

United States District Court,
D. Massachusetts.

NELES-JAMESBURY, INC,
Plaintiff.

v.

FISHER CONTROLS INTERNATIONAL, INC. and Fisher Service Company,
Defendants.

Civil Action No. 94-40200-NMG

Jan. 6, 1998.

Patentee brought action for infringement of patent relating to attenuating rotating valve. Following hearing, the District Court, Gorton, J., provided construction of disputed terms used in asserted claims.

Ordered accordingly.

4,479,510. Cited.

R. Mark Petersen, Worcester, MA, Steven E. Lipman, Arthur I. Neustadt, Steven P. Weihrouch, Oblon, Spivak, McClelland, Maier & Neustadt, P.D., Arlington, VA, for Plaintiff.

Marshall D. Stein, Cherwin & Glickman, Boston, MA, Kenneth B. Herman, Christopher J. Harnett, Robert W. Morris, Robert B. Wilson, Fish & Neave, New York City, for Defendants.

MEMORANDUM OF DECISION

GORTON, District Judge.

In December, 1994, plaintiff Neles-Jamesbury Inc. ("NJI") brought this action against Fisher Controls International, Inc. and Fisher Service Company (collectively "Fisher") for infringement of U.S. Patent No. 4,479,510 ("the '510 Patent") relating to an attenuating rotating valve. NJI asserts that Fisher has infringed four claims of the '510 Patent. Because the parties are unable to agree on the meaning of several terms in the asserted claims, this Court conducted a three-day hearing to construe the disputed terms pursuant to *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996) ("the *Markman* hearing").

I. Background

The subject matter claimed in the patent-in-suit is an attenuating rotary valve used to 1) control the flow of fluids (liquids or gases) through pipes and 2) limit the noise in the pipes caused by changes in pressure.

Aside from causing discomfort to workers, noise vibrations can cause severe damage to both pipes and valves if no attenuating device is used.

The prior art discloses attenuating valves that distribute pressure and thus successfully reduce noise but that also restrict the flow of fluid when the valve is fully opened. The valve invented by Roger Bey and claimed in the '510 Patent differs from prior inventions in that its attenuating device adjusts with movement of the "closure member" so that 1) the amount of attenuation varies with the opening and closing of the valve and 2) when the valve is fully opened, the attenuator does not significantly limit the flow of fluid.

The '510 patent contains 17 claims including five independent claims. NJI and Fisher dispute the meaning of certain words and phrases in independent claims 2 and 8. Claim 2 recites:

2. An attenuator valve assembly comprising: a valve body having a flow passage formed therethrough; a closure member; means for mounting said closure member in said valve body for rotation about an axis with respect to said valve body between a completely open position wherein said closure member allows passage of fluid therepast through said flow passage, and a completely closed position wherein said closure member blocks all flow through said flow passage; sealing means provided in said valve body flow passage for operatively engaging said closure member for preventing fluid flow through said flow passage past said closure member when said closure member is in said closed position; means for attenuating fluid flowing through said flow passage past said closure member, without significantly restricting flow when said closure member is in said completely open position, said means comprising perforated *barrier means* mounted with said closure member, said perforated *barrier means* including continuously open through-extending perforations and comprising a plurality of perforated *plates*; and means for mounting said perforated *plates* adjacent said closure member substantially within said valve body for rotation about said [sic] axis, and spaced from each other in the direction of said flow passage when said closure member is in said closed position so that *the attenuating effect of said plates is immediately called into play when said closure member is first opened and the attenuating effect thereof is great during initial opening of said closure member, and diminishes as said closure member is moved toward said completely open position.*

'510 Patent at col. 8, ll. 15-46 (disputed terms emphasized). Claim 8 recites:

8. A valve assembly comprising: a valve body having a flow passage formed therethrough; a closure member having a regular spherical section curved exterior surface; means for mounting said closure member in said valve body for rotation about an axis with respect to said valve body between open and closed positions, said closure member blocking flow through said flow passage in said closed position; sealing means provided in said valve body flow passage for operatively engaging said closure member for preventing fluid passage through said flow passage past said closure member when said closure member is in said closed position; a plurality of attenuator *plates* each said *plates* [sic] including continuously open through-extending perforations; and means for mounting said *plates* for rotation with said closure member about said axis and spaced from, but adjacent, said closure member to effect attenuation of fluid flowing through said flow passage as said closure member is being moved from said closed to said open position thereof, and vice-versa, and so that said *plates* are spaced from each other and are generally parallel to each other, and each extends to *points substantially on a geometric extension* of said regular spherical section curved exterior surface to engage said sealing means to provide that fluid flowing in said flow passage past said closure member, in a partially open position thereof, flows through said *plates*; and wherein said plurality of attenuator *plates* are spaced from each other in the direction of said flow passage when said closure member is in said closed position.

Id. at col 9, ll. 7-36 (disputed terms emphasized).

Prior to the *Markman* hearing, both parties submitted motions to construe all or almost all of the text of the four asserted claims. Although this Court ultimately must construe all of the language in those claims, as it informed the parties at the *Markman* hearing, this memorandum will construe only those words and phrases actually in dispute.

II. *The Legal Standard*

[1] The determination of a literal infringement claim requires a two-step analysis. First, the Court must properly construe the asserted claims to determine their scope and meaning. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S.Ct. 1384, 1387, 134 L.Ed.2d 577 (1996). Second, the trier of fact must determine whether the properly construed claims cover the accused device or process. *See id.* at 517 U.S. 370, 116 S.Ct. at 1393.

[2] [3] Only the first step, claim construction, is currently before this Court. The purpose of claim construction analysis is to determine the meaning given to each disputed term by a person of ordinary skill in the relevant art. *Haynes Int'l, Inc. v. Jessop Steel Co.*, 8 F.3d 1573, 1578 n. 4 (Fed.Cir.1993). To interpret the claims of a patent, a court must initially consider the intrinsic evidence of record. *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996).

[4] Intrinsic evidence comes from three sources:

- 1) the claims themselves,
- 2) the specification, to the extent that it defines terms in a manner inconsistent with their ordinary meaning, and
- 3) the prosecution history of the patent, to the extent that it contains the patentee's express representations with respect to the scope of the claims.

Id. The specification and prosecution history may only be relied upon insofar as they expressly define the words in the claim because those words are given their ordinary meaning unless the patentee has expressly varied that meaning. *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620 (Fed.Cir.1995); *Markman*, 52 F.3d at 979 (stating that "a patentee is free to be his own lexicographer" but that "any special definition given to a word must be clearly defined in the specification").

[5] [6] "In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term." *Vitronics Corp.*, 90 F.3d at 1583. In order to better understand the patent, a court also may consider extrinsic evidence such as expert testimony, inventor testimony, dictionary definitions and technical treatises. *Id.* at 1584. Extrinsic evidence, however, may not be used to vary or contradict the terms of the claims. *Markman*, 52 F.3d at 981.

III. *Claim Construction*

In order to better understand the mechanics of attenuating rotary valves and the disputed claim language as it would be understood by a "person of ordinary skill in the art," this Court considered expert and inventor

testimony, dictionary definitions and a technical treatise presented by the parties at the *Markman* hearing. As clarified at that hearing, the words and phrases in dispute are:

- 1) "plate" as used throughout claims 2 and 8;
- 2) "barrier means" as used in claim 2;
- 3) "attenuating effect ... is immediately called into play when said closure member is first opened" as used in claim 2;
- 4) "attenuating effect thereof is great during initial opening" as used in claim 2; and
- 5) "points substantially on a geometric extension" as used in claim 8.

A. "*plate*"

[7] The parties agree that the word "plate" may be used to describe flat or slightly curved disc-like structures. NJI argues that the word "plate" encompasses many other forms including bent plates, curved plates and planar plates. While Fisher acknowledges that "plates" may be bent to form other structures such as "tubes," Fisher contends that the term "plate" comprises only flat or slightly curved structures and that, once plates are combined or a plate is altered to form another structure, that structure can no longer be referred to as a "plate."

The claims of the '510 Patent refer to "plates" generically and to "plates" which are "planar." Clearly the term "plate" in isolation encompasses more than merely "planar" (flat) structures. The specification expressly defines "plate":

The term "attenuator plate" as used with respect to the structures is considered in its broadest sense, and may include screens, nets, etc., as more fully described above with respect to the FIGS. 1 through 12 embodiments.

'510 Patent at col. 7, ll. 9-13. The descriptions of Figures 1 through 12 of the Patent disclose "plates" which are "twisted in a spiral configuration" and "screens" (one variety of "plate") which are "curved." Id. at col. 5, ll. 36 & 49. The description of figures 8 and 9, however, distinguishes between "plates" and "tubes." Id. at col. 5, ll. 36-43.

The ordinary meaning of the word "plate" is a structure that is thinner than it is wide or long and that is generally flat and solid. FN1 The claims and specification of the '510 patent expand that definition to encompass structures that may be flat, curved or twisted and that may be perforated such as a screen or net. The specification specifically excludes "tubes" from that expanded definition of "plate." This Court will therefore construe a "plate" as a structure that is thinner than it is wide or long and that may be flat, curved or twisted and perforated such as a screen or net but that is not a tube.

FN1. Based upon the testimony of Cullen Langford, a mechanical engineer certified as an expert in valve operations and standards for valves, this Court concludes that there is no special definition of "plate" in the field of mechanical engineering and that, therefore, a person of ordinary skill in the art of valve mechanics would give the word "plate" its ordinary meaning.

B. "barrier means"

[8] NJI argues that "barrier means" refers to any perforated structure that attenuates noise. Fisher contends that the word "barrier means" denotes a complete block to the flow of fluid so that, if a "barrier means" is perforated, fluid can flow only through the perforations.

The '510 Patent uses the phrase "barrier means" in independent claims 1, 2 and 13 as one component of a "means for attenuating fluid" (the other component being the "closure member"). Based upon the claims, this Court will therefore construe "barrier means" as any structure, other than the closure member, that attenuates the flow of fluid.

The specification corroborates this definition referring to "perforated barrier means" as "an attenuator plate or like structure" and as "any type of perforated surface capable of performing the desired attenuating function." '510 Patent at col. 1, ll. 49-50 & col. 4, ll. 36-37.

C. "*attenuating effect of said plates is immediately called into play when said closure member is first opened*" and "*attenuating effect thereof is great during initial opening*"

[9] [10] In describing how the plates comprising the barrier means are mounted, Claim 2 describes the positioning of the plates. The plates are mounted

adjacent [the] closure member substantially within [the] valve body ... and spaced from each other in the direction of [the] flow passage when [the] closure member is in [the] closed position so that the attenuating effect of [the] plates is immediately called into play when [the] closure member is first opened and ... is great during initial opening of [the] closure member, and diminishes as [the] closure member is moved toward [the] completely open position.

'510 Patent at col. 8, ll. 37-46. The parties dispute the use of the terms "immediately," "first opened," "great" and "initial opening" in the context of the quoted language.

NJI argues that the quoted language includes both a physical description and a description of how the attenuators function in time. NJI contends that the physical description is limited to a) the relationship between the plates and the closure member, b) the location of the plates within the valve body, c) the spacing of the plates in relationship to each other and d) the direction of the plates with respect to the flow of fluid. According to NJI, the remainder of the clause describes how the attenuating device functions temporally so that

- 1) "immediately" means that there is no time lapse between the opening of the valve and the attenuation or lessening of noise,
- 2) "first" in the phrase "first opened" merely emphasizes the absence of temporal delay in attenuation and
- 3) "great during initial opening" is used for contrast with the diminished attenuation as the valve opens farther.

Fisher argues that the quoted language is a physical description that dictates not only the relationship

between the plates and the remainder of the valve, but also the physical extension of the plates in relation to the flow of fluid. According to Fisher, the disputed words describe how the attenuators and closure member operate together spatially so that

- 1) "first opened" means the smallest possible angular degree to which the closure member may rotate;
- 2) "immediately," in the phrase "immediately called into play" means that the attenuator functions at that small degree of rotation; and
- 3) "great during initial opening" further emphasizes that the attenuator functions very effectively at that small degree of rotation.

The terms "first," "immediately" and "initial" ordinarily connote temporal measurements, and neither the specification, nor the prosecution history nor the expert testimony at the *Markman* hearing expresses a specialized meaning for any of those terms in the patent itself or in the field of valve mechanics. Furthermore, the specification supports the temporal interpretation of those terms because the patentee uses different words such as "range" and "degree" when he intends to describe the opening of the valve in spatial terms. *E.g.*, '510 Patent at col. 1, l. 52 & col. 2, ll. 4, 42. This Court, therefore, adopts NJI's interpretation and construes the disputed language as a description of the valve's function in time.

D. "*points substantially on a geometric extension*"

[11] Claim 8 discloses a valve in which the closure member is shaped as a section of a sphere ("a closure member having a regular spherical section curved exterior surface"). Within that claim, the parties dispute the meaning of "points substantially on a geometric extension" in the context of the following limitation:

[E]ach [plate] extends to points substantially on a geometric extension of said regular spherical section curved exterior surface to engage [the] sealing means to provide that fluid flowing in [the] flow passage past [the] closure member, in a partially open position thereof, flows through said plates

'510 Patent at col. 9, ll. 28-33. If one imagines the surface of the closure member described in claim 8 expanded to create a complete sphere, that imaginary sphere is the "geometric extension" referred to in the claim. This Court must 1) identify the points "substantially" on the geometric extension to which the plates must extend and 2) construe the word "substantially."

1. "points"

Neles argues that the only relevant "points" on that imaginary sphere are the points where edges of the plates "engage [the] sealing means" as the closure member rotates between open and closed positions. Neles contends that

- a) claim 8 discloses valves with a single sealing means;
- b) a valve with a single sealing means is a "quarter turn valve" and, thus, only rotates 90 degrees;
- c) the only relevant points on the imaginary sphere span that 90 degrees; and therefore
- d) only one end of each plate must extend "substantially" to the surface of that imaginary sphere.

Fisher argues that the relevant "points" on that sphere comprise complete circles formed by the edges of the plates so that almost all fluid "flowing in [the] flow passage ... flows through said plates" and not around them. Fisher also points out that

- a) the '510 Patent is not limited to quarter-turn valves because the specification describes valves that operate in both directions;
- b) in bi-directional valves, the closure member's rotation is 360 degrees; and therefore
- c) even plates which trace the pattern of rotation must extend "substantially" to the surface of the imaginary sphere on both ends.

The claim itself states both that 1) the edges of the plates must engage the sealing means and 2) the fluid must flow through the plates. First, in order to engage the sealing meanings, as both parties agree, the plates must extend close to the surface of the imaginary sphere on at least one end. Second, expert witnesses for both parties confirm that, to the extent the plates do not meet the geometric extension, fluid will leak around the plates. The farther the edges of the plates are from the geometric extension, the greater the leakage.

Describing the "geometric extension," the specification states:

In the embodiments in FIGS 1-12, the barrier means ... extend[] outwardly from either side of the bore to points substantially one [sic] a geometric extension of the curved exterior surface of the closure member. Such a geometric extension is illustrated most clearly in FIGS. 3, 7, and 9. With the barrier means arranged in such a manner, ... the clearance is small enough that the barrier means very effectively performs its attenuating function in its variable control range.

'510 Patent at col. 3, ll. 63-68 & col. 4, ll. 5-14. Given the expert testimony, in order for the barrier means to "very effectively attenuate" the flow, the plates comprising those barrier means must extend "substantially" to the geometric extension on both ends. The drawings in Figures 1-12 corroborate this interpretation because they depict plates that extend equally on both ends. This Court, therefore construes "points ... on a geometric extension" to include points at both ends of the plates.

2. "*substantially*"

Claim 8 is clear that, if plates must extend "substantially" to points in the imaginary sphere which is the "geometric extension," they must extend very close to the surface of that sphere. Expert testimony presented by both parties demonstrated that a person skilled in the art of valve mechanics would understand that some clearance is necessary so that the plates do not scrape the valve casing as they rotate and as temperature fluctuates in the pipe. The undisputed testimony of both Roger Bey, the inventor, and Cullen Langford, NJI's expert, establishes that a person skilled in valve mechanics, would not understand the term "substantially" to require plates to extend as close as humanly possible to the surface of that imaginary sphere because such precision would not be cost-effective.

Based upon the words of the claims and the testimony of the expert and the inventor, this Court construes "substantially" to mean as close as economically efficient allowing for mechanical clearance to avoid contact between the plates and the valve body either through rotation or thermal expansion.

IV. Conclusion

This Court, therefore, concludes with respect to terms as they are used in the '510 Patent that:

- 1) a "plate" is a structure that is thinner than it is wide or long and that may be flat, curved or twisted and perforated such as a screen or net but that is not a tube;
- 2) a "barrier means" is any structure, other than the closure member, that attenuates the flow of fluid;
- 3) "attenuating effect ... is immediately called into play when said closure member is first opened" means that there is no temporal delay between the opening of the valve and the attenuation of flow;
- 4) "attenuating effect thereof is great during initial opening" means that over time, while the closure member rotates from a closed to an open position, the attenuation is greater earlier and less later; and
- 5) "points substantially on a geometric extension" means that attenuator plates must extend on both ends as close to the surface of the imaginary sphere formed by expanding the curved surface of the closure member as economically efficient, allowing for mechanical clearance to avoid contact between the plates and the valve body either through rotation or thermal expansion.

D.Mass.,1998.

Neles-Jamesbury, Inc. v. Fisher Controls Intern., Inc.

Produced by Sans Paper, LLC.