NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

HAYWARD INDUSTRIES, INC.,
Appellant

v.

PENTAIR WATER POOL AND SPA, INC., DANFOSS POWER ELECTRONICS A/S,
Appellees

2019-1821

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 95/002,006.

Decided: June 12, 2020

KEITH E. TOMS, McCarter & English, LLP, Boston, MA, argued for appellant. Also represented by LEE CARL BROMBERG; SCOTT S. CHRISTIE, TIMOTHY PATRICK HOMLISH, MARK NIKOLSKY, Newark, NJ; STEVEN HALPERN, Hayward Industries, Inc., Berkeley Heights, NJ.

KRISTIN GRAHAM NOEL, Quarles & Brady, LLP, Madison, WI, argued for appellees. Also represented by JOEL AUSTIN, RAYE LYNN DAUGHERTY, MICHAEL PIERY, Milwaukee, WI.

Before DYK, CLEVENGER, and HUGHES, *Circuit Judges*.

CLEVENGER, *Circuit Judge*.

Hayward Industries, Inc. ("Hayward") appeals from a decision of the Patent Trial and Appeal Board reversing an examiner's decision to reject claims of U.S. Patent No. 7,854,597 ("the '597 patent") as anticipated and reversing the examiner's decision to reject claims of the '597 patent as obvious. *See Hayward Indus., Inc. v. Pentair Water Pool & Spa, Inc.* (*Board Decision*), No. 2016-002780, 2019 WL 990776 (P.T.A.B. Feb. 27, 2019). For the reasons set forth below, we reverse-in-part, vacate-in-part, and remand.

BACKGROUND

I

Pentair Water Pool and Spa, Inc. and Danfoss Low Power Drives (collectively "Pentair") are assignees of the '597 patent, which is directed to a pool pumping system. The system includes a pump, a variable speed motor, and a controller connected to the motor. The controller may operate independently or may be connected to an auxiliary device that operates the pump in a master/slave mode.

Claim 1 of the '597 patent, the sole independent claim, recites

> 1. A pumping system for at least one aquatic application, the pumping system receiving information from a user, the pumping system comprising:
>
> a pump;
>
> a motor coupled to the pump;
>
> a control system operating as a master controller, the control system including an automation system, the control system including a remote

> keypad and display connected to the automation system; and
>
> a pump controller located remotely from the control system, the pump controller coupled to at least one of the pump and the motor, the pump controller operating as a slave controller when connected to the control system,
>
> > the pump controller in digital communication with the motor and the control system,
> >
> > the pump controller transmitting information to and receiving information from the control system over at least one communication link,
> >
> > the pump controller operating the motor to substantially *optimize energy consumption* based on the information entered into the remote keypad by the user and received from the control system,
> >
> > the pump controller operating independently to control the motor to *optimize energy consumption* when disconnected from the control system.

'597 patent col. 13, ll. 33–58 (emphasis added to indicate disputed claim limitations).

The prior art reference at issue in this case is U.S. Patent Publication No. 2003/0061004 ("Discenzo"). Discenzo discloses a control system for control of pumps and motors to provide optimized performance of a pumping system. Discenzo teaches various pumping systems, some of which are connected to a host computer for the purpose of receiving and sending information to control the system.

II

Hayward filed a request for *inter partes* reexamination of the '597 patent, asserting that all claims were

unpatentable. The Board found that claims 1–16, 18–32, 34–37, 40–43, and 45–57 were patentable, reversing the examiner's rejection of the claims, and affirmed the examiner's rejection of the remaining claims. *Hayward Indus., Inc. v. Pentair Water Pool & Spa, Inc.*, No. 2016-002780, 2016 WL 4549097, at *6 (P.T.A.B. Aug. 30, 2016). The Board found that Discenzo did not teach the interrelated master/slave relationship of the '597 patent claims and therefore the examiner's rejection was in error. *Id.* at *3.

Hayward appealed to this court. *See Hayward Indus., Inc. v. Pentair Water Pool & Spa, Inc.* (*Hayward I*), 721 F. App'x 974 (Fed. Cir. 2018). We reversed the Board's finding that Discenzo did not teach the interrelated master/slave relationship of the '597 claims because it was unsupported by substantial evidence. *Id.* at 976–78. We affirmed the Board's construction of "optimize energy consumption" as "a reduction of energy consumed over time relative to the ultimate pumping application/function." *Id.* at 980. Because the Board found that Discenzo did not teach the interrelated master/slave relationship of the '597 claims, however, it did not consider whether Discenzo taught the "optimize energy consumption" limitation. *Id.* at 978. Accordingly, we remanded to the Board to make findings on that question. *Id.* We additionally remanded to the Board to determine whether claims 33 and 59 were obvious in view of the combination of Discenzo and U.S. Patent No. 6,253,227 ("Tompkins").

On remand, the Board found that Discenzo did not teach the "optimize energy consumption" limitation because it found that Discenzo was primarily focused on optimization of an overall system rather than optimization of a pump component. *Board Decision*, No. 2016-002780, 2019 WL 990776, at *2. The Board further asserted that Discenzo failed to teach switching between the independent mode and the master/slave mode. *Id.* As a result, the Board once again reversed the examiner's rejection of claims 1–16, 18–32, 34–37, 40–43, and 45–57, finding that

Discenzo did not anticipate the claims. *Id*. at *3. Because the Board found that Discenzo did not teach the "optimize energy consumption" limitation, and because Hayward did not assert that Tompkins taught that limitation, the Board found that Discenzo and Tompkins did not render claims 33 and 59 obvious. *Id*.

Hayward appeals from the Board's Decision After Remand, asserting that Discenzo teaches the "optimize energy consumption" limitation, the Board exceeded the scope of this court's mandate in *Hayward I*, and the case must be remanded for findings on obviousness. We have jurisdiction to decide the appeal under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

Anticipation is a question of fact, as is the question of what a prior art reference teaches. *In re NTP, Inc.*, 654 F.3d 1279, 1297 (Fed. Cir. 2011). We review the factual findings of the Board for substantial evidence. *In re Gartside*, 203 F.3d 1305, 1315 (Fed. Cir. 2000). "[T]he interpretation by an appellate court of its own mandate is properly considered a question of law, reviewable de novo." *Laitram Corp v. NEC Corp.*, 115 F.3d 947, 950 (Fed. Cir. 1997).

This appeal presents three issues. First, Hayward argues that the Board's determination that Discenzo fails to teach the "optimize energy consumption" limitation is unsupported by substantial evidence. Second, Hayward contends that the Board exceeded the scope of our mandate by addressing automatic switching between the master/slave mode and the independent mode. Third, Hayward argues that the Board failed to address claims 33 and 59. We address these issues in turn below.

I

We first consider whether Discenzo teaches the "optimize energy consumption" limitation found in claim 1 of the '597 patent. A prior art reference anticipates a claim if

it discloses all of the claimed limitations and the limitations are arranged in the same way as in the claim. *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015). An anticipating prior art reference may anticipate the claimed invention expressly or implicitly, and the full scope of the prior art reference's disclosure is considered. *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1375–76 (Fed. Cir. 2005). Additionally, prior art references should be considered for all that they teach, rather than being limited to a particular embodiment or the claimed invention of the prior art. *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1076 (Fed. Cir. 2015).

Hayward argues that the Board's finding that Discenzo does not teach the "optimize energy consumption" limitation is unsupported by substantial evidence. According to Hayward, Discenzo teaches optimizing energy consumption of the pumping component as well as of the global system, such that it teaches the limitation of claim 1 of the '597 patent. Pentair argues that the Board correctly found that Discenzo teaches only optimizing energy consumption of the global system but does not teach optimizing energy consumption of the pumping component.

The Board found that Discenzo failed to teach the "optimize energy consumption" limitation because Discenzo was not concerned with component optimization. According to the Board, Discenzo's discussion of optimization was related only to global system optimization and that energy consumption could be a secondary consideration. The Board's decision excludes specific disclosures in Discenzo that teach not only system optimization, but also component optimization.

Discenzo teaches "optimizing system and/or component efficiency, although it will be recognized that other performance characteristics of a motorized system may be optimized individually or in combination," with energy usage being included in a list of potential performance

characteristics that may be optimized. Discenzo ¶ 51. This paragraph of Discenzo clearly states that performance characteristics may be optimized at the system and at the component level. The Board's conclusion that the same paragraph of Discenzo places energy consumption as a secondary consideration to revenue generation ignores that Discenzo does not require that energy consideration be a secondary consideration. Rather, Discenzo explains that in some situations, the goals of optimization of other performance characteristics *may* lead to less than optimal energy consumption. Discenzo ¶ 51. The fact that the system may operate at less than optimal energy consumption does not mean that Discenzo does not also teach that energy consumption can be optimized for the system and/or the component.

Pentair argues that Discenzo ¶ 51 only teaches optimization of the performance characteristics, including energy usage, at the system level, but not at the component level. This argument ignores disclosures elsewhere in Discenzo that teach control of both the components and the system that takes into consideration various performance characteristics. Discenzo teaches that its invention "provides for controlled operation of motors and motorized systems, wherein operation thereof takes into account . . . one or more other performance characteristics or metrics, related to the motorized system and/or component devices therein." Discenzo ¶ 16. Thus, Discenzo not only teaches optimizing performance characteristics on the system level, but also at the component level.

At oral argument, Pentair argued that Discenzo ¶ 51 fails to teach the "optimize energy consumption" limitation because it fails to explain how optimization occurs, although it teaches that the optimization of energy consumption of the pump may occur. *See* Oral Arg. at 26:19–28:00, http://oralarguments.cafc.uscourts.gov/default.aspx?fl=19-1821.mp3. Pentair pointed to the Board's statement that "Discenzo simply is not concerned with component

optimization and so we do not actually know whether Discenzo optimizes any particular component at any given time as claimed." *Board Decision*, No. 2016-002780, 2019 WL 990776, at *2. The claims of the '597 patent do not require that the component operate to optimize energy consumption in any particular way, but merely require that the component optimizes energy consumption in some way.

The Board additionally faulted Hayward for a failure to explain where Discenzo teaches the arrangement of the components as claimed. Pentair argues that Hayward relies on disjointed and optional examples from Discenzo to teach the claimed arrangement of the "optimize energy consumption" limitation and that Discenzo does not itself teach that arrangement. Hayward contends, however, that Discenzo's teachings of how to configure the system also contemplate the optimization of those components.

In order to anticipate a patent, a prior art reference "must not only disclose all elements of the claim . . . but also must disclose those elements 'arranged as in the claim.'" *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). The anticipatory reference must "show all of the limitations of the claims arranged or combined in the same way as recited in the claims." *Id.* A prior art reference, however, does not need to include an "express discussion of the actual combination to anticipate," but may instead teach that the disclosed elements may be combined such that one of skill in the art could implement the combination. *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1344 (Fed. Cir. 2016) (citing *Kennametal*, 780 F.3d at 1383).

Discenzo teaches the elements of the claim and explains that they may be optimized in various systems. Although Discenzo teaches optimization and the arrangement of components in different embodiments of the patent, Discenzo also explains that these features may be combined. Discenzo further teaches that "the optimization aspects of

the invention may be employed across a plurality of controllers operating various actuators . . . and motorized systems." Discenzo ¶ 158. Discenzo additionally states that "while a particular feature of the invention may have been disclosed with respect to only one of several implementations, such feature may be combined with one or more other features of the other implementations as may be desired and advantageous." Discenzo ¶ 180. Based on these disclosures, Discenzo provides substantial evidence that it teaches the limitations as claimed in the '597 patent.

The Board's findings that Discenzo does not teach the "optimize energy consumption" limitation ignore the explicit disclosures of Discenzo and are therefore unsupported by substantial evidence.

II

Hayward argues that the findings of the Board that go beyond the "optimize energy consumption" limitation exceed the scope of this court's mandate in *Hayward I*. The Board is bound by the terms of a mandate issued by an appellate court. *Aydin Corp. v. Widnall*, 121 F.3d 729, 1997 WL 413329, at *3 (Fed. Cir. 1997). "Unless remanded by [an appellate] court, all issues within the scope of the appealed judgment are deemed incorporated within the mandate and thus are precluded from further adjudication." *Engel Indus., Inc. v. Lockformer Co.*, 166 F.3d 1379, 1383 (Fed. Cir. 1999).

Our mandate in *Hayward I* remanded to the Board "the question of whether Discenzo also discloses the 'optimize energy consumption' limitation." 721 F. App'x at 978. Hayward argues that in addition to considering the question of the mandate, the Board also imposed an additional limitation that the system automatically switch between modes, which is an extension of this court's finding in *Hayward I* that Discenzo teaches both the master/slave mode and independent mode of operation required by the claims of the '597 patent. We agree with Hayward that the Board

exceeded the scope of our mandate in *Hayward I*. In addition to making factual findings that Discenzo does not disclose the "optimize energy consumption" limitation, the Board also made factual findings regarding whether Discenzo teaches switching between the master/slave mode and the independent mode. These findings do not relate to the "optimize energy consumption" limitation and instead revisit the question of whether Discenzo teaches the two modes, which we decided in *Hayward I*. 721 F. App'x at 976–78.

We therefore vacate the Board's findings that go beyond the question of whether Discenzo teaches the "optimize energy consumption" limitation.

III

In *Hayward I* we also remanded to the Board the question of whether claims 33 and 59 of the '597 patent were obvious over the combination of Discenzo and Tompkins. 721 F. App'x at 982. The Board concluded that its findings that Discenzo did not teach the "optimize energy consumption" limitation necessitated the conclusion that the combination of Discenzo and Tompkins did not render claims 33 and 59 obvious. Claims 33 and 59 of the '597 patent depend from claim 1 and Hayward's obviousness contentions relied on Discenzo to teach the limitations of claim 1. Because we find that Discenzo teaches the "optimize energy consumption" limitation, we vacate the Board's conclusion that claims 33 and 59 are not obvious. We remand the single question of whether the combination of Discenzo and Tompkins render claims 33 and 59 obvious.

CONCLUSION

For the reasons above, we reverse the Board's conclusion that Discenzo does not teach the "optimize energy consumption" limitation and does not anticipate claims 1–16, 18–32, 34–37, 40–43, and 45–57 of the '597 patent. We further vacate the Board's findings beyond whether Discenzo

teaches that limitation as exceeding the scope of our mandate. We also vacate the Board's conclusion that claims 33 and 59 of the '597 patent are not obvious and remand to the Board the single question of whether claims 33 and 59 are obvious in view of the combination of Discenzo and Tompkins.

REVERSED-IN-PART, VACATED-IN-PART, AND REMANDED

COSTS

No costs.