IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

BEDROCK COMPUTER, TECHNOLOGIES, LLC	§	
v.	§	**No. 6:09cv269 LED-JDL**
SOFTLAYER TECHNOLOGIES, INC., ET AL.	§	**JURY DEMANDED**

REPORT AND RECOMMENDATION OF UNITED STATES MAGISTRATE JUDGE

Before the Court is Defendants' Motion for Summary Judgment of Indefiniteness as to Claims 1, 2, 5, and 6 of U.S. Patent No. 5,893,120 (Doc. No. 283). The matter has been fully briefed. (Doc. Nos. 299, 311 & 316). The Court heard argument on the Motion on October 7, 2010 at the time of the *Markman* hearing. For the reasons stated below, the Court **RECOMMENDS** that Defendants' Motion be **DENIED**.

BACKGROUND

I. The Patent at Issue

Plaintiff Bedrock Computer Technologies, LLC ("Bedrock") alleges Defendants infringe U.S. Patent No. 5,893,120 ("the '120 patent"). The '120 patent is related to an "on-the-fly" garbage collection procedure designed to remove expired data from information storage and retrieval systems while "other types of access to the storage space are taking place." *See* '120 patent at 1:1-5; 1:21-23; 2:56-57. In particular, the system stores information using a hashing technique in the form of external chaining. *See* '120 patent at 2:60.

The goal of the '120 patent is to efficiently remove expired records so as to reclaim storage and speedily access data. '120 patent at 2:19-21. In order to do so, the disclosed method accesses the linked list of data and removes expired records during normal search procedures, as illustrated in Figure 3. '120 patent at 2:57-63 and Fig. 3.

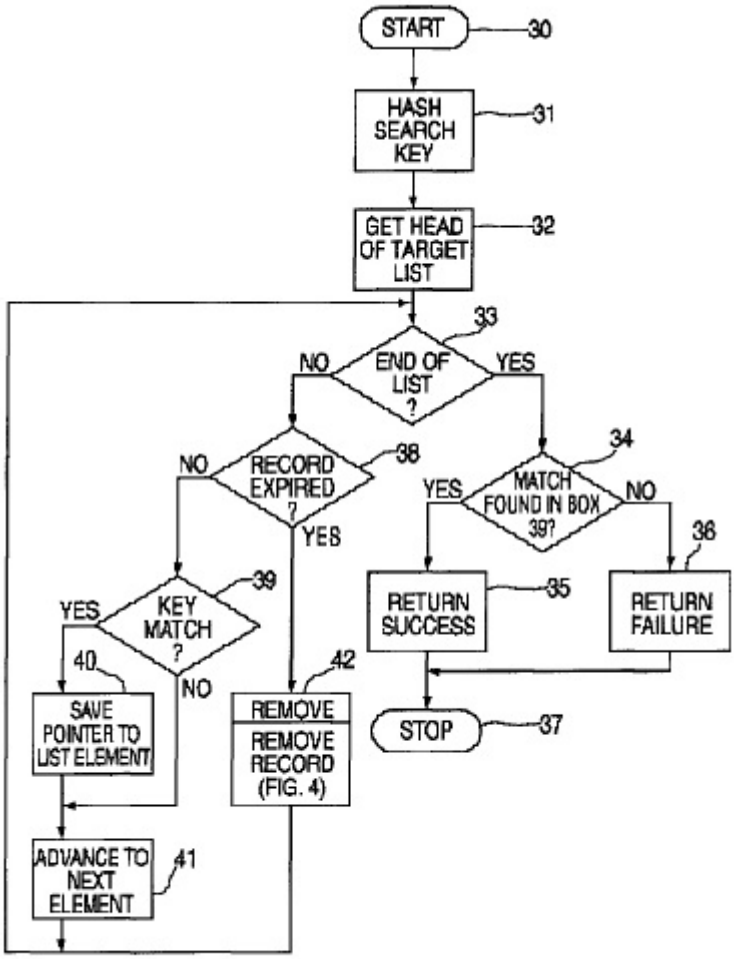

FIG. 3

II. The Claims at Issue

Defendants contend independent claims 1 and 5, and their dependent claims, 2 and 6, respectively, are indefinite under 35 U.S.C. § 112 ¶ 2. (Doc. No. 283). Specifically, Defendants

allege the specification does not contain algorithms that provide corresponding structure for the functions claimed in the means-plus-function elements of these claims. *Id.*

Claims 5 and 6 of the '120 patent are set forth below as representative of the issues in dispute, with the means-plus-function limitations at issue underlined:

> 5. An information storage and retrieval system, the system comprising:
>
> a hashing means to provide access to records stored in a memory of the system and using an external chaining technique to store the records with the same hash address, at least some of the records automatically expiring,
>
> a record search means utilizing a search key to access a linked list of records having the same hash address,
>
> the record search means including means for identifying and removing at least some expired ones of the records from the linked list of records when the linked list is accessed, and
>
> meals [*sic*], utilizing the record search means, for inserting, retrieving, and deleting records from the system and, at the same time, removing at least some expired ones of the records in the accessed linked list of records.
>
> 6. The information storage and retrieval system according to claim 5 further including means for dynamically determining maximum number for the record search means to remove in the accessed linked list of records.

'120 patent at 13:58-14:40 (Claims 5 & 6).

LEGAL STANDARD

I. Summary Judgment Standard

"Summary judgment is appropriate in a patent case, as in other cases, when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law." *Nike Inc. v. Wolverine World Wide, Inc.,* 43 F.3d 644, 646 (Fed. Cir. 1994); FED. R. CIV. P. 56(c). The moving party bears the initial burden of "informing the district court of the basis for its motion" and identifying the matter that "it believes demonstrate[s] the absence of a genuine issue of material

fact." *Celotex Corp. v. Catrett,* 477 U.S. 317, 323, 106 S.Ct. 2548, 2553 (1986). If the moving party meets this burden, the nonmoving party must then set forth "specific facts showing that there is a genuine issue for trial." FED. R .CIV. P. 56(e); *see also T.W. Elec. Serv., Inc. v. Pacific Elec. Contractors Ass'n,* 809 F.2d 626, 630 (9th Cir. 1987).

II. Applicable Law

A party seeking to invalidate a patent must overcome a presumption that the patent is valid. *See* 35 U.S.C. § 282; *United States Gypsum Co. v. National Gypsum Co.,* 74 F.3d 1209, 1212 (Fed. Cir. 1996); *Hibritech Inc. v. Monoclonal Antibodies, Inc.,* 802 F.2d 1367, 1375 (Fed. Cir. 1986). This presumption places the burden on the challenging party to prove the patent's invalidity by clear and convincing evidence. *United States Gypsum Co.,* 74 F.3d at 1212. Close questions of indefiniteness "are properly resolved in favor of the patentee." *Datamize, LLC v. Plumtree Software, Inc*., 417 F.3d 1342, 1348 (Fed. Cir. 2005); *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1380 (Fed. Cir. 2001).

Claims must be particular and distinct. "The specification shall 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. § 112 ¶ 2. The primary purpose of the requirement of definiteness is to provide notice to those skilled in the art of what will constitute infringement. *See United Carbon Co. v. Binney Co.,* 317 U.S. 228, 236 (1942). The definiteness standard is one of reasonableness under the circumstances, requiring that, in light of the teachings of the prior art and the invention at issue, the claims apprise those skilled in the art of the utilization and scope of the invention with a reasonable degree of precision and particularity. *See Shatterproof Glass Corp. v. LibbeyOwens Corp.,* 758 F.2d 613, 624 (Fed. Cir. 1985). To rule "on a claim of patent indefiniteness, a court must

determine whether one skilled in the art would understand what is claimed when the claim is read in light of the specification." *Bancorp. Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372 (Fed. Cir. 2004). "A determination of indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims, [and] therefore, like claim construction, is a question of law." *Amtel Corp. v. Info. Storage Devices, Inc.,* 198 F.3d 1374, 1378 (Fed. Cir. 1999).

A claim limitation expressed in "means plus function" language is governed by 35 U.S.C. § 112 ¶ 6. *Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). This statute was intended to permit use of means expressions without recitation of all the possible means that might be used in a claimed apparatus. *O.I. Corp. v. Tekmar Co*., 115 F.3d 1576, 1583 (Fed. Cir. 1997). "If there is no structure in the specification corresponding to the means plus function limitation in the claims, the claim will be found invalid as indefinite." *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 950 (Fed. Cir. 2007). "This duty to link or associate structure to function is the *quid pro quo* for the convenience of employing § 112, ¶ 6." *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005).

If a patent claim contains a means-plus-function limitation, the patent specification must actually disclose structure capable of performing the specified function. *See id.* at 1300-02 (finding that numerous structures proposed by Plaintiff as corresponding structures either did not perform the recited function or were not disclosed in the specification); *see also Biomedino, LLC*, 490 F.3d at 950 (finding a means-plus-function term indefinite where the alleged corresponding structure was a box labeled "control" and the specification explained that the control function may be accomplished "by known differential pressure, valving and control equipment"). "The inquiry is

whether one of skill in the art would understand the specification itself to disclose structure, not simply whether that person would be capable of implementing a structure." *Id.* at 953. Structure that merely enables other structure to perform the recited function is not corresponding structure. *Asyst Techs., Inc. v. Empak, Inc.*, 268 F.3d 1364, 1371 (Fed. Cir. 2001) ("An electrical outlet enables a toaster to work, but the outlet is not for that reason considered a part of the toaster."). Furthermore, structure disclosed in the specification must be "clearly linked" to the function recited in the claim. *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1313 (Fed. Cir. 2001); *Med. Instrumentation and Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1218-19 (Fed. Cir. 2003).

DISCUSSION

Defendants allege that Claims 1, 2, 5, and 6 are invalid for indefiniteness. DFTS' MOTION AT 1, (Doc. No. 283). The parties seem to agree that the disputed terms are governed by 35 U.S.C. § 112 ¶ 6. *Id.*

I. Claim 5: "hashing means"

A. Parties' Contentions

Defendants contend that the '120 patent does not provide an algorithm for performing the hashing function claimed in Claim 5. *Id.* at 7. Citing *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999), and *Aristocrat Techs. Austl. Pty. Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008), Defendants assert that Claim 5 lacks sufficient corresponding structure and is therefore indefinite under 35 U.S.C. § 112 ¶ 2. *See id.* 6-7. In addition, Defendants point out that even the named inventor admitted the '120 patent lacked disclosure of a hashing algorithm. *Id.*

In response, Bedrock proffers a function and corresponding structure for the disputed term.

See PLTFF'S RESPONSE AT 4-5, (Doc. No. 299). Bedrock argues that Defendants have erroneously identified the function claimed in Claim 5 and that "'[e]xecuting a hashing function,' . . . is not a required function of this claim." *Id.* at 5. Rather, Bedrock asserts, the function claimed by the means-plus-function element is "to provide access to records stored in memory." *Id.* at 4. Therefore, of the "hashing means" disclosed in the specification, which includes (i) a hash function, (ii) a hash table, and (iii) linked lists chained from the hash table, Bedrock states the linked lists actually perform the function of providing access to records. *Id.* at 5. In support, Bedrock points to the subsequent claim term, "a record search means utilizing a search key to access a linked list," stating it addresses the actual step of accessing. *Id.* According to Bedrock, this term shows that "accessing" does not require a hashing function; instead, a search key is needed to perform the actual accessing step. *See id.* Because Defendants misidentified the function claimed in Claim 5, Bedrock contends Defendants' indefiniteness argument carries no weight. *See id.*

B. The '120 Patent Specification Discloses Sufficient Structure to Support a Definite Meaning for "a hashing means to provide access to records stored in memory"

As an initial matter, Bedrock is correct that the function claimed by "a hashing means to provide access to records stored in memory" is not "executing a hashing function." *See* CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER, SECTION XI, (Doc. No. 369) ("Claim Construction Order"). The claim language explicitly states the function is "to provide access to records stored in a memory of the system and using an external chaining technique to store the records with same hash address at least some of the records automatically expiring."

Finding that the function is not hashing, the Court engages in a two-step inquiry: (1) whether structure is described in the specification, and, if so, (2) whether one of skill in the art would identify

the structure from that description. *Atmel Corp. v. Information Storage Devices, Inc*., 198 F.3d 1374, 1379 (Fed. Cir. 1999). As indicated by the explicit functional language of the claim, the structure corresponding to this particular means-plus-function limitation does not require structure executing a hashing function. Rather, the specification must describe structure linked to the performance of the recited function, specifically, providing "access to records stored in a memory of the system and using an external chaining technique to store the records with the same hash address, at least some of the records automatically expiring."

The Court finds that the '120 patent sufficiently links structure to the recited function. In its Claim Construction Memorandum Order, the Court found that external chaining to a hash table provides access to the records stored in the memory of the system. *See* (Doc. No. 369), SECTION XI. In addition, the Definitions portion of the Appendix provides pseudo-code to provide a hash table with a pointer to the head of the linked list, in other words, an externally chained, linked list. *See* '120 patent at cols. 9-10. More particularly, the Search Table Procedure and Alternate Search Table Procedure provides pseudo-code instructions for accessing records utilizing external chaining and hash addresses. The Search Table Procedure, which is exemplary for the purpose of this discussion, is depicted below.

Search Table Procedure

```
function search_table (record_key: record_key_type;
                       var position: list_element_pointer;
                       var previous_position: list_element_pointer;
                       var index: 0 . . . table_size − 1): boolean;
/*   Search table for record_key and delete expired records in target list; if found, position is made to
     point to located record and previous_position to its predecessor, and TRUE is returned; otherwise
     FALSE is returned. index is set to table subscript that is mapped to by hash function in either
     case. */
var p: list_element_pointer;                                          /* Used for traversing chain. */
  previous_p: list_element_pointer;                                   /* Points to p's predecessor. */
begin
  index := hash (record_key);                  /* hash returns value in the range 0 . . . table_size − 1. */
  p := table[index];                                                  /* Initialization before loop. */
  previous_p := nil;                                                                    /* Ditto */
  position := nil;                                                                      /* Ditto */
  previous_position := nil;                                                             /* Ditto */
  while p ≠ nil                          /* HEART OF THE TECHNIQUE: Traverse entire list, deleting */
                                                                      /* expired records as we search. */
    begin
      if p↑ .record_contents is expired
        then remove (p, previous_p, index)          /* ON-THE-FLY REMOVAL OF EXPIRED RECORD! */
        else begin
          if position = nil then if p↑ .record_contents.key = record_key
                                                                      /* If this is record wanted,*/
            then begin position := p; previous_position := previous_p end;
                                                                                /* save its position. */
          previous_p := p;                                                        /* Advance to */
          p := p↑ .next                                                           /* next record. */
        end                                                                       /* else begin */
    end;
        return (position ≠ nil)                  /* Return TRUE if record located, otherwise FALSE. */
  end                                              /* search_table */
```

'120 patent at cols. 11-12 (Search Table Procedure). The "hash" command takes "record_key" as an argument and "returns value in the range 0 . . . table_size –1." Therefore, the specification provides structure adequately linked to the function recited in the means-plus-function limitation.

Moreover, even if executing a hashing function were a function of the means-plus-function element, Defendants erroneously contend that the '120 patent does not disclose any hashing algorithms. The '120 patent specification does, in fact, disclose how to execute a hashing function. The specification discusses hashing techniques and even cites various known hashing methods, such as "truncation, folding, transposition, modulo arithmetic, and combinations of these operations," all known by one of ordinary skill in the art. *See* '120 patent at 4:53-5:52. Thus, even if the execution of a hashing algorithm were required (note the Court does not find such requirement), the '120 patent discloses hashing execution algorithms.

Accordingly, for the reasons stated above, Defendants' primary argument does not rise to the

level of clear and convincing evidence of indefiniteness.

II. Claims 1 and 5: "record search means utilizing a search key to access the linked list"

A. Parties' Contentions

Defendants contend these claims are indefinite, reiterating the argument that the '120 patent does not disclose a hash algorithm. DFTS' MOTION AT 8. Specifically, Defendants argue that the only way to access the linked list using a search key is through hashing. *Id.* Thus, according to Defendants, because executing a hashing function is a necessary element of the claim term, and the patent does not provide a corresponding algorithm, the claim is indefinite for lack of corresponding structure. *Id.*

Bedrock counters that executing a hashing function is not part of the recited function in this particular claim term. PLTFF'S RESPONSE AT 6. In its proposal for corresponding structure, Bedrock points to Box 31, a "Hash Search Key," as well as other boxes in Figure 3. *Id.* In addition, Bedrock points to the pseudo-code displayed in the Search Table Procedure and Alternate Version of Search Table Procedure as structure performing the recited function. *Id.*

Defendants reply that Bedrock's own expert admitted that the hashing technique described in the '120 patent "could be almost an infinite set of hash functions." DFTS' REPLY AT 2. Defendants contend that the specification does not provide the particular hash function to be used in performing the function of this claim term, and therefore the ordinary person of skill in the art would not know the bounds of this claim. *Id.*

B. The '120 Patent Specification Discloses Sufficient Structure to Support a Definite Meaning for "a record means utilizing a search key to access the linked list"

As an initial matter, the Court incorporates its discussion from Section VIII of its Claim

Construction Order, in which the Court finds sufficient structure to perform the function explicitly recited in the claim language. *See* (Doc. No. 369) at 24-28. All the components of the corresponding structure may be found within the '120 patent specification, which provides a lengthy discussion of how the software is configured to perform the function "utilizing a search key to access the linked list." *See* '120 patent at 3:53-58; 4:22-48; 5:58-6:4; 6:13-20; cols. 11 & 12 (Search Table Procedure); cols. 11, 12, 13 & 14 (Alternate Version of Search Table Procedure).

As indicated by the discussion in the Court's Claim Construction Order, the corresponding structure for this claim term is the combination of all the structure that achieves the claimed functions, but such functions do not require executing a hashing function. As with the "hashing means to provide access," structure for the claim function is provided. Further, even if executing a hashing function were required (note the Court does not find such requirement), the '120 names "known hashing functions" that would be recognized by one skilled in the art to be algorithms for executing a hashing function. *See* '120 patent at 5:5. Thus, the Court finds the claim is sufficiently definite.

III. Claims 2 and 6: "dynamically determining maximum number"

A. Parties' Contentions

Defendants assert that Claims 2 and 6 are indefinite because the '120 patent "fails to disclose any algorithm that determines the maximum number of records to remove." DFTS' MOTION AT 9. Bedrock argues that the function of the claim terms is "dynamically determining maximum number of records for the record search means to remove in the accessed linked list of records." PLTFF'S RESPONSE AT 7. According to Bedrock, the structure that makes the dynamic decision is the executable software that chooses whether to execute the Search Table Procedure or the Alternate

Search Table Procedure. *Id.* at 7-8. Bedrock states that this decision is based on various factors, such as the system storage pool, the general system load, etc. *Id.* at 8. Thus, Bedrock argues it is the *choice* between the two search table procedures that performs the recited function, not any specific algorithm. *See id.*

Defendants, on the other hand, argue that the specification does not disclose a particular structure for making the dynamic decision, and therefore there are a variety of ways to perform the recited function. DFTS' MOTION AT 9. Defendants further argue that the choice between using the Search Table Procedure and Alternate Search Table Procedure has nothing to do with determining a maximum number of records to remove. *Id.* Instead, these procedures do not determine *any* number of records to remove; either all expired records are removed or all expired records in the linked list before a match is found are removed. *Id.* at 9-10. Therefore, Defendants contend, both procedures simply remove every expired from the linked list and neither procedure produces "a single quantity" limiting the maximum number of records to remove. *Id.* at 10.

B. The '120 Patent Specification Discloses Sufficient Structure to Support a Definite Meaning for "means for dynamically determining maximum number"

Again, the Court incorporates the discussion of the Claim Construction Order, particularly Section XII, which finds the function of the claim terms to be "dynamically determining maximum number for the record search means to remove in the accessed linked list of records." *See* (Doc. No. 369) at 39-41. Defendants read an additional limitation into the recited claim, stating that a maximum number of records requires a single quantity or number to be determined. This is not the case. Therefore, the corresponding structure for these claim terms does not need to be an algorithm providing "a single number that serves as the upper limit on the number of records removed from

the linked list." *See* DFTS' MOTION AT 10. As stated in the Claim Construction Order, "the dynamic decision is the decision to run the Search Table Procedure or the Alternate Search Table Procedure." (Doc. No. 369) at 40. The on-the-fly garbage removal methods and apparatus claimed in the '120 patent provides for the option to remove all expired records (Search Table Procedure), or remove some, but not all, expired records (Alternate Search Table Procedure). '120 patent at 6:66-7:4. Another option is to remove no records at all. *Id.* This "dynamic runtime decision" is based on a variety of factors described in the specification. '120 patent at 7:4-10. Thus, although the maximum number is not a single, concrete number, the maximum number of records is described in terms of (1) all expired records; (2) some, but not all, expired records; or (3) no records at all.

In addition, Defendants have failed to show that one of ordinary skill in the art would not recognize the pseudo-code of the Search Table Procedure and Alternate Search Table Procedure as the corresponding structure to the recited functions. As such, the disputed claim terms of Claims 2 and 6 are sufficiently definite.

CONCLUSION

Because the claims of a patent are afforded a statutory presumption of validity, a challenge to a claim containing a means-plus-function limitation requires a more persuasive showing that there is a lack of structural support than what was presented here. Accordingly, Defendants' indefiniteness challenge fails. Therefore, the Court **RECOMMENDS** that Defendants' Motion for Summary Judgment (Doc. No. 283) be **DENIED**.

Within fourteen (14) days after receipt of the Magistrate Judge's Report, any party may serve and file written objections to the findings and recommendations contained in the Report. A party's failure to file written objections to the findings, conclusions and recommendations contained in this

Report within fourteen (14) days after being served with a copy shall bar that party from *de novo* review by the district judge of those findings, conclusions and recommendations and, except on grounds of plain error, from appellate review of unobjected-to factual findings and legal conclusions accepted and adopted by the district court. *Douglass v. United States Auto. Ass'n*, 79 F.3d 1415, 1430 (5th Cir. 1996).

So ORDERED and SIGNED this 11th day of January, 2011.

JOHN D. LOVE
UNITED STATES MAGISTRATE JUDGE