

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

In re DBC

545 F.3d 1373 (Fed. Cir. 2008) · No. 2008-1120 · Decided November 3, 2008

SUMMARY

The United States Court of Appeals for the Federal Circuit affirmed the Patent Trial and Appeal Board's decision upholding the rejection of claims in DBC's patent reexamination as obvious under 35 U.S.C. § 103. The court held that DBC waived its Appointments Clause challenge to the administrative patent judges by failing to raise it before the Board and declined to consider the issue despite its discretion to do so. The court also upheld the Board's prima facie obviousness determination but held that the Board erred in evaluating whether the commercial embodiment was commensurate with the claims.

CASE DETAILS

COURT	United States Court of Appeals for the Federal Circuit
WRITING FOR THE COURT	Linn, Circuit Judge; Dyk, Circuit Judge; Stearns, District Judge, sitting by designation
JURISDICTION	Federal
DECIDED	November 3, 2008
DOCKET	2008-1120
DISPOSITION	affirmed
PROCEDURAL POSTURE	DBC appealed the Patent and Trademark Office Board of Patent Appeals and Interferences' affirmance of an examiner's final rejection of all pending claims during ex parte reexamination as obvious under 35 U.S.C. § 103.
STANDARD OF REVIEW	The Federal Circuit reviews the Board's ultimate determination of obviousness de novo and its underlying factual findings for substantial evidence.
PRECEDENTIAL VALUE	published precedential Federal Circuit opinion
PARTIES	DBC, LLC v. Director of the United States Patent and Trademark Office

TOPICS

obviousness

patent prosecution

patent law

judicial review of agency action

appellate procedure

PRACTICE AREAS

patent law

patent prosecution

administrative law

constitutional law

appellate procedure

QUESTIONS PRESENTED

1. Whether DBC waived its constitutional challenge to the appointment of the administrative patent judges by failing to raise the issue before the Board.
2. Whether the prior-art references, including JP '442, established a substantial new question of patentability and a prima facie case that the claims were obvious.
3. Whether DBC's evidence of commercial success was sufficient to rebut the prima facie case of obviousness.
4. Whether the Board's decision should be vacated based on alleged new grounds of rejection.

HOLDINGS

1. DBC waived its challenge to the appointment of the administrative patent judges by failing to raise the issue before the Board, and the circumstances did not warrant exercising discretion to consider the untimely challenge.
2. The prior art, including JP '442 in combination with the other cited references, established a substantial new question of patentability and supported the Board's prima facie determination that the claims would have been obvious.
3. DBC's evidence of commercial success did not overcome the prima facie case of obviousness because it did not establish a sufficient nexus between the sales and the claimed invention.

KEY QUOTATIONS

“Because substantial evidence supports the Board's determination that the claims would have been obvious, and because DBC has waived challenging the appointment of the administrative patent judges who presided over its appeal, we affirm.” (1375)

“The ultimate determination of whether an invention would have been obvious is a legal conclusion based on underlying findings of fact.” (1383)

“For objective evidence to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.” (1384)

FACTUAL BACKGROUND

DBC owned U.S. Patent No. 6,730,333, directed to nutraceutical compositions containing mangosteen fruit pulp and pericarp, including a beverage combining mangosteen pericarp, mangosteen juice, and another fruit or vegetable juice. During ex parte reexamination, the examiner rejected all claims as obvious over seven prior-art references, including Japanese Patent 11043442, which taught combining mangosteen rind with fruits or fruit

juices. DBC submitted declarations and sales evidence concerning its commercially marketed XanGo juice, including approximately \$130 million in gross sales during its first two years, but the Board found the evidence insufficient to establish nonobviousness.

PROCEDURAL HISTORY

The PTO granted a third party's request for ex parte reexamination of DBC's patent. The examiner rejected all claims as obvious over seven prior-art references, and the Board affirmed, finding DBC's evidence of commercial success insufficient to overcome the prima facie case. DBC appealed to the Federal Circuit and also raised an Appointments Clause challenge for the first time in a supplemental brief.

DISPOSITION

affirmed

CASES CITED

- KSR International Co. v. Teleflex Inc., 550 U.S. 398 (2007)
- In re Dembiczak, 175 F.3d 994, 998 (Fed. Cir. 1999)
- In re Gartside, 203 F.3d 1305, 1316 (Fed. Cir. 2000)
- United States v. L.A. Tucker Truck Lines, 344 U.S. 33, 35-37 (1952)
- Woodford v. Ngo, 548 U.S. 81, 89-90 (2006)
- Golden Bridge Technology, Inc. v. Nokia, Inc., 527 F.3d 1318, 1322-23 (Fed. Cir. 2008)
- Golden Blount, Inc. v. Robert H. Peterson Co., 365 F.3d 1054, 1062 (Fed. Cir. 2004)
- Freytag v. Commissioner, 501 U.S. 868, 879, 893, 895 (1991)
- Nguyen v. United States, 539 U.S. 69, 78 (2003)
- Glidden Co. v. Zdanok, 370 U.S. 530, 536 (1962)
- In re Hiniker Co., 150 F.3d 1362, 1367 (Fed. Cir. 1998)
- Applied Materials, Inc. v. Advanced Semiconductor Materials America, Inc., 98 F.3d 1563, 1570 (Fed. Cir. 1996)
- In re Huang, 100 F.3d 135, 140 (Fed. Cir. 1996)
- In re GPAC Inc., 57 F.3d 1573, 1580 (Fed. Cir. 1995)

OPINION

LINN, J.

545 F.3d 1373 (2008) In re DBC. No. 2008-1120. United States Court of Appeals, Federal Circuit. November 3, 2008. *1375 Lawrence M. Jarvis, McAndrews, Held & Malloy, Ltd., of Chicago, IL, argued for appellant. With him on the brief were Yufeng Ma and Consuelo Garcia Erwin. Thomas V. Shaw, Associate Solicitor, Office of the Solicitor, United States Patent and Trademark Office, of Arlington, VA, and Michel S. Raab, Attorney, Appellate Staff, Civil Division, United States

Department of Justice, of Washington, DC, argued for the Director of the United States Patent and Trademark Office.

With them on the brief were Sydney O. Johnson, Jr., Acting Solicitor; Mary L. Kelly, Associate Solicitor; Gregory G. Katsas, Assistant Attorney General; and Kelsi Brown Corkran, Attorney. Before LINN and DYK, Circuit Judges, and STEARNS, District Judge.[*] LINN, Circuit Judge. DBC, LLC ("DBC") appeals from a final decision of the United States Patent and Trademark Office Board of Patent Appeals and Interferences ("the Board"), which affirmed the examiner's rejection of all pending claims as obvious under 35 U.S.C. § 103.

Ex parte DBC, No.XXXX-XXXX, 2007 WL 2433106 (B.P.A.I. Aug. 24, 2007) ("Decision"). Because substantial evidence supports the Board's determination that the claims would have been obvious, and because DBC has waived challenging the appointment of the administrative patent judges who presided over its appeal, we affirm.

I. BACKGROUND This case involves juice made from the fruit of the mangosteen tree (known scientifically as the *Garcinia mangostana* L. *1376 tree), an exotic plant thought to originate from Southeast Asia. The mangosteen fruit, which is botanically unrelated to the mango, is reputed to be one of the best tasting of all tropical fruits. U.S. Patent No. 6,730,333 ("the '333 patent"), col.

1, ll. 22-23. The '333 patent states that the pericarp or rind of the mangosteen fruit although very bitter is known in folk medicine to treat conditions such as intestinal and skin ailments. *Id.*, col. 1, ll. 33-34, 48-53.

As a result of its use in folk medicine, the medicinal properties of the mangosteen tree have been studied in numerous pharmacological and clinical studies. *Id.*, col. 1, l. 58 col. 2, l. 18. According to the patent, these studies have isolated in the mangosteen tree and its fruit chemical constituents known as xanthenes, biologically active compounds that are receiving increased attention as potentially able to provide a variety of health benefits.

Id. DBC is the owner of the '333 patent, which issued on May 4, 2004. The patent is directed to a "nutraceutical composition[] comprising a mixture of the pulp and pericarp of the mangosteen fruit." *Id.*, col. 1, ll. 11-13. A nutraceutical is defined in the patent as "any compound[] or chemical[] that can provide dietary or health benefits when consumed by humans or animals."

Id., col. 3, ll. 59-61. Claim 1 is representative of the invention: 1. A nutraceutical beverage comprising: pericarp from fruit of a *Garcinia mangostana* L. tree; a first juice from fruit of a *Garcinia mangostana* L. tree; and at least one second juice selected from the group consisting of fruit juice and vegetable juice.

On October 14, 2004, the United States Patent and Trademark Office ("PTO") granted a third party's request for ex parte reexamination of the '333 patent. During reexamination, the examiner

rejected all claims of the '333 patent as obvious over a combination of seven prior art references: (1) Japanese Patent 11043442 ("JP '442"); (2) Japanese Patent 08208501 ("JP '501"); (3) James A. Duke & Judith L. duCellier, CRC Handbook of Alternative Cash Crops (1993) ("Duke"); (4) J.F.

Caius, The Medicinal and Poisonous Plants of India (1986); (5) Keigo Nakatani et al., Inhibition of Cyclooxygenase and Prostaglandin E2 Synthesis by γ -mangostin, a Xanthone Derivative in Mangosteen, in c6 Rat Glioma Cells, 63 Biochemical Pharmacology 73 (2002); (6) K.R. Kirtikar & B.D. Basu, Indian Medicinal Plants (1999); and (7) Othman Yaacob & H.D. Tindall, Mangosteen Cultivation (1995) ("Yaacob").

Of these seven references, JP '442 was the only reference not before the original examiner who found the claims of the '333 patent application patentable. In response to the examiner's rejection of the claims during reexamination, DBC submitted three declarations pursuant to 37 C.F.R. § 1.132 to provide objective evidence of nonobviousness. These declarations attempted to demonstrate the success of the commercial embodiment of the patented invention, known commercially as XanGo juice.

The examiner was not persuaded by DBC's evidence, however, and following a telephonic interview, made the rejection final. DBC appealed the examiner's final rejection to the Board. The Board agreed with the examiner that the seven prior art references in the record rendered obvious all pending claims.

The Board also concluded that DBC's proffered evidence of commercial success was not sufficient to overcome the prima facie showing of obviousness. As a result, the Board affirmed the examiner's rejection of the pending claims as obvious under 35 U.S.C. § 103. *1377 DBC timely appealed.

We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A). II. DISCUSSION A. Standard of Review A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the pertinent art. 35 U.S.C. § 103(a); see also generally *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct.

1727, 167 L.Ed.2d 705 (2007). The ultimate determination of whether an invention would have been obvious is a legal conclusion based on underlying findings of fact. *In re Dembiczak*, 175 F.3d 994, 998 (Fed.Cir.1999), abrogated on other grounds by *In re Gartside*, 203 F.3d 1305, 1316 (Fed.Cir.2000).

We review the Board's ultimate determination of obviousness de novo. *Id.* We review the Board's underlying factual findings for substantial evidence. *Gartside*, 203 F.3d at 1316. B. Analysis DBC challenges the Board's decision on three primary grounds.[1] First, DBC contends that the Board

erred in finding a prima facie case of obviousness based on a substantial new question of patentability.

Next, it contends that even if the Board properly found a prima facie case of obviousness, it erred by concluding that the submitted evidence of commercial success was insufficient to rebut the prima facie case. Finally, DBC argues that even if the Board correctly affirmed the examiner's rejection of the claims as obvious, its decision must nevertheless be vacated because two members of the panel that heard the appeal were unconstitutionally appointed.

We address each contention in turn, beginning with DBC's challenge under the Appointments Clause. 1. Appointments Clause DBC argues that regardless of the merits of the underlying rejection, the decision of the Board must be vacated because two of the administrative patent judges on the panel were appointed unconstitutionally.[2] The government counters that DBC waived this issue by failing to raise it either before the Board or in its opening brief in this appeal. [3] We agree with the government that DBC waived the issue by failing to raise it before the Board.

In an article published in 2007, Professor John F. Duffy of the George Washington University Law School contended that legislation enacted in 2000 and delegating the power to appoint administrative patent judges to the Director of the PTO ("the Director") instead of the Secretary of Commerce ("Secretary") was constitutionally infirm under the Appointments Clause, U.S. Const. art. II, § 2, cl.

2. See *1378 John F. Duffy, *Are Administrative Patent Judges Constitutional?*, 2007 *Patently-O Patent L.J.* 21, 21 (2007). Professor Duffy argued that the Director may not constitutionally be delegated the power to appoint administrative patent judges, who are "inferior Officers" in the words of the Appointments Clause, because the Appointments Clause vests that authority only to "the President alone, in the Courts of Law, or in the Heads of Departments."

Id. at 21-25. DBC relies upon Professor Duffy's theory here in arguing that because the administrative patent judges were unconstitutionally appointed, the Board's decision must be vacated. As noted above, DBC did not raise its objection to the manner of appointment to the Board itself.

The threshold question thus presented is whether its failure to do so resulted in a waiver of the challenge. It is well-established that a party generally may not challenge an agency decision on a basis that was not presented to the agency. See *Woodford v. Ngo*, 548 U.S. 81, 90, 126 S.Ct. 2378, 165 L.Ed.2d 368 (2006) ("As a general rule... courts should not topple over administrative decisions unless the administrative body not only has erred, but has erred against objection made at the time appropriate under its practice.") (quoting *United States v. L.A.*

Tucker Truck Lines, 344 U.S. 33, 37, 73 S.Ct. 67, 97 L.Ed. 54 (1952) (emphasis omitted)). In L.A. Tucker, for example, the Interstate Commerce Commission approved an application to extend a motor carrier route. An examiner of the agency recommended that the application be granted, and a division of the Commission approved the recommendation. L.A. Tucker, which had opposed the application, requested, but was denied, reconsideration by the full Commission.

L.A. Tucker then petitioned for further relief, which was also denied. It then filed suit in district court challenging the agency's grant of the application. Before the district court, L.A. Tucker raised for the first time the argument that the Commission's action was invalid because the examiner had not been properly appointed pursuant to the Administrative Procedure Act.

The district court permitted L.A. Tucker to make the argument, and invalidated the agency's action on that basis. The Supreme Court appeal raised the single question "whether such an objection, first made at that stage of the proceedings, was not erroneously entertained." L.A. Tucker, 344 U.S. at 35, 73 S.Ct. 67. Reversing the district court, the Supreme Court found L.A.

Tucker's objection untimely, characterizing its challenge to the examiner's appointment as "clearly an afterthought, brought forward at the last possible moment to undo the administrative proceedings without consideration of the merits and [which] can prevail only from technical compulsion irrespective of considerations of practical justice." *Id.* at 36, 73 S.Ct.

67. Finding the objection untimely, the Court reasoned that "orderly procedure and good administration require that objections to the proceedings of an administrative agency be made while it has opportunity for correction in order to raise issues reviewable by the courts." *Id.* at 37, 73 S.Ct. 67.

As the Supreme Court later explained in *Woodford*, the requirement that a party object to an agency prior to attacking that agency's action in court serves two primary purposes. See *Woodford*, 548 U.S. at 89, 126 S.Ct. 2378 (discussing administrative exhaustion vis-à-vis the Prison Litigation Reform Act of 1995).

First, it "gives [the] agency an opportunity to correct its own mistakes... before it is haled into federal court, and [thus] discourages disregard of [the agency's] procedures." *Id.* at 89, 126 S.Ct. 2378 (last modification in original, internal quotation marks and citation omitted). If DBC had raised this *1379 issue in its appeal before the Board, the Board would have had an opportunity to consider and cure the alleged constitutional infirmity.

Under 35 U.S.C. § 6(b), the Director has authority to designate the members of Board panels. The Director has delegated that authority to the Chief Administrative Patent Judge. See Manual of Patent Examining Procedure § 1002.02(f) (8th ed., rev.6, Sept. 2007), available at http://www.uspto.gov/web/offices/pac/mpep/mpep_e8r5_1000.pdf. According to the Board's standard operating procedures, the Chief Administrative Patent Judge "will approve a revised

designation" of the judges on any particular panel "[w]hen satisfied that there is good reason to change the panel already designated."

Board of Patent Appeals and Interferences, Standard Operating Procedure 1 (Revision 12): Assignment of Judges to Merits Panels, Motions Panels, and Expanded Panels at 6 (Aug. 10, 2005), available at <http://www.uspto.gov/go/dcom/bpai/sop1.pdf>.

As evidenced by DBC's supplemental brief and its attachments, DBC was able to determine, based on the appointment dates of the administrative patent judges in question, that they were appointed by the Director and thus subject to an Appointments Clause challenge.

Thus, nothing prevented DBC from taking steps while this case was before the Board to ascertain the appointment status of the administrative patent judges assigned to its case. Even if DBC did not learn of the judges assigned to its panel until oral argument or until a decision was issued, it still had an opportunity to challenge the composition of the panel in a post-argument submission or in a motion for reconsideration.

If DBC had timely raised this issue before the Board, the Board could have evaluated and corrected the alleged constitutional infirmity by providing DBC with a panel of administrative patent judges appointed by the Secretary. Of course, the Board may not have corrected the problem, or even acknowledged that the problem existed. But in that case, DBC would have preserved its right to appeal the issue.

The second purpose for requiring that a party make an objection to the agency is that it promotes judicial efficiency, as "[c]laims generally can be resolved much more quickly and economically in proceedings before [the] agency than in litigation in federal court." *Woodford*, 548 U.S. at 89, 126 S.Ct. 2378.

The relief DBC seeks with respect to this claim is for a properly appointed panel of administrative patent judges to review the examiner's rejection of its claims. If DBC had objected to the Board, instead of to this court in the first instance, it could have obtained relief immediately, and thus avoided the unnecessary expenditure of the administrative resources of the original Board panel, the judicial resources of this court, and the substantial delay and costs incurred in prosecuting this appeal.

While the foregoing supports the conclusion that DBC has waived challenging the appointments, there is one final inquiry that nonetheless remains. Because we retain discretion to reach issues raised for the first time on appeal, we must consider whether this is one of those exceptional cases that warrants consideration of the Appointments Clause issue despite its tardy presentation.

See *Golden Bridge Tech., Inc. v. Nokia, Inc.*, 527 F.3d 1318, 1322-23 (Fed. Cir.2008) ("While appellate courts are given the discretion to decide when to deviate from th[e] general rule of

waiver, we have explained that 'prudential considerations' articulated by the Supreme Court counsel against hearing new arguments for the first time on appeal absent limited circumstances.") (internal citations omitted); see also *Golden Blount, Inc. v. Robert H. Peterson Co.*, 365 F.3d 1054, 1062 (Fed.Cir.2004). *1380 The Supreme Court itself has, in "rare cases," exercised its discretion to review a constitutional challenge not timely raised before the lower tribunal.

See, e.g., *Freytag v. Comm'r*, 501 U.S. 868, 879, 111 S.Ct. 2631, 115 L.Ed.2d 764 (1991); see also *Nguyen v. United States*, 539 U.S. 69, 78, 123 S.Ct. 2130, 156 L.Ed.2d 64 (2003); *Glidden Co. v. Zdanok*, 370 U.S. 530, 536, 82 S.Ct. 1459, 8 L.Ed.2d 671 (1962). Like this case, *Freytag*, *Nguyen*, and *Glidden* involved constitutional challenges under the Appointments Clause.

The Supreme Court has never indicated that such challenges must be heard regardless of waiver. See *Freytag*, 501 U.S. at 893, 111 S.Ct. 2631 (Scalia, J., concurring in part and concurring in the judgment) (observing that the court did not create a general rule excusing waiver). Rather, the Court has proceeded on a case-by-case basis, determining whether the circumstances of the particular case warrant excusing the failure to timely object.

See *id.*, 501 U.S. at 879, 111 S.Ct. 2631 ("We conclude that this is one of those rare cases in which we should exercise our discretion to hear petitioners' challenge to the constitutional authority of the Special Trial Judge."). DBC has recognized that our excusal of its waiver is discretionary, see Oral Arg. at 2:20-2:22, available at <http://oralarguments.cafc.uscourts.gov/mp3/XXXX-XXXX.mp3>, but nevertheless urges us to consider the merits of its Appointments Clause challenge.

We decline DBC's invitation to consider a challenge it failed to timely raise, as we do not view the circumstances of this case to warrant such an exceptional measure. Primarily, we reemphasize that while this issue could have been raised before the Board, it was not.

Although DBC may not have appreciated the argument until discovering Professor Duffy's article, [4] that article was not an intervening change in law or facts, nor was it based on any legal or factual propositions that were not knowable to DBC when it was proceeding before the Board.

We are not persuaded to overlook DBC's lack of diligence to present an issue of which it was, or should have been, aware. To permit litigants like DBC to raise such issues for the first time on appeal would encourage what Justice Scalia has referred to as sandbagging, i.e., "suggesting or permitting, for strategic reasons, that the trial court pursue a certain course, and later if the outcome is unfavorable claiming that the course followed was reversible error."

Freytag, 501 U.S. at 895, 111 S.Ct. 2631 (Scalia, J., concurring in part and concurring in the judgment). We also consider the remedial action taken by Congress to weigh against considering the waived challenge. On August 12, 2008, the President signed into law legislation that

redelegated the power of appointment to the Secretary, thereby eliminating the issue of unconstitutional appointments going forward.

Pub.L. No. 110-313, § 1(a)(1)(B), 122 Stat. 3014, 3014 (2008) (codified at 35 U.S.C. § 6(a)). The legislation also includes a provision attempting retroactive correction of the Director's appointments by providing "a defense to a challenge to the appointment of an administrative patent judge on the basis of the judge's having been originally appointed by the Director that the administrative patent judge so appointed was acting as a de facto officer."

Pub.L. No. 110-313, § 1(a)(1)(C), 122 Stat. 3014, 3014 (2008) (codified at 35 U.S.C. § 6(d)).
*1381 While we take no position on the constitutionality of that defense, Congress's action in fixing the problem prospectively means that our decision will not affect cases decided by future panels of the Board. This argues against our exercising discretion to address the issue.

Finally, DBC has not made any allegation of incompetence or other impropriety regarding the administrative patent judges who heard its appeal, nor has it alleged that these judges are somehow unqualified to serve in the position. Indeed, the Secretary, acting under the new statute, has reappointed the administrative patent judges involved in DBC's appeal.

Thus, even if we were to exercise our discretion to consider DBC's constitutional argument, conclude that the judges were improperly appointed, and remand to the Board for reconsideration by a properly appointed panel, there is nothing to suggest that the Board would do anything other than simply (and legitimately) assign the case to the same panel.

The fact that we have affirmed the merits of the Board's action in this case also speaks against our exercising discretion and needlessly protracting the reexamination of the present patent. We conclude that the circumstances presented here do not warrant the exercise of our discretion to hear DBC's Appointments Clause challenge. 2. Prima Facie Case of Obviousness A patent may not issue "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

35 U.S.C. § 103(a); see also generally KSR, 550 U.S. 398, 127 S.Ct. 1727, 167 L.Ed.2d 705. As noted above, obviousness is a question of law based on underlying facts. Dembiczak, 175 F.3d at 998. The Board concluded that the prior art relied upon by the examiner established a prima facie case of obviousness: Of record in the rejection is JP '442, which discusses the known medicinal qualities of pericarp.

Of particular interest is Example 6, found on page 16 of the translation, which describes a drink which includes orange juice, water, and an extract of pericarp. JP '442 describes health benefits of its composition; consequently it is a nutraceutical according to the Appellant's definition in the

Specification. Example 6 of JP '443 [sic] includes pericarp from fruit of a *Garcinia mangostana* L. tree in the form of a medicinal extract.

Example 6 also includes orange juice, which is a juice selected from the group consisting of fruit juice and vegetable juice. Thus, the only difference between the single closest piece of prior art of record and instant claim 1 is the addition of juice from fruit of a *Garcinia mangostana* L. tree into the drink. * * * Duke describes that *Garcinia Mangostana* L. is "cultivated for its fruit, which has a flavor suggestive of strawberry and grape; said to be the most delicious of all tropical fruits."

Yaacob describes mangosteen fruits as "one of the finest flavored fruits in the world, outranking all other tropical fruits; the mangosteen has therefore justly earned the popular title of 'Queen of Fruits.'" We agree with the Examiner that these references provide ample motivation to combine mangosteen juice, another fruit or vegetable juice, and mangosteen pericarp in a beverage, to cover up the taste of the mangosteen rind. *1382 Decision at 11-12 (internal citations omitted).

On appeal, DBC primarily argues that the Board failed to establish a prima facie case of obviousness based upon a substantial new question of patentability because the JP '442 reference is cumulative and non-analogous art.[5] DBC argues that since JP '442 was the only new prior art reference cited during reexamination, it cannot raise a substantial new question of patentability.

In *In re Hiniker Co.*, we suggested that a reference that "was not material to the question of obviousness... or... was cumulative with any old art" was not sufficient to create a substantial new question of patentability. 150 F.3d 1362, 1367 (Fed.Cir.1998). Relying on this passage, DBC contends that JP '442 is not material to obviousness and is cumulative over the prior art references that were before the examiner during the original prosecution.

We disagree with DBC on both points. The abstract of JP '442 describes a composition designed to be resistant to legionella bacteria and which includes one or more extracts from a number of fruits and other biological products, one of which is mangosteen rind.

The examiner observed, in his answer before the Board, that "[i]f you want to consume the rind, it was known in the prior art to mix it with a fruit such as strawberry as taught by JP '442 (abstract)." J.A. at 3735; see also id. at 3735-36 ("The key piece of art is JP '442 which clearly teaches mangosteen rind and raspberry, strawberry and/or blackberry in the same composition.").

The Board similarly concluded that the reference teaches "a legionella bacteria disinfection agent and ingestible compositions, e.g., drinks, that contain the disinfection agent." Decision at 5. Thus, as both the examiner and the Board recognized, the abstract teaches mixing the mangosteen rind in a composition with fruits and fruit juices to obtain a legionella resistant composition (a nutraceutical under the '333 patent's definition of the word).

Because it teaches a nutraceutical beverage combining fruits and fruit juices and mangosteen rind in the same composition, JP '442 is plainly material to patentability. DBC also contends that JP '442 is cumulative over JP '501, which "describes the reconstitution of the [mangosteen] extract into a drug and states that the drug can take any suitable form for administration including as a syrup, solution, or suspension with a carrier."

Decision at 6. But, as is plain from JP '501, that reference does not teach that mangosteen rind (or extract) can be made into a composition with fruits or fruit juices, only that it can be made into a "syrup, solution, or suspension with a carrier."

Because JP '442 is the only reference that teaches that the mangosteen rind can be combined with fruits and fruit juices to make a nutraceutical composition, it is not cumulative with respect to any of the prior art references that were before the original examiner.

We thus reject DBC's argument that JP '442 does not raise a substantial new question of patentability. DBC does not appear to challenge the Board's prima facie case of obviousness per se, only that it was not based upon a substantial new question of patentability.

Because we have rejected that argument, and because JP '442, together with the other references cited, is substantial evidence *1383 fully supporting the Board's finding of a prima facie case of obviousness, we affirm that portion of the Board's decision. 3. Secondary Considerations During reexamination, and in response to the examiner's rejection of the pending claims, DBC submitted three declarations pursuant to 37 C.F.R. § 1.132 in an effort to demonstrate the commercial success of XanGo juice.

These declarations, made by Kent Wood, Craig Johanson, and Stephen Beanofficers and employees of XanGo, LLC ("XanGo"), the exclusive licensee of DBC and marketer of XanGo juicedescribed, among other things, the ingredients in XanGo juice and the process for making it. Those statements were offered in an attempt to show that the juice is made according to the claims of the '333 patent.

The submitted declarations also demonstrated that XanGo juice enjoyed \$130 million in gross sales during the first two years it was on the market, and that XanGo's advertising budget represented only a small fraction of sales.

The Board was unpersuaded by DBC's evidence, finding that it was insufficient to overcome the strong prima facie case of obviousness. Decision at 30. In particular, the Board found that: The Appellants have not established with credible and persuasive evidence what product was marketed and when.

The Appellants have not established that the product which was sold is commensurate in scope with the scope of the claims for which protection is sought. Finally, the Appellants have not

persuaded us that the sales are a result of anything other than network marketing, the increasing popularity of mangosteen, and improved availability of the mangosteen fruit in general.

Accordingly, we find that the evidence of commercial success is insufficient to persuade us of the unobviousness of the claimed subject matter, which differs from the prior art only in the addition of a known, tasty, mangosteen juice. *Id.* DBC makes several arguments to support its contention that the Board erred in finding that its evidence of commercial success did not overcome the *prima facie* case of obviousness.

First, DBC argues that the Board erred by concluding that the evidence failed to show that XanGo juice was commensurate with the claims. On this point, we agree with DBC. The Board concluded that the Bean declaration, which proffered that XanGo juice was commensurate in scope with the claims of the '333 patent, was not worthy of credibility: Mr. Bean's Declaration provides no persuasive evidence of any real personal knowledge of the contents of XanGo for the relevant time frame for claimed commercial success.

For example, no chemical analyses, product batch sheets, manufacturing records, sales records, or the like are provided in support of any specific testimony that the commercially sold XanGo product contains the listed ingredients....

In sum, we do not find paragraph 5 [listing the ingredients] to be persuasive or credible. Decision at 27. In his declaration, Bean avers personal knowledge of the contents of XanGo juice, based on discussions with employees, contractors, and officers of DBC. J.A. at 343.

Under the circumstances of this case, no more is required to demonstrate that the XanGo juice falls within the scope of the claims, particularly when the product label itself demonstrates as much. The Board also called Bean's credibility into question because, when stating that XanGo juice was commensurate with the claims, he did not state that it also included a vegetable juice.

Apparently, *1384 the Board thought that the commercial embodiment of the claim must contain both a fruit juice and a vegetable juice since the claim recites "at least one second juice selected from the group consisting of fruit juice and vegetable juice."

On this point, the Board also erred. DBC need not sell every conceivable embodiment of the claims in order to rely upon evidence of commercial success, so long as what was sold was within the scope of the claims. See *Applied Materials, Inc. v. Adv. Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1570 (Fed.Cir.1996) ("[A] patentee need not show that all possible embodiments within the claims were successfully commercialized in order to rely on the success in the marketplace of the embodiment that was commercialized.").

Next, DBC argues that the Board erred when it found no nexus between the claimed invention and the submitted evidence of commercial success. Related to this argument, DBC also claims the

Board erred when it suggested that the commercial success of XanGo juice may be attributable to other factors, such as aggressive network marketing.

The Board concluded that although \$130 million in sales in two years was a substantial figure, there was "no persuasive evidence tying those sales to the claimed subject matter." Decision at 29. Elaborating on this point, the Board observed that the evidence in the record suggested that the success of XanGo juice may be due to other factorsfor example, the increasing popularity of the mangosteen fruit in general.

Id. Based on this increasing popularity, it observed that there was "no evidence comparing the growth in sales of XanGo to the growth in sales of mangosteen juice in general." Id. The Board also highlighted the marketing structure of XanGo, which is a "network marketing company" that pays substantial commissions for sales, and noted that "[h]ow much of the commercial success is due to aggressive network marketing in the form of sales commissions and bonuses is unexplained by the Appellants."

Id. at 30. In light of these infirmities in DBC's submitted evidence, the Board found it insufficient to upset the prima facie case of obviousness. The Board's conclusion is supported by substantial evidence. We have held on a number of occasions that evidence of commercial success alone is not sufficient to demonstrate nonobviousness of a claimed invention.

Rather, the proponent must offer proof "that the sales were a direct result of the unique characteristics of the claimed inventionas opposed to other economic and commercial factors unrelated to the quality of the patented subject matter."

In re Huang, 100 F.3d 135, 140 (Fed.Cir.1996); see also In re GPAC Inc., 57 F.3d 1573, 1580 (Fed.Cir.1995) ("For objective evidence to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.").

Here, DBC has done little more than submit evidence of sales. However substantial those sales, that evidence does not reveal in any way that the driving force behind those sales was the claimed combination of mangosteen fruit, mangosteen rind extract, and fruit or vegetable juice. Nor is there any evidence that sales of XanGo juice were not merely attributable to the increasing popularity of mangosteen fruit or the effectiveness of the marketing efforts employed.

For the foregoing reasons, we cannot conclude that the Board's decision is unsupported by substantial evidence. We thus affirm that portion of the Board's decision. III. CONCLUSION For the foregoing reasons, the decision of the Board is AFFIRMED. *1385 COSTS No costs. NOTES [*] Honorable Richard G. Stearns, District Judge, United States District Court for the District of Massachusetts, sitting by designation.

[1] DBC also makes a number of arguments related to its contention that various aspects of the Board's decision qualify as new grounds of rejection. We have considered those arguments but find them unpersuasive. We also observe that DBC failed to request rehearing or reopening of prosecution pursuant to 37 C.F.R. § 41.77, which it could have done had it believed that the Board made a new ground of rejection in affirming the examiner.

[2] DBC first raised this argument in a supplemental brief filed after briefing in this case was completed. [3] The government contends, alternatively, that Congress has already remedied the problem by enacting legislation providing a defense to a challenge to the appointment of an administrative patent judge that the administrative patent judge was acting as a "de facto officer."

Because we conclude that DBC has waived the argument, we need not and do not address this contention. [4] Professor Duffy's article was published on July 23, 2007, over one month before the Board issued the decision from which DBC appeals (and over six months prior to DBC filing its opening brief here).

Although we do not consider the article to have any effect on DBC's obligation to raise the issue, we note that even if it somehow gave DBC a fresh opportunity to present the objection, DBC failed to diligently do so.

[5] DBC also argues that the Board's decision constitutes a new ground of rejection because the Board cited the English translation of JP '442, while only the English translation of the abstract of that document was before the examiner.

We discern no merit in this argument. As we discuss *infra*, the Board's use of the example in the translation goes no farther than, and merely elaborates upon, what is taught by the abstract.