United States District Court,
E.D. New York.

**Michael I. RACKMAN,**
Plaintiff.
v.
**MICROSOFT CORPORATION,**
Defendant.

No. 97-CV-0003 (CBA)

**June 13, 2000.**

Owner of patent for use of data encryption in video games sued software manufacturer for infringement. The District Court, Amon, J., construed claim language.

Claim construed.

4,670,857. Construed.

Michael I. Rackman, Gottlieb, Rackman & Reisman, New York City, for plaintiff.

Robert T. Tobin, Philip J. McCabe, Paul H. Heller, Kenyon & Kenyon, New York City, Thomas W. Burt, Microsoft Corporation, Redmond, WA, for defendant.

***AMENDED MEMORANDUM & ORDER*** FN1

FN1. This opinion amends and supersedes the Court Memorandum & Order dated February 10, 2000.

AMON**, District Judge.**

***INTRODUCTION***

Before the Court are defendant's motions for partial summary judgment on the issue of claim construction and for summary judgment of non-infringement and plaintiff's cross-motion on the issue of infringement. The claim language is construed as set out below. Neither party is entitled to summary judgment at this time.

***BACKGROUND***

Plaintiff brought the instant action on January 2, 1997, alleging that certain of defendant's products and services infringe his patent, United States Patent No. 4,670,857, entitled "Cartridge-Controlled System

Whose Use is Limited to Authorized Cartridges." Although the complaint does not specify which of defendant's products allegedly infringe the patent, plaintiff has taken the position in this litigation that, at the least, the products in issue are "any product using Authenticode technology or public/private key pairs for authenticating software, Windows NT, Internet Explorer, Microsoft Transaction Server, and Internet Information Server." Letter from Plaintiff to Court dated August 15, 1997, at 2. Plaintiff claims that defendant's products infringe his patent both literally and under the doctrine of equivalents, and that the infringement is willful. Plaintiff seeks a permanent injunction, a declaratory judgment that defendant infringed '857, treble monetary damages, costs, and although he is representing himself, attorneys' fees.

***A. The Patent***

Plaintiff originally filed an application for his patent on October 26, 1981. The patent was issued by the United States Patent Office ("Patent Office") on June 2, 1987. The patent contains eight claims. The claim at issue in this case is claim five, which provides as follows:

A plurality of mass-produced identical systems each comprising data processing means for generating memory-accessing address signals and for executing memory-furnished instructions; and means for interfacing said data processing means with an insertable storage medium having information stored therein; characterized by a read-write memory; said data processing means further controlling generation of memory-accessing address signals to allow accessing of information in the form of blocks of encrypted instructions from an inserted storage medium, decryption of the blocks of encrypted instructions thus accessed, and generation of memory-accessing address signals to allow storage of the decrypted blocks of instructions in said read-write memory, and thereafter executing instructions furnished by said read-write memory in response to generated memory-accessing address signals; said blocks of instructions being stored in encrypted form in said storage medium in accordance with a private key which is associated with a public key of a public-key cryptosystem pair, and said data processing means controlling the decryption of said blocks of encrypted instructions in accordance with said public key; each of said identical systems controlling said decryption and thereafter execution of instructions furnished by its read-write memory in the identical manner responsive to insertion of the same storage medium.

U.S. Patent No. 4,670,857, at col. 8, lines 11-36, reproduced at Defendant's Memo. in Support of Partial Summary Judgment on Claim Construction ("Def.'s Memo. on Claim Construction"), Ex. A.

The specification of plaintiff's patent states that the invention embodied in the patent "relates to cartridge-controlled systems, and more particularly to such a system whose use is limited to authorized cartridges." Id. at col. 1, lines 5-7. The specification proceeds to describe microprocessor-controlled systems, including video game units, which operate according to a series of instructions stored in devices, such as cartridges, containing interchangeable read-only memories (ROM). *See* id. at col. 1, lines 8-25. Without the invention, manufacturers other than the manufacturer of the machine containing the microprocessor can market original cartridges for use with the microprocessor. *See* id. at col. 1, lines 25-35. The "general object" of the invention is to prevent manufacturers from doing so without permission, by providing "a cartridge-controlled system whose use is limited to cartridges authorized by the machine manufacturer." Id. at col. 1, lines 36-38.

The specification of the patent also states, however, that such a cartridge-controlled system is not the only context in which the invention may be used. "Although the illustrative embodiment of the invention is disclosed in the context of a cartridge-controlled machine, it is to be understood that the principles of the

invention apply to systems which are controlled by other types of insertable storage media. For example, the principles of the invention may be applied to programs furnished on discs designed for use with a microcomputer." Id. at col. 1, lines 51-58.

The specification then describes how the invention works. "In accordance with the principles of the invention ... the machine is designed such that the actual instructions which control the machine operation are never stored in conventional program form in the cartridge, even in the cartridges sold by the machine manufacturer. Instead, the instructions stored in the cartridge by the authorized manufacturer are in an encrypted form. When a cartridge is first placed in the machine, the encrypted instructions are read and then decrypted; the decrypted instructions are stored in a random access memory (RAM)" in the machine. Id. at col. 2, lines 3-13. The invention differs from the prior art because "[i]n the prior art, the machine usually accesses individual instructions directly from the ROM contained in the cartridge. In accordance with the invention, however, after the encrypted instructions are decrypted in the machine, they are stored in RAM in their decrypted from ... and it is the instructions in the RAM which are then accessed." Id. at col. 2, lines 13-20. By storing the decrypted instructions in the RAM in the machine, it would be possible for someone skilled in the art to ascertain the decryption algorithm by analyzing the machine. *See* id. at col. 2, lines 21-25. However, this possibility would not jeopardize the ability of the machine manufacturer to use the invention to control the programs used in its machine, because the encryption algorithm must also be known in order to design a program that will decrypt intelligibly. *See* id. at col. 2, lines 25-35. This encryption algorithm will be known only to the machine manufacturer; "the encryption algorithm cannot be determined from knowledge of the decryption algorithm alone." Id. at col. 2, lines 30-31. The encryption and decryption steps of the invention are carried out in accordance with the principles of public-key cryptography, a form of cryptography developed during the 1970s, which at the time of plaintiff's invention, was generally used to securely transmit messages over communications channels. *See* id. at col. 5, lines 16-18.

***B. Patent File History***

Plaintiff's patent application was originally rejected by the Patent Office. The patent examiner assigned to plaintiff's application found, *inter alia,* that plaintiff had failed to provide an enabling disclosureand an adequate written disclosure of the invention, *see* Def.'s Memo. on Claim Construction, Ex. D, at 2, and that plaintiff's invention was not sufficiently distinct from prior art encryption schemes in the microprocessor environment. *See* id. at 7-8. Plaintiff subsequently amended his application, *see* id., Ex. E, but it was rejected by the examiner once again. Plaintiff appealed the examiner's findings, *see* id. Ex. I, and was ultimately awarded the patent by the Board of Patent Appeals and Interferences. *See* Plaintiff's Memo. in Opposition to Defendant's Motion for Partial Summary Judgment on Claim Construction ("Pl.'s Opp. Memo. on Claim Construction"), Ex. 2. The Board summarized plaintiff's invention by stating:

The invention pertains to a method and system for preventing the unauthorized use of a new program in a controlled machine by encrypting the authorized program(s) with a private key and decrypting the encrypted program(s) in any one of a plurality of identical machines each of which is provided with a public key of a public-key cryptosystem pair.

Id. at 1-2.

In 1992, plaintiff brought suit against Nintendo for allegedly infringing his patent. A court in the Southern District of New York granted summary judgment to Nintendo, finding that Nintendo demonstrated that it did

not use public-key cryptography to secure its game cartridges. *See* Def.'s Memo. on Claim Construction, Ex. B. During the litigation, plaintiff asked the Patent Office to re-examine his patent in light of prior art that might be asserted against him. The Patent Office declined to re-examine the patent, finding that the additional prior art did not change its analysis of plaintiff's patent.

## *DISCUSSION*

### *A. Defendant's Motion for Partial Claim Construction*

Defendant has moved for partial summary judgment on the issue of claim construction. At issue is the meaning of the term "insertable storage medium," used in Claim 5.

#### *1. Standard of Review*

[1] Deciding whether a patent has been infringed is a two-step process. First, the court construes the patent claims at issue. *See* Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1301 (Fed.Cir.1999), *cert. denied,* 528 U.S. 1115, 120 S.Ct. 933, 145 L.Ed.2d 812 (2000). "[T]he construction of a patent, including terms of art within its claim, is exclusively within the province of the court." Markman v. Westview Instruments, Inc., 517 U.S. 370, 372, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Second, the properly construed claims must be compared to the accused device. *See* Rodime, 174 F.3d at 1301-02. This second step, the determination of infringement, whether literal or under the doctrine of equivalents, is a question of fact. *See, e.g.,* North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1574 (Fed.Cir.1993) (citation omitted).

#### *2. Principles of Claim Construction*

[2] To interpret claim language, the Court considers three primary sources: the claims themselves, the specification, and the prosecution history. *See* Georgia-Pacific Corp. v. U.S. Gypsum Co., 195 F.3d 1322, 1332 (Fed.Cir.1999) (citing Bell & Howell Document Management Prod. Co. v. Altek Sys., 132 F.3d 701, 705 (Fed.Cir.1997)). Patent claims "particularly poin[t] out and distinctly clai[m] the subject matter which the applicant regards as his invention." Markman, 517 U.S. at 373, 116 S.Ct. 1384 (quoting 35 U.S.C. s. 112). The patent specification "describ[es] the invention 'in such full, clear, concise, and exact terms as to enable any person skilled in the art ... to make and use the same.' " *Id.* (citing 35 U.S.C. s. 112). The prosecution history "contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

[3] The words of the claim itself are the single most important source of the meaning of the claim. *See* Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1552 (Fed.Cir.1997), *abrogated on other grounds by* Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448 (Fed.Cir.1998) (in banc). The claim language is given its ordinary and customary meaning unless a special definition is employed in the specification or prosecution history. *See* Vitronics, 90 F.3d at 1582 (citation omitted); *see also* Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1344 (Fed.Cir.1998) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.") (quoting York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed.Cir.1996)). "Although the patentee is free to define his claim terms in a manner inconsistent with their ordinary meaning, 'he must set out his uncommon definition in some manner within the patent disclosure.' " Wolverine World Wide, Inc. v. Nike, Inc., 38 F.3d 1192, (Fed.Cir.1994) (quoting Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384,

1387-88 (Fed.Cir.1992), *abrogated on other grounds by* Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448 (Fed.Cir.1998) (in banc)).

[4] In construing the language of the patent claims, the court "interprets words in a claim as one of skill in the art at the time of the invention would understand them." Eastman Kodak, 114 F.3d at 1555 (citing Intellicall, 952 F.2d at 1387); *accord* Markman v. Westview Instruments, Inc., 52 F.3d 967, 986 (Fed.Cir.1995), *aff'd* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

[5] [6] [7] In general, words used in different places in a patent should be construed consistently. *See* Digital Biometrics, 149 F.3d at 1345 (citation omitted) (noting that "the same word appearing in the same claim should be interpreted consistently"). If the meaning of the claim language is unambiguous, or can be determined with reference to the context provided by the specification and prosecution history, resort to extrinsic evidence is not necessary. *See* Eastman Kodak, 114 F.3d at 1555 (citing Vitronics, 90 F.3d at 1583). But because the court must interpret the claim language as one skilled in the art at the time of the invention would have understood it, "the testimony of one skilled in the art about the meaning of claim terms at the time of the invention will almost always qualify as relevant evidence." *Id*. The trial court "is best situated" to decide whether extrinsic evidence is needed to properly construe the claim. *Id*. (citing International Communication Materials, Inc. v. Ricoh Corporation, 108 F.3d 316, 318-19 (Fed.Cir.1997)).

[8] A final principle of construction by which this Court is guided is the doctrine that limitations that appear in one claim should not be read into another claim that omits those limitations. *See* D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed.Cir.1985). This is known as the doctrine of "claim differentiation" and its is a "fixed ... long and well established" rule of claim construction. *Id*.

***3. Construing the Claim Language***

To make its determination on the proper construction of the claim, the Court received documentary evidence, written testimony, and portions of the depositions of each side's expert witnesses, and held two oral arguments at which the attorneys outlined their views on claim construction. The Court also reviewed the many briefs and letters submitted by both sides, including those letters received in response to the status conference held on January 7, 2000.

Defendant has moved for partial summary judgment on the issue of claim construction. In the motion, defendant asks the Court to establish as a matter of law that claim 5, by use of the term "insertable storage medium," requires "a physical device which stores information and is inserted into a machine by the user." Defendant's Reply Memo. in Support of Summary Judgment on Claim Construction ("Def.'s Reply Memo. on Claim Construction"), at 1. Plaintiff argues that this claim language cannot be construed in isolation, but rather must be interpreted with reference to the surrounding phrase, which is "means for interfacing said data processing means with an insertable storage medium having information stored therein." The Court agrees with plaintiff that interpretation of the phrase "insertable storage medium" cannot proceed in isolation. The Court will therefore construe the entire claim element.

***a. "data processing means"***

[9] [10] By statute, Congress has provided requirements for construing certain types of claims known as "means-plus-function" claims. *See* 35 U.S.C. s. 112, para. 6. FN2 A "means-plus-function" claim element defines a "means" for performing some function without specifying a definite structure. *See* Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed.Cir.1996). Whether a claim element is a means-plus-

function element is a question of law for the court. *See* Rodime, 174 F.3d at 1302 (citing Personalized Media Communications, LLC v. International Trade Comm'n, 161 F.3d 696, 702 (Fed.Cir.1998)).

FN2. "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."

[11] The Court of Appeals for the Federal Circuit has developed rules for invoking the means-plus-function analysis. "Specifically, if the word 'means' appears in a claim element in combination with a function, it is presumed to be a means-plus-function element to which s. 112, para. 6 applies." *Al-* Site Corp. v. VSI In'tl Inc., 174 F.3d 1308, 1318 (Fed.Cir.1999) (citations omitted); *see also* Rodime, 174 F.3d at 1302. This presumption is especially strong if the phrase "means for" is used. *See* Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed.Cir.1996). This presumption can be rebutted in two ways. "[A]ccording to its express terms, s. 112, para. 6 governs only claim elements that do not recite sufficient structural limitations. Therefore, the presumption that s. 112, para. 6 applies is overcome if the claim itself recites sufficient structure or material for performing the claimed function." *Al-* Site, 174 F.3d at 1318 (internal citations omitted). The second way the presumption is rebutted is if the claim uses the word "means" but does not recite any corresponding function. *See* Rodime, 174 F.3d at 1302.

[12] The claim element at issue-"data processing means"-uses the word "means," and therefore there is a presumption that this is a means-plus-function claim element. That initial presumption is confirmed because the phrase describes the function (data processing), but does not recite any definite structure to accomplish it.

Once it is established that a claim element falls into the means-plus-function category, special rules of construction apply. Section 112, para. 6 responds to the problem that "[a] claim limitation described as a means for performing a function, if read literally, could encompass any conceivable means for performing the function." Valmont Industries, Inc. v. Reinke Mfg. Co., Inc., 983 F.2d 1039, 1042 (Fed.Cir.1993) (citation omitted). "[P]recise claim construction" is "vital because excessive generality can lead to encompassing too much within the patent's folds and a grant to the inventor of more than rights over his own invention." Home Shopping Network, Inc. v. Coupco, Inc., No. 95 Civ. 5048, 1998 WL 85740, at (S.D.N.Y. Feb.27, 1998). To obviate this risk, the statute provides that means-plus-function elements are given a narrower interpretation than other claim elements:

Unlike the ordinary situation in which claims may not be limited by functions or elements disclosed in the specification, but not included in the claims themselves, in writing a claim in means-plus-function form, a party is limited to the "corresponding structure" disclosed in the specification and its equivalents.

Kahn v. General Motors Corp., 135 F.3d 1472, 1476 (Fed.Cir.) (citing 35 U.S.C. s. 112, 6), *cert. denied,* 525 U.S. 875, 119 S.Ct. 177, 142 L.Ed.2d 144 (1998); *see also* Chiuminatta Concrete Concepts, Inc. v. Cardinal Industries, Inc., 145 F.3d 1303, 1308 (Fed.Cir.1998) ("the 'means' term in a means-plus-function limitation is essentially a generic reference for the corresponding structure disclosed in the specification. Accordingly, a determination of corresponding structure is a determination of the meaning of the 'means' term in the claim ....").

In analyzing a means-plus-function element, the first step is to precisely identify the function. *See* Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1258 (Fed.Cir.1999). Next, as just discussed, the Court must "look[ ] to the written description to identify the structure corresponding to that function." *Id*. This second step is required because a means-plus-function claim can only be construed to cover any "corresponding structure[ ]" disclosed in the patent, and their equivalents. *See* Kahn, 135 F.3d at 1476. The level of detail necessary for a disclosed structure to be deemed "corresponding" will be discussed below; consideration of that issue is not necessary at this point because the corresponding structure of the "data processing means" is readily apparent.

Claim 5 describes the "data processing means" as, *inter alia,* performing the functions of "generating memory-accessing signals and ... executing memory-furnished instructions." Patent '857, col. 8, lines 12-14. In addition, the data processing means controls the decryption of encrypted instructions for running the information stored on the insertable storage medium. *See* id. at lines 30-32. The patent specification clearly links this data processing means with the microprocessor. Figure 2 in the specification depicts modifications that the invention makes to Figure 1, the prior art cartridge-controlled system. The text discussing Figure 1 and Figure 2 clearly describes the microprocessor performing the functions ascribed to the data processing means in Claim 5. *See* id. at col. 3, lines 36-53; col. 4, lines 1-23. Even considering the alternate embodiment mentioned briefly referenced in the specification-the microcomputer/disc embodiment-there is no suggestion that something other than the microprocessor would be the data processing means. The Court therefore finds that the microprocessor is the data processing means.

Claim 5 also describes the data processing means as "further controlling generation of memory-accessing address signals to allow accessing of information in the form of blocks of encrypted instructions from an inserted storage medium, decryption of the blocks of encrypted instructions thus accessed, and generation of memory-accessing signals to allow storage of the decrypted blocks of instructions in said read-write memory ...." Id., col. 8, lines 17-24. This language maps directly onto Figure 2, showing the modifications to the Figure 1 system that the invention would make, which discloses another ROM (marked 24b) which "controls an initializing operation during which encrypted instructions in the cartridge ROM are read by the microprocessor and decrypted." Therefore the additional ROM required by the invention and described in Figure 2 with numeral 24b is also part of the data processing means. The Court recognizes that the ROM itself is not technically a data processor, but the patent makes it clear that the invention requires the ROM 24b in order for the microprocessor to process the data. *See* col. 4, line 10 ("the microprocessor [is] under control of ROM 24b").

Therefore, "data processing means" is construed to mean the microprocessor and the additional ROM 24b, and their equivalents.

***b. "insertable storage medium having information stored therein"***

[13] "Insertable storage medium" is not a means-plus-function element. It would therefore be improper to define this term solely with reference to "corresponding structures" found in the specification.

Plaintiff believes that the correct interpretation of this phrase is simply "any insertable storage medium." Pl.'s Opp. Memo. on Claim Construction, at 6. The Court rejects plaintiff's interpretation because it does not contribute to the task of claim construction. The parties have filed numerous briefs arguing about the definition of "insertable storage medium." Its meaning is not self-evident. Plaintiff's tautological suggestion is not helpful in resolving the difficult issues presented in this case.

[14] Plaintiff also suggests in his motion papers that the medium in which the information is stored is irrelevant to the patent: that the "software" "can come from *any* type of medium." Id. at 16 (emphasis in original). Similar statements were made elsewhere, for instance that "it makes absolutely no difference to the result which medium is used. The medium is as insignificant to the invention as the choice between UPS and the Postal Service is to the delivery of a package." Plaintiff's Memo. in Opposition to Defendants Motion of Non-Infringement ("Pl.'s Opp. Memo. on Infringement") at 5; *see also* id. at 10 ("The medium could be anything"); id. at 5 ("The medium can be a floppy disk, a hard disk, a tape, a broadcast from a cable company, or next year's favorite medium"). Plaintiff appears to be suggesting that the term "insertable storage medium" should actually be defined as "any storage medium" (or perhaps "any medium"). This is confirmed by a brief submitted by plaintiff during the prosecution of his patent, *see* Pl.'s Opp. Memo. on Claim Construction, Ex. 1, at 3. (arguing that some of the claims, including the one in issue here, "are broad enough to cover any storage medium"), and statements plaintiff made during oral argument. *See* Aug. 14, 1997 Tr. at 45 ("[F]or whatever reason, the word 'insertable' is in there. I'm not worried about it."). To the extent plaintiff believes that "insertable storage medium" should be construed to mean "any storage medium," the Court rejects that view because it seeks to read the term "insertable" out of the claim. *See* Becton Dickinson & Co. v. C.R. Bard, Inc., 922 F.2d 792, 798 (Fed.Cir.1990) (all limitations in a claim are material). Defining "insertable storage medium" as "any storage medium" would erase the distinction drawn in the claim between internal and insertable storage media. *See, e.g.,* Patent '857, Figures 1 and 2 (showing insertable ROM cartridge 12 and internal RAM 24, auxiliary RAM 24a and ROM 24b). Words in a patent are to be given their ordinary meaning, unless it is clear that the patentee intended a special definition. *See* Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). There is no indication in the patent that plaintiff used "insertable" in a special or unusual manner. To the contrary, the term is used in an ordinary manner elsewhere in the patent. For instance, the patent uses the following terminology to mean the same thing: *compare* "[w]hen a cartridge is first placed in the machine ....", Patent '857, col. 2, line 10-11; *with* "[w]hen a new cartridge is inserted into the machine ...," col. 4, line 9; *and* "[t]he cartridge is insertable into an appropriate slot in the machine ....," col. 3, lines 38-39. Because "insertable" is used in the ordinary sense of the word, the Court will not construe the claim language to entirely disregard a meaningful term. In addition, construing the phrase to mean "any storage medium" does not advance the cause of claim construction, because that phrase is broad to the point of ambiguity. To the extent that a broad reading of a claim renders it ambiguous, the claim should be construed against the patentee and given a narrower construction. *See* Chisum on Patents s. 18.03[2][f][iii], at 18-149 (citing cases).

As discussed above, defendant asks to the Court to construe this claim limitation to mean "a physical device which stores information and is inserted into a machine by the user." Def.'s Reply Memo. on Claim Construction, at 1. The first place the Court will look to understand the meaning of the claim phrase is the words of the claim itself. It is clear that the phrase "insertable storage medium having information stored therein" envisions that the storage medium or storage device itself must store information. This seems indisputable-after all, the medium is a "storage" medium, and it has "information stored therein."

It is also evident from the plain language of the claim that this information-storing medium or device is itself insertable into the machine. FN3 It is not an external cable or connector that is "insertable," but rather the storage medium itself is "insertable." In the Court's view, the ordinary meaning of the words "insertable storage medium having information stored therein" dictates this construction: the device having the information stored on it is itself insertable. This conclusion is bolstered by the examples of insertable storage media that the specification and claims disclose: a video game cartridge and a disc. FN4 *See* Patent '857, col. 1., lines 52-58. The way that the patent uses the term "inserted" and "insertable" also supports this

reading of the claim language. Both parties agree that a video game cartridge is an example of an insertable storage medium. Such a cartridge is clearly conceived of as a physical, memory-storing device that is itself placed into the machine by the user. *See* id., col. 1, lines 13-15 ("a cartridge, containing a ROM, is inserted in a slot provided for this purpose"); col. 2, line 10-11 ("When a cartridge is first placed in the machine ...."); col. 4, line 9 ("When a new cartridge is inserted into the machine ..."). The specification then states that not only cartridges, but "other types of insertable storage media" may be used to implement the invention. Col. 1, line 55. The other type of "insertable storage medium" disclosed is a "program[ ] furnished on discs designed for use with a microcomputer." Col. 1, lines 57-58. The clear implication of this is that insertable storage media are information-holding physical devices that are themselves "inserted into" or "placed in" the machine. Defendant's expert, Dr. Thomas A. Berson, also agrees with this interpretation. *See* Berson Declaration para. 9.

FN3. The word "machine" is used extensively throughout the patent. The patent uses "machine" to mean the entire system shown by Figures 1 and 2, excluding the cartridge (12) and its contacts (15).

FN4. For reasons discussed below, the Court believes that the patent's reference to a "disc[ ]" can only be construed to mean a floppy diskette.

The conclusion that the storage medium itself is insertable, rather than merely connected to the machine by means of a cable, is further supported by the language of the specification: the specification draws a distinction between a television display monitor which is "connectable" to the machine, and a memory-containing cartridge that is "insertable" into the machine. *Compare* Patent '857, col. 3, line 26 *with* col. 3, line 38; *see also* col. 1, lines 13-14 (a video game unit is "connected to a television receiver, and a cartridge, containing a ROM, is inserted in a slot"). Plaintiff has not pointed to any aspect of the claim, specification or prosecution history which contradicts this common-sense reading of the claim language.

The Court also finds that the claim envisions that the storage medium is a physical device that is inserted into the machine in order to operate the machine. *See* col. 8, lines 35-36 (machines operate "responsive to insertion of the same storage medium"); col. 8, lines 19-21 (data processing means accesses information from "inserted storage medium"). This construction of the plain language of Claim 5 is confirmed by the examples of insertable storage media given by the patentee: a video game cartridge and a "disc[ ]," a term which, as indicated earlier, can only be interpreted to mean floppy diskette.

Plaintiff has argued that the reference in the specification to an alternate embodiment employing a different storage medium, *see* col. 1., lines 56-58 ("the principles of the invention may be applied to programs furnished on discs designed for use with a microcomputer"), would call to mind, to one skilled in the art at the time of the patent application, disk drives.

The Court finds that the reference in the patent to "programs furnished on discs" must be construed to mean floppy diskettes, not disk drives. The claim language requires that the "insertable storage medium" have "information stored therein" and that the system operated "responsive to insertion" of the storage medium. However, a disk drive does not have information stored on it (only the disk itself does), *see* Declaration of Berson para. 19, and computers do not operate in response to disk drives, but rather in response to information on disks. *See* id.; *see also* id. para. 21. In construing the language of the patent claims, the court "interprets words in a claim as one of skill in the art at the time of the invention would understand them."

Eastman Kodak, 114 F.3d at 1555 (citing Intellicall, 952 F.2d at 1387); *accord* Markman, 52 F.3d at 986. Defendant's expert argues persuasively that in the context of a claim referring to "a plurality of mass-produced identical systems" each working "responsive to insertion of the same storage medium," the phrase "insertable storage medium" would call to mind, to one skilled in the art in 1981, a storage device such as a floppy diskette, a cartridge or a cassette, not a disk drive. *See* Declaration of Berson para.para. 10-11, 19, 22-23. Based on the foregoing and his understanding of the usage of computer terminology in the early 1980's, defendant's expert testified that one skilled in the art would not believe that the term "discs" referred to a disk drive. *See id*. para.para. 19, 24, 25.

The testimony of plaintiff's expert does not undermine this conclusion. Mr. Dubner admits in his declaration that the word disk only refers to a hard disk drive if the word is used "loosely." Dubner Declaration para. 8. In the Court's view, this admission and Mr. Dubner's deposition testimony reveal that even he believes it is a bit of a stretch to contend, as plaintiff does, that "disk" equals hard disk drive. *See* Def.'s Reply Memo. on Infringement, Ex. S at 49-50, 52-53, 58-59. Faced with a choice between an ordinary definition of a word and a strained or "loose" definition offered only during litigation (rather than in the patent itself), the Court must-according to well-established principles of claim construction-adopt the ordinary definition of the word. *See* Digital Biometrics, 149 F.3d at 1344 ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning."); *see also* Quantum Corp. v. Rodime PLC, 851 F.Supp. 1382, 1385 (D.Minn.1994) ("the meaning which the investor gives to his words can not be made to depend upon subsequent events, but should appear when the application is filed") (citations omitted), *aff'd,* 65 F.3d 1577 (Fed.Cir.1995). FN5

FN5. Although plaintiff has provided the Court with computer product catalogues and articles that use the word "disk" to refer (apparently) to a disk drive, these do not alter the proper construction of the term. The occasional use of synecdoche in popular speech does not transform the fundamental meaning of a word, especially a technical term. In addition, as defendant points out, several of the publications that plaintiff has provided the Court actually draw a distinction between a disk and a disk drive. *See* Def.'s Memo. in Support of Non-Infringement at 10.

Although not relying upon these decisions in its claim construction, the Court notes that its interpretation of these terms comports with the terminology employed by other courts. *See* Rodime, 174 F.3d at 1297 (drawing a distinction between a hard disk and a hard disk drive); Conner Peripherals, Inc. v. Western Digital Corp., No. 93 Civ. 20117, 1993 WL 645932, at * 2 (N.D.Cal. Aug.16, 1993) (drawing a distinction between a hard disk and a hard disk drive); *cf*. Tandon Corp. v. U.S. Intern. Trade Com'n, 831 F.2d 1017, 1019 (Fed.Cir.1987) (drawing a distinction between a floppy disk and a floppy disk drive).

Therefore, the Court finds that the phrase "insertable storage medium having information stored therein" must be construed to require that the storage medium is a physical device which itself stores information; and that the storage medium is itself inserted into the machine (rather than being connected in some other manner) in order to operate it.

The Court recognizes that during the forthcoming infringement analysis under the doctrine of equivalents, distinctions that may be found or implied in this claim construction may not be dispositive in conducting that analysis.

***c. "means for interfacing"***

[15] The final part of the claim phrase that needs to be construed is "means for interfacing." There is a strong presumption that this is a means-plus-function claim element because it employs the phrase "means for." *See* Greenberg, 91 F.3d at 1584. The fact that the claim element recites a function, "interfacing," but does not recite any structure for performing the interfacing, further confirms that this is a means-plus-function claim element. However, even if a claim element does not, on its face, recite definite structure, it may still call to mind definite structure to one skilled in the art and therefore avoid falling under s. 112, para. 6. *See* Personalized Media Communications, LLC v. International Trade Comm'n, 161 F.3d 696, 704-05 (Fed.Cir.1998). Plaintiff has argued to this Court that a "means for interfacing" can be a socket, a slot, a floppy disk drive, and perhaps other devices as well. Defendant's expert has testified that to him the word interface means "all the mechanical, electrical and logical provisions for communication between the one thing and the other." Deposition of Berson, Pl.'s Opp. Memo. on Infringement, Ex. 31 at 121. Based on these representations, the Court finds that the phrase "means for interfacing" would not have called to mind a definite structure to one skilled in the art. Therefore, the presumption that this is a means-plus-function claim element has not been rebutted, and "means for interfacing" will be construed according to the dictates of s. 112, para. 6.

In analyzing a means-plus-function element, the first step is to precisely identify the function. *See* Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1258 (Fed.Cir.1999). In this case, the function is "interfacing." The word "interfacing" is not defined in the patent, and the parties have not cited any uses of the term in the prosecution history. A contemporaneous dictionary of computer terms defined interface as: "a general term to describe the connecting link between the two systems. Most frequently refers to the hardware and software required to couple together two processing elements in a computer system." A.J. Meadows et al., Dictionary of Computing and New Information Technology (1982) (quoted in Katz v. AT & T Corp., 63 F.Supp.2d 583, 600-601 (E.D.Pa.1999)). Although not speaking specifically about the claim element at issue, in his deposition defendant's expert Dr. Berson defined "interfaced" as "all the mechanical, electrical and logical provisions for communication between the one thing and the other." Pl.'s Opp. Memo. on Infringement, Ex. 31 at 121. Plaintiff has cited this definition approvingly in his motion papers. *See id*. at 9. A non-technical dictionary also supports a broad reading of the term. FN6 The Court finds that one skilled in the art would understand interface to be a broad, general term, meaning, as the Dictionary of Computing and New Information Technology put it, "the connecting link between the two systems," encompassing both hardware and software linkages. An interface is therefore the means necessary to connect and communicate between two parts of a system.

FN6. Interface. "1. a surface forming a common boundary of two bodies, spaces, or phases .... 2a. The place at which independent systems meet and act on or communicate with each other .... b. the means by which interaction or communication is effected at an interface." *Webster's Ninth New Collegiate Dictionary* 631 (1983).

The second step in the means-plus-function analysis involves determining what structure corresponds to the function. *See* Kahn v. General Motors Corp., 135 F.3d 1472, 1476 (Fed.Cir.1998). A structure in the specification will only be deemed a "corresponding structure" "if the specification clearly links or associates that structure to the function recited in the claim." *Id*. (citing B. Braun Medical, Inc. v. Abbott Lab., 124 F.3d 1419, 1424 (Fed.Cir.1997) ("We hold that ... structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.")). This statutory "duty to link or associate structure in the specification with the function is the quid pro quo for the convenience of employing s. 112, para. 6." *Id*. (citing O.I. Corp. v.

Tekmar Co., 115 F.3d 1576, 1583 (Fed.Cir.1997)).

The claim language at issue reads "means for interfacing said data processing means with an insertable storage medium having information stored therein." The data processing means and the insertable storage medium are the things being interfaced. Therefore, the Court's task is to determine the corresponding structure that is clearly identified as the means to interface the data processing means FN7 and the insertable storage medium.

FN7. Defined above as the microprocessor and the additional ROM (labeled 24b), and their equivalents.

Plaintiff argues that the phrase "means for interfacing" encompasses "at least sockets and floppy disk drives," because these are specifically disclosed in the patent. Pl.'s Opp. Memo. on Infringement at A4. Plaintiff claims that the socket is a "means for interfacing" a cartridge storage medium with a video game console disclosed in the patent. Floppy disk drives are encompassed because the patent specification recites that the invention could be applied to "programs furnished on discs." Defendant agrees that "means for interfacing" is written in means-plus-function language, but disagrees with plaintiff's interpretation of the implications. Defendant contends that the ROM accessing circuit is the only structure corresponding to the means for interfacing. The Court will first discuss whether sockets and ROM accessing circuits are corresponding structures, and then turn to floppy disk drives.

***[i]. Sockets and ROM Accessing Circuits***

Plaintiff argues that the "means for interfacing" is a "slot" or "socket," terms which plaintiff apparently believes are synonymous. *See* Pl.'s Reply Memo. on Cross-Motion at 12-13. According to plaintiff, the slot is the means for interfacing, because the "order of the circuits" is "(1) cartridge, (2) slot with contacts, (3) ROM accessing circuit, and (4) microprocessor." Therefore, plaintiff argues, "[t]he cartridge mates with the slot, not with the ROM accessing circuit." *Id*. at 14.

Defendant argues that the "means for interfacing" is the ROM accessing circuit. To support this claim, defendant points to language in the specification describing the role of the ROM accessing circuit as the intermediary between the inserted storage medium and the microprocessor: "The cartridge then delivers the instruction to the microprocessor via the ROM accessing circuit." Patent '857, col. 3, lines 46-48.

Figure 1 and Figure 2, describing the prior art video game system and the modifications required by the invention, respectively, are instructive. According to the text, Figure 1 shows the following:

The instructions for controlling the microprocessor operation are stored in a ROM contained in cartridge 12. The cartridge is insertable into an appropriate slot in the machine, and contacts 15 on the cartridge engage a plurality of contacts, shown by the numeral 14, connected to the ROM accessing circuit 16. The ROM accessing circuit is connected to microprocessor 18 over a conventional bus system. The microprocessor transmits an address to ROM accessing circuit 16 corresponding to the location in the cartridge ROM which contains the next instruction to be executed. The cartridge then delivers the instruction to the microprocessor via the ROM accessing circuit.

Id. at col. 3, lines 36-48.

Applying the broad definition of interface discussed above, it is clear that both plaintiff's (slot or socket) and defendant's (ROM accessing circuit) suggestions for the construction of "means for interfacing" are too narrow. Plaintiff would have the slot be the sole means for interfacing, ignoring the plain language of the specification which describes an interfacing role for other elements, such as the ROM accessing circuit. Plaintiff reads interface to mean only the mechanical means for physically attaching the inserted storage medium to the machine, but this is too confined a definition. Notably, plaintiff provides no testimony from one skilled in the art to support this interpretation. Defendant's circumscribed reading of the phrase must also be rejected. "Interface" does not just describe the device that enables electronic communication between the storage medium and the microprocessor (the ROM accessing circuit), but also the mechanical means by which the connection and communication is facilitated. Thus the slot and contacts on the machine are also part of the means for interfacing, as well as the "conventional bus system" connecting the ROM accessing circuit to the microprocessor. *See* id. at col. 3, lines 36-48. The diagram and text clearly link these structures with the function described in Claim 5.

To summarize, the corresponding structure to the "means for interfacing" is the ROM accessing circuit, the bus, the contacts and slot, and their equivalents.

***[ii]. Floppy Disk Drives***

A more difficult question arises where the patent holder asserts that other structures besides ones extensively discussed and diagramed in the specification are "corresponding structures." For instance, in this case plaintiff claims that a floppy disk drive is an also interfacing means. *See* Pl.'s Opp. Memo. on Infringement at 1; Plaintiff's Reply Memo. in Support of Plaintiff's Cross-Motion ("Pl.'s Reply Memo. on Cross-Motion") at 5. However, the term "floppy disk drive" is nowhere mentioned in the Rackman patent. Plaintiff points instead to the following language in the specification:

Although the illustrative embodiment of the invention is disclosed in the context of a cartridge-controlled machine, it is to be understood that the principles of the invention apply to systems which are controlled by other types of insertable storage media. For example, the principles of the invention may be applied to programs furnished on discs designed for use with a microcomputer.

Patent '857, col. 1, lines 51-58. Plaintiff's argument is that this reference to a disc and microcomputer would call to mind the need for a disk drive as an interfacing means:

"[E]ven the most computer illiterate individual knows that if there is a reference to a disk/microcomputer embodiment, the 'interfacing means' for this embodiment has to be a disk drive. There was and still is no other way to interface a floppy disk with a data processor or anything else."

Pl.'s Reply Memo. on Cross-Motion at 10.

Defendant argues that plaintiff has not satisfied the requirement that there be a clearly linked or associated structure. In fact, defendant argues that "[t]here is no disclosed 'corresponding structure' of a 'means for interfacing' in the disc/microcomputer embodiment. Nowhere does the specification specifically identify the 'means for interfacing.' The final word on this is Rackman's own candid admission that [t]here is no discussion of 'interfacing means' in the description or the file history ...." Def.'s Reply Memo. on Non-Infringement at 21 (citing Pl.'s Opp. Memo. on Infringement at 9). Defendant argues that plaintiff has not satisfied the quid pro quo: he had the benefit of describing his invention using broad means-plus-function

language, but did not specifically describe any structure for realizing it other than a ROM accessing circuit.

The issue, then, is whether a specific alternative structure for the particular means-plus-function claim element at issue must be explicitly disclosed, or whether it is enough to disclose the possibility of embodying the invention in an entirely different technology, with the implication that this would necessitate the use of obvious associated structures to perform the functions.

In Atmel Corp. v. Information Storage Devices, Inc., 198 F.3d 1374 (Fed.Cir.1999), the Federal Circuit most recently addressed the interpretation of means-plus-function claim elements that do not squarely identify a corresponding structure. In *Atmel,* the defendant had moved for summary judgment that the claim was indefinite under s. 112, para. 2 because the specification failed to disclose any structure corresponding to a certain means limitation ("high voltage generating means disposed on said semiconductor circuit for generating a high voltage from a lower voltage power supply connected to said semiconductor circuit"). *See id*. at 1376. The district court found that the only discussion of the nature of the high voltage generator circuit was a statement that "known circuit techniques" are used to implement that structure, with a citation to an article entitled "On-Chip High Voltage Generation in NMOS Integrated Circuits Using an Improved Voltage Multiplier Technique." *Id*. at 1377. The district court held that a corresponding structure cannot be identified solely by incorporating by reference outside material, and therefore that the patent was invalid as indefinite because it lacked a corresponding structure to one of the means limitations. *See id*.

The Federal Circuit reversed, concluding that the district court failed to determine whether one skilled in the art would find that sufficient structure had been disclosed. *See id*. at 1378-80. The court cited with approval recent proposed examiner guidelines issue by the Patent and Trademark Office:

The written description does not have to explicitly describe the structure ... corresponding to a means ... plus-function limitation to particularly point out and distinctly claim the invention as required by 35 U.S.C. s. 112 para. 2. Rather, disclosure of structure corresponding to a means-plus-function limitation may be implicit in the written description if it would have been clear to those skilled in the art what structure must perform the function recited in the means-plusfunction limitation.

*Id*. at 1380 (quoting PTO Supplemental Examiner Guidelines on Applying 35 U.S.C. s. 112, 6, 58 Fed.Reg. 443, 444 & nn. 12 & 13 (1999)).

Somewhat confusingly, the *Atmel* court then held that "structure supporting a means-plus-function claim under s. 112, para. 6 must appear in the specification." *Id*. at 1381. The proper "inquiry asks first whether structure is described in specification [sic], and, if so, whether one skilled in the art would identify the structure from that description." *Id*. There appears to be some tension between these statements and the PTO guidelines which allow structure to be "implicit," in other words, "capable of being understood from something else though unexpressed." *Webster's Ninth New Collegiate Dictionary* 605 (1983). If structure is "unexpressed" it cannot be "described in [the] specification." The *Atmel* opinion later seems to confirm that structure cannot be merely implicit: "Fulfillment of the s. 112, para. 6 tradeoff cannot be satisfied when there is a total omission of structure. There must be structure in the specification." Atmel, 198 F.3d at 1382.

The facts of the case suggest a resolution of this apparent contradiction. The *Atmel* court ultimately found that the specification disclosed enough to indicate to one skilled in the art what structure corresponded to the function. This holding was based upon unrebutted expert testimony that the statement that "known circuit techniques" are used to implement the structure, with its citation to an article entitled "On-Chip High

Voltage Generation in NMOS Integrated Circuits Using an Improved Voltage Multiplier Technique" would call to mind sufficient structure to one skilled in the art. *See id*. Thus the structure could be said to be implicit, yet there was enough structure disclosed for one skilled in the art.

*Atmel* appears to be consistent with prior Federal Circuit precedent. In re Dossel, 115 F.3d 942 (Fed.Cir.1997), cited with approval by *Atmel,* involved a means clause for "reconstructing" data. Id. at 946. Reading the written description, the court found that "the clauses in question claim a device that receives digital data words from a memory and data input from a user. The device then computes, from the received data, the current distribution by mathematical operations including a matrix inversion or pseudo inversion, and then outputs the result to a display." *Id*. Although the specification never uses the word "computer," "[c]learly, a unit which receives digital data, performs complex mathematical computations and outputs the results to a display must be implemented by or on a general or special purpose computer." *Id*. at 946-47. The disclosure of specific structures and functions working together to reconstruct data clearly called to mind a computer, even if the word itself was not used. *Atmel* 's requirement that "[t]here must be structure in the specification" was therefore satisfied, Atmel, 198 F.3d at 1382, even though the structure was not clearly named.

*Atmel* and *Dossel* address a situation where structure is disclosed sufficiently even though done in somewhat vague or implicit manner. Fonar Corp. v. General Electric Co., 107 F.3d 1543 (Fed.Cir.1997), concerns a situation where sufficient structure is not disclosed. At issue in *Fonar* was a patent for using magnetic resonance imaging ("MRI") to "obtain multiple image slices of a patient's body at different angles in a single scan, referred to as multi-angle oblique ("MAO") imaging." *Id*. at 1546. An apparatus claim was drafted in means-plus-function language, and one question the court faced was whether the corresponding structure was limited to "use of a generic gradient wave form" as disclosed in the specification, or whether other wave forms may be used. *Id*. at 1551. The court held that: "Although [the specification] states that other wave forms may be used, it fails to specifically identify those wave forms. Thus, under section 112, para. 6, claim 12 is limited to use of a generic gradient wave form and its equivalents." *Id*. at 1551-52. *Fonar* has been read as holding that "[a] specification that merely mentions the possibility of alternative structures without specifically identifying them is not sufficient to expand the scope of the claim beyond the example used." Xilinx, Inc. v. Altera Corp., 1998 WL 822956 at (N.D.Cal. July 30, 1998); *see also* Braun, 124 F.3d at 1425 (adopting the same understanding of *Fonar* ); Trilithic, Inc. v. Wavetek U.S., Inc., 64 F.Supp.2d 816, 825 (S.D.Ind.1999) (same).

The question then, is whether the disclosure in the instant case is more like that in *Atmel* and *Dossel* or that in *Fonar*. The Rackman specification includes a reference to the possibility of a microcomputer embodiment utilizing programs furnished on disks. It therefore appears to avoid the problem in *Fonar,* where the specification merely mentioned the possibility of an alternative structure without specifically identifying one. The reader of Rackman patent is asked to infer the need for a floppy disk drive from the reference to an embodiment in a different technology, a microcomputer utilizing disks. As *Dossel* teaches, the specific word need not be used; the only requirement is adequate disclosure of structure. According to *Atmel,* the dispositive question is whether one skilled in the art would make the inferential leap that plaintiff advocates: from reference to a microcomputer utilizing disks to envisioning the floppy disk drive needed to interface the disks with the computer. Even defendant's expert witness answers this question in the affirmative. After quoting the portion of the specification that describes the alternate embodiment of a "microcomputer" using "programs furnished on discs," Dr. Berson states: "To one of skill in the art of computers, this paragraph indicates that the phrase 'insertable storage medium,' as used in claim 5 of the Rackman patent, means storage devices (like cartridges and floppy disks) which are used by inserting them into a machine such as a

game console *or a floppy disk drive*." Berson Declaration para. 9 (emphasis added); *see also id*. para. 24 ("In 1981, programs from microcomputers were not typically furnished to users on hard disk drives, but rather on floppy disks inserted into floppy disk drives"). A floppy disk drive is therefore adequately disclosed as a corresponding structure to the "means for interfacing." The claim element "means for interfacing" therefore includes the floppy disk drive and its equivalents. As discussed above, the reference to "discs" refers to a floppy diskette, and therefore calls to mind a floppy disk drive. A hard disk drive is not disclosed by the patent.

***d. Means-plus-function Equivalents***

"[S]ection 112, para. 6 provides that the literal scope of a means-plus-function claim includes the identified corresponding structure ... as well as 'equivalents thereof.' For an accused structure to be an equivalent under section 112, para. 6, however, it must both have an equivalent structure and also perform the identical function as that recited in the claim language." Smiths Industries Medical Systems, Inc. v. Vital Signs, Inc., 183 F.3d 1347, 1358 (Fed.Cir.1999) (citations omitted). Determining "the contours of the corresponding structure in a means-plus-function claim" is a question of law for the Court. *Id*. (citation omitted).

There is a two-part test for determining statutory equivalence under s. 112, para. 6. *See* Odetics, Inc. v. Storage Technology Corp., 185 F.3d 1259, 1267 (Fed.Cir.1999). First, the functions must be identical. *See id*. (citations omitted). The second part of the test is as follows:

[T]he statutory equivalence analysis requires a determination of whether the "way" the assertedly substitute structure performs the claimed function, and the "result" of that performance, is substantially different from the "way" the claimed function is performed by the "corresponding structure, acts, or materials described in the specification," or its "result." Structural equivalence under s. 112, para. 6 is met only if the differences are insubstantial, that is, if the assertedly equivalent structure performs the claimed function in substantially the same way to achieve substantially the same result as the corresponding structure described in the specification.

*Id*. (citation omitted).

In a case where the technology at issue has developed over time, the date at which a statutory equivalent is determined can be important. The Court of Appeals for the Federal Circuit has recently clarified that:

[A] structural equivalent under s. 112 must have been available at the time of the issuance of the claim. An equivalent structure or act under s. 112 cannot embrace technology developed after the issuance of the patent because the literal meaning of a claim is fixed upon its issuance. An "after arising equivalent" infringes, if at all, under the doctrine of equivalents.

*Al-* Site Corp. v. VSI In'tl Inc., 174 F.3d 1308, 1320 (Fed.Cir.1999) (citations omitted).

Like all other aspects of claim construction, the Court views the question of statutory equivalence through the eyes of one skilled in the art at the time of the invention. *See* id. at 1316.

The Court cannot complete its claim construction at this time, because there is insufficient record evidence regarding what one of skill in the art would have found to be structural equivalents to the microprocessor and additional ROM, in the case of the "data processing means." For the same reason, on this record the

Court cannot definitely construe the claim element "means for interfacing."

***B. Defendant's Motion for Summary Judgment of Non-Infringement and Plaintiff's Motion for Summary Judgment of Infringement***

Defendant has moved for summary judgment of non-infringement, and plaintiff has cross-moved for summary judgment of infringement. Generally speaking, determining whether an accused device infringes a patent is a question of fact that is properly relegated to the jury. *See, e.g.,* North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1574 (Fed.Cir.1993) (citation omitted). However, "a literal infringement issue is properly decided upon summary judgment when no genuine issue of material fact exists, in particular, when no reasonable jury could find that every limitation recited in the properly construed claim either is or is not found in the accused device." Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed.Cir.1998) (citing Cole, 102 F.3d at 532). In addition, "[a]lthough equivalence [under the doctrine of equivalents] is a factual matter normally reserved for a fact-finder, the trial court should grant summary judgment in any case where no reasonable fact-finder could find equivalence." Overhead Door Corp. v. Chamberlain Group, Inc., 194 F.3d 1261, 1269 (Fed.Cir.1999) (quoting Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1423 (Fed.Cir.1997)).

Discovery has been stayed in this case. As a result, there is very little record evidence currently before the Court. The most glaring gap in the record is the lack of evidence concerning the nature of the accused device or devices. This presents difficulties on a motion for summary judgment of infringement or non-infringement, because infringement analysis requires the Court to determine whether the claim reads on to the accused device. *See* WMS Gaming, Inc. v. International Game Technology, 184 F.3d 1339, 1347 (Fed.Cir.1999). The parties' current motions on infringement are also difficult to evaluate at this time because they were made without the benefit of the Court's ruling today on claim construction. Finally, as just discussed, literal infringement analysis includes s. 112, para. 6 equivalents, but the Court has not yet determined what those equivalents are.

However, the ruling today on claim construction clearly forecloses a finding for plaintiff on certain literal infringement arguments he has advanced. This resolution is possible because one claim element, the "insertable storage medium having information stored therein," is not a means-plus-function element, and therefore the Court's construction of it is complete at this time.

Plaintiff has three theories of literal infringement. Plaintiff contends that the claim language literally applies to:

(1) a floppy disk and floppy disk drive connected to a PC by a cable or telephone line ...,

(2) an external hard drive connected by a cable or telephone line to the PC, and

(3) the Internet or an intranet as a whole (each with floppy and/or hard disk drives) connected to a PC by a cable or telephone line.

Pl.'s Opp. Memo. on Infringement at 2.

In situation (2), the insertable storage medium is a hard disk drive, also described by plaintiff as an "internet/intranet server," and the interfacing means is a "socket" on the PC box into which the "telephone

line or cable" is inserted. *See id*. at 14. In light of the Court's construction of the phrase "insertable storage medium," no jury could find that defendant literally infringes under this theory, because the storage medium containing the information is not itself directly inserted into the computer. The "insertable" aspect of the storage device cannot be construed to refer to a connector cable, because a cable does not store information; the inserted storage medium itself must have "information stored therein." Plaintiff is therefore foreclosed from relying upon this theory of literal infringement.

The Court's ruling that a floppy disk is an "insertable storage medium" and floppy disk drive a "means for interfacing" does not change this result. The parties agree that in the early 1980s, floppy disk drives were often external to the main body of the computer and connected by a cable. However, in this scenario, the cable is not "insertable," as that term is used in the patent. That is because the cable is part of the "means for interfacing" (the drive), not part of the "insertable storage medium" (the diskette).

In situation (3), the insertable storage medium is the "internet or intranet in its entirety," and the interfacing means is the socket into which the telephone line or cable is inserted. *Id*. at 16. Again, no reasonable jury could find that the internet or an intranet literally satisfies the Court's construction of "insertable storage medium," because the physical device containing the information is not itself directly inserted into the computer. The same analysis used in scenario (2) regarding the cable/telephone line applies in this instance as well. Plaintiff is therefore foreclosed from relying upon this theory of literal infringement.

Situation (1) is somewhat different. In this scenario, plaintiff maintains that the "insertable storage medium" is the floppy disk, and the interfacing means is the "floppy disk drive." Plaintiff is correct that applying the Court's definition of "insertable storage medium" does not preclude literal infringement as a matter of law on this theory. However, plaintiff has not shown that any of the numerous other claim elements are present, and therefore is not entitled to summary judgment of infringement. The limited factual record precludes any further rulings on infringement.

## ***CONCLUSION***

The claim element "insertable storage medium" is construed as detailed above. The claim construction forecloses plaintiff from relying on two of his three theories of literal infringement. No other rulings on infringement can be made at this time because of the limited factual record.

SO ORDERED

E.D.N.Y.,2000.
Rackman v. Microsoft Corp.

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