NOTE: This disposition is nonprecedential.

# United States Court of Appeals for the Federal Circuit

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**IN RE: HUMBERTO VALENZUELA MEZA, JEFFREY BRIAN SCHOPPERLE, JESUS ESTRADA,**
*Appellants*

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2018-2219

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 12/755,766.

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Decided: August 14, 2019

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WILLIAM J. BARBER, Ware, Fressola, Maguire & Barber LLP, Monroe, CT, for appellants.

SARAH E. CRAVEN, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, for appellee Andrei Iancu. Also represented by THOMAS W. KRAUSE, JOSEPH MATAL, MOLLY R. SILFEN.

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Before REYNA, WALLACH, and TARANTO, *Circuit Judges*.

REYNA, *Circuit Judge*.

Humberto Valenzuela Meza, Jeffrey Brian Schopperle, and Jesus Estrada appeal from a decision by the Patent

Trial and Appeal Board affirming an examiner's rejection of their patent application claims as obvious. Because substantial evidence supports the Board's determination of obviousness, we *affirm*.

## BACKGROUND

### I. The '766 Application

Inventors Meza, Schopperle, and Estrada (together, "Meza") filed U.S. Patent Application No. 12/755,766 ("the '766 application") with the United States Patent and Trademark Office ("USPTO"). The '766 application is directed to an improved method and pump apparatus for removing water from pool covers and sumps while avoiding ice formation in the impeller cavity of the pump.

The '766 application discloses that the ability for pumps to operate at temperatures near or below the freezing point of water is beneficial in the pool and sump pump industries. J.A. 22. To provide for such operation, the '766 application teaches cycling a pump impeller to avoid ice buildup in the impeller cavity during low ambient temperatures. J.A. 23. The preferred embodiment of the invention includes a pump motor, an impeller, a sensor controller, and two types of sensors: a temperature sensor and a set of high and low water level sensors. J.A. 26–27. The temperature sensor signals the controller to rotate the pump impeller to prevent water from freezing in the impeller cavity when the ambient temperature nears freezing. J.A. 26–27. The water level sensors signal the controller to turn on the pump when the water reaches a high limit and turn off the pump when the water reaches a low limit. J.A. 27. Figure 1 of the '766 application depicts the claimed pump apparatus:

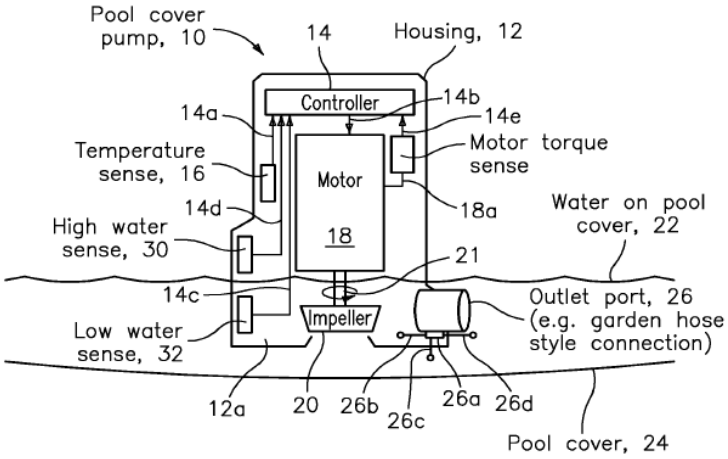


*FIG. 1*

J.A. 61.

The claims at issue require the temperature sensor to operate independently from the water level sensors. J.A. 15–17. Independent claim 14 is representative and recites:

> 14. A method for removing water from a pool cover or sump and avoiding ice formation in an impeller cavity of a pump, comprising:
>
> > receiving in a signal processor of a controller in a pump arranged on a pool cover or in a sump first signaling from a temperature sensing device containing information about the ambient temperature in relation to the pump during a temperature sensing, and second signaling from a field effect level sensing device during a level sensing containing information about a high water level sensed in order to turn the pump on when the water is at a higher level, and also about a low water level sensed in order to turn the pump off when the water is at a lower level; and

> providing from the signal processor of the controller to a motor in the pump corresponding signaling containing information for initiating cycling of an impeller of the pump at low operating temperatures to avoid ice formation in an impeller cavity, but not for level sensing, for turning the pump on when the water is at the higher level to rotate the impeller for removing water from the pool cover or in the sump, and for turning the pump off when the water is at the lower level;
>
> *the temperature sensing being independent of the level sensing*.

J.A. 15 (emphasis added).

## II. Prior Art References

### A. Mayleben

U.S. Patent Application Publication No. 2008/0229819 ("Mayleben") relates to a method and apparatus for controlling a pump using a capacitive sensor that detects the level of a liquid. J.A. 467, 485. Mayleben discloses a preferred embodiment in which a sump pump system includes a pump, a sensor, and a liquid discharge pipe. J.A. 486. According to Mayleben, the sensor "monitors the level of a liquid" and "serves as a switch for activating and deactivating the pump . . . based on that level." *Id.* When the level reaches a predetermined high limit, the sensor activates the pump, which begins to remove the liquid via the discharge pipe. *Id.* According to Mayleben, its pump system may include additional features, including a temperature sensor that "monitor[s] the temperature of the [pump]" and signals the controller to turn off the pump when the device becomes too hot. J.A. 491.

### B. Leone

U.S. Patent Application Publication No. 2005/0095150 ("Leone") relates to centrifugal multistage pumps. J.A. 462. Leone discloses a microcontroller that includes software to control the pump motor. J.A. 463. Leone teaches that the software can "include limitations of the pump's functioning in relation to temperature." J.A. 464. Leone also teaches that the microcontroller is combined with a water temperature sensor and can "start the pump when the temperature is about 0° C[,] causing an intentional increase in water temperature . . . [and] assuring therefore an efficient protection against the fluid in the pump freezing and damaging the pump." J.A. 465.

## III. Proceedings Before the USPTO

On October 23, 2014, an examiner issued a Final Office Action rejecting claims 14 and 16–21 of the '766 application. J.A. 272–79. Relevant to this appeal, the examiner rejected independent claims 14 and 21 as obvious over Mayleben in view of Leone.[1] J.A. 273. The examiner found that Mayleben discloses every limitation of claims 14 and 21 except for "cycling the impeller at a low operating temperature to avoid ice formation in the impeller cavity." J.A. 273–74. The examiner relied on Leone to fill this gap, finding that Leone "teaches a water pump having impellers . . . and a temperature sensor which monitors the

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[1] Congress amended § 103 when it passed the Leahy-Smith America Invents Act ("AIA") in 2011. Pub. L. No. 112–29, § 3(c), 125 Stat. 284, 287 (2011). Because the '766 application does not contain a claim having an effective filing date on or after March 16, 2013 (the effective date of the AIA amendments), or a reference under 35 U.S.C. §§ 120, 121, or 365(c) to any patent or application that ever contained such a claim, pre-AIA § 103 applies. *Id.* § 3(n)(1), 125 Stat. at 293.

ambient temperature and cycles the pump when the temperature reaches 0°C" to avoid ice formation in the impeller cavity *Id.* The examiner found that Mayleben teaches that "additional or supplemental features and processes are within the scope of [Mayleben's] invention." J.A. 274. On this basis, the examiner determined that it would have been obvious to a person of ordinary skill in the art to modify Mayleben's controller to include the additional feature of Leone's temperature sensor. *Id.* The examiner determined that this combination met the limitation of "[t]he temperature sensing being independent of the level sensing" because "separate devices would be used to measure the water level and ambient temperature." *Id.*

The examiner rejected Meza's argument that Mayleben's fluid-level sensor is dependent on its temperature sensor. Meza argued that this dependency is demonstrated by Mayleben's teaching that the pump is deactivated when the device gets too hot. J.A. 276. The examiner disagreed, explaining that "[f]or two features to be 'independent,' one feature would not require the presence of the other feature to function" and finding that "[t]he fluid level based controller feature of Mayleben does not require the presence of the temperature based controller feature to function" and vice-versa. *Id.* The examiner also pointed to claim 19 of the '766 application, which depends on claim 14 and requires turning off the pump when the ambient temperature drops below freezing. *Id.* The examiner explained that "[s]uch a feature is analogous to Mayleben, which provides the feature of turning off the pump . . . when the ambient temperature is above a high temperature." J.A. 276–77.

Meza appealed the examiner's rejection to the Patent Trial and Appeal Board ("Board"), raising the same arguments made to the examiner. J.A. 325, 333–34. In addition, Meza argued that Mayleben "teaches away from integrating any temperature-based controller functionality together with its fluid-level-based controller functionality

and making the two pump controller functionalities independent of one another." J.A. 335; *see also* J.A. 337.

The Board sustained the examiner's rejection of all claims. J.A. 2. The Board rejected Meza's argument that Mayleben only teaches dependent level- and temperature-sensing functionalities. J.A. 4–6. The Board found that although Mayleben discloses deactivating the pump when the device becomes too hot, there is no disclosure in Mayleben that either the level sensor or temperature sensor is affected when the pump deactivates. J.A. 6. The Board further found that Mayleben only teaches deactivating the pump when it overheats, and teaches nothing about deactivating the pump at low temperatures. J.A. 6–7. According to the Board, Meza therefore failed to show why the addition of Leone's temperature-based impeller rotation, which occurs only at low temperatures, would not work with Mayleben's level-based pumping system. *Id.*

The Board also rejected Meza's "teaching away" argument. The Board found that nothing in Mayleben criticizes, discredits, or otherwise discourages the addition of a temperature sensor that cycles the pump impeller to avoid ice formation and is independent of level sensing. J.A. 8. Further, the Board found there was no evidence in the record demonstrating why "cycling at low temperatures would depend on level sensing, because these functions are separate controller functions." J.A. 8–9. The Board found that Leone's controller functionality cycles at low temperatures, and thus would not depend on "Mayleben's 'hot' temperature sensor." J.A. 9. Accordingly, the Board determined that the examiner did not err in rejecting the claims of the '766 application. *Id.*

Meza timely appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(a) (2012).

## DISCUSSION

We review Board decisions in accordance with the Administrative Procedure Act ("APA"), 5 U.S.C. § 706(2) (2012). *In re Durance*, 891 F.3d 991, 1000 (Fed. Cir. 2018). Under the APA, we set aside the Board's decisions if they are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law" or "unsupported by substantial evidence." 5 U.S.C. § 706(2); *Vicor Corp. v. SynQor, Inc.*, 869 F.3d 1309, 1320 (Fed. Cir. 2017). We review the Board's factual determinations for substantial evidence and its legal conclusions de novo. *ACCO Brands Corp. v. Fellowes, Inc.*, 813 F.3d 1361, 1365 (Fed. Cir. 2016). Substantial evidence is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *HTC Corp. v. Cellular Commc'ns Equip., LLC*, 877 F.3d 1361, 1367 (Fed. Cir. 2017) (quoting *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000)).

Obviousness is a question of law with underlying factual findings relating to the scope and content of the prior art, differences between the prior art and the claims at issue, the level of ordinary skill in the pertinent art, and any objective indicia of non-obviousness. *Acorda Therapeutics, Inc. v. Roxane Labs., Inc.*, 903 F.3d 1310, 1328 (Fed. Cir. 2018) (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007)); *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1364 (Fed. Cir. 2015).

Meza raises three arguments on appeal. First, Meza argues that substantial evidence does not support the Board's finding that the combination of Mayleben and Leone teaches the independent operation of the water-level- and temperature-sensing functionalities claimed in the '766 application. Second, Meza argues that the Board erred in finding that Mayleben does not teach away from including level-sensing functionality that operates independently from temperature-sensing functionality. Third, Meza argues that the Board improperly shifted the burden

of proof to establish non-obviousness by asking Meza to explain why Mayleben's pump would not work as claimed in the '766 application with the addition of Leone's temperature-sensing and cycling functionality.

I. Obviousness under 35 U.S.C. § 103(a)

Meza argues that the Board erred by finding that the prior art rendered obvious the claimed limitation of the "[t]he temperature sensing being independent of the level sensing." Appellant's Br. 13–20. Meza contends that Mayleben discloses a system where the level-sensing functionality is dependent on the temperature-sensing functionality because if the temperature sensor indicates that the device is overheating, it signals the controller to deactivate the pump. *Id.* at 15–16 (citing J.A. 491 (Mayleben, ¶ 70)). According to Meza, deactivating the pump results in "completely stop[ping] all of Mayleben's level-sensing-based controller functionality" because the pump cannot be turned on even if the water reaches a predetermined high level. *Id.* at 18–19. Meza further contends that Leone does not fill the gap in Mayleben because Leone does not disclose operating the pump in response to sensed fluid level, thereby failing to teach independent operation of the level-sensing and temperature-sensing functionalities. *Id.* at 14–16. We disagree.

Meza conflates Mayleben's pumping functionality with its level-sensing functionality. *See* Appellant's Br. 18–19 (arguing that if Mayleben's pump is deactivated, all level-sensing functionality "completely stops"); Reply Br. 4–5 (arguing that Mayleben's level-sensing functionality is dependent on its temperature-sensing functionality because "Mayleben discloses that the *pumping functionality* does not work when its temperature sensing deactivates its pump" (emphasis added)).

The claims of the '766 application, however, do not require that the temperature-sensing functionality be independent from the pumping functionality. Rather, the

claims require "[t]he temperature sensing [to be] independent of the *level sensing*." J.A. 15 (emphasis added). As both the Board and the examiner correctly explained, nothing in Mayleben suggests that deactivating the pump would affect the sensing functionality of either the level or temperature sensors. J.A. 5–6 (citing J.A. 380 (Examiner's Answer)). To the contrary, Mayleben teaches that once the water level drops below a predetermined low point, "the sensor unit 14 deactivates the pump 12." J.A. 486 (Mayleben, ¶ 37). If deactivating the pump also deactivated the level-sensing functionality, as Meza asserts, then Mayleben's level sensor could not detect when the water level again reached a predetermined high point, and could not reactivate the pump.

Dependent claim 19 of the '766 application, which depends on claim 14, similarly contradicts Meza's dependency argument. Claim 19 requires turning off the pump when the ambient temperature drops below freezing. J.A. 16. As the examiner explained, this limitation is analogous to Mayleben's feature of turning off the pump when the temperature becomes too hot. J.A. 276, 381. Thus, if Mayleben's level-sensing functionality is dependent on its temperature-sensing functionality, then so is the level-sensing functionality of the present invention dependent on its temperature-sensing functionality—an outcome that would effectively read out the "being independent of" limitation from the claims at issue. *See Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1369 (Fed. Cir. 2005) (holding that it is improper to read out a limitation clearly required by the claim language and specification); *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1562 (Fed. Cir. 1991) ("All the limitations of a claim must be considered meaningful.").

Meza argues the deficiencies of Mayleben and Leone individually, but fails to address what is taught by the combination of the references. We have held that a finding of obviousness cannot be overcome "by attacking references

individually where the rejection is based upon the teachings of a combination of references." *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1050 (Fed. Cir. 2019) (quoting *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986)) (internal quotation marks omitted). Here, the Board found that a person of ordinary skill in the art would modify Mayleben's disclosed pump to add Leone's impeller cycling functionality because Mayleben teaches using additional features with its pump, and explained that "[i]t is the additional feature of using a temperature sensor for cycling at low temperatures, as taught by Leone, that the Examiner uses as the basis for the rejection." J.A. 7. Thus, the Board found that the combination of Mayleben and Leone discloses every limitation of the claims at issue. We conclude that substantial evidence supports this finding.

## II. Teaching Away

Meza argues that Mayleben teaches away from including both temperature-sensing and level-sensing functionalities in one pump device, while still making the two sensing functionalities operate independently. Appellant's Br. 15–16, 23–29. In support, Meza relies on the same general argument that Mayleben's level-sensing functionality depends on its temperature-sensing functionality.

The Board correctly rejected Meza's argument that Mayleben teaches away from independent sensing functionalities. A prior art reference teaches away if it criticizes, discredits, or otherwise discourages the solution claimed. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). As the Board correctly found, nothing in Mayleben criticizes, discredits, or discourages from adding separate temperature-sensing functionality that cycles an impeller at low temperatures to avoid ice formation. J.A. 8. To the contrary, Mayleben discloses that additional features may be added to its pump. J.A. 491 (Mayleben, ¶ 70).

Meza argues that the presence in Mayleben's pump of an internal temperature sensor teaches away from

independent operation of the two sensing functionalities. Mayleben, however, teaches that its internal temperature sensor is optional. J.A. 491 (Mayleben, ¶ 70). Although a person of ordinary skill in the art may prefer an embodiment of Mayleben's pump that includes an internal temperature sensor, it is well-established that "the teaching away inquiry does not focus on whether a person of ordinary skill in the art would have merely favored one disclosed option over another disclosed option." *Bayer Pharma AG v. Watson Labs., Inc.*, 874 F.3d 1316, 1327 (Fed. Cir. 2017).

In light of the foregoing, we hold that substantial evidence supports the Board's determination that the asserted claims of the '766 application are obvious over Mayleben in view of Leone.

## III. Burden of Proof During Prosecution

Unlike with issued patents, during patent prosecution proceedings "the concept of prima facie obviousness establishes the framework for the obviousness determination and the burdens the parties face." *ACCO Brands*, 813 F.3d at 1365 (citing *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1384 (Fed. Cir. 2015)). When examining patent claims, the initial burden rests with the patent examiner to set out a prima facie case that the claims at issue are obvious over the prior art. *Id.* The burden then shifts to the applicant to produce evidence or argument supporting patentability. *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1080 n.7 (Fed. Cir. 2012); *In re Sullivan*, 498 F.3d 1345, 1351 (Fed. Cir. 2007); *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). The examiner weighs the prima facie evidence against the rebuttal evidence to determine whether the entirety of the evidentiary record supports a finding of obviousness by a preponderance of the evidence. *ACCO Brands*, 813 F.3d at 1366 (citing *Rambus Inc. v. Rea*,

731 F.3d 1248, 1255 (Fed. Cir. 2013)); *In re Glaug*, 283 F.3d 1335, 1338 (Fed. Cir. 2002).

Meza faults the Board for requiring him to explain why the prior art does not teach level-sensing functionality independent from temperature-sensing functionality, and why Leone's feature of impeller cycling would not work in Mayleben. Appellant's Br. 18, 21, 25 (citing J.A. 5–8). Meza argues that by doing so, the Board improperly shifted the burden to him to establish non-obviousness. *Id.* We disagree.

The Board determined that the examiner established a prima facie case of obviousness by determining that the combination of Mayleben and Leone disclosed all of the limitations of the claims of the '766 application. J.A. 4; *see also* J.A. 273–76. Meza was then required to "produce evidence or argument supporting patentability." *Sullivan*, 498 F.3d at 1351; *see also Cyclobenzaprine*, 676 F.3d at 1080 n.7. The Board concluded that Meza failed to do so because Meza did not address the basis for the examiner's rejection.

For example, the Board explained that the examiner's rejection was based on Mayleben's express disclosure that its pump may include additional features, such as the additional feature of sensing a low temperature and cycling its impeller to avoid ice formation, as disclosed in Leone. J.A. 4–6. The Board also explained that the examiner found that this additional temperature-sensing feature would work independently from Mayleben's level-sensing feature because "two separate independently functioning devices . . . perform [these] separate and independent tasks." J.A. 5. The Board then stated that Meza did not explain or provide evidence demonstrating why Mayleben's pump could not be modified to include such an additional feature or why "cycling at low temperatures would depend on level sensing, because these functions are separate controller functions." J.A. 6–9. The Board pointed out that Meza's rebuttal arguments focused on an alleged

dependency between Mayleben's level-sensing functionality and its internal temperature-sensing functionality. *See* J.A. 6–7, 9. For his part, Meza never explained why Leone's separate external temperature sensing and cycling functionality would not work with Mayleben's pump. On this basis, the Board concluded that Meza failed to rebut the examiner's prima facie obviousness case. We find no reversible error in the Board's conclusion.

## CONCLUSION

We have considered Meza's remaining arguments and find them unpersuasive. We agree with the Board that claims 14 and 16–21 of the '766 application are obvious over Mayleben in view of Leone. We therefore affirm.

**AFFIRMED**

## COSTS

No costs.