

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

---

**HIP, INC.,**  
*Plaintiff-Appellee*

v.

**HORMEL FOODS CORPORATION,**  
*Defendant-Appellant*

---

2022-1696

---

Appeal from the United States District Court for the District of Delaware in No. 1:21-cv-00546-CFC, Chief Judge Colm F. Connolly.

---

Decided: May 2, 2023

---

JERRY ROBIN SELINGER, Patterson & Sheridan LLP, Dallas, TX, argued for plaintiff-appellee. Also represented by KYRIE CAMERON, EDGAR NEIL GONZALEZ, BARDEN TODD PATTERSON, Houston, TX.

TIMOTHY MICHAEL O'SHEA, Fredrikson & Byron, PA, Minneapolis, MN, argued for defendant-appellant. Also represented by LUKE P. DE LEON, BARBARA MARCHEVSKY, KURT JOHN NIEDERLUECKE.

---

Before LOURIE, CLEVINGER, and TARANTO, *Circuit Judges*.

LOURIE, *Circuit Judge*.

Hormel Foods Corporation (“Hormel”) appeals from a decision of the United States District Court for the District of Delaware holding that David Howard should be added as a joint inventor on its U.S. Patent 9,980,498 (the “498 patent”) pursuant to 35 U.S.C. § 256. *See HIP, Inc. v. Hormel Foods Corp.*, No. 21-cv-546 (D. Del. Apr. 4, 2022), Dkt. 53 (“Final Judgment”) at J.A. 1–2, Dkt. 61 (“Trial Tr. III”) at J.A. 3–13, 831–1045, Dkt. 63 (“Trial Tr. V”) at J.A. 14–42, 1188–1294. For the reasons provided below, we reverse.

#### BACKGROUND

Hormel owns the ’498 patent, which is directed to methods of precooking bacon and meat pieces. Specifically, the ’498 patent claims a two-step method that involves a first preheating step using a microwave oven, infrared oven, or hot air, and a second, higher-temperature cooking step. The first step creates a layer of melted fat around the meat pieces, which protects the meat from condensation that may wash away salt and flavor during cooking. The second step prevents the charred, off flavor associated with cooking the meat pieces at higher temperatures. *See* ’498 patent, col. 3 ll. 52–61.

The ’498 patent has three independent claims, claims 1, 5, and 13. Claims 1 and 5 are relevant on appeal.

Claim 1 reads as follows:

1. A method of making precooked bacon pieces using a hybrid cooking system, comprising:

preheating bacon pieces with a microwave oven to a temperature of 140° F. to 210° F. to create preheated bacon pieces, the preheating forming a barrier with melted fat around the preheated bacon pieces and reducing an

amount of condensation that forms on the preheated bacon pieces when transferred to a cooking compartment of an oven, the barrier preventing any condensation that forms from contacting the preheated bacon pieces under the melted fat and diluting flavor in the preheated bacon pieces;

transferring the preheated bacon pieces to the cooking compartment of the oven, the cooking compartment heated with steam from an external steam generator, the external steam generator being external to the cooking compartment, the steam being injected into the cooking compartment and being approximately 400° F. to 1000° F. when the steam leaves the external steam generator, the cooking compartment including internal surfaces, the steam assisting in keeping the internal surfaces at a temperature below 375 °F. thereby reducing off flavors during cooking in the cooking compartment; and

cooking the preheated bacon pieces in the cooking compartment to a water activity level of 0.92 or less to create precooked bacon pieces.

*Id.* col. 9 ll. 23–48 (emphasis added).

Claim 5 reads as follows:

5. A method of making precooked meat pieces using a hybrid cooking system, comprising:

preheating meat pieces in a first cooking compartment using a preheating method selected from the group consisting of a microwave oven, an infrared oven, and hot air to a temperature of at least 140° F. to create preheated

meat pieces, the preheating forming a barrier with melted fat around the preheated meat pieces and reducing an amount of condensation that forms on the preheated meat pieces when transferred to a second cooking compartment, the barrier preventing any condensation that forms from contacting the preheated meat pieces under the melted fat and diluting flavor in the preheated meat pieces;

transferring the preheated meat pieces to the second cooking compartment, the second cooking compartment heated with an external heating source, the external heating source being external to the second cooking compartment, the second cooking compartment including internal surfaces, the external heating source assisting in keeping the internal surfaces at a temperature below a smoke point of fat from the meat pieces thereby reducing off flavors during cooking in the second compartment; and

cooking the preheated meat pieces in the second cooking compartment to a water activity level of 0.92 or less to create precooked meat pieces.

*Id.* col. 9 l. 57–col. 10 l. 17 (emphasis added).

In early 2005, Hormel embarked on a project to improve on its microwave cooking process for precooked bacon. Appellant’s Br. 7. Then, in July 2007, Hormel planned to meet with David Howard of Unitherm Food Systems, Inc. (“Unitherm”) to discuss the products and processes that Hormel was developing, as well as to discuss Unitherm’s cooking equipment. Appellant’s Br. 8 (citing J.A. 1651). Unitherm, now HIP, was a company that

produced food safety and thermal processing equipment. J.A. 1515.

Accordingly, Howard and Tom Van Doorn, both of Unitherm, met with Hormel representatives in July 2007 and during the subsequent months. Appellant's Br. 9 (citing J.A. 1510–1547). The parties eventually entered into a joint agreement to develop an oven to be used in a two-step cooking process. J.A. 1682, 1692. In December 2007, Hormel conducted pork loin testing relating to color development. Appellant's Br. 15 (citing J.A. 771), Appellees' Br. 12. During this testing, Hormel used both an infrared oven and a more conventional spiral oven. J.A. 1719–20. Howard later alleged that it was during these meetings and testing process that he disclosed the infrared preheating concept at issue on appeal. *See* Trial Tr. V 1151:3–7, J.A. 35.

In January 2008, Hormel conducted additional bacon testing using Unitherm's mini spiral test oven. Appellant's Br. 16 (citing J.A. 775, 1723). After experiencing problems with the spiral oven and testing at Unitherm's facility, Hormel leased the oven and moved it to its own research and development facility to continue testing. Appellant's Br. 17 (citing J.A. 777). Subsequent testing revealed that turning off internal electrical heating elements in the oven solved the charred, off flavor of the bacon, Appellant's Br. 19 (citing J.A. 684, 792), and preheating the bacon with a microwave oven prevented condensation from washing away the salt and flavor, Appellant's Br. 20 (citing J.A. 807). That testing resulted in a two-step cooking process, the first step involving preheating the bacon and the second step involving cooking the meat in a superheated steam oven. Appellant's Br. 20. Hormel filed a non-provisional patent application for the two-step cooking process in August 2011, listing Brian J. Srsen, Richard M. Herreid, James E. Mino, and Brian E. Hendrickson as joint inventors. J.A. 52. The application issued in May 2018 as the

'498 patent. The '498 patent names the four inventors, all of whom assigned their interests in the patent to Hormel.

In April 2021, HIP sued Hormel in the United States District Court for the District of Delaware, alleging that Howard was either the sole inventor or a joint inventor of the '498 patent. HIP argued that Howard contributed to at least one of the following: (1) using superheated steam at a level of 90% or more in claims 3 and 12; (2) heating the internal surfaces of the oven to a temperature less than 375° F. in claim 1; (3) preheating by hot air in claim 5; and/or (4) preheating with an infrared oven in claim 5.

After a bench trial, the district court determined that Howard was not the sole inventor of the '498 patent, Trial Tr. III 896:9–13, J.A. 11, but that he was a joint inventor, based solely on his alleged contribution of the infrared preheating in claim 5, Trial Tr. V 1153:3–5, J.A. 37. The court held that the infrared preheating concept in claim 5 was significant based on the differences between independent claim 1 and independent claim 5 and that HIP established that Howard's testimony was corroborated by Van Doorn's testimony, by the pork loin testing data, and by testimony from three Hormel inventors stating that they had not conceived of the preheating with an infrared oven limitation. Trial Tr. V 1150–53, J.A. 34–37.

In summary, the district court concluded that Howard, although not the sole inventor of the '498 patent, was a joint inventor, having contributed the preheating with an infrared oven concept in independent claim 5. The court ordered the United States Patent and Trademark Office to add David Howard as a joint inventor on the '498 patent and to issue a Certificate of Correction accordingly. Final Judgment at 1–2, J.A. 1–2. Hormel appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

## DISCUSSION

Hormel raises two issues on appeal. First, Hormel contends that the district court erred in holding that David Howard is a joint inventor of the '498 patent because the alleged contribution of preheating with an infrared oven was well known and part of the state of the art and because it was not significant when measured against the scope of the full invention. Second, Hormel contends that the court erred in holding that HIP met its burden of establishing by clear and convincing evidence that David Howard is a joint inventor of the '498 patent because Howard's testimony was insufficiently corroborated. We address each argument in turn.

"Inventorship is a question of law" that we review "without deference" to the district court. *Gen. Elec. Co. v. Wilkins*, 750 F.3d 1324, 1329 (Fed. Cir. 2014). We review facts underlying the inventorship question for "clear error." *Id.* The burden of proving that an individual should have been added as an inventor to an issued patent is a "heavy one," *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1349 (Fed. Cir. 1998) (quoting *Garrett Corp. v. United States*, 422 F.2d 874, 880 (Ct. Cl. 1970)), and "the issuance of a patent creates a presumption that the named inventors are the true and only inventors," *Gen. Elec. Co.*, 750 F.3d at 1329. Thus, an alleged joint inventor must prove a claim of joint inventorship by "clear and convincing evidence." *Hess v. Advanced Cardiovascular Sys., Inc.*, 106 F.3d 976, 980 (Fed. Cir. 1997).

To qualify as joint inventor, a person must make a significant contribution to the invention as claimed. *Fina Oil & Chem. Co. v. Ewen*, 123 F.3d 1466, 1473 (Fed. Cir. 1997). The parties here frame their arguments using the three-part test articulated in *Pannu*, 155 F.3d at 1351. HIP argues that David Howard was a joint inventor because he (1) contributed in some significant manner to the conception of the invention; (2) made a contribution to the claimed

invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention; and (3) did more than merely explain to the real inventors well-known concepts and/or the current state of the art. *Id.*

Hormel contends that the district court erred in holding, under the third *Pannu* factor, that David Howard is a joint inventor of the '498 patent because the alleged contribution of preheating with an infrared oven was well known and part of the state of the art. Hormel contends that Howard's alleged contribution to claim 5, preheating meat pieces with an infrared oven, was disclosed in a prior printed publication, U.S. Patent App. Pub. 2004/0131738 ("Holm"), which, Hormel argues, the court erred in failing to consider. Hormel contends that Holm is directed to a method and apparatus for browning and cooking food products with steam, expressly providing that one of the cooking sources can be an infrared oven. Hormel also argues that its expert testimony established that Holm's browning is preheating, and thus Holm taught using an infrared oven to preheat meat pieces three years before Howard's and Hormel's 2007 discussions. Hormel asserts that the court erred in failing to consider Holm and its disclosure, and instead only looked to the claim language in determining whether preheating with an infrared oven reflected the state of the art. Hormel further asserts that HIP's suggestion that Hormel had an obligation to prove that Holm's disclosure was commercialized, described in a marketing or sales brochure, or described in a textbook is not required in order to show that infrared preheating was well known.

Hormel further argues that the district court failed to analyze the significance of the alleged contribution in light of the full invention (the second *Pannu* factor) and also erred in its conclusion that the infrared preheating language in claim 5 was significant (the first *Pannu* factor). Hormel asserts that the court's findings that Howard was not the sole inventor make it clear that he did not



contribute to the overall conception of the claimed method, but at most suggested the use of a piece of equipment. Hormel concludes that that was not a significant contribution, and further that there is no indication that infrared preheating solved any specific problem in the field of the '498 patent. Hormel notes that the specification of the '498 patent mentions infrared ovens only once, in contrast to microwave ovens, which are mentioned throughout the specification, including in the figures. Hormel also argues that HIP did not put forward any evidence of the significance of Howard's contributions. Hormel finally asserts that the court erred in its claim differentiation analysis between claim 1, which does not include the infrared preheating limitation, and claim 5, which does, because infrared preheating is not what made claim 5 patentable. Hormel concludes that the mere inclusion of the infrared oven language in a claim is not sufficient to label that contribution significant.

HIP responds that the district court did not err in determining that Howard's infrared preheating contribution provided more than a well-known concept in the current state of the art. HIP asserts that Hormel attempts to improperly equate information that is well known in the art with anything in the prior art, however obscure. HIP contends that Holm is an obscure publication that was never commercialized and had never been described in a marketing or sales brochure or in a textbook. The infrared preheating claim limitation, HIP argues, does not become current state of the art merely because it is mentioned in a single patent publication. HIP also argues that its inventor testimony established that infrared preheating was not the state of the art.

HIP further responds that the district court did not err in determining that Howard's infrared preheating contribution was not insignificant in view of the whole invention (the second *Pannu* factor). HIP also argues that the court did not err in determining that Howard contributed in

some significant way to the invention (the first *Pannu* factor), further noting that Hormel did not address that finding in its briefing. HIP argues that Hormel improperly attempts to frame the inquiry under the third *Pannu* factor as one of nonobviousness. HIP also contends that the district court did not err in comparing the claim language in claims 1 and 5 and determining that the added infrared preheating in claim 5 was significant.

We agree with Hormel that Howard was not a joint inventor of the invention claimed in the '498 patent. Under the second *Pannu* factor, the inventor must “make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention.” *Pannu*, 155 F.3d at 1351. Here, we find that Howard’s alleged contribution of preheating meat pieces using an infrared oven is “insignificant in quality,” *id.*, to the claimed invention. Howard’s alleged contribution, preheating with an infrared oven, is mentioned only once in the '498 patent specification as an alternative heating method to a microwave oven. '498 patent, col. 5 ll. 40–42 (“Preheating the sliced bacon with a microwave oven, or other suitable heating methods such as infrared or hot air, prior to fully cooking the sliced bacon . . .”). Further, the alleged contribution is recited only once in a single claim of the '498 patent, in a Markush group reciting a microwave oven, an infrared oven, and hot air. *Id.* col. 9 ll. 57–62. In fact, independent claims 1 and 13 only recite a method of making precooked bacon pieces (claim 1) or meat pieces (claim 13) using a hybrid cooking system comprising preheating meat pieces with a microwave oven and do not recite preheating with an infrared oven. *Id.* col. 9 ll. 23–25; *id.* col. 10 ll. 38–40.

In contrast to the insignificant disclosure of preheating with an infrared oven, preheating with microwave ovens, and microwave ovens themselves, feature prominently throughout the specification, claims, and figures. The brief summary of the invention mentions preheating with a

microwave oven, but never mentions infrared preheating. '498 patent, col. 2 l. 28. As discussed above, independent claims 1, 5, and 13 recite preheating bacon pieces (claim 1) or meat pieces (claims 5 and 13) with a microwave oven. *Id.* col. 9 ll. 25, 61; *id.* col. 10 l. 40. The specification also repeatedly refers to preheating with a microwave oven, including in the background of the invention (“One typical way of making precooked bacon is to use microwave heating,” *id.* col. 1 ll. 19–22) and in the detailed description of the invention (“To address the dilution of the cure flavor, the inventors of the present invention determined that by including a preheating step using a microwave oven, the cold slices of bacon were heated enough to reduce the amount of condensation that formed on the slices of bacon . . .,” *id.* col. 3 ll. 52–56).

Furthermore, the examples and corresponding figures employ procedures using preheating with a microwave oven, but not preheating with an infrared oven. In fact, not one example describes preheating with an infrared oven. Example 1 discloses preheating using a microwave oven. *Id.* col. 5 l. 63. Example 2 uses three methods to preheat the bacon slices: a microwave oven, a superheated steam oven, and a hybrid system using both a microwave oven and a steam oven, consistent with the claimed invention. *Id.* col. 6 ll. 4–21. Strikingly, not a single method of preheating used in Example 2 is an infrared oven. Example 3 uses four preheating methods, including a microwave/superheated steam system, which, the specification discloses, “is the system in accordance with the present invention.” *Id.* col. 6 ll. 23–40. Examples 4 and 5 also use microwave ovens and do not use infrared ovens. *Id.* col. 6 ll. 47–49 (using a hybrid system with a microwave oven); *id.* col. 7 ll. 4–6, 16–18 (same).

The figures further emphasize the centrality of the microwave oven, and the corresponding insignificance of the infrared oven, to the current invention. Figures 2–5 present the results of the microwave-oven-based examples,

with none indicating the use of an infrared preheating step. Finally, Figure 1, a schematic diagram of a hybrid bacon cooking system according to the principles of the claimed invention, explicitly discloses a “microwave oven 40” as the instrument used in the precooking step.

In summary, the specification, claims, and figures all illustrate that Howard’s alleged contribution of preheating the bacon or meat pieces with an infrared oven is “insignificant in quality” when “measured against the dimension of the full invention,” *Pannu*, 155 F.3d at 1351, which squarely focuses on a preheating step using a microwave oven. Thus, we conclude that Howard is not a joint inventor of the ’498 patent.

We need not comment on the other *Pannu* factors, as the failure to meet any one factor is dispositive on the question of inventorship. *Pannu*, 155 F.3d at 1351 (stating that a joint inventor must contribute in a significant manner to the conception or reduction to practice of the invention, make a contribution to the invention that is not insignificant, *and* do more than explain well-known concepts or the current state of the art). We therefore need not address Hormel’s arguments that the alleged disclosure of infrared preheating in Holm constitutes a well-known concept and/or the state of the art. We also need not address Hormel’s arguments on whether the district court erred in its conclusion that the infrared preheating language in claim 5 was a significant contribution to the conception or reduction to practice of the invention (*i.e.*, the first *Pannu* factor).

Finally, we need not reach the question of corroboration. Howard’s alleged contribution of infrared preheating was insignificant under *Pannu*, so the question of corroboration of evidence regarding Howard’s alleged contribution is rendered moot.

HIP, INC. v. HORMEL FOODS CORPORATION

13

CONCLUSION

We have considered the parties' remaining arguments, but we find them unpersuasive. For the foregoing reasons, the decision of the district court is reversed.

**REVERSED**