

United States Court of Appeals for the Federal Circuit

MAXELL, LTD.,
Plaintiff-Appellant

v.

AMPEREX TECHNOLOGY LIMITED,
Defendant-Appellee

2023-1194

Appeal from the United States District Court for the Western District of Texas in Nos. 6:21-cv-00347-ADA, 6:21-cv-01007-ADA, Judge Alan D. Albright.

Decided: March 6, 2024

HILARY L. PRESTON, Vinson & Elkins LLP, Austin, TX, argued for plaintiff-appellant. Also represented by CORBIN CESSNA, JEFFREY TA-HWA HAN, ERIK SHALLMAN; ERIC JOSEPH KLEIN, PAIGE HOLLAND WRIGHT, Dallas, TX.

DAVID SPENCER BLOCH, Greenberg Traurig LLP, San Francisco, CA, argued for defendant-appellee. Also represented by HAROLD H. DAVIS, JR.; YANG LIU, East Palo Alto, CA.

Before PROST, TARANTO, and CHEN, *Circuit Judges*.

TARANTO, *Circuit Judge*.

Maxell, Ltd. owns U.S. Patent No. 9,077,035, which describes and claims a rechargeable lithium-ion battery. Amperex Technology Limited is a manufacturer of lithium-ion batteries. In two now-consolidated actions, Maxell asserted infringement, and Amperex challenged the validity of claims of the '035 patent. The '035 patent's claims require at least two lithium-containing transition metal oxides, represented by formulas that include a transition metal element M^1 , and, as relevant here, two limitations of the claims state requirements for that element. The district court held the claim language defining M^1 to be indefinite on the ground that the two limitations contradicted each other, *Maxell, Ltd. v. Amperex Technology Ltd.*, No. 21-cv-00347, 2022 WL 16858824, at *19–21 (W.D. Tex. Nov. 10, 2022) (*Claim Construction Order*), and on that basis the court entered partial final judgment in favor of Amperex, J.A. 18–20. We reverse, concluding that there is no contradiction and therefore no indefiniteness. The case is remanded for further proceedings.

I

A

The '035 patent, titled “Nonaqueous Secondary Battery and Method of Using the Same,” describes and claims a lithium-ion battery with a positive electrode, a negative electrode, and a nonaqueous electrolyte. '035 patent, Abstract. The limitations of the patent's claims primarily concern the positive electrode and the electrolyte. *See id.*, col. 29, line 20, through col. 30, line 58. All claims of the patent include a positive electrode that includes at least two lithium-containing transition metal oxides with different average particle sizes. *Id.*, col. 4, lines 6–9; *id.*, col. 29, lines 21–26. The transition metal oxides are represented in the claims by formulas that include, in relevant part, a transition metal element M^1 . *Id.*, col. 29, lines 28–31, 43–49.

Claim 1, the sole independent claim of the '035 patent, reads as follows (letters added to label the limitations):

1. A nonaqueous secondary battery comprising:

[a] a positive electrode having a positive electrode mixture layer, a negative electrode, and a nonaqueous electrolyte,

[b] wherein the positive electrode comprises, as active materials, at least two lithium-containing transition metal oxides having different average particle sizes, and the lithium-containing transition metal oxide having the smallest average particle size is a lithium-containing transition metal oxide represented by the formula (1): $\text{Li}_x\text{M}^1_y\text{M}^2_z\text{M}^3_v\text{O}_2$

[c] *wherein M^1 represents at least one transition metal element selected from Co, Ni and Mn, M^2 represents Mg and at least one metal element selected from the group consisting of Ti, Zr, Ge, Nb, Al and Sn, M^3 represents at least one element selected from the group consisting of Na, K, Rb, Be, Ca, Sr, Ba, Sc, Y, La, Hf, V, Ta, Cr, Mo, W, Tc, Re, Fe, Ru, Rh, Cu, Ag, Au, B, Ca, In, Si, P and Bi, and x, y, z and v are numbers satisfying the equations respectively: $0.97 \leq x < 1.02$, $0.8 \leq y < 1.02$, $0.002 \leq z \leq 0.05$, and $0 \leq v \leq 0.05$, and has an average particle size from 2 μm to 10 μm , and the lithium-containing transition metal oxide having the largest average particle size is a lithium-containing transition metal oxide represented by the formula (2): $\text{Li}_a\text{M}^1_b\text{M}^2_c\text{M}^3_d\text{O}_2$*

[d] wherein M^1 , M^2 and M^3 are the same as defined in the formula (1), and a, b, c and d are numbers satisfying the equations respectively: $0.97 \leq a < 1.02$, $0.8 \leq b < 1.02$, $0.0002 \leq c \leq 0.02$, and

$0 \leq d \leq 0.02$, and has an average particle size from 5 μm to 25 μm ,

[e] wherein said electrolyte contains a fluorine-containing organic solvent,

[f] *wherein the content of Co in the transition metal M^1 of the formulae (1) and (2) is from 30% by mole to 100% by mole,*

[g] wherein the content of said lithium-containing transition metal oxide having the smallest average particle size in the lithium-containing transition metal oxides is from 5% by weight to 60% by weight,

[h] wherein the content of said lithium-containing transition metal oxide having the largest average particle size in the lithium-containing transition metal oxides is from 40% by weight to 95% by weight, and

[i] wherein an amount of said fluorine-containing organic solvent is 0.1% by weight to 30% by weight based on the whole weight of the electrolyte.

Id., col. 29, line 20, through col. 30, line 9 (emphases added).

B

In April 2021, Amperex filed a complaint in district court in New Jersey seeking a declaratory judgment of non-infringement of several Maxell patents, including the '035 patent. Complaint, *Amperex Technology Ltd. v. Maxell Ltd.*, No. 21-cv-08461 (D.N.J. Apr. 6, 2021), ECF No. 1; J.A. 1341–430. In response, Maxell brought an affirmative patent-infringement action against Amperex in the Western District of Texas on the same set of patents. Complaint, *Maxell Ltd. v. Amperex Technology Ltd.*, No. 21-cv-00347 (W.D. Tex. Apr. 8, 2021), ECF No. 1; J.A. 1431–565. In January 2022, the cases were consolidated in the Western

District of Texas. J.A. 1996–97; *see also In re Amperex Technology Ltd.*, No. 2022-105, 2022 WL 135431 (Fed. Cir. Jan. 14, 2022) (denying Amperex’s mandamus petition challenging the transfer of its New Jersey action).

In February 2022, the district court conducted claim-construction proceedings and issued an order that, among other things, addressed the two above-highlighted wherein clauses and held to be indefinite the following phrase that combines them: “M¹ represents at least one transition metal element selected from Co, Ni and Mn, . . . wherein the content of Co in the transition metal M¹ of the formulae (1) and (2) is from 30% by mole to 100% by mole.” J.A. 25. On November 10, 2022, the district court issued a claim construction order setting forth its reasoning. *Claim Construction Order*, at *19–21. The court reasoned that “the plain language of the claim recites a contradiction,” because the first limitation does not require the presence of cobalt (nickel or manganese suffices), so cobalt is “optional,” whereas the second limitation does require cobalt. *Id.* at *20; *see also id.* at *21 (repeating point that the first limitation describes “options”).

Pursuant to Federal Rule of Civil Procedure 54(b), the district court severed the ’035 patent claims and counterclaims from the remainder of the case and entered partial final judgment in favor of Amperex and against Maxell with respect to all claims and counterclaims involving the ’035 patent. J.A. 18–20. Maxell filed a timely notice of appeal on November 14, 2022, J.A. 99, within the 30 days allowed under 28 U.S.C. § 2107(a). We have jurisdiction to review the partial final judgment under 28 U.S.C. § 1295(a)(1).

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