

United States Court of Appeals for the Federal Circuit

2006-1342

CIAS, INC.,

Plaintiff-Appellant,

v.

ALLIANCE GAMING CORPORATION
and BALLY GAMING, INC.,

Defendants-Appellees.

Robert C. Morgan, Ropes & Gray LLP, of New York, New York, argued for plaintiff-appellant. With him on the brief were A. Peter Adler and Moriah R. Agovino.

Charles M. Hart, Wolf, Block, Schorr and Solis-Cohen LLP, of Philadelphia, Pennsylvania, argued for defendants-appellees. With him on the brief was Kenneth G. Roberts, of New York, New York.

Appealed from: United States District Court for the Southern District of New York

Judge Lewis A. Kaplan

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DECIDED: September 27, 2007

Before NEWMAN, SCHALL, and MOORE, Circuit Judges.

NEWMAN, Circuit Judge.

CIAS, Inc. (formerly Currency Identification & Analysis Systems) filed a patent infringement suit against Alliance Gaming Corporation and its subsidiary Bally Gaming, Inc. (collectively Alliance). The patent in suit is United States Patent No. 5,283,422 (the '422 Patent), entitled "Information Transfer and Use, Particularly with Respect to Counterfeit Detection." Both CIAS and Alliance produce systems for the detection of counterfeit usage. The Alliance detection systems for tickets used in casino slot machines are known as the Slot Data System (SDS) and Slot Management System (SMS). CIAS charged that these

systems infringe the '422 patent, literally or under the doctrine of equivalents. Alliance moved for summary judgment of non-infringement, on the ground that on the correct claim construction the Alliance systems do not infringe any claim of the '422 patent. The district court granted Alliance's motion, construing the relevant terms of the '422 claims in light of the accused systems. The court held that this mooted Alliance's counterclaim of unenforceability, and entered final judgment dismissing the suit in its entirety.¹

We conclude that although the district court erred in its construction of the term "comprised of," that error did not affect the construction of the substantive terms that support the judgment of non-infringement. That judgment is affirmed.

DISCUSSION

The grant of a motion for summary judgment requires that there is no reasonable view of the material facts, taking cognizance of the evidentiary standards and burdens, whereby a reasonable jury could find for the non-movant. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986); Celotex Corp. v. Catrett, 477 U.S. 316, 323 (1986). The district court's claim construction receives plenary review, Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998), as does the summary judgment based thereon.

The claims of the patent establish and limit the patentee's right to exclude, by "describing the outer boundaries of the invention." Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 27 n.4 (1997). The '422 patent describes and claims a system for detecting counterfeit objects such as gambling chips, labels, currency, commercial paper, and other objects. The system is a computer-directed process whereby

¹ CIAS, Inc. v. Alliance Gaming Corp., 424 F. Supp.2d 678 (S.D.N.Y. 2006).

each authentic object is assigned coded identification information, such as by a bar-code, that is recorded on the object and also stored in a machine-readable facility; then, upon presentation of the object for authentication, the computerized system compares the object's coded information with the stored information and determines whether the object is authentic or counterfeit.

The accused Alliance systems are directed to detection of counterfeit betting tickets, as are used in so-called TITO (ticket-in-ticket-out) slot machines. Alliance argues that it is not new to detect counterfeit objects by comparing their markings, and that patentability of the CIAS '422 invention turned on the nature of the detection system, that is, the information by which authenticity is determined. Alliance states that the principal difference between its system and that of the '422 patent is that Alliance uses a "secret algorithm," which Alliance asserts was excluded from the '422 claims during examination and reexamination, in view of prior art.

Claim 1 is the broadest claim of the '422 patent, with emphases added to the terms whose construction by the district court is challenged by CIAS on this appeal. With the exception of these terms, it was established or conceded that the claims read on the Alliance systems:

1. A counterfeit detection system for identifying a counterfeit object from a set of similar authentic objects, each object in said set having **unique authorized information** associated therewith **comprised of machine-readable code elements coded according to a detectable series**, the system comprising:
 - means at a first facility for storing said authorized information;
 - means at a plurality of facilities other than said first facility for machine-reading code elements from a similar object and providing information related to the machine-read code elements;

means coupled to receive said information related to code elements machine-read from said object for at least temporarily storing that information; and

means at said first facility for detecting counterfeits coupled to said storing means and to said means for temporarily storing, said detecting means including a computer programmed to detect a counterfeit from information in said storing means at said first facility and from information received by said means for temporarily storing when information related to code elements machine read from a similar object is different from said authorized information; and

means for detecting when information relating to said code elements read from a similar object is the same as information previously read from a similar object, whereby a counterfeit may be detected.

Claim 13 was also at issue:

13. A counterfeit detection system for identifying a counterfeit object from a set of similar objects, each object in said set having **unique randomly selected authorized information** associated therewith **comprised of** machine-readable code elements, the system comprising [as in claim 1].

The district court had determined that the resolution of Alliance's motion for summary judgment required construction of several claim terms, viz., "unique authorized information," "comprised of," "machine-readable code elements," "detectable series," and "randomly selected." CIAS appeals only the construction of "unique authorized information," "comprised of," and "randomly selected."

Patent claims are construed as they would be understood by persons experienced in the field of the invention, on review of the patentee's description of the invention in the specification and the proceedings in the Patent and Trademark Office. See generally Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*) (claims are construed in light of the specification and the prosecution history).

"Comprised of"

The district court found that the meaning of "comprised of" has not been clearly resolved in patent-specific precedent, and therefore the court held that the "ordinary and customary meaning" should be used. The court ruled that "comprised of" does not have the same open-ended meaning as "comprising," which also appears in claim 1, and that "comprised of" should be construed as a closed-end term that excludes the presence of all elements beyond those presented in the "comprised of" clause. Thus the court defined "comprised of" as "a limiting description of composition," reasoning that "[t]his construction preserves the distinction between 'comprised of' and 'comprising,' the latter of which in fact is a patent term of art when used in a transitional phrase"

We conclude that this ruling is not correct. Although "comprised of" is not used as regularly as "comprising," and "comprised of" is sometimes used other than as a "transition phrase," nonetheless it partakes of long-standing recognition as an open-ended term. See generally 3 Chisum on Patents §8.06[1][b], at 8-180-82 (2007) (claims usually are structured with a preamble, a "transition phrase," and the elements or steps that are necessary to the right to exclude). The usual and generally consistent meaning of "comprised of," when it is used as a transition phrase, is, like "comprising," that the ensuing elements or steps are not limiting. The conventional usage of "comprising" generally also applies to "comprised of."

Alliance argues that several judicial decisions have used "comprised of" to mean "consists of." However, these rare usages do not remove from "comprised of" its conventional meaning when used as a transition term. The only patent case that illustrates this casual usage appears to be Glaxo Grp. Ltd. v. Apotex, Inc., 376 F.3d 1339, 1343 (Fed.

Cir. 2004), where the invention was a "highly pure amorphous form of CA [cefuroxime]," and the opinion described the accused product as "an amorphous 'co-precipitate' comprised of 90% CA, 9% sorbitol, and 1% zinc chloride by mass." This usage of "comprised of" was not as a claim transition term, but was the court's description of the defendant's product; there was no issue of whether "comprised of" was a limiting term in patent claim style. Similarly, in Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 346 (1961) the Court stated: "The decisions of this Court require the conclusion that reconstruction of a patented entity, comprised of unpatented elements, is limited to such a true reconstruction of the entity . . ."; this linguistic usage is not concerned with claim drafting; and, if anything, it is open-ended and non-limiting.

The other cases to which Alliance directs us are not patent cases, and the usage is simply as descriptive text. An example is Admiral Fin. Corp. v. United States, 329 F.3d 1372, 1377 (Fed. Cir. 2003), where the court wrote that "Admiral . . . seek[s] total restitution in the amount of \$14,395,075, comprised of \$11,072,075, representing capital contributions to Haven, and \$3,323,000, representing the amount that Admiral claims it saved the government." Similarly in Nissho Iwai Am. Corp. v. United States, 982 F.2d 505, 506 n.1 (Fed. Cir. 1992) the court explained that: "The parties estimated that the cars would be comprised of 57.45% Japanese-made components and 42.55% American-made components." These cases raise no issue of the conventional patent claim meaning of "comprised of."

In the patent claim context the term "comprising" is well understood to mean "including but not limited to." In Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 811 (Fed. Cir. 1999) the court explained that patent claims "use the signal 'comprising,'

which is generally understood to signify that the claims do not exclude the presence in the accused device or method of factors in addition to those explicitly recited." In Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1327-28 (Fed. Cir. 1999) the court explained that "the terms 'comprise' and 'consist' have different meanings; . . . 'comprising' . . . is inclusive or open-ended and does not exclude additional, unrecited elements or method steps From these definitions it is clear that 'comprise' is broader than 'consist.'" Similarly, our predecessor court explained that this usage of "comprising" also embraces "comprises" and "which comprises." Application of James F. Hunter, 288 F.2d 930 (CCPA 1961) (the term "comprises" does not limit the claim to the steps that are listed).

The contrast, in patent lexicography, is with "consisting of," not with variations of "comprises." It is equally well understood in patent usage that "consisting of" is closed-ended and conveys limitation and exclusion. See Norian Corp. v. Stryker Corp., 363 F.3d 1321, 1331 (Fed. Cir. 2004) ("consisting of" is a term of patent convention meaning that the claimed invention contains only what is expressly set forth in the claim . . . [however] it does not limit aspects unrelated to the invention"); In re Gray, 53 F.2d 520 (CCPA 1931) (the use of the claim term "consists" is limited to the claim's enumerated alloy metals without other elements, unlike the term "comprising" which permits the inclusion of other metals than those claimed"). Robert A. Faber, Landis on Mechanics of Patent Claim Drafting §2:5, 2-15 (5th ed. 2006) also elaborates that "[o]ther words, less often used, have been given the same meaning in patent claim interpretation as 'comprising': 'including,' 'having,' 'containing,' and even 'wherein.'"

District court cases illustrate this routine construction of "comprised of" in the same way as "comprising," as meaning "including but not limited to." E.g., SKW Americas v. Euclid Chem. Co., 231 F. Supp.2d 626, 637 (N.D. Ohio 2002) ("Because the hydraulic cement mix is 'comprised of' the four elements listed . . . it may include other elements as well."); B.F. Goodrich Flight Sys., Inc. v. Insight Instruments Corp., 22 USPQ2d 1832, 1840, 1992 WL 193112, at *9 (S.D. Ohio Feb. 25, 1992) ("Use of the term 'comprised' renders this claim an 'open' claim which will read on devices which merely add additional elements or steps."), aff'd, 991 F.2d 810 (Fed. Cir. 1993) (Table); Univ. of Fla. Research Found., Inc. v. Orthovita, Inc., No. 1:96-CV-82-MMP, 1998 WL 34007129 (N.D. Fla. Apr. 20, 1998) ("comprised of" is broader than "consisting essentially of" when used in patent claims).

These cases reflect the general understanding and usage of "comprised of" in patent convention as having the same meaning as "comprising." For patent claims the distinction between "comprising" and "consisting" is established, along with the meaning of "comprised of" as related to "comprising," not "consisting of." Correctly construed, "comprised of" does not of itself exclude the possible presence of additional elements or steps.

Applying an incorrect construction of "comprised of," the district court ruled that "unique authorized information . . . comprised of machine-readable code elements coded according to a detectable series" is limited to coding by a detectable series, and that since the Alliance code systems include a "secret" series along with a detectable series, the limit imposed by "comprised of" bars infringement. On the correct construction of "comprised of," this reasoning does not support the court's ruling as to "secret" series. However, as we shall discuss, the prior art and prosecution history served to limit the scope of "unique

authorized information" to a "detectable series" and to exclude a series that included "secret" information.

"Unique Authorized Information"

The district court construed "unique authorized information" as meaning "information associated with each object, unique to that object and authorized by the '422 patent's system, but excluding information other than serial information alone or randomly-selected information alone." Taking cognizance of Alliance's accused systems and drawing on the prosecution history, the district court ruled that "unique authorized information" excluded a combination of serial and randomly-selected information. The district court held, and CIAS had conceded, that "[s]ince part of the SDS eTicket identification number is not a detectable series, the entire numbers are not a detectable series, and so that SDS series does not include that element." CIAS argues that this does not avoid infringement, on the correct construction of "unique authorized information."

CIAS argues that "unique authorized information" includes "multi-digit identifying numbers unique to a [gaming] ticket," including data such as associated pairs or sets containing pseudo-random computer-generated numbers. Alliance points out that such associated pairs were described in a patent to Shoshani, U.S. Patent No. 3,833,795, that CIAS presented during reexamination of the '422 patent. CIAS argues that the claims were not rejected on Shoshani, and that during reexamination the inventors explained that "Shoshani, like Simjian, applies to a set or an associated pair of numbers . . . one number of the pair is a serially-selected identification number The other number of the pair is a randomly-selected control number"

The district court observed that during reexamination the inventors emphasized that the '422 invention did not include comparison of pairs of numbers as in Shoshani. Although CIAS stresses that there was no rejection based on Shoshani, and thus no amendments were made or needed, this does not negate the arguments made during reexamination in order to distinguish Shoshani. We agree with the district court that the reexamination recharacterization of Shoshani requires the construction that the '422 claims exclude information other than serial information alone or randomly-selected information alone.

During reexamination the inventors also addressed the previously cited reference to McNeight, U.S. Patent No. 4,463,250 entitled "Method and Apparatus for Use Against Counterfeiting." McNeight describes a system that detects counterfeit mass-produced articles such as currency notes, drivers licenses, passports, share bonds, tickets for sporting events, etc., according to a detectable series and through the use of a secret algorithm. Upon amendment of the '422 claims during the original prosecution, the CIAS inventors had explained to the examiner: "[T]he claims herein may be distinguished from McNeight et al. [who teach] use of an algorithm This is risky from a security standpoint . . . because once the algorithm was either deduced or stolen, then a counterfeiter could . . . counterfeit with increased impunity." The '422 inventors thereby distinguished McNeight, explaining that the '422 patent's authorized information is "not generated by an algorithm."

Applying the positions taken during the '422 examination and reexamination, the district court construed "randomly selected" in claim 13 to mean "true random" numbers, that is, numbers "without any pattern or predictability whatsoever," rather than "pseudo-random, which is apparent randomness that has been generated purposefully, as by a

computer algorithm or other program." The court reasoned that the scope of the patent was voluntarily narrowed, in light of McNeight and Shoshani, to exclude the use of solely serial information or solely randomly-selected information.

CIAS argues that it did not disavow "multi-part" numbers during reexamination, and that the statements made during reexamination were not disclaimers. CIAS points out that to constitute a disclaimer, any statements made during the patent's prosecution require "clear and unmistakable statements of disavowal" of the specific claim interpretation at issue, quoting Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1368 (Fed. Cir. 2003). CIAS contends that no clear and unmistakable disavowal occurred in the '422 patent's prosecution, and that the additional reference of Shoshani presented for reexamination was merely cumulative of the prior art previously of record. CIAS states that its discussion of Shoshani and McNeight did not limit any claim or disavow any subject matter.

The district court held that the inventors, by limiting the '422 claims to a counterfeit detection system relying on a "detectable series," had disavowed use of a secret algorithm. The court held that this precluded now reading the claims on the accused SDS systems, which use a secret algorithm. The court also concluded that the reexamined claims now excluded systems that employ an identification number that is neither serial nor randomly-selected information alone.

The district court ruled that "randomly selected" can mean only "true random" numbers, and excludes pseudo-random. In construing this term the court looked first to the patent document, and found that the '422 specification did not elaborate on the meaning of this term. The court examined several prior art references and a CIAS sibling patent to reach its construction of this term. It was generally undisputed at trial that the usual

computer algorithm generates only pseudo-random numbers. We agree with CIAS that persons of skill in the field of computer randomization would recognize that the product thereof is most aptly understood as pseudo-random; CIAS conceded that another of its patents shows generation of true random numbers. The district court, receiving conflicting opinions on this point, deemed it a "close question." However, it is not controlling of the question of infringement, for the district court's judgment of non-infringement is supported alone by the court's construction of "unique authorized information."

We discern no error in the district court's construction of the scope of the '422 claims. Although the usage "comprised of" does not of itself exclude the presence of additional elements or steps, this does not permit recovery of claim scope that was limited during prosecution. The district court was correct that the amendments and arguments during examination and reexamination bar interpretation of "unique randomly selected authorized information" to include the accused systems.

The Doctrine of Equivalents

On appeal, CIAS states that the district court erred in failing to consider the accused systems' infringement under the doctrine of equivalents, for CIAS had charged that the SDS system infringed claims 1, 3, 5-7, and 9-12, and the SMS system infringed claims 13 and 14, under the doctrine of equivalents. The district court ruled that the accused systems did not infringe under the doctrine of equivalents, but did not present a separate explanation of this ruling.

In its opinion, the district court explained in detail that the '422 claims had been limited during examination and reexamination. The subject matter that was relinquished is

material to the infringement inquiry under the doctrine of equivalents, for the accused systems are reasonably viewed as within the literal scope of the original CIAS claims before they were limited by amendment and argument. As held in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 733 (2002), when the accused subject matter is within the range of surrendered subject matter, the patentee must satisfy certain criteria in order to reach that subject matter through equivalency; the patentee must show that the asserted equivalent either was unforeseeable, or that the rationale underlying the surrender had only a tangential relation to the equivalent in question, or some other reason why the patentee could not reasonably have described and continued to claim the substitute in question. The district court, in its disposition of the asserted equivalency, may have recognized, as Alliance argued, that CIAS could not meet this burden. On the evidence before the district court that the Alliance series and other differences from the '422 claims were excluded from the claims based on prior art that was distinguished during prosecution, reversible error does not arise from the district court's inclusion of the doctrine of equivalents in its summary judgment of noninfringement.

AFFIRMED