

United States District Court,
N.D. Illinois, Eastern Division.

ONEAC CORPORATION, an Illinois corporation,
Plaintiff.

v.
RAYCHEM CORPORATION, a Delaware corporation,
Defendant.

Sept. 29, 1998.

Patent assignee brought action against competitor, alleging infringement of patent for overvoltage protection circuit for pair of telephone lines and similar data communication channel. On cross-motions for summary judgment, the District Court, Gettleman, J., held that: (1) patent claims' limitation of operation only when the voltage exceeded a predetermined threshold voltage applied only to "filter means" or "means connected in series" and did not apply to entire device; (2) foreign judgment would not have preclusive effect as to legal questions or mixed questions of law and fact; and (3) fact issues precluded summary judgment on issue of infringement.

Motions denied.

4,758,920. Cited.

George H. Gerstman, Terrence W. McMillin, Gerstman, Ellis & McMillin, Ltd., Chicago, IL, Howard M Gitten, Steven B. Pokotilow, James Shifren, James J. DeCarlo, Stroock, Stroock & Lavan, New York City, for Oneac Corporation, an Illinois corporation, plaintiff.

Raymond P. Niro, Thomas G. Scavone, Raymond Pardo Niro, Jr., Robert P. Greenspoon, Niro, Scavone, Haller & Niro, Ltd., Chicago, IL, for Raychem Corporation, a Delaware corporation, defendant.

MEMORANDUM OPINION AND ORDER

GETTLEMAN, District Judge.

On April 14, 1997, plaintiff Oneac Corporation brought a patent infringement action against defendant Raychem Corporation alleging that the defendant is infringing U.S. Patent No. 4,758,920 (the "920 patent"). The '920 patent, entitled "Telephone and Data Overvoltage Protection Apparatus," originally issued to Thomas McCartney on July 19, 1988, and was later assigned to plaintiff. The '920 patent relates generally to an overvoltage protection circuit for a pair of telephone lines and similar data communication channel. More particularly, plaintiff alleges that it relates to circuitry for filtering noise and transient voltage signals above data signals on the lines or channels. Defendant sells a telecommunication line overvoltage protection devices known as Tel Tec, which competes with plaintiff's product.

On September 24, 1997, the court entered a stipulated order pursuant to which the parties agreed to stay all discovery other than that related to resolution of the interpretation of claim elements 1 and 11 of the '920 patent. The parties then filed cross motions for summary judgment limited solely to construction and interpretation of those claim elements.

During the course of the instant litigation, the parties were also engaged in litigation in the United Kingdom over plaintiff's European Patent (UK) No. 0 338 107. That litigation involved the same inventions and substantially similar patent claim language. On May 7, 1998, Justice Hugh Laddie of the High Court of Justice, Chancery Division, Patents Court, Docket No. Ch 1997 O No.1923, issued an opinion concluding that defendant's device infringes plaintiff's European patent. The parties submitted that decision to this court, FN1 and the court ordered briefing on the issue of what, if any, preclusive effect that decision has on the instant case. All briefs have now been filed, and the cross motions for partial summary judgment pertaining to claim construction and infringement on claim elements 1 and 11 of the '920 patent are ripe for decision. For the reasons set forth below, the court construes the claim in accordance with plaintiff's arguments, but denies the cross motions for summary judgment on infringement.

FN1. The opinion is available on LEXIS in the United Kingdom library, allcas file.

Both plaintiff Oneac and defendant Raychem sell telecommunications line overvoltage protection devices. These devices are used to prevent high voltage signals unintentionally carried on telephone lines from damaging expensive pieces of sensitive equipment, such as fax machines or computers. To understand the claim language at issue, it is necessary to discuss the relevant technology.

Signals carried on telephone lines are a function of two variables. The first, voltage, or voltage potential, measures the peak magnitude of the signal being sent. The second, frequency, accounts for the number of complete cycles passed in a second. Some signals, d.c. signals, have no frequency component since they remain at a constant voltage. A.c. signals, on the other hand, do not have a constant voltage. Rather, the voltage rises and falls in a repeated cycle in the form of a sine wave. A cycle is completed when the voltage goes from an initial value of zero, to its maximum positive voltage, down to its maximum negative voltage, and back to zero. Frequency is measured by the number of cycles completed in one second. One cycle per second is known as 1 Hertz. Thus, a.c. signals are measured by their maximum voltage and their frequency.

The telephone system requires the use of two distinct signals: (1) the ring signal and (2) the data signal. The ring signal's role is to make the phone ring. It has a low frequency and a high voltage. The data signal carries either the voices that one hears in the receiver or data sent to a fax machine or computer. This signal is high frequency and low voltage. Both of these signals are necessary for communication through telephone lines.

Before plaintiff's invention was conceived, previous methods of protecting devices connected to telephones were created. These devices eliminated signals above a certain voltage. These methods of overvoltage suppression are not sufficient for fax machines and computers due to the sensitivity of these devices. Even a voltage less than that of the ring signal can damage this expensive equipment if the frequency of that signal is high enough. Thus, a new method of protection was needed to eliminate those high frequency signals with voltages greater than the data signal, but not necessarily greater than the ring signal.

In the previous methods of voltage suppression, the protection circuits incorporated an electrical device known as a transient voltage suppressor (TVS). Ideally, this device operates as an open circuit when the voltage presented to it is below a predetermined threshold level and as a short circuit when the voltage is above the threshold level. In other words, when the signal is below the threshold voltage, the TVS operates like a cut wire through which the signal cannot pass. Meanwhile, above the threshold voltage, the TVS is ideally akin to a connecting wire through which signals can pass. The TVS is a useful tool for eliminating unwanted voltages, but not unwanted frequencies.

Long present in the field of electrical engineering was also the concept of filters. By using devices known as resistors, capacitors, and inductors, a circuit designer could select which frequencies he or she wished to pass through the circuit. While several different types of filters have been implemented, the low pass filter is the only type relevant for this case. A low pass filter operates to attenuate the high frequency components of a signal. There are three common types of low pass filters: (1) RC filter, composed of a resistor and capacitor; (2) RL filter, composed of a resistor and an inductor; and (3) RLC filter, composed of all three devices. Incorporating a low pass filter into a device will eliminate high frequencies, but will allow high voltage signals at lower frequencies to pass.

Neither the TVS nor the low pass filter could alone solve the problem of protecting sensitive equipment like fax machines or computers because they could eliminate signals only on the basis of their frequency *or* their voltage, not both. McCartney, the inventor of the '920 patent, devised a way to solve this problem by, in effect, combining the TVS and the low pass filter into one device. This was done by placing a TVS in series with the capacitor of an RC filter.

When the voltage is within normal data signal range, the TVS acts like an open circuit. Consequently, the incoming signal is allowed to pass through the overvoltage suppression device with minimal degradation. When a voltage above this data range is encountered, the TVS acts like a short circuit allowing the signal to pass through it. However, the passed signal now encounters the capacitor of the RC filter. This component will pass high frequency signals, but will not pass low frequency signals. In other words, the capacitor acts as a short circuit at high frequencies and as an open circuit at low frequencies. Thus, the signal which is able to pass through the TVS must also have a high enough frequency to adequately pass through the capacitor. If a signal has a high enough frequency and voltage, it will pass through the TVS and the capacitor and thus will be removed by the overvoltage suppression device.

By combining the TVS with the capacitor, plaintiff's device creates a switch for the low pass filter. When the incoming voltage reaches a predetermined level, the filter is "turned on" and high frequency components of the signal are attenuated. When the incoming voltage is below that level, the filter remains off. This solved the problem since it allowed the ring signal (high voltage, low frequency) and data signals (low voltage, high frequency) to pass through while eliminating the "transient signals" (high voltage, high frequency).

DISCUSSION

[1] There are two steps to a patent infringement analysis: proper construction of the asserted claim; and a determination as to whether the accused method or product infringes the asserted claim as properly construed. *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1581-82 (Fed.Cir.1996). Thus, the court must first construe the claims before it can address whether either party is entitled to any form of summary judgment. As a result of the claim construction, the scope of plaintiff's patent rights are determined; only

then can the court determine whether defendant's accused device reads on the claim elements in question.

I. Claim Construction

Both parties agree that it is only necessary to construe the third elements of the two independent claims: claim 1 and claim 11. These two claims are structurally and substantively similar. The discussion is focused primarily on the language of claim 1 because it has the broadest scope.

The claim construction turns on one question: whether the claim language limits the scope of plaintiff's rights to devices that filter only when the predetermined threshold voltage has been reached. Plaintiff suggests an interpretation that reads the limiting language to apply only to the new filter apparatus, *not the entire device*. Defendant urges that the limiting language should be applied to the *entire device*, not merely one element of the claim.

[2] [3] To construe the claims, the court first examines intrinsic evidence. *Id.* at 1582. The intrinsic evidence consists of the patent claims, the specification, and, if in evidence, the prosecution history. *Id.* If the intrinsic evidence alone is not sufficient, extrinsic evidence may be used. *Id.* at 1583. Extrinsic evidence is external to the patent and file history, such as expert testimony, inventor testimony, dictionaries, technical treatises, articles, and prior art not cited. *Id.* at 1584. Intrinsic evidence is preferred since it encompasses the materials in the public record. *Id.* at 1583. Therefore, if the intrinsic evidence alone resolves any ambiguity, it is improper to rely on extrinsic evidence. *Id.* at 1583.

A. Claim Language

[4] Claims 1 and 11 of the '920 patent are "means-plus-function" claims. 35 U.S.C. s. 112 para. 6 enables the drafter of the claims to describe the function, or functions, performed by a means described in the specification. Means-plus-function claims must be construed to cover the structure disclosed in the specification and its equivalents. *U.S. v. Telectronics*, 857 F.2d 778 (Fed.Cir.1988).

Claim 1 reads:

1. An overvoltage protection circuit used with a pair of telephone lines comprising: first voltage clamping means for clamping voltage signals on said lines at a first predetermined voltage potential; second voltage clamping means for clamping voltage signals on said lines at a second predetermined voltage potential; and filter means responsive to said second voltage clamping means for filtering noise or transients signals from said voltage signals *only when said voltage signals exceed said second predetermined voltage potential*.
[Emphasis added]

Claim 11 reads:

11. An overvoltage protection apparatus used with first and second conductors connected to a telephone system or other similar communications source for protecting a subscriber station, said overvoltage protection apparatus comprising:

first means connected between the first and second conductors for conducting current while at a voltage greater than or equal to a first breakdown voltage and for blocking current while at a voltage below said first breakdown voltage; second means coupled between first and second conductors for conducting current while at a voltage below said second breakdown voltage; and means connected in series between said first

and second means for filtering noise or transients signals from said first and second conductors *only while said second means is at a voltage greater than or equal to said second breakdown voltage*. [Emphasis added]

[5] To resolve this dispute the court must first examine the words of the claims. *Vitronics*, 90 F.3d at 1582. In both claims, there are three elements. The dispute is focused on the third elements of claim 1 and claim 11. The third element in claim 1 is a "filter means responsive to said second voltage clamping means for filtering noise or transients signals from said voltage signals only when said voltage signals exceed said second predetermined voltage potential." The third element in claim 11 is a "means connected in series between said first and second means for filtering noise or transients signals from said first and second conductors only while said second means is at a voltage greater than or equal to said second breakdown voltage." Plaintiff argues that the "only when" and "only while" limitations apply solely to this third element. Defendant, on the other hand, argues that this restriction applies to the entire claim and thus the whole device depicted in the '920 patent.

If plaintiff's argument succeeds, the '920 patent covers all devices that incorporate a low pass filter with a TVS, thereby creating a filter that does not operate unless a predetermined voltage is reached. This construction would include devices that have an additional ability to filter the incoming signal when the threshold voltage has not been reached. In other words, the presence of two filters, one operating at all times and another using the low pass filter/TVS combination, would not be immune from infringement. If defendant's argument succeeds, the '920 patent's scope is restricted to entire devices that will not in any way filter the signal if the threshold voltage is not reached. Under this construction, any device that filters when the voltage is below the threshold voltage cannot infringe. To determine which argument is valid, the court must examine the language of the claims, the language of the specification, and the prosecution history.

[6] Words in the claim are generally given their ordinary and customary meaning. *Id.* However, the patentee may "chose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as it is clearly stated in the patent specification." *Id.* A precursory review of the specification shows no such special definition of "only." Thus, at this stage in the analysis, the limiting phrase, "only when said voltage signals exceed said second predetermined voltage potential" is given its ordinary meaning.

A grammatical analysis supports a construction that the "only when" phrase should be limited solely to the "filter means." Claim 1, as issued in the '920 patent, has a preamble phrase and three supporting phrases. As a matter of grammar, if the limitation was intended for the whole device, the limiting phrase should have been in the preamble. *See Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620-21 (Fed.Cir.1995) (holding that words appearing in the preamble of a patent claim can provide a limitation applied to the claim as a whole). The presence of the "only when" language as part of a separate supporting phrase implementing a distinct element required in the claimed invention establishes that the limitation of operation applies solely to the filter means, not the entire device.

While this grammatical approach appears plausible, the esoteric nature of patent law leaves open the possibility that patent claims are not to be construed according to these guidelines. Two Federal Circuit cases, however, support the grammatical analysis. In a case involving electric furnaces, the Federal Circuit decided whether the limiting language "consisting of" located in a clause and not the preamble should be applied only to the element in that clause or rather to the claim as a whole. *Mannesmann Demag Corp. v. Engineered Metal Products Co.*, 793 F.2d 1279, 1282 (Fed.Cir.1986). In *Mannesmann*, the court held that the correct reading was to apply the limitation solely to the clause in which it was located. *Id.*

The second case involved similar claim language to that in dispute. In *Lewmar Marine, Inc. v. Barient, Inc.*, the Federal Circuit reversed the district court's finding of invalidity due to anticipation. 827 F.2d 744 (Fed.Cir.1987). *Lewmar* involved a patent covering sailboat winches. *Id.* The claim language included a limiting phrase in means-plus-function claims. FN2 *Id.* at 747 n. 1. In *Lewmar*, the court held that the "only upon" restriction applied to the "means automatically to disconnect the disconnectable drive means" precluded any other method of shifting gears in the winch beside reversing the direction of cranking. *Id.* at 750. Defendant argues that this precedent bars plaintiff's claim construction because the Federal Circuit applied this restriction to the entire device. While *Lewmar* definitively enforces the use of "only" as an absolute limitation in claim language, it does not mandate application of a limiting phrase to claim language external to the clause in which the phrase is located. *See Id.* at 749-50. Even though not explicitly stated by the Federal Circuit, its holding in *Lewmar* is a logical extension of applying this restriction solely to the element in which it was located.

FN2. One claim at issue in *Lewmar* was claim 1, which read:

1. A winch in which there are more than two drive trains between a drive shaft and the winch drum offering respectively different drive ratios of drive of the drum in one sense of rotation,

at least one of the drive trains having a disconnectable drive means, the ratios being successively engageable by successively opposite directions of rotation of the drive shaft,
a preselector operable to determine which one of two of the said drive ratios engageable upon a given said direction of rotation of the drive shaft will be engaged,
the reselector being thus operable by causing connection or disconnection of the disconnectable drive means in one of the said drive trains, and means automatically to disconnect the disconnectable drive means *only upon* reversal of the drive shaft from the given said direction of rotation.

[Emphasis and organization added]

While the two cases support the elemental limitation interpretation, they did not do so merely by examining the grammar of the claims at issue. Rather, both cases additionally examined the specification and the prosecution history to determine whether their grammatical constructions correctly defined the scope of the invention. The court now proceeds to examine the specification of the '920 patent.

B. The '920 Patent *Specification*

[7] The specification acts as a dictionary when it defines terms in the claims; either expressly or implicitly. *Vitronics*, 90 F.3d at 1582. It is the "single best guide to the meaning of a disputed term." *Id.* The use of "only" must be read in light of inventor's description and purpose of the invention. *Lewmar*, 827 F.2d at 750. An examination of the '920 patent specification fails to present any reason why filtering below the threshold voltage should be precluded.

The detailed description of the invention asserts that "in normal operation data signals are unaffected by the frequency response of the filter comprised of resistor 14 and capacitor 22." Since the resistor and capacitor cited constitute the filter means in this embodiment, this statement provides the best insight into the meaning of the "only when" limitation. This phrase explicitly states that the data signals are unaffected by the specific filter means disclosed, not unaffected by any filtering at all.

The summary of the invention also supports this interpretation. The importance of the device is repeatedly stated as the ability to eliminate transient signals above the data signal voltage and below the ring voltage. The importance of preventing any additional filtering is not mentioned anywhere in the patent. Rather, the focus is on enabling a specific method of filtering which is dependant on both voltage and frequency. The inclusion of this specific method of filtering does not exclude the use of any other filtering method to remove undesirable signals from a telephone line.

[8] Plaintiff additionally asserts that defendant's interpretation cannot be correct because it would prevent the embodiment in the patent from being covered by its own claims. A claim interpretation that would exclude the patentee's device is rarely the correct interpretation. *Modine Manufacturing Co. v. U.S. Inter. Trade. Com.*, 75 F.3d 1545, 1550 (Fed.Cir.1996). When such an interpretation is viable there must be "highly persuasive evidentiary support." *Id.* Plaintiff states that any TVS device has a certain amount of inherent capacitance that will cause the circuit to attenuate high frequencies even when the signal voltage is below the threshold voltage. Consequently, plaintiff's embodiment itself has an inherent low pass filter which operates even below the threshold voltage.

Plaintiff is correct: it would be incorrect to interpret the claims to exclude its embodiment. As the U.K. decision found, there is inherent filtering in plaintiff's device due to the inherent capacitance of the TVS. However, this does not mandate agreement with either plaintiff's or defendant's claim interpretation. The inherent filtering implicit in plaintiff's device is not mentioned in the '920 patent because it will filter out only very high signals which are typically of no concern. Thus, the inherent filtering is of no consequence. On one hand, plaintiff may be correct in arguing that any inherent filtering or additional filtering does not negate infringement. On the other, defendant could argue consistently with plaintiff's embodiment that any intentionally designed filtering added into the circuit is free from infringement. Thus, defendant's suggested interpretation of the limitation clause can be reconciled to include plaintiff's disclosed embodiment by acknowledging the relevant frequency range and lack of filtering in this range by plaintiff's device. The inherent filtering argument does not lend itself to resolution of the claim construction other than to identify the practical nature of the devices utilized.

C. Prosecution History

[9] The prosecution history sheds the most light on this dispute. The prosecution history consists of the communications between the patent examiner and the patent attorney prosecuting the patent application, including any express representations made concerning the scope of the claims. *Vitronics*, 90 F.3d at 1582. If any interpretation was disclaimed during the prosecution, the prosecution history excludes that interpretation from the claim construction. *Id.* at 1583.

The patent application that eventually issued as the '920 patent was initially rejected as obvious in light of a earlier patent known as the Standler patent. This rejection was resolved in a conversation with the patent examiner on November 17, 1987. The claims overcame the rejection when the patent attorney agreed to add the "only" clauses. Defendant argues that this addition requires that if there is a series inductor or if a device filters all the time, it cannot infringe the '920 patent.

By examining the Standler patent, one can see that there are both TVS devices and a low pass filter arrangement. Yet, in the Standler patent, the TVS and the low pass filter operate independently of each other. Neither the filter means nor the TVS was novel. What made plaintiff's device patentable was the joining of the two to create a new filtering apparatus dependant on both frequency and voltage.

In the communications to the examining attorney in the Patent Office, the attorney prosecuting the patent application stated that plaintiff's device was patentable over this prior art because the transient voltage did not have to be greater than the ring voltage to be eliminated. This statement supports that necessity for a co-dependence between the TVS and the low pass filter components to correctly eliminate the undesired signals. The office action rejecting the initial patent application restricted the claims construction to a device in which the TVS and low pass filter operate *together* to eliminate unwanted signals. The '920 patent cannot claim devices that solely use a TVS and low pass filter independently.

Defendant's argument that there cannot be a series inductor is clearly without merit. Nowhere in the prosecution history does the examiner or the patent attorney refer to the inductor as barring patentability of plaintiff's device. An inductor in series with a resistor operates as a low pass filter. Nowhere in the prosecution history, specification, or claim language is the use of other types of low pass filters abandoned.

[10] [11] Defendant's other argument, that the Stander prior art eliminates all-the-time filtering, is also tenuous. Filtering all the time is a gelatinous phrase. It may apply to the filter means or the entire device. Prosecution history estoppel bars recapture of only that subject matter actually surrendered during prosecution. *Litton Systems, Inc. v. Honeywell, Inc.*, 140 F.3d 1449, 1455 (Fed.Cir.1998). The claim amendment prevents the patentee from recovering the subject matter that the applicant had to abandon in order to obtain a patent. *Id.* at 1456. During prosecution, claims are to be given their "broadest reasonable interpretation." *In re Donaldson*, 16 F.3d 1189, 1194 (Fed.Cir.1994). Thus, it follows that any additions to overcome prior art were made with the intention of narrowing the claim coverage as little as possible. There is no evidence in the prosecution history supporting a need to prevent overall filtering solely on the basis of frequency.

In the instant case, the patent attorney had to overcome the presence of a TVS and a low pass filter in another patented device. To do this, the "only when" language was added. As a result, a new filter apparatus was patented which was dependent both on frequency and voltage. Thus, the "filter means" was in operation only when a certain threshold voltage was reached.

D. The Meaning of the Limitation Clause

Due to the lack of any evidence demonstrating the need to limit filtering to that effectuated by the "filter means" disclosed in the '920 patent, it is difficult to find support for defendant's argument that the limitation clauses in claims 1 and 11 should be applied to the whole claim and not the individual elements. The location of the limitation clauses in the supporting phrases rather than in the preamble of the claim, the focus on the ability to filter below the ring voltage in the specification, and the scope of the prior art cited in the prosecution history all support plaintiff's position.

[12] Claims are construed to be interpreted by a hypothetical person skilled in the art at the time of filing of the patent application. *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 867 (Fed.Cir.1985). No evidence has been presented as to why a person skilled in the art would perceive a benefit from barring any additional filtering that operates independent of voltage. The court cannot find any evidence to counter the plain meaning of the claims viewed in light of the specification and prosecution history of the '920 patent. The "only" limitation clauses are applicable only to the elements described in the phrases in which they are placed. Thus, only the "filter means," as described in claim 1, or the "means connected in series," as described in claim 11, are restricted to operate only when the voltage exceeds a predetermined threshold

voltage. Since the intrinsic evidence clearly resolves the ambiguity, it would be incorrect to continue to examine extrinsic evidence. Vitronics, 90 F.3d at 1583.

E. "Comprising"

[13] [14] Both claims 1 and 11 complete their preambles with the word "comprising." "Comprising" is a term of art in patent claim drafting that means "the named elements are essential, but other elements may be added and still form a construct within the scope of the claim." Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 500 (Fed.Cir.1997). In other words, the term "comprising" signifies inclusiveness. One cannot avoid infringement by adding elements if each element recited in the claims is found in the accused device. A.B. Dick Co. v. Burroughs Corp., 713 F.2d 700, 703 (Fed.Cir.1983). All the elements must be found in the accused device. If these elements are found, the accused device infringes.

[15] Defendant asserts the patentability of its invention over the '920 patent. Patentability and infringement are not mutually exclusive. Thus, the additional of any elements to what is covered in the '920 patent, even if sufficient to become patentable, does not absolve the new invention from infringing. If the elements of the '920 patent are present, the device infringes.

F. Conclusion on Claim Construction

The claim language in dispute in the '920 patent is construed in accordance with the plaintiff's arguments. The third element, the filter means, is read as operated by a voltage-controlled on/off switch. Additional elements may be added so as to filter the relevant range of frequencies regardless of the voltage. However, these are additions. So long as the frequency response of the alleged device changes when the threshold voltage of the second element in the claim is reached so as to attenuate, or increase attenuation, of the undesired high frequencies within the relevant frequency range, the device incorporates the third element of claim 1 or claim 11.

II. Partial Summary Judgment

A. Standards

Plaintiff moves for partial summary judgment, asserting that defendant's device reads on the elements construed in Part I of this opinion. Defendant's cross motion for summary judgment contends that, because its device has equivalent means under the 35 U.S.C. s. 112 para. 6, the court should find as a matter of law that it does not infringe the '920 patent. To succeed on a motion for summary judgment, the moving party bears the initial burden of identifying those portions of the record, pleadings, and answers to interrogatories and affidavits that demonstrate an absence of a genuine issue of material fact. Celotex Corp. v. Catrett, 477 U.S. 317, 322, 106 S.Ct. 2548, 2551, 91 L.Ed.2d 265 (1986). If the moving party satisfies this burden, then the nonmoving party must provide specific facts raising a genuine issue of fact for trial. Id. at 322, 106 S.Ct. at 2552. In determining summary judgment, the court must view all evidence and draw all reasonable inferences in the light most favorable to the nonmoving party. Lohorn v. Michal, 913 F.2d 327, 331 (7th Cir.1990).

B. Preclusive Effect of Foreign Litigation

[16] Plaintiff maintains its initial argument that there can be no claim or issue preclusion from litigation in foreign courts. The court agrees that while the inventions are the same, each system of patent law, including

claim construction, are significantly different. Consequently, the court refuses to apply any claim or issue preclusion to any finding in the U.K. decision rooted in legal doctrine. *See Medtronic, Inc. v. Daig Corp.*, 789 F.2d 903, 907-08 (Fed.Cir.1986) (refusing to give preclusive effect to German tribunal finding of obviousness due to differences in German and American patent law).

[17] While there is no preclusive effect to questions of law or mixed questions of fact and law, both parties agree to preclusive effect as to factual findings made in foreign litigation. In a very similar case also in the Northern District of Illinois, Judge Shadur addressed this issue. *Northlake Marketing & Supply Inc. v. Glaverbel S.A.*, 986 F.Supp. 471 (N.D.Ill.1997). In *Northlake*, Judge Shadur set forth four requirements for preclusion of factual findings in foreign litigation: (1) the issue must be identical; (2) the issue must be actually litigated; (3) the fact finding must have been necessary to the court's final decision; (4) the proceedings by the foreign tribunal must be fundamentally fair. *Id.* at 475-76. This court adopts Judge Shadur's four part requirement for any factual preclusion. Since the factual issues presented are based on the same technology, the individual issues are identical. The U.K. decision itself demonstrates that the issues were actually decided and necessary for the final decision. Lastly, neither this court nor the parties question the fairness of the proceedings in the United Kingdom.

Remaining Issues after Claim Construction

[18] [19] The claim construction disposed of whether the "only" limitation applies to the filter means or to the device as a whole. Now, the claim as construed must be compared to the accused device. *Kegel Co., Inc. v. AMF Bowling, Inc.*, 127 F.3d 1420, 1425 (Fed.Cir.1997). This comparison is a question of fact. *Id.* In finding that the disclosed filter means must be operative only when a threshold voltage has been reached, this case is reduced to whether defendant's device has an equivalent filter means which operates only when a threshold voltage has been reached.FN3 First, the court analyzes if a filter equivalent to the filter means disclosed in the '920 patent is present in the defendant's device. The court then proceeds to determine if the filter in the accused device operates only when a threshold voltage is reached.

FN3. The presence of the first and second clamping means in the defendant's device is not disputed and thus is not at issue in the infringement analysis.

[20] The Federal Circuit has yet to determine whether a finding of equivalence under 35 U.S.C. s. 112 para. 6 is a question of law or fact. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977 n. 8. To retain a party's right to a jury, the overall determination of equivalence should be regarded as a question of fact. Thus, the court attempts to resolve this issue only with undisputed facts or facts litigated in the United Kingdom to which the parties agree to be precluded. If the use of these facts alone demonstrate the lack of any genuine issue of material fact as to equivalence and voltage dependence, summary judgment on infringement or non-infringement is appropriate.

[21] Claim 1 of the '920 patent is a means-plus-function claim. For a party to infringe, the accused device must perform the identical function as specified in the claims and must employ an identical means or structural equivalent. *Valmont Industries, Inc. v. Reinke Manufacturing Co., Inc.*, 983 F.2d 1039, 1042 (Fed.Cir.1993). The '920 patent claims and specification identify the invention's function as eliminating unwanted high voltage, high frequency signals. Defendant argues that the function is to eliminate the unwanted signals only when the threshold voltage has been reached. This distinction is irrelevant. The invention disclosure statement filed for defendant's device states that "[t]his filter attenuates signals in and

out of band but only during overvoltage conditions." Thus, defendant's disclosure demonstrates that its device has the same function whether the function is defined as simply eliminating undesirable signals or eliminating these signals only when a certain voltage level is reached.

The more complicated question is whether plaintiff's and defendant's devices are structurally equivalent. By comparing the schematic in the '920 patent with that of the accused device, one can see that they are not identical. Thus, the sole issue is whether the two "filter means" are structurally equivalent. Defendant repeatedly stresses that its filter includes an inductor. As a result, the filter used in the accused device has a sharper increase in attenuation after the cutoff frequency. Thus, the presence of the inductor makes the filter a second-order low pass filter while the filter disclosed in the '920 patent specification is a first-order filter. Both the filter used in plaintiff's device and the filter disclosed in the '920 patent are low pass filters.

Whether the accused device has an equivalent filter means becomes an issue of scope. Plaintiff wishes to define the scope of equivalence as any low pass filter that presumably has a comparable cutoff frequency. Defendant wishes to narrow the scope solely to filters which are composed of simple resistors and capacitors. To define the appropriate scope, the court first examines the U.K. decision's factual findings, which help to identify the elements at issue.

In the U.K. decision, Justice Laddie states that the inclusion of the inductor merely gives a "more effective filtering characteristic than the simple RC type of filtering arrangement depicted." In addition, he finds that there are in effect two filters in the defendant's device. The "first filter" is always present due to the parasitic capacitance of a TVS. Thus, the polyswitch, which defendant describes as a resistor with a resettable fuse, the inductor, and the inherent capacitance of the TVS filter the signal even when the threshold voltage has not been achieved.^{FN4} Since it is required that the filter means operate only above a predetermined threshold voltage, these elements cannot be an equivalent filter means. However, the "second filter" operates only when this voltage has been reached. In this case, the polyswitch, inductor, and capacitor operate as a low pass filter. The issue here is whether these three elements are equivalent to the filter means disclosed in the '920 patent.

FN4. The court notes Justice Laddie's determination that the capacitor in the accused device is dominated by the inherent capacitance of the TVS and thus is a negligible element when the threshold voltage has not been reached.

[22] [23] Whether the accused device has an equivalent "filter means" now becomes a determination of whether an RC filter is the structural equivalent of an RLC filter for the function of the '920 patent. To interpret structural equivalence, the court looks at the intrinsic evidence used to construe the claims, along with expert testimony. *See Durango Assoc., Inc. v. Reflange, Inc.*, 843 F.2d 1349, 1356 (Fed.Cir.1988) (listing the factors to be considered as claim language, other claims, the specification, prosecution history, and expert testimony). First, the court addresses the doctrine of claim differentiation to help define the appropriate scope of structural equivalence. This doctrine states that a claim interpretation resulting in one claim having the same scope as another is presumed to be unreasonable. *Beachcombers, International, Inc. v. WildeWood Creative Products, Inc.*, 31 F.3d 1154, 1162 (Fed.Cir.1994). Plaintiff offers that claim 10 of the '920 patent specifically defines the "filter means" as a resistor and capacitor. If claim 1 was read solely to include low pass filters consisting only of a resistor and a capacitor, claim 10, a dependant claim, would in no way refine the scope of claim 1, the independent claim. Thus, the filter means in claim 1 should include equivalents broader than the combination of a resistor and capacitor.

Another consideration helpful in determining whether two structures are equivalents is interchangeability. *Rite-Hite Corp. v. Kelley Co., Inc.*, 819 F.2d 1120, 1124 (Fed.Cir.1987). If one skilled in the art would view defendant's filter as interchangeable with plaintiff's filter, it is more likely an equivalent structure. Plaintiff's expert witness testifies that it is "a simple matter of engineering design choice as to what type of components will be selected to form the low pass filter." Defendant counters by noting an inductor's ability to eliminate fast transients from another element in the device. In response, plaintiff notes that in initially rejecting its patent application in light of the Standler patent, which utilized an RLC filter, the Patent Office must have considered an RLC filter to be equivalent to an RC filter for the purposes disclosed in the patent application.

The accused device is a second-order low pass filter. The disclosed means in the '920 patent is a first-order low pass filter. The structural equivalency issue therefore turns on the addition of an inductor. As the U.K. decision points out, and both parties agree, both RLC and RC filters are common types of low pass filters. Defendant urges that the RLC filter is different because it more sharply attenuates frequencies immediately after the cutoff frequency. Thus, in a way, it may be a better low pass filter because it is closer to the ideal in eliminating unwanted frequencies.

The analysis of what constitutes a structural equivalent results in a scope with limited flexibility. A structural equivalent must have a scope that is, (a) broader than one common type of low pass filter to account for claim differentiation, and (b) narrower than any type of signal attenuation to account for the function of the invention. The most reasonable range of equivalents appears to be low pass filters. A determination that any low pass filter is a structural equivalent accounts for the purpose of attenuating high frequencies and the principles of claim drafting. Even though this appears to be the most logical definition of an appropriate scope, it is not a necessary conclusion from the undisputed and previously litigated facts.

Notwithstanding the limited scope of structural equivalency, this court finds that there remain genuine issues of material fact as to whether an inductor significantly changes the filter in how it removes transient signals. This issue may be resolved by deciding whether a person skilled in the art would consider an RLC filter, as used in the defendant's device, interchangeable with the RC filter for performing the function of the claims asserted. A mere improvement is not enough to negate interchangeability. On this record, therefore, the court cannot find structural equivalence of the two filters.

Defendant additionally argues that they cannot be structurally equivalent since the alleged equivalent of the resistor in its device operates additionally as a resettable fuse, a function lacking in the '920 filter. This element may have an additional function, but this appears not to affect its role as an element in a filter. Notwithstanding this interpretation, the court again finds that the record is incomplete as to whether there are no material differences between the defendant's PTC resistor and the resistor disclosed in the '920 patent as elements of low pass filters.

[24] Even though the court finds that there are genuine issues precluding a finding of an equivalent filter means in the accused device, it will address whether the accused device incorporates a filter that operates only when a threshold voltage has been reached. The presence of this limitation in the accused device is established by examining the invention disclosure statement filed by the inventor of the accused device, which discloses the use of a resistor, a TVS, a capacitor, and an inductor that constitutes a filter which "attenuates signals in and out of band *but only* during overvoltage conditions." (Emphasis added.) In addition, as both parties' expert witnesses conclude, the frequency response of the accused device changes

significantly when the threshold voltage is reached. The attenuation of high frequencies is greatly increased and the cutoff frequency is decreased in magnitude. Defendant's own patent specification offers a diagram that depicts two distinct frequency response curves. Thus, it is apparent by the change in frequency response that additional filtering is "switched on" when the threshold voltage is reached, thereby reading on the court's claim construction. Lastly, the U.K. decision also states that the accused device meets this limitation.

D. Conclusion on Summary Judgment

The court denies both plaintiff's motion for partial summary judgment on whether the accused device has the claim elements at issue and defendant's motion for partial summary judgment of non-infringement. While there is no genuine issue of material fact that precludes a finding that defendant's device meets the "only when" limitation clause as construed by the court, there are issues of material fact as to the structural equivalence of the filters. For the claim elements in question, the only issues left to resolve are: (1) whether the PTC in defendant's device is equivalent to a simple resistor; and (2) whether the presence of an inductor makes defendant's filter non-equivalent for the purposes of the '920 device. Until these issues are resolved, the court cannot grant summary judgment on the issues of literal infringement or the doctrine of equivalents.

This matter is set for report on status October 22, 1998, at 9:00 A.M.

N.D.Ill.,1998.

Oneac Corp. v. Raychem Corp.

Produced by Sans Paper, LLC.