

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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WIRTGEN AMERICA, INC.,  
Petitioner,

v.

CATERPILLAR INC.,  
Patent Owner.

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IPR2022-01396  
Patent 9,371,618 B2

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Before BARRY L. GROSSMAN, JAMES J. MAYBERRY, and  
MATTHEW S. MEYERS, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

DECISION  
Denying Institution of *Inter Partes* Review  
35 U.S.C. § 314, 37 C.F.R. § 42.4

## I. INTRODUCTION

### A. *Background and Summary*

Wirtgen America, Inc. (“Petitioner”) filed a Petition to institute *inter partes* review of claims 1–20 (the “challenged claims”) of U.S. Patent No. 9,371,618 B2 (Ex. 1001, “the ’618 patent”). Paper 1 (“Pet.”). Caterpillar, Inc. filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). Having considered the arguments and evidence presented by Petitioner and Patent Owner, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on at least one of the challenged claims of the ’618 patent. Accordingly, we do not institute an *inter partes* review of the challenged claims.

### B. *Real Parties in Interest*

Wirtgen America, Inc. identifies itself and Wirtgen GmbH as the real parties-in-interest. Pet. 90. Patent Owner indicates that Caterpillar Inc. is the real party-in-interest. Paper 3, 1.

### C. *Related Matters*

Petitioner and Patent Owner state that the ’618 patent is involved in *Wirtgen America, Inc. v. Caterpillar Inc.*, Case No. 1:17-cv-00770 (D. Del.). Pet. 91; Paper 3, 1. Patent Owner also identifies three related *inter partes*

review proceedings, IPR2022-01394 (U.S. Patent No. 7,525,995), IPR2022-01395 (U.S. Patent No. 7,525,995), and IPR2022-01397 (U.S. Patent No. 9,975,538). Paper 3, 1.

*D. The '618 patent*

The '618 patent, titled "COLD PLANER SPRAY SYSTEM AND METHOD," issued on June 21, 2016. Ex. 1001, codes (54), (45). The '618 patent discloses "a water spray system for a cold planer machine." *Id.* at 1:7–9. According to the '618 patent, "[w]hen resurfacing an asphalt road surface, at least a portion of the upper surface of the roadway is milled by specialized equipment so a new layer of asphalt can be deposited." *Id.* at 1:12–14.

The '618 patent explains that the configuration of milling and construction equipment "creates considerable amounts of dust and other airborne debris, which can be controlled by various methods including water spraying and using vacuum collectors," in which sprayed water is used "to cool the cutting drum and also help contain or settle dust." Ex. 1001, 1:35–40. The '618 patent thus discloses a system and a method for operating a cold planer in which "a water flow required to operate the spray banks is estimated," "a pump command signal is determined," "[t]he pump is operated," and "a water pressure in a main manifold is monitored such that the pump is controlled using a closed-loop control scheme that receives the water pressure as feedback to maintain a desired water pressure within the main manifold." *Id.* at Abstract.

Figure 2, reproduced below, shows "a partially fragmented view" of a cold planer machine. Ex. 1001, 3:26.

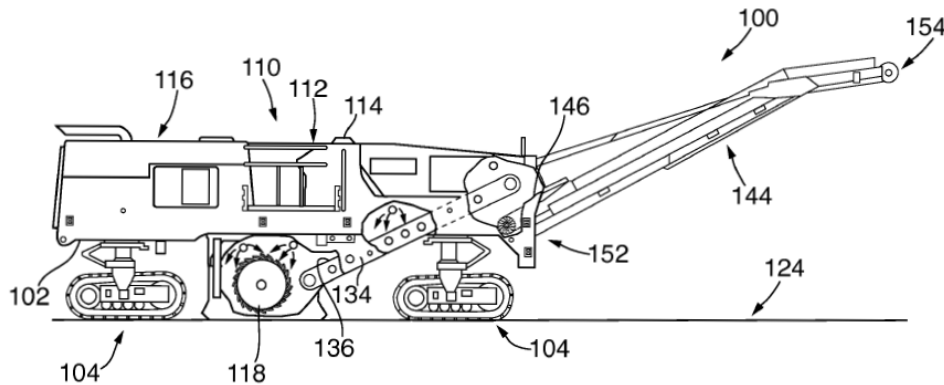


FIG. 2

Figure 2 above shows cold planer 100 including frame 102 and milling drum 118 “that is rotatably supported on” frame 102. *Id.* at 3:48–4:3.

Figure 3, reproduced below, shows “an enlarged detail view of FIG. 2.” Ex. 1001, 3:28.

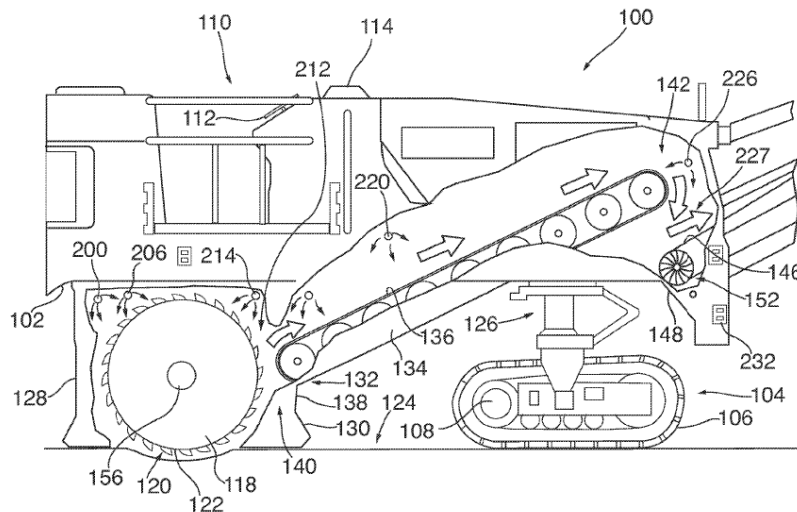


FIG. 3

Figure 3 above shows cold planer 100 including housing 128 that has “four walls surrounding” milling drum 118. *Id.* at 4:21–22. As shown in the figure, cold planer 100 includes primary or first rotor chamber spray bank 200 within housing 128 to provide water to milling drum 118 that “acts to cool the cutting elements of the drum from heat generated during the milling operation, and lubricates those cutting elements.” *Id.* at 4:63–64, 5:5–8.

Cold planer 100 further includes additional spray banks such as second rotor chamber spray bank 206 for cooling and lubricating cutting elements of milling drum 118, transition spray bank 214, intermediate stage conveyor spray bank 220 for “materials traveling on” belt 136, final stage conveyor spray bank 226 for “materials traveling on” belt 146, and low pressure spray bank 232. *Id.* at 5:28–65.

Figure 4, reproduced below, shows “a schematic view of a spray system.” Ex. 1001, 3:29.

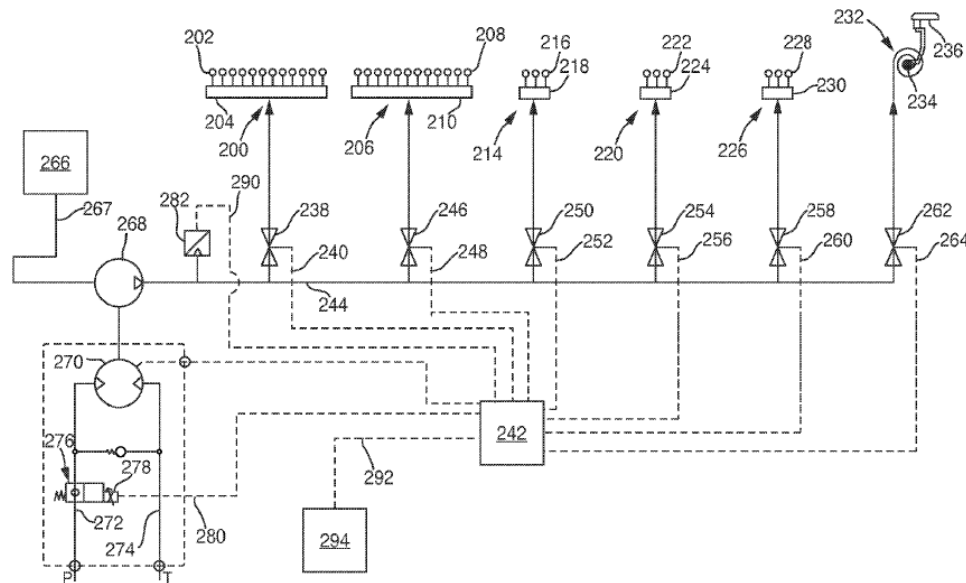


FIG. 4

Figure 4 above shows a schematic view of cold planer 100 that includes various spray banks 200, 206, 214, 220, 226, and 232 from Figure 3. *Id.* at 5:9–67. Electronic controller 242 controls valves such as valves 238, 246, 250, 254, 258, and 262 in main distribution manifold 244 for the respective spray banks. *Id.* at 6:1–24. Main distribution manifold 244 includes housing 300 (shown in Figure 5), “which is mountable to the machine frame.” *Id.* at 7:27–29. Water reservoir 266 provides water via pump 268 and water pressure sensor 282 and operates in conjunction with electronic

controller 242 and other components of cold planer 100. *Id.* at 6:25–54. Water reservoir 266 “is mounted on the frame” of the cold planer. *Id.* at 1:60. Controller 242 operates via “a computer-executable algorithm” and information that is inputted “to a multi-dimensional lookup function or table that correlates, based on predetermined relationships,” in which the information is “indicative of the operating state of the machine” such as “drum operation and speed, conveyor belt activation and speed, machine ground speed, vacuum system activation, type of material planed, planing depth, and other information.” *Id.* at 8:9–25. “[T]he controller may further provide an appropriate pump control signal that will cause the pump 268 to operate and provide a water flow that is equal to, or just above, the estimated water flow” and “the system will estimate the aggregate water flow and pressure that should be provided to the main spray manifold.” *Id.* at 7:5–8, 8:42–45. “Alternatively, this determination can be made based on an operator input of a desired pressure” such that an estimation is made and “[t]he command signal is sufficient to achieve the estimated water flow and/or pressure within the spray distribution manifold.” *Id.* at 8:45–55.

*E. Illustrative Claim*

Petitioner challenges claims 1–20 of the ’618 patent. Pet. 1. Claims 1, 8, and 15 are independent claims. Independent claim 1 reproduced below, is illustrative of the challenged claims.

1. A cold planer machine comprising a frame and a drum enclosed within a housing and arranged to rotate about a drum axis, the drum connected to the frame and configured to plane a road surface during operation, the cold planer comprising:
  - a primary rotor spray bank mounted to the frame and disposed in the housing, the primary rotor chamber spray bank including a first plurality of spray nozzles arranged along

- a first spray manifold, the first plurality of spray nozzles being arranged parallel to the drum axis and being oriented such that a plurality of water sprays provided therethrough are directed towards the drum;
- a water reservoir mounted on the frame and configured to enclose water;
- a pump fluidly associated with the water reservoir and configured to draw the water therefrom, pressurize the water, and provide pressurized water to a main spray manifold connected to the frame;
- wherein the pump is configured to pressurize the water to a variable pressure in response to a pump signal;
- a pressure sensor associated with the main spray manifold and configured to provide a pressure signal indicative of a pressure of the pressurized water within the main spray manifold;
- a first control valve fluidly disposed between the main spray manifold and the first spray manifold, the first control valve selectively fluidly connecting the main with the first spray manifold in response to a valve signal;
- an electronic controller associated with the cold planer and configured to receive a plurality of operating signals indicative of an operating condition of the cold planer, the electronic controller disposed to:
  - monitor the plurality of operating signals;
  - determine an operating state of the cold planer based on the operating signals;
  - determine whether the primary rotor spray bank should be activated based on the operating state;
  - estimate an amount of pressurized water that will be required to operate the primary rotor spray bank when it is determined that the primary rotor spray bank should be activated;
  - determine a desired main spray manifold pressure based on the estimated amount of pressurized water;
  - determine the pump signal based on the desired main spray pressure, and send the pump signal to the pump;
  - activate the first control valve by sending the valve signal to the first control valve when it is determined that the primary rotor spray bank should be activated; and

maintain the desired main spray manifold pressure by adjusting the pump signal based on the pressure signal as a primary control parameter continuously during operation.

Ex. 1001, 9:25–10:9.

*F. Prior Art and Asserted Grounds*

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

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>                 |
|----------------------------|--------------------|-------------------------------------------|
| 1, 2, 8, 9, and 15–20      | 103 <sup>1</sup>   | Heusinger <sup>2</sup> , Orr <sup>3</sup> |
| 7, 14                      | 103                | Heusinger, Orr, Hoisington <sup>4</sup>   |
| 3–5, 10–12                 | 103                | Heusinger, Orr, Klaasse <sup>5</sup>      |
| 6, 13                      | 103                | Heusinger, Orr, Swisher <sup>6</sup>      |

To support its Petition, Petitioner proffers a Declaration of Duane L. Needham, Ph.D. Ex. 1004.

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<sup>1</sup> The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, took effect on March 16, 2013. Because the application that issued as the ’618 patent was filed after March 16, 2013, we apply the AIA version of § 103. *See* Ex. 1001, code (22).

<sup>2</sup> U.S. Patent Application Pub. No. 2012/0043401 A1, published Feb. 23, 2012 (Ex. 1006, “Heusinger”).

<sup>3</sup> U.S. Patent Application Pub. No. 2011/0160920 A1, published June 30, 2011 (Ex. 1007, “Orr”).

<sup>4</sup> U.S. Patent Application Pub. No. 2009/0224084 A1, published Sept. 10, 2009 (Ex. 1009, “Hoisington”).

<sup>5</sup> U.S. Patent Application Pub. No. 2004/0036346 A1, published Feb. 26, 2004 (Ex. 1010, “Klaasse”).

<sup>6</sup> U.S. Patent No. 4,325,580, issued Apr. 20, 1982 (Ex. 1011, “Swisher”).

## II. ANALYSIS

### A. Legal Standards

“In an [inter partes review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (2012) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which that subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness when presented. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

In analyzing the obviousness of a combination of prior art elements, it can be important to identify a reason that would have prompted one of skill in the art “to combine . . . known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418. A precise teaching directed to the

specific subject matter of a challenged claim is not necessary to establish obviousness. *Id.* Rather, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420. Accordingly, a party who petitions the Board for a determination of unpatentability based on obviousness must show that “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (quotations and citations omitted).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

*B. Level of Ordinary Skill in the Art*

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of invention. *Graham*, 383 U.S. at 17. Petitioner asserts

A person of ordinary skill in the art (“POSITA”) at the time of the claimed invention would have had either: (1) a bachelor’s degree (or equivalent) in mechanical, agricultural, and/or systems engineering, or a similar field, and at least two to five years of experience working on fluid-dispensing control systems in mobile machines within the fields of construction, agriculture, or mining, or in a similar field; or (2) seven to ten years of experience developing or designing fluid-dispensing control systems in mobile machines within the fields of construction, agriculture, or mining, or in a similar field.

Pet. 25–26 (citing Ex. 1004 ¶¶ 61–63). Patent Owner does not address the level of skill in the art or otherwise dispute Petitioner’s assertion. *See* Prelim. Resp.

Accordingly, for purposes of this decision, we adopt Petitioner’s description of the level of skill in the art, as reproduced above.

### *C. Claim Construction*

In an *inter partes* review proceeding for a petition filed on or after November 13, 2018, a patent claim shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b).<sup>7</sup> This rule adopts the same claim construction standard used by Article III federal courts, which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*), and its progeny. Under that standard, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *See Phillips*, 415 F.3d at 1312–13. “[W]here a party believes that a specific term has meaning other than its plain meaning, the party should provide a statement identifying a proposed construction of the particular term and where the disclosure supports that meaning.” Office Trial Practice Guide, 77 Fed. Reg. 48,756, 48,764 (Aug. 14, 2012). Consolidated Trial Practice Guide<sup>8</sup> 44.

Petitioner asserts that, for purposes of this proceeding, “all terms should be given their ‘ordinary and customary meaning’ as understood by a

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<sup>7</sup> The Petition in this case was filed August 10, 2022. *See* Paper 5, 1.

<sup>8</sup> Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

[one of ordinary skill in the art], in light of the specification.” Pet. 26. Petitioner argues that in regard to the terms “operating state” and “operating condition,” it “has not identified any evidence suggesting differences between [these] terms that affect the unpatentability analysis” such that “the same ‘operating signals’ provide information on both ‘operating state’ and ‘operating condition.’” *Id.* at 26–27. Patent Owner asserts that the claims receive their “plain and ordinary meaning, interpreted in light of the specification of the patent in which it appears” and that “[t]he terms of the challenged claims do not require express construction in order to reach a decision denying institution.” Prelim. Resp. 4.

We determine, for purposes of this decision, that no explicit construction of these or any other terms is needed to resolve the issues presented by the arguments and evidence of record to reach a decision on institution. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (per curiam) (claim terms need to be construed “only to the extent necessary to resolve the controversy” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

*D. Alleged Obviousness over Heusinger and Orr (Ground 1: Claims 1, 2, 8, 9, and 15–20)*

Petitioner asserts that claims 1, 2, 8, 9, and 15–20 would have been unpatentable as obvious over Heusinger and Orr. Pet. 31–69. Petitioner also relies on the testimony of Dr. Needham to support its assertions. *Id.* Patent Owner responds to Petitioner’s assertions. Prelim. Resp. 4–32.

*1. Overview of Heusinger (Ex. 1006)*

Heusinger “relates to a spraying device for a construction machine for processing the ground.” Ex. 1006 ¶ 1. According to Heusinger,

[e]specially in the case of low pressures there are frequently uneven and thus unsatisfactory distribution results in conventional spraying devices. Moreover, there is a likelihood especially at low pressures that the fluid delivery apparatus will clog with the ground material to be processed and will therefore not be available for further use.

*Id.* ¶ 6. To address this deficiency, Heusinger’s system utilizes a

a spraying device for a generic construction machine which continuously and reliably ensures the even introduction of a fluid into the working chamber over a wide conveying range, i.e., from low fluid quantities up to comparatively high fluid quantities per unit of time and/or distance. Moreover, the spraying device shall be robust and fail-safe.

*Id.* ¶ 7.

Figure 1 of Heusinger, reproduced below, depicts a generic construction machine. Ex. 1006 ¶ 26.

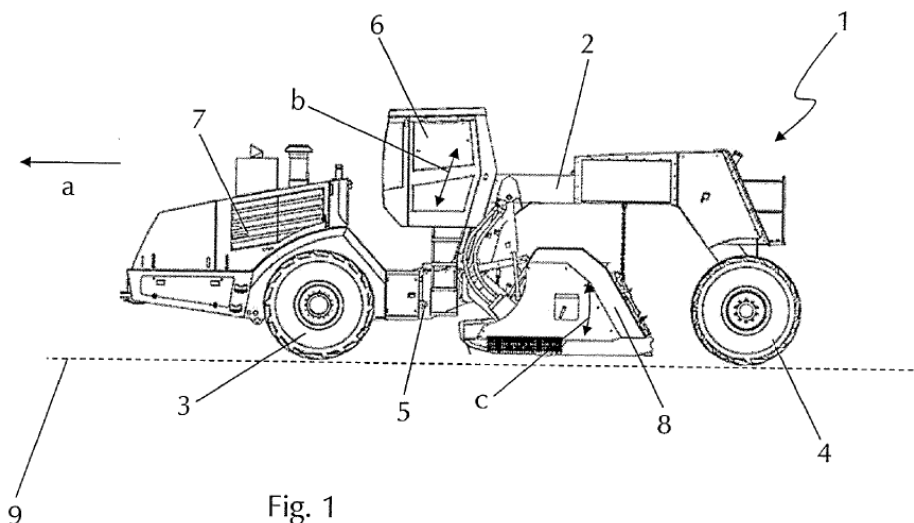
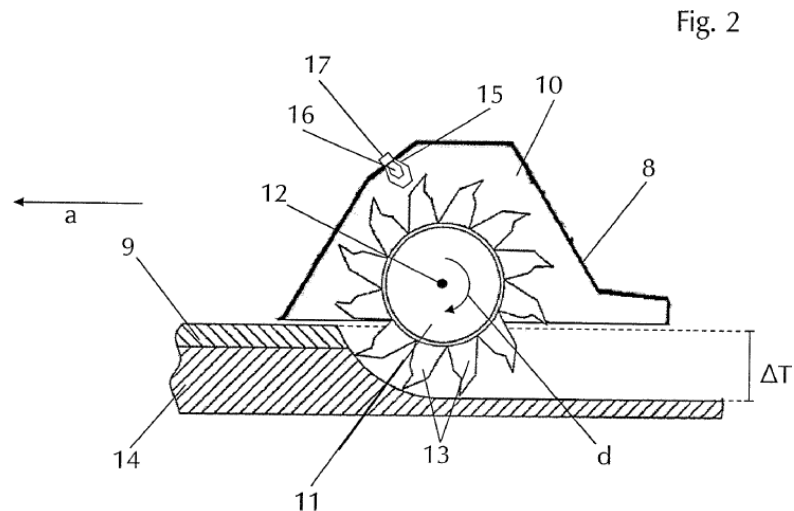


Figure 1 above shows construction machine 1 including machine frame 2 and hood 8 that “encloses a working chamber in which [a] working roller [11] is held.” *Id.* ¶ 32.

Figure 2 of Heusinger, reproduced below, depicts “a sectional side view into the working chamber of the construction machine of FIG. 1.” Ex. 1006 ¶ 27.



In regard to Figure 2 above, Heusinger discloses that

[f]or the purpose of introducing fluid, especially water, into the working chamber 10 which is delimited by the protective hood 8, an outlet nozzle 15 (“large” outlet nozzle) and an outlet nozzle 16 (“small” outlet nozzle) which is disposed in front of the former in the axial direction of the cylinder axis 12 protrude from the outside with their respective fluid outlet opening into the interior space of the working chamber 10. Both outlet nozzles 15 and 16 are each connected . . . to a line beam 17 which is part of a line system. Further structurally identical outlet nozzles 15 and 16 are present which are arranged on the line beam 17 in an alternating manner in a direction of view behind the two outlet nozzles 15 and 16.

*Id.* ¶ 34. Heusinger further discloses that “[t]he line system further comprises a water reservoir which is mounted on the construction machine 1 (not shown in FIG. 2) and a pump (also not shown in FIG. 2) which conveys

the water from the reservoir via the line system to the outlet nozzles 15 and 16.” *Id.* ¶ 35.

Figure 3 of Heusinger, reproduced below, depicts an “arrangement of a spraying device.” Ex. 1006 ¶ 28.

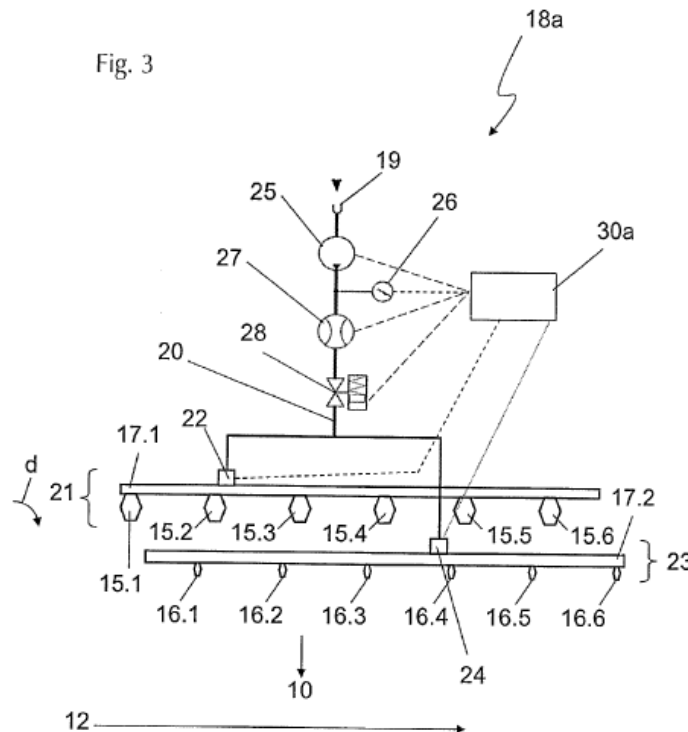


Figure 3 above shows spraying device 18a starting from feed point 19 from a tanker via line system 20 to first fluid delivery apparatus 21. *Id.* ¶ 38.

Spraying device 18a also includes water pump 25, pressure sensor 26, and control unit 30a. *Id.* ¶¶ 38–39. Line system 20 includes first line beam 17.1 connected to second line beam 17.2 via valves 22 and 24. *Id.* ¶ 38. First line beam 17.1 includes large outlet nozzles 15.1–15.6 for water distribution.

*Id.* Heusinger also discloses that

[o]nce the valve 24 is opened and pump 25 is in operation, fluid is pumped through the line system 20 and through the valve 24 into the line beam 17.2 and leaves the same to enter the working chamber 10 via the individual dosing elements of the second

fluid delivery apparatus 23 or through the outlet nozzles 16.1 to 16.6 which are also switched in parallel with each other.

*Id.* “[C]ontrol unit 30a can adjust the feedback control process for controlling the spraying device 18 by taking measuring parameters into account, . . . and [can] adjust the fluid output or the flow rate fluid per unit of time by regulating the pump 25 and/or the valves 22 and 24 of the first fluid delivery apparatus 21 or the second fluid delivery apparatus 23.” *Id.* ¶ 40.

2. *Overview of Orr (Ex. 1007)*

Orr is directed to “a system and method for controlled delivery of a fluid delivery.” Ex. 1007 ¶ 1. Orr identifies that there are work environments such as those in the mining and construction industries that are susceptible to undesirable dust conditions. *Id.* ¶ 2. Orr discloses that these undue dust conditions may reduce the efficiency a worksite. *Id.* ¶ 3. Although dust control systems exist that help control dust levels at the worksite, those systems may be inefficient in certain ways by not monitoring or controlling the amount of water sprayed on a particular location of the worksite. *Id.* ¶ 5. Orr purports to provide a system that is more efficient. *Id.* ¶¶ 5–6.

Figure 4 of Orr, reproduced below, depicts “a representation of an exemplary fluid delivery system associated with [Orr’s] fluid delivery control system.” Ex. 1007 ¶ 14.

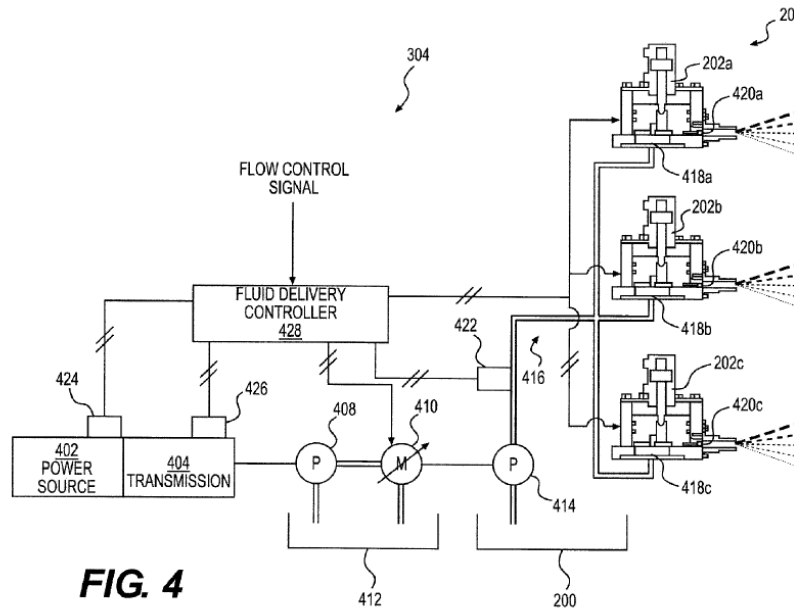


Figure 4 above shows fluid delivery system 304 including pump 414 “fluidly coupled to fluid tank 200” to “deliver the fluid to spray heads 202 via fluid lines 416.” *Id.* ¶¶ 26, 28. Orr discloses that in relation to the spray heads “spray[ing] the fluid onto the surface” of a worksite,

[a]lthough the particular configuration of spray heads 202 is not material to the disclosure, in one embodiment, spray heads 202 may comprise the spray heads described in U.S. application Ser. No. 12/472,415, which is incorporated herein by reference in its entirety. It is to be appreciated, however, that any type of spray head 202 may be used without departing from the spirit and scope of the disclosure.

*Id.* ¶ 29. Fluid delivery system 304 also includes fluid delivery controller 428 that controls pump 408 and motor 410 for controlling the amount of fluid distributed for other purposes, such as for cooling brake components. *Id.* ¶¶ 26, 38. “Fluid delivery controller 428 may receive the signals from fluid pressure sensor 422, power source speed sensor 424, and transmission sensor 426. Fluid delivery controller 428 may also communicate with flow control system 306 (Fig. 3) to receive a flow control signal.” *Id.* ¶ 38.

“Based on known characteristics of fluid delivery system 304, fluid delivery controller 428 may set orifices 420 [of spray heads 202] to spray fluid in the amount and with the distribution or width (e.g., narrow, medium, or wide) commanded by the flow control signal.” *Id.* ¶ 41. “Fluid delivery controller 428 may then determine a corresponding internal fluid pressure required of fluid delivery system 304 to maintain the fluid delivery rate  $R_{\text{Delivery}}$ , indicated by the flow control signal” and “[u]pon determining the appropriate displacement for motor 410 (and/or pump 408), fluid delivery controller 428 may responsively control motor 410 (and/or pump 408) to hold that displacement, thereby maintaining the desired fluid delivery rate. *Id.* ¶ 42.

### 3. *Analysis of Claim 1*

Petitioner asserts claim 1 would have been obvious over Heusinger and Orr. Pet. 31–54. We use Petitioner’s notations to identify the claim elements.

- a) *[1[p]] A cold planer machine comprising a frame and a drum enclosed within a housing and arranged to rotate about a drum axis, the drum connected to the frame and configured to plane a road surface during operation, the cold planer comprising:*

#### *(1) Petitioner’s Contentions*

Petitioner asserts that Heusinger teaches the subject matter of the preamble. Pet. 31–32. More particularly, Petitioner annotates Figure 2 and asserts that “[a]s shown in Fig. 2, Heusinger taught a ‘working roller [11] . . . mounted indirectly on the machine frame’ that is ‘rotatable about its cylindrical axis and is enclosed by a protective hood 8’ and ‘is used for processing ground or road surfaces.’” *Id.* (citing Ex. 1006 ¶ 32; Ex. 1004

¶¶ 86–87). We note that Petitioner does not explain what portion of Heusinger’s construction machine corresponds to the claimed frame. *See id.* We observe, however, that Heusinger discloses a generic construction machine 1 including machine frame 2. Ex. 1006 ¶ 32, Fig. 1. Although the parties do not present conflicting positions with respect the preamble, we discuss the preamble as an initial matter further to our discussions below that relates to the claimed frame.

- b) *[1[a]] primary rotor spray bank mounted to the frame and disposed in the housing, the primary rotor chamber spray bank including a first plurality of spray nozzles arranged along a first spray manifold, the first plurality of spray nozzles being arranged parallel to the drum axis and being oriented such that a plurality of water sprays provided therethrough are directed towards the drum;*

#### *(1) Petitioner’s Contentions*

Petitioner asserts that Heusinger teaches the subject matter of limitation 1[a]. Pet. 32–35. More particularly, Petitioner annotates Figure 3 of Heusinger and asserts that “Heusinger taught a ‘first fluid delivery apparatus 21’ (primary rotor chamber spray bank) comprising ‘line beam 17.1’ (first spray manifold)” and that one of ordinary skill in the art “would also have understood that ‘first fluid delivery apparatus 21’ is mounted to ‘machine frame 2’ via ‘protective hood 8.’” Pet. 32–33 (citing Ex. 1006 ¶¶ 32, 34, 38; Ex. 1004 ¶¶ 88–89).

#### *(2) Patent Owner’s Contentions*

Patent Owner contends that Petitioner “fails to address the claim’s requirement that the ‘primary rotor spray bank’ be ‘disposed in the housing’ of the cold planer machine—and fails to explain where and how this express

claim limitation is disclosed in Heusinger.” Prelim. Resp. 5. Patent Owner argues that Petitioner does not discuss whether “Heusinger’s first fluid delivery apparatus 21 (the alleged primary rotor spray bank) is ‘disposed in’ the protective hood 8 (the alleged housing) as required by claim 1” and rather, Petitioner “merely alleges that a ‘POSITA would have understood that ‘first fluid delivery apparatus 21’ is mounted to ‘machine frame 2’ via ‘protective hood 8.’”” *Id.* at 7 (citing Pet. 32–35). Patent Owner further argues that Petitioner “relies on a component—namely, ‘line beam 17.1’—as forming part of the claimed primary rotor spray bank, which Heusinger describes as being disposed *outside* the protective hood 8 (*i.e.*, the alleged housing).” *Id.* at 7–8 (citing Pet. 32; Ex. 1006 ¶ 34). Patent Owner reproduces Petitioner’s annotated Figure 2 Heusinger and contends that even annotated Figure 2 shows line beam 17 is disposed “wholly external” to protective hood 8. *Id.* at 8 (citing Pet. 34).

### *(3) Discussion*

Having considered the conflicting positions of the parties, we agree with Patent Owner that Petitioner has not adequately established that Heusinger discloses the subject matter of limitation 1[a], as proposed.

Petitioner identifies Heusinger’s first fluid delivery apparatus 21 as the corresponding primary rotor spray bank and Heusinger’s protective hood 8 as the corresponding housing. Pet. 31–32. Petitioner’s analysis for the subject matter of limitation 1[a] does not include how Heusinger discloses a primary rotor spray bank that is disposed in a housing. Pet. 32–35.

Petitioner characterizes Heusinger’s line beam 17.1 as being part of the corresponding primary rotor spray bank. Pet. 32 (citing Ex. 1006 ¶ 38; Ex. 1004 ¶¶ 88–89). However, Heusinger’s Figure 2 clearly shows outlet

nozzles 15 and 16 being disposed inside protective hood 8 and connected to line beam 17 that is disposed outside of protective hood 8, i.e., outside of the corresponding housing. Ex. 1006, Fig. 2. This understanding is consistent with Heusinger's written disclosure which states that

[f]or the purpose of introducing fluid . . . into the working chamber 10 which is delimited by the protective hood 8, an outlet nozzle 15 ("large" outlet nozzle) and an outlet nozzle 16 ("small" outlet nozzle) . . . protrude ***from the outside*** with their respective fluid outlet opening into the interior space of the working chamber 10.

Ex. 1006 ¶ 34 (emphasis added); Prelim Resp. 8. Thus, we agree with Patent Owner that the Petition fails to provide any discussion as to why one of ordinary skill in the art would understand that "Heusinger's first fluid delivery apparatus 21 (the alleged primary rotor spray bank) is 'disposed in' the protective hood 8 (the alleged housing) as required by claim 1." Prelim. Resp. 7 (citing Pet. 32–35). Instead, as Patent Owner correctly points out, "the petition merely alleges that [one of ordinary skill in the art] would have understood that 'first fluid delivery apparatus 21' is mounted to 'machine frame 2' via 'protective hood 8.'" *Id.* (citing Pet. 33). The declaration testimony of Petitioner's declarant, Dr. Needham, does nothing to clarify this discrepancy. *See* Ex. 1004 ¶¶ 88–89.

c) *[1[b]] a water reservoir mounted on the frame and configured to enclose water;*

*(1) Petitioner's Contentions*

Petitioner asserts that the '618 patent discloses that "[a] typical cold planer will carry a water reservoir onboard that feeds the water sprays" and that Heusinger teaches "at least one fluid storage reservoir for carrying the fluid' that is 'mounted on the construction machine,' which 'comprises a

machine frame.” Pet. 35 (citing Ex. 1001, 1:40–41; Ex. 1006 ¶¶ 21, 32, 35; Ex. 1004 ¶¶ 90–91).

### *(2) Patent Owner’s Contentions*

Patent Owner contends that even if the ’618 patent discloses that a typical cold planer will carry a water reservoir onboard and that Heusinger teaches at least one fluid storage reservoir for carrying the fluid that is mounted on the construction machine, “Petitioner provides no explanation as to how such description discloses a water reservoir that itself is mounted on the frame of a cold planer machine.” Prelim. Resp. 9 (citing Pet. 35; Ex. 1001, 1:40–41; Ex. 1006 ¶¶ 21, 32, 35). Patent Owner argues that Petitioner’s expert “points to nothing in Heusinger that discloses such a limitation.” *Id.* at 9–10 (citing Ex. 1004 ¶ 91).

### *(3) Discussion*

Having considered the conflicting positions of the parties, we agree with Patent Owner that Petitioner has not adequately established that Heusinger discloses the subject matter of limitation 1[b], as proposed.

As discussed above in regard to the preamble, Petitioner does not explain what portion of Heusinger’s construction machine 1 corresponds to the claimed frame but we noted that Heusinger discloses a generic construction machine 1 including machine frame 2. *See* Sections II.D.1, II.D.3.a)(1); Pet. 31–32; Ex. 1006 ¶ 32, Fig. 1. According to Heusinger, “frame 2 has a two-element configuration comprising two frame elements which are connected with each other by a knee-joint connection 5.” Ex. 1006 ¶ 32.

Petitioner cites to Heusinger’s paragraphs 21, 32, and 35, as disclosing subjected matter of limitation [1[b]] (Pet. 35), but none of the

cited paragraphs disclose “a water reservoir mounted on the frame,” as required by limitation 1[b]. In this regard, paragraph 35 of Heusinger discloses that “[t]he line system further comprises a water reservoir which is mounted on the construction machine 1.” Ex. 1006 ¶ 35. At least one difficulty with this disclosure, however, is that the water reservoir, in Heusinger, could be mounted on parts of construction machine 1 *other than* machine frame 2. Figure 1 of Heusinger does not depict a water reservoir, but shows parts of construction machine 1, *other than* machine frame 2, where a water reservoir could be mounted. *See* Ex. 1006, Fig. 1. For example, Heusinger discloses that “[t]he construction machine can further comprise at least one fluid storage reservoir for carrying the fluid for fluid supply *or* can be connected alternatively via the line system with a tank vehicle or the like for supplying the spraying device with fluid.” Ex. 1006 ¶ 21 (emphasis added); *see also id.* ¶ 3 (“several fluid tanks can be integrated in the construction machine or suitable connections for a tank vehicle can be provided”). Consequently, Petitioner resorts to speculation to support its assertion that Heusinger discloses a water reservoir that is mounted on frame 2 of construction machine 1. Once again, the declaration testimony of Petitioner’s declarant, Dr. Needham, does nothing to clarify this discrepancy. *See* Ex. 1004 ¶¶ 90–91.

*d) [1[c]] a pump fluidly associated with the water reservoir and configured to draw the water therefrom, pressurize the water, and provide pressurized water to a main spray manifold connected to the frame;*

*(1) Petitioner’s Contentions*

Petitioner asserts that Heusinger teaches “a pump . . . which conveys the water from the reservoir via the line system [main spray manifold] to the

outlet nozzles 15 and 16.” Pet. 36 (citing Ex. 1006 ¶¶ 35–37; Ex. 1004 ¶¶ 92–93). Petitioner further asserts that one of ordinary skill in the art “would have understood that line system 20 constitutes a ‘main spray manifold’ because it is a pipe or chamber that branches into openings to the first and second fluid delivery apparatuses.” *Id.* (citing Ex 1006 ¶ 9; Ex. 1004 ¶¶ 92–93). Dr. Needham provides declaration testimony that “[b]ecause the water system is carried by the vehicle,” one of ordinary skill in the art “would have understood that the branched set of lines, as in the line system (20), are connected to the frame of Heusinger’s cold planer,” in which “[t]he branched set of lines, i.e., the main spray manifold” is shown in Heusinger’s Figure 3. Ex. 1004 ¶ 92. According to Dr. Needham, one of ordinary skill in the art “would have understood that Heusinger’s branched set of lines constitutes a main spray manifold, from which fluid lines may further branch, distribute, or stem,” and “[t]his is consistent with the depiction of the main spray manifold (element 244) in Fig. 4 of the ’618 patent.” *Id.* ¶ 93.

## *(2) Patent Owner’s Contentions*

Patent Owner contends that even if Heusinger’s line system 20 corresponds to the claimed main spray manifold, Petitioner “does not even allege—that Heusinger discloses a line system 20 that is ‘connected to the frame’ of a cold planer as required by claim 1.” Prelim. Resp. 10. Patent Owner argues that Dr. Needham’s “testimony does not make those same claims.” *Id.* at 11 (citing Ex. 1004 ¶¶ 92–93). Patent Owner argues that despite Dr. Needham’s reference to Figure 4 of the ’618 patent in his declaration testimony, that figure “is a *schematic* depiction of an embodiment of the spray system of the claimed invention” whereas Figure 5

of the '618 patent “provides ‘a perspective view’ of an embodiment of a main spray manifold (element 244), which . . . details more structure than the simplified line drawing of Figure 4.” Prelim. Resp. 11 (citing Ex. 1001, 3:29–30, 3:31–32, 7:24–44). As such, Patent Owner argues, Petitioner’s expert improperly “attempts to draw similarities between Heusinger’s line system 20 and a **line drawing** of a spray system of the claimed invention.” *Id.* at 12. Moreover, Patent Owner contends, “this failed analogy to a schematic instead of the more substantive manifold depiction is insufficient to establish that Heusinger’s line system 20 would have been understood to constitute a ‘main spray manifold.’” *Id.* Accordingly, Patent Owner argues that “the petition fails to establish that Heusinger discloses ‘a main spray manifold connected to the frame.’” *Id.* at 13.

### (3) Discussion

Having considered the conflicting positions of the parties, we agree with Patent Owner that Petitioner has not adequately established that Heusinger discloses the subject matter of limitation 1[c], as proposed.

As an initial matter, to the extent that Patent Owner’s contention rests on differentiating between a “main” spray manifold versus a “secondary” spray manifold, we find such a contention to be unpersuasive. Patent Owner does not explain why Heusinger’s line system 20 cannot be regarded as a spray manifold, or a main spray manifold.

However, as discussed above, Figure 1 of Heusinger merely shows construction machine 1 including machine frame 2. *See* Sections II.D.1, II.D.3.c)(3); Ex. 1006 Fig. 1. Even if Heusinger teaches a main spray manifold by way of its line system 20, Petitioner does not explain sufficiently how Heusinger’s line system 20 is connected to its frame 2. Dr.

Needham's comparison of Figure 4 of the '618 patent to Figure 3 of Heusinger does not provide evidence that Heusinger's line system 20 is connected to its frame 2, as required by limitation 1[c].

*e) Conclusion*

Patent Owner also advances arguments that the Petition fails to establish that either Heusinger or the combination of Heusinger and Orr fails to disclose or suggest the subject matter of limitations 1[k], 1[l] and 1[o]. Prelim. Resp. 13–26. Patent Owner further argues that Petitioner fails to establish a motivation to combine the teachings of Heusinger and Orr. *Id.* at 27–31. However, as we determine that Petitioner has not adequately established that Heusinger discloses or suggests the subject matter of limitations 1[a], 1[b], and 1[c] as proposed, we do not reach Patent Owner's arguments with respect to the subject matter of limitations 1[k], 1[l], and 1[o], and motivation to combine the teachings of Heusinger and Orr.

Therefore, based on the current record, we determine that Petitioner has not shown a reasonable likelihood of demonstrating that independent claim 1 would have been obvious over Heusinger and Orr.

*4. Claims 2, 8, 9, and 15–20*

We have considered Petitioner's arguments and evidence for independent claims 8 and 15, and for dependent claims 2, 9, and 15–20. Petitioner relies on the same arguments and evidence to address independent claims 1, 8, and 15, and so, does not provide contentions for these claims that remedy the deficiencies discussed with respect to claim 1. *See* Pet. 59. Accordingly, for the reasons discussed with respect to claim 1, we conclude that Petitioner has not demonstrated a reasonable likelihood that it would

prevail in showing that claims 2, 8, 9, and 15–20 are unpatentable under 35 U.S.C. § 103 as obvious over Heusinger and Orr.

*E. Alleged Obviousness over Heusinger, Orr, and Hoisington (Ground 2: Claims 7 and 14)*

Petitioner challenges claims 7 and 14 by adding Hoisington to the teachings of Heusinger and Orr. Pet. 70–72. Petitioner relies upon Hoisington for teaching the added limitations of these dependent claims and, thus, does not remedy the deficiencies of the asserted art with respect to claims 1 and 8. *Id.* Accordingly, for the same reasons discussed above, Petitioner fails to demonstrate a reasonable likelihood of prevailing in its assertion that the subject matter of claims 7 and 14 would have been obvious over the combination of Heusinger, Orr, and Hoisington.

*F. Alleged Obviousness over Heusinger, Orr, and Klaasse (Ground 3: Claims 3–5 and 10–12)*

Petitioner challenges claims 3–5 and 10–12 by adding Klaasse to the teachings of Heusinger and Orr. Pet. 73–88. Petitioner relies upon Klaasse for teaching the added limitations of these dependent claims and, thus, does not remedy the deficiencies of the asserted art with respect to claims 1 and 8. *Id.* Accordingly, for the same reasons discussed above, Petitioner fails to demonstrate a reasonable likelihood of prevailing in its assertion that the subject matter of claims 3–5 and 10–12 would have been obvious over the combination of Heusinger, Orr, and Klaasse.

*G. Alleged Obviousness over Heusinger, Orr, and Swisher (Ground 4: Claims 6 and 13)*

Petitioner challenges claims 6 and 13 by adding Swisher to the teachings of Heusinger and Orr. Pet. 89–90. Petitioner relies upon Swisher

for teaching the added limitations of these dependent claims and, thus, does not remedy the deficiencies of the asserted art with respect to claims 1 and 8. *Id.* Accordingly, for the same reasons discussed above, Petitioner fails to demonstrate a reasonable likelihood of prevailing in its assertion that the subject matter of claims 6 and 13 would have been obvious over the combination of Heusinger, Orr, and Swisher.

### III. CONCLUSION

For the foregoing reasons, we are not persuaded that the Petition establishes a reasonable likelihood that Petitioner would prevail in any of its challenges to claims 1–20 of the '618 patent.

### IV. ORDER

In consideration of the foregoing, it is hereby ordered that the Petition is *denied*, and no trial is instituted.

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Patent 9,371,618 B2

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