United States Court of Appeals for the Federal Circuit

K-FEE SYSTEM GMBH,
Plaintiff-Appellant

v.

NESPRESSO USA, INC.,
Defendant-Appellee

2022-2042

Appeal from the United States District Court for the Central District of California in No. 2:21-cv-03402-GW-AGR, Judge George H. Wu.

Decided: December 26, 2023

DOUGLAS H. CARSTEN, McDermott Will & Emery LLP, Irvine, CA, argued for plaintiff-appellant. Also represented by KATHERINE M. PAPPAS; IAN BARNETT BROOKS, ADAM WILLIAM BURROWBRIDGE, Washington, DC.

WAYNE M. BARSKY, Gibson, Dunn & Crutcher LLP, Los Angeles, CA, argued for defendant-appellee. Also represented by YU-CHIEH ERNEST HSIN, San Francisco, CA; CHRISTINE RANNEY, Denver, CO.

Before TARANTO, CLEVENGER, and STOLL, *Circuit Judges*.

TARANTO, *Circuit Judge.*

K-fee System GmbH owns U.S. Patent Nos. 10,858,176, 10,858,177, and 10,870,531, which all descend, via division and continuation, from a single application and share a specification. K-fee filed suit against Nespresso USA in the Central District of California alleging infringement of the three patents. The district court issued a claim-construction order in which it construed, among other terms, "barcode," a term present in every claim of the asserted patents. *K-fee Systems GmbH v. Nespresso USA, Inc.*, No. 2:21-cv-03402, 2022 WL 2826443, at *5 (C.D. Cal. March 10, 2022) (*Claim Construction Order*). Nespresso then filed a motion for summary judgment of non-infringement, arguing that its products did not meet the "barcode" claim limitations under the court's construction and thus it did not infringe any asserted claims. The district court agreed and granted Nespresso's motion for summary judgment. *K-fee Systems GmbH v. Nespresso USA, Inc.*, No. 2:21-cv-03402, 2022 WL 2826441, at *1 (C.D. Cal. June 17, 2022) (*Summary Judgment Opinion*).

After final judgment was entered, K-fee appealed. We agree with K-fee that the district court erred in construing "barcode," and we reverse the district court's construction. Because the erroneous construction of "barcode" was also the basis for the district court's grant of summary judgment of non-infringement, we reverse that grant as well and remand for further proceedings.

I

A

The asserted patents describe and claim coffee-machine portion capsules that display information that, when read by a device associated with the coffee machine, can prevent the capsules from being used in incompatible machines. '176 patent, col. 1, lines 11–34, 60–62. The displayed information may also specify capsule-specific

brewing parameters, such as temperature and amount of water. '176 patent, col. 3, lines 23–27. Critically for this appeal, the patents implement this concept by encoding the information in a "barcode." '176 patent, col. 8, line 54–55, col. 12, line 67, through col. 13, line 2. Claim 1 of the '176 patent is representative for the purposes of this appeal and reads, in relevant part:

> 1. A method of making a coffee beverage comprising:
>
> providing an apparatus including a barcode reader;
>
> inserting a first portion capsule into the apparatus, the first portion capsule including . . . an opposing bottom side with a first barcode located on the bottom side, . . . ;
>
> reading the first barcode with the barcode reader;
>
> controlling a production process of a first coffee beverage based upon the reading of the first barcode;
>
> . . .
>
> inserting a second portion capsule into the apparatus, the second portion capsule including . . . an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, . . . ;
>
> reading the second barcode with the barcode reader;
>
> controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second

> production process being different than the first production process;
>
> . . . .

'176 patent, col. 12, line 52 through col. 13, line 41.

B

In its claim-construction order, the district court noted that "the parties agree that plain and ordinary meaning applies, but dispute what that meaning is." *Claim Construction Order*, at *5. The district court characterized the core of the dispute as "whether statements made by K-fee System GmbH . . . before the EPO [European Patent Office] concerning the meaning of 'barcode' should influence the plain and ordinary meaning of that limitation in these proceedings." *Id.*, at *6. K-fee, through its patent attorney, made the statements in a motion asking the EPO to deny an opposition filed by Nespresso's foreign affiliate, Nestec S.A., that challenged the validity of K-fee's related European patent, EP 3 023 362. K-fee was seeking to distinguish a particular piece of prior art, WO 2011/141532 A1 (Jarisch, referred to in the EPO as D1). *Id.*, at *7; *see* J.A. 1101–25.[1] The district court concluded that "the EPO prosecution records . . . were provided to the PTO" by K-fee when it was prosecuting what became its '176 patent in the U.S. Patent and Trademark Office, and the district court therefore analyzed them as part of the intrinsic record. *Claim Construction Order*, at *6.

The district court concluded that K-fee had "argued strenuously" before the EPO for a particular "plain and

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[1] Along with the legal submission, K-fee filed an expert declaration by Ralf Jesse. J.A. 1156–61. The district court, in its rulings on appeal, did not rely on that declaration—which, we note, would not alter our conclusion about the proper claim construction.

ordinary meaning," which excluded "bit codes"—codes made up of two binary symbols. *Id.*, at *8. Based on the EPO submission by K-fee, the district court construed "barcode" to have

> its plain and ordinary meaning (*i.e.*, a code having bars of variable width, which includes the lines and gaps), the scope of which is understood by the clear and unequivocal statements K-fee made to the EPO (*i.e.*, the scope of barcode does not include the type of bit code disclosed in Jarisch/D1).

Id. The district court did "not resort to extrinsic evidence to construe th[e] term." *Id.*

Based on that claim construction of "barcode," Nespresso moved for summary judgment of non-infringement of its accused products. Nespresso primarily argued that the capsules of its accused products operated identically to the Jarisch capsules that K-fee had distinguished before the EPO in that both used a machine-readable code having only two binary symbols, J.A. 2914, so that the accused capsules did not meet the "barcode" limitations of the claims, J.A. 2922. The district court, granting the motion, reiterated that bit codes using only two symbols could not be barcodes, placing particular weight on K-fee's statement to the EPO that Jarisch "discloses a 'bit code,' but not a barcode, because the barcode—as shown above—is always constructed of bars having variable widths, and therefore contains more than only two binary symbols, such as '0' and '1.'" J.A.1111, *Summary Judgment Opinion*, at *2, *7. The district court found that there was no dispute that Nespresso's accused products used a code having only two symbols and concluded that Nespresso therefore did not infringe. *Summary Judgment Opinion*, at *7, *9.

The district court entered final judgment on June 28, 2022, dismissing K-fee's invalidity counterclaims without prejudice. K-fee timely appealed on July 14, 2022. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

We first address the proper construction of "barcode." The district court's ruling relied only on intrinsic evidence, *see Claim Construction Order*, at *8; the court did not purport to make, and neither party argues on appeal that the court did make or should have made, a factual finding about disputed extrinsic evidence concerning extra-patent understandings of the term. We therefore decide the proper claim construction de novo. *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 808 (Fed. Cir. 2021). "We generally give words of a claim their ordinary meaning in the context of the claim and the whole patent document; [and] the specification particularly, but also the prosecution history, informs the determination of claim meaning in context, including by resolving ambiguities"; but "even if the meaning is plain on the face of the claim language, the patentee can, by acting with sufficient clarity, disclaim such a plain meaning or prescribe a special definition." *World Class Technology Corp. v. Ormco Corp.*, 769 F.3d 1120, 1123 (Fed. Cir. 2014) (first citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-17 (Fed. Cir. 2005) (en banc); and then citing *Thorner v. Sony Computer Entertainment America LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)); *see Personalized Media Communications, LLC v. Apple Inc.*, 952 F.3d 1336, 1339–40 (Fed. Cir. 2020).

Broadly, K-fee argues that the district court narrowed the ordinary meaning of "barcode," implicitly finding prosecution disclaimer (though the district court never framed it as disclaimer) when it used K-fee's statements to the EPO to interpret the term. K-fee asserts that this effective holding of disclaimer was improper and that its statements to the EPO did not meet the standard for disclaimer. Nespresso contends that the court correctly invoked the prosecution history to clarify the ordinary meaning, not to narrow an otherwise apparent ordinary meaning. Nespresso also argues that applying the standard required for disclaimer would nevertheless lead to the same result.

At the outset, we note that the term "barcode" has been used in this matter in two different ways. In one use, it refers to an individual message to be read and decoded, *e.g.*, the sequence of bars shown on the bottom side of a flange on a single capsule, so that two different-sequence capsules have two different "barcodes." The claim language quoted *supra* suggests that meaning. In another use, "barcode" refers to the coding "system" used to produce the multiple, individual messages, *e.g.*, "the Jarisch code" or "the Vertuo code" (used in the accused products). Nespresso's Br. at 2; *see also*, *e.g.*, K-fee's Br. at 14–15.

The parties essentially disregard that usage difference, instead focusing entirely on whether the term refers to visually non-uniform-width bars, either with (as the district court held) or without (as we hold) an additional narrowing "bit code" restriction. We proceed, given the language of the claims, by first addressing in full the individual-message use of "barcode," often using "message" expressly, for which we hold that an individual message must display such non-uniformity. After that discussion, we briefly address the coding-system use of "barcode."

A

We consider the ordinary meaning of "barcode" in the context of the patent and prosecution history and then turn to the question of whether K-fee surrendered claim scope by clear disclaimer or redefinition.

1

The parties agree that the meaning of "barcode" is not clarified by the claims themselves or the shared specification. K-fee also no longer challenges the status of the EPO filings as intrinsic evidence, although it did so before the district court. Thus, putting to one side for the moment the possibility of clear surrender (discussed *infra*), we address first what K-fee's motion to deny the opposition in the EPO indicates about ordinary meaning—here, what a relevant

artisan would understand the meaning of "barcode" in the field to be. On considering K-fee's submission, we disagree with the district court that the ordinary meaning of "barcode" excludes "bit codes" (in some sense, two-value codes) or even bit codes of "the type . . . disclosed in Jarisch" to the extent that the latter is different. *Claim Construction Order*, at *8.

K-fee's motion to the EPO was a response to Nestec's validity challenge, which argued that Jarisch (Nestec's own international application) defeated the novelty of K-fee's European patent EP 3 023 362. Like K-fee's EP 3 023 362 and its patents asserted in the present case, Jarisch discloses a beverage capsule displaying information, "by means of a code," that the coffee machine can read and use. J.A. 2971. In its opposition, Nestec contended that this code was a "barcode," a term used by K-fee in EP 3 023 362. J.A. 1086. In response, K-fee first provided evidence about the meaning of "barcode" to a relevant artisan—evidence in the form of quotes from publications in the field, not created for this litigation. J.A. 1102–09. It concluded that "the [relevant artisan] at all times defines the term 'barcode' as a line code constructed of bars having variable widths." J.A. 1109.[2] That understanding is reflected, as well, in a Wikipedia entry and a dictionary entry submitted to the district court by K-fee. *See* J.A. 974–1004, 1006–07. The ordinary, common-sense, natural English meaning of "bars having variable widths" is a matter of visual

[2] "Line code" refers to a code whose message components are set out linearly—*e.g.*, from left to right—rather than, say, in a two-dimensional display (like that of a QR—quick response—code). This aspect of a "barcode" is not in dispute between the parties. In particular, there is no suggestion before us that a line code's messages must be set out in a straight line, rather than along (say) the circumference of a circle.

appearance: "bars" are two-dimensional shapes having length and width (even if not exactly rectangular),[3] and the widths (in the direction of the linear reading) are not uniform.

Before the EPO, K-fee, after setting forth the foregoing, then argued, with the support of an expert declaration, that the teaching of Jarisch did not meet this definition and (under European law) that a barcode could not be "directly and unambiguously inferred" from Jarisch. J.A. 1110, 1118; *see* J.A. 1110–19. Jarisch discloses, among other codes, a code whose messages are "formed of a succession of small rectangular surfaces" that can encode two states, corresponding to 0 and 1. J.A. 2978. It was against this background that K-fee made its statement that Jarisch "discloses a 'bit code,' but not a barcode, because the barcode—as shown above—is always constructed of bars having variable widths and therefore contains more than only two binary symbols such as '0' and '1'." J.A. 1111.

The district court relied on that assertion, and surrounding material in the K-fee EPO submission, to conclude that "the scope of barcode does not include the type of bit code disclosed in Jarisch." *Claim Construction Order*, at *8. The district court further made clear, when applying the construction at summary judgment, that by "the type of bit code disclosed in Jarisch," it meant "a binary code containing only '0s' and '1s.'" *Summary Judgment Opinion*, at *2, *9. Thus, the district court read the statement that a barcode "is always constructed of bars having variable widths and therefore contains more than only two binary symbols such as '0' and '1'" to mean that a barcode *must* "contain[] more than only two binary symbols" and,

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[3] We have no dispute before us about what geometric shapes may qualify as "bars" for purposes of a "barcode," so we do not address that question.

by extension, that any code that contains only two binary symbols could not be a barcode. *Id.* at *8.

K-fee's other statements to the EPO, however, demonstrate that the district court's conclusion was too confining. Elsewhere in the same filing, K-fee also noted that "a barcode can be, but is not necessarily, a bit code. It is therefore a special form of the binary code." J.A. 1112. K-fee further asserted, in its EPO filing, that "while the barcode is a 'bit code,' it is also a 'special case' and therefore represents a subset of the 'bit code.'" J.A. 1114. And K-fee's expert, using the terms "bit code" and "binary code" interchangeably, stated that "[b]arcodes can therefore principally be regarded as a version of binary codes." J.A. 1157.

The district court referred to some of those statements. *Claim Construction Order*, at *8. It erred, however, in determining that, taken together, a relevant artisan would still conclude that no bit code could be a barcode. While K-fee suggested that a *consequence* of being "constructed of bars having variable widths" would be the existence of "more than only two binary symbols," the reason it gave for Jarisch not disclosing a barcode was that Jarisch's messages were not "constructed of bars having variable widths." J.A. 1111. K-fee's remarks all suggest that K-fee understood the relationship between barcodes and bit codes to be more complex than simply that bit codes cannot be barcodes.

In its motion to deny the opposition before the EPO, K-fee also clearly stated that retail barcodes, known as EAN [European Article Number] or UPC [Universal Product Code] barcodes, fell within the scope of its claims. J.A. 1102–03. Indeed, Nespresso does not seem to dispute that such codes are within the ordinary meaning of "barcode" for this patent. The record indicates that EAN/UPC barcodes (messages) can be broken down into binary "modules," where each module has only two possible states, as in a bit code. J.A. 18, 1106, 3347, 3354–55, 3962. The

modules are then combined into "symbols"—sequences of seven modules—that encode the digits from 0 to 9. *Id.* Nespresso argues that these messages are barcodes—and *not* bit codes—because, despite having binary modules, they have more than two symbols, and there is no evidence that they are read at the module level, and thus no evidence that the unit of the code that is read is binary. Nespresso's Br. at 49–50; Oral Arg. at 25:12–26:11. While it is true that no evidence in the record describes how retail barcodes are read, the absence of such evidence highlights that Nespresso's argument is divorced from what K-fee actually represented to the EPO when it plainly invoked retail barcodes as examples of barcodes. There, K-fee presented no evidence to the EPO about how retail barcodes encode information or how they are read. *See* J.A. 1102–03. It did not describe retail codes as made up of "symbols" and "modules." The only evidence it *did* present was that the visual presentation of the coded messages is as a series of bars of varying widths, independently of how the messages are read (one binary module at a time or some other way). *Id.* Instead, retail barcodes are barcodes, and the code used by Jarisch is not, because messages of the former contain bars of visually varying widths, and messages of the latter do not.

In sum, on the point in dispute, all that is clear from K-fee's submission to the EPO about a relevant artisan's understanding of "barcode" is that barcode messages use bars of varying widths—a matter of visual appearance. K-fee cited numerous sources before the EPO to support such an understanding of "barcode," ranging from Wikipedia to barcode standards to textbooks. J.A. 1102–09. The sources discuss various barcodes for various settings, but all have in common an emphasis on "bars" or "stripes" of varying widths. J.A. 1102–09. This is consistent with K-fee's explicit representation to the EPO that "the [relevant artisan] at all times defines the term 'barcode' as a line code constructed of bars having variable widths." J.A. 1109.

That understanding of K-fee's EPO submission is consistent with K-fee's bottom-line purpose (which it fulfilled) of persuading the EPO that Jarisch did not involve a "barcode." On its face, Jarisch is easily understood to fall outside a definition of "barcode" that invokes visual appearance: It does not clearly reveal any bars of varying widths. And the EPO itself concluded that it was "not evident" that Jarisch discloses "a barcode having variable widths." J.A. 1209; *see also infra* p. 14.

Nespresso objects to a visual-appearance definition of "barcode," but the law asks us to determine the meaning of a term "to the [relevant] artisan after reading the entire patent." *Phillips*, 415 F.3d at 1321. The evidence persuades us that a relevant artisan identifies a barcode by appearance and not by other criteria such as a particular encoding of data of the sort reflected in the district court's claim construction. We conclude that the relevant artisan reading the asserted patents and their prosecution history (the latter now accepted by the parties to include the EPO opposition submission) would understand "barcode" to refer to line-code messages, displaying bars, that are characterized by the varying-width visual appearance of the bars in the messages.

2

What remains to be considered is the question of surrender by K-fee in the EPO submission. To determine whether K-fee disclaimed or otherwise surrendered claim scope that comes within the claim language, on all the evidence of a relevant artisan's understanding of that language, we consider whether, despite the apparent ordinary meaning evident from the intrinsic evidence, K-fee "act[ed] with sufficient clarity" before the EPO to "disclaim . . . [the] plain meaning or prescribe a special definition." *World Class Technology*, 769 F.3d at 1123. This inquiry is related to but distinct from the inquiry into what the prosecution history shows about a relevant artisan's understanding of

the claim language in context. We conclude that K-fee did not act with the clarity required either to prescribe a new meaning for "barcode" or to disclaim any portion of the apparent meaning.

First, Nespresso contends only in passing—and primarily in a footnote—that K-fee changed the scope of the term "barcode" through lexicography. But arguments raised only in footnotes are generally forfeited, especially where not developed through discussion and application of the governing legal standards. *CommScope Technologies, LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1296 (Fed. Cir. 2021); *SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1319–20 (Fed. Cir. 2006). Regardless, putting aside forfeiture, we see no indication of any attempt at redefinition by K-fee. "To act as its own lexicographer, a patentee must 'clearly set forth a definition of the disputed claim term' other than its plain and ordinary meaning" and must "'clearly express an intent' to redefine the term." *Thorner*, 669 F.3d at 1365 (first quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); and then quoting *Helmsderfer v. Bobrick Washroom Equipment, Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008)). Before the EPO, however, K-fee consistently argued that its view of barcodes was the ordinary meaning. Further, as discussed above, K-fee's representations to the EPO were far from "clear[]." *Id.*

Second, Nespresso argues that because K-fee's statements were "repeated, unequivocal, and unambiguous," a conclusion of disclaimer is appropriate. Nespresso's Br. at 23–24. We disagree that K-fee's statements to the EPO were "unequivocal" or "unambiguous" and hold that they were not clear enough to support disclaimer. Disclaimer or disavowal of claim scope "must be both clear and unmistakable." *Baxalta Inc. v. Genentech, Inc.*, 972 F.3d 1341, 1348 (Fed Cir. 2020) (quoting *3M Innovative Properties Co. v. Tredegar Corp.*, 725 F.3d 1315, 1325 (Fed. Cir. 2013)). Further, "[e]ven if an isolated statement appears to

disclaim subject matter, the prosecution history as a whole may demonstrate that the patentee committed no clear and unmistakable disclaimer." *Ecolab, Inc. v. FMC Corp.*, 569 F.3d 1335, 1342 (Fed. Cir. 2009). As discussed above, the statements K-fee made about bit codes were not clear and, if anything, were decidedly ambiguous. Taken as a whole, the prosecution history certainly demonstrates "that the patentee committed no clear and unmistakable disclaimer." *Id.*

The only thing K-fee clearly distinguished before the EPO was Jarisch itself, which nowhere declares that its messages have bars of variable widths. Nespresso argues that Figure 5 of Jarisch shows regions of varying widths; that anticipation by Jarisch at the EPO therefore cannot have been avoided based on its lack of bars of variable widths; and further, that any disavowal of Jarisch is inconsistent with K-fee's arguments about the ordinary meaning of barcode. Nespresso's arguments about Figure 5—raised at summary judgment rather than at claim construction—are unpersuasive. As K-fee notes, there is no clear evidence in Jarisch that the wider regions of Figure 5 are part of the code. K-fee's Opening Br. at 43; *see* J.A. 2978–79, 2985. The EPO itself noted that "[i]t is also not evident that the reflective and/or absorbing/diffracting surfaces [of Jarisch] disclose a barcode having variable widths." J.A. 1209. We conclude that Jarisch was distinguished not through any clear disavowal of claim scope, but because it was never within the scope of the claim.

Finally, we note that K-fee makes the legal argument that a conclusion of disclaimer cannot be premised on statements made when defending a related but distinct patent against a different legal standard—here the European standard for novelty. We do not address that contention because we have concluded that K-fee's statements were too unclear to constitute disclaimer.

B

Having addressed the individual-message use of "barcode," we briefly address the coding-system meaning of "barcode" the parties have sometimes used before us. For that meaning, what is crucial is whether any messages produced by the coding system (to be read and decoded), though not necessarily all such messages, have non-uniform-width bars—for all the reasons set out in discussing the individual-message meaning of "barcode." No argument has been made to us that a coding system, to be a "barcode" system, must *never* produce an individual equal-width-bar message, *e.g.*, a message that simply alternates same-width bars, among the large set of messages produced. In other words, we recognize that there might exist one or more messages that have a uniform-bar-width appearance (*e.g.*, 0101 represented by alternating same-width bars) in a "barcode" coding system that otherwise produces messages "constructed of bars having variable widths." J.A. 1109.

* * *

We agree with K-fee that the full scope of the ordinary meaning of "barcode" should apply, and we conclude that the ordinary meaning that a relevant artisan would arrive at after reading the intrinsic evidence is that a barcode is defined by its visual appearance as lined-up bars of varying widths. We reverse the district court's claim construction and construe "barcode" to refer to code messages consisting of a linearly arranged sequence of bars of visually non-uniform widths (or a coding system producing such messages).

III

The district court's grant of summary judgment of non-infringement followed directly from its claim construction. *Summary Judgment Opinion*, at *9. Reversing the district court's claim construction necessitates reversing its grant of summary judgment as well, because the infringement

analysis under the new construction will necessarily differ. For example, the similarity between the accused products and Jarisch that the district court relied on relates to how the messages are read by the reader (uniform-width module by uniform-width module), not to their visual appearance. *Summary Judgment Opinion*, at *6. That is not the correct analysis under the claim construction we adopt. A new analysis is required on remand.

IV

We have considered Nespresso's other arguments, and we find them unpersuasive. For the foregoing reasons, we reverse the district court's claim construction of "barcode" and its summary-judgment determination. We remand for further proceedings consistent with this opinion.

Costs awarded to K-fee.

REVERSED AND REMANDED