

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner

v.

WHIRLPOOL CORPORATION
Patent Owner.

Case No. IPR2026-00336
U.S. Patent No. 12,232,681

**DECLARATION OF DR. KIMBERLY K. CAMERON IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 12,232,681**

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LIST OF EXHIBITS¹

Ex. No.	Description
Ex-1001	U.S. Patent No. 12,232,681 (“the ’681 Patent”)
Ex-1002	Declaration of Dr. Kimberly K. Cameron
Ex-1003	Curriculum Vitae of Dr. Kimberly K. Cameron
Ex-1004	Prosecution History of U.S. Patent No. 12,232,681
Ex-1005	U.S. Patent Application Publication No. 2018/0220867 A1 to Carr (“Carr”)
Ex-1006	U.S. Patent Application Publication No. 2008/0169009 A1 to Mailander (“Mailander”)
Ex-1007	D.E. Patent No. 6810173 to Bosch (“Bosch”) (Certified English Translation)
Ex-1008	E.P. Patent No. 2368479 to Fumagalli (“Fumagalli”)
Ex-1009	U.S. Patent No. 9,445,703 B2 to Heidel et al. (“Heidel”)
Ex-1010	U.S. Patent No. 9,510,729 B2 to Fey et al. (“Fey”)
Ex-1011	U.S. Patent No. 6,869,029 B2 to Ochoa (“Ochoa”)
Ex-1012	U.S. Patent No. 10,045,681 B2 to Schessl et al. (“Schessl”)
Ex-1013	U.S. Patent No. 2,910,207 to Andrew (“Andrew”)
Ex-1014	D.E. Patent No. 6810173 to Bosch (“Bosch”)
Ex-1015	U.S. Patent No. 7,365 to Houghton (“Houghton”)

¹ Four-digit pin citations that begin with 0 are to the branded numbers added by Samsung in the bottom right corner of the exhibits. All other pin citations are to original page, column, paragraph, or line numbers.

Ex. No.	Description
Ex-1016	U.S. Patent No. 10,602,910 B2 to Gutkowski (“Gutkowski”)
Ex-1017	U.S. Patent No. 51,000 to Alexander (“Alexander”)
Ex-1018	U.S. Patent No. 355,139 to Cochrane (“Cochrane”)
Ex-1019	G.B. Patent No. 219,103 to Livens (“Livens”)
Ex-1020	INTENTIONALLY LEFT BLANK
Ex-1021	U.S. Patent No. 2,734,520 to Abresch et al. (“Abresch”)
Ex-1022	Decl. of Emad Tanbour, Ph.D., in Reply to the Expert Decl. of Dr. Kimberly K. Cameron Regarding Non-Infringement and Invalidity of the Asserted Patents, <i>Whirlpool Corp. v. Samsung Elecs. Co., Ltd.</i> , No. 25-cv-01042-JRG-RSP (Jan. 16, 2026)
Ex-1023	U.S. Patent No. 2,648,588 to Ruspino (“Ruspino”)
Ex-1024	U.S. Patent No. 4,402,556 to Schwind (“Schwind”)
Ex-1025	U.S. Patent No. 3,464,566 to Gilson (“Gilson”)
Ex-1026	U.S. Patent No. 4,475,656 to Collier (“Collier”)
Ex-1027	U.S. Patent Application Publication No. 2010/0051069 A1 to Schessl et al. (“Schessl”)
Ex-1028	U.S. Patent Application Publication No. 2013/0002107 A1 to Paschini et al. (“Paschini”)
Ex-1029	U.S. Patent Application Publication No. 2015/0196189 A1 to Shaffer et al. (“Shaffer”)
Ex-1030	U.S. Patent Application Publication No. 2006/0237051 A1 to Bengston et al. (“Bengston”)
Ex-1031	U.S. Patent Application Publication No. 2006/0127051 A1 to Tsumagari et al. (“Tsumagari”)

Ex. No.	Description
Ex-1032	U.S. Patent Application Publication No. 2015/0053238 A1 to Lee et al. (“Lee”)
Ex-1033	U.S. Patent Application Publication No. 2015/0320290 A1 to Hederstierna et al. (“Hederstierna”)
Ex-1034	E.P. Patent No. 2594186 A1 to Milani et al. (“Milani”)
Ex-1035	U.S. Patent Application Publication No. 2014/0190528 A1 to Wegener et al. (“Wegener”)
Ex-1036	U.S. Patent No. 3,402,975 to Smith (“Smith”)
Ex-1037	U.S. Patent No. 3,044,842 to Abresch et al. (“Abresch”)
Ex-1038	U.S. Patent No. 7,032,604 B2 to Welch (“Welch”)
Ex-1039	U.S. Patent No. 2,745,707 to Sebens (“Sebens”)
Ex-1040	U.S. Patent No. 5,332,105 to Standfield (“Standfield”)

I. INTRODUCTION

1. I, Kimberly K. Cameron, submit this declaration to state my opinions on the matter described below.

2. I have been retained by Petitioners Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Petitioner”), as an independent expert in this proceeding before the United States Patent and Trademark Office. ESi is being compensated at my usual and customary rate of \$590 per hour. My compensation does not depend on the outcome of this proceeding, and I have no other interest in this proceeding.

3. I understand that this proceeding involves U.S. Patent No. 12,232,681 (“’681 Patent”) (Ex-1001), which I understand is currently assigned to Whirlpool Corp. (“Patent Owner”). I have been asked to consider the validity of Claims 14-16, and 19 of the ’681 Patent. My opinions and the bases for my opinions are set forth below.

II. BACKGROUND AND QUALIFICATIONS

4. I believe that I am well qualified to serve as a technical expert in this matter based upon my educational and work experience. My curriculum vitae (“CV”) is submitted as Exhibit 1003.

5. I am a Principal Engineer at Engineering Systems Incorporated (ESI), a leading scientific and engineering firm. I specialize in mechanical engineering,

materials science and metallurgy, and have extensive experience with materials evaluation, mechanical design, mechanical testing, stress analysis, failure analysis, fatigue analysis, and fracture mechanics.

6. I graduated with high honors from Princeton University with a degree in Mechanical Engineering and minors in Materials Science, Applied Mathematics and Engineering Physics. I have also received a master's and doctorate in Mechanical Engineering with a minor in Materials Science and Engineering from Stanford University.

7. I have received numerous awards including fellowships from the Department of Defense, the National Science Foundation, and Lucent Technologies. I am a Registered Professional Engineer in both Mechanical Engineering and Metallurgy in the State of California. I am also a registered patent agent. I have taught classes for engineers studying to take the fundamentals of engineering exam and the licensing exam for mechanical engineering.

8. Throughout my career, I have applied my deep understanding of the fundamentals of metallurgy, materials science, engineering physics, computational mathematics, and engineering mechanics to help understand and solve complex problems.

9. Particularly relevant to my declaration here, I have worked on numerous projects for various consumer products. For example, I have experience with dishwashers, refrigerators, washing machines, irons, as well as various consumer electronics and medical devices.

III. INFORMATION CONSIDERED

10. In preparing this Declaration, I considered the various materials I discuss in this Declaration, including, for example, the '681 Patent, the references cited by the '681 Patent, the prosecution history of the '681 Patent (including the references cited therein), various background articles and materials referenced in this Declaration, and the prior art references I identify in this Declaration. In addition, my opinions are further based on my education, training, experience, and knowledge in the relevant field.

IV. RELEVANT LEGAL STANDARDS

11. I am not an attorney and offer no legal opinions. For the purposes of my Declaration, I have been informed about certain aspects of the law that are relevant to my analysis, as summarized below.

A. Claim Interpretation

12. I have been informed and understand that in an IPR proceeding, claims are to be interpreted according to the *Phillips* claim construction standard. I understand that under this standard, the meaning of claim terms is considered from

the viewpoint of a hypothetical “person of ordinary skill in the art” (“POSITA”) at the time of the alleged invention. I have been informed and understand that claim construction is a matter of law and that the final claim constructions for this proceeding will be determined by the Patent Trial and Appeal Board (“PTAB”).

13. I provide my opinions regarding terms that may require explicit construction to resolve the grounds I present in my Declaration in Section **Error! Reference source not found.I.**

B. Perspective of One of Ordinary Skill in the Art

14. I have been informed and understand that a patent is to be understood from the perspective of a hypothetical POSITA. Such an individual is considered to possess normal skills and knowledge in a particular technical field (as opposed to being a genius). I understand that in considering what the claims of a patent require, what was known prior to that patent, what a prior art reference discloses, and whether an invention is obvious or not, one must use the perspective of such a POSITA.

C. Obviousness

15. I have been informed and understand that a patent claim is obvious under 35 U.S.C. § 103, and therefore invalid, if the claimed subject matter, as a whole, would have been obvious to a POSITA as of the priority date of the patent based on one or more prior art references and/or the knowledge of a POSITA.

16. I understand that an obviousness analysis must consider (1) the scope and content of the prior art, (2) the differences between the claims and the prior art, (3) the level of ordinary skill in the pertinent art, and (4) secondary considerations, if any, of non-obviousness (such as unexpected results, commercial success, long-felt but unmet need, failure of others, copying by others, and skepticism of experts).

17. I understand that a prior art reference may be combined with other references to disclose each element of the invention under 35 U.S.C. § 103. I understand that a reference may also be combined with the knowledge of a POSITA, and that this knowledge may be used to combine multiple references. I further understand that a POSITA is presumed to know the relevant prior art. I understand that the obviousness analysis may take into account the inferences and creative steps that a POSITA would employ.

18. In determining whether a prior art reference would have been combined with other prior art or other information known to a POSITA, I understand that the following principles may be considered:

- a) whether the references to be combined involve non-analogous art;
- b) whether the references to be combined are in different fields of endeavor than the alleged invention in the Patent;

- c) whether the references to be combined are reasonably pertinent to the problems to which the inventions of the Patent are directed;
- d) whether the combination is of familiar elements according to known methods that yields predictable results;
- e) whether a combination involves the substitution of one known element for another that yields predictable results;
- f) whether the combination involves the use of a known technique to improve similar items or methods in the same way that yields predictable results;
- g) whether the combination involves the application of a known technique to a prior art reference that is ready for improvement, to yield predictable results;
- h) whether the combination is “obvious to try”;
- i) whether the combination involves the known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces, where the variations are predictable to a POSITA;

- j) whether there is some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill in the art to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention;
- k) whether the combination requires modifications that render the prior art unsatisfactory for its intended use;
- l) whether the combination requires modifications that change the principle of operation of the reference;
- m) whether the combination is reasonably expected to be a success; and
- n) whether the combination possesses the requisite degree of predictability at the time the invention was made.

19. I understand that in determining whether a combination of prior art references renders a claim obvious, it is helpful to consider whether there is some teaching, suggestion, or motivation to combine the references and a reasonable expectation of success in doing so. I understand, however, that a teaching, suggestion, or motivation to combine is not required.

V. LEVEL OF ORDINARY SKILL IN THE ART

20. I am familiar with the level of ordinary skill in the art with respect to the '681 Patent around its filing date and its claimed priority date. Based on my experience working, teaching, and conducting research in the relevant field, and based on my review of the '681 Patent specification, claims, file history, and prior art, I believe one of ordinary skill in the art around the time of the alleged invention of the '681 Patent would have had at least a bachelor's degree in mechanical engineering or a related field, and two years of experience in the design or development of consumer appliances, including dishwashers or comparable fluid-delivery systems, with additional education substituting for experience and vice versa.

21. In determining the level of ordinary skill in the art, I considered, for example, the type of problems encountered in the art, prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field.

22. I met or exceeded the knowledge and experience that a POSITA would have had in 2020.

VI. SUMMARY OF MY OPINIONS

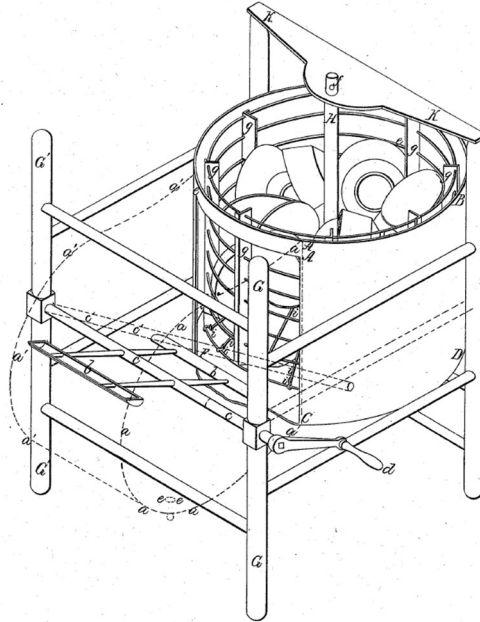
23. As I explain in detail below, it is my opinion that Claims 1, 3-10, 14–17, and 19 of the '681 Patent would have been obvious under 35 U.S.C. § 103 on the following grounds:

- **Ground 1:** Claims 14 and 15 are obvious over Carr (Ex-1005).
- **Ground 2:** Claims 14–16 are obvious over Mailander (Ex-1006).
- **Ground 3:** Claim 19 is obvious over Carr in view of Ochoa (Ex-1010).
- **Ground 4:** Claim 19 is obvious over Mailander in view of Ochoa.

VII. TECHNOLOGY BACKGROUND

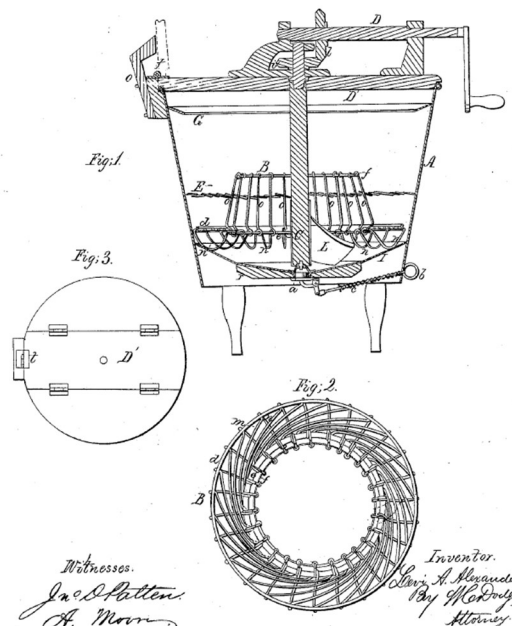
A. Historical Development

24. Modern automatic dishwashers trace their roots to the late nineteenth century, with early designs being manually powered. The first patented mechanical dishwashing device was invented by Joel Houghton, who received U.S. Patent No. 7,365 on May 14, 1850, for his “Improvement in Machines for Washing Table Furniture.” Ex-1015 (US 7,365). In Houghton’s wooden machine, illustrated below, dishes were arranged within a cylindrical rack, and a shaft with arms and buckets arranged on it was turned, “to throw [] water upon the crockery with force.” *Id.*



Ex-1015 (US 7,365)

25. Another early design appeared in 1865, with L. A. Alexander's patented "Machine for Washing Dishes," illustrated below, in which washing was achieved by rotating a dishrack within a water-filled tub. Ex-1017 (US 51,000).



Ex-1017 (US 51,000)

Neither Houghton's nor Alexander's dishwasher ever achieved commercial success.

26. The first commercially successful hand-powered dishwasher was invented in 1886, by Josephine Cochrane, and patented as U.S. Patent No. 355,139. Ex-1018 (US 355,139). Cochrane, motivated by frustration over her fine china being chipped during handwashing, developed a device in a shed behind her home. *See* "Josephine Cochrane – Dishwashing Machine," Lemelson-MIT, available at <https://lemelson.mit.edu/resources/josephine-cochrane>. She measured her dishes, constructed wire compartments to hold them securely, and mounted these on a wheel inside a copper boiler. Powered by a motor, the wheel would turn while soapy water was sprayed over the dishes. Cochrane began producing dishwashers for friends and commercial establishments, eventually founding the Crescent Washing Machine Company. Her machine gained wider attention after being exhibited at the 1893 Chicago World's Fair, where it won an award for design and durability. *Id.*

27. The first modern dishwasher, incorporating many features recognizable in today's models, was created in 1924 by English army officer William Howard Livens, who was granted British Patent GB 219103 for his innovations. Ex-1019 (GB 219103). Livens' design included a loading door, a wire rack to hold dishes, and a rotating spray arm for cleaning, with drying elements added in 1940. *See, e.g.,* <https://en.wikipedia.org/wiki/Dishwasher>. However, Livens' dishwasher did not

achieve commercial success, and it was not until the postwar economic boom of the 1950s that dishwashers began to be widely sold for domestic use, initially as standalone or portable devices, and then later, as modular units, integrated under kitchen countertops. *Id.* Today, dishwashers are found in over 75% of US households.²

B. Features of Conventional Dishwashers

28. Automatic dishwashers have evolved through a series of incremental design changes aimed at improving versatility, washing effectiveness, and efficient use of limited internal space. While early dishwasher designs established the basic framework of a washing chamber supplied with spray fluid and one or more racks for supporting dishes, subsequent developments increasingly focused on how rack structures, component placement, and wash-fluid delivery systems could be refined to accommodate a wider range of dishware while maintaining or improving cleaning and drying performance.

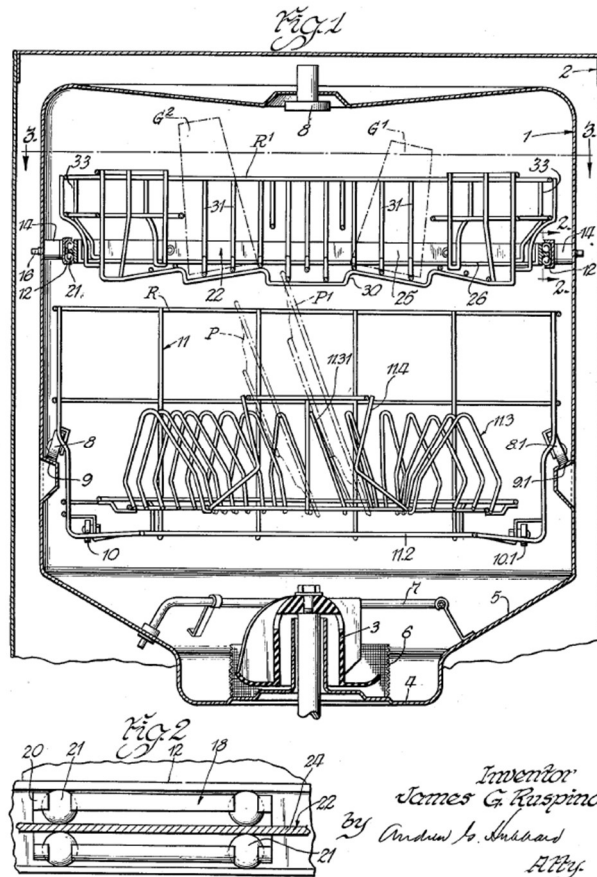
1. Moveable Racks

29. The ability to move a rack into and out of the washing chamber (e.g., by sliding or rolling) was a key innovation in the development of modern

² Data obtained from the US Census Bureau, at <https://www.census.gov/programs-surveys/ahs/data.html>, indicates that in 2023, out of 133,231 households surveyed, 100,437 had a dishwasher.

dishwashers, greatly enhancing user convenience by making it easier to load and unload dishes without heavy lifting or awkward maneuvering. By at least the early-to-mid 1950s, patents described dishwasher racks that could be moved into and out of the dishwasher. For example, U.S. Patent No. 2,745,707 (“Sebens”), which issued in 1956, describes “a dish rack and supporting frame structure, which is slidably mounted for movement into and out of the machine.” Ex-1039 (US 2,745,707). According to Sebens, not only did this “facilitate[] loading and removal of the dishes, silverware and utensils” placed in the rack, it also provided “complete access to all parts” of the racks, “effectively utiliz[ing] all available space within the washing compartment, with sections of the rack being capable of being withdrawn from the machine individually.” ’707 Patent, 1:15–32.

30. Similarly U.S. Patent No. 2,648,588 (“Ruspino”), which issued August 11, 1953, discloses a “Dishwashing Machine,” illustrated below, that provides improved “accessibility and utility of [the] racks by independently mounting on roller supports a bottom plate rack and an upper cup and glass rack.” Ex-1023 (US 2,648,588), 1:6–10.



Ex-1023 (US 2,648,588)

Ruspino further discloses means to adjust the roller supports, thereby enabling “adjustment of the clearance between [the] bottom and upper racks.” *Id.*, 1:10–12.

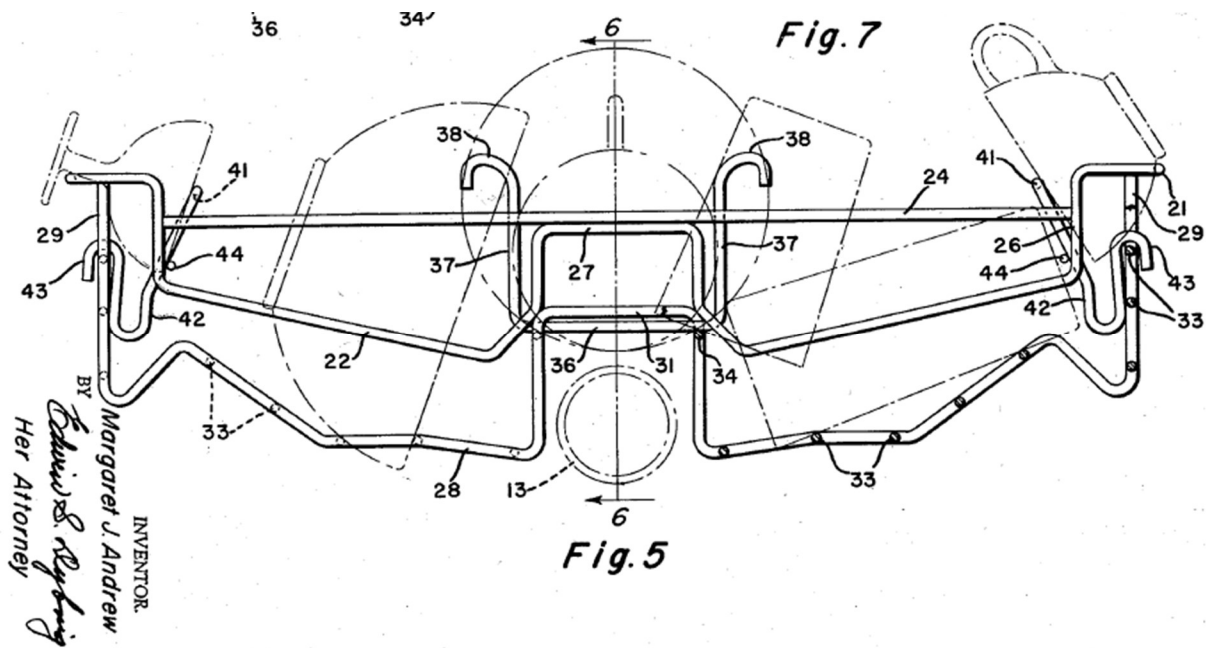
31. Later developments refined these concepts, for example, by disclosing dedicated roller assemblies and track/liner interfaces. *See, e.g.*, Ex-1024 (US 4,402,556).

2. Cup Supports and Angled Seating

32. Cups and glasses introduce another recurring design consideration: they should be held securely in a stable orientation that both (i) exposes surfaces to wash

fluid, and (ii) avoids pooling, by encouraging drainage. Dishwasher designers have long addressed these objectives through the use of inclined or angled support geometries that hold cups and glasses at an angle, relative to horizontal.

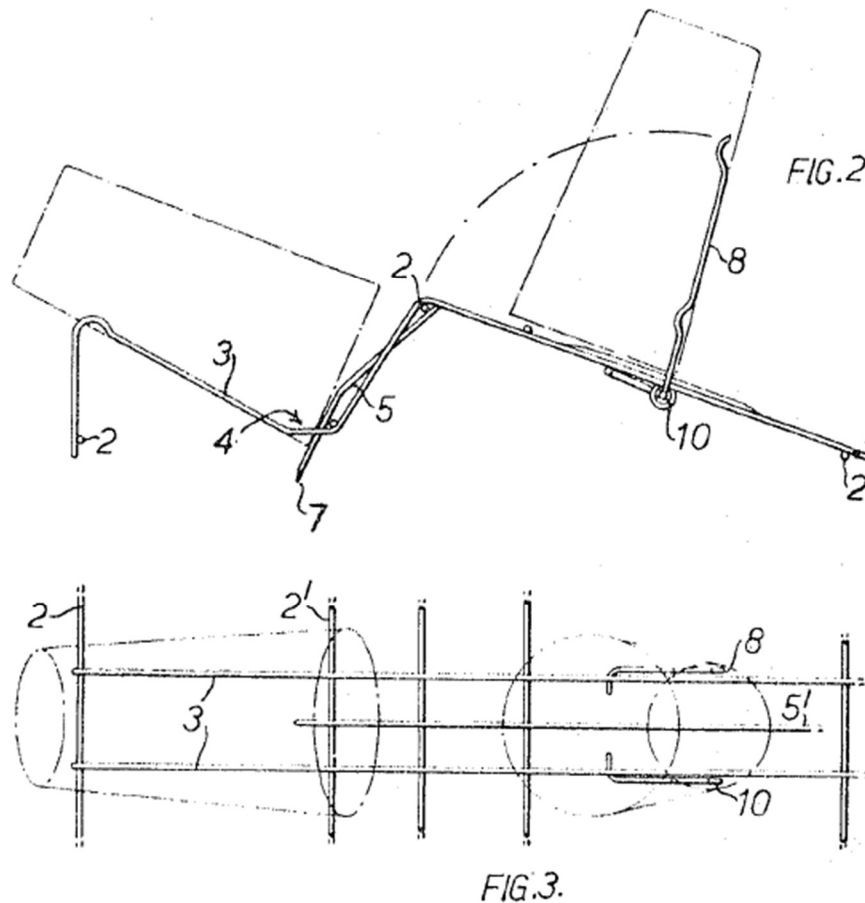
33. For example, as early as the 1950s, patents described rack structures in which posts supported drinking glasses and cups in an inclined position, for cleaning and draining purposes. U.S. Patent No. 2,910,207 (“Andrew”), for instance, teaches a dishwasher rack designed to hold “all different sorts or combinations and varieties of utensils in such a compact way that none will block the liquid cleansing stream from another and all are held to drain adequately after being washed without trapping liquid therein.” Ex-1013 (US 2,910,207), 1:35–39. Thus, Andrew teaches “posts 37,” which “are adapted to invertedly receive and support drinking glasses, tumblers, cups of the like in an inclined position above other utensils placed on the rails 33 of the bottom portions of the rack,” as illustrated in Figure 5, below. *Id.*, 3:41–45.



Ex-1013 (US 2,910,207)

Additionally, Andrew teaches that the bottom portion of the rack is configured to receive cups “in an edgewise liquid spill-out position,” further reinforcing the importance of inclined geometries to promote drainage. *Id.*, 3:49–54.

34. Similarly, U.S. Patent No. 3,464,566 (“Gilson”), which issued September 2, 1969, teaches a dish rack configured to hold glasses in two different angled orientations, as illustrated in Figures 2 and 3, below. Ex-1025 (US 3,464,566).



Ex-1025 (US 3,464,566)

As illustrated above, for the glass on the left, Gilson's rack includes spaced apart "transverse member 3," where "the member 3 hav[e] a bend 4 providing a recess in which the glass is located." *Id.*, 2:28–31. Gilson's rack additionally includes "a bracket 8 which is hingedly supported at 10 so that in its operative position, i.e. when used to support a glass, it is swung to its full line position," as show above, for the glass on the right. *Id.*, 2:38–42. When not in use to support a glass, this bracket "folds down flat against the transverse members 3 of the rack." *Id.*, 2:44–45.

35. Consistent with these teachings, inclined bottom walls are a common feature of patented dishwasher rack designs. *See, e.g.*, Ex-1026 (US 4,475,656) (“The floor 20 is made of angled sections for supporting dishes in various positions for enhanced water drainage.”); Ex-1027 (US 2010/0051069), ¶ 5 (“There is provision for sections of the floor area or the entire floor area to slope,” resulting in an improvement in “the draining-off of water during the drying process”); Ex-1028 (US 2013/0002107), ¶ 12 (describing support surfaces for drinking vessels that are “inclined by 20 to 30 degrees,” resulting in improved drying, because “the drinking vessels are tilted in such a way that water or cleaning liquid can effectively drain off from the drinking vessels”).

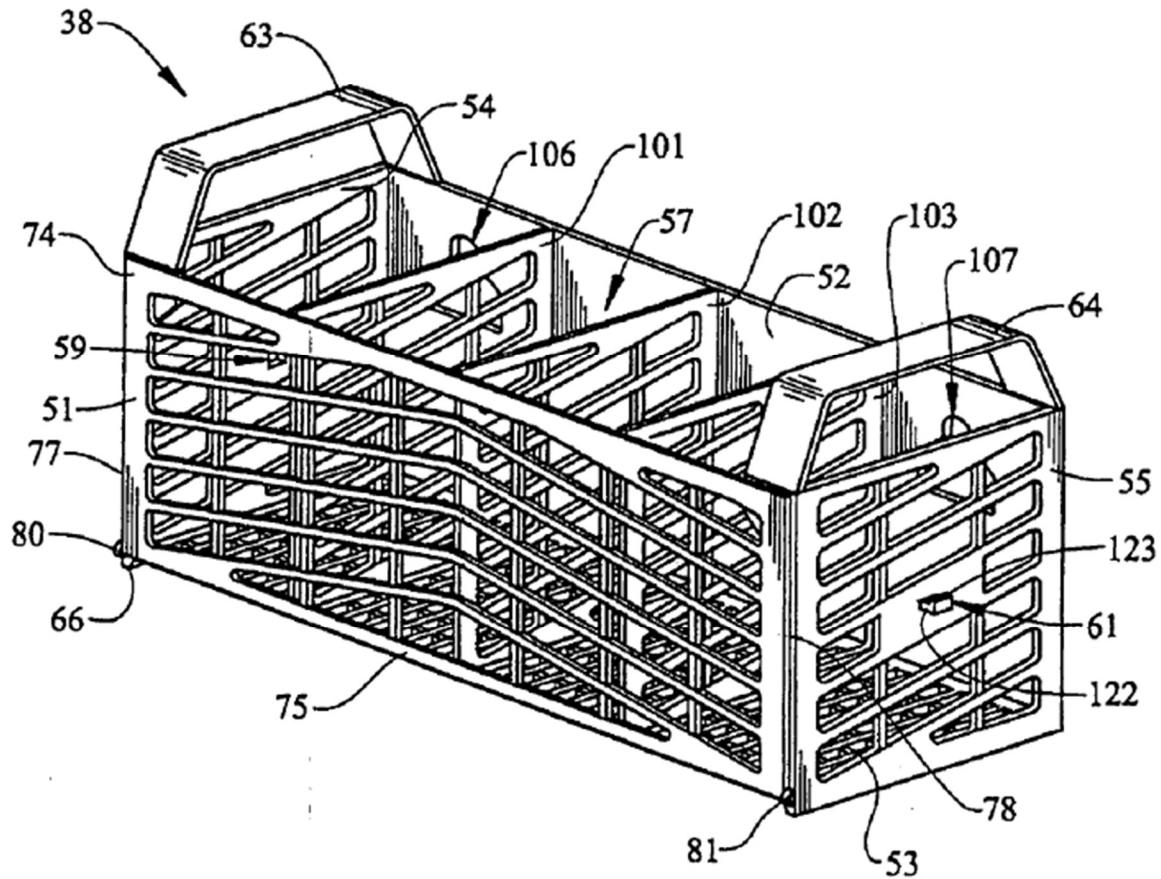
3. Utensil Holders

36. Like cups, utensils present their own dishwasher-related design considerations. Unlike plates and bowls, utensils are small, numerous, and prone to nesting and/or shifting, which can impede thorough cleaning, unless the utensils are properly constrained and separated. *See, e.g.*, Ex-1029 (US 2015/0196189), ¶ 51 (explaining the need to “support flatware [] and/or cooking utensils [] such that suitable spacing is provided between adjacent flatware [] and/or cooking utensils [] in order to provide sufficient wash fluid flow therebetween and permit suitable cleaning of flatware [] and/or cooking utensils []”). Moreover, washing liquid may

pool in certain types of cutlery/utensils such as spoons, without proper positioning. *See, e.g.*, Ex-1027 (2010/0051069), ¶ 20 (explaining that “washing liquor can better drain off the items of cutlery held at an angle,” which “gives an improved drying result or a lower energy requirement for drying the items of cutlery”); Ex-1013 (2,910,207), 1:33-39 (“It is [] desirable to hold the maximum quantity of any of a plurality of like dishes or of all different sorts or combinations and varieties of utensils in such a compact way that none will block the liquid cleaning stream from another and all are held to drain adequately after being washed without trapping liquid therein.”).

37. For this purpose, a long-standing approach has been to place cutlery and utensils in a cutlery basket or caddy positioned on (or attachable to) a rack. These baskets were often designed as separate, removable units to facilitate loading and unloading and to allow flexible placement within the dishwasher tub. For example, U.S. Patent Publication No. 2006/0237051 (“Bengston”) discloses a utensil holder assembly that includes “multiple utensil baskets that can be mounted in various different configurations in the dishwasher to provide a consumer with the flexibility to construct diverse arrangements of dishware, cookware, utensils, and the like for a washing operation.” Ex-1030 (US 2006/0237051), Abstract. An example of one such utensil basket is illustrated in Figure 2, below:

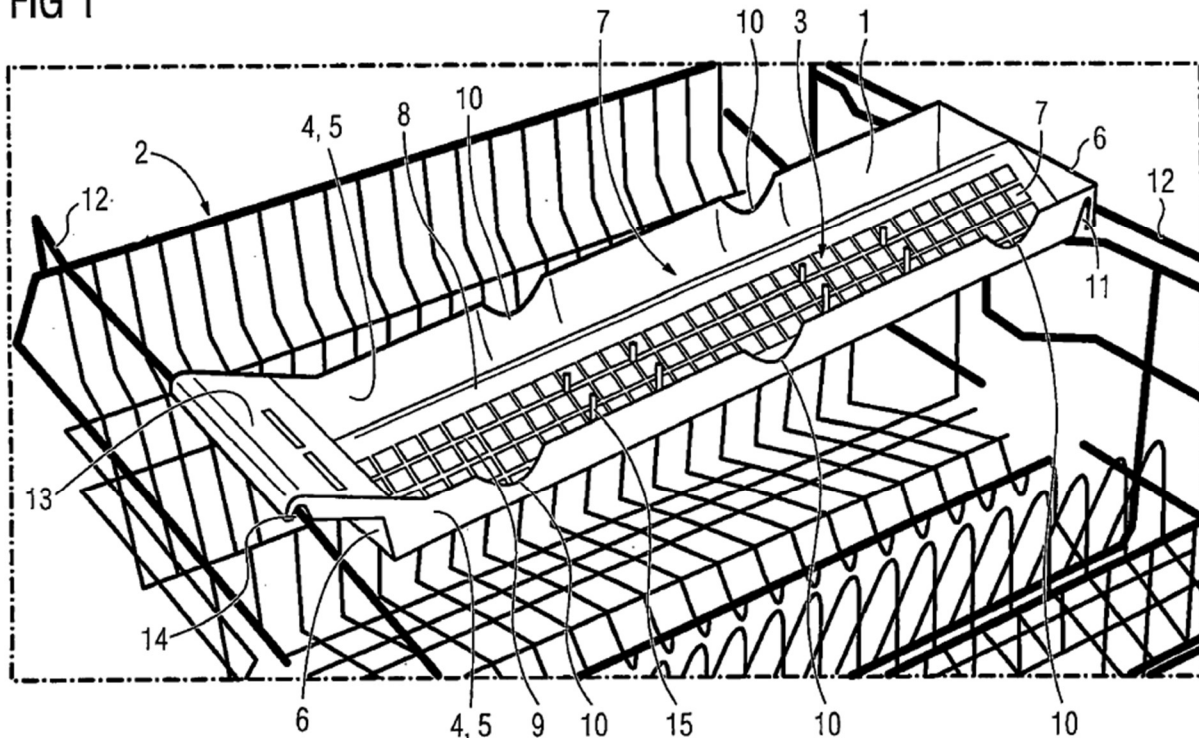
FIG. 2



Ex-1030 (US 2006/0237051)

38. As another example, U.S. Patent Publication No. 2013/0002107 (“Paschini”) discloses a cutlery tray “adapted to be attached to a dishwasher basket,” as illustrated in Figure 1, below. Ex-1028 (2013/0002107), Abstract.

FIG 1



Ex-1028 (US 2013/0002107)

39. Cutlery baskets were often formed from molded plastic, sometimes with internal dividers to separate utensils into compartments and reduce nesting. Ex-1031 (US 2006/0127051), ¶ 21 (explaining that the disclosed utensil basket is preferably “constructed from plastic having an open lattice work that enables the washing fluid to impact utensils stored therein”), ¶ 23 (explaining that the disclosed utensil basket “is provided with a plurality of dividers [] that separate [the] storage compartment [] into a plurality of smaller compartments”).

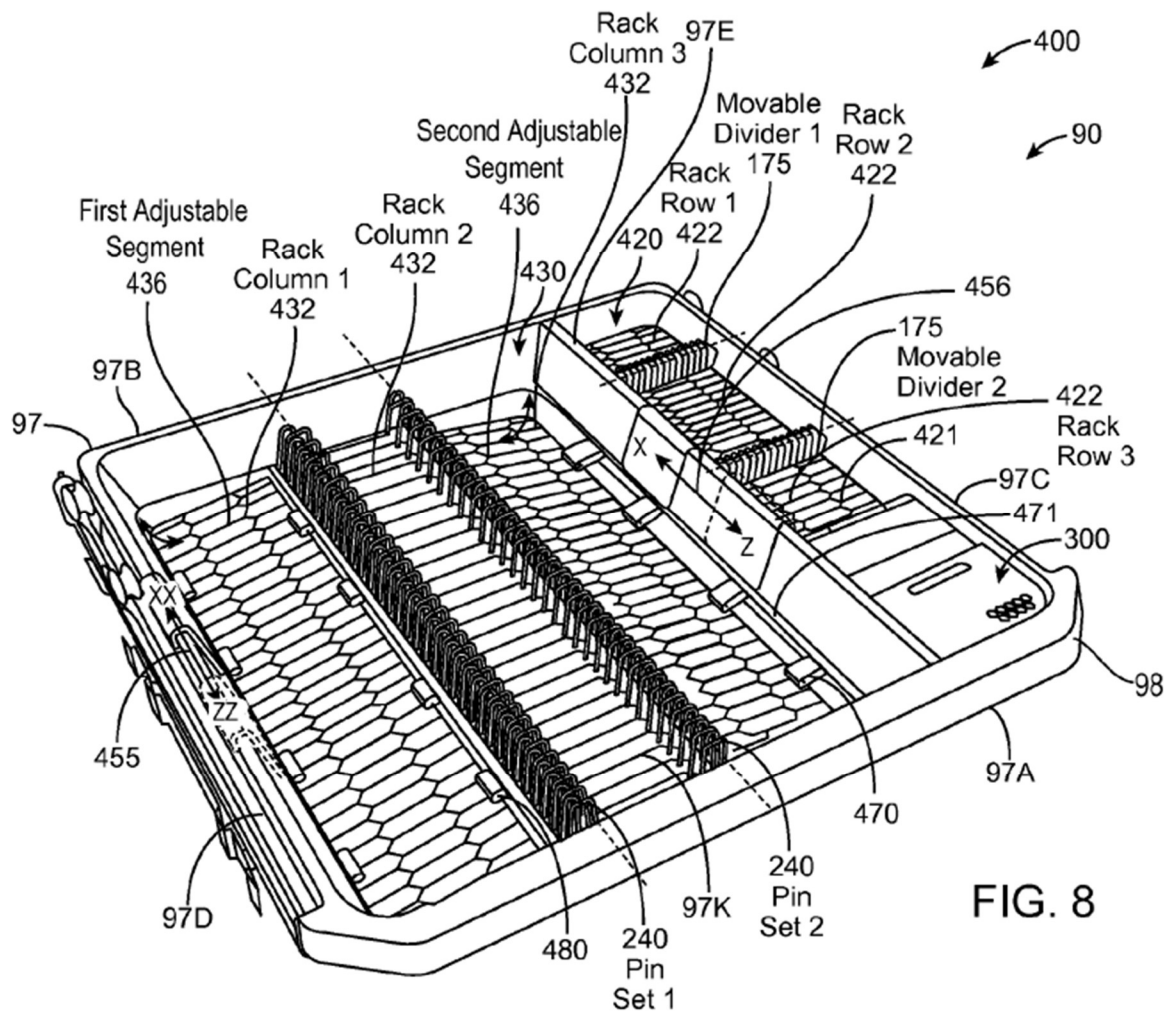
40. In addition to cutlery baskets and caddies, manufacturers also introduced dedicated upper-level utensil trays, located above the traditional upper

rack, and designed primarily to hold flatware, serving utensils, and other low-profile items. The first dedicated utensil rack was introduced by Miele in 1987, to provide extra loading flexibility and improved cleaning for cutlery and utensils.



<https://www.miele.com/en/com/timeline-2738.htm>

41. U.S. Patent Application No. 2015/0053238 (“Lee”) presents another example of a dedicated upper-level utensil tray, which is illustrated in Figure 8, below. Ex-1032 (US 2015/0053238), Abstract.

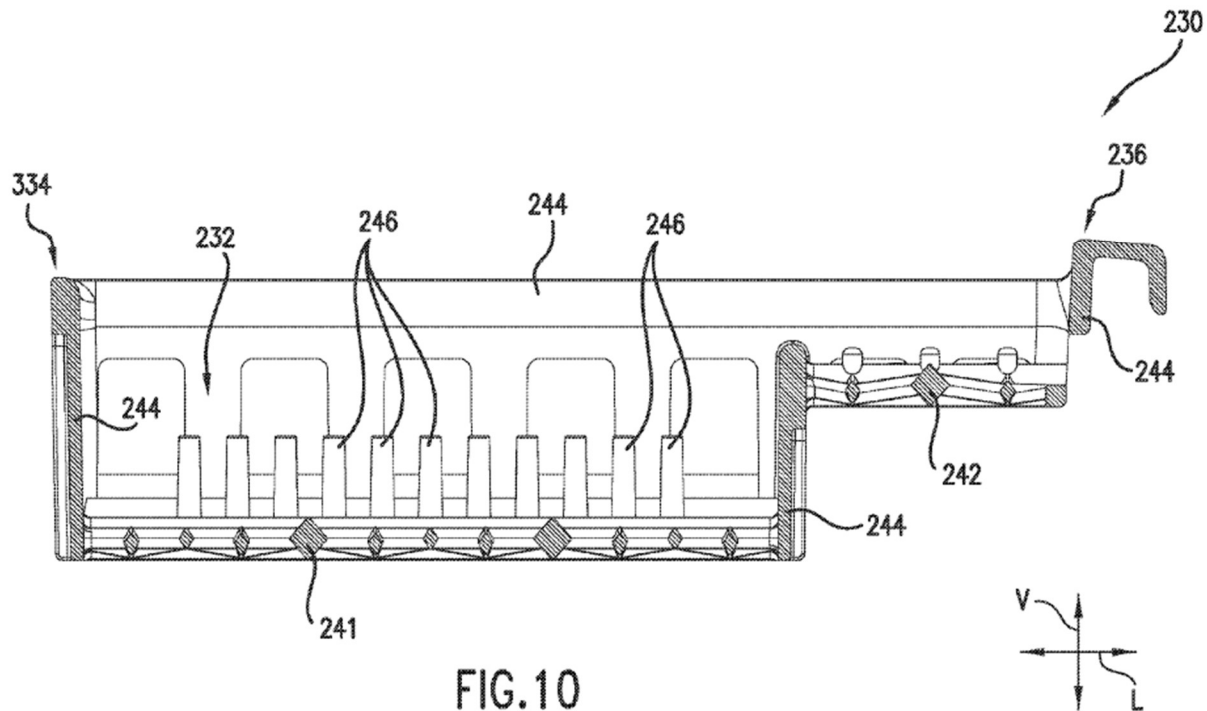


Ex-1032 (US 2015/0053238)

Lee’s utensil tray includes sets of “recessing pins 240,” which are “shaped to receive cutlery, flatware or other utensils.” *Id.* ¶ 54.

42. U.S. Patent Publication No. 2015/0196189 (“Shaffer”) discloses a utensil tray configured to hold both flatware and cooking utensils. Ex-1029 (US 2015/0196189), ¶ 7. In particular, Shaffer discloses a tray that includes “a first bottom wall 241, a second bottom wall 242 and side walls 244.” *Id.* ¶ 43. As

illustrated in Figure 10, below, Shaffer's first and second bottom walls "may be substantially parallel to each other" and "vertically offset from each other," to efficiently make use of the space within the dishwasher. *Id.* ¶ 44.



Ex-1029 (US 2015/0196189)

In this manner, "relatively large cooking utensils[], such as spatulas, ladles, etc., can be supported on first bottom wall 241," and "relatively small cooking utensils, such as chopsticks, fondue forks, etc., can be supported on second bottom wall 242." *Id.* ¶ 45.

43. Utensil trays may incorporate any number of well-known utensil holders, for use in separating and positioning utensils on the tray. These include, for example, pins, slots, loops, indents, etc. *See, e.g.,* Ex-1028 (US 2013/0002107), ¶

28 (“[T]he support face [of the cutlery tray] may comprise mutually spaced bolt-like projections, such as spikes or the like.”); Ex-1032 (US 2015/0053238), ¶ 36 (“recessing pins 240 shaped for receiving cutlery, flatware or other utensils”); Ex-1033 (US 2015/0320290), ¶ 3 (describing the use of “a trapezoidal indentation,” which allows for “larger cutlery items (serving ladles, etc.) to be received therein”);

4. Dedicated, Third-Rack Utensil Trays

44. Alongside these developments, designs also emerged for third racks configured to hold more than just utensils. European Patent Publication EP 2368479 (“Fumagalli”), filed March 24, 2010, and published July 28, 2011, provides an example of one such third rack. Ex-1008 (EP 2368479). Recognizing that many dishwashers at the time “comprise a third basket, in addition to the other two, for arranging knives or other cutlery” (*id.* ¶ 3), Fumagalli sought to “provide a dishwasher with an additional basket which expands the loading possibilities of the dishwasher,” by accommodating cups and dishes, in addition to cutlery. *Id.* ¶ 4. Fumagalli’s third rack is illustrated in Figure 1, below, consisting of several inclined surfaces on which various items can be placed for washing:

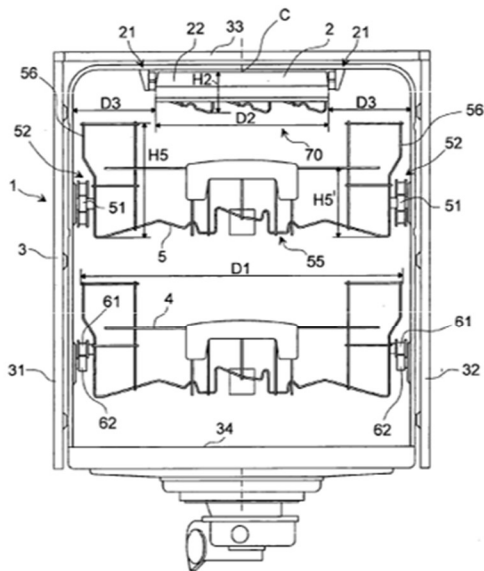


Fig.1

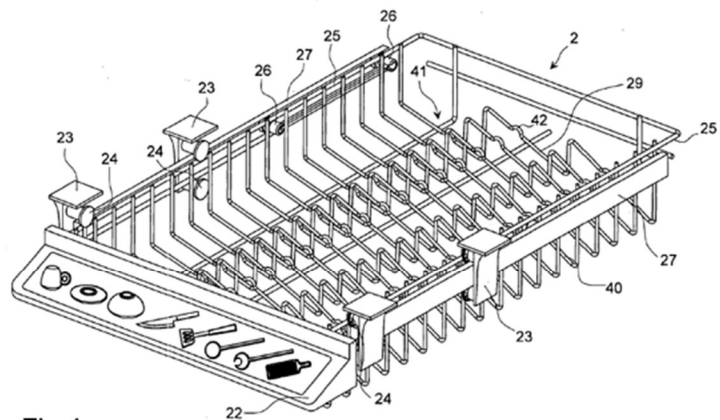
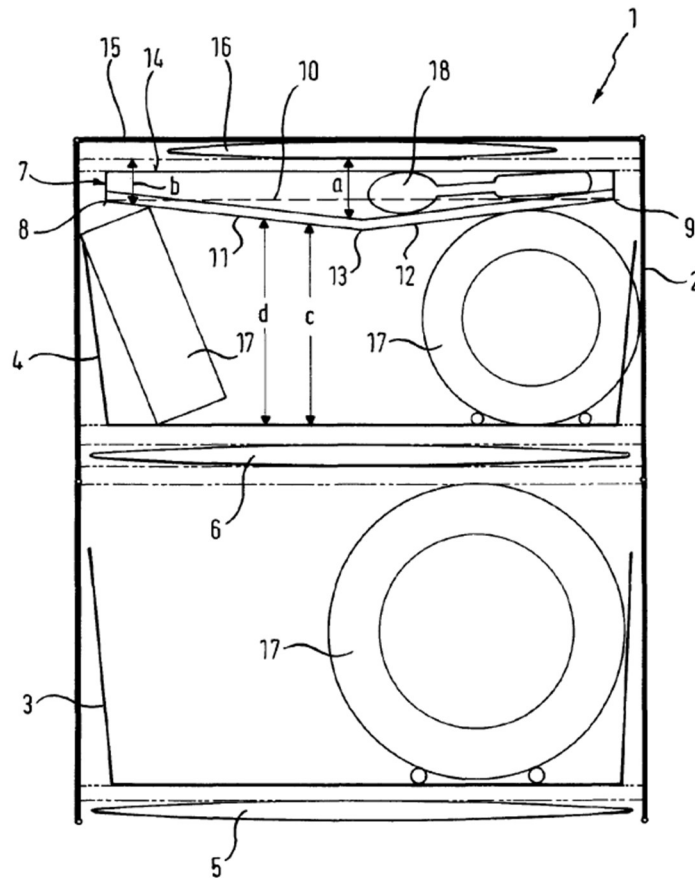


Fig.4

Ex-1008 (EP 2368479)

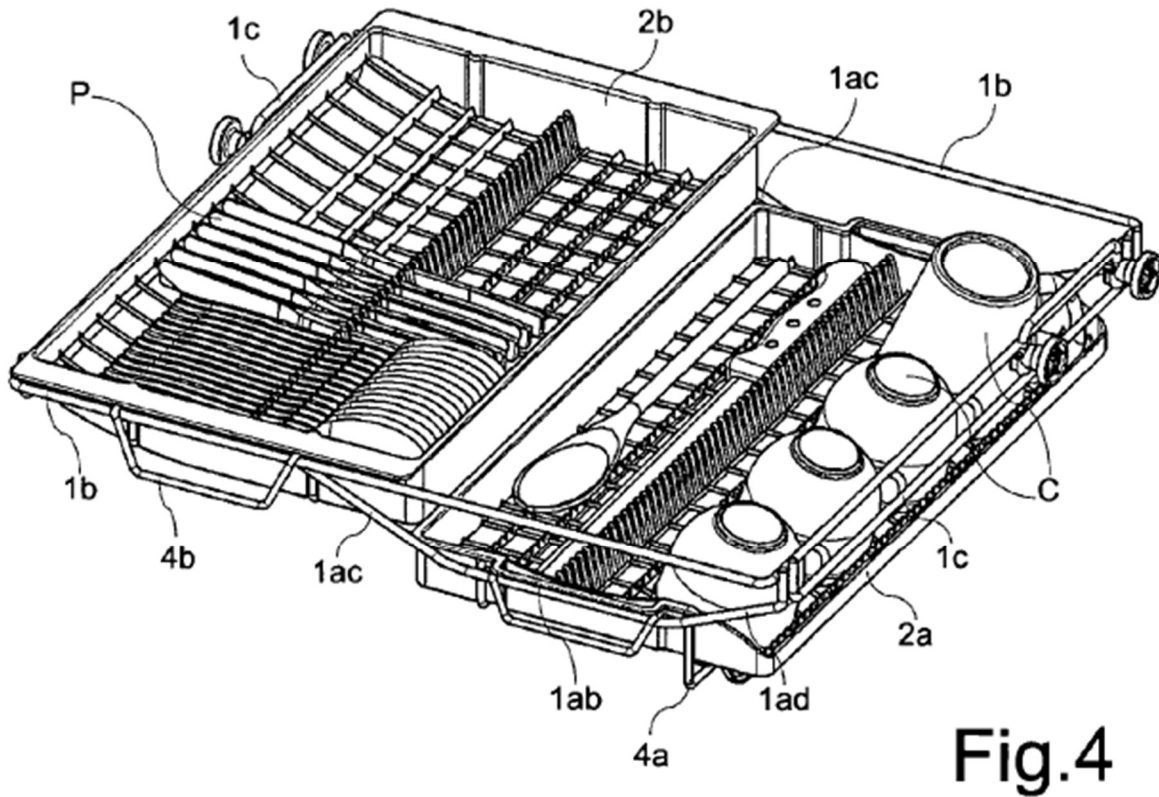
45. As another example, U.S. Patent No. 10,045,681 (“Schessel”), filed November 5, 2007, as PCT Application PCT/EP2007/061890, and published March 4, 2010, discloses a cutlery basket that provides improved draining, and has the added advantage of being able to accommodate cups and other small dishes, in addition to utensils. Ex-1012 (US 10,045,681). Schessel’s cutlery basket, illustrated in Figure 1, below, includes a floor with “a first part area and a second part area which are embodied in each case for accommodating cutlery items, with the first and second part area being arranged at an oblique angle to each other.” *Id.*, 2:10–14.



Ex-1012 (US 10,045,681)

As Schessel explains, not only does this angled floor have the advantage that “washing liquor can better drain off the items of cutlery held at an angle” in the region (*id.*, 3:43–47), but the resulting “arrow-shaped design of the cutlery basket” also provides “a high flexibility in the loading of the cutlery basket,” such that “large items of cutlery, or even smaller items of crockery, such as cups, can be accommodated in the area of the adjoining first part area and second part area.” *Id.*, 2:14–21.

46. European Patent Publication EP 2594186 (“Milani”), filed November 17, 2011, and published May 22, 2013, also recognized that greater flexibility could be achieved by configuring the third rack of a dishwasher to receive more than just cutlery. Ex-1034 (EP 2594186). Noting that, at the time, it was “already known to use a substantially flat third rack, located in the top portion of the dishwasher above the upper rack, acting as a cutlery tray,” Milani explains that “[a] further increase in the flexibility of use of the third rack” can be achieved by configuring it “to receive not only cutlery but possibly also cups and the like in case it is provided with one or more mobile portions that can be lowered to sufficiently increase the distance from the ceiling of the wash tank.” *Id.* ¶¶5–6. Thus, Milani teaches a cutlery tray with “two removable and slidable cutlery inserts,” which “has a greater flexibility of use since it can take multiple configurations that allow an optimal exploitation of the space available in the wash tank,” such as by allowing a user “to load also cups and glasses thereon.” *Id.* This configuration of Milani’s rack is illustrated in Figure 4, below:



Ex-1034 (EP 2594186)

47. U.S. Patent Publication No. 2014/0190528 (“Wegener”) provides another example of a third rack configured to hold both cutlery and cups, as illustrated in Figure 8, below:

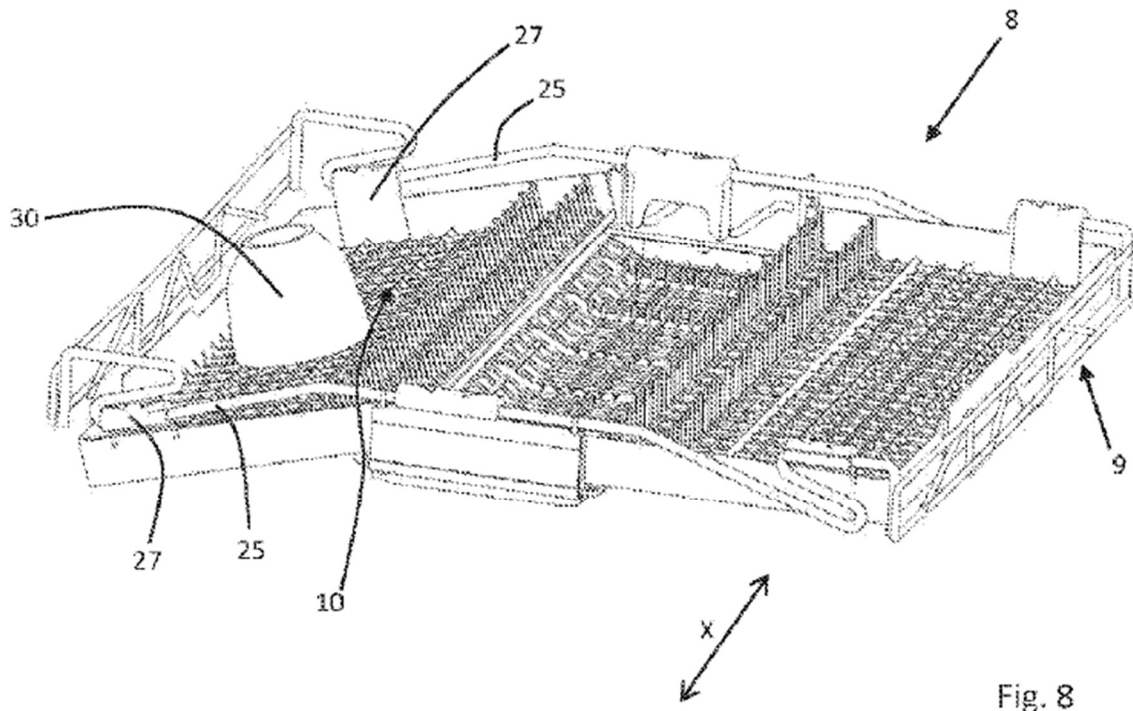


Fig. 8

Ex-1035 (US 2014/0190528)

5. Sprayer Systems

48. Dishwashers employ a variety of sprayer systems to deliver wash liquid to items placed within the appliance. The primary function of these sprayer systems is to ensure thorough coverage and cleaning of dishware, utensils, and cookware within the wash chamber. Sprayer systems can take many different forms, including: rotatable spray arms, spray tubes, and spray nozzles, among others.

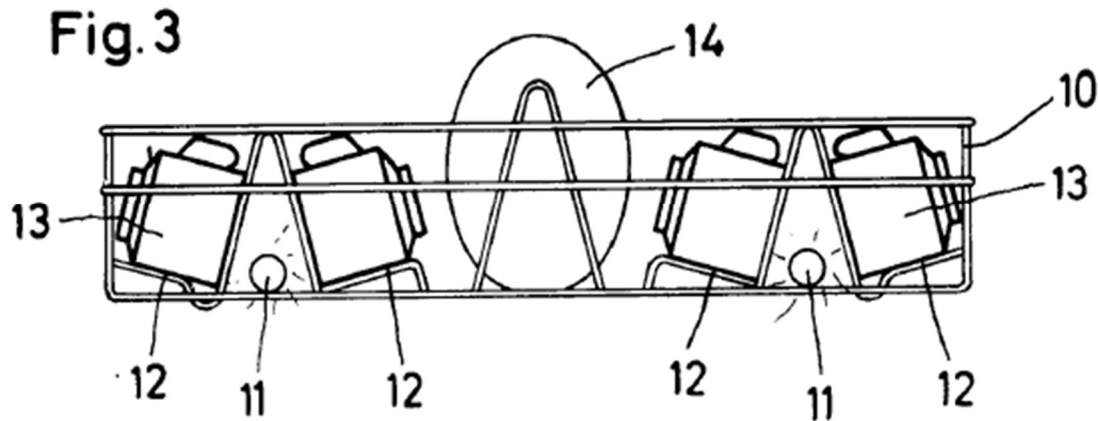
49. Many early dishwasher designs included sprayers located under the dish racks. *See, e.g.,* Ex-1036 (US 3,402,975) (“The dishwashing apparatus ... [includes] a lower spray arm 24 positioned adjacent the bottom wall 14 for effecting an upward spray of fluid onto the articles positioned within the racks.”). However,

it was recognized that such configuration could result in damage to hollow items, such as cups. DE 6810173 (“Bosch”) describes this problem as follows:

In the known dishwashers ..., the device for spraying the dishes is usually located under the dish rack. However, this is disadvantageous insofar as the spray jets are trapped in hollow containers and may cause light items such as cups and glasses to be lifted. These items can easily be damaged when they subsequently drop back onto the dish rack. Arranging the dish items differently is not expedient since the inside of the hollow vessels must face the spray jets in order to achieve a good cleaning result.

Ex-1007 (DE 6810173) at 3. As Bosch explains, this problem can be avoided by arranging the dish rack and the spraying device “such that the spray jets hit the inside of the hollow vessels placed in the dish rack at least approximately horizontally,” so as to not lift the vessels off of the rack. *Id.*

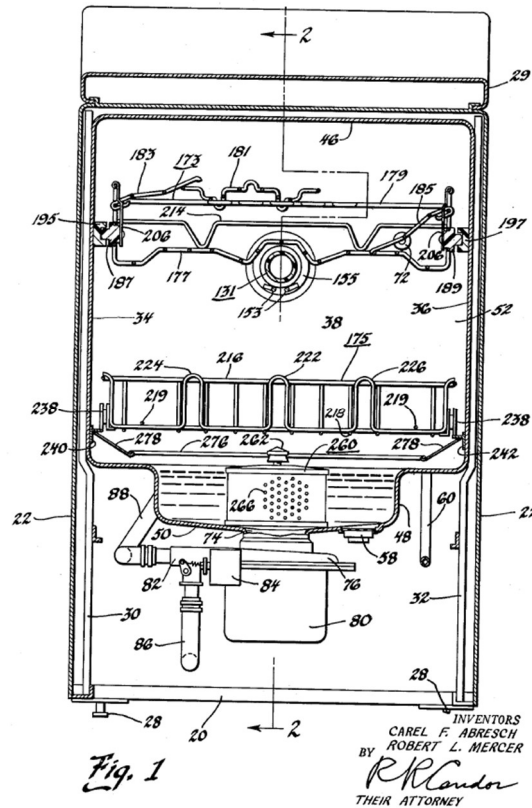
50. Thus, Bosch teaches a spray system in the form of “two spray tubes 11” that are “arranged within the dish rack between dish holders 12 for accommodating hollow vessels 13, such as cups or glasses,” as illustrated in Figure 3, below:



Ex-1007 (DE 6810173)

Id., 6. These spray tubes “can be arranged in the dish rack 10 fixedly or so as to rotate about their longitudinal axis,” thereby emitting spray jets parallel to the side of the cups/glasses that is resting on the rack, as illustrated above. *Id.*

51. Similarly, U.S. Patent No. 3,044,842 (“Abresch”), which issued July 17, 1962, teaches the use of a “rotatable molded plastic hollow spray tube,” extending horizontally from the rear wall of the dishwasher towards the dishwasher door, with dish racks provided above and below the spray tube. Ex-1037 (US 3,044,842), 1:32–38, 1:50–52. Abresch’s spray tube 131 is illustrated in Figure 1, below:

**Ex-1037 (US 3,044,842)**

Abresch's upper rack "is humped over the spray tube 131" (*id.*, 2:63–64) such that "[t]he rotatable spray tube 131 sprays into the inverted cups, glasses, pans and receptacles upon the upper rack 173 located above and onto the plates and dishes located in the lower rack 175 below." *Id.*, 2:54–57.

52. The evolution of rack structures occurred alongside corresponding developments in dishwasher spray systems. While early dishwashers often relied on a single spray arm, by at least the early 2000s, patents described dishwashers with multiple racks and dedicated sprayers/spray arms associated with each rack. For example, U.S. Patent No. 7,032,604 (“Welch”) discloses a three-rack dishwasher,

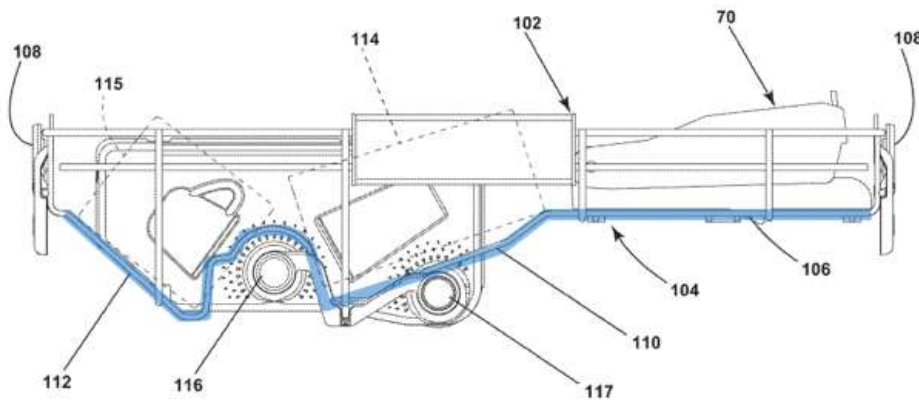
where “[e]ach rack has a spray arm associated therewith.” Ex-1038 (US 7,032,604), Abstract. Welch further teaches that “[a] fourth spray arm may also be provided for enhanced cleaning of objects in the racks.” *Id.*

VIII. THE CHALLENGED PATENT

53. The ’681 Patent relates to an automatic dishwasher that shares “many features of a conventional automatic dishwasher.” Ex-1001, 2:54–55. As the ’681 Patent notes, such conventional dishwashers often employ utensil caddies, which are “removably carried by the lower dish rack,” and “oriented such that they hold the utensils in an upright or vertical orientation during washing.” *Id.*, 1:33–38. In addition to a utensil caddy, the ’681 Patent explains that some “dishwashers can also include a third dish rack, often referred to as a third level rack, of a much shorter height [than] the upper and lower dish racks, with the height being such as to only accommodate silverware or other low profile utensils.” *Id.*, 1:28–32. The ’681 Patent notes that such a third level rack offers advantages over a utensil caddy, particularly in the context of accommodating long-handled items: “[t]he third level rack can normally accommodate long handle items, such as spatulas, serving spoons, [and] stirring spoons” that cannot be carried vertically, within the utensil caddy, because their long vertical extension would interfere with the rotation of the sprayer

positioned above the caddy. *Id.*, 1:39–44. Recognizing this advantage, the '681 Patent seeks to further extend the flexibility offered by the third rack.

54. As shown in Figure 3 below, the '681 Patent teaches an upper wire-frame dish rack within an automatic dishwasher that includes “bottom wall 104 [annotated below] from which extends a peripheral wall 108 defining the sides of the dishrack.” Ex-1001, 5:50–53.



55. The bottom wall “can define multiple planes.” *Id.*, 5:60. For example, the bottom wall has a “first plane transverse to the X-axis” such as planar portion 106 (red), which can receive a utensil caddy 70 (pink). *Id.*, 5:61–65, 5:55–58, 6:9–14. The bottom wall also includes a first angled wall that defines a second plane and a second angled wall 112 that defines a third plane. *Id.*, 5:61–6:2. The angled walls 110 (green), 112 (blue) form a depression (orange), “which forms a first set of cup seats 114 and second set of cup seats 115, which hold cups.” *Id.*, 5:55–60.

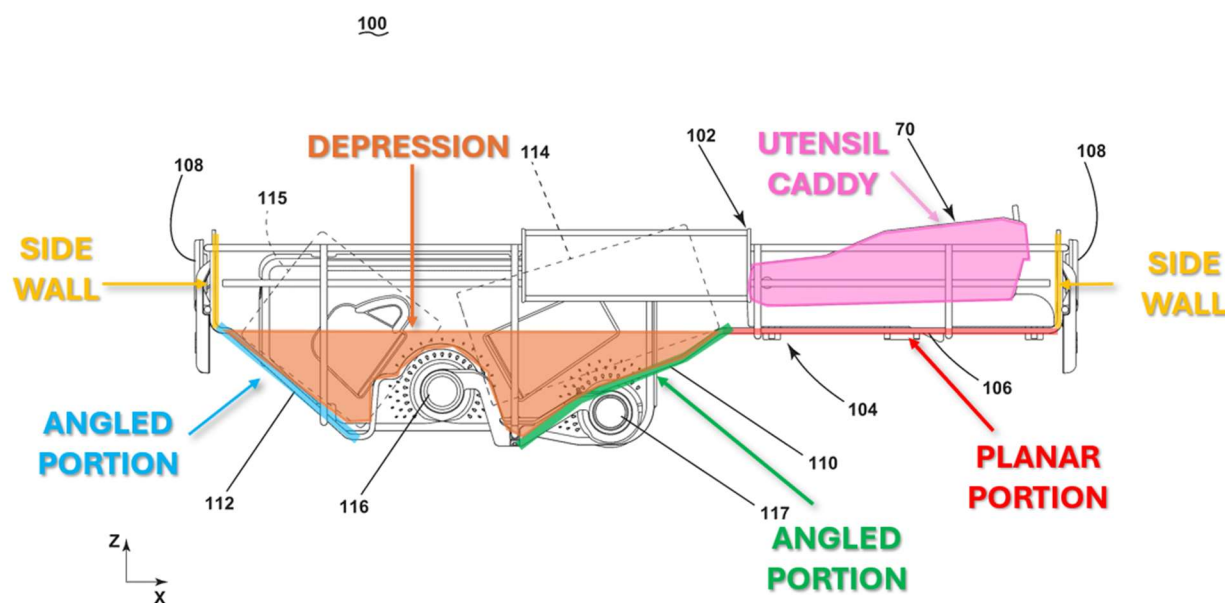


FIG. 3

56. The '681 Patent purports to provide a benefit of its upper dish rack assembly to accommodate more versatility than traditional dish rack assemblies, because “[u]tensils can be secured within the utensil caddy while cups and mugs can be provided within the cup seats.” Ex-1001, 9:36–42. The patent further discusses that its disclosure provides “improved washing efficiency of utensils,” because all the utensils “are horizontally secured and that all portions of the utensils which need to be treated are within the spray zone.” *Id.*, 9:62–65, 10:2–5. However, such dishwasher racks were well known, as explained in detail below in Carr, Mailander, and Ochoa.

IX. PROSECUTION HISTORY OF THE '681 PATENT

57. The '681 Patent, filed Dec. 11, 2023, is a continuation of U.S. Patent No. 11,864,712, filed on June 2, 2022, which is a continuation of U.S. Patent No. 11,375,874, filed on March 30, 2020.

58. The '681 Patent was allowed after one office action. On July 5, 2024, the Examiner rejected the claims as being anticipated by U.S. Patent Publication No. 2006/0237051 to Bengston and cited only to paragraph 19 and Figure 1 for every claim. Ex-1004, 96–101. In response, the Applicant amended the claims and argued that Bengston did not teach a horizontal planar portion extending across a first portion of the bottom wall to support a first set of utensils and an angled second section that has a plurality of pins or a cup set for supporting one or more cups. *Id.*, 133–134. The Examiner allowed the claims on October 28, 2024 stating that Bengston was the closest prior art, which did not teach Claim 1's "second portion connected to and extending from the first portion and angled away from the first portion; the first portion supporting a first set of utensil holders for supporting one or more utensils and the second portion supporting a plurality of spaced pins defining spaced slots for supporting one or more utensils." Ex-1004, 142. The Examiner further noted that Bengston did not teach Claim 14's "depression extending lower than the first portion relative to the peripheral wall; the first portion supporting a first

set of utensil holders for supporting one or more utensils and the second portion defining a cup seat for supporting one of more cups in the depression.” *Id.* at 143. The ’681 Patent issued on February 5, 2025. *Id.*, 159–161.

59. I understand that the prior art relied upon in this Declaration was not considered by the PTO during prosecution of the ’681 Patent. Thus, I understand that the Grounds discussed in this Declaration present new arguments that were not considered during prosecution.

X. PRIORITY DATE

60. For purposes of this Declaration, I have been asked to assume a priority date for the ’681 Patent of March 30, 2020.

XI. CLAIM CONSTRUCTION

61. I understand that Patent Owner has not yet proposed any terms for construction in the underlying litigation. However, based on my review of the parties’ filings in the related litigation, I understand that Patent Owner has taken certain positions that appear to, at least, reflect implied claim scope arguments. Ex-1022. As I will explain in the element-by-element analysis below Patent Owner’s implied positions are incorrect.

62. For clarity, I have set forth my understanding of the plain meaning of certain terms, below:

63. **“Tub”**: The plain meaning of this term includes an open-faced component that defines an access opening for the treating chamber. Ex-1001, 2:67–3:5, Fig. 1.

64. **“Cup Seats”**: The plain meaning of this term includes seats for various types of cups, such as measuring cups and mugs, and other items to be treated within the treating chamber such as “baby bottles, plates, bowls, pans, or the like.” Ex-1001, 7:51–58.

65. **“at the second end of the dishrack, a second portion is angled with respect to the first portion”**: The plain meaning of this term means that the second portion of the bottom wall terminates at the peripheral wall. Ex-1001, Cl. 14.

66. **“Bottom wall”**: The plain meaning of this term means the structures that form the bottommost portion of the dish rack. Ex-1001, 5:50–55, Fig. 3.

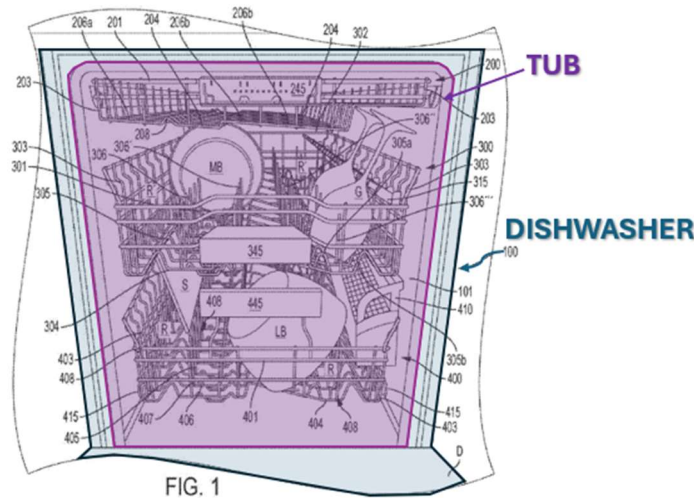
XII. OVERVIEW OF THE APPLIED PRIOR ART REFERENCES

A. Carr (Ex-1005)

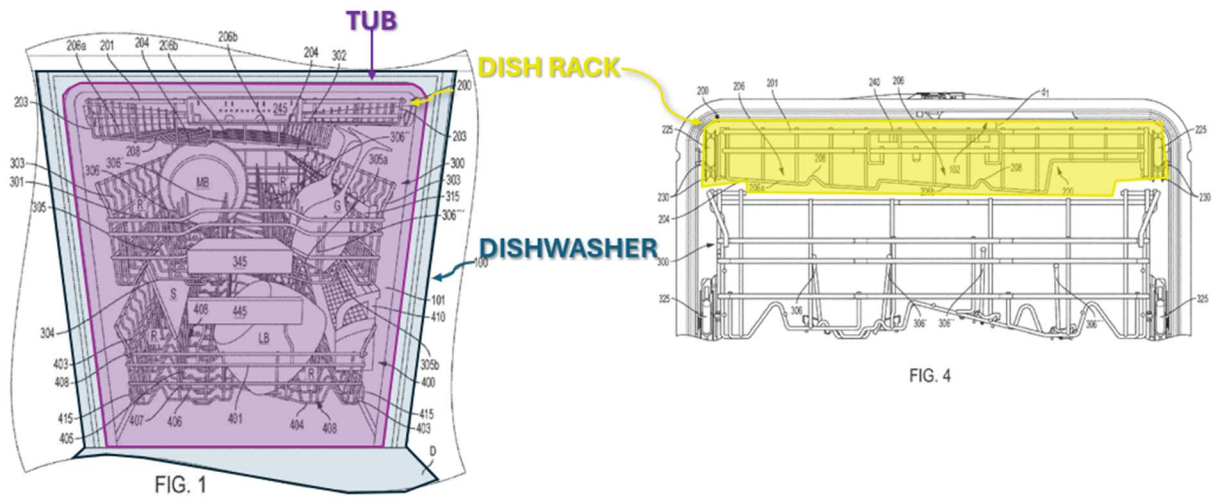
67. Carr (U.S. Patent Publication No. 2018/0220867) was published August 9, 2018, and is prior art to the ’681 Patent under 35 U.S.C. § 102(a)(1).

68. Carr teaches a dishwasher appliance 100 (blue, below). Ex-1005 ¶ 37. Carr explains that “as is known in the art, the dishwasher appliance 100 includes a tub, a pump and filter assembly, a heating element, one or more wash arms, and a drain hose.” *Id.* Carr provides a “dishwasher, comprising: a dishwashing

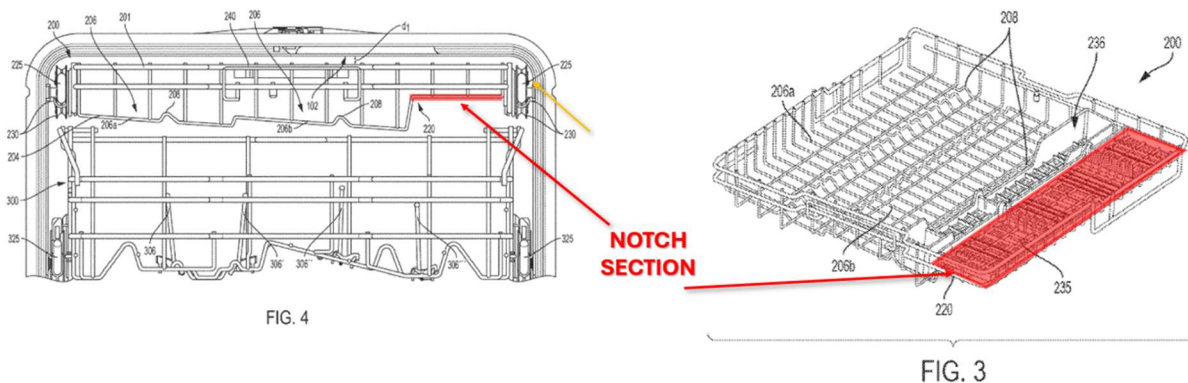
compartment having a loading opening.” *Id.* ¶ 10; *see also id.* ¶ 13. Figure 1, annotated below, shows Carr’s dishwashing appliance (blue) “with the door open so as to reveal the dishwashing compartment,” colored in purple. *Id.* ¶ 28.



69. Carr’s dishwasher includes a “top washware rack configured for movement out of and into the dishwashing compartment.” Ex-1005 ¶ 13. The top washware rack, shown in Figures 1 and 4 below, is “formed of wire thereby to hold washware including cutlery and washware larger than cutlery and to enhance drying performance.” *Id.* Carr’s “top washware rack 200 is configured as a basket and includes front 201, rear 202, and opposing side walls 203 interconnected with a bottom portion 204.” *Id.* ¶ 41.



70. As shown in Figure 4, “top washware rack 200 is formed with a notch section 220 along at least one side ... in the bottom portion 204.” Ex-1005 ¶ 47. Notch section 220 (red, below) accommodates “at least one of cutlery or utensils” (*id.* ¶ 18) and allows the middle dish rack to accommodate stemmed wine glasses (*id.* ¶ 47). As shown in Figure 3, a cutlery/utensil accessory insert 235 is shown disposed above the notch section 220. *Id.* ¶ 48.



71. The bottom portion 204 of washware rack 200 “includes one or more angled portions 206 that is/are configured to hold bowls at a slight tilt with respect

to horizontal in order to drain off water from the bowls.” Ex-1005 ¶ 43. Carr’s angled portion 206 is “tilted at an angle in a range of 3 to 5 degree with respect to horizontal, and preferable is tilted at an angle of approximately 4 degrees with respect to horizontal.” *Id.* Each angled portion is “configured to hold bowls” at a slight tilt in order to drain water off from the bowls. *Id.* ¶¶ 43–44.

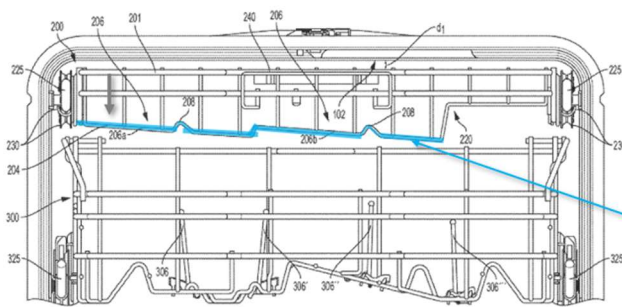


FIG. 4

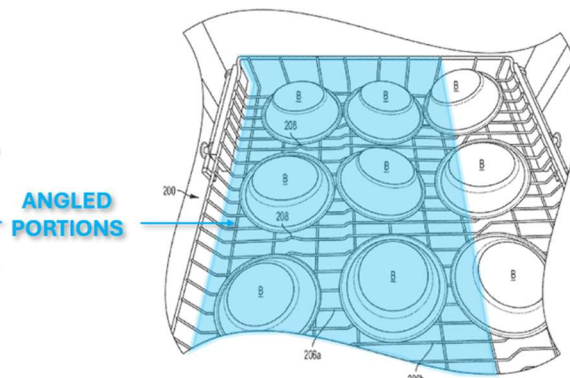


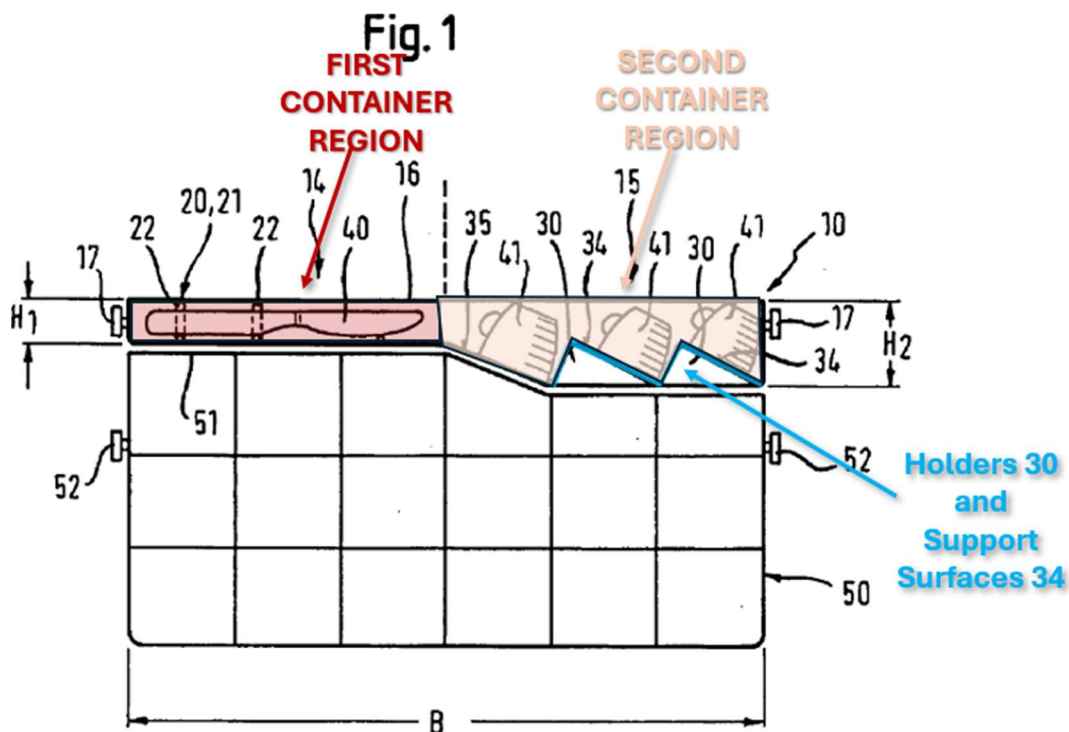
FIG. 6

B. Mailander (Ex-1006)

72. Mailander (U.S. Patent Publication No. 2008/0169009) was published July 17, 2008, and is prior art to the '681 Patent under 35 U.S.C. § 102(a)(1).

73. Mailander teaches a dishwasher rack in the form of “a washing items support for a dishwasher.” Ex-1006 ¶ 1; *see also id.* ¶ 12 (describing the washing items support as “a kind of cutlery drawer which is arranged in addition to the crockery baskets provided in the dishwasher”). “In contrast to the state of the art,” Mailander teaches that the disclosed rack can hold “smaller containers ... in addition to pieces of cutlery.” *Id.* ¶ 12. As illustrated in annotated Figure 1, below, Mailander’s washing item support 10 includes two regions, first container region 14

and second container region 15, “each of them occupying approximately half width B of washing items support 10.” Ex-1006 ¶ 25. Mailander’s first container region 14 (red) includes “a cutlery insert 20,” which is configured to “arrange pieces of cutlery 40 ..., lying one next to the other, ... throughout the depth of washing items support 10.” *Id.* ¶ 26.

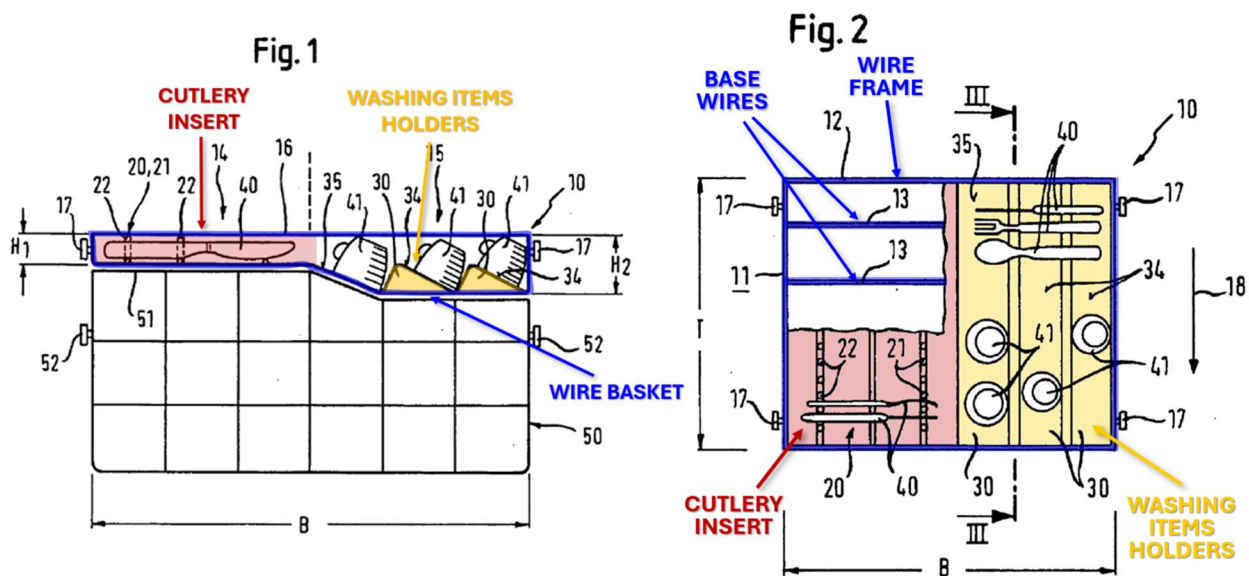


74. Mailander teaches that second container region 15 (peach) is “designed with two washing items holders 30, each of which has a support surface 34 inclined to the horizontal,” so that pieces of crockery can be placed at an angle for an increased drying effect. Ex-1006 ¶ 27. Pieces of crockery that may be positioned on the inclined support surfaces of second container region 15 include “smaller washing

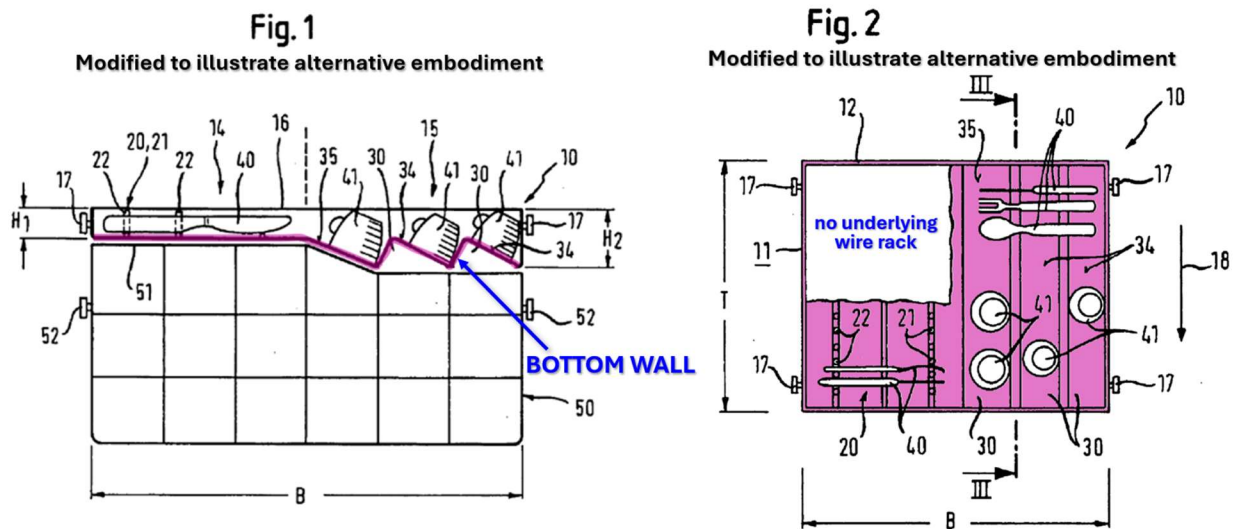
items, e.g. cups, shallow glasses, dessert bowls, or alternatively cutlery in the transverse and longitudinal directions, long knives, cooking spoons etc.” *Id.*

75. In designing the disclosed rack, Mailander explains that a goal was to achieve “a washing items support which is universally applicable.” *Id.* ¶ 8. Consistent with that goal, Mailander teaches a variety of different configurations. For instance, Mailander teaches that cutlery insert 20 and washing items holders 30 “may be formed integrally together or they may be provided as separate inserts.” *Id.* ¶ 27.

76. Mailander also teaches that, in certain embodiments, washing items support 10 includes “a base basket 11 produced from a surrounding wire frame 12.” *Id.* ¶ 28. This is illustrated below, in annotated Figures 1 and 2:



77. Alternatively, Mailander expressly discloses that cutlery basket and washing items holders can be used as the rack themselves—without an underlying wire rack—explaining that the “washing items support 10 may consist of only one material, e.g. plastic, i.e. **without base basket 11.**” Ex-1006 ¶ 28. This is illustrated in the modified versions of Figures 1 and 2, below:



C. Ochoa (Ex-1011)

78. Ochoa (U.S. Patent No. 6,869,029) issued March 22, 2005, and is prior art to the '681 Patent under 35 U.S.C. § 102(a)(1).

79. Ochoa teaches a dish rack comprising of a “wire basket constructed in a conventional manner with a plurality of crisscrossing and encircling wire segments connected to each other to provide space for supporting cups, glasses, small dishware, long utensils and the like in the usual manner.” Ex-1011, 3:2–9. Ochoa

also teaches that the upper rack 12 includes a “water spraying system ... that is mounted on the underside of the rack 16 and moves into and out of the front of the dishwasher 10 with the rack 16.” *Id.*, 3:15–19.

80. Ochoa teaches a spray system that includes “a plurality of water spray outlets 44 are provided along the length of spray tube 32 and preferably the water spray outlets 44 are also circumferentially offset along the length of the spray tube 32.” Ex-1011, 3:63–68. Ochoa further teaches a second sprayer in its “spray spinners,” which are mounted below each dish rack. *Id.*, Abstract, 5:1–20, Cls. 7, 8, 27–29. As shown in Figure 11 below, Ochoa teaches that water spray outlets 44 are sprayers at each end of the dish rack and spinner 72 includes “somewhat conventional design having a plurality of spray outlets 76 directed upwardly and downwardly to spray the contents of the upper and lower racks.” Ex-1011, 5:8–20; *see also id.*, Abstract. Ochoa ensures that “lateral sides and corners of a modern premiere dishwasher of increased width ... receive the same amount of water spray from the spinners as the center portion.” Ex-1011, 1:26–29.

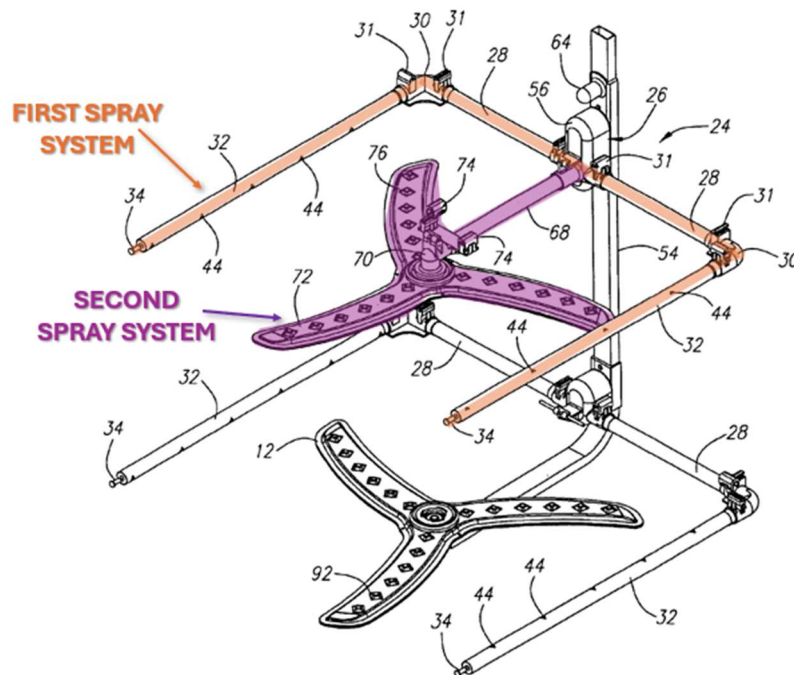


FIG. 11

XIII. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS

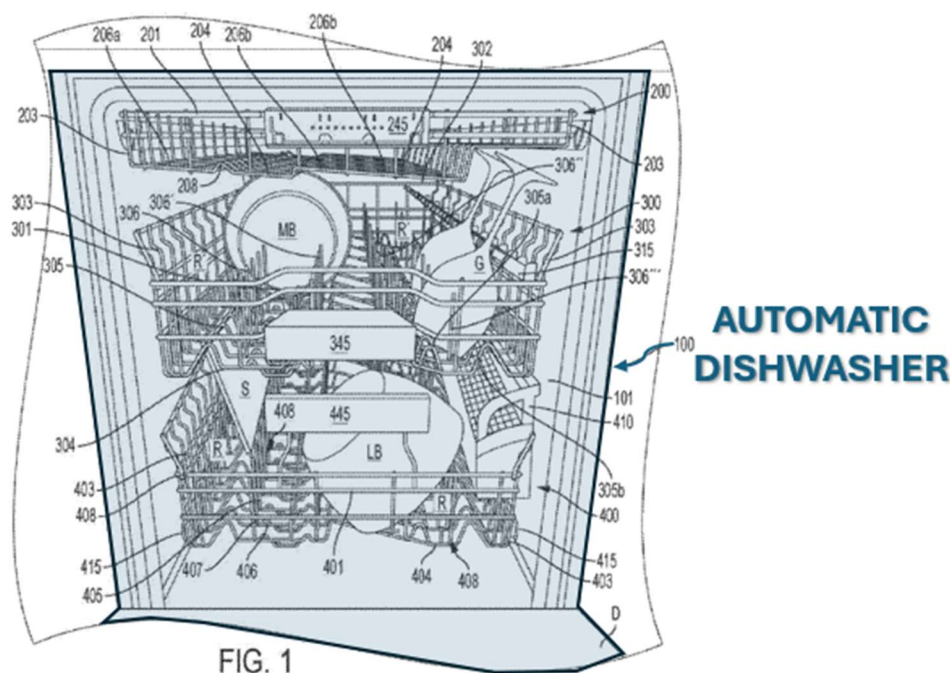
A. Ground 1: Claims 14 and 15 are obvious over Carr

1. Independent Claim 14

- a. **Element 14[pre]: An automatic dishwasher configured to implement an automatic treating cycle of operation, comprising:**

81. Carr teaches the preamble of Claim 14, to the extent that it is limiting.
82. Carr teaches a dishwasher appliance 100 (blue, below). Ex-1005 ¶ 37.

Carr teaches that “as is known in the art, the dishwasher appliance 100 includes a tub, a pump and filter assembly, a heating element, one or more wash arms, and a drain hose.” *Id.*



83. Carr’s apparatus “increases [a] dishwasher capacity, flexibility, and versatility, as well as enhancing the drying performance of [a] dishwasher,” (*id.* ¶ 6), and incorporates by reference U.S. Patent No. 9,445,703 to Hiedel et al. (Ex-1009) for the detailed description of the “suitable structure and operation of the dishwasher appliance.” *Id.* ¶ 37. Hiedel teaches that the dishwasher acts on “actuators of the dishwashers in a controlling and/or regulating manner, thereby allowing wash processes, also referred to as wash cycles or wash runs, in which the items being washed can be cleaned using water, to be carried out automatically.” Ex-1009, 1:39–46. This disclosure makes clear that the dishwasher itself controls and regulates the operation of its internal components (i.e., the actuators) to execute the

wash process. This is the hallmark of an automatic dishwasher: once started, the machine automatically performs the washing cycle without requiring ongoing manual control of water delivery, spray action, or other washing functions. Thus, based on Carr's reference to Hiedel, a POSITA would have understood that Carr's dishwasher is an automatic dishwasher.

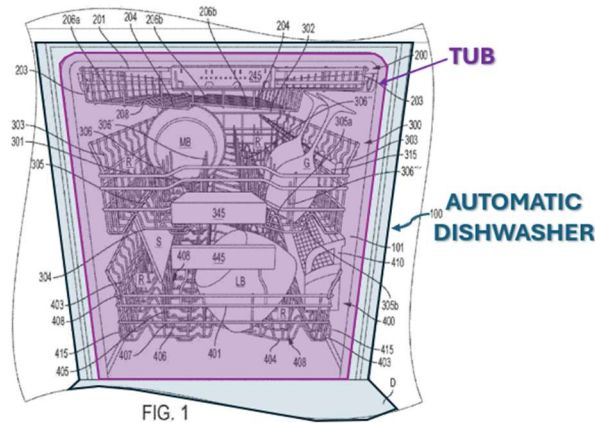
**b. Element 14[a]: a tub defining a dish treating chamber;
and**

84. Carr teaches element 14[a].

85. Carr's dishwasher appliance 100 includes a "tub defining a dish treating chamber," as claimed. Specifically, Carr teaches that "as is known in the art, the dishwasher appliance 100 includes **a tub**, a pump and filter assembly, a heating element, one or more wash arms, and a drain hose." Ex-1005 ¶ 37. As described above, Carr incorporates by reference U.S. Patent No. 9,445,703 to Heidel et al. for detailed description of its dishwasher's structure and operation. *Id.* Heidel teaches that the dishwasher "further comprises **a wash container 5**, which can be closed off by a door 6, so that a closed wash chamber 7 results for washing items to be washed." Ex-1009, 6:21–23.

86. Carr provides a "dishwasher, comprising: a **dishwashing compartment** having a loading opening." Ex-1005 ¶ 10; *see also id.* ¶ 13. Figure 1,

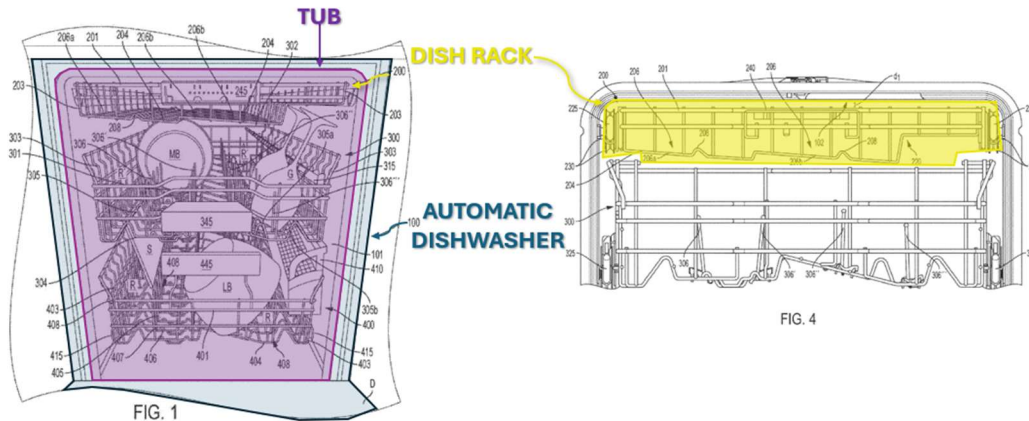
below, shows Carr’s dishwashing appliance (blue) “with the door open so as to reveal the **dishwashing compartment**,” colored in purple. *Id.* ¶ 28.



- c. **Element 14[b(i)]: a dish rack located within the dish treating chamber having a first end spaced from a second end and comprising a bottom wall from which extends a peripheral wall defining side walls of the dish rack,**

87. Carr teaches element 14[b(i)].

88. Carr teaches the claimed “dish rack located within the dish treating chamber.” Carr’s dishwasher includes a “top washware **rack** configured for movement out of and into the dishwashing compartment.” Ex-1005 ¶ 13. The top washware rack, shown in Figures 1 and 4 below, is within the dish treating chamber and is “formed of wire thereby to hold washware including cutlery and washware larger than cutlery and to enhance drying performance.” *Id.*



89. Carr's dish rack includes "a first end spaced from a second end and comprising a bottom wall from which extends a peripheral wall defining side walls of the dish rack," as claimed. Carr teaches that "top washware rack 200 is configured as a basket and includes **front 201, rear 202, and opposing side walls 203 interconnected with a bottom portion 204.**" Ex-1005 ¶ 41. Together, Carr's front, rear, and opposing side walls define the periphery of the rack, and thus, are properly considered "a peripheral wall defining side walls of the dish rack," as claimed. As shown below in Figure 4, Carr's dish rack has a first end spaced from a second end (gray text) by a bottom wall (bottom portion 204, blue), from which extends the peripheral wall defining side walls of the dish rack (including opposing side walls 203, yellow).

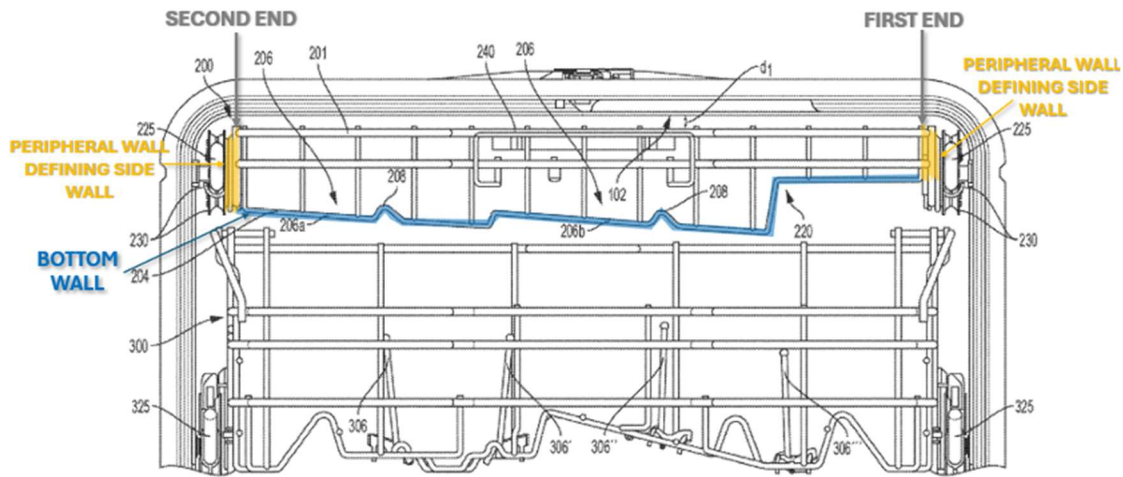


FIG. 4

- d. Element 14[b(ii)]: at the first end of the dish rack, the bottom wall has a first portion defined by a first substantially horizontal planar portion extending across a first portion of the bottom wall and**

90. Carr teaches element 14[b(ii)].

91. Carr teaches that the bottom wall of the dish rack has a first portion that corresponds to a substantially horizontal planar portion extending, from the first end of the dish rack, across a first portion of the bottom wall. Stated differently, at the first end of Carr's dish rack, the bottom wall has a first portion defined by a substantially horizontal planar portion extending across a first portion of the bottom wall. Carr refers to this portion of the dish rack as "notch section 220." Ex-1005 ¶ 47. As shown below in Figure 4, Carr teaches that "top washware rack 200 is formed with a notch section 220 [(red)] along at least one side ... in the bottom portion 204." Ex-1005 ¶ 47.

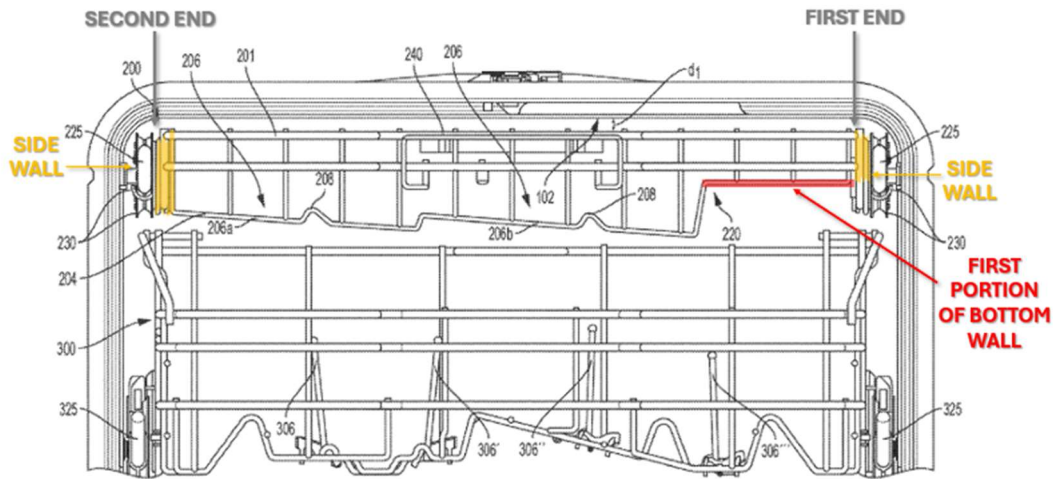


FIG. 4

92. As illustrated in Figure 4, above, notch section 220 is adjacent to the sidewall “at the first end of the dish rack,” as claimed. Notch section 220 is also substantially horizontal and planar, as illustrated in Figure 4, above. Indeed, Claim 7 of Carr expressly claims this geometry for notch section 220, reciting that the “notch section” includes a “**substantially horizontal top surface**”:

7. A dishwasher, comprising: ...

a top washware rack configured for movement out of and into the dishwashing compartment, ...

wherein the top washware rack is configured as a basket formed by a plurality of wire shaped elements, ...

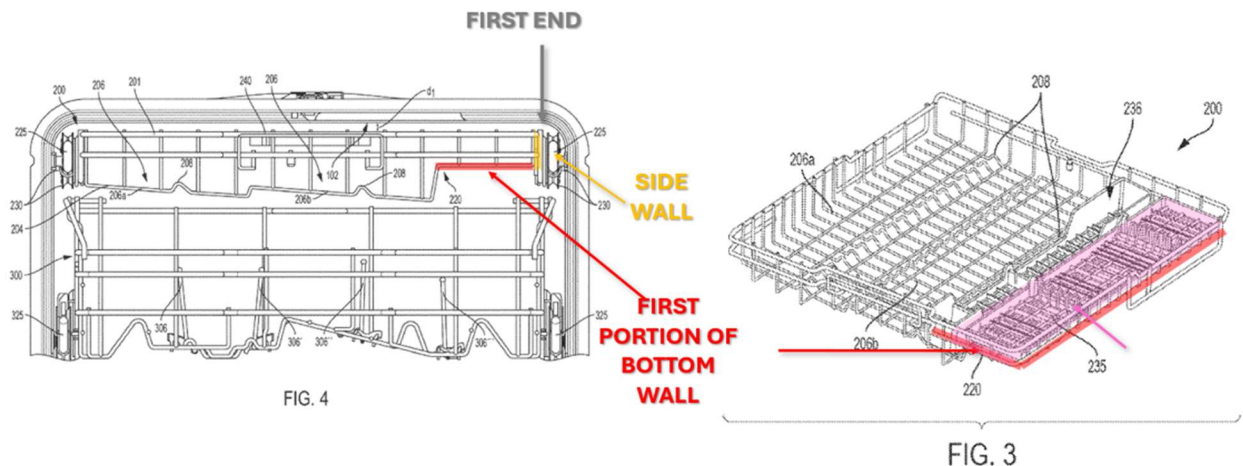
wherein the plurality of wire shaped elements that form the basket are formed with a vertically extending notch section along at least one side edge portion in the bottom portion of the basket in order to accommodate base portions of [] one or more stemmed wine glasses; and

wherein **the vertically extending notch section forms a stepped portion** in the bottom portion of the basket such that **a substantially horizontal top surface of the stepped portion** in the

bottom portion of the basket is located closer to an inner surface of a top wall of the dishwashing compartment as compared to a remainder of the bottom portion of the basket.

Id., Cl. 7.

93. Carr further describes the reason that notch section 220 is designed as a substantially horizontal planar section of the bottom wall—doing so enables it to accommodate “at least one of cutlery or utensils” (*id.* ¶ 18), by accommodating a cutlery/utensil accessory insert 235 (pink) that may be disposed above the horizontal and planer notch section 220, as illustrated in annotated Figure 3, below. *Id.* ¶ 48.



A POSITA would have understood that the substantially horizontal, planar geometry of notch section 220 provides a stable, load-bearing support surface for a cutlery/utensil insert, allowing the insert to rest under gravity on the surface, without tilting or rocking during operation of the dishwasher, including during rack movement and exposure to wash spray.

e. Element 14[b(iii)]: at the second end of the dishrack, a second portion is angled with respect to the first portion and defining a depression;

94. Carr teaches element 14[b(iii)].

95. Carr teaches a second portion of the bottom wall that is angled with respect to the first portion and defines a depression at the second end of the dishrack. Specifically, the bottom portion 204 of washware rack 200 “includes one or more angled portions 206 that is/are configured to hold bowls at a slight tilt with respect to horizontal in order to drain off water from the bowls.” Ex-1005 ¶ 43. Carr teaches that angled portion 206 is “tilted at an angle in a range of 3 to 5 degree with respect to horizontal, and preferably is tilted at an angle of approximately 4 degrees with respect to horizontal.” *Id.* Figure 4, annotated below, shows Carr’s angled portion 206 (corresponding to the claimed “second portion,” blue), which is angled 3–5 degrees with respect to the first portion (horizontal notch portion 220, red). Additionally, as shown in the figure below (left hand side), the second portion of the bottom wall terminates directly at the peripheral wall.

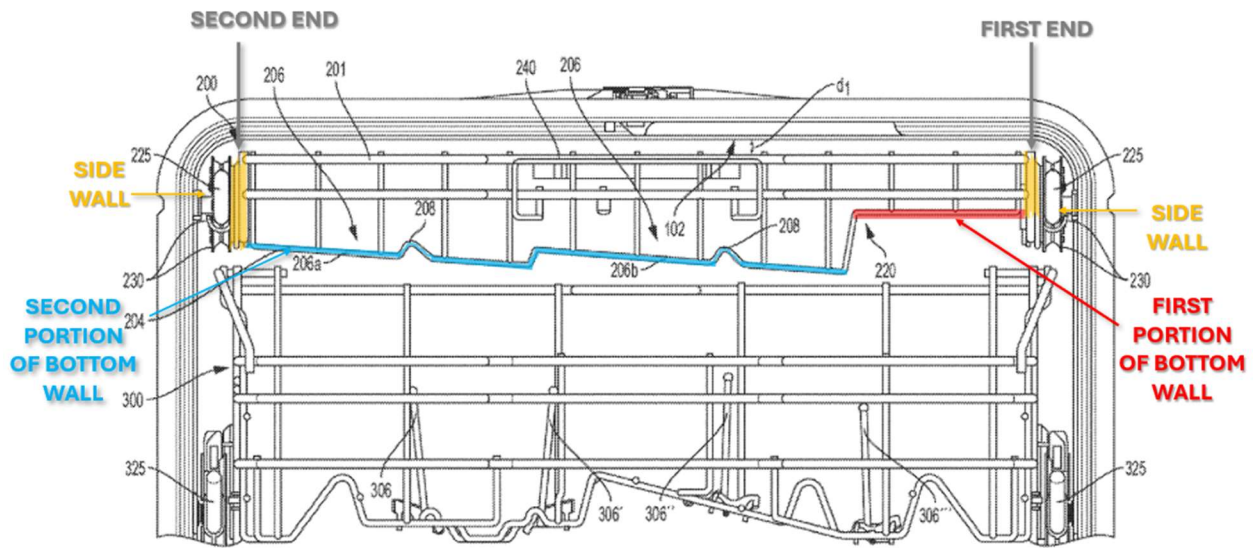


FIG. 4

96. A POSITA would have considered a portion of a bottom wall of a dish rack that was tilted more than 3 degrees from horizontal to be “angled” relative to a “substantially horizontal” portion of the rack. In particular, in the context of mechanical design, a POSITA would have understood that the term “substantially horizontal” denotes a surface that is functionally level for its intended purpose, while allowing for minor, incidental deviations associated with manufacturing tolerances, not deliberate inclination. In the dishwasher context, a POSITA would have recognized that a greater than 3 degree tilt represents an intentional design choice with functional consequences—such as promoting drainage or biasing item orientation; such a tilt would not have been viewed as falling within normal manufacturing tolerances for a horizontal surface. This is consistent with Carr’s disclosure, which refers to a surface tilted at 3 to 5 degrees as “angled,”

distinguishing it from the “substantially horizontal” surface of notch section 220. Ex-1005 ¶43, Cl. 7.

97. Carr’s angled second portion defines a depression. As illustrated in Figure 4, below, each angled portion (blue) is oriented at a slight tilt downward, in order to drain water off from the bowls or other items placed in that portion of the rack. Ex-1005 ¶¶ 43–44. By sloping downward rather than remaining horizontal, the angled portion occupies a lower relative position than the same portion would if configured horizontally, providing space for the bowls it is designed to hold to sit at an angle. *See, e.g.*, Ex-1005 ¶ 46 (explaining that, as compared to “conventional dishwasher configurations which are limited to holding only cutlery and other very small items due to limited spacing,” the “greater spacing between an upper surface of the deepest portion [] of the third, top washware rack and an inner surface of a top wall 102 of the dishwashing compartment 101 greatly enhances the versatility of the third, top washware rack”). Therefore, a POSITA would have understood that Carr’s second portion (angled portion(s) 206, blue) is angled with respect to the first portion (notch portion 220, red) and defines a depression (orange).

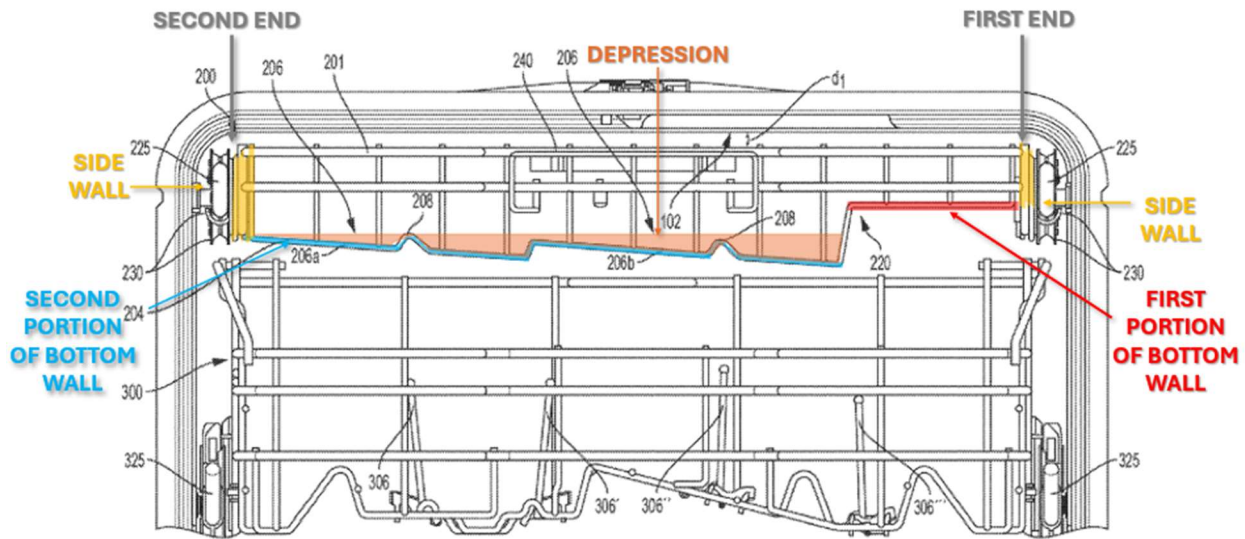


FIG. 4

98. Indeed, Carr specifically identifies the interior end of angled portion(s) 206 (opposite the end adjacent to the side wall) as the “deepest portion 225 of the third, top washware rack 200.” Ex-1005 ¶ 46. Carr explains that the “deepest portion 225” at the bottom of the rack is “d2” in Figure 5,³ as measured from the top of the dishwasher tub to the bottom of the rack at that point. Ex-1005 ¶ 46.

³ Figure 5 depicts the same rack as Figure 4, but with only one set of stopper ribs 208, rather than two. Ex-1005 ¶ 44. A POSITA would have understood that whether or not a second set of stopper ribs 208 is present does not affect the location of the deepest point of the rack.

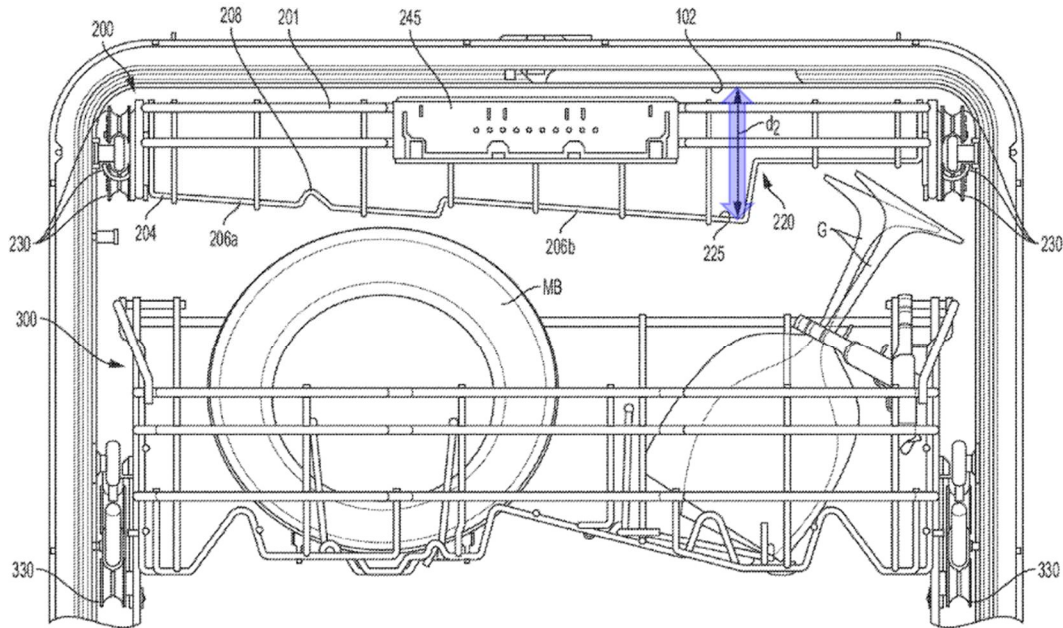


FIG. 5

f. Element 14[b(iv)]: the depression extending lower than the first portion relative to the peripheral wall;

99. Carr teaches element 14[b(iv)].

100. Carr teaches that the depression defined by the angled second portion of the bottom wall extends lower than the first portion, relative to the peripheral wall. Specifically, Carr's angled portion(s) 206 is angled downward relative to notch portion 220, in order to create a depression into which bowls, cups, or other items may be positioned at an angle. Ex-1005 ¶¶ 43–44. As illustrated in Figure 4, below, because this angled portion (blue) begins at a lower vertical height than the substantially horizontal first portion (red) and then slopes downward from that lower starting point, the resulting depression (orange) is positioned lower than the first

portion (red) when measured relative to the surrounding peripheral side wall (yellow).

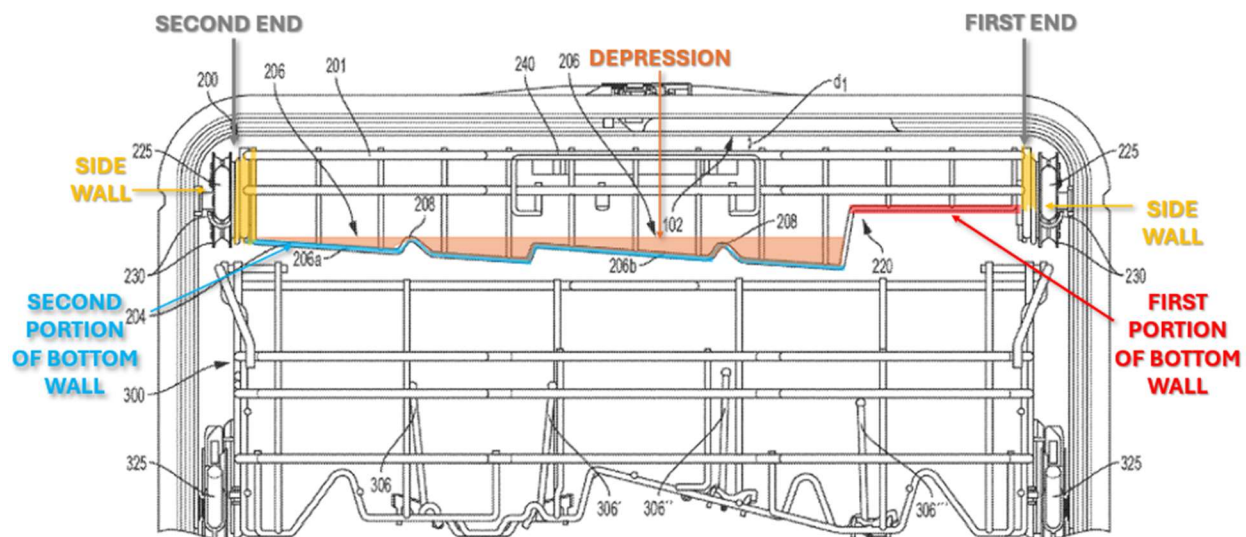


FIG. 4

101. Indeed, as depicted by d2 in Figure 5, the dish rack's "deepest point 225" extends further below the top of the tub than does notch section 220, thus forming the recited depression that extends lower than the first portion relative to the peripheral wall.

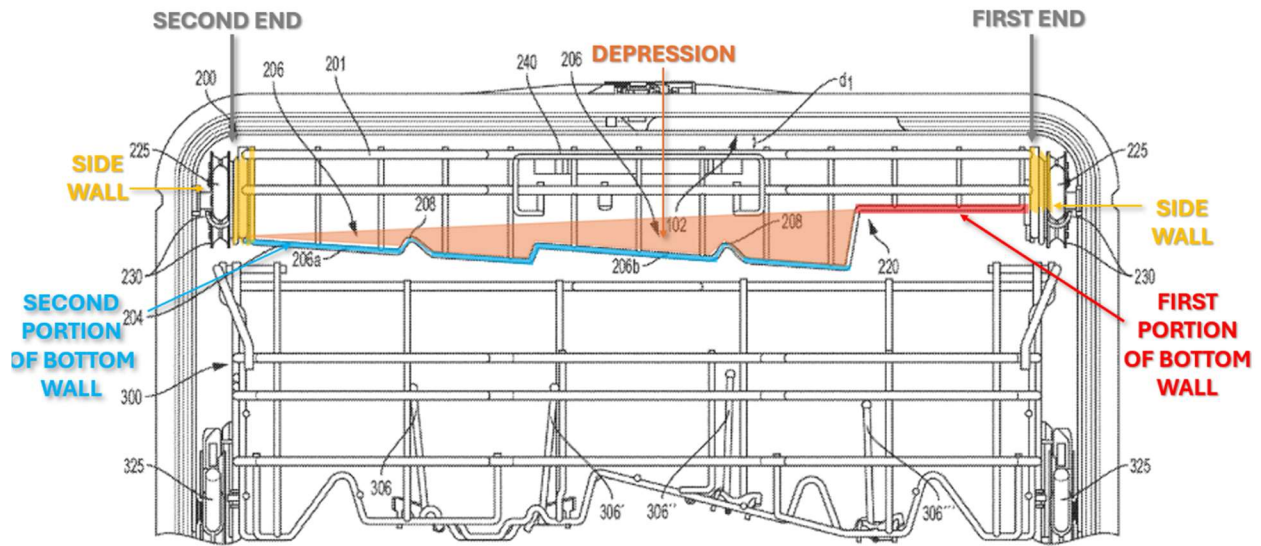


FIG. 4

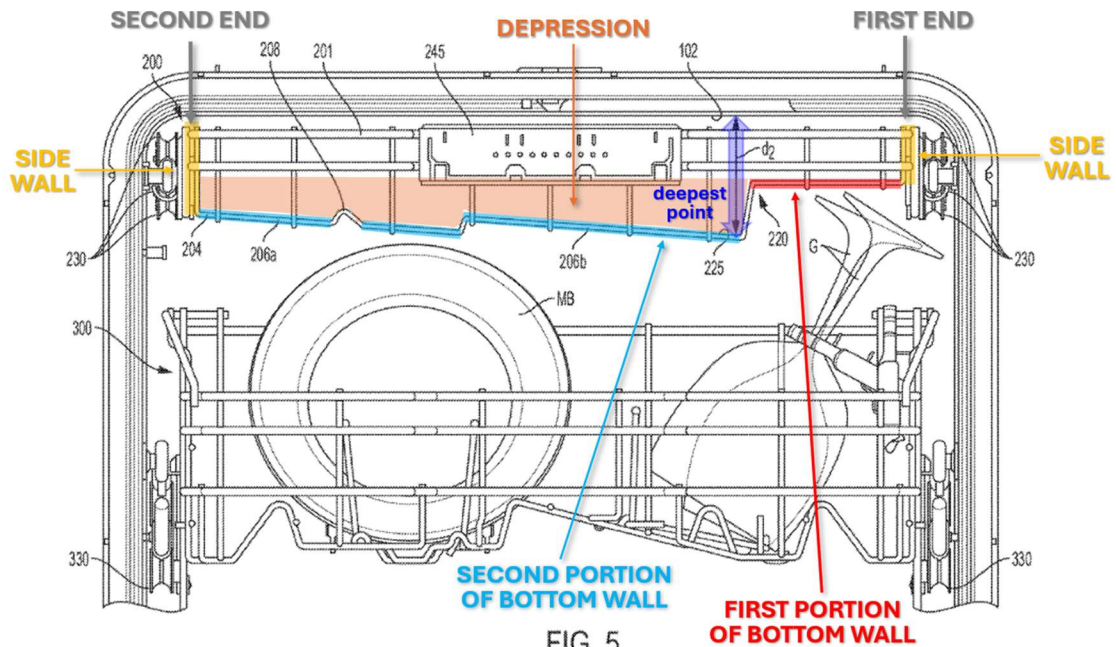


FIG. 5

g. Element 14[c(i)]: the first portion supporting a first set of utensil holders for supporting one or more utensils and

102. Carr teaches element 14[c(i)].

103. Carr teaches that notch section 220 (the claimed “first portion”) supports a first set of utensil holders for supporting one or more utensils. Specifically, notch section 220 accommodates “at least one of cutlery or utensils” (Ex-1005 ¶ 18). Carr teaches that a cutlery/utensil accessory insert 235 may be disposed above—i.e., supported by—notch section 220, as illustrated in Figure 3, below. *Id.* ¶ 48. Carr’s utensil accessory insert 235 corresponds to a first set of utensil holders for supporting one or more utensils, in the same way described by the ’681 Patent. In particular, the ’681 Patent teaches a “first set of utensil holders illustrated as a set of utensil seats 126 or loops 128,” explaining that “[t]he utensil holders can be configured to retain or hold a set of utensils such as, but not limited to, spoons, forks, sporks, knives, ladles, spatulas, or the like.” Ex-1001, 6:61–65. Similarly, as shown below in annotated Figure 3, Carr’s cutlery/utensil accessory insert 235 includes multiple utensil holders in the form of multiple raised loops for supporting one or more utensils. Thus, cutlery/utensil accessory insert 235 (red, below), which houses Carr’s multiple utensil holders, and which is supported by notch section 220 (claimed “first portion”), corresponds to the claimed first set of utensil holders.

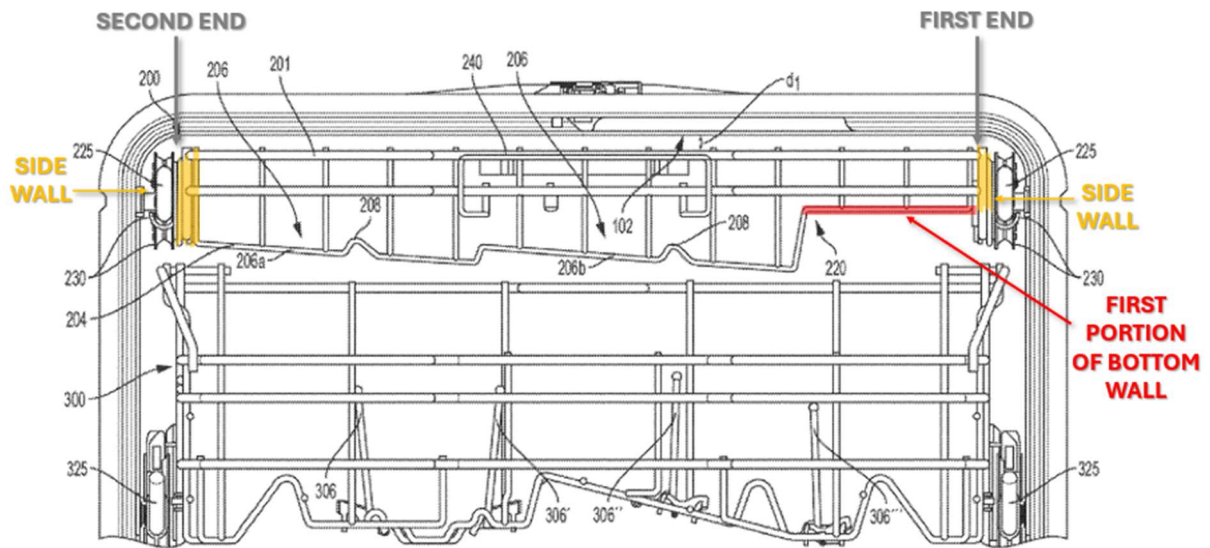


FIG. 4

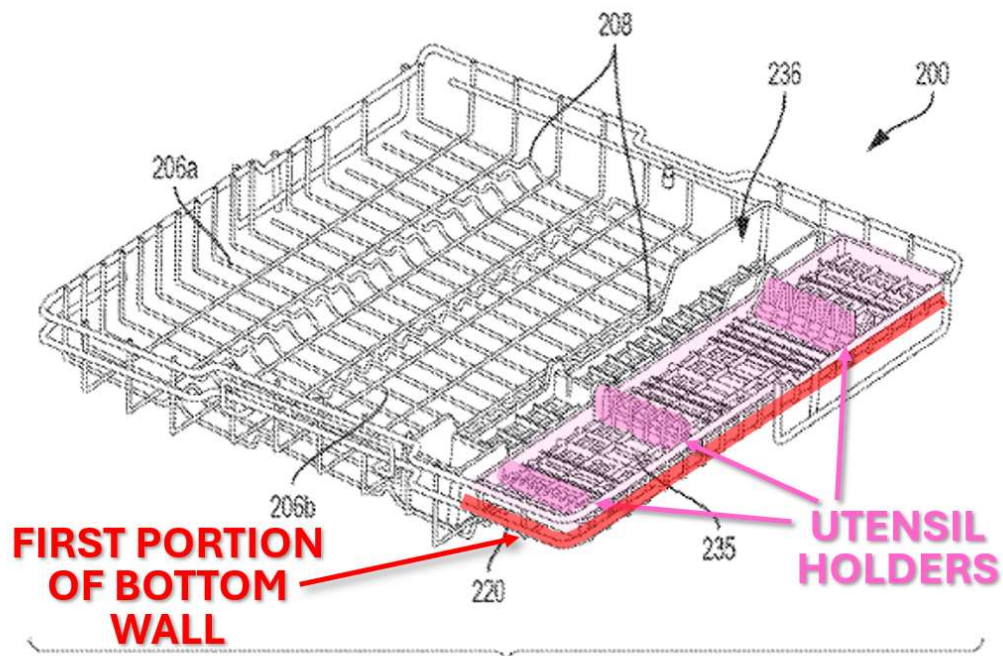
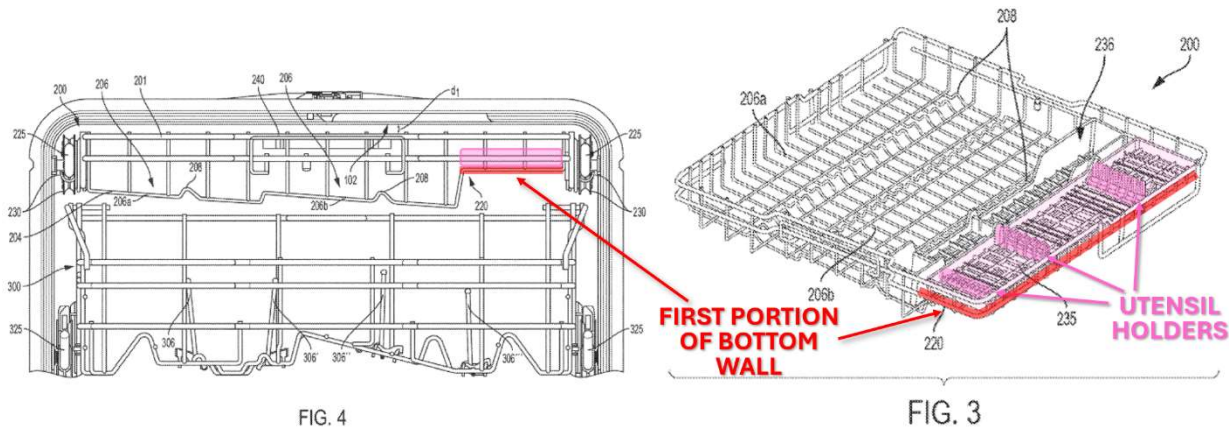


FIG. 3



- h. Element 14[c(ii)]: the second portion defining a cup seat for supporting one or more cups in the depression.**

104. Carr teaches element 14[c(ii)].

105. Carr teaches that the second portion of the bottom wall defines a cup seat for supporting one or more cups in the depression. As previously explained in Section XIII.A.1.e (element 14[b(iii)]), each angled portion 206 is “configured to hold bowls” at a slight tilt in order to drain water off from the bowls. Ex-1005 ¶¶ 43–44. In Figure 6, below, Carr shows how these angled portion(s) provide a seat for supporting one or more bowls. *Id.* ¶¶ 33, 50.⁴

⁴ The rack shown in Figure 6 is the same as the rack shown in Figures 3 and 4, but utensil holder 235 accommodating cutlery appears to have been removed in Figure 6 to make room for additional bowls.

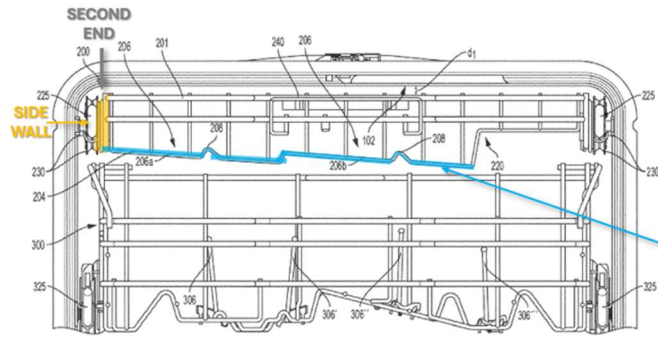


FIG. 4

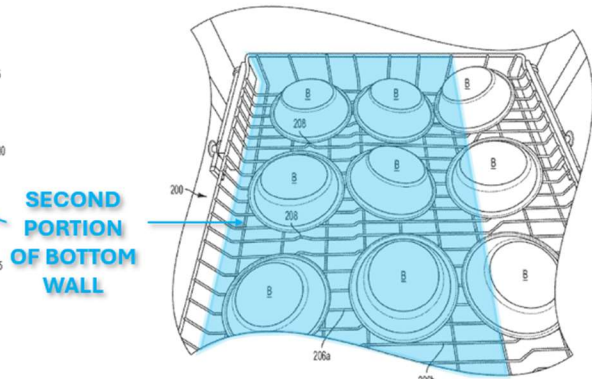


FIG. 6

106. While Carr's figures depict an example using bowls, Carr states that the "top washware rack 200 is configured to hold cutlery and washware which is larger than cutlery such as, but not limited to, *small dishes, bowls, cups, as well as cooking utensils.*" Ex-1005 ¶ 41. As shown below in Figure 4, the depression (orange) defines a cup seat for cups to fit on Carr's dishrack, unlike the first portion (notch section 220, red), which has a shorter height for utensils. Indeed, Carr explains that the depression formed by angled portion(s) 206 "greatly enhances the versatility of the third, top washware rack 200 over conventional dishwasher configurations which are limited to holding only cutlery and other very small items due to limited spacing," by providing a "greater spacing between an upper surface of a deepest portion [] of the third, top washware rack and an inner surface of a top wall 102 of the dishwashing compartment." Ex-1005 ¶ 46.⁵ Thus, as shown in orange in Figure

⁵ This disclosure in Carr is made in the context of discussing Figure 6, which corresponds to the same embodiment illustrated in Figures 3 and 4, annotated to

4, below, Carr teaches that the depression defined by angled portion(s) 206 (claimed “second portion”) includes space to provide seats for one or more cups positioned in the depression.

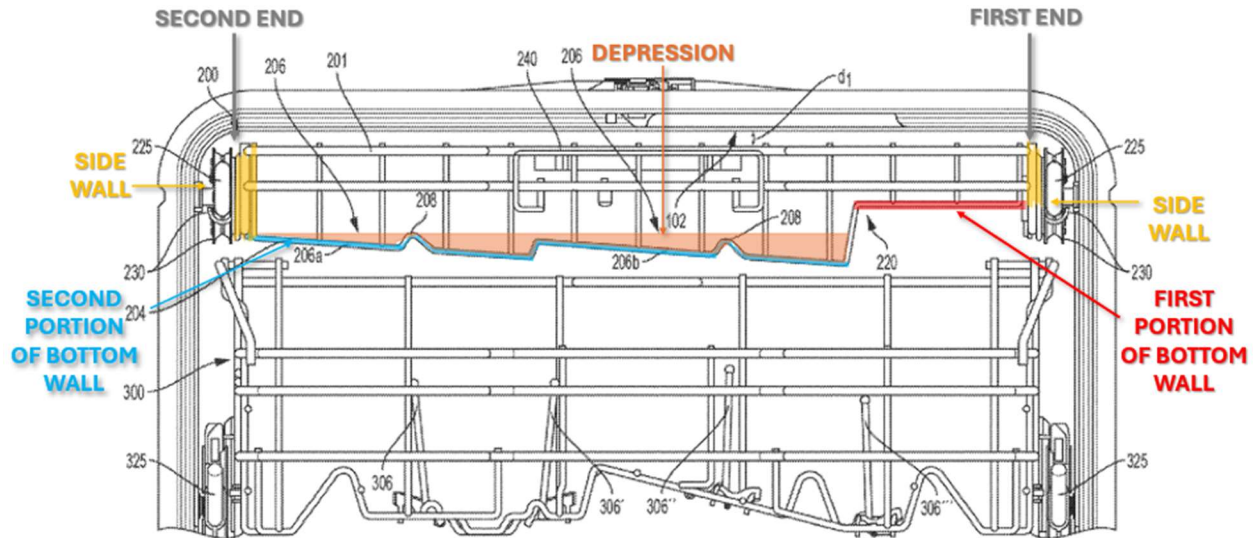


FIG. 4

107. In the related litigation, Patent Owner has argued that “[t]he cup seat disclosed in Claim 14 of the ’681 Patent is capable of securely supporting glasses and cups of ordinary dimension along their cylindrical side.” Ex-1022. But there is nothing in the claim that requires these limitations. Specifically, the claim recites only a “cup seat.” It says nothing about the dimensions of any cup or which side of the cup is positioned on the rack. Moreover, the specification specifically teaches washing small cups, such as “measuring cups.” Ex-1001, 7:51. The ’681

label the deepest portion of the third, washware rack as “deepest portion 225.” Ex-1005 ¶ 46.

specification further explains that shallow objects, such as bowls, may be placed in the cup seats: “It will be further appreciated that although illustrated as cups and mugs either the first or the second set of *cup seats 114, 115 can receive other objects* to be treated within the treating chamber 16 such as, but *not limited to, baby bottles, plates, bowls,* pans, or the like.” Ex-1001, 7:54–58.

108. Here, Carr specifically teaches that the depression formed by angled portion(s) 206 “greatly enhances the versatility” of the rack, as compared to “conventional dishwasher configurations which are limited to holding only cutlery and other very small items due to limited spacing” (Ex-1005 ¶ 46), thus enabling the rack to accommodate “washware which is larger than cutlery, such as ... cups” (Ex-1005 ¶ 41), directly teaching the claimed cup seats. Regardless, the same second region also accommodates “bowls,” just like the “cup seats 114 and 115” as taught in the ’681 specification. Ex-1001, 7:54–58.

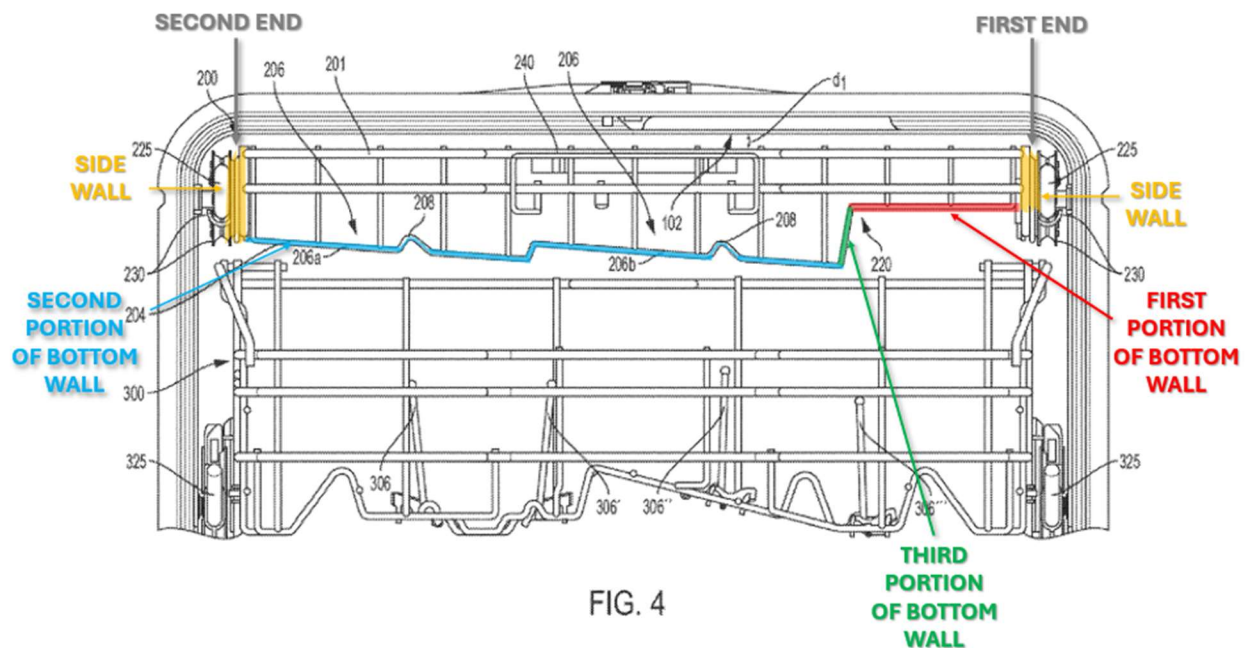
2. Dependent Claim 15

- a. **Element 15[a]: The automatic dishwasher of claim 14, further comprising a third portion of the bottom wall defined by an angled third planar portion relative to the substantially horizontal first portion and extending across a third portion of the bottom wall;**

109. Carr teaches element 15[a].

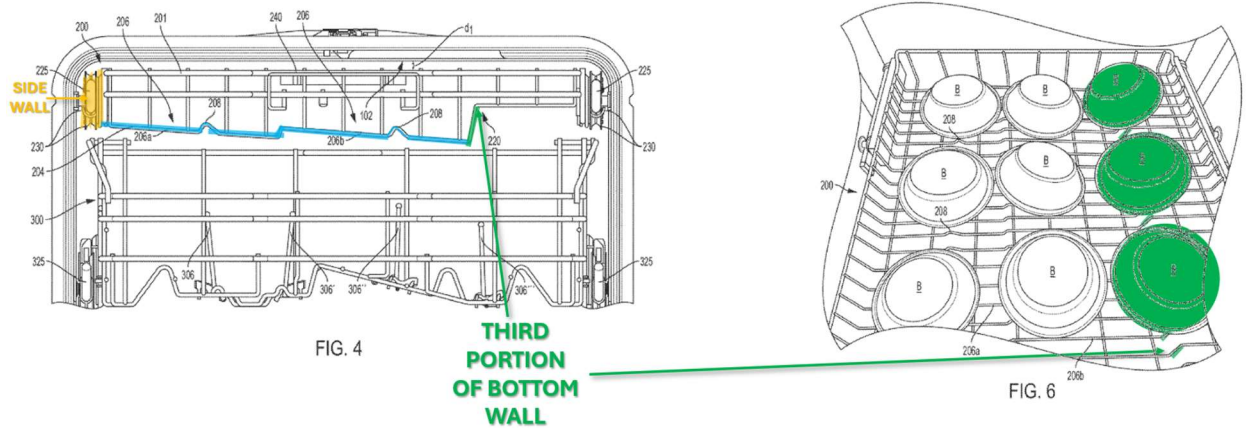
110. Carr teaches a third portion of the bottom wall defined by an angled third planar portion relative to the substantially horizontal first portion, extending

across a third portion of the bottom wall. As shown in Figure 4 below, Carr's bottom portion of washware rack 200 includes an angled portion (green), which is angled away from the first portion (red) and extends across the bottom wall. As described above in Section XIII.A.1, bottom portion 204 of Carr's top washware rack 200 includes one or more angled portions that are configured to hold bowls at a slight tilt with respect to the horizontal. Ex-1005 ¶ 43. The angled portion (green) that allows the angled portions (blue) to form a depression from the first portion (red) is a third angled planar portion. Carr's planar portion that connects the angled portion(s) and notch section 220 at an angle is the third portion of the bottom wall.



111. In the related litigation Patent Owner has argued that “Claim 15 of the ’681 Patent discloses a minimum of three portions *of the top rack*.” This is not correct. The claim specifically recites “a third portion *of the bottom wall*.” This is an important distinction because Patent Owner attempts to distinguish Carr’s third bottom wall portion on an alleged failure to teach what PO believes is the function of its alleged “third portion” of the dish rack. *See, e.g.*, Ex-1022 ¶157 (“As shown in the figures of the ’681 Patent, each ‘portion’ disclosed in the Asserted Claims is designed to be able to securely hold items for washing.”); ¶ 158 (“Carr discloses no functional third portion as disclosed in the ’681 Patent.”). But the claim recites no functional requirements for the “third portion of the bottom wall.” Rather, it merely recites the structural features that make up this third portion of the bottom wall of the dish rack. As explained above, those structural features are taught by Carr.

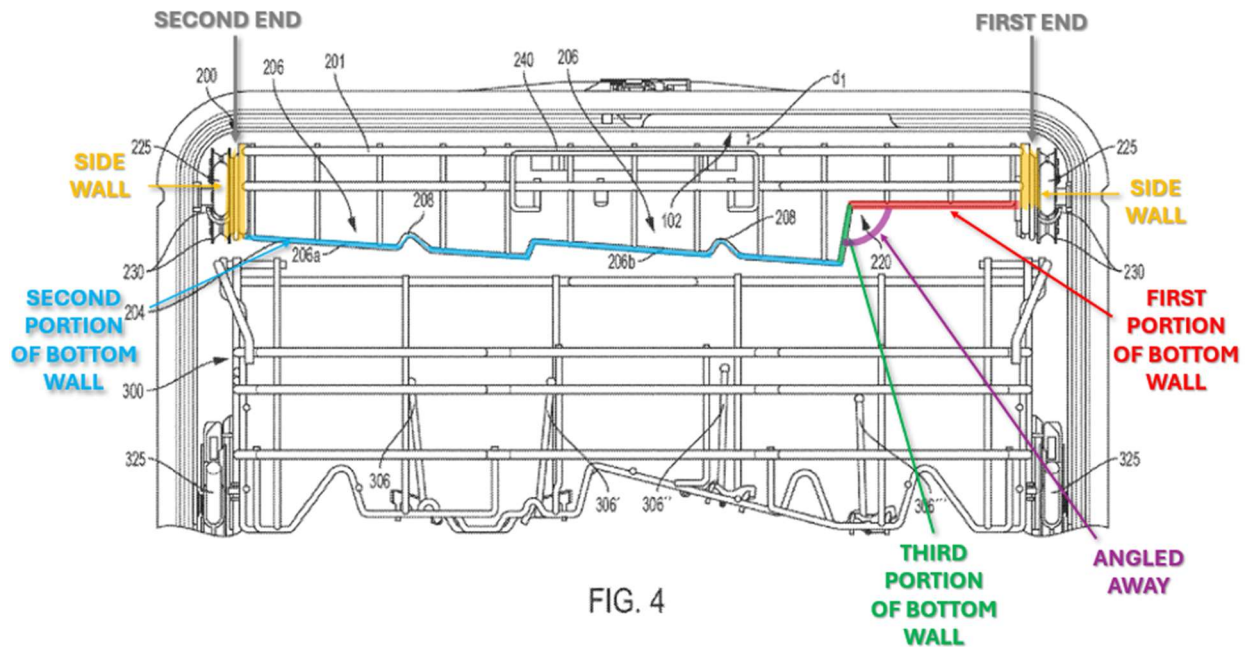
112. Regardless, even if there were some functional requirement for the “third portion of the bottom wall” to “hold items for washing” (but there is no such requirement), this feature is plainly taught by Carr. Specifically, in Carr’s Figure 6, the bowls highlighted in green are placed over the third angled portion, holding them in place for washing.



- b. Element 15[b]: the third portion connected to and extending from the first portion and angled away from the first portion.**

113. Carr teaches element 15[b].

114. Carr teaches that the third portion is connected to and extends from the first portion and is angled away from the first portion. As explained in the previous section, Carr's third portion (green) is connected to and extends from the notch portion 220 (red) in order to provide the depression defined by the angled portions (blue). Carr's third portion is angled away from the first portion by being angled greater than 90 degrees from the notch portion, as highlighted below in Figure 4 in purple.



B. Ground 2: Claims 14-16 are obvious over Mailander

1. Independent Claim 14

- a. Element 14[pre]: An automatic dishwasher configured to implement an automatic treating cycle of operation, comprising:**

115. Mailander teaches the preamble of claim 14, to the extent it is limiting.

116. Mailander discloses a “washing items support” for a “dishwasher” that includes “a washing space that can be sealed by a door, the washing space having at least one spraying device and at least one removable crockery basket therein.” Ex-1006, Cl. 22. As Mailander explains, by enabling “pieces of cutlery to be received individually on each side,” the washing items support “prevents the formation of accumulations of water,” and enables the washing water “to run off the pieces of cutlery unhindered,” which “can [] considerably shorten the **drying programme**

time.” Ex-1006 ¶ 7. A POSITA would have understood that Mailander’s reference to a “drying programme time” refers to the duration of the dishwasher’s programmed drying cycle. In the appliance industry, “programme” is a well-understood term used to describe the automated programs performed by devices like dishwashers and washing machines. Indeed, it would have been well-known to a POSITA that dishwashers operate through automatic programs that sequentially perform washing and drying steps. *Id.* Accordingly, Mailander teaches an automatic dishwasher configured to implement an automatic treating cycle of operation, as claimed.

**b. Element 14[a]: a tub defining a dish treating chamber;
and**

117. Mailander teaches element 14[a].

118. Mailander discloses a dishwasher having a washing space that receives dishware during operation. For instance, Mailander teaches a dishwasher that includes “a washing space that can be sealed by a door,” within which crockery basket(s) and “a washing items support assembly” are arranged to hold “cutlery” and other “washing item[s]” during washing. Ex-1006, Cl. 22. A POSITA would have understood that the disclosed “washing space” corresponds to the interior chamber of the dishwasher, within which dishes are treated with washing fluid and drying heat. In conventional dishwasher terminology, this chamber is formed by the dishwasher tub, which defines the access opening for the treating chamber. As

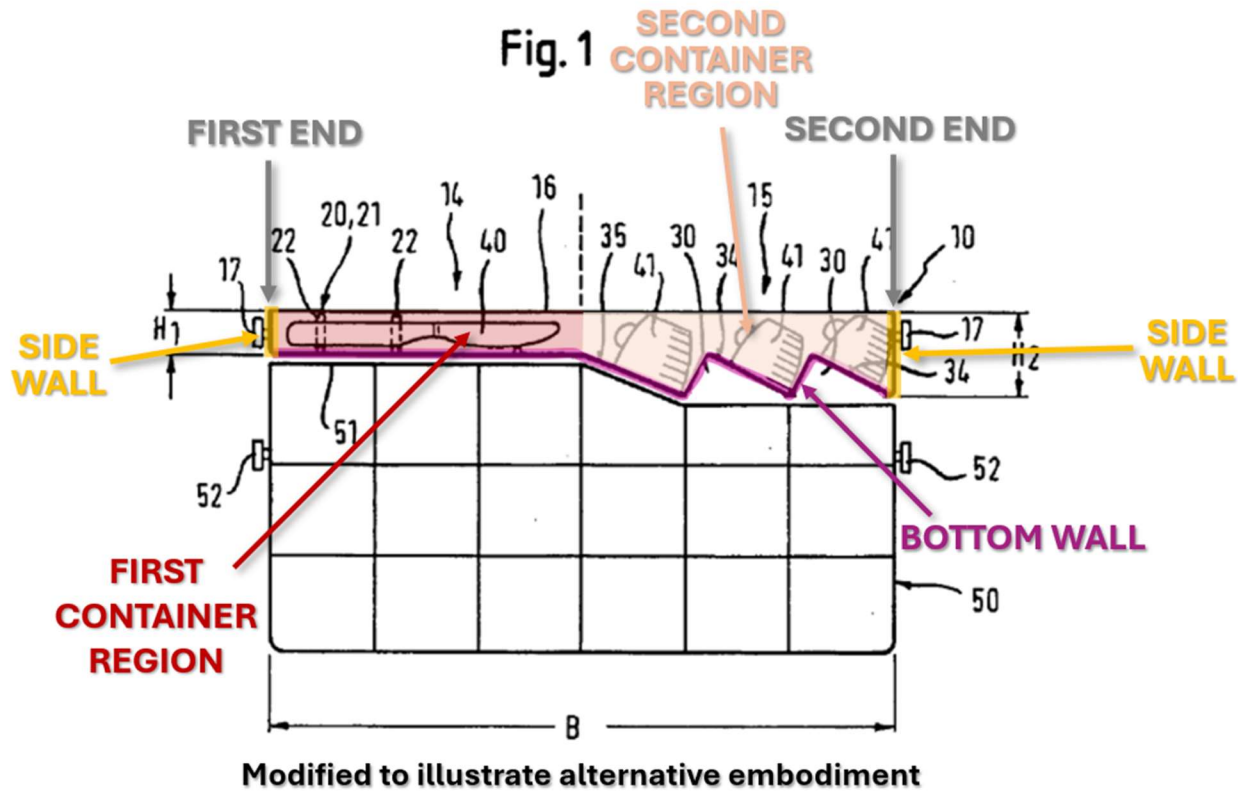
Mailander explains, its open-faced opening to the treating chamber is further “sealed by a door,” thus corresponding to the claimed tub in the same manner described by the ’681 Patent. Ex-1006, Cl. 22 (“a washing space that can be sealed by a door”).

- c. **Element 14[b(i)]: a dish rack located within the dish treating chamber having a first end spaced from a second end and comprising a bottom wall from which extends a peripheral wall defining side walls of the dish rack,**

119. Mailander teaches element 14[b(i)].

120. Mailander’s “washing items support 10” corresponds to “a dish rack located within the dish treating chamber,” as claimed. Specifically, Mailander teaches that washing items support 10 corresponds to “a kind of cutlery drawer which is arranged in addition to the crockery baskets provided in the dishwasher.” Ex-1006 ¶ 12. As Mailander explains, “washing items support 10” is within “the washing space of a dishwasher.” Ex-1006 ¶ 25.

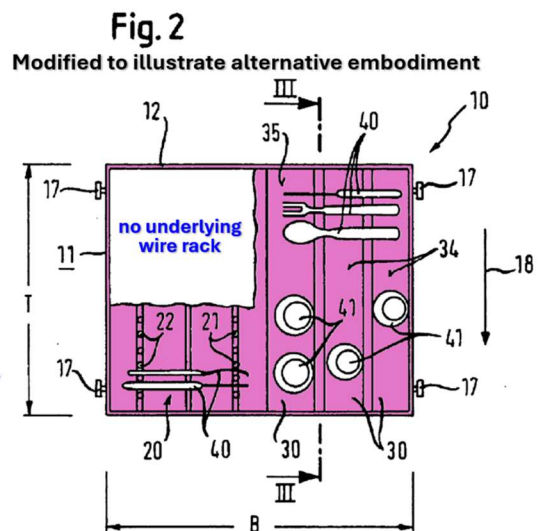
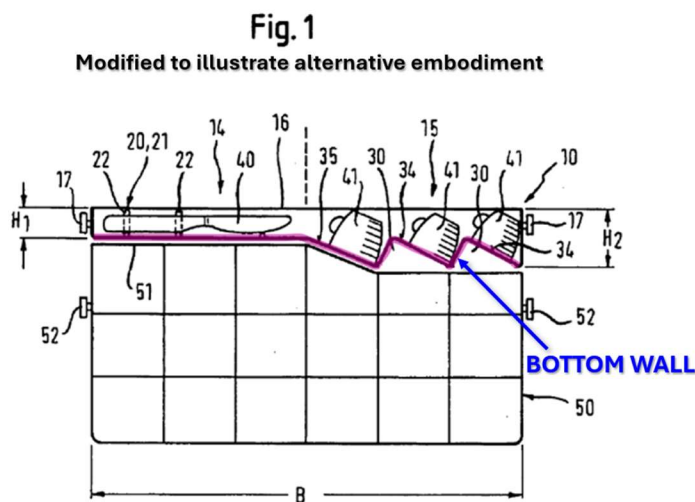
121. As illustrated in annotated Figure 1, below, Mailander’s washing items support 10 has a first end spaced from a second end and comprising a bottom wall from which extends a peripheral wall defining side walls of the dish rack:



As illustrated above, Mailander's dish rack has a first end spaced from a second end in order to accommodate two container regions, first container region 14 (red) and second container region 15 (peach), "each of them occupying approximately half [the] width B of washing items support 10." Ex-1006 ¶ 25.

122. Notably, in the related district court litigation, PO argues that the inclined "support surface[s]" of Mailander's "washing items holders 30" (Ex-1006, ¶ 27) do not form part of the bottom wall of Mailander's rack. Ex-1022 (Tanbour Reply Decl.) ¶ 124. But PO relies on embodiments of Mailander's rack in which washing items holders 30 correspond to inserts placed within a base wire basket, not

part of the bottom wall itself. *Id.* ¶ 123 (asserting that “the washing items holders” in Mailander “are wedge or L shaped add-on components that are not part of the wire rack but rather ‘designed as inserts’ and ‘releasably inserted’ and placed on the bottom wall of the dish rack”); *see also* Ex-1006 ¶¶ 27–28 (teaching embodiments in which “washing items holders 30” are provided as “inserts” within “a base basket 11”). But Dr. Tanbour ignores that Mailander also teaches embodiments in which washing item holders 30, together with utensil insert 20, form part of the bottom wall itself, explaining that “[i]n a further embodiment, not shown, washing items support 10 may consist of only one material, e.g. a plastic, i.e. **without base basket 11.**” Ex-1006 ¶ 28.



A POSITA would have understood that, in such alternative embodiments, the inclined surfaces of each of Mailander’s washing items support 30 and the bottom

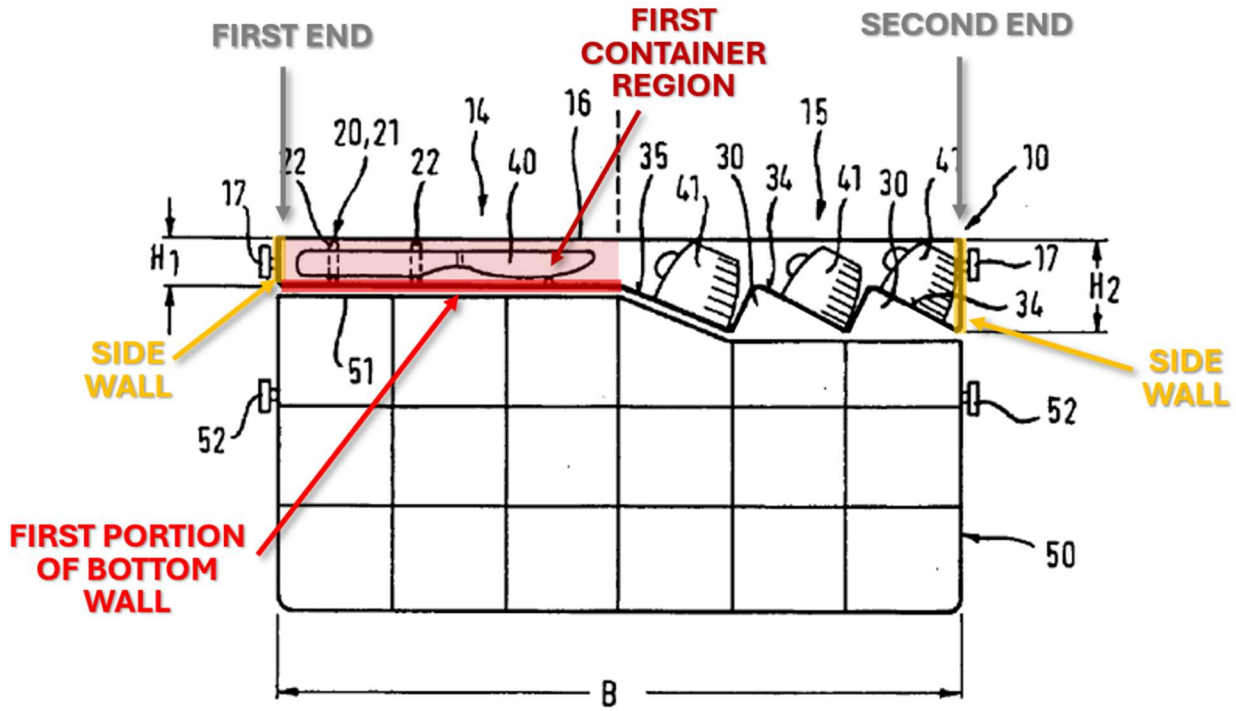
surface of utensil insert 20 correspond to the bottom wall of Mailander's rack, as illustrated in the modified version of Figures 1 and 2, above.

- d. **Element 14[b(ii)]: at the first end of the dish rack, the bottom wall has a first portion defined by a first substantially horizontal planar portion extending across a first portion of the bottom wall and**

123. Mailander teaches element 14[b(ii)].

124. Mailander teaches that, at the first end of washing items support 10 (claimed "dish rack"), the bottom wall has a first portion defined by a substantially horizontal planar portion extending across a first portion of the bottom wall, as claimed. Specifically, Mailander teaches that washing items support 10 includes "a first container region designed as a cutlery container, on which pieces of cutlery **can be placed horizontally**," as illustrated in annotated Figure 1, below. Ex-1006 ¶ 11.

Fig. 1



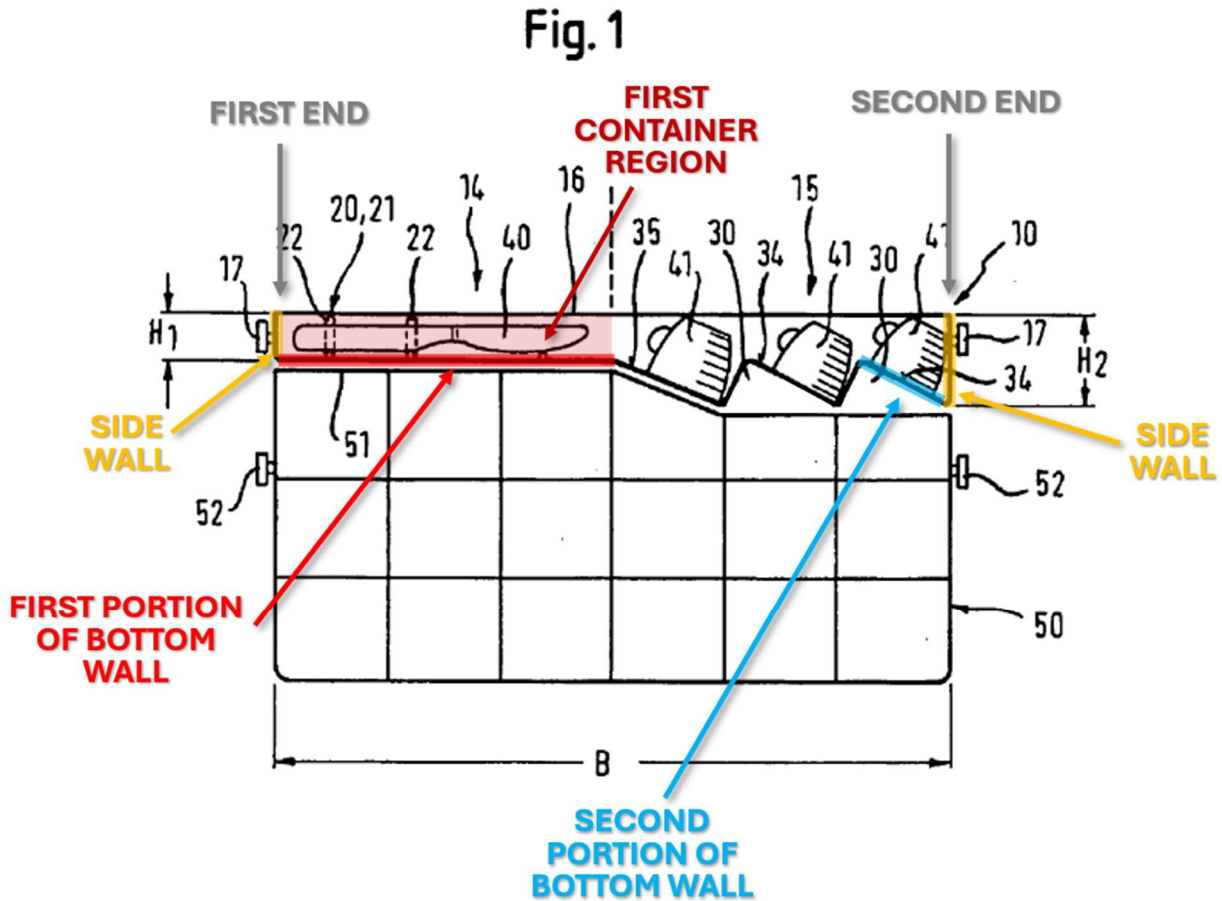
As Mailander explains, this container portion of washing items support 10 is “preferably [] **essentially horizontal**,” to “enable[] the pieces of cutlery to be positioned so that the washing water is able to run off unhindered.” *Id.* ¶ 13.

- e. Element 14[b(iii)]: at the second end of the dishrack, a second portion is angled with respect to the first portion and defining a depression;**

125. Mailander teaches element 14[b(iii)].

126. Mailander teaches that, at the second end of washing items support 10 (the claimed “dish rack”), the bottom wall has a second portion that is angled with respect to the first portion and defines a depression, as claimed. Specifically,

Mailander teaches that washing items support 10 includes second container region 15, which is “designed with washing items holders 30, each of which has a support surface 34 inclined to the horizontal,” so that pieces of crockery can be placed at an angle for an improved drying effect. Ex-1006 ¶ 27. As illustrated in annotated Figure 1, below, the rightmost support surface 34 is angled downward relative to the horizontal bottom wall of first container portion 14 (claimed “first portion”), meeting the rightmost side wall at its lowest point. Specifically, as shown in the figure below (right hand side) the second portion of the bottom wall terminates directly at the peripheral wall.

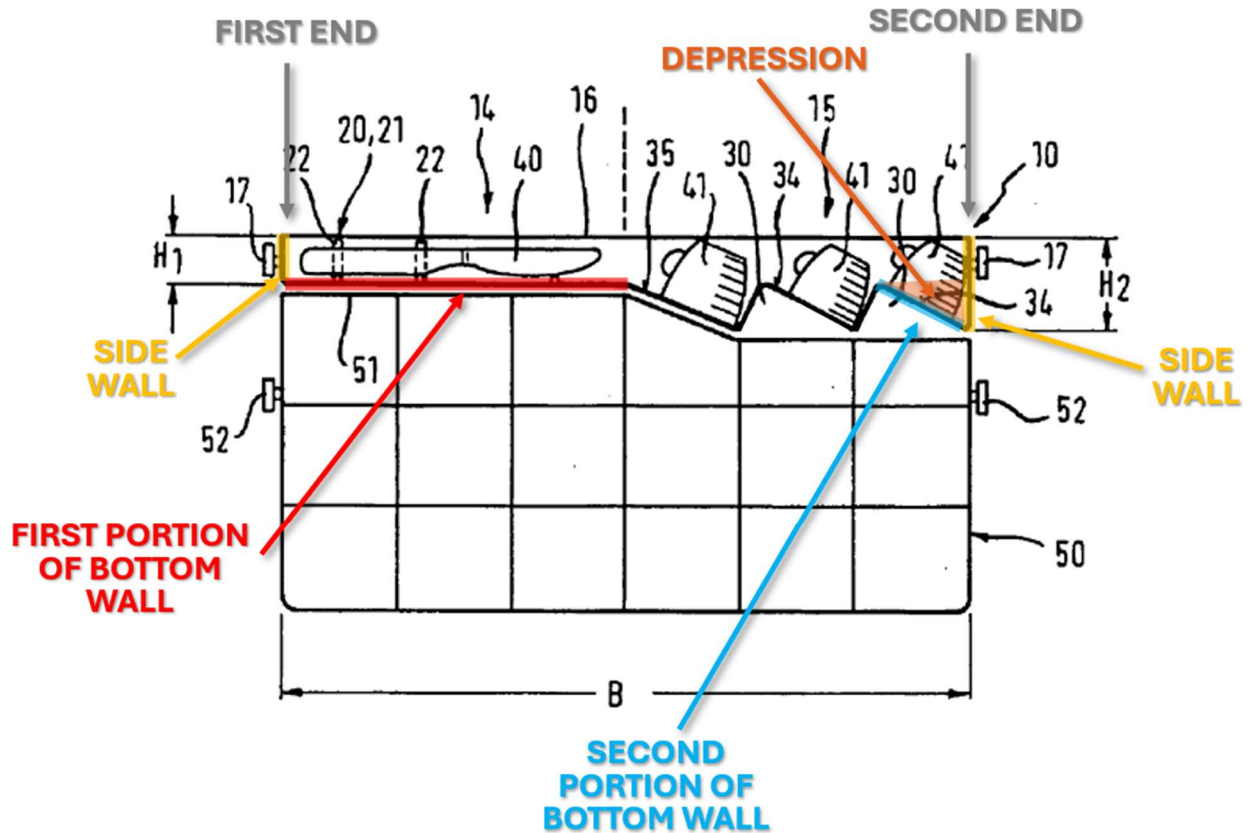


127. As explained for Element 14[b(i)], while Mailander teaches that, in certain embodiments, washing item holders 30 correspond to inserts supported on an underlying wire rack (Ex-1006 ¶¶ 27–28), Mailander also teaches embodiments in which washing item holders 30, form part of the bottom wall itself: “In a further embodiment, not shown, washing items support 10 may consist of only one material, e.g. a plastic, i.e. *without base basket 11*.” Ex-1006 ¶ 28. A POSITA would have understood that, in such alternative embodiments, the inclined surfaces of each of

Mailander's washing items support 30 correspond to a portion of the bottom wall of Mailander's rack, as illustrated in the modified version of Figure 1, above.

128. Mailander's rightmost washing items holder 30 and support surface 34 also define a depression. As explained above, support surface 34 provides an inclined surface for crockery items to be placed at an angle. Mailander teaches that support surface 34 may support "smaller washing items, e.g. cups, shallow glasses, dessert bowls, ..." Ex-1006 ¶ 27. As illustrated in annotated Figure 1, below, the rightmost support surface 34 defines a depression (orange) within which a cup may be supported at an angle:

Fig. 1

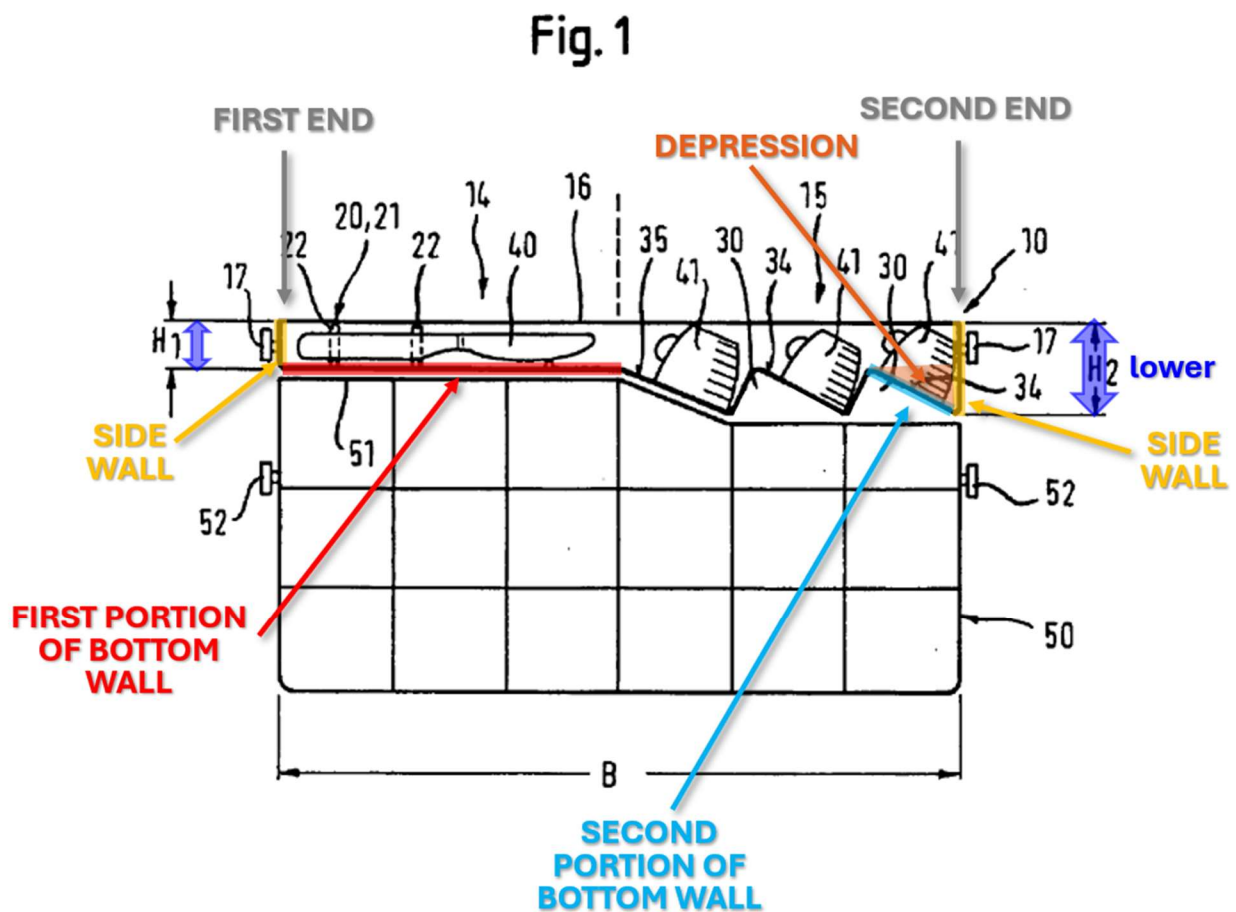


- a. **Element 14[b(iv)]: the depression extending lower than the first portion relative to the peripheral wall;**

129. Mailander teaches element 14[b(iv)].

130. Mailander teaches that the depression defined by the rightmost support surface 34 extends lower than the horizontal cutlery supporting portion (claimed “first portion”) relative to the peripheral wall. In particular, Mailander teaches that washing items support 10 has “a height H1 along first container region 14” (Ex-1006 ¶ 26) and, “in the second container region, a height H2 which is greater than height

H1 (*id.* ¶ 29). Further, Mailander teaches that “[t]he bottom end of first container region 14 is higher in the vertical direction than the bottom end of second container region 15 in the vertical direction.” Ex-1006 ¶ 29. Thus, as illustrated in annotated Figure 1, below, the depression (orange) defined by support surface 34 extends lower than the first portion (red) relative to the peripheral wall:



- b. **Element 14[c(i)]: the first portion supporting a first set of utensil holders for supporting one or more utensils and**

131. Mailander teaches element 14[c(i)].

132. Mailander teaches that first container region 14 (the bottom of which corresponds to the claimed “first portion”) is “designed as a cutlery container, on which pieces of cutlery can be placed horizontally.” Ex-1006 ¶ 11. As Mailander explains, this cutlery container includes “first cutlery containers 21 and cutlery holders 22,” which are used “to arrange pieces of cutlery 40 sorted, lying one next to the other, in the first container region throughout the depth of washing items support 10.” *Id.* ¶ 26. Collectively, Mailander’s cutlery containers 21 and cutlery holders 22, illustrated in annotated Figures 1 and 2, below, correspond to the claimed “first set of utensil holders.”

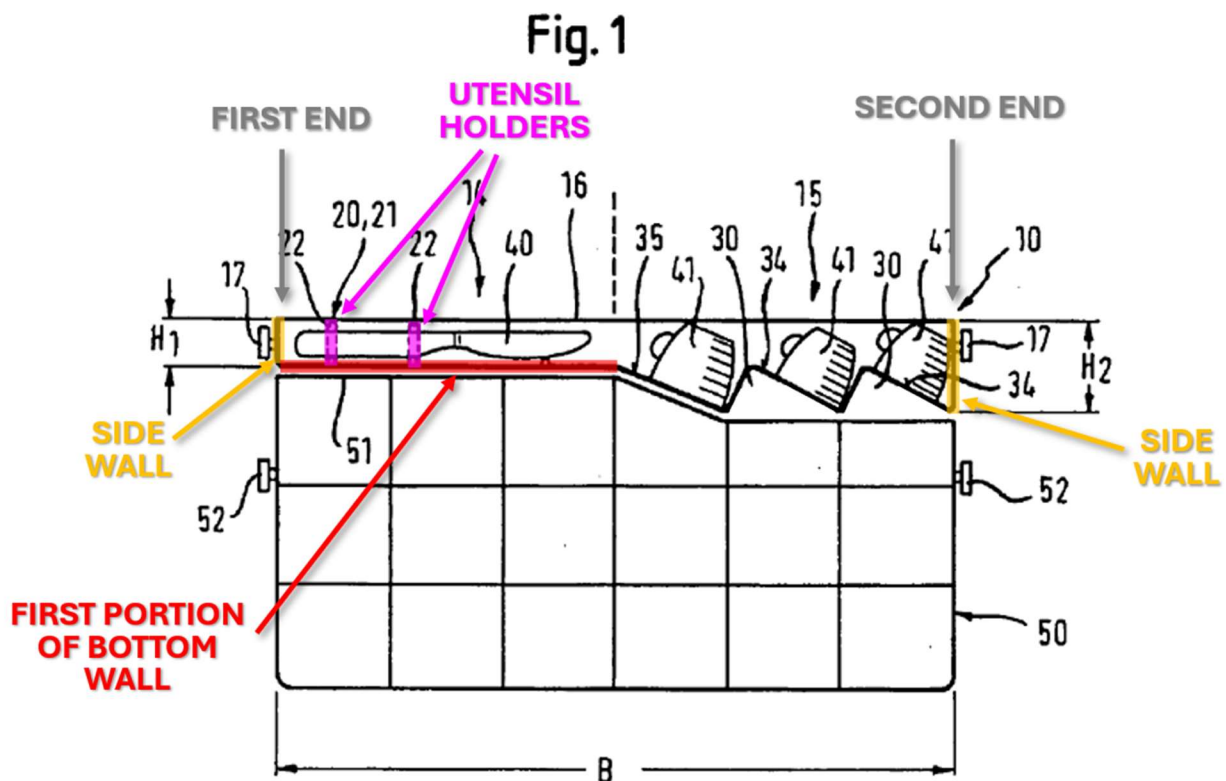
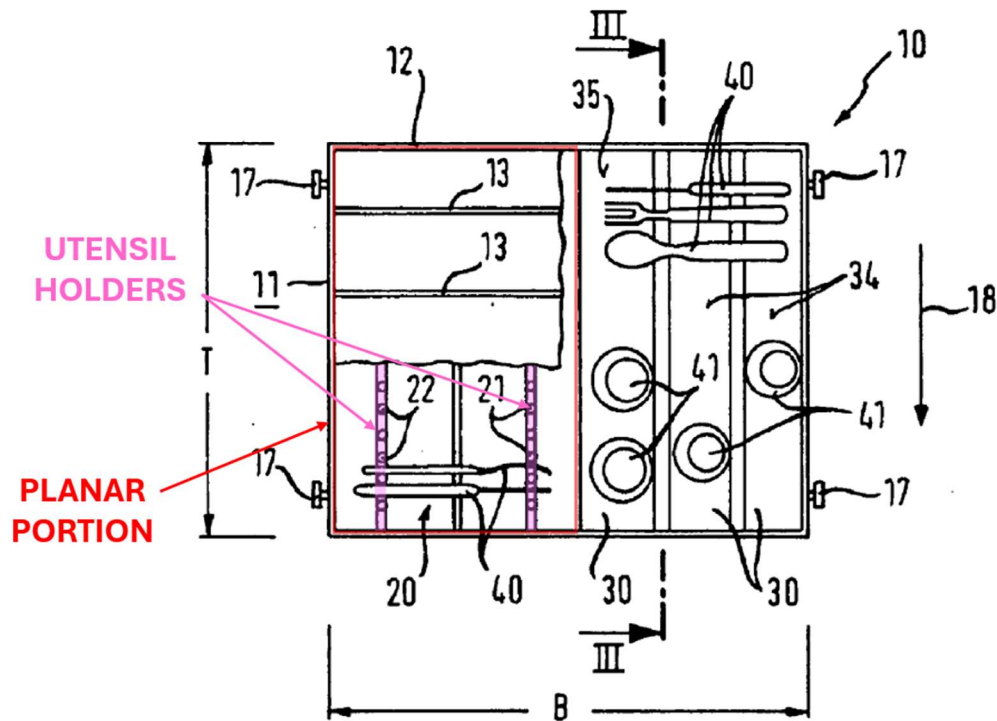


Fig. 2

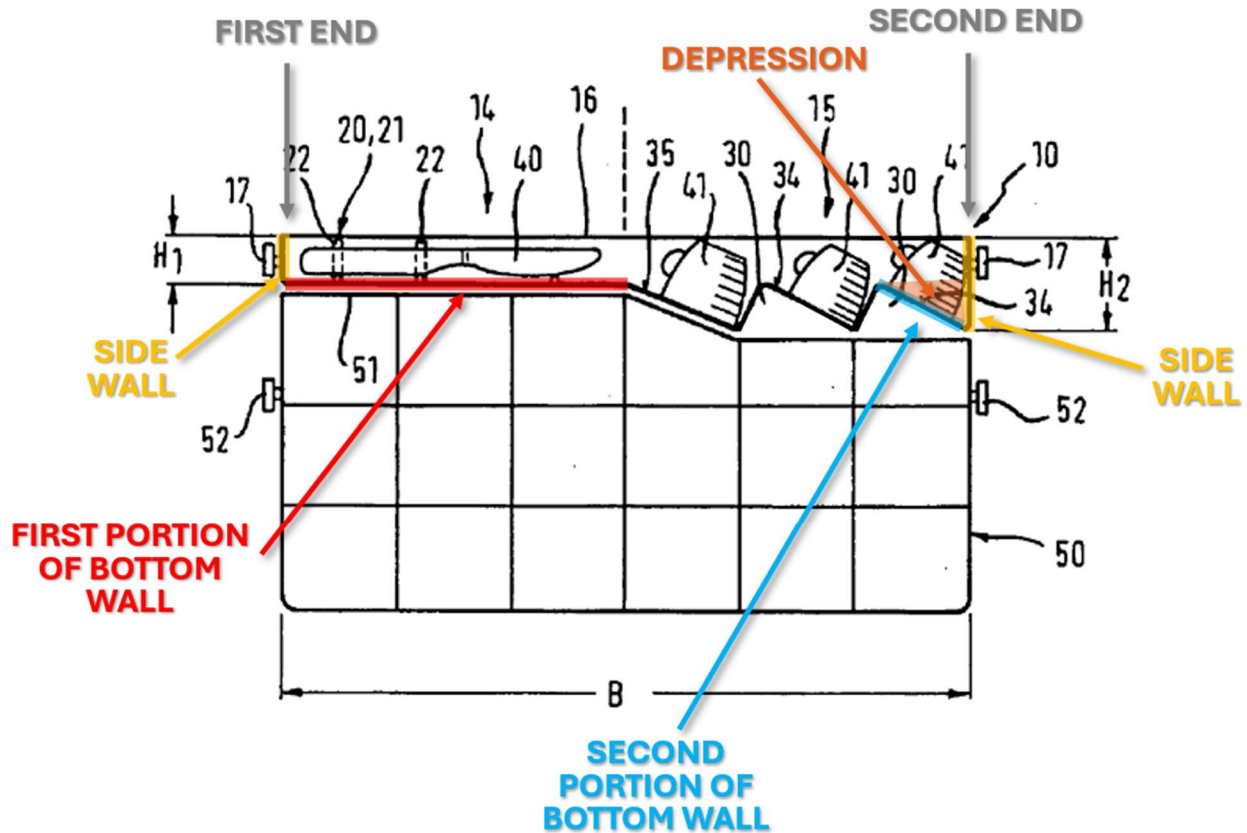


- c. **Element 14[c(ii)]: the second portion defining a cup seat for supporting one or more cups in the depression.**

133. Mailander teaches element 14[c(ii)].

134. As explained for Element 14[b(iii)], and illustrated in annotated Figure 1, below, Mailander teaches that the rightmost support surface 34 (claimed “second portion”) defines a depression (orange) within which a cup may be supported at an angle:

Fig. 1



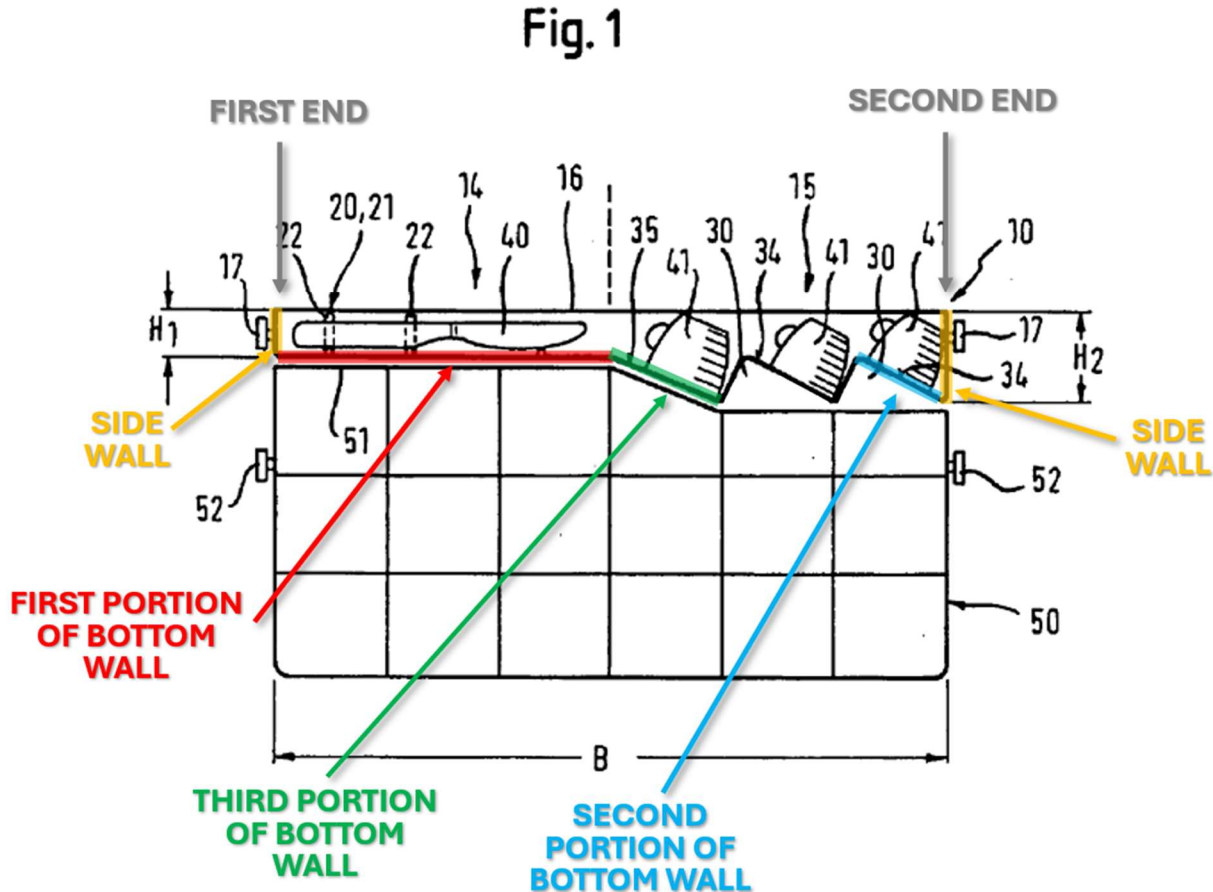
Accordingly, Mailander teaches that this support surface 34 (claimed “second portion”) defines a cup seat for supporting one or more cups in the depression.

2. Dependent Claim 15

- a. **Element 15[a]: The automatic dishwasher of claim 14, further comprising a third portion of the bottom wall defined by an angled third planar portion relative to the substantially horizontal first portion and extending across a third portion of the bottom wall;**

135. Mailander teaches element 15[a].

136. Mailander teaches a “transition region between height H2 and height H1, which is assigned to the second container region, [and] functionally represents a support surface 35.” Ex-1006 ¶ 29. As illustrated in Figure 1, below, transition region 35 is angled downward relative to the substantially horizontal bottom wall of first container region 14 (claimed “first portion”), in order to transition from height H1 of first container region 14 down to height H2 of second container region 15:



137. As explained for Element 14[b(i)], in embodiments in which “washing items support 10 may consist of only one material, e.g. a plastic, i.e. **without base**

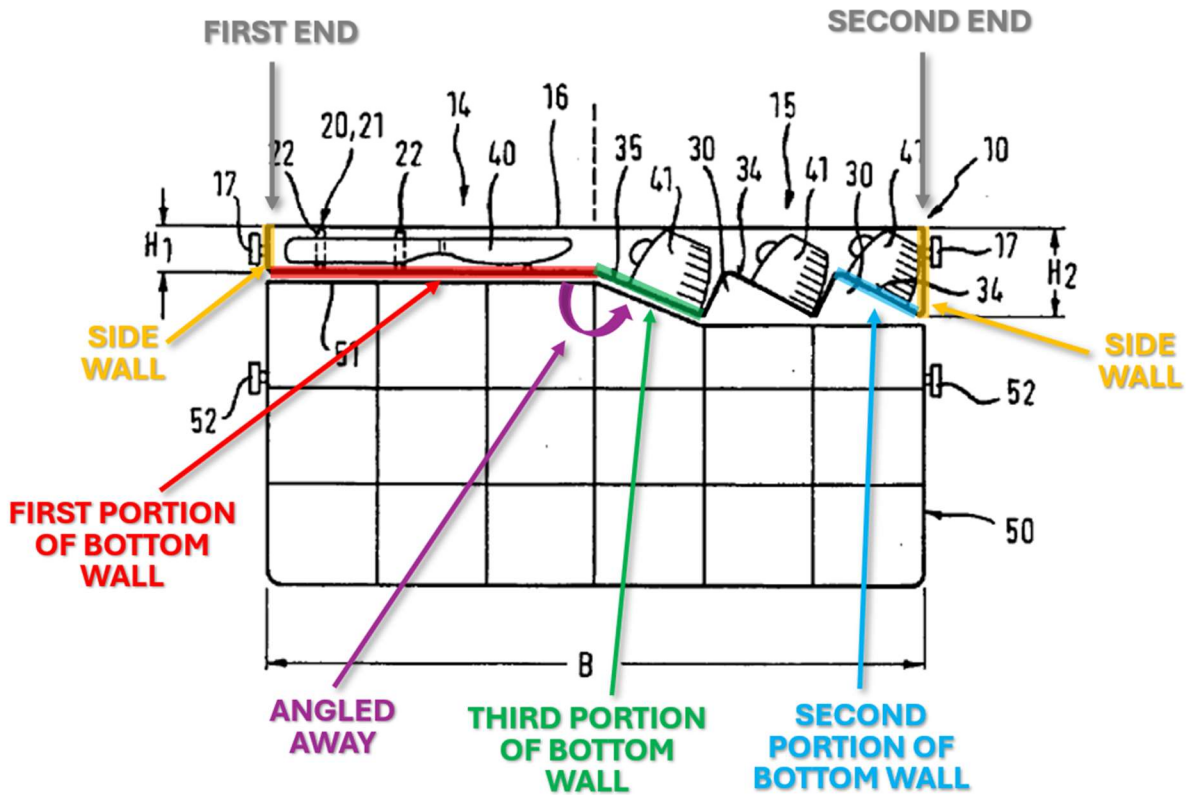
basket 11” (Ex-1006 ¶ 28), transition region 35—like support surfaces 34—corresponds to a portion of the bottom wall of Mailander’s rack. In such embodiments, transition region 35 (green) corresponds to a third portion of the bottom wall, which consists of a planar portion that is angled, and extends across a third portion of the bottom wall, as claimed.

b. Element 15[b]: the third portion connected to and extending from the first portion and angled away from the first portion.

138. Mailander teaches element 15[b].

139. Mailander’s transition region 35 is connected to, extends from, and is angled away from the substantially horizontal bottom wall of first container region 14 (claimed “first portion”). As explained for Element 15[a], transition region 35 is angled in order to transition from the first container region height H1 to the second container region height H2. Ex-1006 ¶ 29. Therefore, Mailander’s transition region 35 (claimed “third portion”) is connected to and extends from the bottom of first container region 14 (claimed “first portion”), and is angled away from first container region 14, as illustrated in annotated Figure 1, below:

Fig. 1

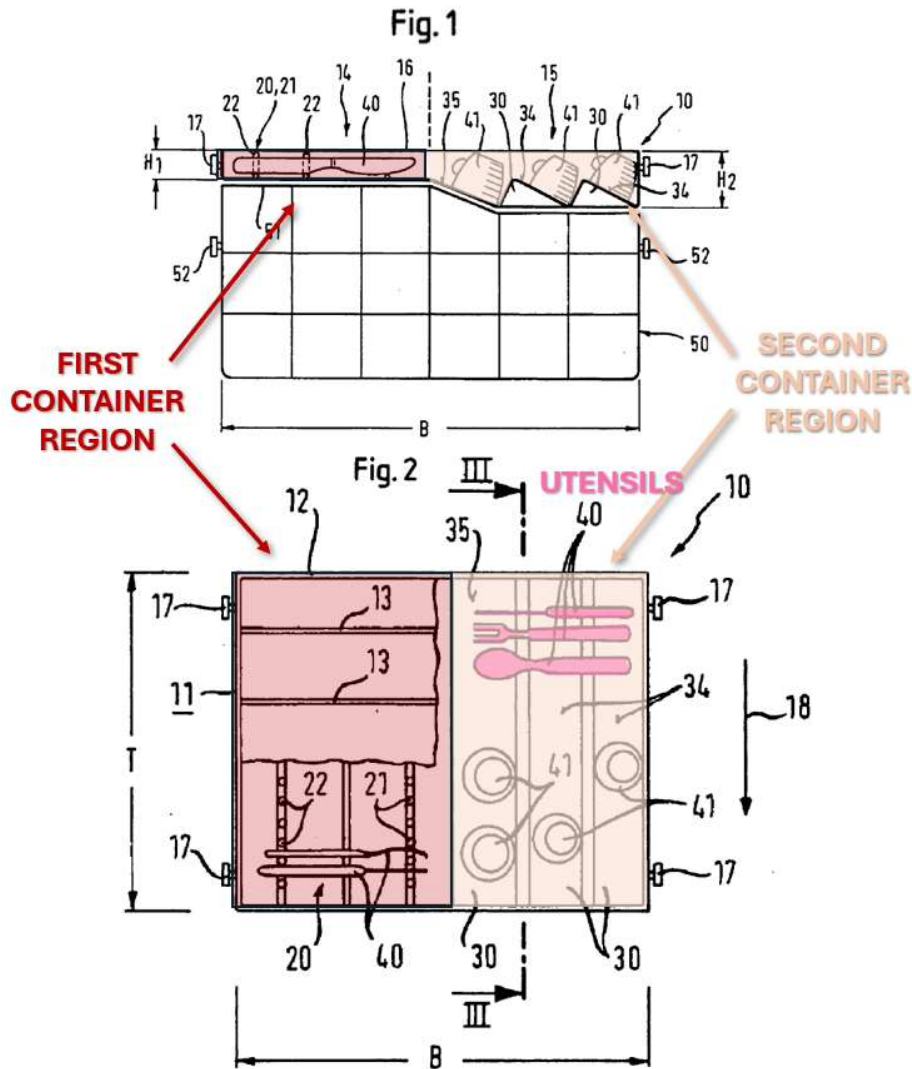


3. **Dependent Claim 16:** The automatic dishwasher of claim 15, wherein the second portion supports a plurality of spaced pins defining spaced slots for supporting one or more utensils.

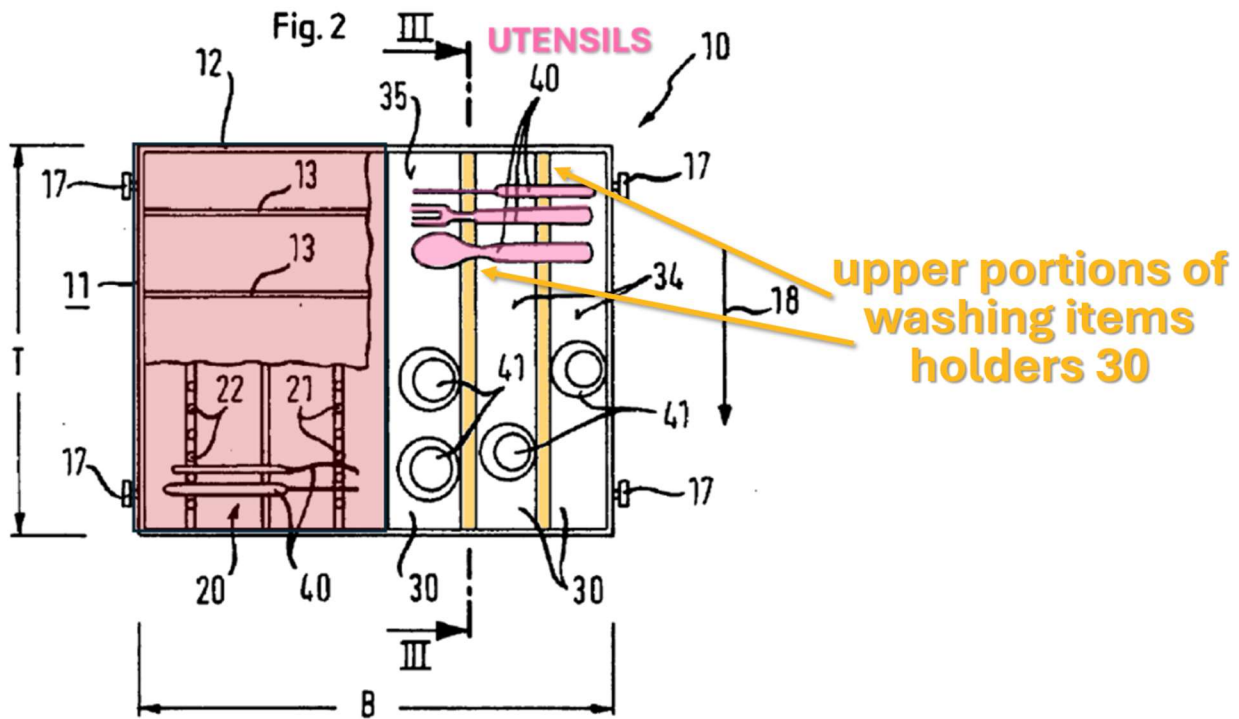
140. Mailander teaches claim 16.

141. Mailander teaches that the versatility of its disclosed dish rack may be increased by configuring “second container region 15” to accommodate pieces of “cutlery 40” in addition to cups. Ex-1006 ¶ 31; *see also id.* ¶ 12 (“Whilst the first container region is classically designed for the ordered receiving of pieces of cutlery, [the] design of the second container region enables both **pieces of cutlery** and other

pieces of crockery to be placed in it.”). This is illustrated in Figure 2, annotated below:

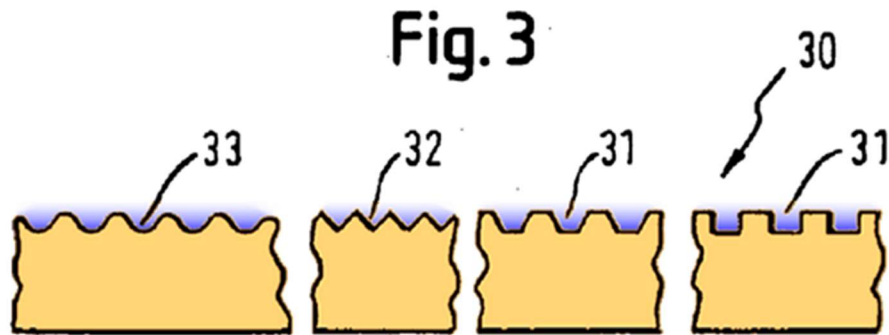


142. In particular, Mailander explains that the “upper sections” of “washing items holders” 30 (illustrated in orange, below) may be used to support utensils within second container region 15:

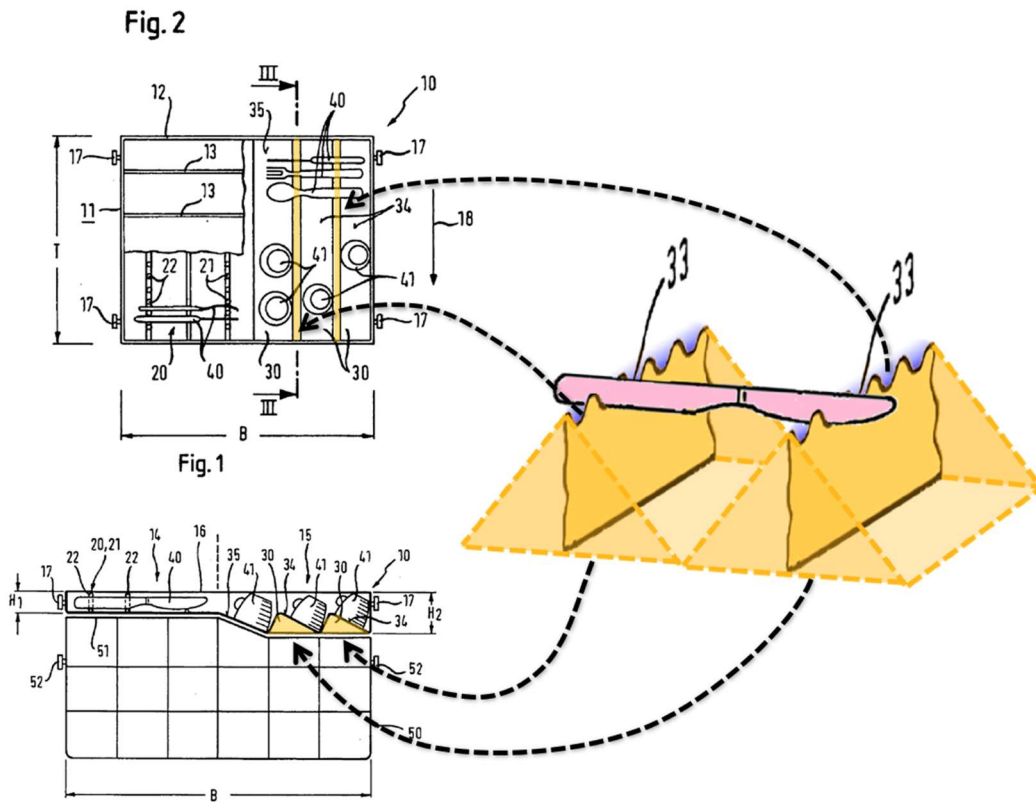


143. Specifically, Mailander explains that cutlery may be placed perpendicularly to the longitudinal extension of the contact surfaces provided by washing items holders 30, such that it is supported by the upper portions of washing items holders 30. Ex-1006 ¶ 15. To this end, Mailander teaches “profiling the upper sections of the washing items holders,” to create “cutlery supports and cutlery holders” to “allow sorted receiving of the pieces of cutlery.” *Id.* As Mailander explains, “recesses” of any suitable shape may be formed in the upper sections of washing items holder 30, into which cutlery may be mounted, “perpendicularly to support surfaces 34, 35 of washing items holder 30.” *Id.* ¶ 33. As shown below in

Figure 3, these recesses 33 may be formed from “trapezium, zigzag, wave or rectangle” shapes. *Id.*



144. Mailander’s recessed upper portions of washing items supports 30, for accommodating utensils, are depicted below, illustrating a knife positioned within one of the utensil holders created by imparting a wave profile to the upper portions of adjacent washing items supports (orange):



145. Because Mailander's recessed portions are formed by profiling the upper portion of washing items support 30—corresponding to the point at which inclined support surface 34 meets the opposing inclined surface of the support—a POSITA would understand that the recessed portions are formed within, and thereby supported by inclined support surface 34 (as well as the opposing inclined surface). Thus, Mailander's cutlery holders are supported by each inclined support surface 34, including the rightmost inclined support surface 34 of Figure 1 (claimed “second portion”). *Id.*

146. A POSITA also would have viewed Mailander's cutlery holders as corresponding to "plurality of spaced pins defining spaced slots for supporting one or more utensils," because they include multiple recessed portions, each bordered by elevated or surrounding portions. These recessed portions serve as slots for receiving and retaining utensils, while the surrounding portions function as projections or barriers that separate adjacent utensils and hold them securely in place. Indeed, Mailander's pins and slots are of the same form as those described in the '681 Patent. In particular, the '681 Patent explains that "the second side wall 122 can further include a second set of utensil holders illustrated as a pin 130 ... *formed as a triangular projection* extending from a surface while the seat 131 can be formed as a curved projection of the second side wall 122." Ex-1001, 7:19–29.

C. Ground 3: Claim 19 is obvious over Carr in view of Ochoa

- 1. A POSITA would have been motivated to combine the teachings of Carr and Ochoa, and would have had a reasonable expectation of success.**

147. A POSITA would have been motivated to combine the teachings of Carr and Ochoa, and would have had a reasonable expectation of success in doing so because each relates to a dishwasher with a spray system. Ex-1005 ¶ 37; Ex-1011, Title, Abstract, 1:26–29.

148. Carr teaches that "as is known in the art, the dishwasher appliance 100 includes a tub, a pump and filter assembly, a heating element, one or more wash

arms, and a drain hose.” Ex-1005 ¶ 37. Carr’s incorporation by reference of Hiedel for detailed description of its dishwasher’s structure and operation (*id.*) further teaches “spray facility 23, 24 comprises an upper rotatable spray arm 23 and a lower rotatable spray arm 24. However fixed spray elements and/or other movable spray facilities could alternatively or additionally also be provided.” Ex-1009, 7:62–67. A POSITA would have understood Carr’s teachings to thus include a sprayer to spray liquid under Carr’s rack (including the second and third portions) because the spray facility can include one or more movable spray facilities, recognizing that Carr leaves the implementation details up to a POSITA. Indeed, it would have been well-known to a POSITA that a variety of different sprayer systems are available for use with a dishwasher rack, with the precise configuration and location of such spray facilities amounting to a matter of routine design choice. *See* Section VII.B.5 *supra*.

149. Ochoa is a reference that a POSITA would have consulted to teach the implementation details of one or more sprayers. Ochoa teaches that its upper rack 12 includes a “water spraying system ... that is mounted on the underside of the rack .” Ex-1011, 3:15–19. Ochoa teaches a spray system that includes “a plurality of water spray outlets 44 are provided along the length of spray tube 32 and preferably the water spray outlets 44 are also circumferentially offset along the length of the spray tube 32.” Ex-1011, 3:63–68. Ochoa further teaches a second sprayer: its “spray

spinners,” which are mounted below each dish rack. *Id.* As shown in Figure 11 below, Ochoa teaches that water spray outlets 44 are sprayers at each end of the dish rack and spinner 72 includes “somewhat conventional design having a plurality of spray outlets 76 directed upwardly and downwardly to spray the contents of the upper and lower racks.” Ex-1011, 5:8–20; *see also id.*, Abstract.

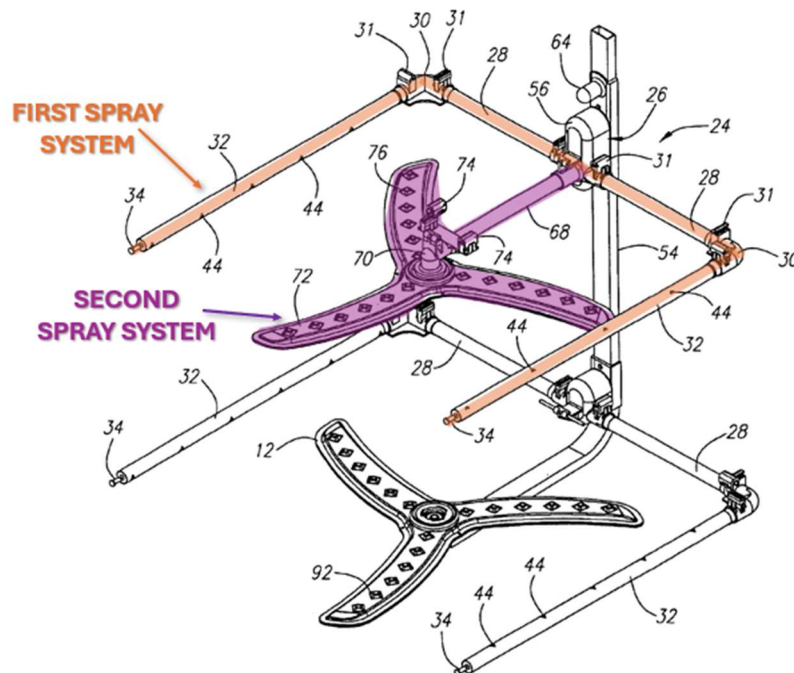
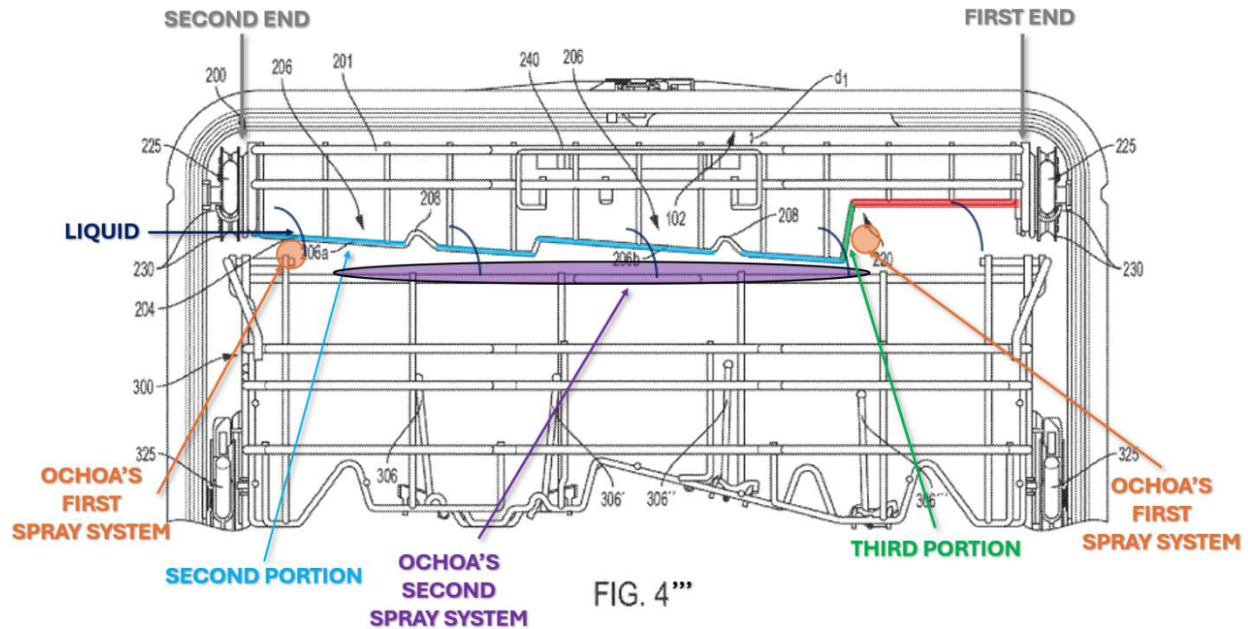


FIG. 11

150. A POSITA would have been motivated to implement Carr’s one *or more* spray systems under its rack (including second and third portions) as two sprayers, as taught by Ochoa, in order to ensure that “lateral sides and corners of a modern premiere dishwasher of increased width ... receive the same amount of water spray from the spinners as the center portion.” Ex-1011, 1:26–29. Specifically,

Carr already teaches using one *or more* spray systems and Ochoa provides the explicit teachings of at least two spray systems and associated benefits.

151. A POSITA would have had a reasonable expectation of success in combining the teachings of Carr and Ochoa. Indeed, as shown below in Modified Figure 4''' below, a POSITA would have been motivated to implement Ochoa's first spray system (Ochoa's spray outlets 44, orange) under Carr's angled portion(s) 206 (blue) and third portion (green), and Ochoa's second spray system (spinner sprayer in the middle of the dishrack, purple) between Carr's angled portion(s) 206 and the portion of the rack connecting those angled portions to notched portion 220 (red) for spraying liquid at angled portion(s) 206 (blue) and connecting portion (green) to ensure that all of the areas within the dish rack receive liquid. In particular, a POSITA would have been motivated to implement one of Ochoa's spray outlets 44 underneath the third portion (green) of Carr's rack, to help ensure that liquid is delivered to notch section 220, without obstructing the region below notch section 220, which Carr teaches is provided to accommodate the stems of wine glasses. Ex-1005 ¶ 26.



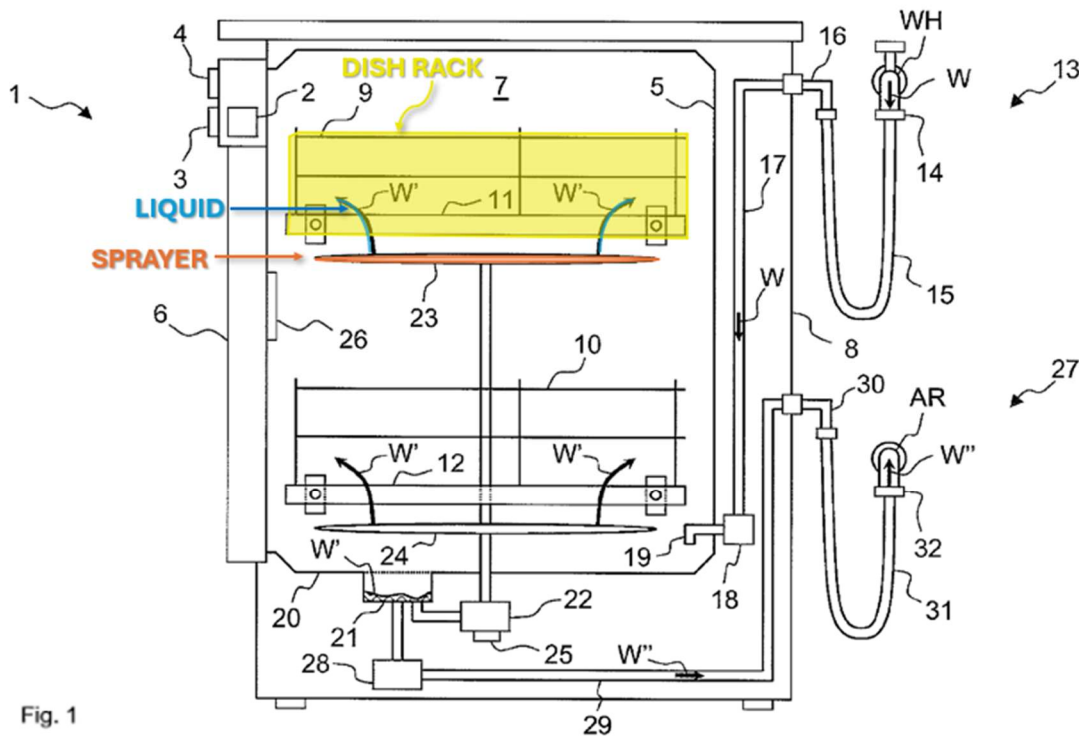
152. Moreover, the references describe a dishwasher spray system to ensure efficient cleaning of the washware. Ex-1005 ¶ 37; Ex-1006, Cl. 22; Ex-1010, Title, Abstract, 1:26–29. A POSITA would thus have understood that these references disclose interrelated teachings based on well-understood technologies that would have been amenable to various well-understood and predictable combinations.

2. Dependent Claim 19

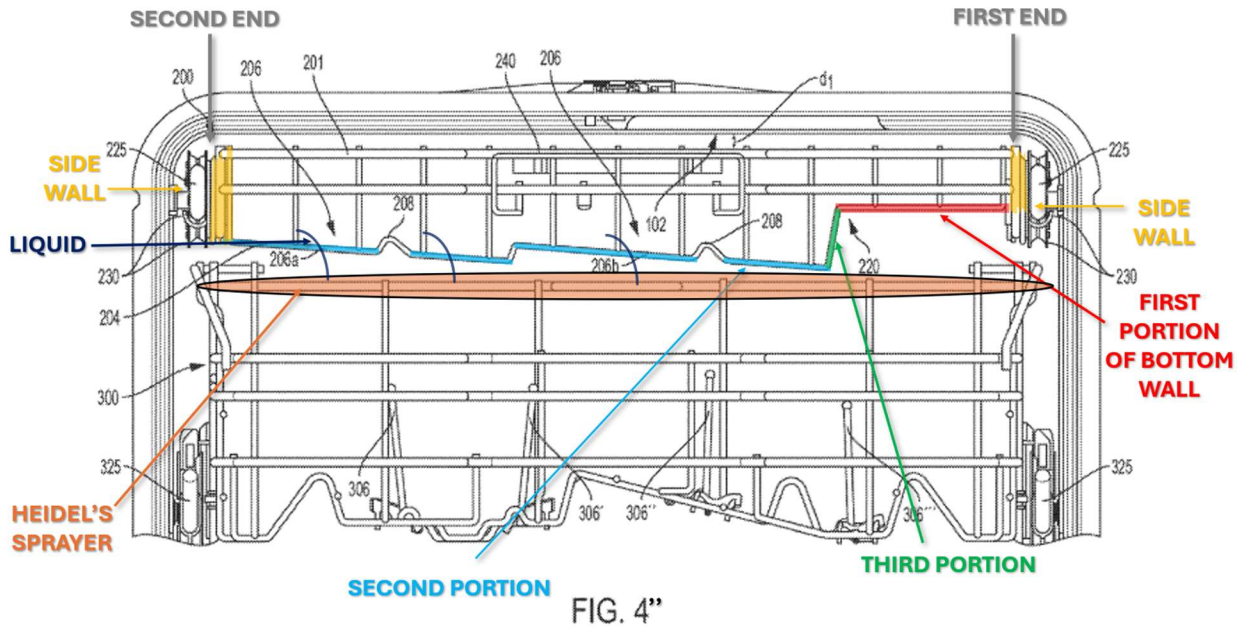
- a. **Claim 19: The automatic dishwasher of claim 15, further comprising a first sprayer positioned beneath the third portion for spraying liquid at the third portion and a second sprayer positioned between the second portion and the third portion for spraying liquid at the second portion and the third portion.**

153. Carr in view of Ochoa (“Carr-Ochoa”) teaches Claim 19.

154. Carr-Ochoa teaches a sprayer positioned between the second portion and the third portion for spraying liquid at the second portion and the third portion. Carr teaches that “as is known in the art, the dishwasher appliance 100 includes a tub, a pump and filter assembly, a heating element, ***one or more wash arms***, and a drain hose.” Ex-1005 ¶ 37. As described above, Carr incorporates by reference U.S. Patent No. 9,445,703 to Heidel et al. for a detailed description of its dishwasher’s structure and operation. *Id.* As shown in Figure 1 below, Heidel teaches a “spray facility 23, 24, which allows washing water W’ to be applied to the items to be washed.” Ex-1009, 7:59–62. Washing water refers to “washing liqu[id] or washing fluid.” *Id.*, 2:35–36. Heidel teaches that the “spray facility 23, 24 comprises an upper rotatable spray arm 23 and a lower rotatable spray arm 24. However fixed spray elements and/or other movable spray facilities could alternatively or additionally also be provided.” *Id.*, 7:62–67.



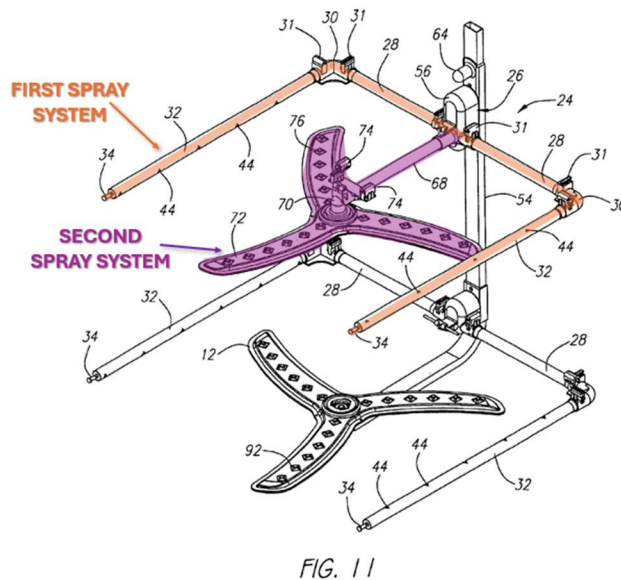
155. A POSITA would have understood that Carr, via its incorporation of Heidel, teaches a sprayer positioned between the second portion and the third portion for spraying liquid at the second portion and the third portion because the spray facility comprises an “upper rotatable spray arm” that sprays washing liquid upwards from under the dish rack. For example, Carr’s “one or more wash arms” would include a sprayer positioned between the second portion and the third portion of the bottom wall by using Heidel’s spray facility 23 (orange) to spray washing liquid (dark blue) broadly to the items positioned on the rack, as shown below in modified Figure 4’’ below.



156. Carr-Ochoa also teaches another sprayer positioned under the third portion for spraying liquid at the third portion. In addition to Heidel's spray facility 23, Heidel teaches that "fixed spray elements and/or *other movable spray facilities could alternatively or additionally* also be provided." Ex-1009, 7:62–67. A POSITA would have understood Carr's teachings to thus include another sprayer to spray liquid under the third portion because the spray facility can include one or more movable spray facilities.

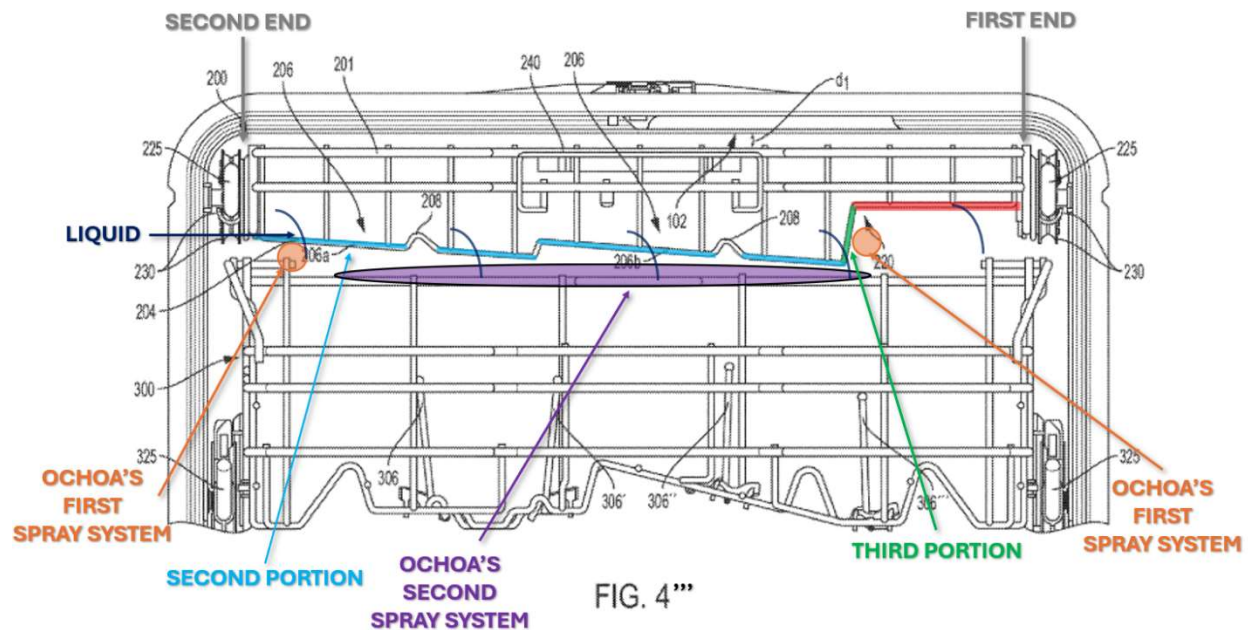
157. For example, as taught by Ochoa, the spray facility can include multiple conduits to spray washing liquid. Ochoa teaches a spray system that includes "a plurality of water spray outlets 44 are provided along the length of spray tube 32 and preferably the water spray outlets 44 are also circumferentially offset along the

length of the spray tube 32.” Ex-1011, 3:63–68. Ochoa further teaches a sprayer in its “spray spinners,” which are mounted below each dish rack. *Id.* As shown in Figure 11 below, Ochoa teaches that water spray outlets 44 are sprayers at each end of the dish rack (orange) and spinner 72 includes “somewhat conventional design having a plurality of spray outlets 76 directed upwardly and downwardly to spray the contents of the upper and lower racks.” Ex-1011, 5:8–20; *see also id.*, Abstract.



158. In the Carr-Ochoa combination (as shown in Modified Figure 4’’’), Ochoa’s spinner spray system (purple) includes spray outlets between Carr’s second and third portions (blue and green) because it is a spinner spray arm that includes a plurality of spray outlets in the middle of the rack. In the Carr-Ochoa combination, a POSITA would have positioned Ochoa’s spray tube 32 (orange) under Carr’s third portion (green), to enable it to deliver washing liquid to notch portion 220 of the

rack, without obstructing the region directly underneath notch section 220, which Carr teaches is provided to accommodate the stems of wine glasses. Ex-1005 ¶ 26. A POSITA would have been motivated to implement two sprayers, as taught by Ochoa, as Carr's one or more spray systems for the reasons described in the previous section.



D. Ground 4: Claim 19 is obvious over Mailander in view of Ochoa

- 1. A POSITA would have been motivated to combine Mailander's and Ochoa's teachings and would have had a reasonable expectation of success.**

159. A POSITA would have been motivated to combine the teachings of Mailander and Ochoa, and would have had a reasonable expectation of success in doing so because each relates to a dishwasher with a spray system. Ex-1006, Cl. 22; Ex-1011, Title, Abstract, 1:26–29.

160. Mailander teaches a dishwasher that includes “at least one spraying device.” Ex-1006, Cl. 22. However, Mailander leaves the well-known implementation details of such one or more spraying devices up to a POSITA.

161. Ochoa is a reference that a POSITA would have consulted to teach the implementation details of one or more sprayers. As explained for Ground 3, above, Ochoa teaches that its upper rack 12 includes a “water spraying system ... that is mounted on the underside of the rack.” Ex-1011, 3:15–19. Ochoa teaches a spray system that includes “a plurality of water spray outlets 44 are provided along the length of spray tube 32 and preferably the water spray outlets 44 are also circumferentially offset along the length of the spray tube 32.” Ex-1011, 3:63–68. Ochoa further teaches another sprayer: its “spray spinners,” which are mounted below each dish rack. *Id.* As shown in Figure 11 below, Ochoa teaches that water spray outlets 44 are sprayers at each end of the dish rack and spinner 72 includes “somewhat conventional design having a plurality of spray outlets 76 directed upwardly and downwardly to spray the contents of the upper and lower racks.” Ex-1011, 5:8–20; *see also id.*, Abstract.

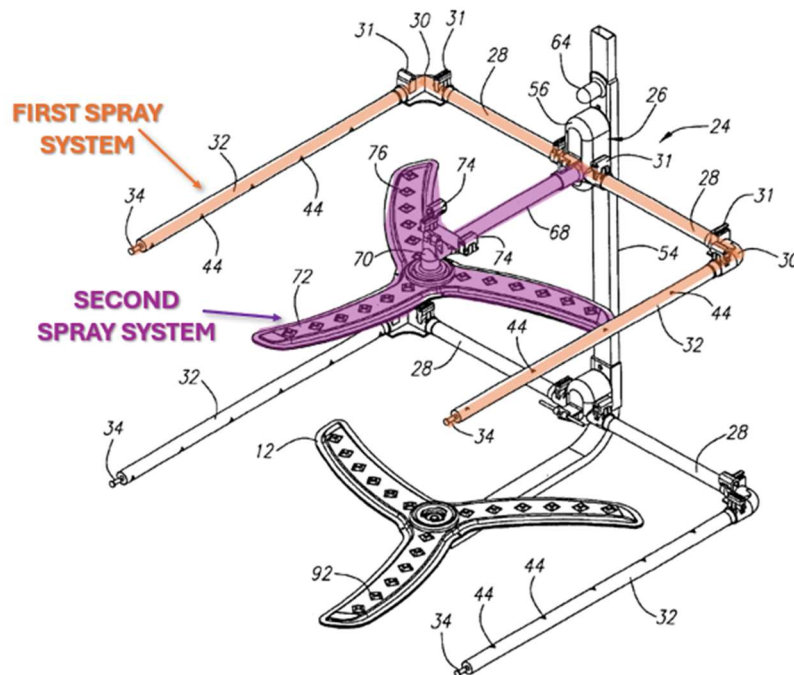
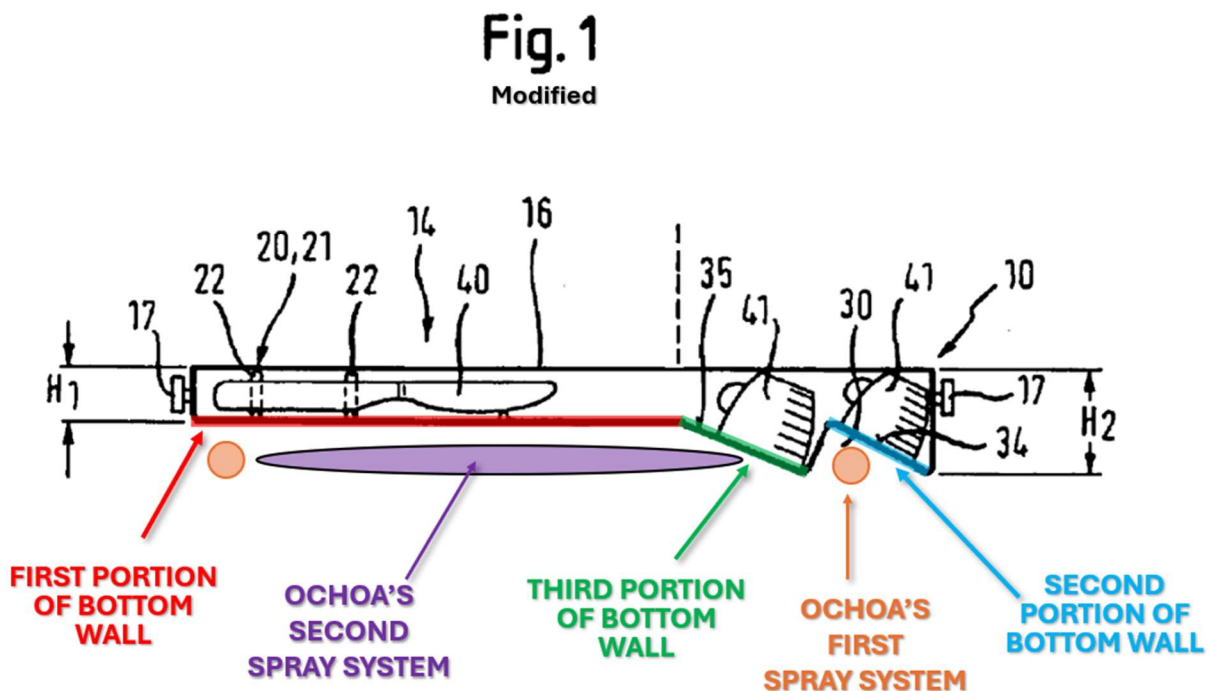


FIG. 11

162. A POSITA would have been motivated to implement Mailander's *at least one* spraying device under its washing items support 10, as taught by Ochoa. Specifically, Mailander already teaches using one or more spraying devices and Ochoa provides the explicit teachings of at least two spray systems and associated benefits.

163. A POSITA would have had a reasonable expectation of success in combining the teachings of Mailander and Ochoa. Mailander teaches that the disclosed washing items support 10 may include one or more washing items holders 30. *See* Ex-1006 ¶ 11 (“The washing items support according to the invention for a dishwasher comprises ... a second container region for washing items, e.g. cups,

small bowls, shallow glasses or pieces of cutlery, with ***at least one*** washing items holder.”). In embodiments in which Mailander’s washing items support 10 includes a single washing items holder 30, a POSITA would have been motivated to implement Ochoa’s second spray system (spinner sprayer in the middle of the dishrack, purple) under Mailander’s first portion (red) and third portion (green), and Ochoa’s first spray system (water spray outlets 44 along the lateral sides of the dishwasher, orange) between Mailander’s second portion (blue) and third portion (green), to ensure that spraying liquid is delivered to all of the areas within the dish rack, as illustrated in the modified version of Figure 1, below.



In particular, a POSITA would have recognized that positioning Ochoa's second spray system (orange) between Mailander's second portion (blue) and third portion (green) would help to ensure that spraying liquid is delivered to the interior of cups positioned on support surface 34, while positioning Ochoa's second spray system (purple) underneath Mailander's third portion (green) would help to ensure that spraying liquid is delivered to the interiors of cups positioned on transition region 35 (claimed "third portion"). A POSITA also would have recognized that Ochoa's spray systems could easily be fastened to the "course [sic] mesh" of Mailander's rack. Ex-1006 ¶¶ 20, 27.

2. Dependent Claim 19

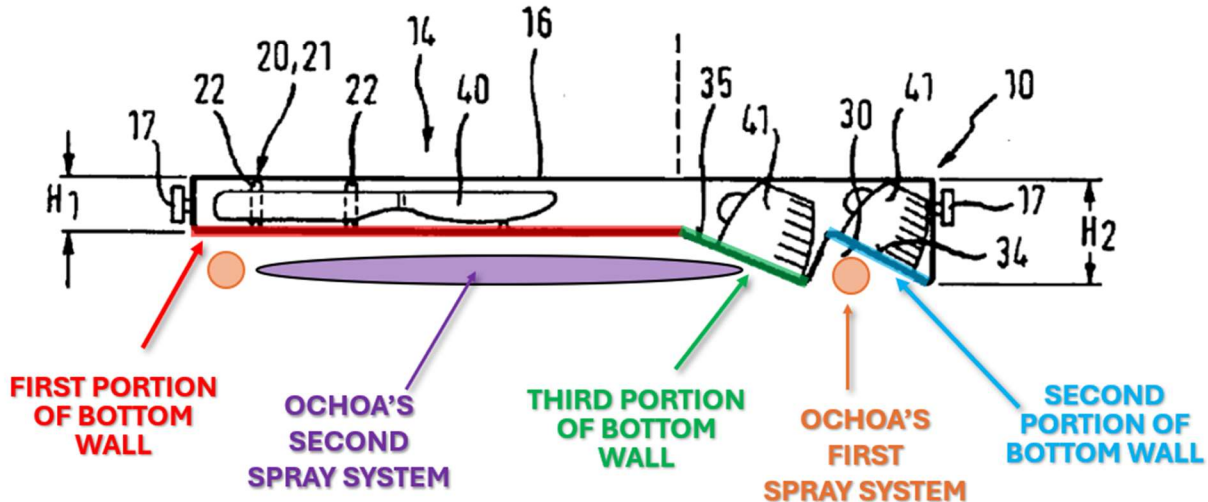
- a. **Claim 19: The automatic dishwasher of claim 15, further comprising a first sprayer positioned beneath the third portion for spraying liquid at the third portion and a second sprayer positioned between the second portion and the third portion for spraying liquid at the second portion and the third portion.**

164. Mailander in view of Ochoa ("Mailander-Ochoa") teaches Claim 19.

165. Mailander teaches a dishwasher that includes "at least one spraying device." Ex-1006, Cl. 22. As explained in Section XIII.D.1 (motivation to combine Mailander and Ochoa), a POSITA would have turned to a reference such as Ochoa for implementation details for Mailander's one or more spraying devices. And, in embodiments in which Mailander's washing items support 10 includes a single

washing items holder 30, a POSITA would have recognized that positioning Ochoa's second spray system (orange) between Mailander's second portion (blue) and third portion (green) would help to ensure that spraying liquid is delivered to the interior of cups positioned on support surface 34, while positioning Ochoa's second spray system (purple) underneath Mailander's third portion (green) would help to ensure that spraying liquid is delivered to the interiors of cups positioned on transition region 35 (claimed "third portion").

Fig. 1
Modified



XIV. CONCLUSION

166. For the reasons above, it is my opinion that Claims 14–16, and 19 of the '681 Patent are obvious based on each of the grounds specified in this Declaration.

167. I declare that all statements made in this Declaration of my knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: April 13, 2026



Dr. Kimberly K. Cameron