

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THE HILLMAN GROUP, INC.,
Petitioner,

v.

MINUTE KEY INC.,
Patent Owner.

Case IPR2015-01154
Patent 8,979,446 B2

Before WILLIAM V. SAINDON, RICHARD E. RICE, and
TIMOTHY J. GOODSON, *Administrative Patent Judges*.

SAINDON, *Administrative Patent Judge*.

DECISION
Final Written Decision
37 C.F.R. § 42.73

I. INTRODUCTION

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

With respect to the grounds asserted in this trial, we have considered the papers submitted by the parties and the evidence cited therein. For the reasons discussed below, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1, 7, 8, 11, 12, 15–18, 20, 23–26, 31, 32, 38, 39, 42, 43, 46–49, 51, 54–58, 64, 65, 68, 69, 72, 74, 76, 79–84, 90, 91, 94, 95, 98, 100, and 104–108 of U.S. Patent No. 8,979,446 B2 (Ex. 1001, “the ’446 patent”) are unpatentable.

A. Procedural History

Petitioner filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1, 7, 8, 11, 12, 15–18, 20, 23–26, 31, 32, 38, 39, 42, 43, 46–49, 51, 54–58, 64, 65, 68, 69, 72, 74, 76, 79–84, 90, 91, 94, 95, 98, 100, and 104–108 of the ’446 patent on four grounds. Pet. 3–4. Patent Owner filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We instituted *inter partes* review on all challenged claims. Paper 8 (“Dec. on Inst.”).

Patent Owner filed a Response, in which it “does not contest Grounds 1–3” but does contest ground 4, which covers claims 23, 54, 79, 104, and 108. Paper 10, 2 (“PO Resp.”). Petitioner filed a Reply. Paper 11 (“Pet. Reply”). No oral argument was held, as neither party requested one. Paper 12.

B. Related Matters

The '446 patent is the subject of a district court action of which the Petitioner is not a party: *Minute Key Inc. v. Keyme, Inc.*, No. 0:15-cv-01599-JNE-LIB (D. Minn. 2015). Paper 5.

C. The '446 Patent

The '446 patent was filed on June 3, 2011, and is directed to a self-service, fully automatic kiosk for duplicating keys. Ex. 1001, (22), (57). The '446 patent expresses that “[t]here is a long-felt need for a fully automatic . . . machine that can provide a duplicate key for an ordinary consumer in a manner as easy as purchasing an item from a vending machine or receiving money from an automated teller machine.” *Id.* at 1:21–26.

D. Challenged Claims

Petitioner’s ground 4 (Freeman, Barber, and Prescott) challenges claims 23, 54, 79, 104, and 108. Of those, only claim 108 is independent; it is reproduced below:

- 108. A self-service kiosk for duplicating keys, comprising:
 - a kiosk housing having a customer interface configured to receive payment from a customer for the purchase of at least one duplicate of the customer’s key,
 - a key-receiving entry in said housing configured to receive at least a portion of the customer’s key to be duplicated,
 - a key analysis system within said housing configured to analyze the blade of a key inserted in said key-receiving entry to determine [w]hether the inserted key matches one of a group of preselected key types and, if so, which preselected key type is matched,
 - a key blank magazine within said housing configured to store key blanks for each of said preselected key types, wherein the key

- blank magazine includes a sensor configured to generate a signal when the number of key blanks, of any of said preselected types, stored in said magazine is reduced to a preselected number,
- a key blank extraction system configured to extract from said magazine a key blank for the preselected key type matched by the blade of said key inserted in said key receiving entry,
 - a key duplicating system within said kiosk configured to replicate the tooth pattern of the blade of said key inserted in said key-receiving entry, on the blade of said extracted key blank, and
 - a key-removal exit in said housing providing customer access to the key with the replicated tooth pattern for removal from the kiosk.

E. Prior Art and Asserted Grounds

Petitioner asserts that the challenged claims are unpatentable over four obviousness grounds, listed below. *See* Pet. 3–4.:

References	Claims
Freeman ¹ and Barber ²	1, 7, 8, 11, 12, 15, 18, 24, 25, 31, 32, 38, 39, 42, 43, 46, 49, 55, 58, 64, 65, 68, 69, 72, 74, 80, 81, 84, 90, 91, 94, 95, 98, 100, 105, and 106
Freeman, Barber, and Almblad ³	16, 17, 47, 48, and 57
Freeman, Barber, and Wills ⁴	20, 26, 51, 56, 76, 82, 83, and 107
Freeman, Barber, and Prescott ⁵	23, 54, 79, 104, and 108

¹ U.S. Patent App. Pub. No. 2008/0145163 A1, published June 19, 2008 (Ex. 1003).

² U.S. Patent App. Pub. No. 2007/0050266 A1, published Mar. 1, 2007 (Ex. 1004).

³ U.S. Patent No. 5,807,042, issued Sept. 15, 1998 (Ex. 1005).

⁴ U.S. Patent No. 6,588,995 B2, issued July 8, 2003 (Ex. 1006).

⁵ U.S. Patent No. 5,590,809, issued Jan. 7, 1997 (Ex. 1007).

Petitioner relies on the testimony of George L. Heredia. Ex. 1002.⁶ Patent Owner states that it does not contest grounds 1–3, which correspond to the first three grounds listed in the table above. PO Resp. 2.

II. ANALYSIS

A. Claim Construction

We interpret the claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent. 37 C.F.R. § 42.100(b). Under that standard, a claim term generally is given its ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Although our claim interpretation cannot be divorced from the specification, *see Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (citing *In re NTP, Inc.*, 654 F.3d 1279, 1288 (Fed. Cir. 2011)), we must be careful not to import limitations from the specification that are not part of the claim language, *see SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

We did not construe any terms in our Institution Decision. Dec. on Inst. 5. In our analysis of ground 4, which is the only ground contested by Patent Owner during trial, we noted that the parties appeared to have

⁶ Mr. Heredia is a former employee of Petitioner and was retained by Petitioner as a consultant from 2013 to 2014. Ex. 1002 ¶ 7.

different understandings as to the limitation requiring a sensor “configured to generate a signal when the number of key blanks . . . is reduced to a *preselected number*.” *Id.* at 10 (emphasis added). We discussed how Petitioner pointed to Prescott for this limitation, and that Prescott sensed when the number of key blanks was zero. *Id.* at 10–11 (citing Pet. 40; Ex. 1007, 12:16–35). We acknowledged Patent Owner’s argument that “Prescott only discloses sending a signal when the magazine is empty” (*id.* at 11 (quoting Prelim. Resp. 28)), but determined that Patent Owner had not provided sufficient analysis explaining why the claims precluded zero as the preselected number so as to persuade us otherwise. *Id.* As such, the parties were on notice that the meaning of this phrase was an issue that could be disputed and developed further during trial.

In its Response, Patent Owner argues that “preselected number,” found in claims 23, 54, 79, 104, and 108, should be construed as “a number chosen from a group of two or more options.” PO Resp. 3. Patent Owner offers extrinsic evidence suggesting that “preselected” means “to choose in advance usually on the basis of a particular criterion.” *Id.* (citing Ex. 2003, a dictionary). Patent Owner also points to language in the specification that states that the sensor can detect when the key level drops, “e.g.,” below 40 keys. *Id.* at 4. Patent Owner intends this example to show that “the claimed sensor is designed to send a signal when there are only a certain number of key blanks left in the magazine.” *Id.* Patent Owner clarifies that it does not preclude “zero” from being the preselected number, *id.* at 4–5, and instead emphasizes that our “apparent construction that ‘preselected number’ simply requires any number . . . without regard to *how that number is chosen*, is impermissibly broad and would read the term ‘preselected’ out of the

claim.” *Id.* at 5 (emphasis added). Notably, however, Patent Owner does not explain what it considers to be a permissible way of determining “how that number is chosen,” how that additional limitation should be read into the claims, or how the specification supports such a construction.

Petitioner argues that “preselected number” should be construed as a “number chosen in advance.” Pet. Reply 2. Petitioner points to Patent Owner’s own definition as extrinsic evidence suggesting that “preselect” means “to choose in advance usually on the basis of a particular criterion.” *Id.* (citing Ex. 2003 and using the same definition relied upon by the Patent Owner). Petitioner also points to disclosure in the specification that it alleges supports its construction. *Id.* at 2–4. In particular, Petitioner points out that the sensor described in the specification is “installed in the machine at a height that corresponds to a desired level of keys.” *Id.* at 4 (citing Ex. 1001, 13:63–14:3, Fig. 41). We understand Petitioner’s point to be that the designer can choose a particular, fixed location for the sensor when designing the machine, and that will represent the “preselected number.” Petitioner argues that Patent Owner’s proposed construction includes additional requirements beyond what the claims or specification require because Patent Owner would limit “how that number is chosen.” *Id.* at 4–6; PO Resp. 5.

Patent Owner’s and Petitioner’s proposed constructions are not that different—they rely on the same dictionary definition. As Petitioner has identified, however, Patent Owner is implicitly proposing additional limitations to the term “preselected number,” specifically requiring a particular (but unspecified) way of “how that number is chosen.” See PO Resp. 5. But “preselected” simply means chosen at some time prior to

another time—there is no additional requirement directed to when or how this choice must occur. One could envision many ways a “preselected number” could come about. For example, a key duplicating machine designer could choose to make the machine with an empty magazine sensor trigger. Even if the number of key blanks to trigger the sensor were fixed and not able to be changed, that number could be said to have been preselected by the designer according to whatever needs she felt were addressed by that choice of design. At the other extreme, a designer could provide a flexible configuration that allowed an authorized user to select any arbitrary number, and possibly allow for re-selection of that number at any time. There, the designer would have built in the capability for someone else to select the number that triggered the sensor.⁷ Accordingly, when considering the construction of “preselected number,” it is important to understand that it is all relative to the point in time in which one is to determine whether a selection has occurred already (so as to be “pre”).

The claims are not method claims and do not specify at which time preselection is measured, nor do they provide much context for the term’s meaning. In claim 108, “the key blank magazine includes a sensor configured to generate a signal when the number of key blanks . . . stored in said magazine is reduced to a preselected number.” Claims 23, 54, 79, and 104 are similar. The claim recitation describes functional characteristics of the sensor, but no particular constraints on the sensor are implied by the

⁷ Depending on when preselection is to be measured, this latter scenario could be considered to *preclude* preselection (from the designer’s/manufacturer’s standpoint), because the number is not chosen in advance.

function recited, the type of the sensor, or the environment in which the sensor is located. *See Rowe v. Dror*, 112 F.3d 473, 479–80 (Fed. Cir. 1997) (functional limitations distinguish over the prior art when they imply certain structural features are required by the claims). For example, no particular type of sensor or sensor configuration is recited in the claims, and nothing in the claims would indicate how a “preselected number” comes about.⁸ Accordingly, the claims do not require the preselected number to be preselected in a certain way, at a certain time, or by a certain person. Next, we turn to the specification.

The specification is brimming with the word “preselected.” The parties do not direct us to, nor do we find, however, a discussion of “preselected number” in terms of the key magazine sensor. Patent Owner directs us to the portion of the specification describing the optical sensor for detecting key blanks (Ex. 1001, 1:59–16:3), but we do not find, nor does either party allege, that there is a discussion of “preselected.” Instead, we see an example where the optical sensor is configured to send a signal when “the supply of blanks in any channel drops below the level of the sensor,

⁸ We note the specification describes an optical sensor, but we do not read limitations from the specification into the claim where the claim language is clearly broader. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (“Absent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification or prosecution history when those sources expressly disclaim the broader definition.”). Further, even if the claims were limited to an optical sensor, we have no evidence or technical reasoning that suggests any particular selection scheme when implementing an optical sensor.

e.g., a height of 40 key blanks above the bottom.” *Id.* at 13:59–63.⁹ Nothing in this passage indicates whether the sensor is adjustable or fixed, whether the exemplary height of 40 is a factory or user setting, how 40 was chosen, or otherwise informs us about what it means to be “preselected.” Patent Owner points to a passage in the specification that states that “[i]f a key blank magazine . . . [is] reported as being depleted or low on stock, the webcam may be used to confirm.” PO Resp. 9 (quoting Ex. 1001, 19:58–66). Patent Owner argues that this means that a signal is sent “*before* the magazine is empty.” *Id.* But Patent Owner has already conceded that zero is a preselected number, and that is consistent with this portion of the specification, which states that it reports the key blank magazine when it is *depleted*, i.e., at zero. *Id.* at 4 (Patent Owner stating that “‘preselected number’ does not necessarily preclude zero”). Patent Owner also argues that if zero were the preselected number, then there could possibly be sales losses. *Id.* at 11. Again, Patent Owner has conceded that zero is a preselected number, and the specification supports zero being the preselected number. Accordingly, we see no basis in the claims or specification for limiting “preselected number” to exclude zero, or to require a particular time or process for performing the preselection.

The specification uses “preselected” in a number of other contexts. To the extent the specification implies that preselection is made at a certain time or by a certain person, the specification suggests that the preselection is a fixed choice, done by the designer of the system. For example, the

⁹ The specification describes 40 key blanks as an example of how many key blanks would be in box of key blanks. Ex. 1001, 14:53–58.

summary of the invention describes a “key analysis system” that “determine[s] whether [a user’s] inserted key matches one of a group of preselected key types.” Ex. 1001, 1:34–39; *see also id.* at 12:33–44 (further describing preselected key types and citing to a patent application providing further detail), *id.* at 13:1–38 (further describing how preselected key types are determined). The structure for figuring out whether a key is a “preselected key type” is a series of mechanical gauges, each of which corresponds to a particular one of the preselected key types. *See id.* at 13:1–38, Fig. 29. These mechanical gauges must be designed and installed into the machine by the designer; they are a fixed choice built into the system’s architecture. This feature is recited in claim 108 as a “key analysis system” that determines whether a key is “of any of said preselected types.” Accordingly, the claims and the specification use “preselected” in this context to mean preselected by the designer of the machine at the time the machine was designed, and not changeable.

The specification also uses the word “preselected” in relation to the user interface or diagnostics. For example, there is a feature of video recording the interior of the machine to allow troubleshooting if there is “an inability to complete a preselected number of customer-initiated transactions within a preselected time period.” *Id.* at 17:53–67; *see also id.* at 7:37–43 (“preselected additional amount” added to credit card charge), 7:48–55 (“preselected time interval” for a user to respond after credit card is declined before reset), 8:12–15 (“preselected time-out interval” during which to enter an email address for emailed receipt option); *id.* at 19, 40–50 (if “preselected criteria are not met . . . the kiosk automatically sends an alert to the remote

server.”). These passages appear to use “preselected” as fixed things chosen by the designer of the system at the time the system was designed.

Given that the specification considers “preselected” to encompass those things chosen by the designer of the system, and not otherwise changeable (e.g., gauges), a person of ordinary skill in the art would understand “preselected” includes a selection by the designer. Nothing in the specification limits the “preselected number” to a particular process. Further, nothing in the claims further limits “preselected number” from what is disclosed in the specification (i.e., that it includes selection by the designer). Accordingly, “preselected number,” in light of the specification, is a number chosen in advance.

Patent Owner’s attempt to add further, undiscussed limitations to the term (e.g., to define a point in time, to define a method of choosing) are unpersuasive. A designer’s choice of zero is a choice, for example, and it is made in advance of the kiosk being complete, to fit a particular need (identifying when magazine is empty). Patent Owner fails to explain why its proposed construction precludes this reading, and instead relies on implicit but undiscussed additional limitations regarding timing or selection method. The claims are directed to a physical product, however, and to the extent Patent Owner would require that the “preselected number” entails a *certain process for pre-selection*, such a process is not claimed and is not described in the specification, and Patent Owner makes no persuasive arguments as to why such a process should be considered part of the claims. Similarly, Patent Owner provides no persuasive argument to limit the claims to a particular point in time at which “preselection” is evaluated.

Our construction of “preselected number” is consistent with the use of “preselected” throughout the specification, as discussed above, and we cannot find anything in the specification that indicates the term is more limited. For example, we find no indication in the specification that the key blank magazine sensor is adjustable, such as to imply “preselected” is in reference to a process and choice of an installer or owner at the point of sale. Instead, a single exemplary location for the sensor is given, with no discussion as to how it was selected. Accordingly, the meaning we have ascribed to the term is the only one for which we can find *support* in the specification.

In view of the above, we adopt Petitioner’s proposed construction of “preselected number” as a “number chosen in advance,” consistent with the claims, specification, and the extrinsic evidence relied upon by both parties.

*B. Obviousness in View of Freeman, Barber, and Prescott
(Claims 23, 54, 79, 104, 108)*

Independent claim 108 is directed to a self-service kiosk for duplicating keys that includes a sensor “configured to generate a signal when the number of key blanks . . . is reduced to a preselected number.” Claims 23, 54, 79, and 104 are dependent claims that add that sensor limitation to their corresponding independent claims.

Petitioner’s analysis of claim 108 is representative. Petitioner first points out that claim 108 includes similar limitations as claim 1, and directs us to its analysis of that claim. Pet. 39. As to claim 1, Petitioner cites to Freeman for most of the self-service kiosk limitations, such as the housing (*id.* at 19–20), key-receiving entry (*id.* at 23–25), key analysis system (*id.* at 25–27), key blank magazine (without sensor) (*id.* at 27–28), key blank

extraction mechanism (*id.* at 28–30), key duplicating system (*id.* at 30–31), and key removal exit (*id.* at 31–32). Petitioner asserts that Freeman does not disclose specifically the form of the user interface recited in the claim, but that Barber does. *Id.* at 21–22. Petitioner reasons that it would have been obvious to a person of ordinary skill in the art to use a graphical user interface, taught in Barber, as the customer interface in the kiosk of Freeman, because Barber teaches that touch screen graphical user interfaces (GUIs) are user friendly and that Freeman desires a user-friendly kiosk. *Id.* at 22 (citing Ex. 1002 ¶¶ 73–75; Ex. 1004 ¶¶ 63–66, 85; Ex. 1003 ¶¶ 9–10). Petitioner asserts that Freeman does not disclose a sensor for determining when the key blank magazine is reduced to a preselected number, but that Prescott does. *Id.* at 39–41. Petitioner reasons that it would have been obvious to a person of ordinary skill in the art to use a sensor to determine whether there were key blanks left, as taught in Prescott, to signal to the user that the machine is unable to produce a copy, or to notify an operating company that the machine is empty. *Id.* at 40–41 (citing Ex. 1002 ¶¶ 107–112; Ex. 1007, 12:27–35). As Mr. Heredia’s un rebutted testimony states:

Since Freeman’s key vending machine would not have had a skilled operator standing by to monitor inventory, and since a key vending machine, like a food product vending machine, holds a finite number of products, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a sensor to sense when the number of key blanks stored in the magazine had been reduced to a preselected number. Such a sensor would have allowed the machine to notify an operating company of its low inventory so that the machine could be replenished. It would also have allowed the machine to signal to a customer that the machine was unable to provide the depleted type of product, as Prescott does. Ex. 1007 col. 12 ll. 27-35.

Ex. 1002 ¶ 111.

Patent Owner does not contest any of the factual assertions of this ground or introduce evidence for a secondary considerations analysis, but rather makes arguments reliant on a particular claim construction that we do not consider commensurate with the broadest reasonable interpretation. *See* PO Resp. 7 (arguing that “Prescott does not teach or disclose [the claimed] sensor” because it does not show the “preselected number” limitation); *see generally id.* at 7–11 (continuing the same argument). Accordingly, Patent Owner has not contested the facts or testimony asserted by Petitioner. We determine Patent Owner to have waived any argument that Petitioner has not established that the prior art describes each limitation or that there is no rationale for combination.

We adopt Petitioner’s obviousness analysis (Pet. 18–32, 39–41, 56) as our own. There is no contest that Petitioner has shown where each limitation is found in the prior art. We also find persuasive Petitioner’s reason to combine analysis, which also is not contested. Specifically, Freeman recognizes a desire in the key duplicating field for user-friendly customer interfaces, especially those as simple as vending machines or automated teller machines. Ex. 1003 ¶ 9. Barber teaches that touch screen GUIs are a useful solution to the problem of providing user-friendly interfaces. Ex. 1004 ¶ 63. Similar combinations have already been made in the field. Ex. 1005, 18:54–61. Accordingly, Petitioner has shown that it would have been obvious to look to related vending machines such as Barber for user-friendly customer interfaces, such as GUIs. With respect to the sensor for determining whether a preselected number of key blanks are left in the magazine, this is a known inventory control feature in vending

machines, and Petitioner has shown that it would have been obvious to incorporate this feature. Ex. 1007, 12:16–35; Ex. 1002 ¶¶ 110–111.

Further, as we explained above, zero is a preselected number, which Patent Owner does not contest. Patent Owner’s argument, as we explained above, seems to require some undisclosed and unclaimed selection procedure, but Patent Owner has not explained why such a process should be read into the claims, how it would be supported by the specification, or how it would avoid the prior art if it were. Choosing to utilize a zero-based sensor is still a choice of a preselected number. To the extent Patent Owner is arguing that the choice in Prescott is zero or nothing, we disagree that the claims preclude this type of choice, as choosing zero is choosing a number, and zero is a meaningful trigger level for a person of ordinary skill in the art to choose.

In view of the record before us, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 23, 54, 79, 104, and 108 would have been obvious in view of Freeman, Barber, and Prescott.

C. Uncontested Grounds

Patent Owner “does not contest Grounds 1–3.” PO Resp. 2. Grounds 1–3 are the (1) Freeman and Barber, (2) Freeman, Barber, and Almblad, and (3) Freeman, Barber, and Willis grounds. See Pet. 18–39, 41–55, 56–59. We find Petitioner’s analysis to be persuasive, and we adopt it as our own.¹⁰

¹⁰ Further, we note the grounds each contain Freeman and Barber, and largely track the analysis discussed in the prior section.

Patent Owner's choice "not [to] contest" these grounds is deemed a concession that the claims are unpatentable in view of these grounds.

Petitioner's uncontested obviousness analysis establishes, by a preponderance of the evidence, that claims 1, 7, 8, 11, 12, 15, 18, 24, 25, 31, 32, 38, 39, 42, 43, 46, 49, 55, 58, 64, 65, 68, 69, 72, 74, 80, 81, 84, 90, 91, 94, 95, 98, 100, 105, and 106 would have been obvious in view of Freeman and Barber; claims 16, 17, 47, 48, and 57 would have been obvious in view of Freeman, Barber, and Almblad; and claims 20, 26, 51, 56, 76, 82, 83, and 107 would have been obvious in view of Freeman, Barber, and Wills.

III.ORDER

In view of the foregoing, it is hereby:

ORDERED that claims 1, 7, 8, 11, 12, 15–18, 20, 23–26, 31, 32, 38, 39, 42, 43, 46–49, 51, 54–58, 64, 65, 68, 69, 72, 74, 76, 79–84, 90, 91, 94, 95, 98, 100, and 104–108 of the '446 patent have been determined to be unpatentable in this *inter partes* review;

FURTHER ORDERED that this is a Final Written Decision under 35 U.S.C. § 318(a) and that parties to the proceeding seeking judicial review of the decision under 35 U.S.C. § 319 must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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