

# United States Court of Appeals for the Federal Circuit

99-1421

TALBERT FUEL SYSTEMS PATENTS CO.,

Plaintiff-Appellant,

v.

UNOCAL CORPORATION, UNION OIL COMPANY OF CALIFORNIA,

Defendants-Appellees,

and

TOSCO CORPORATION,

Defendant-Appellee.

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Appealed from: United States District Court for the Central District of California.

Judge Consuelo Bland Marshall

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

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DECIDED: January 8, 2002

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Before NEWMAN, MICHEL, and RADER, Circuit Judges.

NEWMAN, Circuit Judge.

Talbert Fuel Systems Patents Co. is the owner of United States Patent No. 5,015,356 (the '356 patent) entitled "Hydrocarbon Fuel Systems," inventor William Talbert. Defendant Union Oil Company of California (herein "Unocal" collectively with Unocal Corporation) owns United States Patent No. 5,288,393 (the '393 patent) entitled "Gasoline Fuel." Defendant Tosco is licensed under the '393 patent. Talbert appeals the district court's grant of summary judgment of noninfringement. Talbert also appeals the dismissal of its requested interference proceeding with the '393 patent under 35 U.S.C. §291. We affirm the district court's dispositions.

## DISCUSSION

Talbert's '356 patent is directed to certain reformulated gasolines that reduce emissions while preserving key gasoline performance parameters. Gasolines are produced by refining crude petroleum, a process that includes distilling (fractionating) hydrocarbon mixtures that have been obtained by treating petroleum in various ways not here relevant. The characteristics of the resultant gasoline fractions are affected by their hydrocarbon composition. Conventional gasolines are complex mixtures of hydrocarbons having mostly four to twelve carbon atoms. Gasoline hydrocarbons are conventionally described in three groups or "cuts" based on the number of carbon atoms in the hydrocarbon molecules:  $C_4$  and  $C_5$  (low-end or front-end) hydrocarbons,  $C_6$  to  $C_{10}$  (middle-cut), and  $C_{11}$  and  $C_{12}$  (high-end). The "cut" relates to the separation of hydrocarbon streams in the fractionation process.

The low-end and high-end hydrocarbons are of concern as sources of pollution, for low-end hydrocarbons vaporize readily and can enter the atmosphere uncombusted, for example at the gas pump, and high-end hydrocarbons may be incompletely combusted in the engine, thus polluting the atmosphere through the exhaust. It was known that reduction of these components in gasoline is environmentally desirable. However, low-end hydrocarbons aid effective ignition, and high-end hydrocarbons provide fuel energy. Talbert's '356 patent is directed to reformulated gasolines that are substantially free of both low-end and high-end hydrocarbons, but with a calculated amount of low-end hydrocarbons added or retained as a "priming agent" to facilitate ignition.

## Claim Construction

Claim construction is a matter of law, see Markman v. Westview Instruments, Inc., 52 F.3d 967, 970-71, 34 USPQ2d 1321, 1322 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996), and receives plenary review on appeal. Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1172 (Fed. Cir. 1998) (en banc).

Claim 1 of the '356 patent is representative, with emphases added to indicate the terms whose construction is material to the issues of infringement:

1. A low Reid Vapor Pressure liquid gasoline for use in a standard carbureted internal combustion engine; said gasoline comprising a priming agent and a hydrocarbon mixture having an intermediate carbon range relative to C<sub>4</sub>-C<sub>12</sub> fuel; said intermediate carbon range consisting essentially of C<sub>6</sub>-C<sub>10</sub> hydrocarbons with C<sub>9</sub> and C<sub>10</sub> paraffinic hydrocarbons being present in the mixture; said gasoline having a boiling point range of 121°-345°F at 1 atmosphere pressure; and said priming agent consisting of a hydrocarbon selected from the group consisting of C<sub>4</sub> and C<sub>5</sub> hydrocarbons and mixtures thereof and said priming agent being present in a minimum effective amount for raising the front end volatility of the gasoline to a minimum level for cold engine starting with said minimum effective amount being less than that required for C<sub>4</sub>-C<sub>12</sub> gasoline.

The district court focused on the boiling point range of 121°F-345°F. The '356 patent explains that 121°F is the boiling point of the lowest-boiling C<sub>6</sub> component, 2,2-dimethylbutane (C<sub>6</sub>H<sub>14</sub>), and 345°F is the boiling point of decane, C<sub>10</sub>H<sub>22</sub>, the highest-boiling C<sub>10</sub> component. The district court construed claim 1 as limited to gasolines having a final boiling point of 345°F, and excluding gasolines having a higher final boiling point.

Talbert argues that the district court erred in defining 345°F as a final boiling point, pointing out that the word "final" does not appear in claim 1. Talbert argues that some higher boiling hydrocarbons can be present, such as C<sub>11</sub> and C<sub>12</sub> hydrocarbons, due to the generally recognized imprecision of the refining process, which does not produce gasolines of specific hydrocarbon composition with precise end points. Talbert explains that refinery distillation produces cuts of distillate which may include hydrocarbon components that when pure boil above or below the range of the refinery cut. The '393 patent explains that a refinery stream cut at 345°F will contain "a small amount" of hydrocarbons boiling above 345°F and having 11-12 carbons.

Talbert states that the claim term "consisting essentially of C<sub>6</sub>-C<sub>10</sub>" recognizes that gasoline in the 121°-345°F boiling range contains mostly C<sub>6</sub> to C<sub>10</sub> hydrocarbons, but that some hydrocarbons outside that range can be present. Talbert argues that since some hydrocarbons higher than C<sub>10</sub> can be present, they necessarily would raise the final boiling point of the gasoline above 345°F. Talbert argues that claim 1 is not limited to gasolines whose final boiling point is 345°F because even traces of hydrocarbons above C<sub>10</sub> will raise the final boiling point above 345°F, without significantly altering the fuel's performance for standard carbureted engines. Thus Talbert urges that when reading the claim as a whole including its preamble, taking cognizance of the imprecision of refinery methods, a claim construction is required that does not limit the boiling point of the gasoline to 345°F.

The basic tools of claim construction are the words of the claim, understood in light of the specification

and the prosecution history, in accordance with the usage and knowledge in the field of the invention. A term of technical art, unless defined otherwise, by the patentee, has the meaning by which it would be understood by persons experienced in the field of the invention. See, e.g., Multiform Dessicants v. Medzam, 133 F.2d 1473, 1477, 45 USPQ2d 1429, 1432 (Fed. Cir. 1998).

The district court, rejecting Talbert's proposed construction, ruled that claim 1 is limited to gasolines whose final boiling point is 345°F. In doing so, the district court focused on the "explicit limitation" in the clause "said gasoline having a boiling point range of 121°-345°F." We agree with the district court that the plain meaning of a boiling point range that is used to define a composition and distinguish it from other compositions is that the range limits the composition to that stated in the claim, and that compositions of a different boiling range are not covered by the claim. While the signal "consisting essentially of" allows for the presence of small amounts of components outside of the designated paraffinic C<sub>6</sub>-C<sub>10</sub> hydrocarbons, the boiling range of 121°-345°F is designated as describing the entire claimed gasoline. The phrase "consisting essentially of" thus cannot negate the limiting effect of the claimed temperature range of 121°-345°F, a limitation added in acquiescence to the examiner's requirement for specificity. Thus, Talbert's argument that the recited range does not exclude gasolines with a higher upper temperature is untenable.

During prosecution Talbert stressed that 345°F was the "final boiling point" for standard carbureted gasoline as well as for the gasifier gasoline of Talbert's original application. Talbert told the examiner: "Furthermore, it will be noted that applicant's fuel which contains C<sub>9</sub> and C<sub>10</sub> hydrocarbons has a final boiling point of 345° which corresponds to the boiling point of C<sub>10</sub> paraffinic hydrocarbon." Although Talbert argues that this statement was not intended to limit the boiling point of the claimed gasoline, but simply to highlight that the newly added description "paraffinic hydrocarbons" was not new matter under 35 U.S.C. §112, Talbert consistently stated during prosecution that its fuel has a final boiling point of 345°F.

Talbert also relied on the 345°F upper limit to distinguish various references during prosecution of the '356 application. For example, in discussing Hamilton Patent No. 3,002,917, Talbert stated that "the temperature range of the boiling points of the hydrocarbons of the gasoline of the presently claimed invention is between 96.8° and 345°F. There is absolutely no suggestion of such a gasoline composition in the Hamilton reference." Talbert also argued that Hamilton "teaches away from [the claimed] fuel by providing for a fraction having a boiling range up to 390°F (column 1, lines 42-43). This fraction is not the same as, nor equivalent to, that which is the subject of applicant's composition claims." Talbert also stated that "fuel having hydrocarbon components with boiling points above those claimed" would function in a manner that "completely negate[s] an important characteristic of the composition of the invention." Although Talbert now argues that Hamilton's high-octane aviation gasoline differs in several ways from that of Talbert, and that Talbert was not required to recite all the differences from Hamilton during prosecution, nonetheless Talbert emphasized the difference in boiling point ranges as the distinction on which he premised patentability.

Again, in distinguishing the Schulze 2,409,157 patent, Talbert stressed his "final boiling point of 345° which corresponds to the boiling point of C<sub>10</sub> paraffinic hydrocarbon," and also the limitation of the C<sub>9</sub>-C<sub>10</sub> hydrocarbons to paraffinic hydrocarbons. Talbert argues that Schulze is directed to an aviation gasoline containing a high proportion of aromatic hydrocarbons, and that Schulze was distinguished by Talbert's inclusion of the paraffinic limitation in the claims. While that is an accurate description of the prosecution, Talbert also emphasized, for Schulze as well as for Hamilton, that 345°F marked the upper boiling point of the Talbert claimed gasoline. Even if such a precise limit was not necessary for patentability, as Talbert now argues, it is explicitly stated in the claims. Thus we confirm the district court's conclusion that the upper boiling temperature limit for the gasoline defined in claim 1 is 345°F.

Talbert states that this claim construction is incorrect because it is inoperable. We agree that a

construction that renders the claimed invention inoperable should be viewed with extreme skepticism. See generally Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1557, 37 USPQ2d 1609, 1617 (Fed. Cir. 1996) ("When claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity."). However, Talbert did not demonstrate inoperability or provide any basis for judicially interpreting the claim to adjust the temperature range that Talbert states is the inoperable limitation.

Talbert also states that the district court's construction of the claim excludes the preferred embodiment. See Hoechst Celanese Corp. v. BP Chem. Ltd., 78 F.3d 1575, 1581, 38 USPQ2d 1126 (Fed. Cir. 1996) ("it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way"). Again, Talbert has not supported this argument. It does not contradict the specification's teaching that refinery distillations are imprecise, to apply the specification's teaching and the prosecution history's argument that the upper temperature limit of the gasoline is 345°F.

We confirm the district court's claim construction. On this construction Talbert conceded that there was not literal infringement; we have been directed to no contradiction of Unocal's statements that its production records show "true boiling point endpoints ranging from 373.8°F up to 472.9°F."

## The Doctrine of Equivalents

The district court granted Unocal's summary judgment motion that there was no infringement under the doctrine of equivalents. Summary judgment may be granted on the factual question of equivalency when the nonmovant cannot prevail, even when resolving disputed facts and drawing all factual inferences in its favor. See EMI Group v. Intel Corp., 157 F.3d 887, 891, 48 USPQ2d 1181, 1184 (Fed. Cir. 1998). The district court ruled that Talbert had "surrendered claims to a fuel with a boiling point in excess of 345°," and thus that Talbert was estopped to reach a fuel with a higher boiling range, under the doctrine of equivalents.

As we have discussed, to overcome the Hamilton reference Talbert argued that the Hamilton gasoline, a high-octane aviation fuel having a boiling range up to 390°F, is "not the same as, nor equivalent to" the claimed gasoline. Talbert states that this argument concerning Hamilton does not support a surrender of all higher boiling gasolines. Talbert states that the 121°-345°F temperature range was included in response to the examiner's requirement for specificity, not to overcome prior art. However, the prosecution record shows that Talbert relied on this temperature specificity for patentability purposes. See Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 520 U.S. 17, 30 (1997). We agree with the district court that Talbert is estopped to reach, by way of equivalency, Unocal's gasoline having a significantly higher boiling range. See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 56 USPQ2d 1986 (Fed. Cir. 2000) (en banc), cert. granted, 121 S. Ct. 2519 (No. 00-1543) (U.S. June 18, 2001).

The grant of summary judgment of noninfringement under the doctrine of equivalents is affirmed.

## The Requested Interference Proceeding

Talbert states that it disclosed its invention to Unocal in 1989, that Unocal evaluated the invention and stated that it was not interested, and then a year later filed its own patent application (which issued as the '393 patent) on what Talbert states is substantially the same invention. The '393 patent's claim 81 follows,

edited to include the limitations of the claims from which it depends:

81. An unleaded gasoline fuel [suitable for combustion in a spark ignition automotive engine, said fuel having an octane value of at least 92, a 50% D-86 distillation point no greater than 200°F, and a Reid Vapor Pressure no greater than 7.0 psi] and a 90% D-86 distillation point no greater than 300°F.

Talbert sought resolution in the district court of whether claim 81 of the Unocal '393 patent and claim 1 of the Talbert '356 patent are directed to the same invention, and a declaration of priority of invention in accordance with the procedures of 35 U.S.C. §291:

§291 The owner of an interfering patent may have relief against the owner of another by civil action, and the court may adjudge the question of the validity of any of the interfering patents, in whole or in part. The provisions of the second paragraph of section 146 of this title shall apply to actions brought under this section.

When patents are deemed "interfering" under §291, the district court determines priority of invention and may declare invalid any claim that loses the priority determination. Thus the necessary predicate to an interference under §291 is identity of the invention as claimed by each party. See Advance Transformer Co. v Levinson, 837 F.2d 1081, 1084, 5 USPQ2d 1600, 1602 (Fed. Cir. 1988) ("interfering patents are patents that claim the same subject matter").

The district court denied Talbert's request for a §291 interference, on the ground that the inventions are not the same. The court found that the challenged claims of Unocal's '393 patent do not state a similar boiling point limit, and that "the '393 patent's specific olefin and paraffin limitations further distinguish it from the composition prescribed by the '356 patent." Thus the district court found that no interference existed.

Talbert argues that the '356 claims should not be read to include a temperature restriction; this argument fails, as we have discussed. Talbert also argues that Talbert's claim 1 and Unocal's claim 81 define the same gasoline, but simply recite different characteristics. For example, Talbert states that Unocal's claimed properties of a 50% distillation point at or below 200°F, a 90% distillation point at or below 300°F, and a Reid Vapor Pressure no greater than 7.0, also exist in Talbert's claimed gasoline. Unocal in turn argues that several of the limitations in Talbert's claim 1 do not apply to Unocal's claim 81, such as the temperature limit of 345°F and the recitation of paraffin hydrocarbons. Unocal maintains that the properties stated in Unocal's claim 81 are not inherent in the gasoline of Talbert's claim 1 because gasoline covered by claim 1 will not always possess the properties set forth in claim 81.

Talbert is correct that interfering claims need not recite all of the same limitations, if in fact the claims cover the same subject matter. Talbert provided affidavits of David Hirshfield, described as a leading expert in gasoline technology, and of the inventor William Talbert, that a gasoline in accordance with claim 1 of the '356 patent would have the characteristics recited in claim 81 of the '393 patent. However, neither affiant substantiated this view or challenged Unocal's response that the Talbert fuel did not meet the claim 81 requirement of an octane value of at least 92.0. The Hirshfield affidavit states that "the octane value of the Talbert gasoline sample is only 84.3" and that additives were used to raise Talbert's octane to 92.

It is apparent that the octane value required by Unocal's claim 81 is not possessed by Talbert's gasoline

of claim 1, but is available only by manipulation of the composition using octane-increasing additives. As explained in Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1269, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991), discussing inherency in the context of obviousness:

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. [Citations omitted.] If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

(quoting In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)). Accepting Talbert's expert testimony that one skilled in the art would have known how to raise the Talbert gasoline's octane value does not convert Talbert's claimed gasoline into one having a higher octane value. Talbert's affidavit evidence is insufficient as a matter of law to establish identity of subject matter. We affirm the district court's decision declining to declare an interference under §291.

AFFIRMED

No costs.

#### Footnotes

1. Talbert Fuel Systems Patents Co. v. Unocal Corporation, No. 98-CV-412 (C.D. Cal. Dec. 15, 1998) (claim construction and dismissal of §291 claim); Apr. 12, 1999 (summary judgment of noninfringement for Unocal); May 3, 1999 (summary judgment of noninfringement for Tosco).
2. Reid Vapor Pressure is a gasoline's vapor pressure in a sealed container at 100°F.