NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.,
Appellants

v.

POWER2B, INC.,
Appellee

2023-1630

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2021-01257.

Decided: February 12, 2025

BENJAMIN HABER, O'Melveny & Myers LLP, Los Angeles, CA, argued for appellants. Also represented by ABIGAIL GRACE MCFEE, NICHOLAS WHILT, RYAN KEN YAGURA; WILLIAM FINK, Washington, DC; THOMAS MCCLINTON-HARRIS, Newport Beach, CA.

MARK THOMAS DEMING, Polsinelli PC, Chicago, IL, argued for appellee. Also represented by ADAM PETER DANIELS, Los Angeles, CA; JASON WIETJES, Dallas, TX.

Before HUGHES, MAYER, and STARK, *Circuit Judges*.

STARK, *Circuit Judge*.

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, "Samsung") filed for *inter partes* review ("IPR") of a patent owned by Power2B, Inc. ("Power2B"), which is directed to interaction with an interactive screen on a device. Central to the appeal is the Board's construction of "an impingement of an electromagnetic radiation spot," which the Board construed as requiring electromagnetic radiation to perform the impingement. J.A. 29-30. Applying this construction, the Board found that Samsung's asserted prior art did not disclose this limitation of the challenged claims. Samsung appeals, arguing that "impingement" should be given its plain and ordinary meaning, which includes an object interrupting or blocking electromagnetic radiation without that object having to project or reflect radiation. We conclude that the Board construed the claim language too narrowly. Accordingly, we vacate and remand for the Board to consider Samsung's challenges under the correct construction.

I

A

Power2B's U.S. Patent No. 9,317,170 (the "'170 patent") is entitled "Interactive Devices." J.A. 50. It claims priority to an application with a priority date of March 14, 2007. The '170 patent is directed to interactive devices, including Personal Digital Assistants, and methods for users to interact with those devices. In some embodiments, a user interacts with the device using a light-emitting stylus or remote, beaming light onto the surface of the device. In other embodiments, a user interacts with the device using a non-light-emitting stylus or the user's finger to select items on the interactive surface. For example, a device

may emit beams of light, i.e., electromagnetic radiation, that are interrupted by the user's finger when the finger approaches the screen, and the device then detects the interruption of those beams of light.

At issue in this appeal is claim 1, which recites:

> An interactive assembly comprising:
>
> > at least one interactive surface element, at least a first region of the at least one interactive surface element having first user sensible functionality and at least a second region of the at least one interactive surface element having second functionality, different from the first user sensible functionality;
> >
> > at least one input sensor located in propinquity to at least one of the at least one interactive surface element, each of the at least one input sensor being configured to provide an output indicative of *an impingement of an electromagnetic radiation* spot on at least one of the at least one first region and the at least one second region of the at least one interactive surface element;
> >
> > . . .
> >
> > wherein the at least one input sensor includes a detector assembly arranged at at least one edge of the interactive surface element;
> >
> > . . . and wherein the arrangement of detector elements is configured to detect electromagnetic radiation at a baseline level and to sense a position of at least one object with respect to the interactive surface

> element and wherein the utilization circuitry is further configured to provide an output according to a location of at least one detector element in the arrangement for which at least one of an amount of radiation detected and a change in the amount of radiation detected exceed a first predetermined threshold.

J.A. 127 (emphasis added).

Also involved in this appeal is claim 28, which depends from claims which depend from claim 1, and recites:

> An interactive assembly according to claim 27, wherein the array detection output includes information corresponding to a location of an *impingement point* of the object on the interactive surface element coinciding with a viewing plane.

J.A. 128 (emphasis added). Claim 30, also at issue, similarly claims "impingement of an electromagnetic radiation spot." *Id*.

B

Samsung's petition challenges the patentability of Power2B's claims based on prior art including U.S. Patent App. Pub. No. 2002/0118177 ("Newton"), "Protected Touch Panel Display System." J.A. 1643. Newton is directed to a display screen located inside a protective barrier, where sections of the screen are touch activated. Emitters along the protective barrier emit energy beams, and detectors detect when a user touches the display screen by interrupting the energy beams. Newton states that "[a] finger, stylus or other pointing device placed on or adjacent to the touch panel display screen will interrupt the energy beams emitted by the emitters. In response to detecting the interruption of the energy beams, the detectors may generate signals from which the touch panel display system is able

to calculate the location of the touch on the touch panel display screen." J.A. 1652 ¶ 25.

The second prior art reference Samsung relies on is U.S. Patent App. Pub. No. 2003/0034439 ("Reime"), entitled "Method and Device for Detecting Touch Pad Input." J.A. 1600. Reime is directed to "[a] method and system for detecting the presence of an object at a touch pad device" having designated interaction areas on the screen and "optical sensor components, each including an optical receiver and . . . emitters positioned at opposite sides of the receiver such that when an object is present at the touch pad device, the changes in the receiver output can be used to determine the location of the object." J.A. 1600. Reime depicts pencils and fingers interacting with the touchpad and explains:

> When a user uses an object such as a pencil **100** or a finger **100' (FIG. 2A)** to touch the touch pad **5,** some light **110** emitted from the emitter **10** encounters the surface of the object **100**. Part of the light **110** reflects off the object **100** and is received by the receiver **30**. Likewise, some light **120** emitted from the emitter **20** encounters the surface of the object **100** and then reflects off the object **100** to receiver **30**.

J.A. 1620. In short, Reime's receivers rely on light reflected from objects to determine the location of the object over the touch pad.

C

Samsung petitioned for IPR of claims 1, 2, 6-8, 13-14, 16, 18, 19, 21-23, 26, and 30 of the '170 patent. In its petition, Samsung contended that the claim terms did not need explicit construction. Samsung also argued that the impingement limitation was met by references, including Newton, which disclosed a user's finger interrupting beams of light over portions of an interactive surface. Samsung alternatively argued that Reime disclosed the relevant

limitation because it disclosed light hitting an impinging object and then reflecting back to a detector element.

In its Institution Decision, the Board agreed with Samsung that the claim terms did not need to be construed but added that Samsung's implicit construction, which would allow an *object* to *impinge*, was correct. The Board also made a "preliminary determination to clarify that a showing of 'an impingement' requires an act of touching, and additionally, a user touching the 'electromagnetic radiation spot' is sufficient without a separate requirement that light is reflected as a result of that touching." J.A. 7567.

In its Final Written Decision, however, the Board reconsidered its understanding of the claims. It expressly construed "impingement of an electromagnetic spot" as "an area of reflected or projected radiation," requiring that the electromagnetic radiation do the impinging – and, crucially, *not* allowing that an object (such as a finger) do the impinging merely by interrupting or blocking electromagnetic radiation. J.A. 17-18. In doing so, the Board aligned itself with a construction adopted by a district court in parallel litigation. *See Power2B, Inc. v. Samsung Electronics Co.*, No. 6-20-cv-01183 (W.D. Tex. Nov. 10, 2021), ECF No. 63 (construing "impingement of an electromagnetic radiation spot" to mean "an area of reflected or projected radiation").

Turning to the obviousness analysis, the Board noted that Samsung had conceded that Newton did not teach the impingement limitation under Power2B's construction, which the Board was adopting. It then found that Reime also did not teach that limitation. Therefore, the Board found, Samsung had not shown that the challenged claims were unpatentable as obvious.

Samsung timely appealed. The Board had jurisdiction under 35 U.S.C. §§ 6, 316(c). We have jurisdiction under 28 U.S.C.§ 1295(a)(4)(A) and 35 U.S.C. §§ 141(c), 319.

II

Claim construction is a question of law we review de novo when, as here, it is based solely on intrinsic evidence. *See Arendi S.A.R.L. v. Google LLC*, 882 F.3d 1132, 1133 (Fed. Cir. 2018); *see also Trustees of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1362 (Fed. Cir. 2016) ("The construction of claim terms based on the claim language, the specification, and the prosecution history are legal determinations.").

III

Samsung argues that the Board's construction of "an impingement of an electromagnetic radiation spot" is improperly narrow, as it encompasses only impingement by reflection and projection of electromagnetic radiation while excluding impingement by interruption or blocking of electromagnetic radiation. We agree with Samsung.

A

As an initial matter, we reject Power2B's contention that Samsung forfeited the claim construction position it presses upon us. It is true, as Power2B emphasizes, that Samsung did not expressly propose a claim construction to the Board. However, Samsung consistently advanced the position before the Board, as it does here, that the '170 patent's claims use "impingement" in a manner broad enough to capture an object interrupting or blocking an electromagnetic radiation spot. Samsung also consistently argued against Power2B's narrower "implied construction" precisely on the basis that Power2B "would exclude impingement that causes the absence or interruption of radiation." J.A. 7523 n.3. Samsung further argued, as it does here, that Power2B's construction is too narrow and would exclude embodiments described in the specification.

The Board understood Samsung's position as a proposed claim construction. *See* J.A. 19 ("[Samsung] argues that [Power2B]'s proposed construction 'is not required by

the claim language.' [Samsung] also argues that the recitations of touching or contacting in dependent claims 12, 15, and 28 support [Samsung]'s position because independent claim 1 must include touching within its scope.") (internal citation omitted); *see also* J.A. 15-16. In its Institution Decision, the Board preliminarily adopted Samsung's understanding of the claims. *See* J.A. 7567. And in the Final Written Decision, although siding with Power2B, the Board recognized the parties had a claim construction dispute and resolved it. J.A. 17-18 ("[Samsung] has provided responsive argument disputing [Power2B]'s claim constructions.").

In these circumstances, there is no forfeiture. *See generally Summit 6, LLC v. Samsung Electronics Co.*, 802 F. 3d 1283, 1290 (Fed. Cir. 2015) (holding that claim construction argument was not forfeited or waived when consistent with arguments below).[1] Thus, we will review the Board's claim construction.

B

In its Final Written Decision, the Board construed "an impingement of an electromagnetic radiation spot" as limited to "an area of projected or reflected radiation." J.A. 17-18. That is, the Board construed the claim term as limited to electromagnetic radiation impinging on the surface, while finding that interrupting or blocking the

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[1] Power2B points to purported inconsistencies between the claim construction Samsung proposed in district court litigation and the position Samsung took at the Board. However, even Power2B does not contend that Samsung should be judicially estopped from pressing the construction it is advocating to us, and any inconsistency (if there was any) in its positions does not support a finding of forfeiture, given the record before us.

electromagnetic radiation is outside the scope of the claims. The Board's construction further requires that the reflected or projected electromagnetic radiation must land on the interactive surface element. J.A. 20-21. Otherwise, according to the Board, nothing would be "impinged upon." J.A. 20 ("[I]ndependent claims 1 and 30 require that either the first or second region on the interactive surface element be impinged on."). We disagree with the Board.

As properly construed, in the context of the challenged claims, "impingement of an electromagnetic radiation spot" must include "reflected, projected, and interrupted or blocked radiation." Oral Arg. at 00:40-58, 3:46-57.[2] In other words, when a finger or non-light-emitting stylus interrupts or blocks a beam of electromagnetic radiation, and does so over a certain spot on the surface of a device, the claim limitation is satisfied. Contrary to the Board's construction, as articulated by Power2B on appeal, the "electromagnetic radiation spot on . . . [the] interactive surface element" does not "require[that] radiation imping[e] on the surface element" and, hence, does not exclude interrupting or blocking radiation. Response Br. at 19.

In reaching a different conclusion, the Board relied on the doctrine of claim differentiation, pointing to claim 28, which depends from claims depending from claim 1. The Board emphasized that claim 1 requires "that either the first or second region on the interactive surface element be impinged on," J.A. 20, while claim 28, by contrast, claims "an impingement point of the object on the interactive surface" element, J.A. 22. To the Board, this meant that "[t]he applicant knew how to claim an 'object' and used the term in claim 28 to require impingement by an object." J.A. 22. As a result, the Board read claim 28, but not claim 1, as

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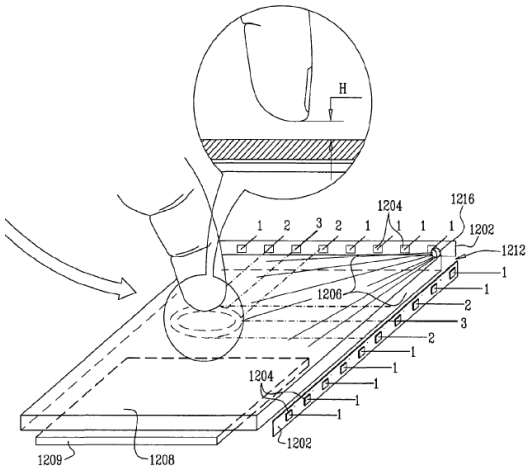
[2] *Available at* https://oralarguments.cafc.uscourts.gov/default.aspx?fl=23-1630_11042024.mp3.

allowing an object to do the impinging, by interrupting or blocking the electromagnetic radiation.

However, as Samsung persuasively argues, claim 28 actually supports Samsung's construction, not the Board's. Samsung writes: "if claim 28 requires impingement by an object, then claim 1's impingement must [also] be broad enough to encompass impingement by an object." Opening Br. at 26. We agree. *See Littelfuse, Inc. v. Mersen USA EP Corp.*, 29 F.4th 1376, 1380 (Fed. Cir. 2022) ("By definition, an independent claim is broader than a claim that depends from it, so if a dependent claim reads on a particular embodiment of the claimed invention, the corresponding independent claim must cover that embodiment as well.").

The '170 patent's specification provides further support for our construction, especially as the specification discloses embodiments that appear to be excluded under Power2B's narrower construction, an outcome our precedents disfavor. *See Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1277 (Fed. Cir. 2008) ("[W]here claims can reasonably [be] interpreted to include a specific embodiment, it is incorrect to construe the claims to exclude that embodiment, absent probative evidence on the contrary."). For example, Figure 18A, reproduced below, shows a finger interrupting beams projected from a corner of the interactive screen, without showing those beams being reflected or projected back onto the device:



J.A. 73 (Fig. 18A).[3] This embodiment, then, appears to fall outside the scope of the claims under the Board's

[3] The patent describes Figure 18A as showing "one or more electromagnetic radiation emitting sources" and a finger that interrupts light projected out from "a single [infrared] emitting LED **1216** . . . at or generally adjacent to an intersection of the mutually perpendicular edges **1206** along which detector elements **1204** are arranged." J.A. 114 ('170 patent, 48:54-57, 64-67). This is further expected with respect to a similar figure, Figure 18B: "When the user's finger touches or is located in propinquity to interactive surface element **1228,** the amount of light detected by one or more of detector elements **1224** is typically changed relative to the baseline . . . . [The circuitry then] determines whether the absolute amount of light detected by each of the detector elements **1224** is below a predetermined threshold, or whether the change in the amount of light detected by each of the detector elements **1224** exceeds a predetermined threshold." J.A. 116 ('170 patent,

construction. *See also* J.A. 55, 97 ('170 patent, 13:14-20) (Fig. 1E depicting embodiment in which user's finger may "Point to Buy" as sensors on device surface detect "impingement" in form of interruption or blocking of electromagnetic radiation).

To be sure, the specification also discloses embodiments in which electromagnetic radiation is reflected or projected onto the device. *See* J.A. 56, 58 (Figs. 1F, 2B). We agree that these embodiments must be within the scope of the claims as properly construed – and they are captured by the claims under Samsung's proposed construction. The claims are properly understood as including these embodiments (in which the impingement is the result of reflecting or projecting electromagnetic radiation onto the surface of a device), but not as limited to them, as the claims also include embodiments in which electromagnetic radiation is merely interrupted or blocked instead. *See generally Hill–Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) ("[W]e do not read limitations from the embodiments in the specification into the claims."). Fundamentally, nothing in the specification would cause a person of ordinary skill in the art to read the claims as excluding from "impingement" those instances in which electromagnetic radiation is interrupted or blocked.

Nothing in the prosecution history alters our conclusions. In particular, as the Board also recognized, at no point during prosecution did the patentee disclaim the Figure 18 embodiments. J.A. 30 ("Further, based on the current record, we preliminarily find that the prosecution

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51:42-53). While the finger may, therefore, reflect light, the patent explains that the detectors would also detect the *absence* or *decrease* of light, which would result from, for example, interrupting or blocking the light.

history does not reveal an intentional disclaimer or disavowal of claim scope by the inventors.").

In sum, we agree with Samsung as to the proper construction: impingement includes both (1) electromagnetic radiation being reflected or projected onto the interactive surface of a device, and (2) interrupting or blocking electromagnetic radiation from reaching the surface, without reflecting or projecting radiation onto the surface.

C

Samsung requests that if we agree with its claim construction, as we do, we vacate and remand for the Board to reevaluate whether Newton and Reime render obvious the impingement limitation of the challenged claims. Oral Arg. at 8:41-54 ("If you agree on the claim construction issue, . . . you just remand it back to . . . the Board for further proceedings because that claim construction error, I think, infected both of the grounds."). We will do so. The Board will also need to evaluate, in the first instance, whether other limitations of the challenged claims are disclosed in Samsung's asserted prior art.

IV

We have considered Power2B's remaining arguments and find them unpersuasive. Accordingly, we vacate and remand to the Board to evaluate Samsung's obviousness contentions under the correct claim construction.

VACATED AND REMANDED

COSTS

Costs awarded to Samsung.