zurich, Germany) no. 143 (1993): 129
Design in Kunststoff (Germany) no. 44 (1993): 72-74
Domus (Milan, Italy) no. 752 (September 1993): 80-81
Kunstof Magazine (Doetinchem, Netherlands) no. 5 (May 1993): 32
Machine Design (July 9, 1993): 12

Industrial Design Activities

- 2022 **Polar Ice Coffee Table (furniture design)**
Steve Visser Design
West Lafayette, IN
- 2021 **Pompeii Washbasin (fixture design)**
Steve Visser Design
West Lafayette, IN
- 2020 **Root Coffee Table (furniture design)**
Root Coffee Table (furniture design)
Steve Visser Design
West Lafayette, IN

2018-2019	Neonatal Crib (medical design) Save The Children Blantre, Malawi (Africa) Design Director: Steve Visser Design Team: Qiuying Joyce Xu, Lauren Para, Daniel Madrinan-Chiquito, Engineering Team: Yuehwern Yih, Sidi Deng, Maxwell Silla, Francis Masi Medical Team: Bina Valsangkar, Queen Dube, Nenani Chisema
2018-2019	Kangaroo Mother Care Hospital Bed (furniture design) Save The Children Blantre, Malawi (Africa) Design Director: Steve Visser Design Team: Dewey Yu, Daniel Madrinan-Chiquito, Engineering Team: Yuehwern Yih, Maxwell Silla, Francis Masi Medical Team: Bina Valsangkar, Queen Dube, Nenani Chisema
2018	Walnut and Cast Pewter Inlay Coffee Bar (furniture design and development) Revolution Community Church Logansport, IN Design Director: Steve Visser Design Team: David Marchese and Keith Williams
2017	Herculaneum Coffee Table II (furniture design) Steve Visser Design West Lafayette, IN
2017	Truss Arch (public space design) City of West Lafayette West Lafayette, IN
2016	Fuzion Mini (product design) FASTR, Inc. Indianapolis, IN
2015-2016	Herculaneum Coffee Table (furniture design) Steve Visser Design West Lafayette, IN
2015	River Desk and Silver Apple² Pedestal (furniture design and development) Steve Visser Design West Lafayette, IN
2015	Hand Pendant (product design) Braun-Ability Winamac, IN Design Team: Steve Visser and Yingxiao Cao
2015	QLD Wheelchair Lift (product design) Design Team: Steve Visser and Yingxiao Cao Braun-Ability Winamac, IN
2014	Balance Stool, Egg Bowls, Umbrella Birdfeeder, and Button Clock (product design) Association of Craft Producers Kathmandu, Nepal
2014	3 Horned Trivet, Copper Candle Holder (product design) Design Team: Sari Visser and Steve Visser Association of Craft Producers Kathmandu, Nepal

2011-2014	Mini Massage Tool (product design) Soft Tissue Therapy Tools, Inc. Indianapolis, IN
2013	Circle Chair (furniture design and development) DesigNapkin West Lafayette, IN
2012	Exclamation Chair (concept development) DesigNapkin West Lafayette, IN
2011-12	Apple² table line (furniture design and development) DesigNapkin West Lafayette, IN
2009-2010	Fuzion ST3 (product design and development) Soft Tissue Therapy Tools, Inc. Indianapolis, IN
2007	Pendant Lighting Design, Origins 212 Collection (product design) Omega Lighting Tupelo, MS Principal Design: Steve Visser and Scott Shim
2006-2007	Track Lighting Design (product design) Omega Lighting Tupelo, MS Principal Design: Steve Visser and Scott Shim Design Team: Milan Jovanovic,
2006-2007	Bike Seat Design (product design) David Porter Kansas City, MO Principal Design: Scott Shim and Steve Visser
2006	Cell Phone Design (product design) Samsung Electronics Sacramento, CA Principal Design: Scott Shim and Steve Visser
2006	MXR programmable light (product design) Apollo Design Technology, Inc. Ft. Wayne, IN Principal Design: Scott Shim and Steve Visser
2005-2006	Portable Electronics (product design) Klipsch Audio Corp. Indianapolis, IN Principal Design: Steve Visser and Scott Shim Design Team: Nick Poteracki, Milan Jovanovic, Faraz Shah and Scott Collins
2005-2006	Wardrobe Valet (product design) Proman Products, LLC. Loves Park, IL Principal Design: Scott Shim and Steve Visser

2005	Identity Mouth Guard (product design) Reliance, Inc. Taipei, Taiwan Principal Designers: Scott Shim and Steve Visser Design Team: Nick Poteracki, Colt Stander, Bria Helgersen, Jason Boyer, and Brian Beaver
2005	USB Drive (concept design) Filadex, Inc. West Lafayette, IN
2004-2005	Contact Lens Travel Case (product design) Reliance, Inc. Taipei, Taiwan
2004	Sanitary Toilet Care System (product design) Dr. Seok-Jin Kim Indianapolis, IN Principal Designer: Steve Visser Design Team: Milan Jovanovic and Alex Cantoni
2001	Civil Interactive Play Table (furniture design) Imagination Station West Lafayette, IN
2001	Knock-Down Stool (concept development) Matt Striebel Bloomington, IN Principal Designer: Steve Visser Design Team: Laura Drake and Kyungsook Song
2001	Interactive Trolley Exhibit (exhibit design) Imagination Station/CityBus West Lafayette, IN Principal Designer: Steve Visser Design Team: Nathaniel Grady, Michael Lah and Kiley Reed
2001	Quantum Armchair (furniture design) Patent assigned to Purdue Research Foundation West Lafayette, IN
1999-2000	Fiber Optic Cross (design/ build commission) St. Thomas Aquinas Church West Lafayette, IN
1999	Wooden Decorative Products (product design) Reliance, Inc. Taipei, Taiwan Principal Designer: Steve Visser Design Team: Braden Smith and Haolong Ma
1999	Self-Watering Flowerpots (concept design) Reliance, Inc. Taipei, Taiwan
1998	Faucet Design (product design) Delta Faucet Indianapolis, IN Principal Designer: Judd Lord Design Team: Steve Visser and Loren Hill

1995-1996	<p>Portable Bassinet (product design) Redmon, Inc. Peru, IN Principal Designer: Steve Visser Design Team: Don Herring, Don Woods and Dan Julian</p>
1993-1995	<p>Compliers® Flexural Fishing Pliers (product design) Compliers, Inc. West Lafayette, IN Principal Designer: Steve Visser Engineer: Ashok Midha</p>
1994	<p>Stenfors Temperature Control System (product design) Stenfors, OY Oulu, Finland Principal Designer: Steve Visser Design Team: Kyle Bennett and Don Woods</p>
1994	<p>Computer Interface Device (product graphics) Interserve, Inc. Rockford, IL</p>
1994-1995	<p>ExerTron™ Video Game Controller (product design) ExerTron, Inc. Muncie, IN Principal Designer: Steve Visser Design Team: Don Herring and Scott Jost</p>
1994	<p>Tele-Talker™ (product design) Amuze Technologies Indianapolis, IN Principal Designer: Steve Visser Design Assistant: Braden Smith</p>
1994	<p>Kudo Crafters Clamp (product design) Fiskars, Inc. Madison, WI Design Team: Kyle Bennett and Steve Visser</p>
1993	<p>Mini Printer (concept design) Quixale America, Inc. NPC Limited Taipei, Taiwan Principal Designer: Chao-Hsi Wu Design Team: Steve Visser and Brian McGreevy</p>
1993	<p>ZARD printer sharing system (concept design) Power Print Systems Rossville, IN Principal Designer: Steve Visser Design Team: David Winn and Brian McGreevy</p>
1992	<p>Trim Line Vending Machine (concept design) Standard Changemakers, Inc. Indianapolis, IN</p>

1992 **Display Case** (furniture design commission)
Elastic Mechanism Lab
Mechanical Engineering Building
Purdue University

1992 **River Valley Evangelical Free Church** (logo design)
West Lafayette, IN

1991 **Tricorder Radio Frequency Meter** (product design)
Trilithic, Inc.
Indianapolis, IN
Principal Designer: Steve Visser
Design Assistant: Braden Smith

1991 **Water Soluble Packaging System** (concept development)
Great Lakes Chemical
West Lafayette, IN
Principal Designer: Steve Visser
Design Assistant: Richard Johnson

1991 **ECG Analyzer** (product graphics)
Vetronics, Inc.
Lafayette, IN

1990 **KG Software** (logo design)
Micro Data Base Systems, Inc.
Lafayette, IN

1989 **AnSCO Vision AL 35mm camera** (product design)
Haking, Inc.
Hong Kong
Principal Designer: Hari Matsuda
Design Assistant: Steve Visser

1989 **Whistler 750 radar detector** (product design)
Whistler, Inc.
Westford, MA
Principal Designer: Hari Matsuda
Design Assistant: Steve Visser

1989 **Shure Beta 58 wireless microphone** (design detailing)
Shure Brothers, Inc.
Chicago, IL

1989 **Whistler 2se radar detector** (product graphics)
Whistler, Inc.
Westford, MA

1989 **Point of purchase poster** (graphic design)
AnSCO, Inc.
Glen View, IL

1989 **Coulter blood analyzer** (product design)
Coulter, Inc.
Miami, FL
Principal Designer: Robert Coons
Design Assistant: Steve Visser

1989 **Ansko Vision Gift Pack (package design)**
Ansko, Inc.
Glen View, IL
Principal Designer: Hari Matsuda
Design Team: Peter Langmar and Steve Visser

1988 **Top Flight Video Game Clam Pack (package design)**
Konomi, Inc.
Chicago, IL
Principal Designer: Hari Matsuda
Design Assistant: Steve Visser

Expert Witnessing

2022-2023 **Molo Design Ltd. vs. Chanel Inc. Canada (expert witness, utility patent)**
Gowling WLG LLP.
Ottawa Canada
• Work on Expert Report on Validity, November 2022-March 2023

2022 **Hasbro Inc. vs. GelBlasters et. al.(expert witness, utility patents)**
Fish & Richardson P. C.
Boston MA
• Review and Analyze Infringement Contentions, August- October 2022

2021-2023 **Sure Fit Home Products LLC vs. Maytex Mills (expert witness, design patents)**
Goldberg Cohen LLP
New York, NY.
• Submit Expert Report on Infringement, November 21, 2022
• Review claim construction

2021 **Gunner Kennels vs. Luck Duck (expert witness, utility patents)**
Banner & Witcoff, Ltd.
Washington DC/ Chicago IL
• Work on Expert Report on Validity, November-December 2021
• Submit Expert Report on Infringement, November 5, 2021

2021 **Greenfield vs. Mold-Rite Plastics LLC (expert witness, design patents)**
Bond, Schoeneck & King PLLC
Syracuse, NY.
• Prepare preliminary opinions on infringement/validity, August 2021

2020-2022 **Samuel Stamping Technologies vs. Therma-Tru Corp. (expert witness, design patent)**
Vorys, Sater, Seymour and Pease, LLP
Cleveland, OH
• Review and Analyze Validity Contentions, October 2022
• Declaration regarding claim construction brief, February 18, 2021
• Prepare rebuttal expert report on §112 issue, December 15, 2020

2019-2021 **RTC Industries, Inc. vs. Fasteners For Retail, Inc. (expert witness, utility patent)**
Banner & Witcoff, LTD
Washington, DC/ Chicago, IL
• Completed deposition as expert, May 5, 2020
• Declaration in IPR2019-00994, January 28, 2020
• Declaration in IPR2019-00994, August 8, 2019

2018-2021 **J.R. Simplot vs. McCain Foods USA, Inc. (expert witness, design patents)**
Jones Day
Cleveland, Ohio
• Give deposition on invalidity, validity, infringement and non-infringement, September 29, 2021
• Prepare rebuttal expert report on invalidity, August 20, 2021

- Prepare rebuttal expert report on infringement, August 21, 2021
 - Prepare expert report on infringement, July 9, 2021
 - Prepare expert report on invalidity, July 9, 2021
- 2019-2020 **Gamevice, Inc. vs. Nintendo Co. Ltd. (expert witness, utility patents)**
 Quinn Emanuel Trial Lawyers, and LTL Attorneys, LLP
 Los Angeles, CA
- Prepare declaration regarding Daubert motion, April 6, 2020
 - Give deposition on invalidity, February 18, 2020
 - Give deposition on non-infringement, February 17, 2020
 - Prepare rebuttal expert report on non-infringement, February 6, 2020
 - Prepare expert report on invalidity, December 20, 2019
 - Declaration regarding claim construction, March 12, 2019
- 2019-2020 **Pavo Solutions, LLC. vs. Kingston Technology (expert witness, utility patent)**
 Russ, August & Kabat
 Los Angeles, CA
- Testified at trial, Santa Ana, CA, March 3-4, & 11, 2020
 - Declaration regarding Daubert motion, August 2, 2019
 - Completed deposition as expert witness, June 4, 2019
 - Prepare expert report on validity, April 5, 2019
 - Prepare expert report on infringement, March 8, 2019
- 2018 **Honeywell vs. Aprilaire (expert witness, design patent)**
 Kirkland and Ellis, LLP
 Washington, DC
- Completed deposition as expert, December 11, 2018
 - Gave declaration in summary judgment motion, December 4, 2018
 - Prepare expert report on validity, September 27, 2018
 - Prepared expert report on infringement, August 20, 2018
- 2018 **J.R. Simplot vs. McCain Foods, Ltd. (expert witness, design patent)**
 Norton Rose Fulbright Canada, LLP
 Toronto, Canada
- Review design patents, October 2018
- 2017 **C&S Marketing vs. GoPro (expert witness, design patent)**
 Kilpatrick Townsend & Stockton, LLP
 San Francisco, CA
- Prepare declaration on invalidity, May 21, 2017
 - Prepare expert report on invalidity, February 10, 2017
 - Prepare expert report of non-infringement, March 31, 2017
- 2017 **Nordock, Inc. vs. Systems, Inc. (expert witness, design patent)**
 Sokol Law Office
 Milwaukee, WI
- Prepare supplemental declarations for summary motion, September 14, 2017
 - Prepare declaration for summary motion, August 24, 2017
- 2017 **Gamon vs. Campbell Soup (expert witness, utility, and design patents)**
 Reed Smith, LLP
 Philadelphia, PA
- Completed deposition as expert, Indianapolis, IN, November 10, 2017
 - Prepare declarations on invalidity 111', D646', and D645', October 13, 2017
- 2015-2017 **Luv N' Care vs. Sauvinex (expert witness, contract dispute)**
 Banner & Witcoff, Ltd.
 Washington, DC
- Completed deposition as expert, Lafayette, IN, August 25, 2017
 - Prepare rebuttal expert report on copying, June 21, 2017
 - Completed deposition as expert, Lafayette, IN, September 4, 2015

- Prepared expert report on copying, June 18, 2015
- 2016 **Gamon vs. Campbell Soup (expert witness, utility patents)**
Cozen O'Connor
New York, NY
 - Prepared declarations on invalidity 111' and 326', October 14, 2016
- 2016 **IGT vs. Aristocrat Technologies (expert witness, design patent)**
Covington and Burling, LLP
Washington, DC
 - Prepared declaration on invalidity, March 15, 2016
- 2015-2016 **Sonos vs. Denon (expert witness, design patent)**
Lee Sullivan Shea & Smith, LLP
Chicago, IL
 - Prepare declaration on validity, October 26, 2016
 - Prepare declaration on claim construction, September 9, 2016
- 2015-2016 **Sonos vs. Denon (expert witness, design patent)**
KPPB, LLP
Anaheim, CA
 - Prepare supplemental declaration on validity, September 29, 2016
 - Prepared declaration on validity, March 30, 2016
 - Completed informal interview with USPTO, Alexandria, VA, February 13, 2016
- 2015 **CATR vs. Kingston Electronics (expert witness, utility patent)**
Renaissance IP Law Group, LLP
Portland, OR
 - Completed deposition as expert, Lafayette, IN, September 21, 2015
 - Prepared declaration on validity, July 16, 2015
- 2014-2015 **Cablz vs. Chums (expert witness, utility patent)**
Stoel Rives, LLP
Salt Lake, UT
 - Prepare declaration on invalidity, January 22, 2015
 - Completed deposition as expert, Dallas, TX, August 15, 2014
 - Prepared declaration on invalidity, August 1, 2014
 - Prepared rebuttal report on invalidity, August 1, 2014
 - Prepared report on invalidity, May 26, 2014
- 2013-2014 **PNY vs. Phison Electronics (expert witness, utility patent)**
Fish and Richardson, PC
Dallas, TX
 - Completed deposition as expert, Dallas, TX, July 23, 2014
 - Prepare declaration on validity, July 8, 2014
- 2013-2014 **M-Edge vs. Amazon (expert witness, utility patent)**
Alston and Bird, LLP
Washington, DC
 - Completed deposition as expert, Chicago, IL, April 10, 2014
 - Prepared report on non-infringement, March 7, 2014
 - Prepared report on invalidity, January 30, 2014
- 2012-2013 **MSA vs. Nifty Home Products (expert witness, design patent)**
Gibson & Demier, LLP
Woodbridge, NJ
 - Completed deposition as expert, Woodbridge, NJ, May 8, 2013
 - Prepared report on infringement, March 15, 2013

- 2012-2013 **Frito-Lay vs. Medallion Foods, Inc. (expert witness, trademark)**
 Baker Botts, LLP
 Dallas, TX
- Testified at trial, Sherman, TX, February 15, 2013
 - Completed deposition as expert, Dallas, TX, November 20, 2012
 - Prepared report on trademark, October 8, 2012
- 2012-2013 **Nordock, Inc. vs. Systems, Inc. (expert witness, design patent)**
 Sokol Law Office
 Milwaukee, WI
- Testified at jury trial, Milwaukee, WI, March 19 & 25, 2013
 - Testified in claim construction hearing, Milwaukee, WI, January 30, 2013
 - Gave declaration in summary judgment motion, November 5, 2012
 - Prepared rebuttal report, July 20, 2012
 - Prepared report on infringement/validity, June 20, 2012
- 2012 **Sofpool, LLC vs. Kmart and Big Lots (expert witness, design patent)**
 Troutman Sanders, LLP
 Irvine, CA
- Gave declaration in summary judgment motion, October 29, 2012
 - Gave declaration in claim construction hearing, June 18, 2012
 - Prepared report on infringement, March 2, 2012
 - Prepared report on validity, February 10, 2012
- 2010-2011 **Spellbound vs. Pacific Handy Cutter/Stanley Black & Decker (expert witness, utility patents)**
 Miller Canfield
 Chicago, IL
- Prepared rebuttal second supplemental report, October 11, 2011
 - Gave declaration on statement of facts, September 26, 2011
 - Gave declaration in support of summary judgment, August 5, 2011
 - Prepared second supplemental report, August 5, 2011
 - Gave declaration in support of summary judgment, February 7, 2011
 - Prepared rebuttal expert report, February 14, 2011
 - Prepared supplemental expert report, December 29, 2010
 - Gave declaration on infringement and validity, December 17, 2010
 - Prepared expert report, December 7, 2010
- 2010-2011 **Microsoft vs. Datel, Inc. (expert witness, design patents)**
 Howard, Rice, Nemerovski, Canady, Falk & Rabkin, PC
 San Francisco, CA
- Completed deposition as expert, June 8, 2011
 - Prepared rebuttal report, May 27, 2011
 - Prepared expert report, April 11, 2011
 - Worked on ITC expert report, June-August 2010
- 2010 **Magnadyne vs. Best Buy/EverWin (expert witness, design patent)**
 Troutman Sanders, LLP
 Irvine, CA
- Completed deposition as expert, Detroit, MI, June 3, 2010
 - Prepared supplemental expert report on invalidity, May 19, 2010
 - Prepare declaration, April 12, 2010
 - Prepared expert report on invalidity, March 24, 2010
- 2009 **Plastipak (expert witness, design patent)**
 Dykema Gossett, LLP
 Chicago, IL
- Provided opinion on patent infringement, September 2009

- 2008 **Trover Group, Inc. vs. Diebold (expert witness, design patent)**
Thompson & Knight, LLP
Dallas, TX
- Prepared preliminary reports on invalidity and non-infringement, September–November 2008
- 2008 **Hanamint Corp. vs. Home Casual (expert witness, design patent)**
Fabyanske, Westra, Hart & Thomson, P.A.
Minneapolis, MN
- Completed deposition on expert report, July 10, 2008
 - Prepared supplemental expert report on invalidity, April 30, 2008
 - Prepare expert report on invalidity, March 28, 2008
- 2007-2008 **Sofpool, LLC vs. Intex Recreational Corp. (expert witness, design patents)**
Baker & Daniels, LLP
Indianapolis, IN
- Testified in jury trial as a design expert, Marshall, TX, April 15, 2008
 - Prepared expert report on non-infringement March 7, 2008
 - Gave declaration for markman hearing February 19, 2008
 - Prepared expert report on invalidity, February 18, 2008
- 2006-2007 **Calphalon vs. Meyer (expert witness, design patent)**
Dykema Gossett, LLP
Chicago, IL
- Testified in jury trial as a design expert, June 12, 2007
 - Completed deposition on expert report, Chicago, IL, May 9, 2006
 - Prepared expert report for Meyer Inc. in a design patent dispute, April 22, 2006
- 2006 **Zuna Corporation vs. Atico, Walgreen & Target (expert witness, utility patent)**
Wiley Rein & Fielding, LLP
Washington, D.C.
- Reviewed patents, claim construction and manufactured products in view of a utility patent owned by Zuna Corporation, February-March
- 2005-2006 **Fisher-Price vs. Evenflo (expert witness, utility patent)**
Milbank, Tweed, Hadley & McCloy, LLP
Washington, D.C.
- Testified in preliminary injunction hearing as a design expert, May 24, 2006
 - Completed deposition on the expert report, Buffalo, NY, December 22, 2005
 - Prepared expert report on infringement, October 11, 2005
- 2005 **Fabio Perini S.p.A. vs. Chan Li Machinery Co. Ltd. (expert witness, utility patent)**
Baker & McKenzie, LLP
Washington, D.C.
- Worked as non-testifying expert in an International Trade Regulation & Customs case involving an Italian manufacturer and a Taiwanese Manufacturer. October-December
 - Created visual images to help explain the issues involved in the case.
 - Created claim charts for US patents 5,979,818 and Re 35,729
- 2003-2004 **Fisher-Price vs. Graco (expert witness, utility patent)**
Milbank, Tweed, Hadley & McCloy, LLP
Washington, D.C.
- Assisted in preparation for Markman hearing, Philadelphia, PA, March 2004
 - Testified in Preliminary Injunction hearing, Philadelphia, PA, November 2003
 - Prepared a preliminary report for a lawsuit between Fisher-Price and Graco, Inc. concerning a product that Graco, Inc. produces and patent 6,520,862 that Fisher-Price owns, July-September 2003

2001-2003	<p>Fisher-Price vs. Safety Ist (expert witness, utility and design patents) Milbank, Tweed, Hadley & McCloy, LLP Washington, D.C.</p> <ul style="list-style-type: none"> • Testified in a trial concerning seven products and on four patents in dispute, Wilmington, DE, January 14-15, 2003 • Gave declaration for court on claim construction, March 28, 2002 • Prepared expert report on five products that Safety Ist produces and five patents that Fisher-Price owns, January 15, 2002
2001	<p>Stein Industries vs. Display Specialties (expert witness, design patent) Fish & Richardson, PC Minneapolis, MN</p> <ul style="list-style-type: none"> • Reviewed patent history and depositions in the case, July-August 2001
2001	<p>The Kong Company vs. Mann Design (expert witness, utility patent) Fish & Richardson, PC Minneapolis, MN</p> <ul style="list-style-type: none"> • Gave opinions on definition of claim language in patent 6,129,053 and visual comparisons with design patent 388,559, March, 2001
2000	<p>3-M vs. Cabot (expert witness, utility, and design patents) Fish & Richardson, PC Minneapolis, MN</p> <ul style="list-style-type: none"> • Completed deposition, Indianapolis, IN, September 2000 • Gave declaration, April 2000 • Prepared expert report, March 21, 2000
<p>International Fellowships and Residencies</p>	
2022-2023	<p>Purdue Sabbatical: Design Process from the Real World Selected for full year sabbatical with the support of the College of Liberal Arts at Purdue University. The project involved interviewing designers from around the world about the design processes they use. Interviews were conducted in 6 continents with industrial designers working on a variety of products. Buenos Aires Argentina, Sydney Australia, Prague Czech Republic, Helsinki Finland, Budapest Hungary, Turin Italy, Rabat Morocco, Bangkok Thailand, and Providence RI and Santa Barbara, CA. July 2022-May 2023</p>
2015	<p>SAI Faculty Fellow Selected for four-week residency at Domus Academy in Milan. The project was focused on industrial design inspiration from Etruscan objects. Milan, Italy July 19-August 14</p>
2014	<p>Designer in Residence Served as a designer in residency at the Association of Craft Producers in Nepal. The project was focused on designing crafts for fair trade industry. Kathmandu, Nepal September 1-October 22</p>
2014	<p>American Academy in Rome Associate Fellow Selected for four-week residency at the American Academy in Rome. The project was focused on industrial design inspiration from 1st Century Rome. Rome, Italy April 28-May 24</p>
2013	<p>International Workshop Organized and team-taught 48 students during an intensive 48-hour design challenge with student in China. Nanjing, China September 20-22</p>

- 2002 **Study Abroad Program**
Taught British Style course at Oxford University.
Oxford, UK
June 30-August 4
- 2000 **International Faculty Exchange**
Taught at the University of Lapland for six weeks; included a Product Design course for international students from several countries within Europe, and an Advanced Research and Design course with a group of Finnish students designing a robot for domestic yard work.
Rovaniemi, Finland
April 1-May15
- 1999 **Malaysian Polytechnic Curriculum Development Project Phase II**
One of 16 professors that consulted for the Malaysian Ministry of Education, by assisting with the development and implementation of a new curriculum at Politeknik Johor Bahru, Pasir Gudang, Malaysia. The grant included support for one month in the USA and one month in Malaysia. Funding was provided through the World Bank.
Johor Bahru, Pasir Gudang, Malaysia
July and September 1999
- 1996-1997 **Fulbright Scholar**
Won a scholarship to teach and research at the University of Art and Design Helsinki. Teaching included courses in Industrial Design, Materials and Processes and Compliant Mechanisms. Research focused on creative endeavors with computer aided industrial design.
Helsinki, Finland
August 1996-August 1997
- Lectures**
- 2022 **The Good The Bad and The Ugly**
University of Illinois at Champaign/Urbana
Champaign IL
March 3
- 2021 **MFA Guest Critique**
University of Illinois at Champaign/Urbana
Champaign IL
December 10
- 2020 **Order in a Chaotic World: Gestalt Theory and Design Perception**
Universidad del Norte
Bogotá, Columbia (Virtual due to COVID)
September 30
- 2019 **NSF Workshop for Engineering Design and Systems Engineering**
Discussion Leader "The Future of Work" Breakout Session
West Lafayette, IN
October 7
- 2019 **Employing Design Perception to Drive Product Creation**
Huazhong University of Science & Technology
Wuhan, China
March 12
- 2019 **Design Perception, How We See Products**
Design Education Symposium
Lecture at Wuhan University of Science and Technology
Wuhan, China
March 11

- 2017 **The Entrepreneurial Designer: Design Focused Entrepreneurship, Product Design, and Business Models**
Design innovation & Entrepreneurship Forum
Busan, South Korea
December 14
- 2016 **Panelist: Industrial Design Education Symposium**
National Conference IDSA
Detroit, MI
August 17
- 2015 **Domus Academy**
Perception: How We Identify Great Design
Milan, Italy
July 28
- 2013 **Keynote Lecture at the 4th International Innovation Design Education Forum**
Perceiving Design: Design Perceived
Nanjing, China
September 19
- 2013 **Breaking the Rules of Visual Perception**
Steve Visser and Cheryl Qian
IDSA National Education Symposium
Chicago, IL
August 21
Published online:
www.idsa.org/sites/default/files/Visser_Paper_Breaking_the_rules_of_Visual_Perception.pdf
- 2013 **Beyond the Computer Screen: Applying Information Visualization in Product Design**
Cheryl Qian, Steve Visser and Victor Chen
IDSA National Education Symposium
Chicago, IL
August 21
Published online:
www.idsa.org/sites/default/files/Qian-Paper_BeyondTheComputerScreen.pdf
- 2012 **What You Can Get From 48 Hours: The Future of Design Leadership**
Steve Visser, Cheryl Qian and Victor Chen
IDSA National Education Symposium
Boston, MA
August 15
Published online:
<http://www.idsa.org/what-you-can-get-48-hours-future-design-leadership>
- 2011 **A Collaborative Effort: Integrating Interaction Design Evaluation Into Product Design Process**
Cheryl Qian and Steve Visser
Eastman IDSA National Education Conference
New Orleans, LA
September 14
Published online:
www.idsa.org/sites/default/files/ACollaborativeEffortIXDEvaluation.pdf
- 2011 **Keynote Lecture at the International Innovation Design & Education Forum**
Integrating Interaction Design and Industrial Design
Nanjing, China
August 15

- 2011 **Integrating User Experience Research Into Industrial Design**
Education: Interaction Design Program at Purdue
Cheryl Qian, Steve Visser and Victor Chen
National Collegiate Inventors and Innovators Alliance Conference
Washington, DC
March 25
Published online:
<http://nciia.org/sites/default/files/u7/Qian.pdf>
- 2010 **Interaction Design at Purdue University**
Cheryl Qian and Steve Visser
Eastman IDSA National Education Conference
Portland, OR
August 5
- 2010 **The Interactive Face of Design**
Cheryl Qian, Petronio Bendito and Steve Visser
Faces of Design, IDSA Mideast Conference
Grand Rapids, MI
May 1
- 2009 **Panelist: Industrial Design Education**
Midwest District Conference IDSA
Minneapolis, MN
April 4
- 2007 **Keynote Lecture at the ICHEM Conference**
How to Effectively Incorporate Corporate Sponsored Projects and Design Competition into Design Curriculum
Wuxi, China
November 6
- 2007 **Keynote Lecture at International Nanjing Forum of Industrial Design Education**
How to Effectively Incorporate Corporate Sponsored Projects and Design Competition into Design Curriculum
Nanjing, China
November 8
- 2006 **Workshop Co-Leader with Jim O'Grady from Calgary Canada**
National Collegiate Inventors and Innovators Alliance conference
Portland, OR
March 23
- 2005 **Panel Leader: Design Competitions and Tenure**
Eastman IDSA National Education Conference
Washington, D.C.
August 22
- 2005 **Entrepreneurship in Industrial Design: A Case Study**
Kookmin University
Seoul, South Korea
April 19
- 2005 **Entrepreneurship in Industrial Design Lecture and Workshop**
Seoul National University
Seoul, South Korea
April 18

- 2004 **Panelist: Industry Sponsored Student Research Models**
Eastman IDSA National Education Conference
Art Center
Pasadena, CA
October 24-26
- 2003 **Strategies: Corporate vs. Entrepreneurial Design**
Notre Dame University
Notre Dame, IN
November 4
- 2001 **Entrepreneurship/Corporate Sponsorship: Purdue's Two-Sided Gold Coin**
International Convention of University Courses in Industrial Design:
Milan International Furniture Fair
Milan, Italy
April 7-8
Published in:
Designing Designers. Training Strategies for the Third Millennium
p. 69-74
- 2001 **Seminar on Entrepreneurial Design**
IDSA Midwest District Conference: Designing the Experience
Chicago, IL
March 23
- 2001 **Entrepreneurship/Corporate Sponsorship: Purdue's Two-Sided Gold Coin**
Published in:
IDSA Design Education Proceedings
p. 405-412
- 2000 **Design in the USA**
University of Lapland
Rovaniemi, Finland
April 18
- 1999 **Finding Opportunities**
Seminar: Designing In the New Millennium
Politeknik Johor Bahru
Pasir Gudang, Malaysia
July 24
- 1999 **Brainstorming Workshop**
IDSA Midwest District Conference: The Creative Culture
Madison, WI
April 9
- 1998 **Compliance: Utilizing Plastic's Flexible and Rigid Characteristics.**
In IDSA Design Education Proceedings: Why Design?
Long Beach, CA
September 22-24, CD ROM
- 1997 **Entrepreneurial Design Center: Blurring the Boundaries Between Design Education, Business and Manufacturing**
Co-Authored: Steve Visser and Tom Gatis
Published in:
IDSA Design Education Proceedings
Washington, D.C.
June 23-25, CD ROM

- 1997 **Compliant Mechanism Workshop**
Two-week workshop for 20 students at The University of Lapland
Rovaniemi, Finland
April 28-May 7
- 1997 **American Design & Compliers® Design Process**
To 40 students at the University of Lapland
Rovaniemi, Finland
May 6
- 1997 **East Meets West: The Design Cultures of Asia and America**
Joint lecture with Professor Lee of South Korea
Approximately 150 students and faculty attended
University of Art and Design
Helsinki, Finland
January 15
- 1996 **Machine Age Design in America**
To Industrial Design Freshmen
University of Art and Design Helsinki
Helsinki, Finland
December 12
- 1996 **An Introduction to Industrial Design**
To 40 students at the Tampere Polytechnic
Tampere, Finland
November 5
- 1996 **Venturing In Industrial Design**
American Voices conference
Turku, Finland
October 10
- 1996 **Venturing Organizations, a Case Study**
To 70 Industrial Design/Business Management students
University of Art and Design Helsinki
Helsinki, Finland
September 12
- 1996 **The Design Process for Compliers®**
To Industrial Design Freshmen
University of Art and Design Helsinki
Helsinki, Finland
December 5
- 1995 **Entrepreneurs: A Natural Resource in Short Supply and Educating**
Design Students in the Art of Venturing
IDSA Design Education Conference
Santa Fe, NM
September 13-16
- 1994 **Inventionalism: Designers Reject Expressionistic Pleasures of the 80's and Replace Them with an Adoration for Innovation**
Co-Authored; Steve Visser and John Peasley
Dearborn, MI
August 16-18
Published in:
IDSA Design Education Conference Proceedings: Design Futures
p. 133-139

- 1994 **Compliant Mechanisms: Materials and Processes**
Lecture and mini workshop
University of Michigan
Ann Arbor, MI
March 8
- 1993 **Drawing Workshop**
Taught a three-day workshop on design drawing techniques to twelve students from Helsingin Taideteollainen Korkeakoulu (University of Art and Design Helsinki)
Helsinki, Finland
April 20-22
- 1993 **Plastic Design**
Helsingin Taideteollainen Korkeakoulu (University of Art and Design Helsinki)
Helsinki, Finland
April 22
- 1993 **Parallel Design at Purdue: Mechanical Engineering and Industrial Design Team-Up.**
Co-Authored; Steve Visser and Ashok Midha
Georgia Institute of Technology
Atlanta, GA
August 10-12
Published in:
IDSA Design Education Conference Proceedings
p. 245-249
- 1991 **Industrial Design Process and Education**
Rovaniemi Institute of Industrial Arts and Handicrafts
Rovaniemi, Finland
December 18
- 1991 **Industrial Design Process and Education**
Helsingin Taideteollainen Korkeakoulu (University of Art and Design Helsinki)
Helsinki, Finland
December 17
- 1991 **What is Industrial Design?**
Lecture including a three-screen multi-media presentation developed by students in A&D 355
Presentation Techniques
Purdue University
October 29
- 1990 **Art Education vs. Design Education**
University of California
San Bernardino, CA
April 10
- Major Professor Master's in Industrial Design**
- 2021 Jae Chae
2020 Keith Williams and Daniel F. Mandrinan Chiquito
2019 Xiao Ma
2018 Yingxiao Max Cao
2016 Amie Barnes, Wilson Zhang and Hongmin Jin
2015 Angie Wang
2013 Zoey Feng and Robert Sibley
2011 Di Wu
2010 Xi Chen, Sara Rockwell and Larry Fenske
2009 Hao Hua

Grants/Corporate Sponsorship

2019	LumiSource, LLC Organized a design project for the design of lamps for millennials. Chicago, IL
2018-2019	Save the Children Co-PI for a project to reduce infant mortality by integrating family-centered kangaroo mother (KMC) care into health systems. Designed and developed smart furniture for use in neonatal and KMC facilities in resource limited countries Malawi, Africa
2015-2016	Hasbro, Inc. Co-led student interdisciplinary design project working with major toy manufacturer to explore concepts focused on solar powered and mechanical toys. Providence, RI
2015	BraunAbility (3 Co-PI's) Co-PI for the BraunAbility Queensland project. It was a project to re-design a wheelchair lift for the European Market. The team of three professors and three RA's worked together for 12 months to improve the design of a wheelchair lift by reducing the weight, reducing noise and improving the visual design of the lift. Winamac, IN
2015	Evonik Organized a 48-hour intensive design project. The goal was to develop new ways to promote Evonik plastics to Industrial Designers. Lafayette, IN
2014	Kimberly Clark Professional Co-Organized student design project working with major safety manufacturer to explore concepts focused on the clean-room gowns. Atlanta, GA
2014	Hasbro, Inc. Directed a student design project to explore toy concepts focused on Play-Doh. Providence, RI
2013	GE Appliance Organized graduate student design project working with major appliance manufacturer to explore concepts focused on the laundry. Louisville, KY
2013	National Furniture Arranged corporate sponsored project exploring office stool designs for the Junior Industrial Design Students. Worked with Glen Fuller who taught the class. Jasper, IN
2013	HON Furniture Arranged 48-2-Design workshop for 96 industrial design students. The project was to design furniture for the office storage accessories. Muscatine, IA
2013	Hasbro, Inc. Arranged student design project working with major toy manufacturer to explore toy concepts focused on preschool children. Providence, RI
2012	Caterpillar Arranged Corporate sponsored project for senior industrial design students. The project was to explore how Caterpillar could expand its brand. Peoria, IL
2012	Weber Grill Arranged 48-2-Design workshop for 50 industrial design students. The project was to design products to improve the grilling experience. Chicago, IL

2011	National Furniture Arranged corporate sponsored project exploring occasional table designs for the Junior Industrial Design Students. Worked with Victor Chen who taught the A&D 305 class. Three of the students were hired to bring their designs to production. The production designs were introduced at Neocon 2012. Jasper, IN
2010	GE Healthcare Arranged multi-course project exploring home monitoring of patients with: multiple sclerosis, cerebral palsy, arthritis, and Parkinson's. Milwaukee, WI
2010	The Hon Company Arranged 48-2-Design workshop for 50 industrial design students. The project was to design furniture for the future of education. Muscatine, IA
2010	Hasbro, Inc. Led student design project working with major toy manufacturer to explore toy concepts focused on the Stretch Armstrong movie. Providence, RI
2009	DePuy, Inc. a Johnson & Johnson Company Arranged sponsored project with DePuy, Inc. for the juniors. This project focused on designing for the Paralympics. Warsaw, IN
2009	MCS Frames Arranged sponsored project focusing on future frame trends. Chicago, IL
2008	Whirlpool interaction Design Grant to develop new interaction design area within industrial design at Purdue University. Benton Harbor, MI
2007	Rolodex (Newell Rubbermaid) Managed students design project sponsored by office-supply manufacturer, researched millennial's organizational needs and helped identify new market opportunities for the company. Chicago, IL
2007	Radio Flyer Led student design project sponsored by toy manufacturer to create future concept for ride-on toys. Chicago, IL
2004	Whirlpool Corp. Organized student design project exploring new concepts for refrigeration storage. This innovative intensive project spanned two weekends and included 32 students creating 256 concepts within 48 hours. Benton Harbor, MI
2001	Hill-Rom Led Packadorm Project: design project sponsored by a major manufacturer of hospital beds and equipment. The project was to design a safer and more efficient method of transporting equipment and patients in the hospital environment. Batesville, IN
2001	Campbell Hausfeld Led power paint equipment research and design project. Student project to explore what women want in power paint equipment. Nashville, TN
2000	International Programs Global Initiative Initiated an exchange program with the University of Lapland and Purdue University. Rovaniemi, Finland
1999	Dr. Martens Shoes Organized a corporate sponsored project for the junior level Industrial Design students. The project included a five-day trip to New York provided by Dr. Martens for all participating students and faculty. The students also had a chance to work with professional designers, marketers, and executives from Dr. Martens. New York, NY

1999

Samsung Corporation

Campus liaison for the Prometheus Design Competition.
Seoul, South Korea

1995

Purdue Research Foundation

Summer Faculty Grant
Computer Design of Complex Compliant Mechanisms