United States District Court,
N.D. Indiana, South Bend Division.

CATERPILLAR INC,
Plaintiff.
v.
DETROIT DIESEL CORP,
Defendant.

No. 3:95-CV-489-RM

Dec. 30, 1996.

Patentee brought action against competitor, alleging infringement of its cruise control patent. On motion to construe patent claim, the District Court, Miller, J., held that: (1) statute permitting means-plus-function and step-plus-function claims applies to method claims; (2) cruise control was "engaged" within meaning of patent when it was operating to control vehicle's speed, not when on/off switch was closed; and (3) claim stating that one of sets of data representing one of fuel delivery limit curves was retrieved when cruise control was engaged, and other set of data representing other fuel delivery limit curve was retrieved when cruise control was not engaged allowed for cruise control to be one of two states, and one of two different sets of data was retrieved depending on whether cruise control was engaged or not engaged.

Ordered accordingly.

4,914,597. Cited.

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Robert M. Edwards, Jr., Jones Obenchain Ford Pankow and Lewis, South Bend, IN, Robert C.J. Tuttle, Ernie L. Brooks, Frank A. Angileri, Brooks and Kushman, PC, Southfield, MI, for Detroit Diesel Corp.

MEMORANDUM AND ORDER

MILLER**, District Judge.**

The parties agree that, pursuant to the decision of the Federal Circuit in Markman v. Westview Instruments, 52 F.3d 967 (Fed.Cir.1995), affirmed in Markman v. Westview Instruments, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), the court properly determines the meaning of a patent claim as a matter of law. The defendant filed a motion for the court to determine the meaning of Claim 1 of the patent in suit, and the motion is now fully briefed. The court determines the meaning of Claim 1 of the U.S. Patent No. 4, 914,597

as set forth in this memorandum and order.

I.

Caterpillar Inc. filed this suit against Detroit Diesel Corporation alleging that Detroit Diesel's "CruisePower" feature infringes its United States Patent No. 4,914,597 (" '597 patent"). The patent relates to a system providing variable engine power while using vehicle cruise control; the claim at issue-Claim 1-involves a method of operating a vehicle engine with cruise control by use of a fuel delivery system that controls the rate of fuel delivery by responding to a command signal generated through the retrieval of sets of data from memory, the set retrieved depending on whether the cruise control is "engaged."

Claim 1 of the '597 patent provides the following:

1. A method of operating a vehicle engine (12) equipped with a cruise control (44) which is engageable to control the speed of the vehicle (38) in response to a set speed wherein the engine includes a fuel delivery system (14) which is responsive to a command signal to in turn control the rate of fuel delivery to the engine, comprising the steps of:

providing a memory (86) having stored therein two sets of data representing two different fuel delivery limit curves wherein each fuel delivery limit curve defines predetermined fuel delivery limits as a function of engine speed;

determining when the cruise control (44) is engaged;

retrieving one of the sets data from the memory (86) representing one of the fuel deliver limit curves when the cruise control (44) is engaged;

retrieving the other set of data from the memory (86) representing the other fuel delivery limit curve when the cruise control (44) is not engaged; and

using the retrieved data to develop the command signal.

The parties agree that under the *Markman* decision, the court must determine the meaning of Claim 1 as a matter of law before the issue of infringement may be resolved with reference to the claim's meaning. In construing a patent as a matter of law, the court considers the claim itself, the specification, and the prosecution history ("file wrapper"). Markman v. Westview Instruments, 52 F.3d 967, 979 (Fed.Cir.1995) (*citing* Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1561 (Fed.Cir.1991)). The court is to construe the claim's language; the court cannot narrow or broaden the scope of a claim to give the patent owner something different than what is set forth. E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed.Cir.1988); Autogiro Co. of America v. United States, 181 Ct.Cl. 55, 384 F.2d 391, 396 (1967). The court may also consider extrinsic evidence as an aid in understanding the meaning of the claims' language, Markman v. Westview Instruments, 52 F.3d at 980, FN1 though extrinsic evidence may not be used "for the purpose of varying or contradicting the terms of the claims." Id. at 981.

FN1.
Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises. This evidence may be helpful to explain

scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history. Extrinsic evidence may demonstrate the state of the prior art at the time of the invention. It is useful to show what was then old, to distinguish what was new, and to aid the court in the construction of the patent.
... The court may, in its discretion, receive extrinsic evidence in order to aid the court in coming to a correct conclusion as to the true meaning of the language employed in the patent.

52 F.3d at 979 (internal quotation omitted).
A claim must be read in light of the entire specification, which contains an explanation of the invention that must enable one of ordinary skill in the art to make and use the invention. "[T]he description may act as a sort of dictionary, which explains the invention and may define terms used in the claims." 52 F.3d at 979. Although the patentee is granted license to define his terms, FN2 any special definition assigned to a word must be clearly defined in the specification. *Id*. (citing Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388 (Fed.Cir.1992)); *see* Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580 (Fed.Cir.1995) ("[T]he words of a claim will be given their ordinary meaning to one of skill in the art unless the inventor appeared to use them differently."), *cert. denied,* 517 U.S. 1167, 116 S.Ct. 1567, 134 L.Ed.2d 666 (1996). The claim defines the scope of the invention, SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 (Fed.Cir.1985) (en banc), and although the specification may aid in divining the true meaning of the claim, the court cannot read into a claim a limitation that appears in the specification but not the claim. Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1566 (Fed.Cir.1992); E.I. du Pont de Nemours, 849 F.2d at 1433. References to a preferred embodiment, such as those in the specifications or drawings, are not claim limitations. Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed.Cir.1988); Raytheon Co. v. Roper Corp., 724 F.2d 951, 957 (Fed.Cir.1983). And although the patent's prosecution history is relevant to determining claims' meaning, 52 F.3d at 980 (citing Graham v. John Deere Co., 383 U.S. 1, 33, 86 S.Ct. 684, 701-02, 15 L.Ed.2d 545 (1966)), it similarly cannot change the scope of the claims, 52 F.3d at 980.

FN2. The Court of Claims described the reasoning for this in Autogiro Co. of America v. United States, 181 Ct.Cl. 55, 384 F.2d 391, 397 (1967):
An invention exists most importantly as a tangible structure or a series of drawings. A verbal portrayal is usually an afterthought written to satisfy the requirements of patent law. This conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled. Often the invention is novel and words do not exist to describe it The dictionary does not always keep abreast of the inventor. It cannot. Things are not made for the sake of words, but words for things. To overcome this lag, patent law allows the inventor to be his own lexicographer....

II.

The parties disagree on the meaning of Claim 1, as well as on the more fundamental question of the proper categorization of Claim 1, and thus the proper method employed to determine the claim's meaning. Detroit Diesel contends that the '597 patent contains "step-plus-function" components that the court must, pursuant to paragraph 6 of s. 112 of the Patent Act, construe with reference to the corresponding portions of the specification. Caterpillar argues that the '597 patent is a method patent, and that no authority exists for the application of paragraph 6 to method claims.

A. Background

The Patent Act provides that "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. s. 101; *see also* Diamond v. Chakrabarty, 447 U.S. 303, 309, 100 S.Ct. 2204, 2207-2208, 65 L.Ed.2d 144 (1980) (Congress intended s. 101 to include "anything under the sun that is made by man"). FN3 A "process" is further defined as a "process, art or method." 35 U.S.C. s. 100(b). Three of the four classes of utility inventions-machines, manufactures, and compositions of matter-may be grouped into "products," leaving products and processes as the two general categories of patents. 1 Donald. S. Chisum, *Patents,* s. 1.01, at 1-5, 1-7 (1996).

FN3. The Act excludes from patentability subject matter that falls under the categories of "laws of nature, physical phenomena, and abstract ideas." Diamond v. Diehr, 450 U.S. 175, 185, 101 S.Ct. 1048, 1056, 67 L.Ed.2d 155 (1981).

A patent specification contains a description of the invention, a description of how to make and use the invention that would allow one reasonably skilled in the art to make and use it, and a description of the "best mode" contemplated by the inventor for carrying out the invention. 35 U.S.C. s. 112(1). The specification must conclude with "one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. s. 112(2). Patent claims may be drafted in "functional" language, which "describ[es] an invention in terms of what it *accomplishes* rather than in terms of what it *is*." 2 Chisum, *Patents,* s. 8.04 at 8-53. Functional language is by its nature broad, and may run afoul of the Patent Act's requirement that a patent claim "particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention." 35 U.S.C. s. 112, para. 2 (based on 35 U.S.C., 1946 ed., s. 33).

Just such a situation occurred in Halliburton Oil Well Cementing Co. v. Walker, 329 U.S. 1, 67 S.Ct. 6, 91 L.Ed. 3 (1946), in which the Supreme Court held that a claim drafted as a "means-plus-function" was invalid. The functional language of the patent at issue in *Halliburton* FN4 described a resonator in relation to the rest of the apparatus as "means associated with said pressure responsive device for tuning said receiving means to the frequency of echoes from the tubing collars of said tubing section to clearly distinguish the echoes of said couplings from each other." 329 U.S. at 8-9, 67 S.Ct. at 10. "The language of the claim," the Supreme Court explained, "thus describes this most crucial element in the 'new' combination in terms of what it will do rather than in terms of its own physical characteristics or its arrangement in the new combination apparatus." Id at 9, 67 S.Ct. at 10. It was this "broadness, ambiguity, and overhanging threat of the function claim" that troubled the Supreme Court:

FN4. The patent in suit in *Halliburton* involved "an apparatus designed to facilitate the pumping of oil out of wells which do not have sufficient natural pressure to force the oil to gush." 329 U.S. at 3, 67 S.Ct. at 7. The patent at issue improved over the prior art by adding a mechanical acoustical resonator to make an accurate measure of the distance from the well top to the fluid surface. Id. at 4, 67 S.Ct. at 8.

What he claimed in the court below and what he claims here is that his patent bars anyone from using in an oil well any device heretofore or hereafter invented which combined with the Lehr and Wyatt machine [

(the prior art)] performs the function of clearly and distinctly catching and recording echoes from tubing joints with regularity. Just how many different devices there are of various kinds and characters which would serve to emphasize these echoes, we do not know. The Halliburton device, alleged to infringe, employs an electric filter for this purpose. In this age of technological development there may be many other devices beyond our present information or indeed our imagination which will perform that function and yet fit these claims. And unless frightened from the course of experimentation by broad functional claims like these, inventive genius may evolve many more devices to accomplish the same purpose. Yet if Walker's blanket claims be valid, no device to clarify echo waves, now known or hereafter invented, whether the device be an actual equivalent of Walker's ingredient or not, could be used in a combination such as this, during the life of Walker's patent.
329 U.S. at 12, 67 S.Ct. at 12 (citations omitted).
In 1952, Congress reacted to the *Halliburton* decision by enacting paragraph six of s. 112 (then paragraph 3), which provides that "[a]n 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(6). As explained in *Greenberg v. Ethicon Endo-Surgery. Inc.,:*

The record is clear on why paragraph six was enacted. In Halliburton Oil Well Cementing Co. v. Walker. 329 U.S. 1, 67 S.Ct. 6, 91 L.Ed. 3 (1946), the Supreme Court held invalid a claim that was drafted in means-plus-function fashion. Congress enacted paragraph six, originally paragraph three, to overrule that holding. In place of the *Halliburton* rule, Congress adopted a compromise solution, one that had support in the pre-*Halliburton* case law: Congress permitted the use of purely functional language in claims, but it limited the breadth of such claim language by restricting its scope to the structure disclosed in the specification and equivalents thereof.

91 F.3d 1580, 1582 (Fed.Cir.1996) (citations omitted); *see also* 2 Chisum, *Patents,* s. 8.04[1] at 8-62-8-63.FN5 The court in Motorola Inc., v. Interdigital Technology Corp., 930 F.Supp. 952, 963 (D.Del.1996), described this simple example regarding the effect of paragraph 6: "[I]f a patent contains a means-plus-function limitation claiming a 'means for fastening' and the specification discloses a 'button' as a possible fastening means, under *Markman* a court must resolve any disputes regarding both the 1) function of the fastening means, and 2) the meaning of the word 'button,' as a matter of law."

FN5.
Halliburton Oil Well Cementing Co. v. Walker appeared to set an unreasonably high standard of definiteness for patent claims. Claim language in a means-plus-function style had been common prior to *Halliburton* and had received the apparent approval of the Supreme Court in Continental Paper Bag [v. Eastern Paper Bag, 210 U.S. 405, 28 S.Ct. 748, 52 L.Ed. 1122 (1908)]. *Halliburton* also seemed to run contrary to the prevailing notions that a patentee need not describe in his specification every possible embodiment of the invention and that a patent would include later specific improvements if those improvements "stood on the shoulders" of the first patent. It is not surprising therefore that Congress inserted the third [(now, sixth)] paragraph of Section 112 in the Patent Act of 1952 to dispel some of the implication of the *Halliburton* case.

2 Chisum, *Patents,* s. 8.04[l] at 8-62-8-63.

B. Paragraph Six Applies to Methods Claims

[1] Though Caterpillar is correct in its observation that case law directly on point is sparse, the court

concludes that, contrary to Caterpillar's assertion, paragraph six of s. 112 applies to method claims, and not only to apparatus claims. The court's conclusion is based on the statute's plain language, commentary of one of its drafters, case law at the time of enactment of paragraph six and since then, and on Patent and Trademark Office guidelines.

Contrary to Caterpillar's expert's interpretation,FN6 paragraph six of s. 112 does not define a new and distinct variety of patent claim. Rather, the plain language of paragraph six makes clear that the method it prescribes applies on an element-by-element basis and that it applies to both apparatus and methods claims: "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 ..." (emphasis added). From the statute courts derive the terms "means-plus-function" and "step-plus-function" for functional language contained in apparatus and methods claims respectively.

FN6. Caterpillar's expert, James M. Amend, asserts in his affidavit that, "depending on the type of patent (*e.g.* method, means-plus-function, apparatus, etc.), certain statutory and/or common law rules will govern the manner in which the claims of the patent should be construed," and that "[b]ecause Claim 1 of the '597 patent is a method claim, para. 6 of 35 U.S.C. s. 112 does not apply to the construction of that claim." Amend Aft. (ex. B to Caterpillar's response), para. 15.

Commentary by one of paragraph six's drafters supports its application to method/process claims. The Reviser's Notes regarding paragraph six included the following comment by P.J. Federico, then Examiner-in-Chief of the Patent Office:

The last paragraph of section 112 relating to so-called functional claims is new. It provides that an element of a claim for a combination (and a combination may be not only a combination of mechanical elements, but also a combination of substances in a composition claim, or steps in a process claim) may be expressed as a means or step for performing a specified function, without the recital of structure, material or acts in support thereof.

2 Chisum, *Patents,* s. 8.04[2][a] at 8-64 (*citing* Federico, *Commentary on the New Patent Act,* 35 U.S.C.A. 1, 25-26 (1954)).FN7 That paragraph six applies to method/process claims also finds support in PTO guidelines published in the wake of the Federal Circuit's decision in In re Donaldson Inc., 16 F.3d 1189, 1193-1194 (Fed.Cir.1994). Charles E. Van Horn (PTO Patent Policy and Projects Administrator), PTO Notice on Means or Step Plus Function Limitation Under 35 U.S.C. Section 112, 6th Paragraph, 47 Pat. Trademark & Copyright J. (BNA) 571, 571 (1994); *see also* Practising Law Institute, *The* Winning Mechanical Claim 426 PLI/Pat 231, 331 (1995); Paul M. Janicke, *The Crisis in Patent Coverage: Defining Scope of an Invention by Function,* 8 Har. J.L. & Tech 155, 192 n. 14 (1994). In Donaldson, the court held that paragraph six of s. 112 applies not only to courts, but also to the PTO's patent examination process. The guidelines (which were "distributed to patent examiners for guidance on examining practice and procedure" and "incorporated into the Manual of Patent Examining Procedure") begin by setting forth six examples of elements of claims that are written in functional language that invokes paragraph six of s. 112. 47 Pat. Trademark & Copyright J. (BNA) at 571. The guidelines' last two examples are elements of process claims from In re Roberts, 470 F.2d 1399 (C.C.P.A.1973), and *Ex parte* Zimmerley, 153 U.S.P.Q. 367 (Bd.App.1966), respectively:

FN7. The court is mindful of the Federal Circuit's warning in In re Donaldson, Inc., 16 F.3d 1189, 1193 n. 3

(Fed.Cir.1994), that Mr. Federico's comments do not constitute legislative history per se because Mr. Federico, though a textual author of the 1952 Patent Act's provisions, was not a legal author, and so was "merely stating his personal views." Lawrence Kass, Comment, Computer Software Patentability and the Role of Means-Plus-Function Format in Computer Software Claims 15 Pace L.Rev. 787, 852-853 (1995). The *Donaldson* court's warning, however, was made in the context of a different issue (whether application of paragraph six of s. 112 is appropriate during patent examination). With respect to the application of paragraph six, the United States Court of Customs and Patent Appeals expressed its agreement with Mr. Federico's interpretation of paragraph six as applying to "not only a combination of mechanical elements, but also a combination of substances in a composition claim, or steps in a process claim." Application of Fuetterer, 50 C.C.P.A. 1453, 319 F.2d 259, 264 (1963).

(5) reducing the coefficient of friction of the resulting film [step plus function; "step" unnecessary], and (6) raising the Ph [sic] of the resultant pulp to about 5.0 to precipitate ...

The guidelines also provide that "step" and "act" are related in the same way as "means" and "structure." 47 Pat. Trademark & Copyright J. (BNA) at 573.
In *Roberts,* the Court of Customs and Patent Appeals reversed the examiner's rejection of four method claims. 470 F.2d at 1403. The examiner's rejection was based on the claims' functional language; the examiner thought the step of " 'reducing the coefficient of fiction-to below about 0.40' define [d] a result but fail[ed] to identify the specific act or acts required to produce the result claimed." Id. at 1402. The court disagreed with the examiner's conclusion because "[t]he [sixth] paragraph of [section 112] specifically allows the use of functional language to define claim limitations." *Id*. at 1402. "[T]he absence in the claim of specific steps which would bring about the desired friction property is no defect The claims define the limits of the claimed invention, and it is the function of the specification to detail how this invention is to be practiced." *Id*. at 1403. In *Zimmerley,* the Patent Office Board of Appeals reversed a rejection of a method claim for failing to particularly point out and distinctly claim the invention; specifically, the examiner thought that the claim element of "raising the ph level of the resultant pulp to about 5.0 to precipitate dissolved molybdenum as molybdenum trihydroxide" should have recited a specific way of raising the pH level. 153 U.S.P.Q. at 369. The court found the examiner's rejection improper because paragraph six of s. 112 "sanctions functionally defined steps in claims drawn to a combination of steps." *Id*. at 369.

In In re Cohn, 58 C.C.P.A. 996, 438 F.2d 989 (1971), the court noted that paragraph six of s. 112 applies to allow functional language in a method claim, though it went on to find inexplicable inconsistencies within the claims at issue and affirmed the examiner's rejection of the patent as indefinite under the second paragraph of s. 112. 438 F.2d at 999 ("It is true that claim language which expresses performing particular steps until a given result or state is reached, or a given condition obtained, may be proper under s. 112, [sixth] paragraph.").

[2] From *Roberts, Zimmerley,* and *Cohn,* the court concludes that s. 112 applies to functional methods claims where the element at issue sets forth a step for reaching a particular result, but not the specific technique or procedure used to achieve the result. Such an interpretation is consistent with the statute's plain language, which exempts from the purview of s. 112(6) an element in a claim for a combination that is expressed as a means or step for performing a function *with* the recital of supporting acts.FN8

FN8. Indeed, the Federal Circuit has found s. 112(6) inapplicable in situations where an element's language is functional, but some recitation of structure exists and the "means" is not tied to the function. York

Products Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1574 (Fed.Cir.1996).

The Federal Circuit's treatment of means-plus-function language reveals that paragraph six's application is not triggered simply by the use of functional language or the magic words "means for ___ing" or "step for ___ing." FN9 In Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580 (Fed.Cir.1996), the Federal Circuit found that the district court erred in applying s. 112(6) to a claim element that defined a component as a "detent mechanism." The district court based its decision on the functionality of the "detent" (*i.e.,* "a device for positioning and holding one mechanical part in relation to another"), and on the fact that the "detent means" was used twice in the specification's summary of the invention. *Id.* at 1583. The Federal Circuit disagreed with the district court's reasoning on three bases. First, the court explained that "[t]he fact that a particular mechanism ... is defined in functional terms is not sufficient to convert a claim element containing that term into a 'means for performing a specified function' within the meaning of section 112(6)." *Id.* More important than the fact that "detent mechanism" was defined in terms of what it does was the fact that "the term, as the name for structure, has a reasonably well understood meaning in the art." *Id.* Second, that the specification contained the term "means" was of little significance because "means" was used "simply as a shorthand way of referring to each of the key structural elements of the invention," and that those elements later were described in detail without using "means." Lastly, the court considered the patentee's intent: "the element in question did not use 'means-plus-function' language, no other element of the claim was in means-plus-function form, and nothing cited to use from the prosecution history or elsewhere suggests that the patentee intended to claim in that fashion." *Id.* at 1584. The court then noted the general principle that "the use of the term 'means' has come to be so closely associated with 'means' plus-function' claiming that it is fair to say that the use of the term 'means' (particularly as used in the phrase 'means for') generally invokes section 112(6) and that the use of a different formulation generally does not." *Id.* at 1584.

FN9. For a broader view of the application of s. 112(6) to method claims, *see* Kenneth R. Adamo, Drafter's Dilemma: Means Plus Function and Guidelines and Hilton Davis, 78 J. Pat. & Trademark Off. Soc'y 367, 389 (1996) ("[I]t is fundamental that nearly all steps recited in process claims fall within this provision [s. 112, para. 6] of the Patent Statute," (citations omitted)). Though the Federal Circuit has not directly addressed the issue, the Federal Circuit has clearly not adopted such an expansive view of the application of s. 112(6) to method claims.

Greenberg thus teaches that an element's language is not dispositive of whether s. 112(6) applies, *see* York Products Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1574 (Fed.Cir.1996) ("[M]ere incantation of the word 'means' in a clause reciting predominantly structure cannot evoke section 112, P 6."), and that the court should consider whether the functional term has a "reasonably well understood meaning in the art," and the drafter's intent, as may be evidenced by the language, reference to other elements or claims, and the prosecution history.

C. Section 112(6) ***Does Not Apply to the Elements of Claim I of*** the '597 Patent

[3] Applying the factors discussed above to the elements of Claim 1, the court concludes that s. 112(6) is not applicable. The elements of Claim 1 of the '597 patent are written as steps-plus-functions, which support an intent to invoke s. 112(6): "steps of: providing a memory ... determining when the cruise control is engaged; ... retrieving one of the sets [of] data ...; retrieving the other set of data ...; and using the retrieved data...." That factor, however, is not determinative, and the remainder of the factors counsel the court not to apply s.

112(6). Nothing in the prosecution history suggests an intent to invoke s. 112(6), *see* ex. D to Caterpillar's response, and the elements at issue in Claim 1 are not result-oriented, as were those in *Roberts Zimmerley* and *Cohn,* in which the Federal Circuit discussed the application of s. 112(6) to method or process claims. The elements of Claim 1 involve the actions of "providing," "determining" "retrieving," and "using," which do not merely describe an achieved result, but are specific acts in themselves. The acts set forth in Claim l's elements are "functional" only in the manner in which all acts are functional, and nothing before the court suggests that the acts set forth in the claim lack a "reasonably well understood meaning in the art." *See* Greenberg, 91 F.3d at 1583.

D. Construction of Claim I As A Matter of Law

[4] The parties agree that Claim 1 is written in "open format" because it uses the transition phrase "comprising the steps of." FN10 When a claim is written in open format, the elements set forth are only a part of the device or method, and a device or method containing those elements, even if it contains additional elements, will read on the claim. *See* Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271-1272 (Fed.Cir.1986). By contrast, claims with the transitional language of "consisting of" are in "closed format" which means that it will literally read on or cover a device with only the named elements. 2 Chisum, *Patents,* s. 8.06[1][b] at 8-101. Open claims are broader in scope and are thus preferred by claim drafters over closed format claims. The parties disagree as to the meaning of the second, third, and fourth elements of Claim 1.

FN10. Use of the words "including" and "having" also denote a claim in open format 2 Chisum, *Patents,* s. 8.06[1][b] at 8-101.

1. "[D]etermining when the cruise control is engaged"

[5] With respect to the second element of Claim 1, Detroit Diesel contends that the cruise control must be either engaged or not engaged, that the cruise control is engaged when the on/off switch is closed, and is not engaged when the switch is open or the brake or clutch is depressed. To support the meaning it ascribes to the word "engaged," Detroit Diesel refers the court to the portions of the specification that explain that "[w]hen the switch 48 is closed, a signal is passed to the road speed limit and cruise control 44 to engage the cruise control mode of operation," col. 4, lines 29-31, and that "[w]hen either the brake pedal 52 or clutch 54 is depressed," the "cruise control mode of operation" is "disengage[d]." Detroit Diesel also refers the court to Figure 1 of the '597 patent, in which switch (48) is represented as "ON/OFF."

Caterpillar asserts that the cruise control is engaged when the on/off switch is activated, a vehicle speed is entered, and vehicle speed control is released from the throttle to the engine controller. To support its definition of "engaged," Caterpillar refers the court to the "set" step (50) in the patent's Figure 1, and to the affidavit of Michael Moncelle, the first named inventor of the '597 patent. Mr. Moncelle explains that "[i]t is common and accepted knowledge to one of ordinary skill in the art for engine cruise control systems that an engine cruise control is 'engaged' when it is activated and capable of controlling the engine to maintain a specified vehicle speed," which occurs "only after the cruise control has been activated by turning the feature on, and the vehicle speed has been entered through the set or resume functions." Moncelle Aff., para. 4. Caterpillar also cites the affidavit of its expert James Amend, who explains that "[t]he only interpretation of the word 'engage' in Claim 1 which is consistent with how a cruise control works, the purpose of the invention and the preamble to Claim 1, is that it means: on and set above the minimum, and not disengaged by depressing the brake or clutch." Amend Aff., para. 29.

Although the portion of the specification that states that "[w]hen the switch 48 is closed, a signal is passed to the road speed limit and cruise control 44 to engage the cruise control mode of operation," col. 4, lines 29-31, appears to define the cruise control as "engaged" when the switch (48) is "on," reference to the entire specification confirms that the second element of Claim 1 uses "engaged" in its ordinary sense, *i.e.*, "employed." *American Heritage Dictionary of the English Language* 433 (1981). The cruise control is engaged when it is operating to control the vehicle's speed. This definition is consistent with the patent's preamble, which describes the invention as a "method of operating a vehicle engine (12) equipped with a cruise control (44) which is engageable to control the speed of the vehicle...." It is also consistent with the patent's purpose, described in the specification: "Thus, when the cruise control is engaged, a higher engine output power is available, if needed, so that an operator is less likely to have to downshift in order to provide the torque required to maintain the actual vehicle speed at the desired vehicle speed." The use of "engaged" in this context cannot simply mean that the on/off switch is closed; the purpose of the patent is to make more torque available when the cruise control is actually in use, *i.e.*, controlling vehicle speed, to encourage the use of cruise control and decrease the need to downshift. These purposes would not be served if the higher torque were available simply based on the cruise control on/off switch.

The specification describes the cruise control's operation, *see* col. 4, lines 20-44, and Figure 1 shows the inputs the cruise control receives. The operation of the cruise control as depicted in the specification, including Figure 1, is consistent with the explanation of Caterpillar's expert James Amend. In his affidavit Mr. Amend explains that one of ordinary skill in the art would know that a cruise control feature on a manual transmission vehicle could have six operational states: (1) activation switch off; (2) activation switch on; no vehicle speed set; (3) activation switch on and speed set, but the set speed is below a pre-programmed minimum set speed; (4) activation switch on and speed set above minimum, but operator pressed the clutch or the brake; (5) activation switch and speed set above minimum but operator used throttle to exceed set speed; and (6) activation switch on, speed set above minimum, and operator neither presses brake or clutch, nor exceeds set speed through use of throttle. Amend Aff., para. 26; *see also* Moncelle Aff., para. 4. The cruise control is "engaged," *i.e.* controlling the vehicle speed, only in the final state.

2. The Retrieving Steps

"[R]etrieving one of the sets [of] data from the memory (86) representing one of the fuel deliver[y] limit curves when the cruise control (44) is engaged";
"[R]etrieving the other set of data from the memory (86) representing the other fuel delivery limit curve when the cruise control (44) is not engaged"

[6] The parties propose very different interpretations of the retrieving steps of the '597 patent. Detroit Diesel contends that the retrieving steps require the retrieval of one set of data representing a fuel delivery limit curve if the cruise control is engaged, and the retrieval of a different set of data representing a different fuel delivery limit curve ii the cruise control is not engaged. Detroit Diesel bases its interpretation on the plain language of the claim and on the dictionary definition of "other." Detroit Diesel also refers the court to what it deems an admission by Caterpillar to the European Patent Office during prosecution of the same claim with that office that the claim is invalid unless the retrieving steps are limited to mutually exclusively retrieving one or the other set of data depending on whether the cruise control is engaged. In response to an objection from the EPO, Caterpillar inserted a reference to prior art WO-A-840391 1 (the Thompson Patent European counterpart), explaining in its letter to the EPO presenting the amended application that the

reference "does not suggest using a high horse power curve during cruise control engagement and a lesser horsepower curve simply because the cruise control is engaged." Caterpillar amended the claim to explain that WO-A-8403911 "does disclose limiting fuel supply to a to a lower range of values ... when cruise control is off than when it is on, *even though the limitation to using a lower range of values is not primarily determined by whether or not the cruise control is engaged or disengaged*." *See* Exh. F to Detroit Diesel's Motion.

Caterpillar, on the other hand, contends that when properly interpreted in their open format the retrieving steps are not limited in the manner Detroit Diesel proposes. Caterpillar claims that the first retrieving step can only be interpreted to require retrieval of at least one set of data, representing one or more fuel delivery limit curves, when the cruise control is engaged. Caterpillar explains that the lower limit curves (which would, under Detroit Diesel's interpretation, be available only when cruise control is not engaged) may also limit the command signal if cruise control is engaged, as shown in the preferred embodiment, in which the additional power is not retrieved unless power above the lower limit curve is needed to maintain the cruise set speed:

[H]igher rated rack limits, and thus higher engine output torque and horsepower levels, are made available when: (1) the cruise control is engaged; (2) the cruise control set speed is greater than a minimum predetermined speed; and (3) the vehicle speed is less than the cruise control set speed plus a predetermined value.

* * * * * *

If any of the questions posed by the blocks 130, 132, or 134 [of Figure 3] is answered in the negative, then it has been determined that the increased rack limits represented by the torque curves 120A, 122A and respective horsepower curves 120B and 122B are not to be used.

'597 Patent, Col. 6, lines 23-29 and 62-66. Caterpillar thus concludes that the specification itself contradicts Detroit Diesel's interpretation because it describes a situation where cruise control is engaged but the upper limit curve is not retrieved. The preferred embodiment thus evaluates conditions other than whether the cruise control is engaged before selecting a particular set of data. Because the claim is written in an open format, Caterpillar argues, it will read on devices that include additional elements not referenced in the claim.

According to Caterpillar, the second retrieving step must be read to allow the retrieval of more than one set of data from memory when cruise control is not engaged, and cannot be read as restricting retrieval of the second (lower) fuel delivery limit curve to when the cruise control is not engaged. Claiming to construe the patent practically and in accordance with its purposes, Caterpillarasserts that the second retrieving step may properly be construed to require retrieval of the lower fuel delivery limit curve where power is demanded through the throttle (where by definition the cruise control is not engaged), and to "preclud[e] throttle retrieval of the higher curve in other circumstances."

Caterpillar objects to Detroit Diesel's reliance on the EPO documents, claiming they are presented out of context and in edited form, and are not legal admissions by Caterpillar, and do not support Detroit Diesel's arguments. The correspondence, Caterpillar claims, merely shows its disagreement with the EPO about whether the Thompson Patent European counterpart taught use of the cruise control as a determining step for accessing additional power.

Lastly, Caterpillar argues that the court cannot accept Detroit Diesel's interpretation of Claim 1 because it would mean that "the fuel delivery limit curves in Figures 2A and 2B are mutually exclusive," which in turn would make Claim 3 FN11 of the patent directly contradicted by Claim 1 and rendered meaningless. Detroit Diesel's reply seems to accept Caterpillar's assertion that its interpretation of Claim 1 would make Claim 3 contradicted by Claim 1 and rendered meaningless, but points out that claim differentiation FN12 is a "guide, not a rigid rule." *See* Autogiro, 384 F.2d at 404.

FN11. Claim 3 of the '597 patent provides: "3. The method of claim 1, including the further steps of determining whether the speed of the vehicle is less than the set speed plus a predetermined value and retrieving at least a portion of the other set of data from the memory (86) when the vehicle speed is not less than the set speed plus the predetermined value."

FN12.
The doctrine of claim differentiation is a canon of claim construction which holds that when a patent contains both broad and narrow claims, the additional limitation of the narrow claim should not be read into the broad claim. The doctrine embodies the common sense notion that ordinarily language of one claim should not be so interpreted as to make another claim, such as a claim dependent on the first claim, identical in scope.

Motorola Inc. v. Interdigital Technology Corp., 930 F.Supp. 952, 965 (D.Del.1996) (quotations and citations omitted).
Detroit Diesel's reply brief makes two points relevant to construction of the retrieving steps. Detroit Diesel criticizes Caterpillar's interpretation of the retrieving steps as doing "violence to language as a tool for communication" by effectively eliminating the determining step altogether since, according to Caterpillar, the same sets of data may be retrieved without regard to whether the cruise control is engaged. Detroit Diesel also presents the deposition testimony of the first named inventor of the '597 patent, Michael Moncelle, who explains:

Q. So the first and second retrieving steps are mutually exclusive of one another depending on the answer to the determining step; is that accurate?

A. (Mr. Moncelle): Yes, they are mutually exclusive. You choose one or the other.

Moncelle Dep. at 31. In his affidavit, Mr. Moncelle explains that the steps are mutually exclusive in that one or the other sets of data is retrieved (engine fuel delivery necessarily is restricted at any point in time by one of the limit curves), but that this does not mean that the higher fuel delivery curve is the only accessible curve during cruise control engagement. Moncelle Aff., para.para. 10-11.

After examining the claim and the entire specification and considering the parties' arguments, the court agrees with Detroit Diesel's construction of the retrieving steps of the '597 patent. The claim states that one of the sets of data representing one of the fuel delivery limit curves is retrieved when cruise control is engaged, and the other set of data representing the other fuel delivery limit curve is retrieved when the cruise control is not engaged. As Detroit Diesel argues, the claim allows for the cruise control to be in one of two states (engaged or not engaged), and one of two different sets of data is retrieved depending on whether the cruise control is engaged or not engaged. By its own words, the claim sets up two mutually

exclusive possible situations.

The court cannot reconcile Caterpillar's urged interpretation with the language of the claim. Caterpillar argues that because the claim is written using "comprising," *i.e.* in open format, limitations that are not present in the claim's language cannot be read into the claim. While it is true that a claim written in open format does not exclude additional unrecited elements, *see* Moleculon Research Corp. v. CBS Inc., 793 F.2d 1261, 1271-1272 (Fed.Cir.1986), Caterpillar's interpretation is not based on additional unrecited elements. Caterpillar argues for an interpretation of the retrieving steps in which neither step is limited even to the language set forth in the step. The claim's words must be given their ordinary and accustomed meaning unless it appears that the inventor used them differently. ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed.Cir.1988); Envirotech Corp. v. Al George, Inc. 730 F.2d 753, 759 (Fed.Cir.1984). The first retrieving step provides for retrieval of one set of data when the cruise control is engaged, and the second step provides for retrieval of the other set when the cruise control is not engaged. Caterpillar now argues that either set may be retrieved when the cruise control is engaged, and that when the cruise control is not engaged, the first set may nonetheless be retrieved, such as during power take-off Caterpillar's asserted construction of Claim 1 may make sense in a vacuum, and even jibe with the purposes of the patent (making additional power available when necessary to maintain the set speed), but it finds no support in the claim's language. FN13

FN13. The court does not rely on the EPO documents in reaching this conclusion, and determination of their meaning and status as "admissions" is not necessary.

Caterpillar's reference to portions of the preferred embodiment to support its interpretation is likewise unconvincing. The portion of the preferred embodiment Caterpillar references supports its assertion that in the preferred embodiment additional power is not retrieved unless power above the lower limit curve is needed to maintain the cruise set speed, but the portions Caterpillar cites recite additional steps (corresponding to blocks 132, 134, and 136 of Figure 3) that are not contained in Claim 1, but rather can be seen in the language of Claims 2 and 3 of the patent.

Lastly, Caterpillar's claim differentiation argument does not alter the court's conclusion Caterpillar contends that Claim 1 cannot be interpreted in the manner urged by Detroit Diesel-"that the fuel delivery limit curves in Figures 2A and 2B are mutually exclusive"-because it would make Claim 3 of the patent directly contradict Claim 1. Caterpillar has not, however, explained how or why Detroit Diesel's interpretation would render Claim 3 contradicted by Claim 1 and "meaningless", and the answer is not obvious to the court.

III. CONCLUSION

For the foregoing reasons, the court GRANTS the plaintiff's motion for leave to file brief in excess of twenty-five pages (filed Aug. 8, 1996 (# 144)), and GRANTS the plaintiff's motion for an order determining the meaning of Claim 1 of U.S. Patent No. 4, 914,597 as a matter of law (filed Jan. 26, 1996 (# 56)). The meaning of Claim 1 of U.S. Patent No. 4,914,597 is hereby determined as set forth in this order. At the time for submission of proposed jury instructions, the court will consider the parties' proposed instructions consistent with this order.

SO ORDERED.

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