

**United States Court of Appeals
for the Federal Circuit**

DOME PATENT L.P.,
Plaintiff-Appellant

v.

**MICHELLE K. LEE, DIRECTOR, U.S. PATENT AND
TRADEMARK OFFICE,**
Defendant-Appellee.

2014-1673

Appeal from the United States District Court for the
District of Columbia in No. 1:07-CV-01695.

Decided: September 3, 2015

JAMES W. DABNEY, Hughes Hubbard & Reed LLP,
New York, NY, argued for plaintiff-appellant. Also repre-
sented by MITCHELL EPNER, STEPHEN S. RABINOWITZ.

SCOTT WEIDENFELLER, Office of the Solicitor, United
States Patent and Trademark Office, Alexandria, VA,
argued for defendant-appellee. Also represented by
NATHAN K. KELLEY, WILLIAM LAMARCA.

Before REYNA, SCHALL, and HUGHES, *Circuit Judges.*

HUGHES, *Circuit Judge*.

Dome owns a patent for making contact-lens material. On reexamination, the U.S. Patent and Trademark Office found that the claimed method at issue was obvious and therefore unpatentable. The district court agreed with the Patent Office that the claimed method was unpatentable. On appeal, Dome challenges both the standard of review employed by the district court and the court's ultimate conclusion on obviousness. Because we conclude that the district court applied the proper legal standard and because its factual findings were not clearly erroneous, we affirm.

I

Dome owns U.S. Patent No. 4,306,042, which concerns the polymer science behind making contact-lens materials that are rigid and gas permeable. During the relevant time period, contact-lens makers required contact-lens materials to be optically clear, sufficiently rigid for machining and polishing, oxygen permeable, and hydrophilic. To meet these four requirements, contact-lens makers used plastic polymers.

A polymer is a chain or network of molecules called monomers. The process of synthesizing a polymer from monomers of a single type is called polymerization. When two or more different types of monomers are reacted, i.e., copolymerized, a copolymer is formed and the constituent compounds are known as comonomers. Polymers or copolymers can have many different structures, including linear chains, branched chains, cross-linked networks, and mixtures thereof.

Contact-lens makers can produce materials that have varying physical properties by varying the types of monomers used and the resulting polymer's structure. For example, using one type of cross-linking agent over another may increase the gaps in a polymer's structure,

affecting oxygen permeability. Or using hydrophilic monomers, sometimes referred to as “wetting agents,” in a linear polymer chain can increase the polymer’s ability to attract or hold water. By contrast, using hydrophobic monomers to create a polymer can decrease the polymer’s affinity for water.

The first practical plastic contact lens was made of plexiglass, or polymethyl methacrylate (PMMA). Although clear, rigid, and hydrophilic, PMMA was not sufficiently oxygen permeable to allow users to wear the lenses for extended periods of time. After a few hours, a user had to remove PMMA lenses to allow the cornea to absorb ambient oxygen, which is needed to ensure, among other things, that the eye’s cells and nerves remain healthy. Given these limitations on PMMA lenses, polymer scientists began exploring other combinations of monomer types and polymer structures to create a material similar to PMMA, but with increased oxygen permeability.

In the early 1970’s, major advances in polymer science led to the discovery that silicone could be incorporated into plastics by mixing siloxane-based compounds with methyl methacrylate (MMA), a monomer in PMMA. One particular siloxane-based compound known as “Tris,” or 1,1,1-tris(trimethylsiloxy)methacryloxypropylsilane, was identified as a strong candidate because, when mixed with MMA, it led to materials with exceptional oxygen permeability. A significant drawback to this combination, however, was that Tris is hydrophobic, and it caused the polymer to be hydrophobic. To offset this drawback, polymer scientists in the late 1970’s and the 1980’s would combine other hydrophilic comonomers, wetting agents, and cross-linking agents with Tris, hoping to strike an acceptable balance between oxygen permeability, optical clarity, rigidity, and hydrophilicity.

Claim 1 of the '042 patent covers a method of making one such combination. The method comprises making Tris and then copolymerizing it with an ester of acrylic or methacrylic acid (e.g., MMA), a surface wetting agent, and an oxygen permeable siloxane-based cross-linking agent (a multifunctional¹ siloxanyl alkyl ester). Claim 1 recites, in relevant part:

A method of making an oxygen permeable material for the manufacture of contact lens by the synthesis of the monomer 1,1,1-tris(methylsiloxy)methacryloxypropylsilane (a siloxanyl alkyl ester) by the following procedures: . . .

(f) forming an oxygen permeable contact lens material by copolymerizing from 5% to 90% by weight of the 1,1,1-tris(trimethylsiloxy)methacryloxypropylsilane prepared above; 3% to 90% by weight of an ester of acrylic or methacrylic acid; from 0.05% to 90% by weight of a surface wetting agent, from 0.01% to 90% by weight of an oxygen permeable crosslinking agent selected from the class of multifunctional siloxanyl alkyl esters in the presence of a free radical or a photo initiator.

'042 patent, col. 5 ll. 38–64.

In December 1997, Dome filed suit against six makers of contact lenses for alleged infringement of the '042 patent. Shortly after, one defendant requested *ex parte*

¹ Copolymers with cross-linked networks, such as the types covered by the '042 patent, can be formed by employing a “multifunctional” comonomer. Two or more ends of a multifunctional comonomer have the ability to join with other comonomers to form a cross-link between polymer chains, like a rung of a ladder.

reexamination of the '042 patent. *See* 35 U.S.C. § 302 (1994). In June 1999, the Patent Office ordered reexamination and, as a result, the district court stayed litigation pending a final determination in the reexamination proceeding. The Patent Office confirmed the patentability of claims 2, 3, and 4 of the '042 patent, but it found claim 1 obvious under 35 U.S.C. § 103(a) (2006).

Dome then filed suit in September 2007 against the Patent Office in the United States District Court for the District of Columbia under 35 U.S.C. §§ 145 and 306 (2006), requesting that the district court enjoin the Patent Office from cancelling claim 1 of the '042 patent and that it direct the Patent Office to issue a reexamination certificate under 35 U.S.C. § 307 (2006). Following a bench trial, the district court held claim 1 of the '042 patent invalid as obvious under 35 U.S.C. § 103 and entered judgment in favor of the Patent Office.

The district court concluded that the '042 patent would have been obvious to a person of ordinary skill at the time of filing in view of the prior art, including U.S. Patent Nos. 4,120,570 (Gaylord), 4,152,508 (Ellis), and 4,235,985 (Tanaka).

Gaylord discloses a polymer for making rigid, gas-permeable contact lenses. Gaylord's disclosures represent a significant breakthrough in contact-lens materials. It is one of the first teachings of using siloxane-based monomers, including Tris, with MMA for the purpose of making contact lenses. In fact, the record indicates that Tris and similar siloxane-based compounds became an "industry standard" in the manufacture of contact lenses following this breakthrough. J.A. 2085.

Gaylord teaches that a suitable polymer can be made by combining Tris, MMA, methacrylic acid as a hydrophilic wetting agent, and a hydrophilic cross-linking agent, such as ethylene glycol dimethacrylate. *See* Gaylord col. 1 l. 53 – col. 2 l. 44; col. 3 ll. 63–65; col. 5 ll. 39–

51; col. 6 ll. 3–12. But unlike the '042 patent, Gaylord does not teach using a hydrophobic, siloxane-based cross-linking agent. *See* Gaylord col. 6 ll. 3–12.

Ellis discloses a “silicone-containing hard contact lens material” that, like Gaylord, can include Tris, MMA, a hydrophilic wetting agent, and a hydrophilic cross-linking agent, including ethylene glycol dimethacrylate. Ellis col. 1 ll. 1–3; col. 3 ll. 7–24; col. 3 ll. 64–68; col. 4 ll. 24–27; col. 4 ll. 4–7. Ellis also teaches the inclusion of a fifth monomer called an itaconate ester, which “gives increased rigidity, hardness and some degree of wettability.” Ellis col. 2 ll. 1–3.

Tanaka discloses a polymer suitable for continuous-wear contact lenses, and it teaches using a variety of cross-linking agents. Like Gaylord and Ellis, Tanaka teaches using a hydrophilic compound, including ethylene glycol dimethacrylate, as a cross-linking agent. Tanaka col. 8 ll. 2–6. But Tanaka also teaches, among other things, that using hydrophobic siloxane-based compounds are preferably employed as cross-linking agents because of their ability to enhance oxygen permeability in the resulting polymer. Tanaka col. 8 ll. 10–46.

Tanaka differs from Gaylord in that, rather than using Tris, Tanaka teaches using a different siloxane-based monomer, containing both hydrophobic alkylsiloxy ester groups (siloxane-based groups) and internal hydrophilic glycerol or polyether groups. *See* Tanaka col. 2 l. 64 – col. 3 l. 5. Tanaka teaches that this replacement for Tris-type monomers can be combined with MMA. *See* Tanaka col. 2 l. 64 – col. 3 l. 5; col. 7 ll. 39–41. According to Tanaka, this approach is more effective than using Tris-type monomers because simply offsetting the hydrophobic properties of Tris by copolymerizing it with hydrophilic monomers can lead to an “opaque” product, “a fatal defect for use as contact lens materials. Therefore, the polymerization ratio of the hydrophilic monomer to the [Tris-type]

monomer is limited to produce a transparent copolymer” Tanaka col. 3 ll. 35–40; *see also* Tanaka col. 3 ll. 6–34. Tanaka suggests that alternatively one might reduce the number of siloxane-based molecules in the polymer to reduce hydrophobicity, but then the oxygen permeability of the resulting polymer becomes too low. Tanaka col. 3 ll. 41–45. Tanaka explains that “[i]n any case, there cannot be obtained a polymer suited for preparing a contact lens which can be comfortably worn continuously for a long period of time” when Tris-type monomers are employed. Tanaka col. 3 ll. 48–51.

In the district court action, Dome did not dispute that the prior art disclosed the compounds recited in claim 1 of the ’042 patent. The district court found that a person of ordinary skill would have been motivated to combine the prior art and that the prior art did not teach away from the claimed invention, notwithstanding the disclosures in Tanaka regarding Tris-type monomers. Additionally, the court found that Dome’s proffered evidence of objective indicia did not indicate nonobviousness. Accordingly, the court agreed with the Board’s conclusion that claim 1 is unpatentable as obvious under 35 U.S.C. § 103. Dome appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(C).

II

Before reaching Dome’s appeal of the obviousness conclusion, we first address Dome’s allegation that the district court erred by only requiring the Patent Office to show that claim 1 of the ’042 patent is obvious by a preponderance of the evidence, rather than by clear and convincing evidence. We conclude that the district court correctly applied the preponderance of the evidence standard.

Dome’s appeal arises from an *ex parte* reexamination of the ’042 patent. Ordinarily, the Patent Office in such a proceeding must establish by a preponderance of the

evidence that the reexamined claims are not patentable. *Rambus Inc. v. Rea*, 731 F.3d 1248, 1255 (Fed. Cir. 2013). If an ex parte reexamination results in the claims being rejected as unpatentable, the decision can be appealed directly to this court. *See* 35 U.S.C. § 141.

Alternatively, for ex parte reexaminations filed before November 29, 1999, a complaint can be filed in district court against the Patent Office. *See* 37 C.F.R. § 1.303(a) (2012); 35 U.S.C. § 145 (“The [district] court may adjudge that such applicant is entitled to receive a patent for his invention, . . . and such adjudication shall authorize the Director to issue such patent . . .”). “The thrust of such a complaint is that the decision of the board is erroneous on the facts, the law, or both. Indeed, the board’s decision is the jurisdictional base for the suit. . . . [I]t is in essence a suit *to set aside* the final decision of the board.” *Fregeau v. Mossinghoff*, 776 F.2d 1034, 1036–37 (Fed. Cir. 1985).

Accordingly, if the Patent Office decides after an ex parte reexamination that a preponderance of the evidence establishes the claimed subject matter is not patentable, § 145 authorizes the district court to review whether that final decision is correct. The § 145 action in such a case does not concern the different question of whether, as part of a defense to an infringement action, clear and convincing evidence establishes that an issued and asserted patent should be held invalid. *See id.* at 1037 (“it cannot seriously be contended that a § 145 action is other than one to overturn the board’s decision”).

Citing 35 U.S.C. § 282 and *Microsoft Corp. v. i4i Ltd. Partnership*, 131 S. Ct. 2238 (2011), Dome argues that the district court erred by refusing to hold the Patent Office to the clear and convincing evidence standard of proof. According to Dome, the presumption of validity in § 282 applies to its claimed invention because the district court action concerns a claim that the Patent Office previously allowed to be patented. Accordingly, Dome argues the

Supreme Court’s holding that “§ 282 requires an invalidity defense to be proved by clear and convincing evidence,” 131 S. Ct. at 2242, also applies in Dome’s § 145 action.

The § 145 action before the district court did not involve a defense to a charge of infringement of an issued patent. Section 282 therefore does not apply in this instance. *See* 35 U.S.C. § 282. The district court here was reviewing the Patent Office’s reexamination of claimed subject matter, and its final determination that the subject matter is not patentable, to ascertain whether Dome was entitled to receive a patent. Only if the district court found in favor of Dome would the Patent Office be authorized to issue a patent. *See* 35 U.S.C. § 145. And only after the patent issued would it be entitled to the presumption of validity under § 282 and, consequently, could not be held invalid absent clear and convincing evidence.

The clear and convincing evidence standard in the litigation context “stems from our suggestion that the party challenging a patent in court ‘bears the added burden of overcoming the deference that is due to a qualified government agency presumed to have done its job.’” *Sciele Pharma Inc. v. Lupin Ltd.*, 684 F.3d 1253, 1260 (Fed. Cir. 2012) (quoting *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1366 (Fed. Cir. 2007)). But “[i]n reexamination proceedings, ‘a preponderance of the evidence must show nonpatentability before the [Patent Office] may reject the claims of a patent application.’” *Rambus*, 731 F.3d at 1255 (quoting *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988)). This standard is “substantially lower than in a civil case, . . . [and] there is no presumption of validity.” *In re Swanson*, 540 F.3d 1368, 1377 (Fed. Cir. 2008) (citations omitted).

“[A]n examiner is not attacking the validity of a patent, but is conducting a subjective examination of claims in the light of prior art.” *In re Etter*, 756 F.2d 852, 857–58

(Fed. Cir. 1985); *see also id.* at 857 (“litigation and reexamination are distinct proceedings, with distinct parties, purposes, procedures, and outcomes”). When the Patent Office institutes *ex parte* reexamination, it reopens prosecution to determine whether the claimed subject matter should have been allowed in the first place. At that point, there is no need to presume that the Patent Office had “done its job” in the previous examination. Accordingly, the presumption of validity is no longer applicable.

Our conclusion aligns with the purpose of the reexamination process, which includes allowing the Patent Office to take a second look at “patents thought ‘doubtful.’” *In re Etter*, 756 F.2d at 857 (quoting H.R. Rep. No. 66-1307, at 3–4 (1980), *reprinted in* 1980 U.S.C.C.A.N. 6460, 6462). “In a very real sense, the intent underlying reexamination is to ‘start over’” in the Patent Office. *Id.* We would hinder this intent if we required the district court here to presume that the reexamined claim is valid because of the Patent Office’s previous determination and, consequently, to impose a burden to defend its own subsequent reexamination decision by clear and convincing evidence. Thus, the district court did not err by requiring the Patent Office to show by a preponderance of the evidence that the reexamined claim is obvious.

III

We now address the district court’s obviousness determinations. 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.” 35 U.S.C. § 103(a) (2006).² Obviousness is a question of law

² Because the application for the ’042 patent was filed before March 16, 2013, the pre-Leahy-Smith America

based on underlying factual findings, including: “(1) the scope and content of prior art; (2) differences between prior art and claims; (3) the level of ordinary skill in the art; and (4) objective indicia of nonobviousness.” *Par Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1193 (Fed. Cir. 2014) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966)). We review the ultimate conclusion of obviousness de novo and the underlying factual findings for clear error. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1164 (Fed. Cir. 2006).

A

If all elements of a claim are found in the prior art, as is the case here, the factfinder must further consider the factual questions of whether a person of ordinary skill in the art would be motivated to combine those references, and whether in making that combination, a person of ordinary skill would have had a reasonable expectation of success. *Id.* at 1164. The Supreme Court has cautioned, however, that an obviousness determination cannot be confined by formalistic rules. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007). Rather, courts must take an “expansive and flexible approach” to the question of obviousness. *Id.* at 415.

Evidence of a motivation to combine prior art references may flow from “the nature of the problem to be solved.” *Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1371 (Fed. Cir. 2011) (quoting *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1276 (Fed. Cir. 2004)). Here, the record supports the district court’s finding that a person of ordinary skill understood that high oxygen permeability in contact-lens materials was desirable. And this understanding would have motivated a person of ordinary

skill to combine the Tris monomer disclosed in Gaylord with the Tris-type cross-linking agent disclosed in Tanaka to increase the oxygen permeability of a contact lens.

Gaylord, for example, teaches that the previously used contact-lens material, PMMA, is rigid and durable but relatively impermeable to oxygen. Gaylord col. 1 ll. 24–30. Gaylord explained it would be “highly desirable” to provide a contact-lens material that has “increased oxygen permeability, is wettable,” and has improved mechanical properties. Gaylord col. 1 ll. 39–44. To meet that need, Gaylord discloses using siloxane-based compounds, including Tris-type monomers. *See* Gaylord col. 1 ll. 44–51; col. 2 ll. 32–44. Similarly, Ellis teaches that oxygen permeability is “directly related” to the silicone content in contact lenses. Ellis col. 1 ll. 29–30. And Tanaka explains that contact lenses with poor oxygen permeability would make it “impossible to wear them continuously for a long period of time.” Tanaka col. 1 ll. 30–32. Tanaka therefore “preferably employed” siloxane-based cross-linking agents, including some that are hydrophobic, because the oxygen permeabilities of the obtained cross-linked copolymers are high. Tanaka col. 8 ll. 10–46.

The testimonies from Dome’s experts also support the district court’s conclusion. Dr. Mark Melamed testified that “it’s essential that there be an adequate flow of oxygen either through the lens or around the lens.” J.A. 1805; *see also* J.A. 1804–05 (“it’s essential that there be a constant flow of oxygen to the entry surface of the cornea in order for a contact lens to be worn safely for a period of time”). A “chief” issue during Dr. Melamed’s practice was “the ability to get oxygen across a contact lens,” while “maintaining a nice even tear film over the contact lens and over the cornea,” i.e., hydrophilicity, was considered a “secondary problem” related to contact lens comfort levels. J.A. 1807. And another of Dome’s experts, Dr. Timothy Long, testified that those in the field were turning to

siloxane-based compounds to enhance a polymer’s oxygen permeability. *See* J.A. 1746 (“It has great oxygen permeability. It’s one of the big driving forces for people in the contact lens field to use it.”). Accordingly, the district court did not clearly err in finding that the evidence disclosed a motivation to combine the prior art.

B

Dome argues that a person of ordinary skill would not have been motivated to combine Gaylord with Tanaka because the prior art teaches away from using Tris with siloxane-based cross-linking agents. To improve Gaylord’s disclosures, Dome asserts, a person of ordinary skill would have been inclined to introduce hydrophilic cross-linking agents, instead of hydrophobic siloxane-based cross-linking agents, to offset the hydrophobicity of Tris, but Tanaka warned against this approach. As an alternative, Tanaka suggested designing a new amphiphilic or hydrophilic monomer to replace Tris altogether.

“[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious.” *KSR*, 550 U.S. at 416. A reference teaches away from a claimed invention when a person of ordinary skill, “upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). But “[t]he degree of teaching away will of course depend on the particular facts.” *Id.*; *see also id.* (“A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use.”). And “there is no rule that a single reference that teaches away will mandate a finding of nonobviousness.” *Medichem*, 437 F.3d at 1165; *see also KSR*, 550 U.S. at 421 (“Rigid preventative rules that deny factfinders recourse to common sense . . .

are neither necessary under our case law nor consistent with it.”). Additionally, just because “better alternatives” may exist in the prior art “does not mean that an inferior combination is inapt for obviousness purposes.” *In re Mouttet*, 686 F.3d 1322, 1334 (Fed. Cir. 2012) (citing *Gurley*, 27 F.3d at 553).

Here, Tanaka discloses potential disadvantages associated with using Tris-type monomers. It explains that, outside of certain unspecified limits, if hydrophilic monomers are copolymerized with hydrophobic Tris-type monomers to offset hydrophobicity, the copolymer “is liable to become opaque.” Tanaka col. 3 ll. 6–36. Tanaka explains that opacity is a “fatal defect” for the copolymer’s use as a material for contact lenses, and thus offsetting hydrophobic Tris-type monomers with hydrophilic monomers “is limited.” Tanaka col. 3 ll. 36–41. Tanaka does not further identify the mentioned limits, but it goes on to disclose an alternative for Tris-type monomers. *See* Tanaka col. 3 ll. 52–59.

The record, however, supports the district court’s finding that other prior art references disclose roadmaps on how to offset the disadvantages associated with using Tris-type monomers to obtain a material suitable for contact lenses.

Ellis acknowledges that “[i]t has been difficult to obtain high oxygen permeability while still maintaining other properties . . . when oxygen permeability is derived from the silicone content” in a polymer. Ellis col. 1 ll. 30–34. Ellis then teaches how to effectively overcome this difficulty without compromising the resulting material’s clarity. Ellis teaches several examples of using Tris with hydrophilic monomers in varying concentrations and concludes that “[i]n all cases, the polymers are optically clear and meet required standards of contact lenses.” Ellis col. 7 ll. 15–17; *see also id.* col. 5 l. 50 – col. 7 l. 13; *id.* col. 7 ll. 19–21. Ellis also discloses that “many variations

are possible within the scope of keeping the physical properties,” stating that “[f]or example, two or more siloxanyl alkyl ester monomers can be used instead of a single such monomer for that component of the system.” Ellis col. 7 ll. 30–36.

Gaylord similarly acknowledges the issues identified by Tanaka and then sets out a solution, one that does not compromise the resulting polymer’s use as a material for contact lenses. Gaylord teaches that “[w]hile some of the copolymers are inherently wettable by human tears, it may be necessary to improve the wettability of others.” Gaylord col. 5 ll. 39–41. For example, “wettability can be imparted to the copolymer by the addition of from about 0.1% to about 10% by weight of one or more hydrophilic monomers to the copolymerization mixture” or by other treatments, including corona discharge, oxidizing, or soaking in aqueous solutions. *Id.* col. 5 ll. 42–58. Gaylord also lists examples “illustrat[ing] the preparation and properties of copolymers containing varying proportions of a siloxanyl monomer, [MMA], and a hydrophilic monomer (hydroxyethyl methacrylate).” Gaylord col. 9 l. 67 – col. 10 l. 2. Many of these examples resulted in “transparent” materials. *See* Ellis col. 9 l. 66 – col. 10 l. 24.

The district court found that while Tanaka warns that constructing a lens with Tris-type materials can be difficult, the other two references plainly teach that Tris could be used effectively to make contact lenses. Accordingly, the district court concluded that a person of ordinary skill would not have been dissuaded from combining the prior art, particularly in light of Gaylord and Ellis. The record supports these factual findings.

While Dome’s argument that the claimed subject matter would not have been obvious in light of Tanaka’s disclosures is plausible, “[t]he burden of overcoming the district court’s factual findings is, as it should be, a heavy one.” *Polaroid Corp. v. Eastman Kodak Co.*, 789 F.2d

1556, 1559 (Fed. Cir. 1986). Our standard of review requires that we uphold the district court's factual findings on this point, rather than revisiting them de novo. In this case, the district court did not clearly err in finding a person of ordinary skill would have been motivated to combine the identified prior art to arrive at the claimed invention, notwithstanding Tanaka's disclosures regarding Tris-type compounds.

C

Dome also challenges the district court's handling of evidence relating to objective indicia of nonobviousness. Dome argues first that the district court erred by improperly shifting the burden onto Dome to prove nonobviousness once the Patent Office established a prima facie case of obviousness.

While we have held that a district court has erred "by making its finding that the patents in suit were obvious before it considered the objective considerations and by shifting the burden of persuasion to [the patentee]," *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1075 (Fed. Cir. 2012), the legal framework used by the district court in this case was not improper.

Before reaching its ultimate conclusion of obviousness, the district court first considered whether the Patent Office had demonstrated that a person of ordinary skill would have been motivated to combine the compounds recited in claim 1 of the '042 patent and that there would have been a reasonable expectation of success. The court also considered whether the prior art taught away from the claimed invention. After finding in favor of the Patent Office on these points, the court agreed with Dome that a product, the Boston IV contact lens, embodies claim 1 of the '042 patent and that the Boston IV contact lens achieved some commercial success. Nevertheless, the court found that the evidence relating to the Boston IV

contact lens was not particularly strong. Next, after considering the parties' arguments and making the relevant findings of fact, the court concluded that claim 1 of the '042 patent is obvious as a matter of law. Indeed, the court's opinion, when read as a whole, shows that the court considered and made factual findings on all evidence relating to objective indicia before reaching its ultimate conclusion on obviousness.

Dome also argues that the district court erred by refusing to consider Dome's proffer of evidence relating to objective indicia of nonobviousness. We have consistently stated that "all evidence pertaining to the objective indicia of nonobviousness must be considered before reaching an obviousness conclusion." *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1355 (Fed. Cir. 2013). The district court here did not refuse to consider Dome's evidence. Rather, the court found that Dome was entitled to a presumption that the commercial success of the Boston IV contact lens relates to the claimed invention. Nonetheless, the court found that the evidence was "not particularly strong." J.A. 57. The court also gave "little weight" to testimony relating to the reasons for the Boston IV contact lens's commercial success. J.A. 6 n.4. Moreover, the court found that Dome's own expert testified that the commercial success of the Boston IV contact lens was in part due to other economic and commercial factors not related to the allegedly novel aspects of the claimed invention. Dome does not challenge these findings.

After having accepted all evidence relating to the four *Graham* factors—including evidence relating to commercial success—the district weighed the evidence and then made findings of fact. Only after considering all of the evidence did the court reach its obviousness conclusion. Thus, we conclude that the court did not err in its consideration of the evidence relating to objective indicia of nonobviousness.

IV

We have considered Dome's remaining arguments and find them unpersuasive. Because the district court did not commit reversible error in its determination that the claimed subject matter would have been obvious to a person of ordinary skill during the relevant time period, we affirm.

AFFIRMED