When is a Patent Anticipated by Prior Art with an Overlapping Range?

Ineos USA LLC v. Berry Plastics Corp.
(Fed. Cir. April 16, 2015)

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Procedural History

- Appeal to the Fed. Cir. from U.S. District Ct. in Texas.
- District Court granted defendant Summary Judgment invalidating patent due to anticipation by prior art.
- Fed. Cir. Affirmed.

Overview of the Fed. Circuit's Rulings

- Claim requiring that composition be comprised of 0.05 to 0.5% by weight of at least one saturated fatty acid amide was anticipated by prior art, which overlapped the range because the patentee failed to explain how the claimed range was critical.
- Prior art anticipated specification for saturated fatty acid amide behenamide as a primary lubricant, because small genus was specific enough to anticipate the species.

The Parties

- Ineos USA LLC – plaintiff/patentee/appellant
  - Represented by Finnegan Henderson.
- Berry Plastics Corp (maker of bottle caps for Dasani) – defendant/appellee
  - Represented by Barnes & Thornburg.

Patent at Issue

- U.S. Patent No. 6,846,863 – held by Ineos
  - Directed to polyethylene-based compositions which can be used to form shaped products, such as screw caps for bottles, which incorporated a lubricant to optimize the cap's slip properties and to facilitate unscrewing of the cap.
  - The '863 specification described that its compositions have specific amounts of polyethylene, lubricants, and additives to help resolve bad order and flavor.

'863 Patent at Issue

1. Composition comprising at least [1] 94.5% by weight of a polyethylene with a standard density of more than 940 kg/m3,

[2] 0.05 to 0.5% by weight of at least one saturated fatty acid amide represented by CH3(CH2)nCONH2 in which n ranges from 6 to 28[,]

[3] 0 to 0.15% by weight of a subsidiary lubricant selected from fatty acids, fatty acid esters, fatty acid salts, mono-unsaturated fatty acid amides, polyols containing at least 4 carbon atoms, mono-or poly-alcohol monoethers, glycerol esters, paraffins, polysiloxanes, fluoropolymers and mixtures thereof, and

[4] 0 to 5% by weight of one or more additives selected from antioxidants, antacids, UV stabilizers, colorants and antistatic agents.

- *Brackets inserted by court for ease of reference.

The Dispute: Prior Art Anticipated Claim

- Ineos filed an infringement action against Berry Plastics.
- Berry moved for summary judgment on the grounds that the claims in the '863 patent are anticipated by prior art, including U.S. Patent No. 5,948,846.

The Prior Art Teachings

- The parties did not dispute that the '846 patent disclosed 94.5% by weight of a polyethylene with a standard density of more than 940 kg/m^3 as described in limitation 1 of claim 1 of the '863 patent.
- Also, there was no dispute that the '846 patent disclosed stearamide, which is a compound within the class of saturated fatty acid amides represented by $CH_3(CH_2)_nCONH_2$ in which n ranges from 6 to 28 ("primary lubricant") as described in limitation 2.

The Lower Court's Ruling

- '846 patent's disclosure of a lubricant, which could be stearamide, in amounts from 0.1 to 5 parts by weight, and more specifically of "at least 0.1 part by weight per 100 parts by weight of polyolefin, in particular of at least 0.2 parts by weight, quantities of at least 0.4 parts by weight being the most common ones" describes particular points (e.g., 0.1 part by weight) along with the broader disclosure of the full range (0.1 to 5 parts by weight).
- '846 patent's disclosure of stearamide in these amounts met limitation 2.

The Lower Court's Ruling Con't

- The subsidiary lubricant of limitation 3 and the additive of limitation 4 are optional in the claimed composition because limitations 3 and 4 set forth ranges beginning with 0%.
- '846 patent's disclosure of an optional subsidiary lubricant and an optional additive satisfied limitations 3 and 4. The court concluded that the '846 patent anticipates the asserted claims. Ineos appealed.

The Legal Standards Applied

- Summary judgment is appropriate when there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. Fed.R.Civ.P. 56(a).
- To anticipate a patent claim under 35 U.S.C. § 102:
  - "a reference **must** describe ... **each** and **every** claim limitation and enable one of skill in the art to practice an embodiment of the claimed invention without undue experimentation." *Ineos* at *2 (quoting *Am. Calcar, Inc. v. Am. Honda Motor Corp.*, 651 F.3d 1318, 1341 (Fed.Cir.2011)) (emphasis added).

Ineos' Arguments on Appeal

- '846 patent discloses no single species within the genus of claim 1.
- Although the '846 patent discloses stearamide—one of the primary lubricants of limitation 2—the '846 patent does not disclose or suggest that stearamide or any other primary lubricant "should be included as a lubricant in an amount between 0.05 and 0.5% by weight while entirely excluding or severely limiting any other lubricant to no more than 0.15% by weight."
- The '846 patent discloses ranges for amounts of lubricants, not particular individual point values.

Ineos' Arguments on Appeal Con't

- Since the ranges concerning the amounts of lubricants disclosed in the '846 patent only slightly overlap with the ranges of limitations 2 and 3 in claim 1 of the '863 patent, the '846 patent does not disclose these limitations.
- Ineos's offered testimony that the ranges claimed in the '863 patent are critical, raising material dispute of fact that should have precluded lower court from awarding summary judgment to Berry.

Berry's Defenses

- Description in the '846 patent of stearamide in amounts of "at least 0.1 part by weight per 100 parts by weight of polyolefin, in particular at least 0.2 parts by weight, quantities of at least 0.4 parts by weight being the most common ones" discloses **particular points** (i.e., 0.1, 0.2, and 0.4 parts by weight) within the range claimed in limitation 2 of claim 1 of the '863 patent (i.e., 0.05 to 0.5% by weight).
- Court correctly concluded that because the compositions of the '846 patent contain "one or more lubricating agents," the '846 patent discloses that a subsidiary lubricant is optional. Berry Plastics asserts that the court therefore correctly found that the '846 patent met limitation 3 of claim 1 of the '863 patent.

Berry's Defenses Con't

- Court did not err in declining to consider the purported criticality of the claimed ranges in limitations 2 and 3 because such inquiry is not necessary where, as here, the prior art discloses particular points within the later claimed range.

What did the Federal Circuit Decide?

- Affirmed District Court's invalidation of '863 patent based on anticipation

The Legal Rulings:

- Although generally a species can anticipate a genus; a genus does not necessarily anticipate a species.
- When a patent claims a range, that range is anticipated by a prior art reference if the reference discloses a point within the range. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 782 (Fed. Cir. 1985)
- If the prior art discloses its own range, rather than a specific point, then the prior art is only anticipatory if it describes the claimed range with sufficient specificity.
- "Sufficient specificity" means:
  - a reasonable fact finder could conclude that there is no reasonable difference in how the invention operates over the range. *Atofina v. Great Lakes Chemical Corp.*, 441 F.3d 991 (Fed Cir. 2006); *ClearValue, Inc. v. Pearl River Polymers*, Inc. 668 F.3d 1340, 1345 (Fed. Cir. 2012).

Federal Circuit's Rationale

- The major lubricant of limitation 2 overlapped within the **range** disclosed in the '846 patent.
- The '846 patent specification states:
  - The composition according to the invention includes the lubricating agent in a total quantity of ***at least*** 0.1 part by weight per 100 parts by weight of polyolefin, in particular of at least 0.2 parts by weight, quantities of at least 0.4 parts by weight being the most common ones; ***the total quantity of lubricating agents does not exceed*** 5 parts by weight, more especially 2 parts by weight, ***maximum values*** of 1 part by weight per 100 parts by weight of polyolefin being recommended.

Federal Circuit's Rationale Con't

- "At least" and "does not exceed" set forth corresponding minimum and maximum amounts for the primary lubricant. This portion of the specification clearly discloses ranges, not particular individual values.
  - "the disclosure of a range ... does not constitute a specific disclosure of the endpoints of that range."
- Federal Circuit held that District Court erred in concluding that the '846 patent discloses particular points within the range recited in limitation 2.

Federal Circuit's Rationale Con't

- Regardless of lower District Court's error, Berry still wins.
- Ineos failed to raise a genuine question of fact about whether the range claimed is critical to the operability of the invention.

Precedent on the definition of "Critical" – Atofina v. Great Lakes

- Finding that there was no anticipation: *Atofina v. Great Lakes Chemical Corp.*, 441 F.3d 991 (Fed.Cir.2006),
  - Fed. Cir. reversed the district court's finding of anticipation where the patent-in-suit claimed a temperature range that was critical to the operability of the invention and the range disclosed in the prior art was substantially different.
  - *Atofina* involved a patent claiming a method of synthesizing difluoromethane at a temperature between 330–450 °C - U .S. Patent No. 5,900,514
  - '514 patent and its prosecution history described the claimed temperature range as critical to the invention, and stated that the synthesis reaction would not operate as claimed at a temperature outside the claimed range.
  - The prior art at issue in *Atofina* disclosed a broad temperature range of 100–500 °C.

Precedent on the definition of "Critical" –Atofina v. Great Lakes

- Fed. Cir. held that the patent at issue was not anticipated because there was a "considerable difference" between the prior art's broad disclosure and the claimed "critical" temperature range, such that "no reasonable fact finder could conclude that the prior art describes the claimed range with sufficient specificity to anticipate this limitation of the claim."
- Evidence showed that a person of ordinary skill in the art would have expected the synthesis reaction to operate differently, or not all, outside of the temperature range claimed in the patent at issue.

Precedent on the definition of "Critical" – OSRAM v. Am. Induction

- Finding that there was no anticipation – *OSRAM Sylvania, Inc. v. Am. Induction Technologies, Inc.*, 701 F.3d 698, 701 (Fed. Cir. 2012)
  - Patentee argued that the claimed pressure range "less than 0.5 torr" was critical to the operation of its claimed lamp assembly.
  - Presented expert testimony and evidence supporting its assertion that the "less than 0.5 torr" limitation was "central to the invention claimed" and "lamp would operate differently at various points within the range disclosed" in the prior art reference at issue.
  - Federal Circuit emphasized "how one of ordinary skill in the art would understand the relative size of a genus or species in a particular technology is of critical importance."

Precedent on the definition of "Critical" – ClearValue v. Pearl River

- Finding of Invalidity Due to Anticipation: *ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1345 (Fed.Cir.2012).
  - *ClearValue* patent claimed a method "for clarification of water of raw alkalinity *less than or equal to 50 ppm* by chemical treatment."
  - Jury found ClearValue's patent not anticipated by prior art disclosing clarifying water with alkalinity of "150 ppm or less"
  - Federal Circuit reversed and held the patent invalid as anticipated.
    - ClearValue failed to argue that the claimed range was critical to the invention
    - NO EVIDENCE THAT claimed method would work differently within the prior art range of 150 ppm or less.
    - No evidence demonstrating any difference across the range and how the method would operate within the claimed range and within the range disclosed in the prior art.

Federal Circuit's Application of Facts to Legal Standard:

- Ineos did not raise a genuine question of fact about whether the range recited in limitation 2 is critical to the invention.
- Ineos failed to established that any of the properties of odor or taste would differ if the range from the prior art '846 patent was substituted for the range of limitation 2.

Ineos' Expert Testimony

- Ineos relied on inventor testimony stating that the range claimed in limitation 2 is critical to:
  - avoid unnecessary manufacturing costs and
  - the appearance of undesirable blemishes on the bottle caps

The Federal Circuit's Weight to Expert Testimony

- Expert testimony failed to established any relationship between avoided cost and prevention of undesirable blemishes, and the claimed invention's slip properties or elimination of odor and taste problems.
  - Method of manufacture claim was not at issue
- Ineos failed to address how claimed invention's slip properties or improved odor and taste properties would not have been expected based on the prior art.

Burden-shifting or not?

- Because a patent is presumed valid, an accused infringer bears the burdens of persuasion and production.
- By requiring that Ineos show how the '863 limitation was different from what was found in the prior art, the criticality rule *shifts the burden* of production, placing it on Ineos to prove that the '846 reference does *not* contain the disputed limitation.
- But is it burden shifting? Or is it an articulation of the anticipation rule? That is, a prior art reference containing a range that overlaps with the claimed range anticipates unless the patent holder can prove criticality.
- This perspective seemingly places the burden of a factual element of the anticipation inquiry on the patent holder.

Federal Circuit Ruled That a Small Genus Can Anticipate a Species

- Federal Circuit affirmed that the '846 patent anticipates dependent claim 3 of the '863 patent.
- Claim 3 of the '863 patent recites that the primary lubricant is the saturated fatty acid amide behenamide.
- Held:
  - The specification of the '846 patent discloses a genus of saturated fatty acid amides and states that good results are achieved with the narrower genus of saturated fatty acid amides having 12 to 35 carbon atoms.
  - Verbatim disclosure of a particular species is not required in every case for anticipation because disclosure of a small genus can be a disclosure of each species within the genus."

Federal Circuit Ruled That a Small Genus Can Anticipate a Species Con't

- Held:
  - Behenamide fell within the narrower preferred genus because it is a saturated fatty acid amide with 22 carbon atoms.
  - Federal Circuit agreed with Berry Plastics' assertion that behenamide is a common lubricating agent, and supported that contention with an expert declaration stating that behenamide is a common fatty acid amide used in the packaging industry.

Ineos' Response to Genus Argument

- Ineos failed to dispute that behenamide fell within the narrow genus of saturated fatty acid amides having 12 to 35 carbon atoms.
- Ineos failed to provide detailed information on how large this genus is to support its contention that the genus does not disclose behenamide.
- Ineos's inventor declaration did not challenge that behenamide is not a common lubricant within this species.

Practice Tips

- Ineos' inventor should have testified that ranges in their patent was critical to the operability of the invention, meaning it improved odor and taste.
- Evidence from Ineos' that showed certain points within the prior art range did not operate as well would overcome the anticipation rejection.
- To overcome an anticipation rejection, it is important to show how large the genus is of the prior art.

Questions?

Thank you.