

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INVATA, LLC and HC ROBOTICS,
Petitioner,

v.

OPEX CORPORATION,
Patent Owner.

IPR2022-01604
Patent 11,192,144 B2

Before WILLIAM A. CAPP, JEREMY M. PLENZLER, and
JAMES J. MAYBERRY, *Administrative Patent Judges*.

CAPP, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

Invata, LLC and HC Robotics (collectively “Invata”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–19 of U.S. Patent No. 11,192,144 B2 (Ex. 1001, the “’144 patent”). OPEX Corporation (“OPEX”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 6. We conclude that Invata has shown a reasonable likelihood of prevailing in its challenge to claim 1 and, accordingly, we institute *inter partes* review as to claims 1–19.

I. RELATED MATTERS

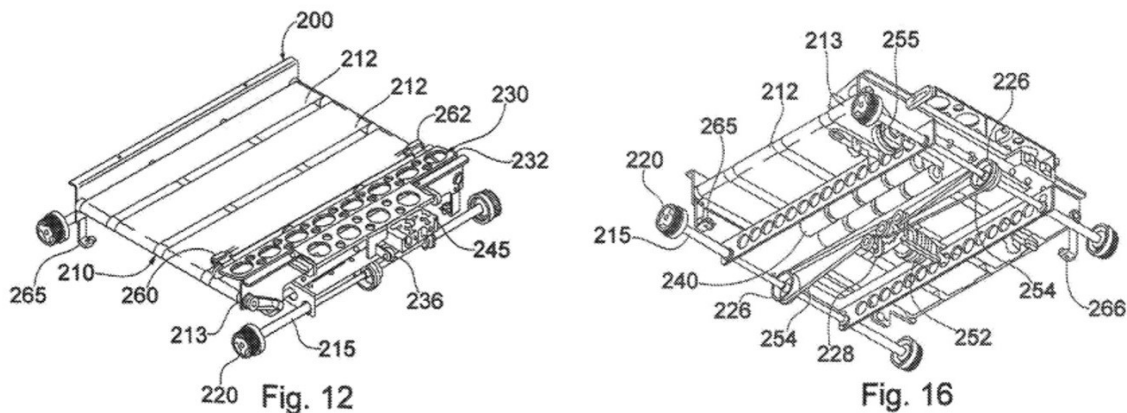
OPEX has asserted the ’144 patent against Invata in the United States District Court for the Eastern District of Pennsylvania. Prelim. Resp. 6. OPEX also reports that the ’144 patent is the subject of two International Trade Commission (ITC) proceedings: (1) Inv. No. 337-TA-1293; and (2) Inv. No. 337-TA-1333. *Id.* OPEX also reports that there is additional litigation between the parties in District Court and before the ITC. *Id.* at 6–11.

II. BACKGROUND

A. The ’144 patent (Ex. 1001)

The ’144 patent, entitled “Material Handling Apparatus For Delivering Or Retrieving Items,” is one of a family of at least 12 patents that trace their lineage to non-provisional application number 12/014,011, which was filed on January 14, 2008, and eventually issued as US 7,861,844 B2. The Specification of the ’144 patent generally discloses an automated mail sort system featuring an array of storage locations that includes a plurality of interconnected vertical and horizontal track sections, which track sections are traversed by a plurality of vehicles 200. Ex. 1001, 2:7–23.

The claims of the '144 patent are specifically directed to the vehicles that traverse the tracks of the system. *Id.* at 20:10–22:43. Two views of the vehicle are depicted below.



FIGURES 12 AND 16 OF '144 PATENT

The composite figure above depicts Figures 12 and 16 of the '144 patent, respectively, from left to right.

B. The Challenged Claims

Invata challenges claims 1–19. In the Preliminary Response, OPEX argues all claims of the '144 patent together. *See generally* Prelim. Resp. Independent claim 1 is representative of the claimed subject matter and is reproduced below:

1. A delivery vehicle operable with a material handling system having a plurality of destination areas and a guide system, wherein the delivery vehicle comprises:
 - a transfer mechanism for transferring an item onto or off the vehicle, wherein the transfer mechanism has a support surface configured to support the item when the item is on the vehicle;
 - a pair of opposing walls spaced apart from one another so that the support surface is between the opposing walls

- with the walls projecting upwardly relative to the support surface, wherein the opposing walls are positioned to form a first opening to facilitate transfer of items onto the support surface through the first opening, and wherein the opposing walls form a second opening to facilitate transfer of items onto the support surface through the second opening;
- a drive system cooperable with the guide system to guide the vehicle to the destination areas,
- a motor for driving the drive system;
- an electric storage element for storing electricity and providing power to the transfer mechanism and the motor; and
- a controller for receiving signals for controlling the motor and the transfer mechanism to control the movement of the vehicles along the guide system and to control transfer of items onto and off of the vehicles.

C. The Asserted Grounds of Unpatentability

Invata challenges claims 1–19 of the ‘144 patent as obvious under 35 U.S.C. § 103 over various combinations of references listed below and as further supported by the Declaration of Laurens E. Howle (Ex. 1002).

Claims Challenged	References
1-3, 5, 9-19	King, US 7,381,022 B1, iss. June 3, 2008 – (Ex. 1005) Rokkaku, US 7,008,164 B2, iss. Mar. 7, 2006 – (Ex. 1006)
4	King (Ex. 1005), Rokkaku (Ex. 1006), and Lert, US 2005/0047895 A1, pub. Mar. 3, 2005 – (Ex. 1007)
6-8	King (Ex. 1005), Rokkaku (Ex. 1006), and Jones, US 5,092,451, iss. Mar. 3, 1992 – (Ex. 1008)

D. Claim Interpretation

In IPR proceedings, we apply the same claim construction standard that is applied in civil proceedings under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b); *Cupp Computing AS v. Trend Micro Inc.*, 53 F.4th 1376, 1380 (Fed. Cir. 2022) citing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc); *Polaris Innovations Ltd. v. Brent*, 48 F.4th 1365, 1372 n.3 (Fed. Cir. 2022).

In the Petition, Petitioner purportedly interprets all claim terms in accordance with their plain and ordinary meaning consistent with the specification. Pet. 10 (citing Howle, Ex. 1002 ¶ 42). Petitioner does not offer any proposed constructions as to what it believes to be the plain and ordinary meaning for any of the claim terms of the '144 patent. Pet. 10. Dr. Howle testifies that he does not believe that any articulation of meaning is needed to resolve any controversy. Howle ¶ 42. Dr. Howle notes that the parties have offered differing proposed constructions on terms of a related patent in an ITC investigation and recites the competing constructions of the respective parties. *Id.* ¶ 43. Dr. Howle offers no opinion as to correctness of any particular proposed construction. *Id.*

OPEX does not challenge Petitioner's position on claim construction. Prelim. Resp. 25. In particular, OPEX does not offer any proposed construction of any claim term. *Id.*

We have reviewed the analysis sections of the Petition and the Preliminary Response and it does not appear to us, at this stage of the case, that any issue regarding whether a claim limitation is met by either King or Rokkaku hinges on the meaning of any particular claim term. Under the

circumstances, we will defer further consideration of claim construction in this case until the record is more fully developed.¹

III. ANALYSIS

A. Claims 1–3, 5, 9–19

1. King (Ex. 1005)

King is directed to an automated storage and distribution system. King, (Ex. 1005) Abstr. King features computer-controlled carriage 58 that navigates a system of horizontal and vertical rails within an automated storage and retrieval system. *Id.* at 6:46–53. King’s storage and retrieval system has a plurality of bins 115 and a system of bin racks. *Id.* Carriage 58 navigates the system of rails in three-dimensions to store and retrieve items stored in the bins from the storage system. *Id.* at 2:53–57, 1:20–22.

King’s bins 115 feature outwardly protruding lips 116 at the upper edge of the bins. *Id.* at 9:1–11, Figs. 13A, B. When resting in the storage racks, lips 116 of bins 115 rest on corresponding horizontal support surfaces 109 that are disposed in the rack structure. *Id.*

King’s carriage 58 features toothed rotational devices (wheels) 68 and 69 that are mounted on all four sides of the carriage. *Id.* at 7:3–7, Figs. 4A, B. The toothed rotational devices engage corresponding features in the horizontal and vertical rails to provide traction as the carriage navigates through the rack, rail structure. *Id.* at 8:23–33.

¹ The parties are hereby notified that, depending on the positions taken in the Patent Owner’s Response and the Petitioner’s Reply thereto, we may require further briefing from the parties on claim construction.

King's rails are electrically energized, which serves as a source of electrical power to the carriages. *Id.* at 7:56–58, 11:11–16. Each carriage has its own independent propulsion and control device which allows multiple carriages to operate independently on the rail system. *Id.* King's carriages attach to bin manipulators 125. *Id.* at 7:14–17, Fig. 5. Bin manipulators 125 feature arm sprockets that drive manipulator arm chains 129 in a manner that facilitates transfer of a bin from the carriage to and from the rack. *Id.* 7:20–32, 11:17–12:21, Figs. 6, 17A–F.

2. *Rokkaku (Ex. 1006)*

Rokkaku is directed to an automated guided vehicle that is capable of transporting various materials and transferring such materials on and off of the vehicle. Rokkaku (Ex. 1006), 1:5–8, 2:48–3:46. Rokkaku uses conveyors for loading and unloading items in an automated storage system. *Id.* at 2:50–57, Figs. 1–5. Rokkaku's vehicle is mounted over dolly 4 that is fitted with wheels 45. *Id.* at 3:13–38, Figs. 1–2. Dolly 4 is self-propelled and may travel autonomously on a floor surface or may be guided by a track/rail. *Id.* at 3:30–42.

3. *Unpatentability of Claim 1 over King and Rokkaku*

a) The individual claim elements

Invata alleges that the combination of King and Rokkaku discloses or suggests each limitation of claim 1. Pet. 20–45. Invata recites each individual element of claim 1 in a subheading and then, beneath each such subheading, offers allegations as to how such recited element is satisfied by either King, or Rokkaku, or both. *Id.* Invata's allegations are supported by citations to King, Rokkaku, and Dr. Howle's declaration (Ex. 1002). *Id.* Invata's allegations are further supported by a number of annotated drawings

from the prior art references. *Id.* at 22, 24–26, 29, 31, 33, 34, 36–38, and 43. Having reviewed the Petition, the prior art, and Dr. Howle’s declaration, it appears to us, at least for the purposes of this stage of the proceeding, that Invata’s allegations have sufficient evidentiary support in the record.

OPEX does not appear to challenge any of Invata’s factual allegations regarding whether King and/or Rokkaku satisfy the limitations of claim 1. *See generally* Prelim. Resp. The Preliminary Response appears to dispute Invata’s assertions of unpatentability by arguing: (1) the teachings of King and Rokkaku are not combinable for purposes of an obviousness analysis; *Id.* at 37–69; and (2) certain secondary considerations of non-obviousness support the patentability of the claims. *Id.* at 69–78.

b) Combinability

Invata alleges that a person of ordinary skill in the art would have considered it obvious to combine the teachings of King and Rokkaku to arrive at the claimed invention. Pet. 15–20. Invata notes that King and Rokkaku are essentially from the same field, namely, automated storage and retrieval of things. *Id.* at 16. Invata further notes that King and Rokkaku both employ autonomous vehicles and transfer material to and from such vehicles. *Id.* According to Invata, modifying King’s vehicles with Rokkaku’s conveyors amounts to a straightforward and obvious design choice to substitute Rokkaku’s conveyors for King’s manipulator arms to load and unload material. *Id.* at 16–17. Invata alleges that a person having ordinary skill in the art would have been motivated to make the proposed modification to allow King’s vehicles to load and unload multiple items at a time. *Id.* at 17. Invata further asserts that the proposed combination involves little more than using a known technique of one device to improve

a similar device. *Id.* at 17. Invata’s positions are supported by opinion testimony from Dr. Howle. *Id.* at 15–20; Howle (Ex. 1002) ¶¶ 64–75.

OPEX argues that the Petition fails to adequately explain “why” or “how” a person of ordinary skill in the art would have combined the conveyors of Rokkaku’s with King’s delivery vehicle. Prelim. Resp. 37–42. OPEX offers testimony from Dr. Singhose (Ex. 2004) that King already works “really well” and therefore, does not require modification. *Id.* at 42. OPEX further argues that Invata’s reasons to combine King and Rokkaku are based on impermissible hindsight. *Id.* at 43. OPEX further argues that Rokkaku’s conveyors are functionally incompatible with King on account of a number of alleged problems, including: a lateral reach problem, an angular rotation problem, and a guide roller problem. *Id.* at 48–66. OPEX supports these arguments with animation videos that purportedly demonstrate each of these problems. *Id.*; Exs. 2026, 2027 (lateral reach), Ex. 2028 (angular rotation). OPEX also argues that King teaches away from the proposed combination. Prelim Resp. 67–69.

“Whether a person of ordinary skill in the art would have been motivated to modify or combine teachings in the prior art, and whether he would have had a reasonable expectation of success, are questions of fact.” *Regents of Univ. of Cal. v. Broad Inst., Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018) (*quoting In re Stepan Co.*, 868 F.3d 1342, 1346 (Fed. Cir. 2017)). Given that we are at the Preliminary Response stage of these proceedings, we are not inclined to engage in an exercise of weighing evidence, particularly on an incomplete record.

We determine, on the current record, that Petitioner sufficiently demonstrates at this stage of the proceeding that a person having ordinary

skill in the art would have had reason to combine King and Rokkaku. Resolution of the combinability issues in this case will be reserved for trial following discovery and more extensive briefing by the parties.

c) Secondary Considerations

OPEX raises a number of secondary considerations of nonobviousness in its Preliminary Response. Prelim. Resp. 69–77. As secondary considerations, OPEX asserts: (1) long-felt, unmet need; (2) failure of others; (3) initial industry skepticism; (4) industry praise; (5) unexpected results; (6) commercial success; and (7) copying. *Id.*

Secondary considerations comprise one of the four classic *John Deere* factual determinations that are made in the course of an obviousness analysis. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Generally, such secondary considerations are considered to be essential components of the obviousness determination. *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998).

An investigation into secondary considerations of non-obviousness can frequently be particularly fact intensive. It almost invariably requires discovery into matters that are outside of the scope and content of the prior art presented in an IPR petition. Considering that Invata is the Petitioner and has only now, for the first time in this proceeding, been presented with an outline of OPEX’s secondary considerations case and has not yet been given an opportunity for discovery, much less present evidence at a trial in response to OPEX’s case, we are disinclined to hinge the outcome of a Decision to Institute on the incomplete record before us.

Resolution of this issue must await discovery and a presentation of evidence at trial.

IV. CONCLUSION

Invata has shown a reasonable likelihood of prevailing on its challenge that claim 1 is unpatentable over King and Rokkaku. Under prevailing law, a determination that any one claim is reasonably likely to be shown unpatentable in an IPR warrants institution of a trial on all challenged claims. *SAS Institute, Inc. v. Iancu*, 138 S.Ct. 1348, 1356 (2018). We have not, however, made a final determination with respect to the patentability of any challenged claim or the construction of any claim term.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted as to claims 1–19 of the ‘144 patent on the following grounds of unpatentability:

A. Claims 1–3, 5, and 9–19 under 35 U.S.C. § 103(a) as obvious over King and Rokkaku;

B. Claim 4 under 35 U.S.C. § 103(a) as obvious over King, Rokkaku, and Lert; and

C. Claims 6–8 under 35 U.S.C. § 103(a) as obvious over King, Rokkaku, and Jones.

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial commencing on the entry date of this Order.

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