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

**The BOLER COMPANY,**
Plaintiff.
v.
**NEWAY ANCHORLOK, INTERNATIONAL, INC,**
Defendant.

**March 14, 2000.**

Owner of patent for truck suspension system sued competitor for infringement. The District Court, Gwin, J., construed the patent's claims.

Claims construed.

5,366,237. Cited.

David L Drechsler, David P. Dureska, John B Schomer, Karen K Grasso, Mark J. Skakun, Walter A Lucas, Buckingham, Doolitle & Burroughs, Akron, OH, for The Boler Company, plaintiff.

George T Williams, John E. McGarry, Michael F. Kelly, Rader, Fishman & Grauer, Grand Rapids, MI, Glenn E Forbis, Rader, Fishman & Grauer, Bloomfield Hills, MI, John C Fairweather, John W. Solomon, Brouse & McDowell, Akron, OH, for Neway Anchorlok International, Inc., defendant.

## OPINION AND ORDER

GWIN**, District Judge.**

In this case, Plaintiff Boler Company claims Defendant Neway Anchorlok International, Inc. infringed its rights in U.S.Patent No. 5,366,237 ("the '237 patent"). Pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), the Court now construes Plaintiff Boler Company's '237 patent.

## I. Background

This case involves a popular suspension system used on heavy duty truck trailers known generally in the industry as "trailing arm suspensions" or "trailing beam suspensions." The '237 patent teaches improvements to air ride beam-type axle/suspension systems that have been used in the heavy-duty truck and trailer industry for many years.

Trailing beam suspension systems generally include two beams attached at their forward ends to the truck

trailer frame. At the other end of each beam is a spring between the end of the beam and the trailer frame. Among other options, these springs can be coiled steel springs or air springs. Trailing beam suspension systems also have an axle that traverses the trailer and rests perpendicular to the beams. A wheel is attached to each end of the axle. These suspension systems cushion the trailer.

The '237 patent makes twenty-eight claims. Among these claims, Plaintiff Boler Company says Defendant Neway Anchorlok has infringed claims 16, 17, and 21. Claim 16 is an independent claim. Claims 17 and 21 are dependent claims that include all of the claim limitations of claim 16 plus additional elements. Claim 16 teaches as follows:

In an axle bearing suspension system for a wheeled vehicle wherein external forces imposed on the vehicle to which said suspension system is attached result in torsional forces being imposed on said axle, said suspension system including a brake actuation mechanism comprised of a brake chamber, an S-cam assembly comprising an S-cam bearing, a slack adjuster, an elongated beam, a pneumatic bellows located on said beam, a hanger bracket located at one end of said beam, means for rigidly connecting said axle to said beam, and a pivot connection for resiliently connecting said beam to said hanger bracket, the improvement comprising: means located on said beam for attaching said S-cam bearing directly to said beam, and means for directly attaching said brake chamber to said beam.

Claim 17, a dependent claim, claims the teaching of claim 16 together with a limitation that the axle bearing suspension system have the axle run through an orifice in the beam:

The suspension system of claim 16 wherein said means for rigidly connecting said axle to said beam comprises an orifice in said beam which substantially surrounds said axle and is rigidly attached thereto, thereby to prevent said axle from assuming a cross-sectional shape substantially different from its unstressed shape when said torsional forces are imposed upon it.

Here, the parties dispute the interpretation of plaintiff's '237 patent. Specifically, the parties dispute the construction of:

1. "elongated beam";

2. "means for rigidly connecting said axle to said beam";

3. "means located on said beam for attaching said S-cam bearing directly to said beam"; and

4. "means for directly attaching said brake chamber to said beam."

The Court now turns to a discussion of the rules governing the interpretation of the claims of the '237 patent.

## II. Legal Standard

A determination of infringement requires a two-step analysis. "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 149 F.3d 1309, 1315 (Fed.Cir.1998); Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed.Cir.1998).

[2] In construing a patent claim, the Court looks first to the three sources of intrinsic evidence of record: the patent itself, including the claims, the specification, and, if in evidence, the prosecution history. *See* Genentech, Inc. v. Boehringer Mannheim GmbH, 989 F.Supp. 359 (D.Mass.1997) (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996)).

[3] The claim language defines the scope of the claim. A construing court does not afford the specification, prosecution history, and other relevant evidence the same weight as the claim itself, but consults these sources to give the necessary context to the claim language. *See* Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1552 (Fed.Cir.1997).

[4] In interpreting the claims and specification, the construing court interprets words "as one of skill in the art at the time of the invention would understand them." Eastman Kodak, 114 F.3d at 1555. In addition, "the court should also consider the patent's prosecution history ... in order to ascertain the true meaning of the language used in the patent claim." *Markman,* 52 F.3d at 980; *see also* Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452 (Fed.Cir.1985) ("[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance.").

[5] Terms used in the claim are to be given their ordinary and customary meaning "unless another meaning is specified or evident from the patent history." Storer v. Hayes Microcomputer Products, 960 F.Supp. 498, 501 (D.Mass.1997).

[6] [7] Reliance upon extrinsic evidence is improper where the public record-the claims, specifications, and file history-unambiguously defines the scope of the claims. *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed.Cir.1996). Thus, the Court looks to extrinsic evidence to assist in construing a patent claim only if the intrinsic evidence is ambiguous. FN1

FN1. *See* Vitronics, 90 F.3d at 1583-85; *Markman,* 52 F.3d at 980-81. Thus, "[i]f a court is able to discern the meaning of a patent's claims after considering these three sources of intrinsic evidence [i.e. the patent claims, specification and prosecution history], it should not look further to expert testimony or other evidence not part of the public record." Revlon Consumer Prod. Corp. v. L'Oreal, 170 F.R.D. 391, 393 (D.Del.1997). Opinion evidence on claim construction "is no better than opinion testimony on the meaning of statutory terms." Vitronics, 90 F.3d at 1585.

[8] Claim 16 of the '237 patent is expressed in means-plus-function format. Where a patent applicant chooses to use "means plus function" expressions, federal patent law says:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and *such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.*

35 U.S.C. s. 112, para. 6 (emphasis added).

Under this statute, a functional claim element's "broad literal language ... must be limited to only those means that are 'equivalent' to the actual means shown in the patent specification." Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 520 U.S. 17, 18, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997). The statute restricts the scope of a functional claim limitation as part of a literal infringement analysis. *See* Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 934 (Fed.Cir.1987).

[9] [10] The use of the word "means" creates a presumption that 35 U.S.C. s. 112, para. 6 applies. *See* York Prods., Inc. v. Central Tractor, 99 F.3d 1568, 1574 (Fed.Cir.1996) ("In determining whether to apply the statutory procedures of [s. 112, para. 6], the use of the word 'means' triggers a presumption that the inventor used this term advisedly to invoke the statutory mandates for means-plus-function clauses."). Failure to use the word "means" creates a presumption that s. 112, para. 6 does not apply. *See* Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213 (Fed.Cir.1998).

The parties agree that the '237 patent is stated in means-plus-function format. FN2 As such, the Court interprets its claims under 35 U.S.C. 112, para. 6.

FN2. In its *Markman* brief, Plaintiff Boler Company acknowledges that "when drafting the clauses at issue, Plaintiff specifically used means-plus-function language to define the invention as set forth in Claim 16." Doc. 36 at 9.

The Court now construes the patents at issue in this litigation.

## III. Construing the '977 Patent

### A. Construing "elongated beam"

[11] Defendant Neway Anchorlok argues that "beam," as claimed by claim 16 of the '237 patent, should be construed to mean an integral elongated structural member in a suspension system that is similar to Figures 9-12 of the '237 patent. Referring to those figures, Plaintiff Neway Anchorlok argues that the beam must connect the beam to the axle without additional parts, including U-bolts, brackets, sleeves, or welds. As Neway Anchorlok interprets "beam," the axle must insert through some opening or orifice in the beam. Otherwise it would not rigidly connect the axle to the beam. FN3

FN3. Defendant Neway Anchorlok says that claim 16 cannot include elements extrinsic to the beam to affix the axle. If Neway Anchorlok's interpretation controlled, the only apparent method of rigidly affixing the beam to the axle would be through some opening similar to an orifice. See Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1358 (Fed.Cir.1999) ("35 U.S.C. s. 101 mandates that any patentable invention be useful and, accordingly, the subject matter of the claim must be operable.")

In suggesting that "beam" be interpreted to require a member similar to Figures 9-12, Defendant Neway Anchorlok runs afoul of the doctrine of claim differentiation.

[12] The doctrine of claim differentiation is ultimately based on the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope. *See* Karlin Technology, Inc. v. Surgical Dynamics, Inc. 177 F.3d 968, 971 (Fed.Cir.1999) (citing Comark Communications Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed.Cir.1998)). Thus, limitations stated

in dependent claims are not normally read into the independent claim from which they depend. *See id.* (citing Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995)); *see also* Comark, 156 F.3d at 1187 (" 'There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant.' ") (citing Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed.Cir.1987)). As described above, dependent claim 17 explicitly teaches:

The suspension system of claim 16 wherein said *means for rigidly connecting said axle to said beam comprises an orifice* in said beam which substantially surrounds said axle and is rigidly attached thereto, thereby to prevent said axle from assuming a cross-sectional shape substantially different from its unstressed shape when said torsional forces are imposed upon it. (Emphasis added.)

Dependent claim 17 thus differentiates itself from claim 16 by saying the axle is attached through an orifice.

Here, dependent claim 17 teaches the same structure that Defendant Neway Anchorlok says should be required of claim 16. If Neway Anchorlok's construction of claim 16 was accepted, the Court would be reading limitations stated in dependent claim 17 into independent claim 16, the claim upon which claim 17 depends.

Defendant Neway Anchorlok argues that the '237 patent specifications, including the figures accompanying the patent, limit claim 16 to the structure taught in figures 9-12. But the 35 U.S.C. 112, para. 6 specifications may embrace more than the preferred embodiment. A means-plus-function claim encompasses all structure in the specification corresponding to that element and equivalent structures. *See* 35 U.S.C. 112, para. 6; Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1258 (Fed.Cir.1999). Patentees are not necessarily limited to their preferred embodiment. *See* Signtech USA, Ltd. v. Vutek, Inc., 174 F.3d 1352, 1356 (Fed.Cir.1999); Serrano v. Telular Corp., 111 F.3d 1578, 1583 (Fed.Cir.1997).

Here, the specifications teach several versions of the invention. The '237 patent teaches generally:

In another form of the invention there is provided in an axle suspension system wherein external forces imposed on the vehicle to which the suspension system is attached result in a torsional force being imposed on the axle, the suspension system including a brake actuation mechanism comprised of a brake chamber, and S-cam bearing, slack adjuster, and elongated beam, a pneumatic bellows located on the beam, a hanger bracket located at one end of the beam, means for rigidly connecting the axle to the beam, and a pivot connection for resiliently connecting the beam to the hanger bracket, the improvement comprising means located on the beam for attaching said S-cam bearing directly to the beam, and means for directly attaching the brake chamber to the beam.

'237 patent, col. 5, ll. 58-col. 6, ll. 1-5.

The '237 patent then teaches that the preferred embodiment involves attaching the axle to the beam through an orifice:

In a particularly preferred embodiment of the present invention, there is provided in a beam type axle suspension system ... means for rigidly connecting the axle to the beam, comprising an orifice in the beam of a larger size but substantially the same shape as the axle and through which the axle, with a sleeve rigidly

attached thereto, is slid or pressed.

'237 patent, col. 6, ll. 5-13.

The '237 patent specifications uses the term "beam" even though the "beam" does not have an inherent method of attaching to the axle:

"A typical trailing arm suspension 17 is shown in Figs. 5, 6 & 8 in this respect.... Beam 42 has a means of a rigid attachment 44 to axle 7."

'237 patent, col. 3, ll. 50-55. Before the '237 patent issued, the prior art understood the phrase "beam" to include beams that were secured to an axle by means of U-bolts.

The '237 patent specifications thus suggest more than one embodiment of the invention. Only in the preferred embodiment does the '237 patent teach that the axle is attached by sliding or pressing the axle through an orifice. In other embodiments, the '237 patent teaches a rigid connection between the beam and axle. It does not require the connection be made through the orifice described in the preferred embodiment.

Also, the '237 patent history suggests that the focus of its claim prosecution had been on its movement of the brake actuation mechanism from the axle to the beam. After the initial application was made, the Patent and Trademark Office denied the patent application on the ground that it had been anticipated by the Raidel patent, FN4 among others. The claim was later allowed after the inventor argued that the Raidel patent did not suggest placement of the brake actuation mechanism on the beam and that the Raidel patent was a different kind of suspension. Importantly, none of the '237 patent history suggests that the axle's placement through an orifice in the beam was ever an important issue during the claim prosecution.

FN4. U.S.Patent No. 4,132,432.

To summarize, claim 16 of '237 patent uses a means-plus-function format to teach a trailing arm suspension that moved the brake actuation mechanism from the axle to an elongated beam. While claim 16 describes only "an elongated beam," claim 17 of the '237 patent differentiates by teaching a "beam comprises an orifice in said beam which substantially surrounds said axle and is rigidly attached thereto."

In similar fashion, the '237 patent specifications teach several versions of the invention. Certain specifications teach a more general description of the beam. Other specifications teach a preferred embodiment that includes beams with orifices for the receipt of the axle.

In Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1257-58 (Fed.Cir.1999), the Federal Circuit recognized that in a means-plus-function format patent, the patent should be construed through the identification of the structure in the specification which performs the recited function. The Court held that a means-plus-function claim should not be limited to a "structure from the written description beyond that necessary to perform the claimed function." *Id.; see also* Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed.Cir.1999).

In this means-plus-function claim, the Court looks to the structure in the written description necessary to perform the claimed functions. While the preferred embodiment of the '237 patent includes a beam with an

orifice to connect the axle to the beam, these elements are not necessary to perform the claimed function. The doctrine of claim differentiation argues against this construction. If claim 16 of the '237 patent required the elongated beam to have an orifice in said beam which substantially surrounds said axle and is rigidly attached thereto, there was no reason for claim 17 of the '237 patent.

In claim 16 of the '237 patent, the Court construes "beam" to a mean an integral elongated structural member in a suspension system and attached at the other end by a rigid connection to an axle and equivalents thereto.

In claim 17 of the '237 patent, the Court construes "beam" to a mean an integral elongated structural member in a suspension system without any distinct means, structure, or component to attach the suspension system's axle to the beam, such as U-bolts, brackets, sleeves or welds and equivalents thereto.

**B. Construing "means for rigidly connecting said axle to said beam"**

[13] Claim 16 of the '237 patent discloses a "means for rigidly connecting said axle to said beam." Claim 17, a dependent claim, claims the teaching of claim 16 together with a limitation that the "means for rigidly connecting said axle to said beam comprises an orifice in said beam which substantially surrounds said axle and is rigidly attached thereto."

These claims are stated in means-plus-function format. The use of the means-plus-function format requires both identification of the claimed function and identification of the structure in the written description necessary to perform that function. *See* Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1257 (Fed.Cir.1999). To interpret and construe the claims of the '237 patent, the Court primarily reviews the claim language chosen, and not chosen, together with the patent's specifications. *See* Vitronics, 90 F.3d at 1582 ("[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.").

The '237 patent claims 16 and 17 are somewhat different. Claim 16 of the '237 patent discloses a "means for rigidly connecting said axle to said beam." Claim 17, a dependent claim, claims the teaching of claim 16 together with a limitation that "the means for rigidly connecting said axle to said beam comprises an orifice in said beam which substantially surrounds said axle and is rigidly attached thereto."

As described above, the doctrine of claim differentiation suggests that claim 16 and claim 17 disclose a different invention. The Federal Circuit Court of Appeals described that the "doctrine of claim differentiation ... normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend." Karlin, 177 F.3d at 971-72 (citing Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995)).

The '237 patent specifications support this differentiation:

"In *one form of the invention,* then, there is provided and axle suspension system for a wheeled vehicle ... the suspension system including an elongated beam, ... [and] means for rigidly connecting the axle to the beam, ... The means for rigidly connecting the axle to the beam comprising an orifice in the beam which substantially surrounds the axle and is rigidly attached thereto...."

'237 patent, col. 5, ll. 40-53 (emphasis added).

In contrast, the specifications describe another form of the invention without requiring that the connection be made through an orifice:

" *In another form of the invention* there is provided in an axle suspension system ... the suspension system a ... means for rigidly connecting the axle to the beam ..."

'237 patent, col. 5, ll. 58-62.

As proposed by Defendant Neway Anchorlok, claim 16 and claim 17 of the '237 patent identify an identical disclosure. As proposed by Neway, the construction shown by dependent claim 17 is superfluous to the construction shown by independent claim 16 of the '237 patent.

More reasonably, the Court finds that claims 16 and 17 disclose somewhat different inventions. The Court finds that claim 17 of the '237 patent should be construed to be "a rigid connection by welding, brazing, soldering or adhesively bonding of the axle and the beam through an orifice located in the orifice."

Because the Court finds that independent claim 16 of the '237 patent does not disclose the same structure as dependent claim 17, the Court rules that claim 16 discloses a function of rigidly connecting an axle to the beam. In describing attaching the brake actuation means to the beam rather than the axle, the '237 patent suggests that the beam-axle connection includes structures other than the welded connection at orifice 67. Describing the brake actuation placement, the '237 patent says:

FIGS. 9, 10 and 13 illustrate yet another unique feature of the instant invention, i.e. the ability to attach the brake actuation mechanism to the beam and thereby avoid entirely any welding or other type of attachment to axle 7 ... The axle-to-beam connection, as described above, is rigid. This is important. To be safe, brake chambers and S-cam assemblies must remain in the same position relative to the axle, or the brakes may not operate properly. Through the use of the unique resilient bushing arrangement of U.S.Pat. No. 4,166,640, which allows a rigid axle-to-beam construction (as well as a rigid beam), the beam now becomes a better location for attaching the brake chamber and S-cam assembly as the axle was in the prior art,....

'237 patent, col. 8, ll. 5-21.

U.S.Pat. No. 4,166,640 describes a rigid axle-beam connection through the use of U-bolts. *See* U.S.Pat. No. 4,166,640, col. 3, ll. 20-27. The '237 patent describes the use of U-bolts as taught in U.S.Pat. No. 4,166,640, as one means of creating a rigid axle-beam connection. Given this reference to another means for creating the axle-beam connection, the Court finds that independent claim 16 teaches a structure broader than the axle-beam orifice structure taught by claim 17 of the '237 patent.

Guided by the doctrine of claim differentiation, the Court construes claim 16 of the '237 patent to be any structure whereby the axle and beam are connected, and at the point of connection, there is no significant movement of the beam and axle relative to each other, and its equivalent thereto.

Interpreting dependent claim 17 of the '237 patent, the Court finds that claim 17 discloses a function of rigidly connecting an axle to the beam. Guided by the common sense notion that different words or phrases used in separate claims have different meanings and scope, the Court construes claim 17 of the '237 patent to be a structure that rigidly adheres the axle to the beam comprising an orifice in the beam which

substantially surrounds the axle and is rigidly attached thereto through a continuous 360 ~weld, brazing, soldering, or adhesive bonding around the orifice/axle interface.

### C. Interpreting "means located on said beam for attaching said S-cam bearing directly to said beam" and "means for directly attaching said brake chamber to said beam."

[14] As earlier described, claim 16 of the '237 patent, provides, in part:

In an axle bearing suspension system ... an S-cam assembly comprising an S-cam bearing, ... the improvement comprising: means located on said beam for attaching said S-cam bearing directly to said beam, and means for directly attaching said brake chamber to said beam.

Claim 17 of the '237 patent describes the same means for attaching the S-cam bearing and the brake chamber as claim 16 of the '237 patent. The specifications of the '237 patent do not suggest any different structure for Claim 17 from that suggested for Claim 16.

Regarding construction of "means for directly attaching said brake chamber to said beam," Defendant Neway Anchorlok says this Court must construe this phrase as requiring "nuts and bolts that cause the brake components to abut the beam without any intervening parts."

After reviewing the intrinsic evidence of the '237 patent, the Court finds that "means for directly attaching" should be construed to require a direct attachment of the brake components to the beam (element 59 of the '237 patent) and not to the axle. In claim 16 of the '237 patent, its inventor says that attachment of the brake components on the beam distinguished the invention from the prior art which had attached the brake chamber and S-cam bearing to the axle. Accordingly, the "means for directly attaching" the brake components to the beam does not allow attachment to the axle.

Interpreting "directly attaching," the Court finds this term should be given its regular meaning. Giving such an interpretation, the Court finds "directly" requires that the brake chamber and the S-cam bearing be attached "without any intervening space." Webster's Third New International Dictionary, at 641. The Court finds that "attaching" requires the brake actuating mechanism to "fasten firmly," "to make fast or join" to the beam. *See* id. at 140.

The Court therefore construes "means located on said beam for attaching said S-cam bearing directly to said beam," and "means for directly attaching said brake chamber to said beam" discloses a function of fastening firmly without any intervening space the air brake chamber and S-cam bearing to the beam. The Court finds that the structure used to accomplish this is an S-cam bearing and brake chamber brackets or appendage to the beam to which the S-cam bearing and brake chamber are attached through a combination of nuts and bolts, or its equivalent thereto.

## IV. CONCLUSION

The Court has construed the claims presented by the parties. The disputed terms and phrases shall, at all times relevant, be construed in the manner and fashion proscribed herein. The jury shall be so instructed at trial.

IT IS SO ORDERED.

N.D.Ohio,2000.
Boler Co. v. Neway Anchorlok, Intern., Inc.