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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte GYEONG-MIN KANG, WU-SEOK JANG,
HYUN-JUNG PARK, and HAK-JU LEE

Appeal 2018-009040¹
Application 14/729,580
Technology Center 2600

Before JEAN R. HOMERE, JAMES B. ARPIN, and
MICHAEL M. BARRY, *Administrative Patent Judges*.

ARPIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant² appeals under 35 U.S.C. § 134(a), the rejections of claims 1–3 and 5–21, all of the pending claims. Final Act. 2. Claim 4 is

¹ In this Decision, we refer to Appellant’s Appeal Brief (“App. Br.,” filed April 26, 2018) and Reply Brief (“Reply Br.,” filed September 21, 2018); the Final Office Action (“Final Act.,” mailed November 8, 2017), the Advisory Action (“Adv. Act.,” mailed February 8, 2018); and the Examiner’s Answer (“Ans.,” mailed August 3, 2018); and the originally-filed Specification (“Spec.,” filed June 3, 2015). Rather than repeat the Examiner’s findings and determinations and Appellant’s contentions in their entirety, we refer to these documents.

² “Appellant” here refers to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party-in-interest as S-Printing Solution Co., Ltd. App. Br. 3.

canceled. App. Br. 25 (Claims App'x). We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

Appellant's claimed subject matter relates to methods, systems, and image forming apparatus for "controlling an operation of an image forming apparatus by using a wearable device." Spec. ¶ 2. The Specification's Figure 3 is reproduced below.

FIG. 3

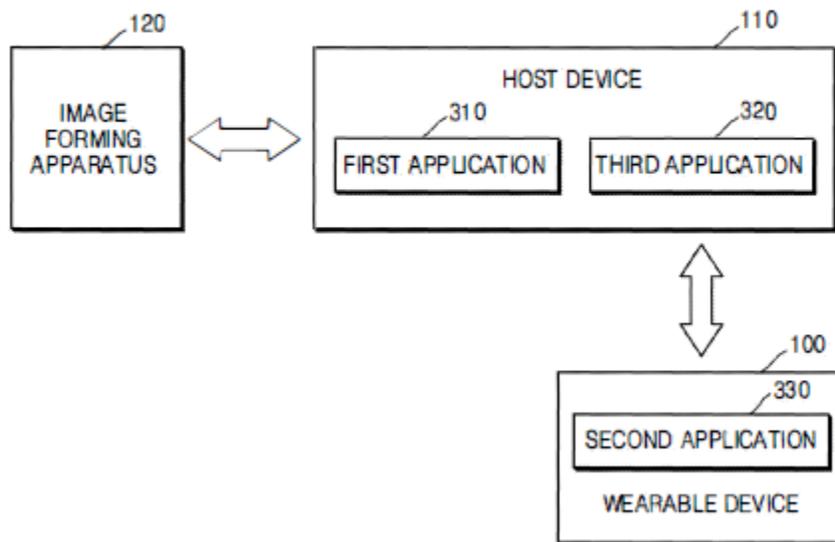


Figure 3 depicts a second application installed in a wearable device and first and third applications installed on a host device. *Id.* ¶ 15; *see id.* ¶¶ 7–11. “The second application 330 obtains a user input of operating the image forming apparatus 120. Then, based on information included in the user input, the second application 330 generates a task performance request to be transmitted to the third application 320.” *Id.* ¶ 46. Third application 320

then executes first application 310 and instructs image forming apparatus 120 to perform the task originating from wearable device 100.

As noted above, claims 1–3 and 5–21 are pending. Claims 1, 11, and 18 are independent. App. Br. 24, 26, 28–29 (Claims App’x). Claims 2, 3, 5–10 depend directly or indirectly from claim 1; claims 12–17 depend directly from claim 11; and claims 19–21 depend directly from claim 18. *Id.* at 24–29.

Claim 11 recites “[a] system for controlling an operation of an image forming apparatus, the system comprising: a wearable device in which a second application is installed; and a host device that is connectable to the wearable device and the image forming apparatus,” which coordinate the interaction of the applications according to methods recited in claim 1. *Id.* at 24, 26. Claim 18 recites “[a]n image forming apparatus that operates in response to a request from a wearable device” which coordinates the interaction of the applications according to methods substantially similar to those recited in claim 1. *Id.* at 24, 28–29. The Examiner relies on the same reference and substantially the same arguments in challenging claims 1, 11, and 18. Final Act. 2–4, 6–7; *see* App. Br. 19–20. Therefore, we focus our analysis on the disputed and overlapping limitations of these independent claims.

Claim 1, reproduced below with disputed limitations emphasized, is illustrative.

1. A method of controlling an operation of an image forming apparatus by using a wearable device connected to a host device, the method comprising:

converting, by an execution of a third application installed in the host device, a task performance request requesting a task to be performed by the image forming apparatus, which is

transmitted from a second application installed in the wearable device via the wearable device, into an execution instruction of a first application installed in the host device that controls the operation of the image forming apparatus, wherein the second application and the third application interoperate with each other;

executing the first application by the third application, based on the execution instruction, and instructing the image forming apparatus to perform the task; and

receiving, by the first application, information indicating a task performance result related to the task from the image forming apparatus.

Id. at 24 (emphases added).

REFERENCES AND REJECTIONS

The Examiner relies upon the following references in rejecting the pending claims:

| Name³ | Number | Pub'd/Issued | Filed |
|-------------------------|--------------------|---------------------|---------------|
| Kawano | US 2009/0122342 A1 | May 14, 2009 | Nov. 12, 2008 |
| Kato | US 2014/0368849 A1 | Dec. 18, 2014 | Oct. 23, 2013 |
| Hansen | US 9,019,535 B1 | Apr. 28, 2015 | Dec. 6, 2012 |
| Yu | US 2015/0242168 A1 | Aug. 27, 2015 | Feb. 24, 2014 |

Claims 1–3, 5, 7, 10–13, 15, and 18–21 stand rejected as unpatentable under 35 U.S.C. § 102 by Yu. App. Br. 2–8. Claims 6 and 14 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Yu and Hansen. *Id.* at 8–9. Claims 8 and 16 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Yu and Kato. *Id.* at

³ All reference citations are to the first named inventor only.

9–10. Claims 9 and 17 stand rejected as unpatentable under 35 U.S.C. § 103 over the combined teachings of Yu and Kawano. *Id.* at 10–11.

Appellant contests the anticipation rejection of the independent claims and relies on the alleged deficiencies in their rejection to overcome the rejections of the dependent claims. Because we determine that the reversal of the rejection of the independent claims is dispositive, except for our ultimate decision, we do not discuss the merits of the rejections of claims 2, 3, 5–10, 12–17, and 19–21 further herein. We review the appealed rejection of independent claim 1 for error based upon the issues identified by Appellant, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential). Unless otherwise indicated, we adopt the Examiner’s findings in the Final Action and the Answer as our own and add any additional findings of fact for emphasis. We address the rejection of claim 1 below.

ANALYSIS

1. Anticipation of Claim 1 by Yu

The Examiner rejects claim 1 as anticipated by Yu. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test. *See In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990). Moreover, “it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would

reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). Nevertheless,

unless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.

Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008); accord *In re Arkley*, 455 F.2d 586 (CCPA 1972). For the reasons given below, we sustain the Examiner’s rejection of claim 1.

The Examiner finds that Yu discloses each and every element of claim 1. Final Act. 2–4, Adv. Act. 2. Yu’s Figure 1 is reproduced below.

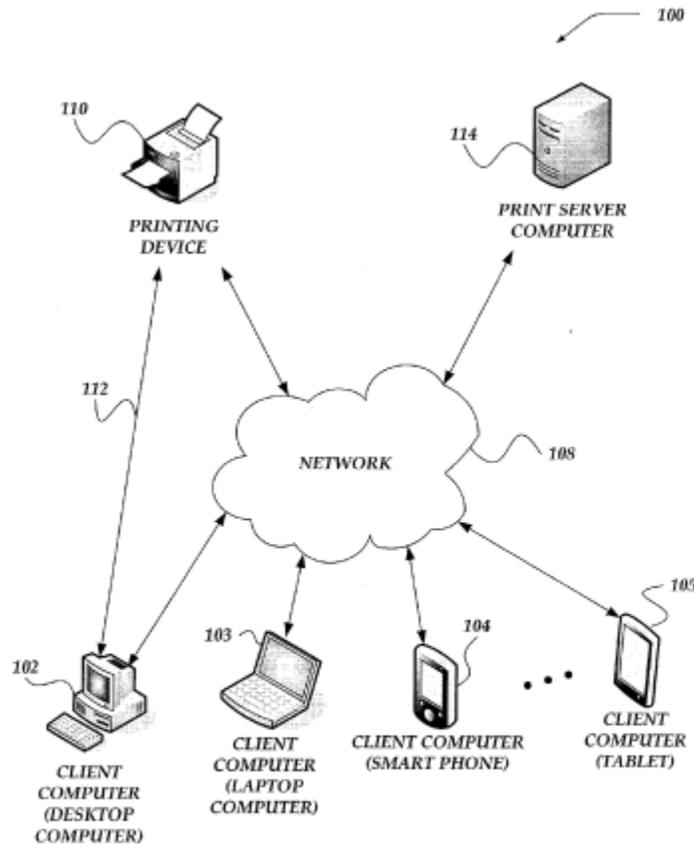


FIG. 1

“[Figure 1] is a system diagram of an environment in which embodiments of the invention may be implemented.” Yu ¶ 5. In particular, Yu discloses that printing device 110 and print server computer 114 may be joined over network 108 to any one of a number of client devices 102–105, which may include wearable devices. *Id.* ¶¶ 37–52, Fig. 4 (depicting printing device 400).

Moreover, the Examiner finds that Yu discloses the recited step of

converting, by an execution of a third application installed in the host device, a task performance request requesting a task to be performed by the image forming apparatus [(Yu ¶¶ 24, 25, 83)], which is transmitted from a second application installed in the wearable device via the wearable device, into an execution instruction of a first application installed in the host device that controls the operation of the image forming apparatus [(*id.* ¶¶ 73, 82, 83)], wherein the second application and the third application interoperate with each other [(*id.*)].

Final Act. 3; Adv. Act. 2; *see* App. Br. 24 (Claims App’x) (emphasis added).

In particular, Yu discloses that a client computer, e.g., a wearable device (Yu ¶ 41 (“wearable computing devices”)), may include applications 220, which “may include computer executable instructions which, when executed by client computer 200, transmit, receive, and/or otherwise process instructions and data. . . . Further, Applications 220 may include document processing application 222, viewing application 224, or the like.” Yu ¶ 73. Thus, an application installed in the wearable device transmits a print request, e.g., a task performance request, to a print server computer, e.g., a host device. *Id.* ¶¶ 52, 74.

Yu's Figure 3 is reproduced below.

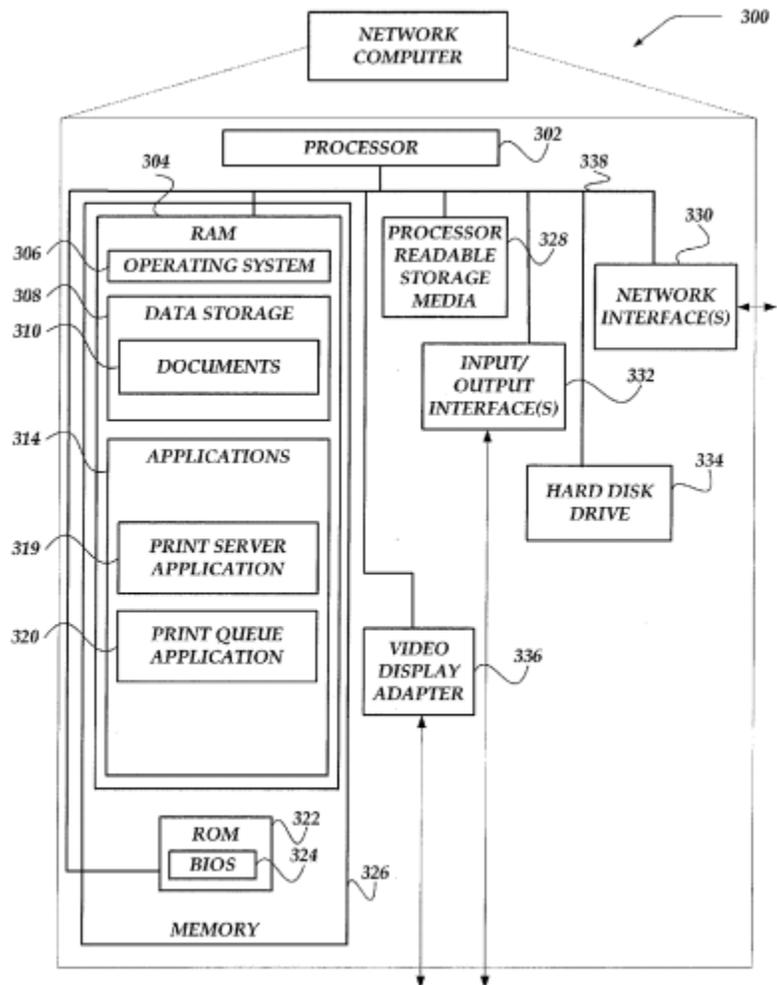


FIG. 3

“[Figure 3] shows an embodiment of a network computer that may be included in a system such as that shown in [Figure 1].” Yu ¶ 7. Network computer 300, e.g., the print computer server, has print server application 319 and print queue application 320 installed thereon. *Id.* ¶¶ 82, 83. As Yu explains, print server application 319 may be configured to receive a document from a client computer, such as a wearable device, and may forward documents to printing device 110 without converting the document to an intermediate page description language. *Id.* ¶ 83. Further,

print queue application 320 may receive documents for print jobs and queue them until they are printed. *Id.* A relevant definition of a “print queue” is “[a] buffer for documents and images waiting to be printed. When an application places a document in a print queue, it is held in a special part of the computer’s memory, where it waits until the printer is ready to receive it.” MICROSOFT COMPUTER DICTIONARY, 421 (5th ed. 2002). Thus, a document may be queued for printing if there are other documents awaiting printing. *See* Yu ¶ 171.

Claim 1 recites “*executing* the first application by the third application, based on the execution instruction, and instructing the image forming apparatus to perform the task.” App. Br. 24 (Claims App’x) (emphasis added). The Examiner finds Yu discloses that, if a document is sent by print server application 319 to the printing device, but other documents are awaiting printing, the transmission of a print instruction causes print queue application 320 to queue the document for printing. Final Act. 3 (citing Yu ¶¶ 82, 83). In particular, the Examiner finds:

Yu generally teaches a method of controlling an operation of a printer by using a wearable device (hereinafter ‘client’) connected to a server, the method comprising: adapting, by running a print server application 319 employed in the print server computer 300, a print request to be forwarded and to be performed (or printed) by a printing device 400. *This mean[s] that the server, by using a[] print server application 319, will convert a request that is submitted from a client in order to command the printer to read (to be instructed) in order to perform the printing operation; and running a print queue application 320 via the print server application 319 (e.g., because it’s receiving a document), and instructing the printer 400 to perform the document to be done (performed).* The result of printing is transmitted, via the server, to the user who originated the print job. The “print request to be forwarded and

printed by the printing device 400” corresponds to the task performance request requesting a task to be performed by the image forming apparatus. *The “running a print queue application 320 via the print server application 319 (because it’s receiving a document) in order to forward the document to the printing device 400 so that the printing device 400 can print corresponds to “executing the first application by the third application, based on the instruction, and instructing the image forming apparatus to perform the task.[”]* The user receiving, via print queue, a status report of a result of printing corresponds to receiving information indicating a task performance result related to the task from image forming apparatus.

Adv. Act. 2 (emphases added). Thus, the Examiner finds that Yu discloses executing the first application, e.g., the print queue application, by the third application, e.g., the print server application.

Appellant contends Yu does not disclose that print server application 319 “convert[s]” a task performance request into an execution instruction for print queue application 320, and such an operation is not inherently or necessarily performed by Yu’s system. App. Br. 16. Nevertheless, as noted above, Yu clearly discloses that a print request may be received from a wearable device by the print computer server and forwarded for printing by print server application 319 to a printing device. Ans. 5 (citing Yu ¶¶ 21–23, 73, 82, 83). Further, Appellant contends, “[t]here is no disclosure that print queue application 320 receives a task performance request and converts the task performance request into an execution instruction of the print server application 319 (or vice versa).” App. Br. 16–17. However, print queue application 320 queues documents for printing according to the instruction received. Ans. 5–6 (citing Yu ¶¶ 82, 83, 96). Thus, we are persuaded that Yu discloses the “converting” step, as recited in claim 1.

In addition, Appellant contends “conversion of a document to another format as described by Yu does not disclose the features of ‘converting, by an execution of a third application installed in the host device, a task performance request ... into an execution instruction of a first application installed in the host device’.” Reply Br. 2. In particular, Appellant contends the following characterization of Yu by the Examiner is erroneous:

The wearable device, by using the 2nd application, request a task to the host device in order to convert, by using 3rd application, and “forward” said requested task to the image forming apparatus, wherein said “forward” said requested task, by using a 1st application, includes instructions (e.g., [page description languages (PDLs)]) in order to force (instruct) the image forming apparatus perform the task, in which is originally requested from the wearable device . . . a method of controlling an operation of a printer by using a wearable device (hereinafter ‘client’) connected to a print server computer 300, the method comprising: adapting, by running a print server application 319 employed in the print server computer 300, a print request (¶0073) to convert and then forward in order to make the printer understand the request and perform the job (task performance).

Id. (italics added, ellipsis by Appellant) (quoting Ans. 3). Thus, we are persuaded, although the first application may “include” instructions to convert a document into another form, e.g., PDL, it is not limited to such a form conversion.

Appellant further contends Yu fails to disclose that print server application 319, i.e., the “third application,” *executes* print queue application 320, i.e., the “first application,” as recited in claim 1. App. Br. 18–19; Reply Br. 3–5. Appellant does not interpret the term “execute,” but contends that forwarding a document by print server application 319 is not an *execution*, and there is no disclosure that print server application 319 *executes* print queue application 320. Reply Br. 4; *see* App. Br. 18. Thus, Appellant

contends the Examiner finding that print server application 319 executes print queue application 320 is based on unsupported speculation. Reply Br. 4 (citing Ans. 5–6). We disagree.

Generally, “to execute” means “to carry out,” “to perform,” or “to run (a computer program) or process (a command).” RANDOM HOUSE WEBSTER’S COLLEGE DICTIONARY, 460 (2nd Random House ed. 1999). Another relevant definition of to “execute” is “[t]o perform an instruction.” MICROSOFT COMPUTER DICTIONARY at 200. Appellant does not contend that the Specification imposes a narrower interpretation on the term “execute.” See *In re Morris*, 127 F.3d 1048, 1053 (Fed. Cir. 1997) (“[T]he PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, *taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.*” (emphasis added)).

The Examiner finds Yu discloses that the mobile computer, e.g., the host device, may provide the output document, prepared by the print server application, directly to the print queue, run or processed by the print queue application. Ans. 5 (citing Yu ¶¶ 73, 82, 83); see Yu ¶¶ 171, 173. In particular, Yu explains:

In at least one of the various embodiments, the mobile computer may provide the output document directly to the printer rather than providing the output document to the print queue. In such cases, the mobile computer may be arranged to send a status message to the print queue to cancel or delete the job, change the job status to completed.

Yu ¶ 171.

Further, Yu's Figure 16 is reproduced below.

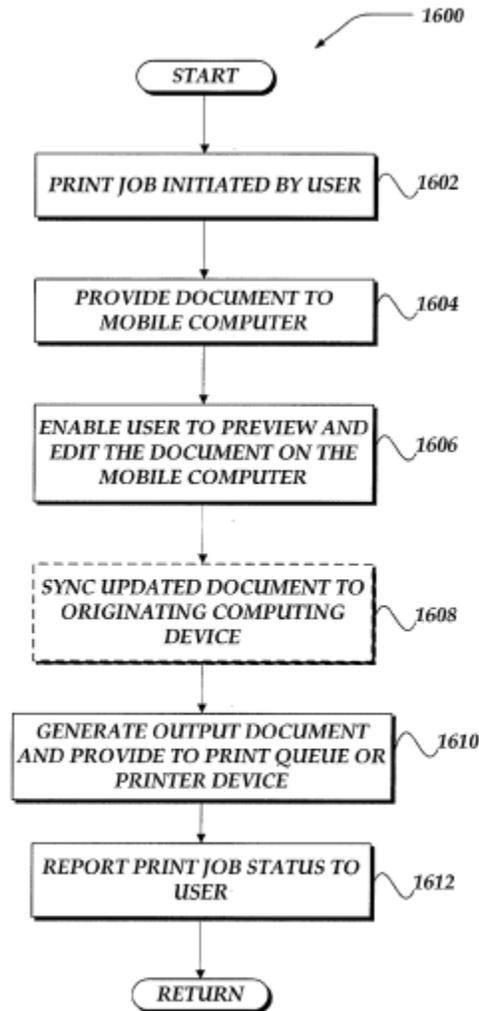


FIG. 16

“[Figure 16] illustrates a flowchart for a process for a mobile printer controller *in accordance with at least one of the various embodiments.*” Yu ¶ 17 (emphasis added). Yu explains:

At block 1610, in at least one of the various embodiments, an output document may be generated and provided to a print queue, or a printer device for printing. In at least one of the various embodiments, the output document may be based on the updated intermediate document [and] may include the edit information that may have been added by the user during block 1608.

In at least one of the various embodiments, before providing the output document to print queue or printer, the mobile computer may generate an output document that may be comprised of a particular PDL. In at least one of the various embodiments, as described above, the output document may comprised of a PDL that is compatible with the selected printer. In some cases, the output document may be comprised of a different PDL than the original document.

Id. ¶¶ 211, 212 (emphases added). Thus, we are persuaded Yu discloses that print server application 319 *executes* print queue application 320. That is, the print server application causes the print queue application to perform an instruction, namely, to queue and eventually to print a document provided by print server application 319 to print queue application 320.

Consequently, we are not persuaded that the Examiner erred in rejecting claim 1, and we sustain the rejection of claim 1.

2. The Remaining Claims

As noted above, Appellant challenges the rejection of independent claims 11 and 18 for the same reasons as claim 1. App. Br. 19–20; Reply Br. 5. Claims 2, 3, and 5–10, 12–17, and 19–21 depend directly or indirectly from the independent claims. Appellant does not challenge the rejections of dependent claims separately from its challenge to independent claim 1. App. Br. 20–22; Reply Br. 5–6. Because we are not persuaded that the Examiner erred with respect to the anticipation rejection of claim 1, we also are not persuaded that the Examiner erred with respect to the anticipation rejection of claims 11 and 18 or with respect to the rejections of dependent claims 2, 3, and 5–10, 12–17, and 19–21; and, for this reason, we sustain those rejections.

DECISIONS

The Examiner did not err in rejecting:

- a. claims 1–3, 5, 7, 10–13, 15, and 18–21 as anticipated by Yu;
- b. claims 6 and 14 as rendered obvious over the combined teachings of Yu and Hansen;
- c. claims 8 and 16 as rendered obvious over the combined teachings of Yu and Kato; and
- d. claims 9 and 17 as rendered obvious over the combined teachings of Yu and Kawano.

2. Thus, on this record, claims 1–3 and 5–21 are unpatentable.

CONCLUSION

For the above reasons, we affirm the Examiner’s decision rejecting claims 1–3 and 5–21.

| Claims Rejected | 35 U.S.C. § | Reference(s) | Affirmed | Reversed |
|---------------------------------|--------------------|---------------------|---------------------------------|-----------------|
| 1–3, 5, 7, 10–13, 15, and 18–21 | 102 | Yu | 1–3, 5, 7, 10–13, 15, and 18–21 | |
| 6 and 14 | 103 | Yu and Hansen | 6 and 14 | |
| 8 and 16 | 103 | Yu and Kato | 8 and 16 | |
| 9 and 17 | 103 | Yu and Kawano | 9 and 17 | |
| Overall Outcome | | | 1–3 and 5–21 | |

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED