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Paper 12
Date: December 16, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KIOSOFT TECHNOLOGIES, LLC and TECHTREX, INC.,
Petitioner,

v.

PAYRANGE INC.,
Patent Owner.

PGR2021-00084
Patent 10,891,608 B2

Before MEREDITH C. PETRAVICK, STACEY G. WHITE, and GEORGE R. HOSKINS, *Administrative Patent Judges.*

PETRAVICK, *Administrative Patent Judge*.

DECISION
Denying Institution of Post-Grant Review
35 U.S.C. § 324(a)

I. INTRODUCTION

A. *Background and Summary*

KioSoft Technologies, LLC and TechTrex, Inc. (collectively, "Petitioner") filed a Petition requesting post-grant review of claims 1–20 of U.S. Patent No. 10,891,608 B2 (Ex. 1002, "'608 patent"). Paper 2 ("Pet."). PayRange Inc. ("Patent Owner") filed a Preliminary Response. Paper 6

("Prelim. Resp."). With our authorization, Petitioner filed a Reply (Paper 8, "Reply") and Patent Owner filed a Sur-reply (Paper 9, "Sur-reply").

As set forth in 35 U.S.C. § 324(a), a post-grant review may not be instituted unless "the information presented in the petition filed under section 321, if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable."[1]

After considering the Petition, the Preliminary Response, Reply, Sur-reply and the evidence of record, we determine that Petitioner fails to demonstrate that it is more likely than not that at least one of the claims challenged in the Petition is unpatentable. Accordingly, we do not institute a post-grant review.

B. *Related Matters*

The '608 patent is the subject of *PayRange Inc. v. KioSoft Technologies, LLC et al.*, Case No. 1:20-cv-24342, in the U.S. District Court for the Southern District of Florida ("the district court litigation"). Pet. 11; Paper 3, 2. Related U.S. Patent Nos. 10,719, 833 and 10,891,614 are also the subject of the district court litigation. U.S. Patent No. 10,719,833 is challenged in PGR2021-00077 and U.S. Patent No. 10,891,614 is challenged in PGR2021-00093.

The '608 patent is related to U.S. Patent No. 9,659,296 and U.S. Patent No. 9,134,994, which are the subject of *PayRange Inc. v. Kiosoft Technologies, LLC et al.*, Case No. 1:20-cv-20970-RS in the U.S. District Court for the Southern District of Florida ("the '20970 district court

[1] Petitioner incorrectly states the standard for post-grant review as whether the Petition "shows a reasonable likelihood that the Petitioners will prevail on at least one of the challenged claims." Pet. 10.

litigation"). Pet. 11; Paper 3, 2. U.S. Patent No. 9,659,296 was challenged in CBM2020-00026 and IPR2021-00086, in which we exercised discretion respectively under 35 U.S.C. § 324(a) and § 314(a) to deny institution. Pet. 11; Paper 3, 2.

C. *The '608 Patent*

The '608 patent is titled "Method and System for an Offline-Payment Operated Machine to Accept Electronic Payments" and issued on January 12, 2021. Ex. 1002, codes (45), (54). The '608 patent claims priority, through a chain of patent applications, to a provisional patent application filed on December 18, 2013. *Id.* at code (63).

The '608 patent describes retrofitting an offline-payment operated machine, such as a coin-operated vending machine, to accept electronic payments. *See generally id.* at 39:38–46:5; Figs. 28A–B, 29A–B, 30. Figure 28A of the '608 patent is reproduced below.

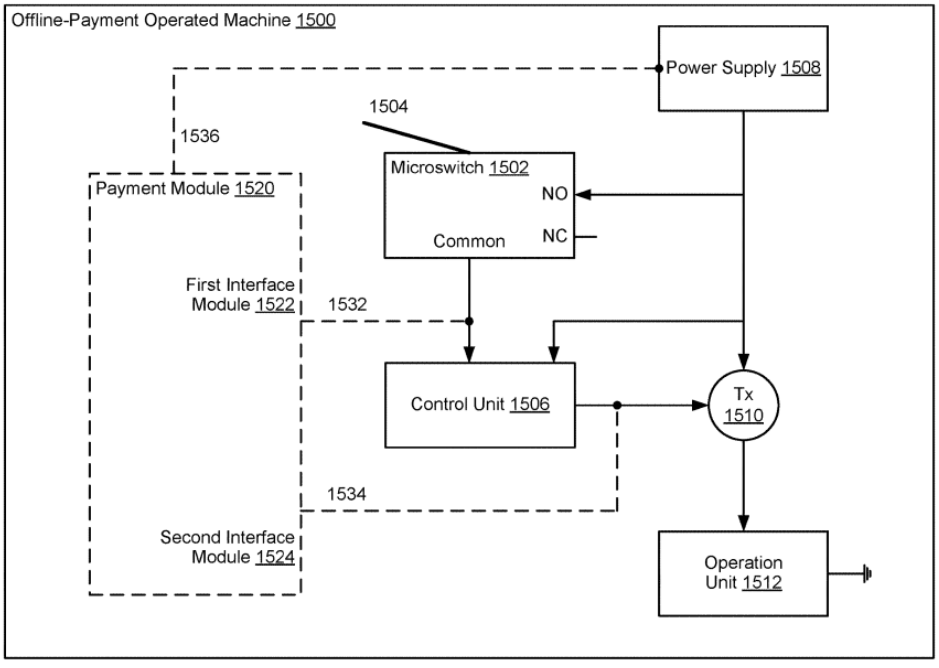

Figure 28A

Figure 28A depicts a block diagram of offline-payment operated machine 1500. *Id.* at 39:38–40. "[O]ffline-payment operated machine 1500 . . . is an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi)." *Id.* at 39:40–44. Offline-payment operated machine 1500 has microswitch 1502, control unit 1506, and operation unit 1512. *Id.* at 39:49–51. Mircoswitch 1502 has a lever 1504 in offline-payment operated machine 1500's coin slot. *Id.* at 39:57–65. When a coin slides down the coin slot, lever 1504 is depressed, closing microswitch 1502 and sending a pulse to control unit 1506. *Id.* at 39:61–40:6. "[W]hen the control unit 1506 receives a preset sequence of payment acceptance signals indicative of a preset number of coins being received by the microswitch 1502, the control unit 1506 initiates the operation of the offline-payment operated machine 1500." *Id.* at 40:7–11.

Offline-payment operated machine 1500 is retrofitted to accept electronic payments by installing payment module 1520. *Id.* at 40:22–26. Payment module 1520 has first interface module 1522 and second interface module 1524, which sample payment acceptance signals from microswitch 1520 and control signals from control unit 1506 to initiate operation of machine 1500, respectively. *Id.* at 40:35–49. "By sampling and storing these signals, the payment module 1520 is able to simulate operation of a respective coin receiving switch in response to receiving the correct/preset number of coins so as to trigger operation of the offline-payment operated machine in response to completion of an electronic payment." *Id.* at 41:43–48, 42:55–65.

D. *Illustrative Claim*

Claims 1, 7, 13, and 19 are independent. Claims 2–6 depend from claim 1. Claims 8–12 depend from claim 7. Claims 14–18 depend from claim 13. Claim 20 depends from claim 19. Claim 1 is illustrative of the claimed subject matter and is reproduced below with bracketed material added.

> 1. [1.0][2] A payment module for an offline payment-operated machine including a coin receiving switch, the payment module comprising:
>
> [1.1] a short-range wireless transceiver configured to communicate with one or more mobile devices;
>
> [1.2] one or more processors;
>
> [1.3] a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine; and
>
> [1.4a] memory with one or more programs for execution by the one or more processors, the one or more programs including instructions for:
>
> [1.4b] storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine;
>
> [1.4c] receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine; and

[2] Petitioner's designations to reference the elements of claim 1 are set forth in brackets. Herein we refer to the elements of claim 1 using Petitioner's designations. *See* Pet. 54–64.

[1.4d1] in response to the wireless request:
determining a first number of electrical pulses to output via the first interface module to the control unit of the offline payment-operated machine in order to initiate the requested cashless operation of the offline payment-operated machine;
[1.4d2] causing the offline payment-operated machine to initiate the requested cashless operation by issuing the first number of electrical pulses to the control unit via the first interface module; and
[1.4d3] sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

Ex. 1002, 46:62–47:34.

E. *Prior Art and Asserted Grounds*

Petitioner asserts that claims 1–20 are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	Basis/ Reference(s)
19–20	112(a)	Lack of Written Description
1–20	112(b)	Indefiniteness
5, 11, 17	112(d)	Failure to Further Limit
1–20	102	Breitenbach[3]
1–20	103	Breitenbach, Yung[4]
1–20	103	Breitenbach, Cole[5]

Pet. 14–15. Petitioner relies on the Declaration of Gerald Smith (Ex. 1005).

[3] U.S. Patent No. 9,092,768 B2 (issued July 28, 2015) (Ex. 1007) ("Breitenbach").
[4] U.S. Patent No. 7,110,954 B2 (issued Sept. 19, 2006) (Ex. 1011) ("Yung").
[5] U.S. Patent No. 6,743,095 B2 (issued June 1, 2004) (Ex. 1014) ("Cole").

II. ANALYSIS

A. *Discretionary Denial under 35 U.S.C. § 324(a)*

Patent Owner contends we should exercise our discretion under 35 U.S.C. § 324(a) to deny institution of post-grant review. Prelim. Resp. 10–18 (citing, *e.g.*, *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*")).

Because we determine that Petitioner fails to demonstrate that, if unrebutted, it is more likely than not that at least one of the claims challenged in the Petition is unpatentable, we need not address Patent Owner's contentions concerning discretionary denial.

Accordingly, we do not exercise our discretion to deny institution under 35 U.S.C. § 324(a).

B. *Level of Ordinary Skill*

Petitioner contends:

> A [person having ordinary skill in the art ("POSITA")], as of the date of the alleged invention, would have had an education background of, or practical experience providing an equivalent to, a Bachelor of Science in Electrical Engineering, Computer Science, Information Technology, or a related/equivalent field and at least three years of work experience in electronic payment systems, vending machine technologies, or telecommunication solutions.

Pet. 29 (citing Ex. 1005 ¶ 52). Patent Owner does not dispute Petitioner's contention in its Preliminary Response. *See generally* Prelim. Resp.

Based on the record before us, we adopt Petitioner's asserted level of ordinary skill to determine whether it is more likely than not that at least one of the claims challenged in the Petition is unpatentable. This level of skill in the art is consistent with the disclosure of the '608 patent and the prior art of record. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

C. *Claim Construction*

We interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.200(b) (2020). This standard requires that we construe claims "in accordance with the ordinary and customary meaning of such claim[s] as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.*; *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). Only those terms that are in controversy need be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs*. in the context of an AIA trial proceeding).

Petitioner proposes constructions of the following claim limitations:

> 1) "offline payment-operated machine";
>
> 2) "interface";
>
> 3) "storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine";
>
> 4) "initiate a cashless operation of the offline-payment operated machine"; and
>
> 5) "sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver."

Pet. 16–18. For each proposed construction, the Petition merely cites to the Declaration of Gerald Smith and does not provide any substantive

explanation as to why we should adopt Petitioner's proposed constructions. *See id.* (citing Ex. 1005 ¶¶ 73–104).

Patent Owner contends that the Petition is deficient in the manner that it construes claims because it does not evaluate the claim language, specification, and prosecution history. Prelim. Resp. 7. Patent Owner states that "Petitioners merely cite their expert's conclusory language, which simply adopts Petitioners' own constructions using substantially-similar language as the [P]etition." *Id.* (citing Ex. 1005 ¶¶ 73–104). Patent Owner argues that "[f]or the purposes of this preliminary response, no construction of the claims is required to deny institution." *Id.* at 8.

On this record, we determine that only the term "offline payment-operated machine" requires construction to the extent discussed below and that no other claim term requires explicit construction. *See Vivid Techs.*, 200 F.3d at 803 (construing explicitly only those claim terms in controversy and only to the extent necessary to resolve the controversy).

"offline payment-operated machine"

Petitioner proposes that "offline payment-operated machine" should be construed to mean

> a machine that is not connected to any network and that accepts cash to perform an operation, wherein the machine includes a coin receiving switch that generates an analog signal in response to insertion of a single coin of a predetermined type in the machine.

Pet. 17. As support for its construction, Petitioner cites to the Declaration of Gerald Smith and does not provide any other substantive explanation as to why we should adopt Petitioner's proposed construction in the Petition. *See id.* (citing Ex. 1005 ¶¶ 82–84). Mr. Smith testifies that the term "offline payment-operated machine" would not have a plain and customary meaning

to a POSITA, but that a POSITA would have understood the term "offline" to mean not connected to any network. Ex. 1005 ¶¶ 82–83. Mr. Smith also testifies:

> Based on my review of the entirety of the '608 patent, I found col. 39, lines 39–45 of the specification to be informative regarding the meaning of the term, "offline payment-operated machine." Specifically, EX1002, 39:39–45 describe[s] the "offline-payment operated machine" to be "an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi)."

Id. ¶ 84.

Patent Owner disagrees with Petitioner's construction and argues that "Petitioners fail to explain why the machine's 'offline' payment operability necessarily precludes the machines from also having, at least in some circumstances, a network connection." Prelim. Resp. 8. According to Patent Owner, the '608 patent discloses some embodiments in which "the offline payment-operated machine also can have 'online' payment operability" (*id.* at 9 (citing Ex. 1002, 6:41–63, 9:23–27, 9:42–50)) and other embodiments in which the "offline payment-operated machine is not connected to any persistent networks" (*id.* (citing Ex. 1002, 9:46–48, 9:64–67, 22:8–12, 39:38–48)). Patent Owner further argues, under the doctrine of claim differentiation, that dependent claims 5, 11, and 17 "specify that the machine is not connected to any networks indicates that the machine as recited in claim[] 1 is not so limited." *Id.* at 8–9.

We are not persuaded by Petitioner's arguments because Petitioner's proposed construction improperly attempts to read a particular embodiment described in the '608 patent into the claims. It is not proper to read limitations from the '608 patent into the claims:

> Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.

SuperGuide Corp. v. DirecTV Enters., Inc., 358 F.3d 870, 875 (Fed. Cir. 2004). "[A]lthough the specification often describes very specific embodiments of the invention, [the Federal Circuit has] repeatedly warned against confining the claims to those embodiments." *Phillips*, 415 F.3d at 1323.

As Mr. Smith points out, the '608 patent does describe offline-payment operated machine 1500 as an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi). Ex. 1005 ¶ 84 (citing Ex. 1002, 39:39–45). But, the '608 patent describes offline-payment operated machine 1500 as merely one *example* of an offline-payment operated machine in *some implementations*. The '608 patent states:

> FIG. 28A illustrates a block diagram of an offline-payment operated machine 1500 *in accordance with some implementations*. *For example*, the offline-payment operated machine 1500 *(e.g., a form of the machine 120*) is an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi). *For example,* the offline-payment operated machine 1500 is a washer or dryer at a laundromat, a parking meter, a car wash payment kiosk, or other offline-payment operated machine that dispenses goods and/or services.

Ex. 1002, 39:38–48 (emphases added). The '608 patent emphasizes that offline-payment operated machine 1500 is merely an example. *Id.* at 39:52–56 ("The components of the offline-payment operated machine 1500 in FIG. 28A are examples and one of skill in the art will appreciate that various

other components may be included in or excluded from the offline-payment operated machine 1500."). Petitioner provides no sufficient explanation as to why the language of the claims restricts the claims to this embodiment.

We are not persuaded by Mr. Smith's testimony that a POSITA would have understood the term "offline" to mean not connected to any network (Ex. 1005 ¶ 82) because Mr. Smith's testimony is inconsistent with the '608 patent's disclosure. The '608 patent describes that offline-payment operated machine 1500 is a form of payment accepting unit or machine 120. *Id.* at 39:40–41. As Patent Owner points out (Prelim. Resp. 9), the '608 patent discloses payment accepting units or machines 120 that are machines connected to a network connection, but may be temporarily offline. For example, the '608 patent discloses:

> Although payment accepting units (or "machines") that accept only cash (e.g., paper currency and coins) may not require a connection (persistent or non-persistent) to a network, traditional payment accepting units that accept cashless payments (e.g., credit cards, debit cards, and alternative mobile device payment methods, using, for example, smart phones) require a persistent connection to a network (wired or wireless) to facilitate the cashless payments. In other words, without a persistent (ongoing or accessible on demand) network connection, traditional payment accepting units cannot accept cashless payments. *Most traditional payment accepting units that accept cashless payments include the technology to accomplish this persistent network connection that allows them to connect to a remote server. If the network connection to a traditional machine is temporarily interrupted, cashless payments will be temporarily unavailable. If the machine is located in a location where no network connection is available, cashless payments is not possible.*

Ex. 1002, 6:30–48 (emphasis added); *see also id*. at 9:42–46 ("Traditionally, machines that accept payment other than cash require a persistent (ongoing

or accessible on demand) connection to a network to facilitate payment. This is true for machines that accept, for example, credit cards and debit cards").

Further, we are persuaded by Patent Owner that the doctrine of claim differentiation indicates that the term *offline payment-operated machine* as recited in the independent claims is not so limited because dependent claims, such as claims 5, 11, and 17, recite that the offline payment-operated machine is not connected to any networks. *See, e.g.,* Ex. 1002, 47:60–62; *Alcon Research, LTD. v. Apotex Inc.*, 687 F.3d 1362, 1367 (Fed. Cir. 2012) ("Under the doctrine of claim differentiation, dependent claims are presumed to be of narrower scope than the independent claims from which they depend."); *Intamin, Ltd. v. Magnetar Techs., Corp.*, 483 F.3d 1328, 1335 (Fed. Cir. 2007) ("An independent claim impliedly embraces more subject matter than its narrower dependent claim."); *SRI Int'l v. Matsushita Elec. Corp*., 775 F.2d 1107, 1122 (Fed. Cir. 1985) ("It is settled law that when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement.").

Accordingly, we do not adopt Petitioner's proposed construction of "offline payment-operated machine" and, in particular, do not construe "offline payment-operated machine" to require a machine that is not connected to any network.

D. *Principles of Law*

To prevail on its challenges, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U. S.C. § 326(e); 37 C.F.R. § 42.1(d). "[T]he 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). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC. v. Nat'l Graphics, Inc.,* 800 F.3d 1375, 1378 (Fed. Cir. 2015).

E. *§ 112 Lack of Written Description – Claims 19 and 20*

Claim 19 recites a payment module comprising:

> [(a)] a first interface module configured to communicate with a control unit of the offline payment-operated machine using a serial interface to send one or more commands to the control unit; [and]
>
> [(b)] a *second* interface module configured to count one or more electrical pulses generated by the coin receiving switch of the offline payment-operated machine in response to the insertion of a single coin of a predetermined type in the offline payment-operated machine.

Ex. 1002, 50:7–21 (labeling and emphasis added).

Petitioner asserts that the specification of the '608 patent lacks written description for limitation (b) because "it is only the 'first interface module' [1522] that is mentioned as counting one or more electrical pulses generated by the coin receiving switch" and the specification "does not hint, much less describe, the second interface module 1524 being capable of counting the electrical pulses from the coin receiving switch." Pet. 32–33. In other words, claim 19 labels as the *second* interface module what the specification of the '608 patent labels as the *first* interface module, and vice versa.

Patent Owner responds that claim 19 as originally filed and the remainder of the specification provides adequate written description support. Prelim. Resp. 19–22. Patent Owner argues: "Petitioners never explain why the as-filed claim, in view of the additional disclosure in the specification regarding the claimed components and the claimed configuration, is

insufficient to reasonably convey to a POSA that the inventors were in possession of claims 19–20." *Id.* at 21.

Under 35 U.S.C. § 112(a), "[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same . . . ." To satisfy the written description requirement, the disclosure must reasonably convey to skilled artisans that the patentee possessed the claimed invention as of the filing date. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*). The requirement under § 112 does not demand that the specification recite the claimed invention *verbatim*. *Id.* at 1352 (citations omitted). The "claimed subject matter need not be described *in haec verba* in the specification in order for that specification to satisfy the description requirement." *In re Smith*, 481 F.2d 910, 914 (CCPA 1973). "Original claims are part of the original specification and in many cases will satisfy the written description requirement." *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1297 (Fed. Cir. 2017).

We agree with Patent Owner. Petitioner, itself, indicates that the specification of the '608 patent discloses an interface module counting the electrical pulses generated by a coin receiving switch. The Petition states: "Specifically, the objective inquiry reveals that it is only the 'first interface module' that is mentioned as counting one or more electrical pulses generated by the coin receiving switch." Pet. 32; *see also* Ex. 1005 ¶ 125 (corresponding testimony of Mr. Smith).

In this regard, the '608 patent states:

> In FIG. 28A, the first interface module 1522 is configured to sample payment acceptance signals from the microswitch 1502 (e.g., a coin receiving switch) via lead 1532 of the offline-payment operated machine 1500. For example, the payment acceptance signals are indicative of a coin being received by the microswitch 1502 which depress lever 1504.

Ex. 1002, 40:35–40. The '608 patent also describes FIG. 28B as illustrating signals sampled by the first interface module 1522, "[f]or example, the preset sequence of payment acceptance signals indicative of the preset number of coins include pulses (i.e., payment acceptance signals) 1552, 1554, 1556, and 1558." *Id.* at 40:50–58; *see also id.* at 41:59–42:4 ("payment acceptance signals are indicative of a preset number of coins received by the coin receiving switch"); 42:49–55 (describing identifying a count of pulses). The '608 patent further states: "[T]he terms used for labels (e.g., 'first,' 'second,' and 'third') are meant solely for purposes of designation and not for order or limitation." *Id.* at 46:11–14. Claim 19, as originally filed, recited limitation (b), with the coin counting interface module being labeled as the second interface module. Ex. 1003, 283.

Given the originally filed claim 19 and the above disclosures of the '608 patent, Petitioner does not persuade us that the '608 patent does not reasonably convey to skilled artisans that the patentee did not possess the claimed invention as of the filing date. Petitioner does not show sufficiently that claims 19–20 are more likely than not unpatentable under 35 U.S.C. § 112(a) for lack of written description.

F. *§ 112 Indefiniteness – Claims 1–20*

Petitioner asserts that claims 1–20 are unpatentable under 35 U.S.C. § 112(b) for indefiniteness. Pet. 34. In particular, Petitioner argues that the

following limitations fail to inform a POSITA about the scope of the claimed invention with reasonable certainty:

> "a first interface module configured to output to a control unit . . . one or more electrical pulses" (claims 1, 7, and 13);
>
> "a first interface module configured to communicate with a control unit . . . using a serial interface . . . " (claim 19);
>
> "a second interface module configured to store [or sample] control signals from the control unit" (claims 4, 10, and 16);
>
> "a second interface module configured to count one or more electrical pulses . . . and to store an output of the control unit" (claim 19); and
>
> "the offline payment-operated machine is not connected to any networks" (claims 5, 11, and 17).

Pet. 34–35, 40.

Patent claims must "particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention." 35 U.S.C. § 112(b). "[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014); *see* USPTO Memorandum on the Approach to Indefiniteness Under 35 U.S.C. § 112 in AIA Post-Grant Proceedings (Jan. 6, 2021).[6]

[6] Available at https://www.uspto.gov/sites/default/files/documents/IndefinitenessMemo.pdf.

1. Interface Module Terms – Claims 1–20

Petitioner asserts that 35 U.S.C. § 112(f) applies to each of these limitations:

"a first interface module configured to output to a control unit . . . one or more electrical pulses" (claims 1, 7, and 13);

"a first interface module configured to communicate with a control unit . . . using a serial interface . . . " (claim 19);

"a second interface module configured to store [or sample] control signals from the control unit" (claims 4, 10, and 16); and

"a second interface module configured to count one or more electrical pulses . . . and to store an output of the control unit" (claim 19).

Pet. 35–45. In particular, Petitioner argues that "interface module" does not connote sufficiently definite structure and that a POSITA would understand this to be a nonce term. *See, e.g., id.* at 37–39 (citing Ex. 1005 ¶¶ 130–131).[7]

Patent Owner disagrees and argues that "interface module" "connotes sufficient structure to avoid means-plus-function construction because it [] denotes a type of device with a generally understood meaning in the mechanical arts." Prelim. Resp. 24.

Means-plus-function claiming occurs when a claim term is drafted in a manner that invokes 35 U.S.C. § 112(f), which states:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such

[7] As Petitioner's analysis for these terms is substantially similar, we cite to Petitioner's analysis concerning "a first interface module" as recited by claims 1, 7, and 13 as representative. *See* Pet. 40–45.

> claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The failure to use the term "means" in a claim element creates a rebuttable presumption that § 112(f) does not apply, but does not automatically prevent that element from being construed as a means-plus-function element. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). In such a case, § 112(f) will apply if the claim term fails to recite sufficiently definite structure, or else recites a function without reciting sufficient structure for performing that function. *Williamson*, 792 F.3d at 1349. "The standard is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." *Williamson,* 792 F.3d at 1349. Claim language does not invoke a § 112(f) construction if persons of ordinary skill in the art reading the specification would understand the term to be the name for a structure that performs the function, even when the term covers a broad class of structures or identifies the structures by their function. *Greenberg v. Ethicon Endo-Surgery, Inc.,* 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("Many devices take their names from the functions they perform.").

We agree with Patent Owner that Petitioner has not sufficiently rebutted the presumption that § 112(f) does not apply. Petitioner relies upon Mr. Smith's testimony to support its assertion that "interface module" is a nonce word. *See* Pet. 37–39 (citing Ex. 1005 ¶¶ 130–131). However, Mr. Smith's testimony that "interface module" does not connote sufficiently definite structure and that a POSITA would understand this to be a nonce

term is conclusory and unsupported. *See* Ex. 1005 ¶¶ 130–131. This testimony is also inconsistent with other testimony.

Specifically, Mr. Smith also testifies that "a POSITA would understand the term 'interface' to mean: a place at which two or more systems connect to facilitate communication" (Ex. 1005 ¶ 73 (emphasis omitted) and that

> [t]he plain and customary definition of "interface," in my opinion, would be understood by a POSITA to be consistent with that provided by the Meriam-Webster online dictionary, namely *"the place at which independent and often unrelated systems meet and act on or communicate with each other."*

Id. ¶ 75 (citing Ex. 1021, 2); *see also* Prelim. Resp. 24 (citing*, e.g., High Point Sarl v. Sprint Nextel Corp.*, No. 09-02269-CM, 2012 U.S. Dist. LEXIS 108485, at *15 (D. Kan. Aug. 3, 2012) ("'module' and 'interface' . . . have a well-known meaning to those of skill in the art." (citing IEEE Dictionary ("interface") (5th ed. 1993) (defining "interface" as "a hardware or software component that connects two or more components for the purpose of passing from one to the other)). This definition of "interface" is consistent with the '608 patent's description of an industry standard multi-drop bus (MDB) which connects two or more systems to facilitate communications. Ex. 1002, 6:1–29, 15:56–16:22. The Petition, itself, explains that the MDB "was developed as an interface to handle communications between electronic components in automated vending machines" and that the "MDB protocol served as an interface between various electronic components." Pet. 22; *see also* Ex. 1005 ¶¶ 44, 48.

Given the above, we are not persuaded by Petitioner that "interface module" does not connote sufficiently definite structure and that a POSITA would understand this to be a nonce term. Thus, we are not persuaded that

Petitioner has sufficiently rebutted the presumption that §112(f) does not apply. Accordingly, we determine that Petitioner does not show sufficiently that claims 1–20 are more likely than not unpatentable under 35 U.S.C. § 112(b) for being indefinite with respect to the "interface module."

2. "the offline payment-operated machine is not connected to any networks"– Claims 5, 11, and 17

Claims 5, 11, and 17 are dependent from claims 1, 7, and 13, respectively, and each recites "wherein the offline payment-operated machine is not connected to any networks." Ex. 1002, 47:60–62, 48:58–59, 50:1–3. Applying its proposed construction of "offline payment-operated machine," Petitioner asserts that "a POSITA would not be able to ascertain, with any degree of reasonable certainty, the scope of the alleged invention of claims 5, 11, or 17" because

> the requirement that the machine not be connected to any networks, as specified in these dependent claims, suggests to a POSITA that "the offline payment-operated machine" recited in the independent claims 1, 7, and 13 can be connected to a network, which is contrary to the plain and customary meaning of "offline," as understood by a POSITA.

Pet. 45–46.

Patent Owner responds, "[b]ecause Petitioners' indefiniteness challenge to claims 5, 11, and 17 is premised on [its] misconstruction of the claim, Petitioners have failed to satisfy their burden to demonstrate indefiniteness of these claims." Prelim. Resp. 30.

We agree with Patent Owner. Petitioner's contention is based upon its proposed construction of "offline payment-operated machine," which above we do not adopt. Petitioner does not show sufficiently that claims 5, 11, and 17 are more likely than not unpatentable under 35 U.S.C. § 112(b) for being indefinite.

G. *Failure to Further Limit*

Under 35 U.S.C. § 112(d), "a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed." Claims 5, 11, and 17 are dependent from claims 1, 7, and 13, respectively, and each recites "wherein the offline payment-operated machine is not connected to any networks." Ex. 1002, 47:60–62, 48:58–59, 50:1–3.

Petitioner contends that dependent claims 5, 11, and 17 fail to narrow the claims from which they depend because "[e]ach of independent claims 1, 7, and 13 specifies the 'payment-operated machine' is offline" when payment-operated machine is given Petitioner's proposed construction. Pet. 46–47 (emphasis omitted). Petitioner's proposed construction requires that the offline payment-operated machine is not connected to any networks. *Id.* at 17, 46–47. Patent Owner responds that Petitioner's proposed construction is incorrect and "that the machine has an offline payment capability does not exclude the machine from also having a connection to a network." Prelim. Resp. 30–31. We agree with Patent Owner. Petitioner's contention is based upon its proposed construction of "offline payment-operated machine," which above we do not adopt. Petitioner does not show sufficiently that claims 5, 11, and 17 are more likely than not unpatentable under 35 U.S.C. § 112(d) for failing to further limit the claim from which they depend.

H. *Breitenbach Grounds*

1. Overview of Breitenbach

Breitenbach is titled "Machine Retrofits and Interactive Soda Fountains" and published on July 18, 2015, from an application filed on January 11, 2011. Ex. 1007, codes (22), (45), (54).

Breitenbach describes coupling a conventional vending machine to a retrofit device to enhance services. *Id.* at 2:15–24. Figure 1 of Breitenbach is reproduced below.

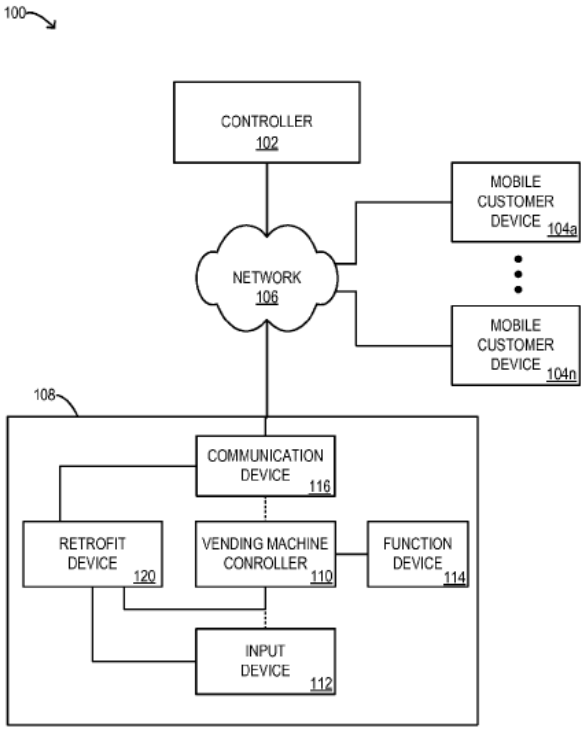

FIG. 1

Figure 1 depicts a block diagram of an embodiment of Breitenbach's system. *Id.* at 1:58–59; 4:11–12. The system includes controller 102 communicating with mobile customer devices 104a–n via network 106 and machine 108. *Id.* at 4:11–16. Machine 108 may be a vending machine having input device 112, function device 114, communication device 116, and vending machine controller 110. *Id.* at 4:16–19. Machine 108 may include retrofit device 120. *Id.* at 4:26–27.

Figure 2 of Breitenbach is reproduced below.

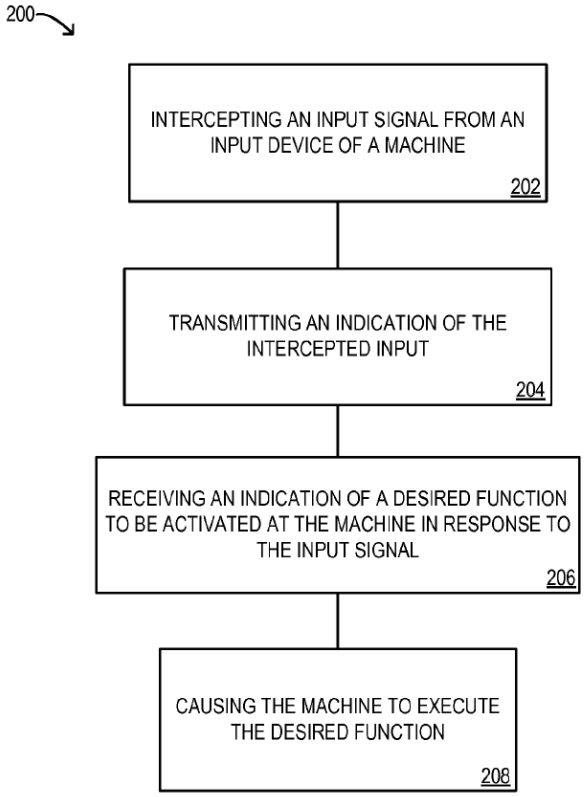

Figure 2 depicts a flow diagram of method 200. *Id.* at 7:37–38. For step 204 ("transmitting an indication of the intercepted input"), Breitenbach describes retrofit device 120 sending a signal indicative of a customer's input device or system, such as controller 102. *Id*. at 8:14–21. Breitenbach describes in conjunction with step 206 ("receiving an indication of a desired function to be activated at the machine in response to the input signal"), that "[s]pecially-programmed instructions stored and/or executed by the controller [102] may, for example, be executed to determine an appropriate action to be taken at the machine [108] in response to the customer's input." *Id.* at 8:30–32, 8:35–38. With respect to step 208 ("causing the machine to execute the desired function"), Breitenbach states:

> The retrofit device may, based on the received indication of the desired function for example, send a signal to the machine (e.g.,

> to the VMC 110 and/or the function device 114 of FIG. 1) that causes the machine to undertake the desired function. In the case that the desired function is the dispensing and/or providing of a unit of product, for example, the retrofit device may transmit a signal that causes the machine to dispense the desired unit of product—such as by sending a signal indicative of payment to a payment acceptance device of the machine. The retrofit device may, in some embodiments, "fool" the machine by replicating a "coin-in" signal indicative of the proper payment amount for the desired unit of product, causing the machine to dispense the unit of product.

Id. at 8:49–62.

2. Anticipation by Breitenbach — Claims 1–20

A claim is anticipated under § 102 "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. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). "Inherent anticipation requires that the missing descriptive material is 'necessarily present,' not merely probably or possibly present, in the prior art." *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) (quoting *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999)); *see also Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 958 (Fed. Cir. 2014).

a) Independent Claim 1

Petitioner contends that Breitenbach anticipates claim 1. Pet. 47–65. In particular, Petitioner contends that Breitenbach inherently describes claim limitation 1.4b, which requires a program including instructions for "storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine." Pet. 60; Ex. 1002, 47:9–15. For claim limitation 1.4b, the Petition states:

> Breitenbach inherently stores in the memory of the retrofit device (120/320/420/520/720) the number of electrical pulses needed to "fool" the VMC (110/410/510/910) into determining the coin-acceptance mechanism received the appropriate number of coins for operation. EX1005, ¶¶184-185. The retrofit device does this "by replicating a 'coin-in' signal indicative of the proper payment amount for the desired unit of product, causing the machine to dispense the unit of product." *Id.*, 8:47-62; EX1005, ¶¶ 185-186. In order to replicate the "coin-in" signal, the retrofit device inherently stores and determines the number of electrical pulses needed by the VMC to initiate an operation of the coin-operated machine (108/708). *Id.*

Pet. 60; *see also* Pet. 51–52; Ex. 1005 ¶¶ 110–111, 184–186 (substantively similar testimony of Mr. Smith).

Patent Owner disagrees and argues that "the retrofit device that Breitenbach discloses does not ***necessarily*** store, in the memory ***of the retrofit device***, a number of electrical pulses that must be received by a control unit to initiate an operation of the machine." Prelim. Resp. 32. Patent Owner contends that Petitioner ignores that Breitenbach describes that machine 108 is connected to controller 102 through network 106 and storing operation instructions remote from the machine at controller 102. *Id.* at 32–33 (citing Ex. 1007, 4:11–54, 5:9–46, 6:51–61, 17:48–18:46, Fig. 1, Fig. 7).

We agree with Patent Owner. As acknowledged by Petitioner, Breitenbach does not explicitly describe "the particular structure included in the retrofit device to generate and output the 'coin-in' signals to the VMC to 'fool' the machine into detecting proper payment for a machine operation." Pet. 99; *see generally* Ex. 1007. Breitenbach does state that

> [t]he retrofit device may, in some embodiments, "fool" the machine by replicating a "coin-in" signal indicative of the proper payment amount for the desired unit of product, causing the

machine to dispense the unit of product.

Ex. 1007, 8:58–62. But, Petitioner does not sufficiently explain why this necessarily means that "[i]n order to replicate the 'coin-in' signal, the retrofit device inherently stores and determines the number of electrical pulses" (Pet. 60). Mr. Smith's testimony is similarly conclusory and does not sufficiently support Petitioner's theory of inherency. Ex. 1005 ¶¶ 110–111, 185–186. Further as Patent Owner points out (Prelim. Resp. 32–33), Petitioner's analysis does not sufficiently account for Breitenbach's descriptions of storing operation instructions remote from machine 108 at controller 102. *See, e.g.,* Ex. 1007, 6:51–61, 8:35–38 ("Specially-programmed instructions stored and/or executed by the controller [102] may, for example, be executed to determine an appropriate action to be taken at the machine [108] in response to the customer's input."),

Accordingly, we determine that Petitioner does not show sufficiently that claim 1 is more likely than not unpatentable under 35 U.S.C. § 102 as being anticipated by Breitenbach.

b) Independent Claims 7, 13, and 19

Independent claims 7, 13, and 19 recite limitations similar to limitation 1.4b. Ex. 1002, 48:12–15, 49:17–20, 50:28–31. Petitioner merely references its analysis of claim 1 to show that Breitenbach anticipates claims 7, 13, and 19 and does not provide any additional explanation. Pet. 74–75 (claim 7), 83 (claim 13), 92 (claim 19). For the same reasons as discussed above with respect to limitation 1.4b, Petitioner does not show sufficiently that claims 7, 13, and 19 are more likely than not anticipated by Breitenbach.

c) Dependent Claims

Claims 2–6 depend from claim 1. Claims 8–12 depend from claim 7. Claims 14–18 depend from claim 13. Claim 20 depends from claim 19.

For the same reasons as discussed above with respect to limitation 1.4b, Petitioner does not sufficiently show that claims 2–6, 8–12, 14–18, and 20 are more likely than not anticipated by Breitenbach.

3. Obviousness over Breitenbach and Yung — Claims 1–20

Petitioner does not rely upon Yung to cure the above deficiency of Breitenbach. *See* Pet. 104 (mapping limitation 1.4b by reference to the Petition's anticipation ground). Accordingly, we determine that Petitioner does not sufficiently show that claims 1–20 are more likely than not unpatentable under 35 U.S.C. § 103 over Breitenbach and Yung.

4. Obviousness over Breitenbach and Cole — Claims 1–20

Petitioner does not rely upon Cole to cure the above deficiency of Breitenbach. Pet. 112 (mapping limitation 1.4b by reference to the Petition's anticipation ground). Accordingly, we determine that Petitioner does not sufficiently show that claims 1–20 are more likely than not unpatentable under 35 U.S.C. § 103 over Breitenbach and Cole.

III. CONCLUSION

For the foregoing reasons, we conclude that the information presented in the Petition fails to establish that it is more likely than not that at least one claim of the '608 patent is unpatentable. Accordingly, we do not institute post-grant review of the '608 patent.

IV. ORDER

It is ORDERED that the Petition is denied, and we do not institute post-grant review of any claim of the '608 patent based on the grounds asserted in this Petition.

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