NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

IN RE: KWANGJIN SONG,
Appellant

2025-1705

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 18/199,940.

Decided: February 18, 2026

KWANGJIN SONG, Rockwell, NC, pro se.

MARY L. KELLY, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, for appellee John A. Squires. Also represented by KAKOLI CAPRIHAN, NICHOLAS THEODORE MATICH, IV, ROBERT J. MCMANUS.

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

PER CURIAM.

Kwangjin Song appeals pro se from a decision of the Patent Trial and Appeal Board ("Board") affirming an examiner's final rejection of several claims of patent application No. 18/199,940 as anticipated or obvious over

U.S. Patent Publication No. 2018/0043656 to Song et al. (published Feb. 15, 2018) ("Song '656") and U.S. Patent Publication No. 2016/0243525 to Song et al. (published Aug. 25, 2016) ("Song '525"). We *affirm*.

BACKGROUND

Appellant Kwangjin Song is the inventor of patent application No. 18/199,940, filed on May 20, 2023, which appellant prosecuted pro se. The application is directed to a "porous separator film" which may be used as a separator dividing the positive and negative electrodes of certain battery types. J.A. 28.[1] The independent claim at issue in this appeal is claim 1, which recites:

> A multilayer porous separator film comprising at least one oriented layer, the at least one oriented layer comprising:
>
> a) a matrix polymer selected from the group of a first polymer having a crystalline melting temperature ("Tm") or a glass transition temperature ("Tg") of 180° C. or higher, a second polymer other than the first polymer, and combinations thereof;
>
> b) an open and interconnecting pore structure characterized by a plurality of open and interconnecting pores, a Gurley air permeability of 1 sec/100 cc or greater, and a porosity of 90 % or less; and
>
> c) an ionic conductivity characterized by a MacMullin number ("N_M") of 1 to 15.

J.A. 100.

---

[1] Citations to "J.A." refer to the corrected joint appendix filed by the parties. Dkt. No. 24.

The examiner rejected claims 1, 2, 4, 6–9, 12–21, 23, and 25–39 (the "contested claims"). Each contested claim was rejected as anticipated by or obvious over two prior-art references. First, the examiner rejected each contested claim under 35 U.S.C. § 102(a)(1) as anticipated by Song '656. Song '656 is directed to an "oriented multilayer porous film," and the corresponding patent application is the subject of an appeal that we also decide today upholding the rejection of the application. *See In re Song*, No. 2025-1653. Song '656 discloses manufacturing processes that are identical to those in the appealed application. *Compare* J.A. 36–49 ¶¶ 64–103; J.A. 50–57 ¶¶ 108–27; J.A. 61–72 ¶¶ 139–75, *with* J.A. 487–92 ¶¶ 61–100; J.A. 492–96 ¶¶ 102–27; J.A. 496–504 ¶¶ 132–68. The examiner additionally rejected all contested claims as unpatentable over Song '525, determining claims 1, 2, 4, 6–9, 12–21, 23, 25–27, 38, and 39 to be anticipated by Song '525 and claims 28–37 to be obvious under 35 U.S.C. § 103 over Song '525.[2] Song '525 is directed to a "method for producing a novel multilayer sorbent polymeric membrane comprising . . . a plurality of interconnecting pores." J.A. 464 ¶ 6. Appellant appealed to the Board, and the Board affirmed.

---

[2] Appellant is listed as an inventor on both prior art references and argued during prosecution that appellant's own patent publications should not be prior art, citing § 102(b)(2). Section 102(b) provides that a disclosure is not prior art under certain circumstances when the disclosure's subject matter is obtained from the same inventor. § 102(b)(2). However, § 102(b)(2) can only disqualify prior art cited under § 102(a)(2). *Id.* Here, the examiner cited the references as printed publications under § 102(a)(1). The examiner correctly determined that the exception under § 102(b)(2) does not apply to disqualify Song '656 or Song '525, which were both published before the critical date of the appealed application.

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

DISCUSSION

"To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either expressly or inherently." *Rapoport v. Dement*, 254 F.3d 1053, 1057 (Fed. Cir. 2001). A prior art reference need not use the same language as the invention to be anticipating. *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 913 (Fed. Cir. 2022). Rather, the question is whether the reference enables a person of ordinary skill in the art ("POSA") to practice the invention as claimed without undue experimentation. *Am. Calcar, Inc. v. Am. Honda Motor Co.*, 651 F.3d 1318, 1341 (Fed. Cir. 2011). A claim is unpatentable as obvious "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious" to a person of ordinary skill in the art ("POSA") at the effective filing date. 35 U.S.C. § 103. A single prior-art reference may render a claim obvious if a POSA would have been motivated to modify the prior art to arrive at what is claimed. *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016).

I

Appellant's arguments are primarily directed to the rejection of independent claim 1 as anticipated over Song '656.

Song '656 discloses a "porous film having excellent ionic conductivity and electrical insulation for use as a separator" in certain electrical battery types. J.A. 484 ¶ 10.

Appellant argues that the Board misconstrued claim 1 by not reading the preamble as limiting. Specifically, appellant urges that Song '656, which discloses a "porous film," does not disclose the "separator film" of the claimed

invention, as recited in the preamble. Appellant's Br. 22. The Board concluded that the word "separator" indicates only the intended use of the film and that claim 1 recites a structurally complete device without the preamble. We agree with the Board's conclusion. The specification does not suggest any structural meaning of "separator" for the film itself but explains that a "separator is located between positive and negative electrodes in an electrochemical cell." J.A. 25. The positive and negative electrodes are not part of the claimed structure; the word "separator" thus merely explains where the claimed film might be used advantageously. And in any event, Song '656 discloses "a porous film . . . for use as a separator." J.A. 484 ¶ 10.

With respect to the "open and interconnecting pore structure" limitation, the Board determined that appellant's application and Song '656 disclose identical methods, such that the resulting pore structures would necessarily be the same, and observed that appellant did not identify any differences. Appellant argues that the Board erred in determining that the process disclosed in Song '656 inherently produces the claimed pore structure. Appellant points to the range of "distinctly different structures and properties" that may result from the disclosed process. Appellant's Br. 29 (citing J.A. 94–96 ¶¶ 255–57).

We note that appellant described some of the resulting films as having "clogged or collapsed pores" rather than open pores, J.A. 94 ¶ 255, suggesting that some version of the process, as identically disclosed in Song '656, does not necessarily result in the claimed open and interconnected pore structure. *See MEHL/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999). But anticipation does not need to rely on an inherency theory when Song '656 explicitly discloses the open and interconnected pore structure. J.A. 501 ¶ 174 ("a fibrous matrix interconnected with a plurality of open

pores" (reference numbers omitted)). We further note that Figures 2A and 2B in the appealed application, showing electron micrographs of "interconnecting pores . . . for an unfilled and filled separator film," appear to be identical to Figures 2A and 2B in Song '656, showing a micrograph of "a typical [polyolefin]-based separator film and a filled Example separator film." *Compare* J.A. 32 ¶ 45, 108, *with* J.A. 480, 485 ¶ 45. Additionally, appellant concedes that Song '656 discloses an open pore structure with interconnecting pores. Appellant's Br. 25 ("As shown above, the '656 application disclosed an open pore structure, characterized by [Gurley number] and channeled in the [normal direction] by a plurality of interconnecting pores.").

Appellant also argues that the prior art fails to anticipate claim 1 because the "open and interconnecting pore structure" of the claim is improved over the prior art pore structure. But the distinctions identified by appellant, such as "multiple form factors" and "complete in-plane interconnectivity" between pores, are not recited in claim 1. Appellant's Br. 25–26. These unrecited properties do not distinguish the claim from the prior art.

We affirm the Board's decision with respect to Song '656.

II

The Board also correctly rejected claims 1, 2, 4, 6–9, 12–21, 23, 25–27, 38, and 39 based on anticipation by Song '525. Song '525 discloses a "multilayer sorbent polymeric membrane" comprising "a plurality of interconnecting pores." J.A. 464 ¶ 6. The "wide range of applications" of the Song '525 membrane includes "separation and purification of gases and fluids." J.A. 464 ¶ 2. Appellant's arguments for all claims rejected on this ground rest on the same arguments presented as to claim 1.

Regarding the "open and interconnecting pore structure" limitation, the Board concluded that a person of ordinary skill would have understood that the Song '525 membrane would either absorb or adsorb a material and reasoned that in an absorbent membrane, "the pore structure must be open and interconnecting to permit a material to be absorbed into it." J.A. 7. Appellant argues that the Board erred in concluding that the absorbent membrane must be an open and interconnecting pore structure. We understand appellant's argument to be that the Board's theory is one of inherent anticipation and that the Board did not establish that a membrane can only be made absorbent by having open and interconnecting pores.

As with the Song '656 ground, we find it unnecessary to determine if the method of Song '525 inherently discloses an open and interconnecting pore structure because it directly discloses the structure. The examiner observed that Figure 2 of Song '525 is identical to Figure 2B in the appealed application, which appellant describes as showing "a plurality of open, interconnecting pores" in the specification of the appealed application. J.A. 75 ¶ 183; *compare* J.A. 460, *with* J.A. 108. We agree that these two figures depict the same film in all relevant respects. Song '525 thus discloses an open and interconnecting pore structure by appellant's own description.

Appellant's remaining arguments are directed at properties that are not recited as limitations in claim 1. Appellant argues that the prior art membrane was thick and weak compared to the film of claim 1, but claim 1 recites no thickness or strength limitations. We reject appellant's argument that the preamble's recitation of "separator film" should limit and distinguish the claim for the same reason as discussed for the Song '656 ground. The Board did not err in rejecting claims 1, 2, 4, 6–9, 12–21, 23, 25–27, 38, and 39 as anticipated by Song '525.

Claims 28–37 were rejected as obvious over Song '525. The examiner found that the configuration of layer structures recited in these claims were obvious to try in light of the disclosure in Song '525 that layers can comprise different materials such as polyolefin, polar polymer, sorbent polymer, and coating polymers. Appellant does not dispute that such configurations were obvious to try but argues only that Song '525 is "unanalogous" to the appealed application. Appellant's Br. 40. Appellant forfeited this argument by not raising it before the Board. *See In re Google Tech. Holdings LLC*, 980 F.3d 858, 863 (Fed. Cir. 2020). But in any event, appellant's argument that the multilayer polymer membrane of Song '525 is not from an analogous field of endeavor as the multilayer polymer film of the appealed application is unpersuasive. The Board did not err in rejecting claims 28–37 as obvious over Song '525.

We affirm the Board's decision with respect to Song '525.

III

We have considered appellant's other arguments and find them unpersuasive. We *affirm* the Board's decision.

AFFIRMED