

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PRIMERA TECHNOLOGY, INC.,  
Petitioner,

v.

AUTOMATIC MANUFACTURING SYSTEMS, INC.,  
D/B/A ACCUPLACE,  
Patent Owner.

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Case IPR2013-00196  
Patent 8,013,884 B2

Before JOSIAH C. COCKS, JUSTIN T. ARBES, and MIRIAM L. QUINN,  
*Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

FINAL WRITTEN DECISION  
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

## I. BACKGROUND

Primera Technology, Inc. (“Petitioner”) requested *inter partes* review of claims 1-20 of U.S. Patent No. 8,013,884 B2 (“the ’884 patent”) pursuant to 35 U.S.C. §§ 311-319. Paper 6 (“Pet.”). We granted the Petition and instituted trial for all asserted claims. Paper 19 (“Dec. on Inst.”). Although Petitioner proposed six grounds of unpatentability, we instituted trial on three grounds:

- a) obviousness of claims 1-5, 7, 8, 10-15, 17, 18, and 20 over Hodai<sup>1</sup> and Levine;<sup>2</sup>
- b) obviousness of claims 6 and 16 over Hodai, Levine, and Geddes;<sup>3</sup> and
- c) obviousness of claims 9 and 19 over Hodai, Levine, and Bouchard.<sup>4</sup>

During trial, Automatic Manufacturing Systems, Inc., d/b/a Accuplace (“Patent Owner”), filed a Patent Owner Response (“PO Resp.”) addressing the three obviousness grounds and relying on the declaration of Dr. Charles DeBoer (Exhibit 2001). Paper 27. Petitioner filed a Reply to Patent Owner’s Response (“Pet. Reply”) relying primarily on additional prior art references and on Petitioner’s cross-examination of Dr. DeBoer (Exhibit 1018). Paper 30.

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<sup>1</sup> JP Patent Pub. No. 2003-312063 (“Hodai”) (Ex. 1003). Here we refer to the English translation (Ex. 1003) of the original reference (Ex. 1002). Petitioner has provided an affidavit attesting to the accuracy of the translation. See Ex. 1003; 37 C.F.R. § 42.63(b).

<sup>2</sup> U.S. Patent No. 5,676,910 (“Levine”) (Ex. 1004).

<sup>3</sup> U.S. Patent No. 6,629,792 B2 (“Geddes”) (Ex. 1005).

<sup>4</sup> U.S. Patent App. Pub. No. 2005/0219344 A1 (“Bouchard”) (Ex. 1006).

Both parties filed Motions to Exclude. In particular, Petitioner filed a motion seeking exclusion of Dr. DeBoer's testimony. Paper 36. Patent Owner's motion seeks to exclude the additional prior art references on which Petitioner relies in its Reply. Paper 43.

An oral hearing was held on April 28, 2014, and a transcript of the hearing is included in the record (Paper 49) ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). This final written decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons that follow, we determine that Petitioner has met its burden to prove by a preponderance of the evidence that claims 1-20 of the '884 patent are unpatentable.

A. THE '884 PATENT (EXHIBIT 1001)

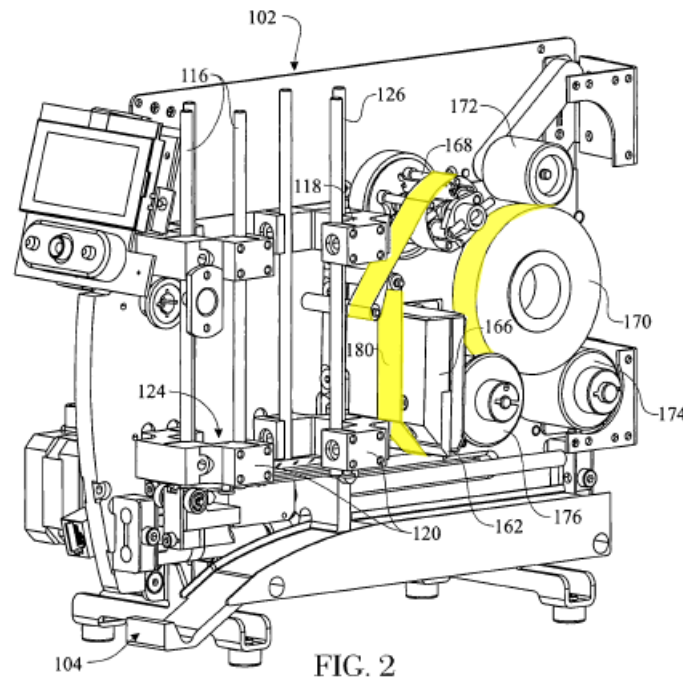
The '884 patent<sup>5</sup> relates to "the attachment of information to objects," and more specifically to "attaching medical information to glass surfaces such [as] glass slides during the processing of these slides." Ex. 1001, col. 1, ll. 15-20. The patent describes the problem in the prior art of the potential error in matching patient information to a specimen slide. *Id.* at col. 1, ll. 21-48. One solution for preventing the error is to attach the patient

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<sup>5</sup> The '884 patent, titled "Device and Method for Printing Information on Glass Surfaces," issued on September 6, 2011, based on Application 12/147,407, filed on June 26, 2008, which claims priority to Provisional Application 61/035,016, filed on March 9, 2008. On September 6, 2013, Patent Owner filed Application 14/020,322 for reissue of the '884 patent, seeking to add an additional claim 21 to the patent. The reissue application is pending.

information at the time the specimen is placed on the slide. *Id.* at col. 1, ll. 49-51. The patent describes that at the time of the invention there were various known ways of marking specimen slides: printing labels and attaching them by hand or machine, printing on the slide with ink jet printers, and marking the slide with laser beams or diamond scribing. *Id.* at col. 1, ll. 60-65. According to the patent, however, these machines were large, complex, expensive, and costly to operate (*id.* at col. 1, l. 65 – col. 2, l. 3), provided no ability to verify the correctness of the information marked on the slide (*id.* at col. 2, ll. 9-15), were hazardous to operate (*id.* at col. 2, ll. 22-23), or produced dust byproduct (*id.* at col. 2, ll. 21-22). The '884 patent identifies a need for an “economical method that very accurately matches and places patient information on patient specimen slides, which provides these features with a maximum of flexibility for use in a diagnostic laboratory.” *Id.* at col. 2, ll. 24-27.

In the summary of the invention, the patent describes the printing device as a device that prints medical information onto slides that are stored in a slide storage section, where the printing is performed with ink media tape and a print head to transfer the medical information onto the surface of the slide. *Id.* at col. 2, ll. 34-44. Reproduced below is an annotated Figure 2 of the '884 patent showing a front side perspective view of a printing device of a preferred embodiment of the invention and highlighting ink tape roll 170 and tape 180. *See* Ex. 1001, col. 3, ll. 39-41.



As shown in Figure 2, the printing device includes slide storage section 102 for loading a plurality of slides and a printing section that includes print head assembly 166 with print head 162, take-up reel 168, ink tape roll 170, tension roller 172, driven roller 174, and support roller 176. *Id.* at col. 6, ll. 55-60. During printing, a slide carrier is “moved to the left incrementally, per print row, while in contact with the tape 180.” *Id.* at col. 6, ll. 63-65. “This action draws the tape from the print rol[l] 170, such that an unprinted section of the tape 180 is interposed between the next print row beneath the print head 162.” *Id.* at col. 6, ll. 65-67.

After printing the last row on the slide, “the print head and slide move to a non-contact position, and the slide transport moves the carrier with the completed slide to an output section.” *Id.* at col. 2, ll. 51-54; *see also id.* at col. 6, ll. 16-18 (describing that a slide shuttles moves to the right to eject

the slide into an output tray). “The motion then is reversed . . . to acquire another slide and repeat the printing process.” *Id.* at col. 6, ll. 48-52.

The patent further describes that the printing device provides the “ability to print any specific information onto a slide 140 upon request.” Ex. 1001, col. 7, ll. 24-25. “The information can be manually entered for each slide or series of slides, downloaded from a database, scanned in via a bar code scanner, and the like.” *Id.* at col. 7, ll. 25-28. “Alternately, the information can be obtained directly from the microtome.” *Id.* at col. 7, ll. 28-29. The patent adds that “[t]he ability to print upon demand helps ensure the printed information matches the desired information respective to the material deposited upon the slide.” *Id.* at col. 7, ll. 29-32.

#### B. ILLUSTRATIVE CLAIMS

Challenged claims 1 and 11 of the '884 patent are the only independent claims at issue:

1. A method of transferring information onto surfaces of objects comprising:
  - inputting information into an input device, the input device transforming the information into an image for storage in a printing memory as a stored image;
  - positioning one or more glass objects in an object storage section by a printing device;
  - removing one glass object from the storage location in a glass object carrier of the printing device;
  - indexing the glass object in the carrier to initialize the printing;
  - transporting the object to a first position under a print head of a printing means for transferring such information to the object;

positioning an ink media tape from a driven feeder between the print head and the glass object;  
moving the print head and glass object together to cause the tape to contact the glass object in the carrier;  
heating, as required, at least one pixel element in a predetermined manner in the print head to print a row from the stored image by a thermal process to cause an inked media to transfer onto the object as determined by the stored image;  
advancing the tape and indexing the object to a next print row and repeating the steps from positioning the tape to transfer the desired information to the object;  
after printing the last row of data, separating the print head and object to a non-contact position;  
transporting the glass object by the carrier to an output section;  
removing the glass object wherein the object is mechanically removed into the output section; and  
repeating said method as many times as necessary as determined by the operator.

11. A printing device for attaching information to a glass like object, the printing device comprising:  
an input/interface means for transferring information to the printing device;  
a processing means for receiving the information from the input/interface means and transforming the information into an image for printing, the image being stored in a memory of the processing means;  
a control means for the input/interface means and the processing means;  
a storage section for the object, the storage section being an integral part of the printing device;  
a shuttle having a carrier for removing one of the objects from the storage section in a controlled manner

and indexing the object for printing, the shuttle moving the object so indexed to a first print position;

a printing section, the printing section comprising:

a tape feeder, the taper feeder being driven by a processing means, a tape from the tape feeder being positioned for printing in close proximity to the glass like object in the first print position;

a print head, the print head having a plurality of heating pixel elements in a row for printing the stored image by a thermal process to cause an inked media to transfer onto the object as determined by the stored image, after printing data in the first print position, the print head and tape are advanced to the next printing position, this is repeated until the stored image is printed on the glass like object, after printing the stored image, the print head and glass like object separate to a non-contact position, and the carrier moves the glass like object therefrom; and

an output section, the object with a printed image thereon is moved to the output section, after which another glass like object is removed from the storage section by the carrier if so required and the process repeated as necessary.

## II. ANALYSIS

### A. CLAIM INTERPRETATION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Claim terms are also given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed.

Cir. 2007). Also, we must be careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (“limitations are not to be read into the claims from the specification”).

In the Decision on Institution, we interpreted various claim terms of the ’884 patent as follows:

| Term                               | Interpretation                                                                                                                                                                                                                                                                   |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| “carrier” (claims 1 and 11)        | a structure, which may be fixed or may move, that carries an object                                                                                                                                                                                                              |
| “shuttle” (claim 11)               | a structure that moves back and forth to move an object                                                                                                                                                                                                                          |
| “printing means” (claim 1)         | a structure for printing                                                                                                                                                                                                                                                         |
| “input/interface means” (claim 11) | Function: transferring information to the printing device<br><br>Corresponding structures include: (1) an Ethernet network interface; (2) user interface, including a control panel for manually inputting information; (3) a bar code scanner; and (4) interface to a microtome |

| Term                          | Interpretation                                                                                                                                                                      |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| “processing means” (claim 11) | Function: receiving the information from the input/interface means and transforming the information into an image for printing.<br><br>Corresponding structure includes a processor |
| “control means” (claim 11)    | Function: control<br><br>Corresponding structures include: (1) user interface section; and (2) a control panel                                                                      |

Dec. on Inst. 10-16. Petitioner does not dispute these constructions. Patent Owner challenges the Board’s construction of all the above-listed terms, except “printing means” and “input/interface means,” and proposes constructions for terms that the Board did not construe. PO Resp. 8-23. We note that Patent Owner’s proposed challenge of the construction of “shuttle” and “carrier” does not appear to be dispositive of any issue at trial, because Patent Owner does not dispute that the “shuttle” and “carrier” limitations are disclosed in the asserted references based on either Patent Owner’s or the Board’s construction of these terms. We have reviewed Patent Owner’s arguments regarding “shuttle” and “carrier,” but see no reason to change our original constructions.

Regarding the remaining terms that Patent Owner disputes, the construction for “processing means” is revised per the analysis that follows, and the construction for “control means” is not changed, as discussed below.

The analysis below further addresses the claim terms not addressed in the Decision on Institution, terms which Patent Owner argues provide alleged distinctions over the asserted prior art.

1. *“printing means” (Claim 1)*

Patent Owner agrees with the Board’s construction of this term. PO Resp. 22-23. Accordingly, we adopt here the analysis and construction for the term “printing means” as set forth above, and in accordance with our Decision on Institution. Dec. on Inst. 13-14.

2. *“operator” (Claims 1, 10, and 20)*

The Decision on Institution did not provide a construction for the term “operator.” This term appears as part of the “repeating” step recited in claim 1. Claims 10 and 20 further recite that the “printing device is transportable by the operator.” Patent Owner contends that “the operator” is “the operator that determined the quantity of slides to be created by the printing device for each cassette and that placed specimens on the slides.” PO Resp. 9. We are not persuaded by Patent Owner’s arguments because they do not reflect the broadest reasonable interpretation of the claim language in light of the specification. Independent claims 1 and 11 (from which claims 10 and 20 depend, respectively) are silent concerning the action of determining the quantity of slides to be created by the printing device for each cassette. The claims are silent also concerning the action of specimen placement on the slides by an operator of the printing device. Thus, neither action is anchored in the claim language or called for by the specification, which does not

define in any way the term “operator.” At best, the specification describes that an “operator *can* determine the quantity of slides to be created/identified.” Ex. 1001, col. 4, ll. 11-13 (emphasis added). This description provides that the operator “can” determine the quantity of slides, but does not limit the operator to performing such a task, which, again, the claims do not recite. Furthermore, the specification does not link the specimen placement with the actions of the operator because it describes that a “laboratory technician”—not an operator of the printing device—places the specimen on the slides (*id.* at col. 5, ll. 15-18). *See* PO Resp. 10 (arguing that this passage of the specification supports the contention that the operator places specimens on the slides).

The broadest reasonable interpretation of “operator” is one who operates the printing device. This interpretation is supported by the specification. For example, the specification states that the “operator/technician *of the machine* is either in the room or in an adjacent room.” Ex. 1001, col. 1, ll. 33-34 (emphasis added). The specification further provides that “[t]he operations of the printing device should be as simple as possible and minimize operator intervention, such as, for example, that required during single slide loading methods.” *Id.* at col. 4, ll. 21-24. “[T]he operator scans the cassette.” *Id.* at col. 4, ll. 46-55. And the “printing device should have . . . a user interface that is adjustable in direction to accommodate different operating locations and different operator heights.” *Id.* at col. 4, ll. 41-44. These passages confirm that the

term “operator” is used in accordance with the plain and ordinary meaning of the word: one who operates the printing device.<sup>6</sup>

Based on the foregoing and applying the broadest reasonable interpretation consistent with the specification, we construe “operator” to mean “one who operates the printing device.”

### 3. “repeating” Step (Claim 1)

The Decision on Institution did not provide a construction for the step of “repeating said method as many times as necessary as determined by the operator.” According to Patent Owner, this claim limitation should be clarified in two aspects. First, Patent Owner contends that the plain and ordinary meaning of this limitation is “repeating *each and every step* of the method as many times as necessary.” PO Resp. 10 (emphasis in original). Second, Patent Owner contends that the phrase “as determined by the operator” means “as determined by the operator that determined the quantity of slides to be created by the printing device for each cassette and that placed specimens on the slides.” PO. Resp. 11. We agree with Patent Owner’s first contention, but we do not agree with the second contention for the reasons described with regard to the term “operator,” above.

Inspection of the claim language itself—“repeating the method”—yields the conclusion that the phrase refers to each and every step of the

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<sup>6</sup> See *Definition of operator*, THE AMERICAN HERITAGE® DICTIONARY OF THE ENGLISH LANGUAGE (2011), available at <http://search.credoreference.com/content/entry/hmdictenglang/operator/0> (Exhibit 3001).

method (other than the “repeating” step of the method itself), as recited. And although the specification is unclear regarding whether all the expressly recited steps are repeated, the plain language of the claim leaves no room for interpreting otherwise. See Ex. 1001, col. 4, l 58 – col. 5, l. 10 (stating that “this process is repeated,” but not describing whether the described “process” refers to all the steps from “inputting information” to “removing the glass object”).

Based on the foregoing and the evidence in the record before us, we conclude that the “repeating” step, construed broadly, but reasonably in light of the specification, means “repeating each and every step as many times as necessary as determined by the operator.”

4. *“input device” (Claim 1)*

The Decision on Institution did not provide a construction for this term. In its response, Patent Owner proffers that the construction of “input device” is “a processor that transforms information into an image to be printed.” PO Resp. 14. We do not agree with Patent Owner because the proposed construction (1) is inconsistent with the plain and ordinary meaning of the term, (2) imports extraneous limitations, and (3) improperly reads an embodiment into the claims.

First, the term “input device” is used in the specification and recited in the claims in accordance with the plain and ordinary meaning of the term. For example, claim 1 recites “inputting information into an input device” and “the input device transforming the information into an image.” These functional limitations of “input device” reveal that, according to the

broadest, but reasonable interpretation, the term refers to a structure for handling input of information: accepting and transforming the information as recited. The specification confirms that “input device” is a structure for handling input of information by stating that, in one exemplary embodiment, “[a] person or *input device* inputs the medical information into a processor that prepares a rasterized image to be printed and stores this image in a memory of the processor.” Ex. 1001, col. 2, ll. 36-39 (emphasis added); col. 4, ll. 58-61. Therefore, under the broadest reasonable interpretation, “input device” is not limited to a “processor that transforms information into an image to be printed,” as Patent Owner urges us to conclude.

Second, the specification uses “input device” distinctly and separately from the processor. In the passages cited above, the “input device” is used to input the medical information into a processor. *Id.* The specification further describes the processor as rasterizing an image to be printed. *Id.* Patent Owner’s proposed construction attempts to narrow the claims to an unrecited structure of a processor, which is not called for expressly by the claim language. Lastly, Patent Owner’s proposed construction limits the “input device” to an embodiment of a processor, and ignores the function of inputting information into the processor that is described and recited.

Accordingly, we conclude that the plain and ordinary meaning of “input device” is a structure for handling input of information.

5. “*processing means*” (Claim 11)

We construed “processing means” as a means-plus-function term, in accordance with section 112, ¶ 6. Dec. on Inst. 15. We identified the

function as “receiving the information from the input/interface means and transforming the information into an image for printing.” *Id.* We identified the structure linked to the function as a processor. *Id.*

Patent Owner disagrees with the identified function, but does not disagree with the identified structure. In particular, Patent Owner argues that the above-identified functions of receiving and transforming are not the only functions attributed to the “processing means.” PO Resp. 12. Claim 11 recites an unidentified function in the following limitation: “a tape feeder, *the tape feeder being driven by a processing means*, a tape from the tape feeder being positioned for printing in close proximity to the glass like object in the first print position” (emphasis added). According to Patent Owner, the specification describes a processor as the “structure corresponding to the function of driving the tape feeder.” PO Resp. 12 (citing Ex. 1001, col. 2, ll. 41-43, col. 4, ll. 64-65).

We are persuaded by the argument that claim 11 recites an additional function of driving the tape feeder. The claim language expressly attributes, albeit in passive voice, to the processing means, the function of driving a tape feeder. We do not agree, however, that the structure corresponding to that driving function is a processor. First, the passages Patent Owner cites do not support its contention, because they do not describe a processor in any discernible manner. For example, the first cited passage states that “[a]n ink media tape roll acting through a *driven feeder* provides, in a controlled manner, a coated tape between a print head and the slide.” Ex. 1001, col. 2, ll. 42-44 (emphasis added). The claims recite a “tape feeder” being

“driven,” and the specification refers to a “driven feeder”—the structure driving the feeder, however, is unknown from this passage. The second citation relied on by Patent Owner is virtually identical to the first citation and fares no better: “An ink media tape roll acting through a *driven feeder* provides a coated tape between the print head and the slide.” *Id.* at col. 4, ll. 64-66 (emphasis added). These passive-voice sentences give us no clue as to the structure that drives the feeder.

Furthermore, the asserted testimony of Charles DeBoer does not support the proposed construction. Dr. DeBoer declares that the ’884 patent discloses a printing section that includes a tape driven by the processor. Ex. 2001 ¶¶ 56, 60. Dr. DeBoer supports that statement by pointing to the passive-voice sentences discussed above. *Id.* at n.37. Dr. DeBoer also relies on a passage in column 6 that describes the printing section of the device having various components, including ink tape roll 170, tension roller 172, driven roller 174, and support roller 176. *Id.*; Ex. 1001, col. 6, ll. 55-62. In that passage, however, the only structure linked in any way to the function of “driving” is driven roller 174—no processor is described.

Additional testimony of Dr. DeBoer regarding whether a processor drives the tape feeder is unpersuasive because that additional testimony is conclusory. For example, Dr. DeBoer states that “a person of ordinary skill in the art understands that the processor performs the function of driving the tape feeder.” Ex. 2001 ¶ 63. Although the law does not require that a structure be identified explicitly, the specification must identify some structure that a person of ordinary skill in the art would understand as

corresponding to the means-plus-function limitation. *See Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1380 (Fed. Cir. 1999). Where our reviewing court has found that the structure is a computer, without an express disclosure of that computer, the specification has shown clearly the intent to attribute to a computer the recited functions. *See In re Dossel*, 115 F.3d 942, 946-47 (Fed. Cir. 1997). Although the '884 patent describes a processor, Dr. DeBoer does not show how the description of that processor would be understood by a person of ordinary skill in the art to include the function of driving the tape feeder. Nor does he explain how the '884 patent specification shows that the processor is intended to drive the tape feeder. Therefore, because of the conclusory nature of, and the lack of support in, the written description for Dr. DeBoer's testimony in this regard, we do not find his testimony on that issue persuasive.

We now turn to identifying the structure linked to the function of driving the tape feeder. "Application of § 112, ¶ 6 requires identification of the structure in the specification *which performs the recited function.*" *Micro Chemical, Inc., v. Great Plains Chemical Co., Inc.*, 194 F.3d 1250, 1257 (Fed. Cir. 1999) (emphasis added). Further, the statute does not permit "incorporation of structure from the written description beyond that necessary to perform the claimed function." *Id.* at 1258. The patent describes that a drive system is located in the rear of the machine, shown below in Figure 1B of the '884 patent. Ex. 1001, col. 6, ll. 24-26.

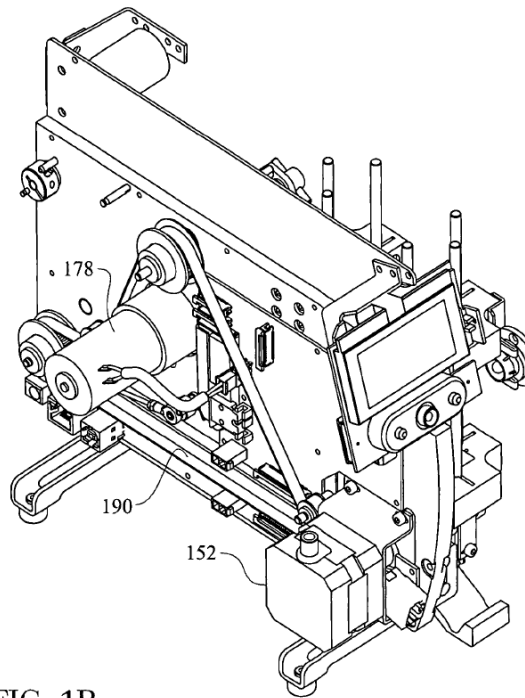


FIG. 1B

Figure 1B depicts stepper motor 152 that moves certain parts in the device, such as translating back and forth slide supports that are slideably mounted on guide shafts 148. *Id.* at col. 6, ll. 1-6. Inspection of Figure 1B also shows that belt 190 is coupled to motor 152 and engages what Figure 2 depicts as take-up reel 168 and driven feeder 174, and that the motor thereby causes the rotation of the take-up reel and the driven feeder. Further, there is a direct relationship between the back and forth motion of the slide and feeding the ink media tape during printing. The '884 patent confirms this relationship stating that “[t]he ink media moves *in tandem* with the motion of the slide, presenting a continuously fresh section of ink between the print head and the slide throughout the printing process.” *Id.* at Abstract (emphasis added). Indeed, the patent describes that during printing, the

action of the slide carrier moving to the left, per print row, “draws the tape from the print rol[l] 170, such that an unprinted section of the tape 180 is interposed between the next print row beneath the print head 162.” *Id.* at col. 6, ll. 65-67. The ’884 patent further describes *driven* roller 174 in connection with the printing section of the device shown in Figure 2. *Id.* at col. 6, ll. 55-60. Because Figures 1B and 2 support the conclusion that only the take-up reel and driven feeder are rotated by the motor during printing, those devices, when “driven,” feed the ink media tape in the printing device. Therefore, we conclude that the structure that drives the recited “tape feeder” is a motor.

Accordingly, we conclude that the structures of the “processing means” linked to the three recited functions (receiving the information from the input/interface means, transforming the information into an image for printing, and driving the tape feeder) are a processor and a motor.

6. “*input/interface means*” (*Claim 11*)

Patent Owner provides its proposed construction for the term in accordance with section 112, ¶ 6, and argues that the corresponding structures for the limitation include “(1) an interface to an Ethernet network, (2) a user interface for manually obtaining information, (3) an interface to a bar code scanner, (4) an interface to a microtome, and (5) an interface to a database.” PO Resp. 23. We find that Patent Owner’s proposed construction does not differ materially from our construction. Further, we do not discern any argument by Patent Owner that our construction should be revisited. *Id.* Accordingly, the construction for the term “input/interface

means” is as set forth above and according to the analysis in our Decision on Institution. Dec. on Inst. 14-15.

7. “*control means*” (Claim 11)

Patent Owner requests a modification to the construction of “control means” provided in the Decision on Institution. PO Resp. 13. In particular, Patent Owner urges that under § 112, ¶ 6, the function of the “control means” is not control generally, as we initially determined, but “controlling the input/interface means and the processing means.” *Id.* We deny Patent Owner’s request because the proffered function is not supported by the claim language.

Claim 11 recites the limitation as follows: “control means for the input/interface means and the processing means.” After the word *for*, there is no functional language tying the function of control specifically to the “input/interface means” and “processing means.” We interpret the general recitation of the function of “control” as broadly, but reasonably, being untethered to those specific means. The specification confirms this interpretation as it states that “a *control* panel and display 182 are used to initiate and *control the operation of the printing device 110.*” Ex. 1001, col. 7, ll. 16-18 (emphasis added). Patent Owner cites this very passage as disclosing the function of control. This passage, however, does not support the contention that the “control” is specifically of the “input/interface means” and “processing means,” to the exclusion of the control of other components. Instead, the control that the specification describes is, generally, the operation of the printing device. *Id.* Indeed, Patent Owner

does not point to any disclosure in the specification of a device controlling both an “input/interface means” and a “processing means.”

Furthermore, we are not persuaded by Patent Owner’s argument that the described, but unclaimed, capability of the printing device to print “upon request” or “upon demand” weighs in favor of redefining the function of “control” in the manner argued by Patent Owner. *See* PO Resp. 13-14. Patent Owner relies on the statements in paragraph 2 of the Notice of Allowability of the application corresponding to the ’884 patent.<sup>7</sup> *See* Ex. 2002. Notably, the statement of reasons for allowance is stated as

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<sup>7</sup> Paragraph 2 of the Notice states that:

2. The following is an examiner's statement of reasons for allowance: Prior art of record do not teach or suggest the claimed method and device for transferring information onto surfaces of glass objects comprising the steps/means as recited in the claims.

The claimed method and device provides the ability to print any specific information onto a glass object upon request. The information can be manually entered for each object or series of objects, downloaded from a database, scanned in via a bar code scanner, and the like. Alternately, the information can be obtained directly from the microtome. The ability to print upon demand helps ensure the printed information matches the desired information respective to the material deposited upon the object.

Ex. 2002 ¶2.

follows: “[p]rior art of record does not teach or suggest the claimed method and device . . . as recited in the claims.” *Id.* at ¶ 2. The language in the Notice that Patent Owner relies on as a “statement of reasons for allowance” merely paraphrases language found in the specification. *Compare* Ex. 2002 ¶ 2 *with* Ex. 1001, col. 7, ll. 24-32. This paraphrased language is untethered to the “control means.” Nevertheless, it is unclear how the specific embodiment of ways to enter information for the printing device alluded to by the Examiner confines the “control” function to features not expressly recited in the claim. *See Generation II Orthotics, Inc. v. Med. Tech., Inc.*, 263 F.3d 1356, 1364-65 (Fed. Cir. 2001) (“When construing the functional statement in a means-plus-function limitation, we must take great care not to impermissibly limit the function by adopting a function different from that explicitly recited in the claim.”). Accordingly, for purposes of construing the “control means” term, we give little to no weight to the Examiner’s statement in the Notice of Allowability.

Based on the foregoing analysis, we confirm our determination in the Decision on Institution that the recited function is “control” and that the structures corresponding to the function include (1) user interface section (Ex. 1001, col. 7, ll. 14-15; Fig. 1A (item 110)), or (2) a control panel (*id.* at col. 7, ll. 16-17).

8. “transforming” (*Claims 1 and 11*)

The Decision on Institution did not provide a construction for this term. In its response, Patent Owner proffers that the ordinary and customary meaning of “transforming” is “converting non-rasterized information into a

rasterized image to be printed.” PO Resp. 9. Patent Owner argues that the specification and the opinion of its declarant, Dr. DeBoer, support the proffered construction. *Id.* (citing Ex. 2001 ¶ 35; Ex. 1001, col. 2, ll. 35-38, col. 4, ll. 58-61). We are not persuaded by Patent Owner’s argument because the claim language and the specification do not support the proposed construction of “transforming.”

The specification describes that the processor “transforms the information into a format that is used to drive the heating pixels appropriately.” Ex. 1001, col. 7, ll. 18-21. Such a description of transforming is broader than “converting non-rasterized information into a rasterized image.” Although the specification may describe that the processor rasterizes, it describes an exemplary embodiment, and neither the claim language nor the specification limits the scope of the word “transforming” to rasterizing.

As Patent Owner notes, the claim recites the word in accordance with its ordinary and customary meaning. The testimony of Dr. DeBoer, on which Patent Owner relies to support that meaning, uses the words “transforming,” “rasterizing,” and “converting” interchangeably. Ex. 2001 ¶ 35. That testimony, however, fails to support the interchangeability of these words with any facts or other evidence. Furthermore, the cited testimony attempts to describe transforming techniques known to a person of ordinary skill in the art—the testimony, however, is not directed to what the proper claim construction would be for the term using the broadest reasonable interpretation in the context of the specification. Accordingly,

we are not persuaded by the cited testimony of Dr. DeBoer as to the proper scope of the term “transforming.”

As evidence of the proper meaning, we consider that the claims are directed to a printing device that transforms information into an image. Because one embodiment of that transformation includes the use of a processor, the appropriate field of science with which one of ordinary skill in the art would be involved includes computer science. *See e.g.*, Ex. 2001 ¶ 15 (setting forth the level of skill in the art as someone with an undergraduate degree in mechanical engineering or computer science plus four years of industry experience in printer design). Evidence of the meaning of the word “transforming” in that field is exemplified by a dictionary definition: to change the form of digital computer information without significantly altering its meaning.<sup>8</sup> This definition is consistent with the claimed step of “transforming the information into an image for storage” and consistent with the specification, which describes transforming the information into a format that is used to drive the heating pixels appropriately. *See* Ex. 1001, col. 7, ll. 18-21, 45-46. The transformation must not alter the meaning of the information because the specification and the claims provide that the image that is printed must convey the information, such as the patient’s name, patient identifier, bar-coding, etc.

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<sup>8</sup> *Definition of transform (computer science)*, DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 1953 (McGraw-Hill 4<sup>th</sup> ed. 1989) (attached as Ex. 3002).

*Id.* at col. 4, ll. 7-9, col. 7, ll. 54-55, 66-67 (transferring the desired information to the object).

Accordingly, applying the broadest reasonable interpretation consistent with the specification, we determine that the term “transforming the information into an image” means “changing into an image the form of the information without significantly altering its meaning.”

B. CREDIBILITY OF DR. DEBOER AND PETITIONER’S MOTION TO EXCLUDE DR. DEBOER’S DECLARATION

As an initial matter, Petitioner, in its Reply, challenges the credibility of Patent Owner’s declarant, Dr. DeBoer. Reply 14-15. Dr. DeBoer testified regarding the ’884 patent and the prior art in a declaration submitted by Patent Owner in support of its Response. Ex. 2001. Petitioner argues that during his deposition Dr. DeBoer admitted to having no familiarity with the general state of the art, contrary to statements in his declaration. Reply 15. Given these circumstances, Petitioner requests that we give little to no weight to Dr. DeBoer’s opinions in general. *Id.*

In addition to challenging Dr. DeBoer’s credibility in the Reply, Petitioner filed a Motion to Exclude Dr. DeBoer’s declaration, arguing that Dr. DeBoer’s testimony is inadmissible under Fed. R. Evid. 702.<sup>9</sup> Paper 26 (“Pet. Mot.”). Patent Owner opposes Petitioner’s Motion. Paper 44 (“PO Opp.”). Before turning to the parties’ substantive arguments, and given the issues overlapping Petitioner’s Motion to Exclude and Petitioner’s

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<sup>9</sup> Petitioner also filed a Reply in Support of Motion to Exclude Evidence. Paper 47.

arguments regarding Dr. DeBoer's credibility, we now resolve the raised challenges concerning Dr. DeBoer's testimony.

*1. Petitioner's Motion to Exclude Pursuant to 37 C.F.R. § 42.64*

Citing Fed. R. Evid. 702 and 37 C.F.R. § 42.64(c), Petitioner argues that Dr. DeBoer is not qualified as an expert in the pertinent art, and cites to Dr. DeBoer's deposition testimony reflecting a lack of expertise in the medical diagnostic field. *See, e.g.*, Ex. 1018, 129:25 – 131:9, 50:13-15, 41:6-10, 157:16-19, 113:1-7. Petitioner concludes that “[b]ecause Dr. DeBoer is by his own admission not qualified in what he considers to be the relevant art, his declaration is properly excluded from this proceeding.” Pet. Mot. 6. In addition, Petitioner maintains that Dr. DeBoer is not qualified to opine as to the state of the art at the time of the invention because (i) he admitted he has no knowledge or expertise regarding the relevant state of the art (*id.* at 7); and (ii) an unqualified expert may not testify to “the nature of the claimed invention, the scope and content of prior art, [or] the differences between the claimed invention and the prior art” (*id.* at 6 (citing *Sundance, Inc. v. Demonte Fabricating Ltd.*, 550 F.3d 1356, 1360 (Fed. Cir. 2008))). Further, Petitioner maintains that certain material Petitioner filed with its Reply<sup>10</sup> refutes Dr. DeBoer's assertions that the patent-at-issue disclosed “on demand” features that were not found in the prior art, and Dr. DeBoer did not review this material before submitting his declaration. For the reasons discussed below, Petitioner's Motion to Exclude is denied.

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<sup>10</sup> Exs. 1021–1025 and 1027–1029.

Fed. R. Evid. 702, as made applicable to *inter partes* reviews pursuant to 37 C.F.R. § 42.62, provides:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

(b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.

Dr. DeBoer worked for 21 years for Eastman Kodak Company's printer technology division, where he gained knowledge of, and experience with, laser and inkjet marking engine technologies, and specifically, worked on comparisons of thermal print head and laser thermal color printing. Ex. 2003, 3. In developing laser thermal color printing products, he was involved in writing software code for rasterizing, combining, modifying, and half toning color images. *Id.* at 1. He is a named inventor on more than 100 patents in printer and/or imaging technology. *Id.* Based on the foregoing, we are not persuaded by Petitioner's argument that Dr. DeBoer is not qualified to testify as an expert in this case.

Furthermore, we are not persuaded by Petitioner's argument at pages 5-6 of its Motion that Dr. DeBoer should be disqualified because he does not have specific expertise with microscope slide printers. First, the objection

goes to the weight and sufficiency of his testimony, rather than its admissibility. *See Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1221 (Fed. Cir. 2006) (“Vaughan’s challenge goes to the weight of the evidence rather than the admissibility of Lueptow’s testimony and analysis.”) (citing *Quiet Tech. DC-8, Inc. v. Hurel-Dubois UK Ltd.*, 326 F.3d 1333, 1344-45 (11th Cir. 2003)); *In re TMI Litig.*, 193 F.3d 613, 692 (3d Cir. 1999) (“So long as the expert’s testimony rests upon ‘good grounds,’ it should be tested by the adversary process—competing expert testimony and active cross-examination.” (quoting *Ruiz-Troche v. Pepsi Cola of P. R. Bottling Co.*, 161 F.3d 77, 85 (1st Cir.1998))); *Wilmington v. J.I. Case Co.*, 793 F.2d 909, 920 (8th Cir.1986) (“Virtually all the inadequacies in the expert’s testimony urged here by [defendant] were brought out forcefully at trial. . . . These matters go to the weight of the expert’s testimony rather than to its admissibility.”). Second, Dr. DeBoer testified that his experience with printers adequately prepared him to address the asserted prior art and the issues involved in the ’884 patent. *See* Ex. 1018, 209:22 –211:6. In sum, we find that the lack of specific expertise with microscopic slide printers is insufficient reason to exclude Dr. DeBoer’s testimony.<sup>11</sup>

Moreover, Petitioner points to other testimony elicited from Dr. DeBoer regarding his lack of knowledge of the state of the art at the time of the invention, and maintains that, because of this testimony, Dr. DeBoer may

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<sup>11</sup> There is no requirement of a perfect match between the expert’s experience and the field of the patent. *See SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010).

not testify regarding the relevant state of the art at the time of the invention. Pet. Mot. 11-13. Petitioner also argued that its rebuttal evidence refutes Dr. DeBoer's opinions and that he did not review this evidence in providing his testimony. *Id.* We are not persuaded by Petitioner's arguments. To the extent that Dr. DeBoer has made statements about his lack of knowledge regarding the state of the art, and to the extent that he did not consider certain evidence in providing his opinions, these considerations affect the weight to be accorded to his testimony; these are not sufficient to exclude his testimony.

Thus, we deny Petitioner's motion seeking to exclude Dr. DeBoer's testimony in this proceeding.

## *2. Credibility of Dr. DeBoer*

The challenge to Dr. DeBoer's credibility is based on the same arguments made in support of Petitioner's Motion to Exclude. Reply 14-15. We are capable of discerning from the testimony, and the evidence presented, whether the witness' testimony should be entitled to any weight, either as a whole or with regard to specific issues. Here, Petitioner advocates that Dr. DeBoer's entire testimony (Ex. 2001) is entitled to little, if any, probative value. We decline to take the advocated wholesale approach to evaluating the credibility of Dr. DeBoer's testimony. We will weigh the testimony on an issue-by-issue basis, as appropriate. Moreover, to the extent Petitioner has pointed out the inadequacies of Dr. DeBoer's testimony, we are capable of taking note of those inadequacies and weighing that testimony accordingly.

### C. PRINCIPLES OF LAW

To prevail in its challenges to the patentability of claims, the petitioner must establish facts supporting its challenges by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966) (“the Graham factors”). The level of ordinary skill in the art usually is evidenced by the references themselves. See *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

For an obviousness analysis, prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). 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). That is because an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *see also In re Translogic Tech., Inc.*, 504 F.3d at 1259.

We analyze the instituted grounds of unpatentability in accordance with the above-stated principles. But first, we determine the level of ordinary skill in the art.

#### D. LEVEL OF ORDINARY SKILL IN THE ART

The Petition does not set forth Petitioner’s contention on the level of ordinary skill in the art. Patent Owner proffers Dr. DeBoer’s testimony on the determination of the level of skill in the art appropriate for the ’884 patent. Ex. 2001 ¶ 15-16. That testimony concludes that a person of ordinary skill in the art relevant to the ’884 patent would have had an undergraduate degree in mechanical engineering and/or computer science plus four years of industry experience in printer design.” *Id.* ¶ 15. Although Petitioner disputes that Dr. DeBoer would have been one of ordinary skill in the art, Petitioner does not challenge Dr. DeBoer’s opinion regarding the training and experience that one of ordinary skill in the art relevant to the ’884 patent would have had. Based on our review of the technology claimed in the ’884 patent and the description of the printing device set forth in the specification, we agree with Patent Owner that the level of ordinary skill in the art would include an undergraduate degree in mechanical engineering

and/or computer science plus four years of industry experience in printer design. We further agree that this level would include the “ability to analyze both mechanical and electronic operations of thermal dye transfer printers.”

*Id.*

#### E. OBVIOUSNESS GROUNDS BASED ON HODAI AND LEVINE

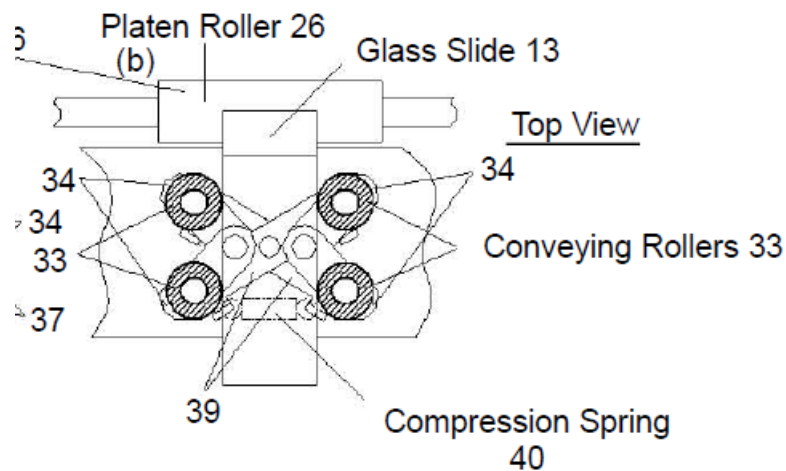
With respect to the alleged grounds of unpatentability based on the combination of Hodai and Levine, we have reviewed the Petition, the Patent Owner Response, and Petitioner’s Reply, as well as the relevant evidence discussed in each of those papers. We are persuaded, by a preponderance of the evidence, that claims 1-5, 7, 8, 10-15, 17, 18, and 20 are rendered obvious by Hodai and Levine under 35 U.S.C. § 103.

We first summarize the teachings in the Hodai and Levine references.

##### *1. Overview of Hodai (Exhibit 1003)*

Hodai teaches a thermal printer having a storage part for storing glass plates prior to printing, a printing part for printing on the plates, and a conveyor that transports plates. Ex. 1003, claim 1. More specifically, Hodai teaches using a printer with a thermal head and a conveying path to place the glass plate at a print position. *Id.* ¶ 6. The process begins by activating a feeder hook to engage the back edge of a glass plate at the bottom of a glass plate storage cassette to propel the glass plate onto the conveying path. *Id.* ¶¶ 16, 34-36. That conveying path is equipped with conveyor rollers that transport the glass plates from the supply part to the printing part. *Id.* ¶ 8.

Petitioner provides an annotated version of Figure 5 of Hodai. Pet. 14. The top view portion of the annotated figure is shown below:



The above excerpt of Figure 5 illustrates that the conveying rollers (items 33) grip the sides of the glass plate (item 13) and rotate around their center, thus guiding the glass plate to the center of the conveyor path and to the platen roller (26). *Id.* ¶ 22-26. When the glass slide reaches this position, the thermal head lowers and presses the ink ribbon to the glass plate. *Id.* ¶ 45. The thermal elements on the thermal head transfer ink from the ink ribbon onto the surface of the glass plate. *Id.* When the printing process is complete, the glass plate is dropped onto a stacker cassette and stored there. *Id.* ¶ 46.

## 2. Overview of Levine (Ex. 1004)

Levine teaches an automatic device that prepares microscope slides with blood films and prints information on the slides according to coded information obtained by scanning a bar code on the specimen tube. Ex.1004, Abstract. Levine teaches that the device includes “electronics module 18 [that] contains power supplies and computer elements, and may also contain an interface and connection to a laboratory computer.” *Id.* at

col. 4, ll. 56-59. Patient information to print on the slide may be obtained from an interfaced hospital or laboratory computer. *Id.* at col. 9, l. 64 – col. 10, l. 2.

Below are Figures 9 and 9A of Levine:

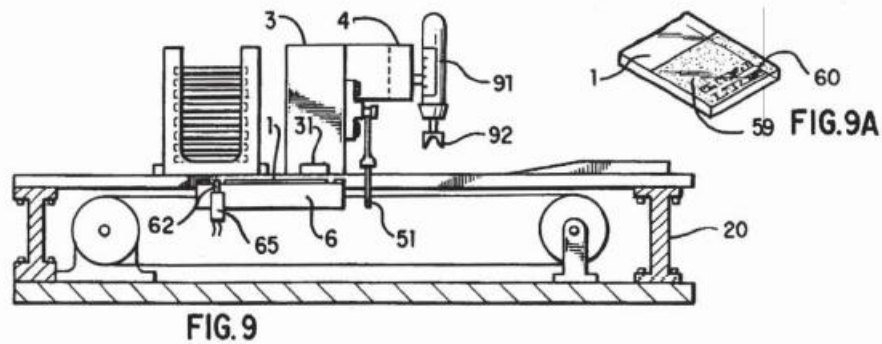


Figure 9 above illustrates carriage 6 in its home position. *Id.* at col. 6, ll. 42-46. The carriage holds slide 1 and moves back and forth along a frame. *Id.* at Abstract. The slide is dispensed from a magazine into the carriage, which then moves to the position for printing the information on the slide. *Id.* “The bar code on the test tube is transformed into a numerical value by the computer, and the printing head 31 of printer 3 records the numerical value and/or other information onto the forward portion of the slide[,] where, as described above, the frosting or coating is located.” *Id.* at col. 6, ll. 56-60. Figure 9A, shown above, illustrates an enlarged view of the forward portion of the slide including the data printed onto the slide. *Id.* at col. 6, ll. 60-62.

After the blood sample is placed on the slide, the carriage moves to the right, driving the slide up a ramp (shown in fig. 13) and placing the slide on a platform. *Id.* at col. 8, ll. 40-46, 64-67. The carriage then moves back

to the home position to dispense the next slide from the magazine. *Id.* at col. 9, ll. 5-16.

*3. Claim 1 is Unpatentable in View of Hodai and Levine*

There is no dispute that Hodai and Levine teach many of the limitations of claim 1. In particular, Hodai discloses: positioning a glass object in an object storage section (printer with a hopper cassette 10); removing a glass object into a “carrier” (central conveyor 6 having rotating rollers 33); indexing (engaging and transporting the slide to printing part 7); transporting the object under the print head (rollers 33 transport the slide to a printing position under thermal print head 29); positioning ink media tape (positioning thermal transfer ink ribbon 31); moving the print head (pressure applied to print head 29 to press ink ribbon 31 onto glass slide); heating a pixel element to print (print head 29 includes a row of heating elements for printing); advancing the tape and indexing to a next print row (conveying path and moving slide and ink ribbon 31 along the path); separating the print head and object (printed slide is removed from printing part 7); transporting the glass object by the carrier (slide moved to stacker cassette 42 via conveyor 7); and removing the glass object into an output section (slide is dropped into stacker cassette 42). *See* Pet. 34-36. With regard to Levine, Petitioner has shown, and Patent Owner does not dispute, that Levine discloses a “carrier” in which glass slides are removed from a magazine for indexing, and transporting to a printing unit and to an exit ramp. *See id.*

Patent Owner does dispute that, with regard to claim 1, Petitioner has shown that Hodai and/or Levine teach two limitations: “inputting

information into an input device, the input device transforming the information into an image for storage in a printing memory as a stored image” [hereinafter “the inputting step”]; and “repeating said method as many times as necessary as determined by the operator” [hereinafter “the repeating step”]. PO Resp. 24-31. We do not agree with Patent Owner’s contentions that either Hodai or Levine fails to teach the inputting step and the repeating step. As explained below, we are persuaded that Levine teaches the inputting step and that both Hodai and Levine teach the repeating step. Furthermore, we conclude that the repeating step is a matter of common sense for the reasons explained below.

a. The Repeating Step of Claim 1

Many of Patent Owner’s arguments rest on the distinctions drawn between the repeating step, as recited, and the capability disclosed in Levine and Hodai of printing subsequent slides. PO Resp. 30-33, 34-36. Furthermore, according to Patent Owner, if Hodai discloses the repeating step—involving repetition of the entire method—it necessarily is required that Hodai also teach repetition of the inputting step, as recited. PO Resp. 28-30. Patent Owner also contends that Levine’s next-slide positioning invites speculation as to whether the repeating step is met. PO Resp. 31-33. We have reviewed all the arguments presented by Patent Owner and are not persuaded that the repeating step, alone or in combination with the inputting step, imparts a patentable distinction over the prior art of record as argued by Patent Owner.

As stated in the Decision on Institution, both Hodai and Levine teach that the disclosed printing devices are capable of repeatedly printing slides. Dec. on Inst. 27-28. In Hodai, the repetition occurs from the point of separation of the glass plates. Ex. 1003 ¶ 48. In Levine, the printing device is put in position to dispense the “next slide” right after completion of printing. Ex. 1004, col. 9, ll. 6-19. That is, Hodai and Levine disclose devices capable of printing multiple slides, repeatedly.

Nevertheless, because Hodai does not teach the inputting step, Patent Owner argues that Hodai cannot be found to teach the repeating step. See PO Resp. 34 (arguing that Hodai does not teach “transforming,” which is part of the inputting step). The premise for this argument is in characterizing Hodai as rendering “ready-to-print images” such that the repeated printing occurs without processing the ready-to-print images. PO Resp. 29, 34 (citing Ex. 2001 ¶¶ 82-85, 140-141). Dr. DeBoer opines that printing the same “ready-to-print image” leads one of ordinary skill in the art to the conclusion that Hodai does not process or transform the image with each repeated printing operation. Ex. 2001 ¶ 82-83, 141-142. Dr. DeBoer, therefore, refers to Hodai’s printer as a “batch-type printer” that does not “render[] a unique image on each slide, such as to identify specific slide number[s].” *Id.* ¶ 84. In cross-examination, however, Dr. DeBoer testified that Hodai’s printing device is likely to receive an input and print the different things that are inputted. Ex. 1018, 94:14-17. We also note that Dr. DeBoer admitted that the claim language does not require printing of a unique image, and that the claim language would be met if multiple slides

were printed each with the same information, i.e., without rendering a “unique image.” Ex. 1018, 92:13 – 93:19. There is an inconsistency in Dr. DeBoer’s opinions and testimony. On the one hand, Hodai is distinguished because it allegedly does not render a unique image on each slide each time a slide is printed, and on the other hand, the claims are alleged to not require rendering a unique image with each repetition.

Given the inconsistency in Dr. DeBoer’s testimony, we do not credit Dr. DeBoer’s opinion characterizing Hodai as a “batch-type printer” or that such characterization, even if it were applied to Hodai, distinguishes over the claim language. Furthermore, Patent Owner’s argument focuses on the teachings of Hodai in isolation. The asserted ground of unpatentability, however, is directed to the *combined teachings* of Hodai and Levine. That is, our analysis of whether claim 1 is unpatentable focuses on the printing device in Hodai (with the disclosed capability of repeated printing) in combination with the known method of inputting information into a printing device for printing bar coded information on glass slides, as evidenced by Levine. Therefore, an argument that Hodai, alone, does not teach expressly both inputting and repeating is unpersuasive. See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007) (“[I]n many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.”).

We also find unpersuasive Patent Owner’s additional argument that Hodai’s repeating is not the recited repeating step because there is no “operator” disclosed in Hodai. See PO Resp. 30-31. This argument rests on

Patent Owner’s proposed construction of “operator” (one who determines a quantity of slides to be created and places specimens on the slides). PO Resp. 31. *But see* Ex. 1018, 110:21 – 111-1 (Dr. DeBoer testifying that with regard to claim 1, the person who put the specimen on the slide did not have to be the same operator). The argument is that, because Hodai is silent as to whether one who determines a quantity of slides also places specimens on plates, Hodai does not teach an “operator.” *Id.* We have concluded, however, that Patent Owner’s proposed construction is inconsistent with the broadest reasonable interpretation in the context of the specification. *See* Section II(A)(2), above. Applying our construction of “operator”—one who operates the printing device—we find that Hodai, in combination with Levine, teaches repeated printing by performing the claimed method for a second slide, and subsequent slides, as determined by an operator. *See* Ex. 1003 ¶ 48 (“the embodiment . . . realizes user friendly operation in a small area of placement.”).

As for whether it is speculation that Levine’s next-slide-dispensing disclosure meets the repeating step, we are not persuaded by Patent Owner’s argument. *See* PO Resp. 31-33. By way of background, Levine describes a shortcoming of prior art automated machines, where identification of the specimen and cleaning of the slides between preparations of those specimens were not available. Ex. 1004, col. 1, ll. 30-36. Levine solves those problems by printing indicia read from a bar code on the test tube onto a slide during the process of smearing the blood specimen on the slide. *Id.* at col. 1, ll. 55-67. A cleaning pad ensures that the mechanism for spreading

the blood is cleaned before the next use. *Id.* at col. 2, ll. 10-13. After printing a slide with a blood specimen and cleaning the spreader, Levine positions the slide carriage to dispense the next slide. *Id.* at col. 9, ll. 15-16. These disclosures in Levine lead us to conclude that Levine's printing device is used repeatedly, for different specimens. For example, Levine's device prepares a specimen and prints the slide after scanning a given test tube, and performs the specimen preparation and printing of a slide after scanning a subsequent test tube. Therefore, we find that Levine teaches the repeating step, as recited.

Patent Owner's argument to the contrary—that Levine's operator is not given choices from which to determine the manner of repetition—is unpersuasive. *See* Tr. 38:11-23. The claimed method is silent as to providing choices regarding the number of slides or whether a unique or same image is desired for multiple slides. Accordingly, distinctions regarding whether an operator is able to make a determination to repeat the method by selecting various alternatives of printing images or the number of slides to be printed are not reflected in the claim language.

In any event, regardless of whether Hodai or Levine teach the repeating step, as recited, we conclude that including such a step would have been the result of common sense. The repeating step merely recites repeating earlier steps, as an operator determines, and as necessary. The earlier recited steps, including the inputting step as discussed below, are disclosed by either Hodai or Levine. Therefore, the recited steps are for known techniques for affixing information onto glass slides by a printing

device. Thus, if an operator determines that additional glass slides are needed, it is common sense to perform the method again until the desired slides are printed. Neither Hodai nor Levine teach single-use devices or limit the information that can be printed on the slides. That is, one of ordinary skill in the art would have had available the Hodai and Levine printing devices to prepare as many slides as needed, for a single specimen or for multiple specimens. Indeed, the determination of how many slides are to be printed, and with what specific information, is not defined by the claim language. As stated earlier, one of ordinary skill in the art has knowledge of computer science and mechanical printing devices. Such a person is creative and need only consider that a combination of Hodai's thermal printer and Levine's bar code reader is capable of performing their known functions again and again, until the desired number of slides is achieved—it makes common sense to use the device as many times as one needs. *See Perfect Web Techs., Inc. v. Infousa, Inc.*, 587 F.3d 1324 (Fed. Cir. 2009) (“No expert opinion is required to appreciate the potential value to persons of such skill in this art of repeating steps. . . .”).

Based on the foregoing, we find that Hodai and Levine teach the repeating step of claim 1, and that the step is a result of the application of common sense.

b. The Inputting Step of Claim 1

Patent Owner argues that neither Hodai nor Levine discloses the inputting step. PO Resp. 23-27. In our Decision on Institution, we stated that Levine teaches inputting information in various ways to the computer

and the electronic module for printing data onto a slide. Dec. on Inst. 20.

One of those ways is set forth by Petitioner as follows:

A test tube 91 containing the specimen sample to be applied to the slide 1 will have a bar code label providing identification adhered to the tube. A bar code reader 4 (i.e., an input device) reads the specimen identification from the bar code on the test tube, and that information is transformed by the computer.

Pet. 33-34. Notwithstanding Levine's bar code example as one way of inputting, Patent Owner argues that Levine is deficient because it does not teach inputting "in combination with the 'repeating' step as recited in claim 1." PO Resp. 25. As for Levine's bar code example, Patent Owner disputes that such an example teaches transforming information, as recited, because Levine fails to "describe any examples of scanning one bar code to obtain multiple images." PO Resp. 35.

We are not persuaded by Patent Owner's contentions that Levine fails to teach the inputting step because Patent Owner argues limitations that are not commensurate with the scope of the claim. Patent Owner attempts to read into the inputting step (in combination with the repeating step) that the image must be different for each subsequently printed slide or that, at a minimum, two slides must be created, each with a different image, for the method to be performed. PO Resp. 35.

Patent Owner's argument is that Levine and Hodai each must disclose both the inputting step and the repeating step for these references to render the claims unpatentable. We are not persuaded by this argument. Such an argument would conflate the analysis of anticipation and obviousness.

Reciting “repeating” in a claim does not automatically shackle known elements combined in a known manner such that they cannot be found separately in the art to establish obviousness.

Here we have Levine teaching the inputting step and Hodai and Levine teaching that a printing device may be used again to repeat printing. Not only does Levine suggest repeating the printing of slides for each test tube as necessary, but such a repetition is common sense as stated above. Therefore, we find that Levine teaches the inputting step, whether performed with a single-test tube or with multiple test tubes, such that the inputting step of reading the bar code and creating the image is repeated as many times as the operator wishes to process test tubes with Levine’s printing device.

#### *4. Claim 11 is Unpatentable in View of Hodai and Levine*

With regard to claim 11, Patent Owner disputes that Hodai or Levine teach or suggest five limitations: (1) a processing means/the tape feeder being driven by a processing means; (2) a control means; (3) the process repeated as necessary; and (4) an input/interface means. PO Resp. 36-43. We are not persuaded by Patent Owner’s arguments because, under the broadest reasonable interpretation of the claim language and application of section 112 ¶ 6, the narrow distinctions drawn by Patent Owner are not supported by the claim language. We discuss each of the argued limitations in turn.

a. Processing Means

In accordance with our construction of processing means, which includes a processor, we find that Levine discloses a microprocessor and computer elements housed in module 18, which interfaces with the computer to receive the patient information. Ex. 1004, col. 4, ll. 57-59, col. 9, ll. 64-66. The computer stores information to be printed on the slides, such as dates and other indicia. *Id.* at col. 10, ll. 10-13, 49-52. Patent Owner does not dispute that Levine discloses this aspect of the processing means.

The dispute regarding this limitation pertains to whether Levine also teaches that the processing means drives a tape feeder. PO Resp. 38, 43. Because Levine is not relied upon as teaching a tape feeder, and the processor is found in Levine, Patent Owner contends that no teaching in Levine is relied upon to teach a processor that drives the tape feeder. *Id.* at 43. Similarly, Patent Owner argues that Hodai fails to teach the recited “processing means” because Hodai is not relied upon to teach the processor, but it is relied upon to teach the “tape feeder.” *Id.* The argument is unpersuasive.

We have construed the term to include a processor and a motor, which drives the tape feeder. *See* Section II(A)(5), *supra*. Hodai discloses ink ribbon roller 31a that is driven by motor D to wind the ink ribbon during printing. Ex. 1003 ¶ 19. Accordingly, we find that Hodai teaches the structure of the “processing means” that drives the tape feeder as recited in claim 11.

That Hodai teaches one aspect of the processing means—namely, the motor that drives the tape feeder—and Levine teaches another—the processor—does not negate that these references of record disclose all of the structures of the “processing means.” The fault is not with the prior art of record. Instead, the means-plus-function claim term conflates into a single “means” two different structures that perform two different functions. It is clear from Hodai that the mechanics of driving a tape feeder were known to include a motor and associated hardware, and it was known from Levine that a processor is used to “transform” the bar code into a numerical value that is printed on the slide (Ex. 1004, col. 6, ll. 56-59). Accordingly, the structures corresponding to the recited “processing means” were known in the art to perform the recited functions. Therefore, we find that Levine and Hodai teach the “processing means” recited in claim 11.

b. Control Means

Although Patent Owner admits that Levine discloses interfaces to a laboratory computer and a bar code reader, it disputes that such interfaces provide a selection of which interface to choose data from, either the bar code reader or the laboratory computer. PO Resp. 38-39. Moreover, according to Patent Owner, the keyboard and actuator buttons do not control the bar code reader. *Id.* at 39. We are not persuaded by Patent Owner’s arguments. These arguments rely on a narrow interpretation of “control means” advanced by Patent Owner, which we reject. *See* Section II(A)(7), *supra*. Consistent with our construction of control means—where the structure is a user interface section or control panel—we find that Levine

discloses a keypad for entering data and instructions into the apparatus. Ex. 1004, col. 3, ll. 6-9. Levine further discloses a keyboard with actuation buttons 15, 16, and 17 that control the speed at which the carriage moves. *Id.* at col. 4, ll. 52-54, col. 8, ll. 9-10. The keyboard may be used also to input values, which the computer interprets. *Id.* at col. 8, ll. 11-15. From these disclosures, we find that the keypad, keyboard, and actuation buttons disclosed in Levine allow input into the printing device for controlling that device. Indeed, the Levine device is a programmable device. *Id.* at col. 2, ll. 24-25, col. 10, ll. 10-13. As such, programming codes that are entered by a user change the operation of the printing device. *Id.* at col. 8, ll. 12-13.

But, contrary to Patent Owner's assertions, Levine teaches more than just adjusting the speed of the carriage; Levine teaches using programming to change what is printed on the slides. *Id.* at col. 10, ll. 11-13 ("the apparatus can be programmed to print the date onto the slide, in addition to other indicia"). It stands to reason that the keyboard, keypad, and buttons operate the device by, at a minimum, changing the speed of the carriage and adding a date and other indicia as information to be printed on the slide.

Based on the foregoing, we find that Levine teaches "control means," as recited in claim 11.

c. Input/Interface Means

Regarding the "input/interface means," although Patent Owner's Response alludes to a contention that neither Hodai nor Levine teaches the limitation (PO Resp. 36), we find no argument in the Response regarding how the evidence presented supports that argument. During the oral hearing,

Patent Owner confirmed that the argument presented regarding the “input/interface means” is with regard to how it affects the scope of the “control means”—no contention was advanced that Levine fails to teach “input/interface means.” Tr. 42:1-16. We find that Levine teaches the limitation because it discloses an interface to a laboratory computer and a bar code reader. Ex. 1004, col. 6, ll. 49-62, col. 9, l. 64 – col. 10, l. 13. Either the bar code reader or the computer are input/interface means, as each may be used to input information into the printing device for printing indicia onto the slide.

d. Repeating

The last limitation recited in claim 11 recites “the process [is] repeated as necessary.” Ex. 1001, col. 9, ll. 21-22. This “repeating” differs from the “repeating” step recited in claim 1 in that it does not recite a determination by an operator. Accordingly, arguments made regarding the lack of disclosure of an operator in Hodai are inapplicable to this claim. Patent Owner made no other argument that Hodai fails to teach this limitation. With regard to Levine, Patent Owner argues that the disclosure of dispensing the next slide invites speculation as to whether the process is “repeated as necessary.” PO Resp. 42. We addressed this argument in the analysis of the “repeating” step recited in claim 1. See Section II(E)(3)(a) (pages 40-41). For the same reasons stated in that analysis, we find unpersuasive Patent Owner’s arguments that Levine fails to teach that the “process is repeated as necessary,” as recited in claim 11.

*5. Rational Underpinning for the Conclusion of Obviousness.*

Relying on the following passage of its Response, Patent Owner argued during oral hearing that Petitioner failed to show evidence of a motivation to combine: “Levine suffers a fate similar to Hodai and therefore a combination of Levine and Hodai remains deficient.” PO Resp. 35; Tr. 40:11-15, 41:15-20, 49:7-11. We are not persuaded by Patent Owner’s belated argument. Upon review of the Response at pages 34-36, we find no argument directed at challenging Petitioner’s arguments and evidence that a person of ordinary skill in the art would have been motivated to combine the references to achieve the printing device recited in claim 1. *See e.g.*, Pet. 32 (“a person would have recognized that the information inputting step of the Levine patent would provide the information needed by the thermal printer shown in [Hodai] in order to print the text and bar codes.”). Even assuming that a challenge to the evidence was presented properly, we note that Petitioner posited that a person of ordinary skill in the art would have found that the features of the printer taught by Levine could be incorporated into the printer of Hodai and vice versa. Pet. 39-40. We also stated in our Decision on Institution that the record presented sufficient evidence that the claims merely combine known elements for their known purpose to achieve a predictable result. Dec. on Inst. 28. Nothing in the record before us either disputes these rationales or presents reasons why that rationale is not applicable to the facts before us.

#### *6. Conclusion Regarding Unpatentability*

We have applied the Graham factors and our guiding legal principles. Patent Owner has shown no secondary factors to dislodge the determination that claims 1 and 11 are obvious. *See KSR*, 550 U.S. at 426. Therefore, based on the evidence of record and the arguments presented, we conclude that Petitioner has shown, by a preponderance of the evidence, that claims 1 and 11 are unpatentable over the combination of Hodai and Levine.

Patent Owner did not challenge Petitioner's assertion of unpatentability with regard to the additional limitations found in dependent claims 2-5, 7, 8, 10, 12-15, 17, 18, and 20. *See PO Resp. 44*. Having reviewed Petitioner's evidence of unpatentability for those dependent claims, we conclude that Petitioner also has proven by a preponderance of the evidence that claims 2-5, 7, 8, 10, 12-15, 17, 18, and 20 are unpatentable over Hodai and Levine.

#### **F. OBVIOUSNESS GROUNDS BASED ON HODAI, LEVINE, AND GEDDES**

Patent Owner does not challenge Petitioner's assertions regarding the unpatentability of claims 6 and 16 as being obvious over Hodai, Levine, and Geddes, other than to address the patentability of the claims from which claims 6 and 16 depend. *PO Resp. 44* (relying on the arguments presented for the independent claims, nos. 1 and 11). We have reviewed the evidence presented by Petitioner regarding the unpatentability of these dependent claims (*Pet. 44-46*), and we conclude that Petitioner has proven by a preponderance of the evidence that claims 6 and 16 are unpatentable over Hodai, Levine, and Geddes.

G. OBVIOUSNESS GROUND BASED ON HODAI, LEVINE, AND BOUCHARD

Patent Owner does not challenge Petitioner's assertions regarding the unpatentability of claims 9 and 19 as being obvious over Hodai, Levine, and Bouchard, other than to address the patentability of the claims from which claims 9 and 19 depend. PO Resp. 44. We have reviewed the evidence presented by Petitioner regarding the unpatentability of these dependent claims (Pet. 46-48), and we conclude that Petitioner has proven by a preponderance of the evidence that claims 9 and 19 are unpatentable over Hodai, Levine, and Bouchard.

H. PATENT OWNER'S MOTION TO EXCLUDE

In its Motion, Patent Owner seeks to exclude the following evidence submitted by Petitioner:

- a) U.S. Patent No. 5,423,619 to Kohno (Ex. 1009), submitted with the Petition;
- b) Petitioner's Exs. 1019-1030 submitted with Petitioner's Reply;
- c) Petitioner's Exs. 1, 5-7, and 11-14, introduced as exhibits in the testimonial deposition of Dr. Charles DeBoer, Patent Owner's expert witness; and
- d) Dr. DeBoer's testimony regarding Exs. 1, 5-7, and 11-14.

All of Patent Owner's objections to the above-identified exhibits and testimony are moot because we have not relied on any of these exhibits in

rendering our decision.<sup>12</sup> Therefore, Patent Owner's motion is *denied* as moot.

### III. CONCLUSION

Petitioner has demonstrated, by a preponderance of the evidence, that:

- (1) claims 1-5, 7, 8, 10-15, 17, 18, and 20 are unpatentable over Hodai and Levine under 35 U.S.C. § 103(a);
- (2) claims 6 and 16 are unpatentable over Hodai, Levine, and Geddes under 35 U.S.C. § 103(a); and
- (4) claims 9 and 19 are unpatentable over Hodai, Levine, and Bouchard under 35 U.S.C. § 103(a).

### IV. ORDERS

In consideration of the foregoing, it is hereby:

ORDERED that claims 1-20 of the '884 patent are unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is *denied*;

and

FURTHER ORDERED that Patent Owner's Motion to Exclude is *denied*.

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<sup>12</sup> To be clear, this includes the objections identified as "Additional Points" set forth on pages 6-12 of Patent Owner's motion, as well as Patent Owner's specific objections to Exs. 1027 and 1028 and Exs. 1, 12, and 13 on pages 12-15 of the motion.

This is a final decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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