

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THE HEIL CO.,
Petitioner,

v.

ADVANCED CUSTOM ENGINEERED
SYSTEMS & EQUIPMENT CO.,
Patent Owner.

Case IPR2018-00139
Patent 8,146,798 B2

Before CHRISTOPHER L. CRUMBLEY, JO-ANNE M. KOKOSKI, and
JEFFREY W. ABRAHAM, *Administrative Patent Judges*.

KOKOSKI, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a)

I. INTRODUCTION

We have jurisdiction to conduct this *inter partes* review under 35 U.S.C. § 6, and this Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that The Heil Co. (“Petitioner”) has shown by a preponderance of the evidence that claims 1–8 of U.S. Patent No. 8,146,798 B2 (“the ’798 patent,” Ex. 1001) are unpatentable.

A. *Procedural History*

Petitioner filed a Petition (“Pet.”) to institute an *inter partes* review of claims 1–8 of the ’798 patent. Paper 2. Advanced Custom Engineered Systems & Equipment Co. (“Patent Owner”) filed an election to waive its Preliminary Response. Paper 6. Pursuant to 35 U.S.C. § 314(a), we instituted an *inter partes* review of claims 1–8 based on the following grounds: (1) whether claims 1–3 and 8 are unpatentable under 35 U.S.C. § 103¹ as obvious over the combined teachings of Scherer,² McAdams,³ and McAllister;⁴ (2) whether claims 4–7 are unpatentable under 35 U.S.C. § 103 as being obvious over the combined teachings of Scherer, McAdams,

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended several provisions of 35 U.S.C., including § 103. Because the ’798 patent has an effective filing date prior to the effective date of the applicable AIA amendments, we refer herein to the pre-AIA version of § 103.

² U.S. Patent App. Pub. No. 2008/0077541 A1, published March 27, 2008 (Ex. 1005).

³ *Cart Industry Changes and Expands*, Waste Age, 97–98 (Nov. 1993) (Ex. 1006).

⁴ U.S. Patent App. Pub. No. 2006/0080819 A1, published April 20, 2006 (Ex. 1007).

McAllister, and Mitschele;⁵ (3) whether claims 1–3 and 8 are unpatentable under 35 U.S.C. § 103 as being obvious over the combined teachings of Scherer, McAdams, McAllister, and Casella;⁶ and (4) whether claims 4–7 are unpatentable under 35 U.S.C. § 103 as being obvious over the combined teachings of Scherer, McAdams, McAllister, Casella, and Mitschele.

Paper 7 (“Dec. on Inst.” or “Institution Decision”), 6, 20.

After institution of trial, Patent Owner filed a Patent Owner Response (“PO Resp.,” Paper 21), Petitioner filed a Reply (“Pet. Reply,” Paper 27), and Patent Owner filed a Sur-Reply (“PO Sur-Reply,” Paper 31). Petitioner relies on the Declaration of Wayne DeFeo (“DeFeo Declaration,” Ex. 1003) in support of its contentions.

An oral hearing was held on February 21, 2019, and a transcript is included in the record. Paper 34 (“Tr.”).

B. Real Parties in Interest

Petitioner identifies the real parties in interest (“RPI”) as “The Heil Co., The Curotto-Can, LLC, a single member company whose single member is The Heil Co., and Dover Corporation.” Pet. 1. Patent Owner’s Response includes a section entitled “There is a missing Real Party-in-Interest,” but neither sets forth any substantive arguments in that regard nor provides the factual and legal basis for that belief. PO Resp. 2–4. Instead, Patent Owner argues that it requested authorization from the Board “to submit a motion providing the available evidence and requesting discovery,” which misstates the nature of Patent Owner’s request. *Id.* at 3–4. As set

⁵ U.S. Patent App. Pub. No. 2008-0308631 A1, published Dec. 18, 2008 (Ex. 1008).

⁶ U.S. Patent App. Pub. No. 2007/0260466 A1, published Nov. 8, 2007 (Ex. 1009).

forth in our October 9, 2018 Conduct of the Proceeding Order, Patent Owner made an untimely request for additional discovery relating to Petitioner's identification of the RPI, which we denied. Paper 17, 6–7 (explaining that Petitioner “waited until two weeks before the already-extended due date of its Response to seek authorization for discovery,” and did “not offer any good cause for its delay” or “provide a reason why permitting it to seek this discovery now is in the interests of justice”). Patent Owner did not explain, and we did not rule on the merits of Patent Owner's argument regarding Petitioner's identification of the RPI. *See id.* Because Patent Owner has again failed to present an argument that explains the basis of its position, we are not persuaded that Petitioner failed to name any RPI.

C. Related Proceedings

The parties identify *Sonrai Systems, LLC v. AMCS Group*, 1:16-cv-09404 (N.D. Ill.) as a related proceeding. Pet. 1; Paper 5, 2.

D. The '798 Patent

The '798 patent, titled “Method and Apparatus for Monitoring Waste Removal and Administration,” is directed to a method for controlling, tracking, and monitoring the movement of waste receptacles. Ex. 1001, 1:23–24. The '798 patent states that “there is on-going and growing concern in major municipalities with controlling several aspects [of] refuse collection,” because, for example, “citizens or users will often engage in activity with respect to refuse receptacles that violates municipal codes.” *Id.* at 2:45–49. Due to the difficulty in determining which receptacles belong to which addresses, the '798 patent states that “city officials need a method that will facilitate receptacle identification while at the same time providing a

simplified method of issuing citations to the proper entity responsible for the code violation.” *Id.* at 2:56–67.

To address these issues, the ’798 patent describes a method of monitoring waste receptacles that requires a permit for use thereof. *Id.* at 3:54–57. The permit is associated with a discrete receptacle identifier. *Id.* at 3:57–58. A transmitter provided to the permittee is attached to the receptacle, which transmits a signal carrying the data associated with the discrete receptacle identifier to a handheld receiver. *Id.* at 3:59–64. If a municipal code violation associated with the use of the receptacle is identified from the data, the handheld receiver generates a citation based on the violation. *Id.* at 3:64–67.

In particular, the ’798 patent teaches that each receptacle “is outfitted with a means of communicating or transmitting a signal carrying” the discrete receptacle identifier, such as a radio frequency identification (“RFID”) tag. *Id.* at 5:12–15. The RFID tag “includes all the information necessary for a government or independent inspector to make a determination in the field at a remote location as to whether a violation is present and has occurred relating to the item being inspected.” *Id.* at 12:25–29. The RFID tag “has an adhesive thereon or is placed into a protective pouch (having a transparent cover, with an adhesive on an outwardly facing surface)” so that the RFID tag can be “adhered to the outer container wall in a designated location.” *Id.* at 16:31–35.

The receptacle identifier information is stored on a database typically located at an external site, and is electronically joined with the account to which the receptacle belongs. *Id.* at 5:62–66. “Each account has one or more receptacle identifiers associated with it, and the database carries with it

information typical to the management of any business account. . . .” *Id.* at 6:1–4. In one embodiment, a handheld device capable of reading RFID tags is used to collect information in the field, and includes a communications module to communicate with a central station that houses a central database. *Id.* at 15:12–25, 17:28–31. In that instance, the RFID tag “merely includes identifying information encoded therein,” and the registration information is stored in the central database. *Id.* at 17:35–36, 17:41–43. The central station then uses the information received from the handheld device “to make a determination of whether there is a violation and a citation should be issued.” *Id.* at 17:32–34.

Claim 1 is the only independent claim, and is reproduced below.

1. A method for a municipality to track the condition, pick-up, and general use of a large number of refuse containers among its citizens and businesses, the method comprising the steps of:

requiring a permit for use of a multi-use waste receptacle wherein the multi-use waste receptacle is of a type filled and emptied on multiple occasions;

issuing the permit in the form of a passive radio frequency identification tag having a unique identifier associated therewith to a permit applicant wherein the passive radio frequency identification tag includes means for attachment to the multi-use waste receptacle;

associating the unique identifier with biographical information associated with the permit applicant;

establishing a permit type associated with a type of waste to be deposited in the multi-use receptacle;

associating the permit type with the permit;

establishing an electronically accessible database external to the passive radio frequency identification tag comprising an association of

a plurality of unique identifiers with biographical information associated with a corresponding plurality of permit applicants;

requiring attachment of the passive radio frequency identification tag to a receptacle of the permit applicant wherein the passive radio frequency identification tag remains attached to the receptacle subsequent to several loadings and empties of refuse within the receptacle;

making a determination whether use of a multi-use receptacle is in compliance or non-compliance based on the permit type associated with the permit attached thereto; and

providing a handheld device for communicating information regarding the determination, the handheld device comprising a reader for reading the unique identifier from the passive radio frequency identification tag, a means for wireless communication with the database wherein the handheld device receives information from and transmits information to the electronically accessible database, and a display for displaying information to a user.

Id. at 18:46–19:18.

II. ANALYSIS

A. *Level of Ordinary Skill in the Art*

Petitioner contends that a person having ordinary skill in the art (“POSITA”) at the time of the ’798 patent “would have had at least a Bachelor’s Degree in an academic area emphasizing environmental science or business and at least five years of experience in the field of solid waste and/or recycling management.” Pet. 8 (citing Ex. 1003 ¶¶ 11–12). Patent Owner does not dispute Petitioner’s contention in its Response.

Accordingly, we adopt Petitioner’s assessment of the level of ordinary skill in the art, which is consistent with the level of ordinary skill in the art at the time of the invention as reflected in the prior art in this proceeding. See *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2011).

B. Claim Interpretation

We interpret claims of an unexpired patent using the “broadest reasonable construction in light of the specification of the patent in which [the claims] appear[.]” 37 C.F.R. § 42.100(b) (2017).⁷ Consistent with the broadest reasonable construction, claim terms are presumed to have their ordinary and customary meaning as understood by a person of ordinary skill in the art in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

For the purposes of the Institution Decision, we determined that “means for attachment to the multi-use receptacle” as set forth in independent claim 1 has the function of “attaching the passive RFID tag to the multi-use waste receptacle,” and that the structures corresponding to that function “are a protective pocket or pouch with adhesive on one side, and adhesive placed directly on the RFID tag.” Dec. on Inst. 8. We also

⁷ The Office recently changed the claim construction standard applicable to an *inter partes* review. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018). The rule changing the claim construction standard, however, does not apply to this proceeding because Petitioner filed its Petition before the effective date of the final rule, i.e., November 13, 2018. *Id.* at 51,340 (rule effective date and applicability date), 51,344 (explaining how the Office will implement the rule).

determined that the function of the claimed “means for wireless communication” is “facilitating wireless communication with the database,” and that the corresponding structure is “a communications module.” *Id.* at 9. The parties do not contest our constructions of these terms, and we see no reason to modify the constructions in light of the record developed at trial.

C. Principles of Law

To prevail on its challenges to the patentability of the claims, a petitioner must establish facts supporting its challenge by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378–79 (Fed. Cir. 2015) (discussing the burdens of persuasion and production in *inter partes* review).

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which the subject matter pertains. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary

skill in the art; and (4) objective evidence of nonobviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

D. Overview of the Prior Art

1. Scherer

Scherer is directed to “systems and methods that utilize customer billing and/or account status information to dynamically route vehicles.” Ex. 1005 ¶ 3. Scherer explains that “there exists a need to assess the status of customer accounts payable information in, for example, a waste collection environment, and utilize such information to dynamically modify collection vehicle routes to provide or eliminate customer service.” *Id.* ¶ 9. Scherer Figure 1 is reproduced below.

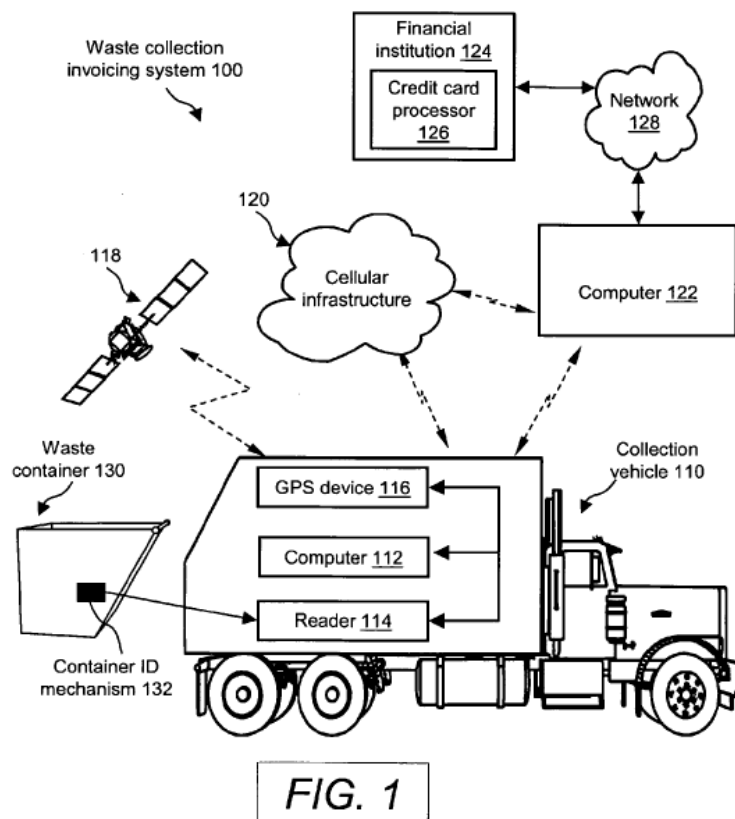


Figure 1 is a block diagram of a waste collection invoicing and account system in accordance with an embodiment described in Scherer. *Id.* ¶ 10.

System 100 includes collection vehicle 110 with computer 112, reader 114, and global positioning system (GPS) device 116, GPS satellites 118, cellular infrastructure 120, computer 122, and waste container 130 with attached container identification (ID) mechanism 132. *Id.* ¶¶ 14–15. Computer 112 communicates with computer 122 via a wireless communication link. *Id.* ¶ 17. Container ID mechanism 132 can be an RFID tag, a bar code, or other identifier that uniquely identifies waste container 130. *Id.* ¶ 20.

Scherer teaches that when the system is in operation, one or more collection vehicles 110 are deployed along routes generated by routing software and, at each collection location, reader 114 scans container ID mechanism 132 in order to extract the identification number thereon. *Id.* ¶ 27. Reader 114 transmits the extracted ID data to computer 112, which transmits the data to computer 122 via cellular infrastructure 120. *Id.* Computer 122 contains databases such as a customer database and an ID database. *Id.* ¶ 21. The customer database, for example, “contains data pertaining to customer accounts such as account payment status, amount due, and address.” *Id.* ¶ 25, Table 1.

The ID data of each waste container 130 is associated with a particular customer and, by reading the data on container ID mechanism 132, the routing software can associate the ID data with a customer address to determine the location of collection vehicle 110. *Id.* ¶ 27. Billing software processes the data stored in the customer database and communicates changes to the routing software “so that route modifications can be generated based on accounts that are suspended or restored to good standing while collection vehicle 110 is en route.” *Id.* ¶ 29.

2. *McAdams*

McAdams, an article entitled “Cart Industry Changes and Expands” that was published in *Waste Age* (an industry magazine), reports on Rubbermaid, Inc.’s acquisition of a company called Toter, Inc. Ex. 1006, 97. McAdams explains that Toter, Inc. “recently disclosed information on a radio frequency identification (RFID) program it is implementing in Edmund, Okla.” *Id.* As part of that program, waste receptacles with RFID tags were distributed to citizens of Edmund, and the city tracked the location of each cart through the use of handheld computers that could scan the tags and record their serial numbers. *Id.* at 97–98. McAdams reports that “[a]t the end of each day, the hand-held computer is uploaded into an IBM-compatible computer providing the city with daily records.” *Id.* at 98.

3. *McAllister*

McAllister is directed to “systems[] and methods for deploying and/or recycling wireless tags, such as RFID tags and wireless sensors, and the containers they may be attached to.” Ex. 1007, (57). McAllister describes “[c]ertain preferred embodiments and implementations,” including an RFID/wireless sensor system “that leaves RFID tags and wireless sensors undamaged and capable of reuse through numerous cycles.” *Id.* ¶ 38. In particular, McAllister describes tagging transportation containers “such as paperboard boxes, corrugated cartons, pharmaceutical bottles, pharmaceutical containers, and conveyable cases” and states that “other containers may be used by these methods.” *Id.* ¶ 39. McAllister teaches that “the tags can easily be removed for subsequent repetitive cycles of cleaning, testing, sorting, interrogation, reconditioning, reprogramming, and reuse.” *Id.*

McAllister describes several methods of attaching RFID tags to containers, including “[h]and attachment of tags, prefabricated packets, pockets, panels, seals, carriers, or pouches that contain or carry transponders or wireless tags.” *Id.* ¶ 51. McAllister further teaches that the tags can be attached “based on selective application of adhesive just prior to the time of” attachment, and, “[i]n some embodiments, the adhesive may be selectively applied around the perimeter of the transponder, tag, or wireless sensor.” *Id.* ¶ 188. Alternatively, adhesive can be applied “anywhere onto a surface of the transponder body that is not adversely affected by the adhesive, its application, or its subsequent removal.” *Id.*

4. *Mitschele*

Mitschele is directed to “handheld computer devices for use in parking meter and parking offence enforcement.” Ex. 1008 ¶ 1. The handheld computer includes a digital processor, keypad, display screen, digital camera, and infrared port. *Id.* ¶ 10. A parking enforcement official uses the handheld computer to enter information regarding the license plate number, location, type of infraction, and other information related to a parking violation, and uses the camera to take digital images of the license plate and the offending action. *Id.* ¶ 14. The violation information and images are stored electronically on the handheld computer, “and such violation data and images can be downloaded to a main computer or transmitted wirelessly to a central computer” using the infrared port. *Id.* ¶ 16.

Mitschele also describes an embodiment where a vehicle is provided with an RFID tag containing information identifying the vehicle, in which case the handheld computer contains “an RFID reader which will scan and

read the identification number from the RFID tag.” *Id.* ¶ 18. Mitschele teaches that “the identification number can be sent to the central computer to be used to retrieve the vehicle license number for use in printing on the ticket or notice, cross-checking the information received otherwise and identifying the vehicle owner for forwarding the infraction notice.” *Id.*

5. *Casella*

Casella is directed to “systems and methods for improving recycling behavior of various entities.” Ex. 1009 ¶ 2. Casella describes “the electronic capture of data relating to individual recycled items, and the electronic association of this data with a user from whom the recyclables are received.” *Id.* ¶ 7. To do this, Casella teaches that “the recyclables container may bear an RFID tag, which can be identified by a reader at the time of pickup.” *Id.* ¶ 10. Casella explains that “the collection and measurement process is carried out by a plurality of collection vehicles and/or trucks” that network with a central computer and a series of material recovery facilities (MRFs). *Id.* ¶ 13. This networking “can provide for optimization of the routes of the vehicles as well as optimization of the MRFs expecting the recyclable materials.” *Id.*

In particular, Casella describes a method that registers “the identity of the recyclables and waste container, which includes the steps of receiving data or indicia from the recyclables and waste containers regarding the associated user.” *Id.* ¶ 55. Each container is “fitted with an RFID tag that emits a signal identifying the container and the user, the signal being readable by an RFID reader coupled to or otherwise associated with a particular collection vehicle.” *Id.* The identity of the user is associated with the containers by “receiving the electronic data from such containers and

matching it with a user identity and user account.” *Id.* Casella teaches that this “data processing and registration may take place within the on-board computer 120 on the collection vehicle, or it may be accomplished on the central computer 112, or both.” *Id.*

E. Claim 1

Petitioner contends that the subject matter of independent claim 1 of the ’798 patent would have been obvious over the combined teachings of Scherer, McAdams, and McAllister, and the combined teachings of Scherer, McAdams, McAllister, and Casella. Pet. 12–53, 64–71; Pet. Reply 2–18. Petitioner relies on the DeFeo Declaration in support of its contentions. *Id.* Patent Owner disagrees with Petitioner’s assertions. PO Resp. 8–31; Sur-Reply 3–15. The parties focus their arguments on two elements in claim 1: (1) “establishing a permit type associated with a type of waste to be deposited in the multi-use receptacle; [and] associating the permit type with the permit;” and (2) “making a determination whether use of a multi-use receptacle is in compliance or non-compliance based on the permit type associated with the permit attached thereto.” As to the other elements of claim 1, we have reviewed the entirety of the evidence and arguments presented in the Petition and find that Petitioner has shown sufficiently that those elements are disclosed by the combined prior art references. Pet. 15–33, 36–39, 43–53, 68, 70–71. We, therefore, adopt Petitioner’s analyses as to those elements, and address the arguments regarding the disputed claim elements in turn.

1. *establishing a permit with a type of waste to be deposited in the multi-use receptacle; [and] associating the permit type with the permit*

Petitioner contends that Scherer meets this element of claim 1 because Scherer's method "expressly or impliedly requires the customer to obtain a permit, and/or it would have been obvious to incorporate such a requirement into Scherer's method." Pet. 33. Petitioner contends that "[t]he particular 'type of waste' addressed by Scherer is 'municipal solid waste (MSW)'—e.g., trash/garbage consisting of items typically disposed of after use such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, etc." *Id.* (citing Ex. 1005 ¶ 5; Ex. 1003 ¶ 61). Petitioner also contends that "Scherer further distinguishes between different types of MSW by tracking the 'type of container' associated with each RFID tag—e.g., a dumpster, a roll-off container, or a residential toter." *Id.* (citing Ex. 1005 ¶¶ 20, 43–44, Fig. 4; Ex. 1003 ¶¶ 62–63). Therefore, according to Petitioner, "the 'permit type' in Scherer's method is associated with a permit specifically for collecting MSW in a certain type of container." *Id.* at 34 (citing Ex. 1003 ¶ 63).

Petitioner additionally contends that Casella also discloses this element of claim 1 because it describes "separate RFID tags for waste (e.g., trash) containers and containers holding recyclables." Pet. 69 (citing Ex. 1009 ¶¶ 38, 54–57; Ex. 1003 ¶ 141). Petitioner contends that "[i]n Casella's method, the RFID tag attached to the container is scanned to distinguish between waste and recyclables containers, which enables separate tracking of these materials and calculation of the user's diversion rate." *Id.* (citing Ex. 1009 ¶¶ 12, 15–17, 38, 54–57).

Patent Owner argues in response that the “multi-use receptacle” of claim 1, “beyond being of the type that is filled and emptied on multiple occasions, is also ‘multi-use,’” meaning that it is “‘usable for multiple types of waste,’ just as many (but not all) cans, toters, dumpsters, compactors, balers, bins, containers, and boxes are so usable.” PO Resp. 11–12. Patent Owner argues, therefore, that “the claims distinguish between—as different—types of waste and types of receptacles—and the receptacles of the claims are ‘multi-use’ as to types of waste.” *Id.* at 19. Patent Owner argues that Petitioner’s contentions regarding “establishing a permit type associated with a type of waste to be deposited in the multi-use receptacle” are deficient because they are based on “the hypothesis that the claim limitation is met by prior art that assertedly has permit type by container type, not waste type,” and, “[i]f the receptacle is usable with many types of waste, as it expressly is in the claims, then it does not, by its receptacle type, distinguish a waste type.” *Id.* at 20. According to Patent Owner,

[w]ith a receptacle of multiple uses in relation to types of waste, establishing a permit type according to the type of receptacle does not allow establishment of the permit type associated with the type of waste. Being multi-use, all of “cans,” etc., hold multiple types of waste, depending on use, and do not dictate type of waste.

Id. at 20–21.

Patent Owner further argues that it is unreasonable to interpret “a claim that has a limitation of establishing a permit type associated with a type of waste as being a claim that has a limitation that establishes a permit type, where the waste could only [be] one type, and therefore the permit could only have one type.” PO Resp. 22. Patent Owner argues that this “hypothetical permit type would always essentially be no type, since the

waste would have no discernible type,” and “there is no sense to establishing a hypothetical permit type in association with a hypothetical type of waste where the waste has one and only one hypothetical type.” *Id.* at 22–23.

Petitioner replies that “the Petition interprets the term ‘multi-use waste receptacle’ to mean exactly what the claim says—a waste receptacle ‘of a type filled and emptied on multiple occasions.’” Pet. Reply 1 (citing Pet. 8, 17–19). Petitioner contends that “the term ‘multi-use receptacle’ is expressly defined by the ‘wherein’ clause that immediately follows it,” and that “[t]o construe the ‘multi-use’ modifier apart from unambiguous definitional claim language does not make the modifier ‘meaningful,’ as [Patent Owner] avers, it improperly imports an extraneous limitation into the claims.” *Id.* at 2–3 (internal citation omitted).

Petitioner also contends that, even if Patent Owner is correct that the recited “multi-use receptacle” requires a receptacle capable of use for multiple types of waste, Scherer and McAdams provide such a receptacle. Pet. Reply 10. In that regard, Petitioner contends that “the receptacles described in the ’798 Patent’s specification are residential toters and commercial dumpsters” that “are the same as the toters and dumpsters disclosed by Scherer and McAdams,” and that “the ’798 Patent itself concedes its toters and dumpsters are ‘standard.’” *Id.* at 5. Petitioner contends, therefore, that “if the ’798 Patent’s receptacles are ‘usable for multiple types of waste,’ as [Patent Owner] contends, then so too are the receptacles of the Scherer-McAdams-McAllister combination.” *Id.* at 6. Petitioner also notes that Patent Owner “concedes that ‘many’ toters and dumpsters are ‘usable for multiple types of waste,’ and makes no attempt to

explain why the Scherer/McAdams toters and dumpster would not be so usable.” *Id.* (internal citation omitted).

Based on our review of the record, we find persuasive Petitioner’s argument that the combined teachings of Scherer, McAdams, and McAllister, and the combined teachings Scherer, McAdams, McAllister, and Casella, disclose “establishing a permit type associated with a type of waste to be deposited in the multi-use receptacle; [and] associating the permit type with the permit.” Pet. 33–36, 64–69; Pet. Reply 1–18; Ex. 1003 ¶¶ 22–27, 48–53, 60–63, 130–142. Scherer describes a method that can “assess the status of customer accounts payable information in, for example, a waste collection environment, and utilize such information to dynamically modify collection vehicle routes to provide or eliminate customer service.”

Ex. 1005 ¶ 9. Scherer teaches attaching a container ID mechanism to a waste container (*id.* ¶ 15), and linking the container ID with a customer database that identifies data pertaining to customer accounts, such as customer name and address, account payment status, and amount due (*id.* ¶¶ 25–26, Table 1). Scherer teaches that the waste container “can be standard, large-volume receptacles, such as a dumpster, a roll-off container, or a 90-gallon toter that is used for residential curbside collection,” and that the container ID mechanism can be an RFID tag (*id.* ¶ 20). Scherer also teaches that the method can be used by waste management companies that contract with municipalities “to handle their municipal solid waste (MSW),” which includes “garbage, refuse, and other discarded materials that result from residential, commercial, industrial, and community activities.” *Id.* ¶ 5.

Additionally, Mr. DeFeo credibly testifies that “[w]hile Scherer does not use the exact term ‘permit,’ Scherer’s pay-for-service (i.e., subscription

service) method of waste collection *does* require a permit for using the waste containers,” “because residential and commercial customers must pay a fee to allow or *permit* them to have the waste deposited in their containers picked up by a collection vehicle.” Ex. 1003 ¶¶ 23–24. Mr. DeFeo also testifies that “an ordinarily skilled person in 2008 would have appreciated that Scherer’s technique for dynamically routing waste collection vehicles would not work properly unless the customers were *required* to obtain permits in the form of RFID tags in order to receive waste pick-up services.” *Id.* ¶ 26. We further credit Mr. DeFeo’s testimony that “Scherer’s waste collection method specifically targets municipal solid waste (MSW), which is a well-known and defined ‘type of waste.’” *Id.* ¶ 61. Accordingly, the evidence of record supports Petitioner’s contention that Scherer discloses “establishing a permit type associated with a type of waste to be deposited in the multi-use receptacle; [and] associating the permit type with the permit.”

We have considered Patent Owner’s arguments to the contrary and do not agree with them for the following reasons. Patent Owner contends that the recited “multi-use receptacle” must be usable for multiple types of waste (PO Resp. 12), but does not provide sufficient objective evidence or analysis demonstrating why that is the case. The ’798 patent specification does not provide a definition for “multi-use receptacle” beyond that in claim 1 itself, namely, “of a type filled and emptied on multiple occasions.” Patent Owner instead points to the prosecution history of the ’798 patent, and argues that its interpretation of multi-use “is consistent with the remarks that gained allowance of the claims” (*id.* at 12), which, according to Patent Owner, “explicitly explained” that the subject matter to which the claims were directed was, in significant part, “having a system of permit typing that

typed issued permits according to the type of waste that was to be lawfully loaded and allowable waste for a receptacle, where the receptacle was multi-use, *i.e.*, capable of use for multiple types of waste” (*id.* at 7).

Patent Owner, however, mischaracterizes the statements made during the prosecution of the ’798 patent. The claims as originally submitted did not include the term “multi-use waste receptacle.” Ex. 1002, 252–254. When the applicant added new claim 21 in response to a rejection of the originally-submitted claims, the applicant argued that the prior art cited by the examiner (Maruca) “is not directed to a municipal permitting process” because it “is directed to a single use marker (136) for identifying a banned substance in a waste container.” *Id.* at 126. The applicant further argued that Maruca does not require “the customer to acquire a permit for use of a multi-use waste receptacle wherein the multi-use waste receptacle is of a type filled and emptied on multiple occasions, obey a set of municipal codes, or that entitles the issuer to use the tag as a means to cite the customer for municipal code violations.” *Id.* The applicant also argued that its application is directed to “providing a means by which a municipality can better control waste removal and handling among its citizens leading to [sic] directly to cleaner streets and alleys,” and that “[t]he present invention will eliminate or reduce trash overages, undersized containers, [and] poor container maintenance condition.” *Id.* at 125. None of these remarks indicate that the term “multi-use waste receptacle” means anything other than that it is “of a type filled and emptied on multiple occasions.”

In remarks accompanying a subsequent rejection of the claims, the applicant again described claim 21 as including the step of “requiring a permit for use of a multi-use waste receptacle wherein the multi-use waste

receptacle is of a type filled and emptied on multiple occasions,” without further elaboration. Ex. 1002, 69. The applicant argued that,

[f]or instance, in the method of Claim 21, a permit, in the form of an RFID tag, having a permit type associated with the kind of waste that can be lawfully loaded into a multi-use waste receptacle, is attached to a multi-use waste receptacle. Thus, the RFID tag does not indicate the actual contents of the multi-use receptacle. Instead, it is an indicator of the allowable contents of the multi-use receptacle. As such, the RFID tag permit of Claim 21 provides a means for a municipality to continuously control the use of one or more multi-use waste receptacles. The method of Claim 21 further provides a means by which misuse of a multi-use waste receptacle can be identified at the site of the multi-use waste receptacle. Additionally, the method of Claim 21 provides a means by which the use of multi-use waste receptacles can be tracked and policed.

Id. at 71. These remarks also do not support Patent Owner’s contention that the multi-use waste receptacle must be usable for multiple types of waste. As Petitioner notes, “at best, these prosecution remarks indicate ‘multi-use waste receptacles’ can be ‘misused’ by depositing non-allowable items in them.” Pet. Reply 3–4. Moreover, the applicant’s statement that Maruca “does not describe associating a permit type with a permit in the form of an RFID tag attached to a multi-use waste receptacle to identify a waste stream in a multi-use waste receptacle over multiple discreet loading and emptying cycles of the multi-use receptacle” further undermines Patent Owner’s contention that a multi-use waste receptacle means something other than the definition provided in the claim itself. Ex. 1002, 70.

Whether claim 1 requires that the multi-use waste receptacle be usable for multiple types of waste is a moot point, however, because, in its Sur-Reply, Patent Owner concedes that it did not argue in the Patent Owner

Response “that the petition-asserted combinations lacked ‘multi-use’ containers,” or “that interpretation to mean ‘usable for different types of waste’ was in and of itself a reason to find the claims patentable.” PO Sur-Reply 6. There is no dispute, therefore, that the claimed multi-use waste receptacles were known in the prior art, even if the claimed multi-use waste receptacles must be usable for different types of waste as Patent Owner contends.

We also do not agree with Patent Owner that the prior art asserted by Petitioner discloses “permit type by container type, not waste type.” PO Resp. 20; PO Sur-Reply 9–12. One example of waste management services Scherer describes is that provided to a municipality to handle MSW, defined by Scherer as “garbage, refuse, and other discarded materials that result from residential, commercial, industrial, and community activities.” Ex. 1005 ¶ 5. Scherer also describes container ID mechanisms, namely, RFID tags, that are associated with a particular customer, and can be used to determine both the location of the collection vehicle and whether that customer’s account is suspended or in good standing. *Id.* ¶¶ 27–29. Scherer’s method, therefore, permits a customer to dispose of MSW (a type of waste) in a specifically-identified multi-use receptacle, which meets the “establishing a permit type associated with a type of waste to be deposited in the multi-use receptacle” limitation of claim 1. This is consistent with the examples described in the ’798 patent specification, which include permits with the purpose of trash/refuse removal that regulate the “collection, storage of trash/refuse for removal and size of container, compactor, or bailer.” Ex. 1001, col. 12. That Scherer also teaches an ID database that contains the container ID and

the customer that ID is assigned to, and also contains the customer's location as well as the type of container, does not change that result. *Id.* ¶ 43.

In any event, as Petitioner notes, even if claim 1 requires multiple different types of permits for multiple different types of waste, Casella discloses “separate RFID tags for waste (e.g., trash) containers and containers holding recyclables.” Pet. 69 (citing Ex. 1009 ¶¶ 38, 54–57; Ex. 1003 ¶ 141). In particular, Casella teaches a system that is “usable with any number of containers,” where “each container may be identified with a user through its respective container ID mechanism.” Ex. 1009 ¶ 38. Casella teaches that a user may require more than one type of container, “for example one container may be designated for one of waste, recycling, compost and the like,” and that multiple container ID mechanisms “can be electronically configured for identifying a single user or group of users.” *Id.* Casella, therefore, discloses multiple permit types, each associated with a different type of waste, namely, non-recyclable waste, recycling, and compost. *See also* Ex. 1003 ¶ 141 (Mr. DeFeo testifying that Casella describes separate RFID tags for respective containers holding non-recyclable waste and recyclables, and that “[t]he separate RFID tags correspond to permits for different types of waste materials”).

Patent Owner also argues that Casella “has nothing to do with ‘multi-use’ receptacles.” PO Resp. 23. As discussed in the prior paragraph, to the extent Patent Owner interprets “multi-use” to require that a single container be capable of accepting different types of waste, Casella discloses specifying whether a particular container is to hold waste, recycling, or compost. Ex. 1009 ¶ 38. In any event, we have interpreted “multi-use” to refer to a container “of a type filled and emptied on multiple occasions,” and

Petitioner does not rely on Casella to supply the “multi-use waste receptacle” limitation of claim 1. Patent Owner’s argument that Casella “has nothing to do with ‘multi-use’ receptacles,” therefore, attacks Casella individually, rather than as part of the asserted combination. *See* Pet. 68 (citing *id.* at 15–33, 36–39, 43–53). Nonobviousness cannot be established by attacking the references individually when the ground of unpatentability is predicated upon a combination of prior art disclosures. *See In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986); *see also In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (“But one cannot show non-obviousness by attacking references individually where, as here, the [grounds of unpatentability] are based on combinations of references.”).

Accordingly, we determine that the combined teachings of Scherer, McAdams, and McAllister, and the combined teachings of Scherer, McAdams, McAllister, and Casella, disclose “establishing a permit type associated with a type of waste to be depositing in the multi-use receptacle; [and] associating the permit type with the permit” as recited in claim 1.

2. *making a determination whether use of a multi-use receptacle is in compliance or non-compliance based on the permit type associated with the permit attached thereto*

Petitioner contends that Scherer meets this element of claim 1 because, “in Scherer’s method, the penalty for non-compliance with the service fee arrangement for collecting municipal solid waste (the claimed ‘permit type’ associated with a ‘type of waste’) is refusal of service,” and, “[a]ccordingly, Scherer’s method includes ‘decision steps’ (314 and 316) where the software analyzes billing data to determine whether service has been suspended (non-compliance) or reinstated (compliance) based on payment or non-payment of the service fee.” Pet. 40 (citing Ex. 1005 ¶¶ 28–

29, 34–36, Fig. 3; Ex. 1003 ¶¶ 71–72). Petitioner contends that “the ’798 patent specifically describes an embodiment where a ‘violation’ (e.g., non-compliance with the permit) is determined based on the failure to renew the permit by paying the requisite fee.” *Id.* at 41–42 (citing Ex. 1001, 11:20–23) (internal footnote omitted).

Petitioner further contends that Casella meets this element of claim 1 because “[t]he relevant determination in Casella’s approach is whether commercial entities have misused their permitted containers by failing to achieve a diversion rate that complies with environmental standards.” Pet. 70. In particular, Petitioner contends that “Casella’s method includes scanning the RFID tag on the container to determine whether it contains recyclables or waste material, and then using this information to calculate the diversion rate and make a compliance determination.” *Id.* (citing Ex. 1009 ¶¶ 12, 15–17, 38, 54–57; Pet. 64–68).

Patent Owner responds that “[s]ince the [claimed] permit type is based on waste type, determining whether use is in compliance is also a matter of determination based on waste type.” PO Resp. 28. Patent Owner argues that a compliance determination based on payment status is not “‘directly related’ to even ‘container identifier,’ let alone waste type.” *Id.* According to Patent Owner, making “a compliance or non-compliance decision ‘based on the failure to renew the permit by paying the requisite fee’ is not making the determination ‘based on the permit type associated with [a] permit . . .’ The patent does not allegedly equate permit type with permit renewal or fee payment.” PO Sur-Reply at 13; *see also* PO Resp. 28–29 (“The claims are not so broad that a ‘compliance determination based on payment status’ is

‘not excluded by the claim language,’” and “the claims do not direct themselves to a ‘compliance determination’ by ‘payment status.’”).

Based on our review of the record, we find that Scherer and Casella disclose the “making a determination whether use of a multi-use receptacle is in compliance or non-compliance based on the permit type associated with the permit attached thereto” limitation of claim 1, as Petitioner contends. Pet. 40–43, 64–70; Ex. 1003 ¶¶ 70–72, 143–145. The ’798 patent is directed to solving problems faced by municipalities “with controlling several aspects of refuse collection,” because “citizens or users will often engage in activity with respect to refuse receptacles that violates municipal codes.” Ex. 1001, 2:45–49. The ’798 patent specification explains that one of the problems faced by the municipalities is users “fall[ing] behind in payment of bills for removing refuse and waste,” which causes the receptacles and surrounding areas to be “overloaded with waste,” providing “a haven for vermin such as rats” and causing “damage to the lane on which the receptacles are located.” *Id.* at 2:50–55. Thus, the ’798 patent provides a “method that will facilitate receptacle identification while at the same time providing a simplified method of issuing citations to the proper entity responsible for the code violation.” *Id.* at 2:64–67. The ’798 patent specification also states that “one of the primary purposes of issuing citations is to force compliance with rules, regulations and ordinances to maintain properly sized, safe equipment.” *Id.* at 16:54–57.

Consistent with these goals, the ’798 patent provides examples of permit violations, which include, among others, that the permit is expired, the container does not have a permit, the permitted container is not the same as the container being used, the containers are overflowing, and/or the

containers are damaged or in an improper location. Ex. 1001, 16:46–54; *see also id.* at 11:7–12 (“[C]itations for misuse, neglect, damage, etc. can be easily, swiftly, and electronically generated using a handheld receiver with printer for generating citations, providing yet a further stream of income to municipalities as well as improving lane conditions, thus reducing the likelihood of infestation by vermin.”), 11:20–23 (“Permits and citations will force compliance. Users can specify correct container size, schedule additional pick-ups. Service may be halted due to lack of payment or by schedule.”). Taken together, these disclosures in the ’798 patent indicate that the compliance/noncompliance determination encompassed by the claims is not limited to waste type as Patent Owner contends. Indeed, the ’798 patent specification does not discuss making a compliance determination based on the contents of the permitted container.

For these reasons, we determine that Scherer discloses the “making a determination whether use of a multi-use receptacle is in compliance or non-compliance based on the permit type associated with the permit attached thereto” limitation of claim 1 because Scherer’s method includes the step of determining whether a customer account is suspended or in good standing. Ex. 1005 ¶¶ 28–29, 33–36; *see* Ex. 1003 ¶¶ 30, 70–71.

We further determine that Casella also discloses a compliance determination as required by claim 1.⁸ Casella describes designating

⁸ Patent Owner argued for the first time at the oral hearing that Casella does not track the type of waste in the designated receptacles. *Compare* Tr. 40:4–13, *with* PO Resp. 27–28, *and* PO Sur-Reply 12–15. That untimely new argument is waived. *See* Paper 8, 6 (“The patent owner is cautioned that any arguments for patentability not raised in the response will be deemed waived.”).

separate containers as those for waste, recycling, compost, and the like with a container ID mechanism such as an RFID tag (Ex. 1009 ¶ 38), scanning the RFID tag to determine whether it contains waste or recyclables, and measuring the quantity of waste and the quantity of recyclables (*id.* ¶¶ 55–56). The ratio of the weight of recyclables received as compared to the sum of the combined weight of the waste and recyclables (the diversion rate) is calculated (*id.* ¶ 57), which is used to determine compliance with specified standards (*id.* ¶¶ 72–74). If the diversion rate is in compliance, the user is certified as meeting the standards; if it is not, the user is provided guidance to improve its environmental practices in order to gain compliance certification. *Id.* ¶ 74. Casella, therefore, discloses a compliance determination based on the type of waste in the permitted containers, which is also within the scope of “making a determination whether use of multi-use receptacle is in compliance or non-compliance based on the permit associated with the permit attached thereto” as recited in claim 1.

Accordingly, we determine that the combined teachings of Scherer, McAdams, and McAllister, and the combined teachings of Scherer, McAdams, McAllister, and Casella, disclose “making a determination whether use of multi-use receptacle is in compliance or non-compliance based on the permit associated with the permit attached thereto” as recited in claim 1.

3. *Motivation to Combine*

Petitioner contends that, “to the extent claim 1 of the ’798 Patent includes features not expressly described in Scherer, such features (e.g., adhesive attachment means, passive RFID tags, handheld devices) were perfunctory and ubiquitous in Scherer’s field as demonstrated by McAdams

and McAllister.” Pet. 15. For example, Petitioner contends that Scherer and McAdams both describe using RFID devices to track the condition, pick-up, and use of waste containers (*id.* at 16), and, like Scherer, McAdams also “describes a method of tracking waste container usage for ‘billing purposes’ using RFID tags” (*id.* at 24). Petitioner also contends that “[i]t would have been obvious to modify the Scherer-McAdams method by incorporating the ‘means for attachment’ of RFID tags disclosed by McAllister” and that “a POSITA would have specifically sought out McAllister’s disclosure to provide a suitable technique for attaching an RFID tag as taught by Scherer and McAdams.” *Id.* at 30–31; see Ex. 1003 ¶¶ 108–111. Petitioner further contends that a POSITA would have been motivated to improve the Scherer-McAdams-McAllister based on Casella (1) to improve recycling behaviors as taught by Casella; (2) because “a POSITA would have appreciated the economic benefits of improved recycling behaviors for a municipality based on the market demand for recycled materials by manufacturers;” and (3) because “a POSITA would have appreciated that Scherer and Casella describe exceedingly similar systems including a waste collection vehicle designed to scan RFID tags attached to waste containers and communicate wirelessly with a central computer” and “would have viewed Casella’s approach to incentivizing recycling as a natural companion to Scherer’s method based on Casella’s disclosure that a user’s diversion rate can be converted” into an economic benefit. Pet. 66–68; Ex. 1003 ¶¶ 134–139.

Patent Owner argues in response that Petitioner’s contentions are “each a mashup of different rationales of obviousness arguments—and of some matters not recognizable as proper arguments of obviousness—not once following a single rationale of obviousness to the exclusion of other

rationales of obviousness to a properly-argued conclusion.” PO Resp. 16–19 n.4. To the extent that we understand Patent Owner’s argument, we note that Patent Owner does not provide any support for its apparent contention that a rationale to combine must be based on a single reason to the exclusion of all others. *See id.* Patent Owner does not otherwise respond to the substance of Petitioner’s contentions.

A reason to combine or modify the prior art may be found explicitly or implicitly in market forces, design incentives, the “interrelated teachings of multiple patents,” “any need or problem known in the field of endeavor at the time of invention and addressed by the patent,” and “the background knowledge, creativity, and common sense of the person of ordinary skill.” *Perfect Web Techs., Inc. v. Info USA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009) (quoting *KSR*, 550 U.S. at 418–21). Based on our review of the record, for the reasons set forth in the Petition, we find that Petitioner has established that a POSITA would have had reason to combine the teachings of Scherer, McAdams, and McAllister, and Scherer, McAdams, McAllister, and Casella, to achieve the claimed subject matter.

4. Conclusion

After considering Petitioner’s and Patent Owner’s positions, as well as their supporting evidence,⁹ we determine that Petitioner has shown by a preponderance of the evidence that independent claim 1 would have been obvious over the combined teachings of Scherer, McAdams, and McAllister, and the combined teachings of Scherer, McAdams, McAllister, and Casella.

F. Claims 2, 3, and 8

⁹ Patent Owner did not introduce any evidence of objective indicia of nonobviousness.

Petitioner contends that the subject matter of claims 2, 3, and 8 of the '798 patent would have been obvious over the combined teachings of Scherer, McAdams, and McAllister, and/or the combined teachings of Scherer, McAdams, McAllister, and Casella. Pet. 53–56, 71. Petitioner relies on the DeFeo Declaration in support of its contentions. *Id.* Claims 2, 3, and 8 depend, directly or indirectly, from independent claim 1. Patent Owner does not address separately Petitioner's explanations and supporting evidence as to how the teachings of Scherer, McAdams, McAllister, and Casella account for all of the limitations of these dependent claims. *See generally* PO Resp. We have reviewed the evidence and arguments presented in the Petition and find that Petitioner has shown sufficiently that the combined teachings of Scherer, McAdams, and McAllister, and Scherer, McAdams, McAllister, and Casella, account for all the limitations recited in claims 2, 3, and 8. Pet. 53–56, 71; Ex. 1003 ¶¶ 86–94.

G. Claims 4–7

Petitioner contends that the subject matter of claims 4–7 of the '798 patent would have been obvious over the combined teachings of Scherer, McAdams, McAllister, and Mitschele, and/or the combined teachings of Scherer, McAdams, McAllister, Casella, and Mitschele. Pet. 56–64, 71–72. Petitioner relies on the DeFeo Declaration in support of its contentions. *Id.* Claims 4–7 depend, directly or indirectly, from independent claim 1. Patent Owner does not address separately Petitioner's explanations and supporting evidence as to how the teachings of Scherer, McAdams, McAllister, Mitschele, and Casella account for all of the limitations of these dependent claims. *See generally* PO Resp. We have reviewed the evidence and arguments presented in the Petition and find that Petitioner has shown

sufficiently that the combined teachings of Scherer, McAdams, McAllister, and Mitschele, and Scherer, McAdams, McAllister, Casella, and Mitschele, account for all the limitations recited in claims 4–7, and that a POSITA would have had reason to combine the teachings to achieve the claimed subject matter. Pet. 56–64, 71–72; Ex. 1003 ¶¶ 118–129, 152–153.

H. Credibility of Mr. DeFeo

Patent Owner argues that Mr. DeFeo’s testimony should be given no weight. PO Resp. 41; *see id.* 31–41. For example, Patent Owner argues that although Mr. DeFeo testified that his curriculum vitae “was complete concerning past testimonies,” Mr. DeFeo “failed as a witness in a past testimony and been categorized ‘not competent,’ and had not included the testimony on his CV.” *Id.* at 32. In particular, Patent Owner argues that Mr. DeFeo “was expressly referenced for his testimony in a case, in Hudson County Superior Court, of New Jersey, in 2010, in which the court concluded that the party for which he testified had presented no competent proof.” *Id.* at 35 (citing Ex. 2015, 10). The Court in that case, however, did not find that Mr. DeFeo was not competent, as Patent Owner contends. Instead, the Court found that the defendant (the party for whom Mr. DeFeo testified) “failed to produce appropriate documentation to substantiate its claims.” Ex. 2015, 9. The Court did not opine on the competency, or lack thereof, of Mr. DeFeo. *See id.* at 3–5 (discussing the substance of Mr. DeFeo’s testimony). Moreover, as Petitioner notes, Mr. DeFeo did list his participation in this case on his CV. Pet. Reply 20 (citing Ex. 1004, 4).

Patent Owner also argues that Mr. DeFeo “attempted to deny he had a past failed business relationship with Patent Owner’s licensee Sonrai, one he didn’t disclose in his declaration.” PO Resp. 61. We agree with Petitioner,

however, that “Mr. DeFeo did not attempt to deny his prior business relationship with Sonrai, he merely disagreed that the relationship was properly characterized as ‘failed.’” Pet. Reply 21; *see also* Ex. 2013, 33:6–16 (“Q: You had a failed relationship with Sonrai, correct? A: No. Q: You had a business relationship with Sonrai, correct? A: I had a business relationship with Sonrai, yes. Q: And did that lead to substantial success for you and Sonrai? A: I was paid whether successful or not for my perspective. It was successful.”).

Finally, Patent Owner argues that Mr. DeFeo’s testimony is “fudged, misstated, and exaggerated.” PO Resp. 39; *see id.* at 33–34, 39–41. Patent Owner’s allegations in this regard, however, go to its disagreement with Mr. DeFeo’s opinions, not to his credibility as an expert witness. *See id.* at 39 (arguing that Mr. DeFeo’s testimony that “different types of containers are typically used to dispose of different types of waste” “fudges with the word ‘typically’ because it allows that different types of containers are *not categorically* used to dispose of different types of waste”), 40–41 (arguing that Mr. DeFeo “also fudges again when he states ‘Scherer does not use the exact term ‘permit,’” because “Scherer does not use the term ‘permit’ or any variation of the term ‘permit’”).

Patent Owner has not moved to exclude Mr. DeFeo’s testimony, nor has Patent Owner taken an express and affirmative position that Mr. DeFeo is not qualified as an expert. We reviewed Mr. DeFeo’s testimony and do not find it to be lacking credibility or veracity. Accordingly, we disagree with Patent Owner that Mr. DeFeo’s testimony should be given no weight, and our analysis reflects this determination. *See supra* Section II.E–G.

III. CONCLUSION

After reviewing the record and weighing the evidence offered by both parties, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1–8 of the '798 patent are unpatentable.

IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–8 of the '798 patent are determined to be *unpatentable*; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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