UNITED STATES DISTRICT COURT

DISTRICT OF NEVADA

* * *

KONAMI GAMING, INC.,

                Plaintiff,

      v.

HIGH 5 GAMES, LLC,

                Defendant.

Case No. 2:14-cv-01483-RFB-NJK

ORDER

I.   INTRODUCTION

Before the Court are Defendant's Motion to Limit the Number of Patent Claims, ECF No. 60, Defendant's Motion for Summary Judgment, ECF No. 92, and claim construction, as briefed in ECF Nos. 86 and 91. For the reasons stated below, the Court grants summary judgment for Defendants.

II.   PROCEDURAL HISTORY

Plaintiff Konami filed the first Complaint on September 12, 2014. ECF No. 1. The operative Amended Complaint was filed on February 29, 2016. ECF No. 53. The Amended Complaint alleges four counts of infringement for four patents: Count I – Infringement of US Patent No. 8,096,869; Count II – Infringement of US Patent No. 8,366,540; Count III – Infringement of US Patent No. 8,662,810; Count IV – Infringement of US Patent No. 8,616,955. High 5 Games filed an Answer and Counterclaims on March 14, 2016. ECF No. 54. Plaintiff Konami filed an Answer to the counterclaims on March 28, 2016. ECF No. 55. Plaintiff Konami

1 filed its opening claim construction brief on October 7, 2016. ECF No. 86. Defendant High 5 filed

2 a Response on October 21, 2016, and Plaintiff filed a Reply on November 11, 2016. ECF Nos. 92,

3 98. The Court approved the parties' stipulated discovery plan and scheduling order, providing that

4 discovery would not commence until after the claim construction hearing. ECF No. 52. Defendant

5 filed a Motion for Summary Judgment on October 21, 2016. ECF No. 92. Defendant argued that

6 the claims at issue are all invalid as indefinite under 35 U.S.C. § 112, and abstract under 35 U.S.C.

7 § 101. Plaintiff filed a Response on December 2, 2016, and Defendant filed a Reply on December

8 23, 2016. ECF Nos. 99, 101.

9   On May 31, 2017, June 1, 2017, June 2, 2017, and August 1, 2017, the Court held an

10 omnibus hearing addressing claim construction and the Motion for Summary Judgment. In

11 addition to the arguments of counsel, the Court heard testimony from Defendant's expert witness

12 Mark C. Nicely and Plaintiff's expert witness John Acres. As laid out below, the witnesses testified

13 as to the knowledge of one of ordinary skill in the art at the time the patents were issued, including

14 industry standards and standard technology as relevant to the knowledge of one of ordinary skill

15 in the art. In a minute order on July 10, 2017, the Court requested that the parties submit complete

16 copies of the prosecution histories of the patents, as well as summary descriptions of the

17 prosecutions. ECF No. 138. The parties did so on July 24, 2017. ECF Nos. 143-148.

18

19 **III. BACKGROUND -- EXTRINSIC & INTRINSIC EVIDENCE**

20   The parent patent, No. 8,096,869, is entitled "Gaming Machines with Runs of Consecutive

21 Identical Symbols," patented on January 17, 2012. The patent No. 8,366,540 was patented on

22 February 5, 2013. The patent No. 8,616,955 was patented on December 31, 2013. The patent No.

23 8,622,810 was patented on January 7, 2014. The patents disclose variations on a slot gaming device

24 in which the simulated digital "reels" depict a consecutive run of identical symbols in one reel to

25 heighten the player's anticipation of a winning outcome, with the identical symbol changing for

26 each "game."

27   **A. The Claims of the Four Patents**

28   The Court's analysis in this case focuses on the asserted claims of the four patents at issue.

The independent claims are representative of the asserted claims for the patents at issue in this case. The following are the independent claims of the four patents:

<u>**Claim 1 of the '869 Patent:**</u> A gaming machine comprising: *a processor configured to* execute a game displaying a matrix of symbol containing elements . . . said simulated rotatable reel including at least one section in which a *consecutive run of three or more of said symbol containing elements* is *populated* by an identical symbol . . . wherein said identical symbol is selected by *virtually spinning a notional, non-visible, inner reel* comprising a plurality of said symbols.

<u>**Claim 19 of the '869 Patent**</u>: A method for increasing probability of a winning outcome on a gaming machine; wherein said winning outcome is determined by a game including pre-defined arrangements of a plurality of symbols displayed in a matrix of symbol containing elements comprising portions of simulated rotatable reels; *said method comprising a processor of a gaming machine configured to* . . . arrange at least one of said simulated rotatable reels with at least one consecutive run of three or more symbol containing elements displaying an identical symbol . . . wherein said subset of said plurality of symbols is arranged on a notional non-visible inner reel, such that said identical symbol is randomly selected anew for each play of the game *by virtual rotation of said notional non-visible inner reel*. (emphasis added).

<u>**Claim 1 of the '540 Patent:**</u> A gaming machine comprising: a display device; and, *a processor configured to* execute a game displaying a matrix of symbol containing elements . . . wherein said simulated rotatable reel including at least section in which a consecutive run of two or more of said symbol containing elements is populated by a first identical symbol; wherein said first identical symbol is used for a first play of said game; wherein a second identical symbol is *randomly selected*, and wherein the first identical symbol is replaced by the second identical symbol in said consecutive run of two or more of said symbol containing elements, said second identical symbol being used for a second play of said game. (emphasis added).

<u>**Claim 21 of the '540 Patent:**</u> A method for increasing probability of a winning outcome on a gaming machine; wherein said winning outcome is determined by a game including pre-defined arrangements of a plurality of symbols displayed, on a display device of said gaming machine, in a matrix of symbol containing elements comprising portions of simulated rotatable reels*; said method comprising a processor configured to*: arrange at least one of said simulated rotatable reels including at least one section in which a *consecutive run of two or more of said symbol containing elements* is populated by a first identical symbol; said first identical symbol being used for a first play of said game; *randomly select* a second identical symbol; and replace the first identical symbol by a second identical symbol[.] (emphasis added).

<u>**Claim 1 of the '810 Patent:**</u> A gaming machine comprising: *a memory device configured to* store data representing a reel . . . the reel having a run of *consecutive symbol positions*, the run . . . being initially populated with a first identical symbol from the set of symbols . . . *a game controller configured to* (i) initiate the first instance of a game using the reel, (ii) *randomly select* a second identical symbol from the set of symbols, (iii) replace each of the first identical symbols in the run of consecutive symbol positions of the reel with a second identical symbol, and (iv) initiate a second instance of the game using the reel having the run of consecutive symbol positions populated with a second identical symbol.

<u>**Claim 8 of the '810 Patent:**</u> A method comprising: *storing data, in a memory device*,

representing a reel . . . initiating, *via a game controller*, the first instance of the game using the reel; *randomly selecting*, *via the game controller*, a second identical symbol from the set of symbols; replacing each of the first identical symbols in the *run of consecutive symbol positions of the reel* with a second identical symbol; and initiating a second instance of the game using the reel having the run of consecutive symbol positions populated with a second identical symbol. (emphasis added).

Claim 15 of the '810 Patent: *A non-transitory computer readable medium recording a program for controlling a computer to function as a memory device configured to store data representing a reel* . . . the reel having a run of consecutive symbol positions . . . initially populated with a first identical symbol . . . a *game controller configured* to (i) initiate the first instance of a game using the reel, (ii) *randomly select a second identical symbol* from the set of symbols; (iii) replace each of the first identical symbols in the run of consecutive symbol positions of the reel with the second identical symbol, and (iv) initiate a second instance of the game using the reel having the run of consecutive symbol positions populated with the second identical symbol. (emphasis added).

Claim 1 of the '955 Patent: A *gaming machine* for providing a game to a player, comprising: a *memory device configured to* store data representing a reel having a predetermined number of symbol positions, wherein each symbol position has an associated symbol from a set of symbols, the reel having a run of consecutive symbol positions . . . a *display device configured to <u>display</u>* a matrix having a plurality of display elements arranged in a column, a number of the display elements in the column being less than the predetermined number of symbol positions in the reel . . . a *game controller configured to* initiate the instance of the game using the reel during which the reel is spun at a game speed, and the game controller being further configured to replace each of the symbols associated with the run of consecutive symbol positions with an identical replacement symbol during spinning of the reel . . . . (emphasis added)

Claim 10 of the '955 Patent: A *method of comprising*: storing data, in a *memory device*, *representing a reel*, the reel having a predetermined number of symbol positions, wherein each symbol position has an associated symbol from a set of symbols, the reel having a run of consecutive symbol positions, wherein each of the symbol positions of the run of consecutive symbol positions is initially populated, prior to initiation of an instance of a game . . . ; *display, via a display device, a matrix having a plurality of display elements arranged in a column*, the number of display elements in the column being less than the predetermined number of symbol positions in the reel, and displaying a portion of the reel such that the symbols associated with some of the symbol positions of the reel are displayed in the matrix when the reel is in a stop position: initiating, via *a game controller*, play of the instance of the game using the reel during which the reel is spun at a game speed . . . (emphasis added).

Claim 19 of the '955 Patent: A *non-transitory computer readable medium* *recording a program for controlling a computer to function* as a: a *memory device configured to* store data representing a reel having a predetermined number of symbol positions, wherein each element has an associated symbol from a set of symbols, the reel having a run of consecutive symbol positions . . . a *display device configured to* display a matrix having a plurality of display elements arranged in a column, a number of the display elements in the column being less than the predetermined number of symbol positions in the reel . . . a *game controller configured to* initiate the instance of the game using the reel during which

the reel is spun at a game speed, and the ***game controller being further configured to*** replace each of the symbols associated with the run of consecutive symbol positions with an identical replacement symbol during spinning of the reel . . . . (emphasis added).

The claims share common terms or significant phrases which are part of this Court's analysis. These terms include: (a) "processor configured to", (b) "game controller configured to", (c) "display device configured to," (d) "consecutive run of three or more said symbol containing elements," and (e) "notional non-visible inner reel."[1]

B. The Specification for the '869 Patent

In analyzing invalidity, the Court has considered the patents in their entirety, as well as other cognizable evidence, including the prosecution history. The specifications of the four patents are substantially similar, and Plaintiffs have not asserted the existence of substantial structural differences between the patents. The '869 patent is the parent patent for the other three patents in this case. The Court therefore focuses its analysis in this Opinion on the specification and claims in the parent '869 patent with reference to the other patents as necessary or where they may slightly differ. See generally, Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation.").

The Court here identifies the most salient portions of the specification of the '869 patent that could plausibly relate to the disclosure of "structure" that may support the claimed invention:

(1) "[I]n a first broad form of the invention, there is provided a gaming machine arranged to display a matrix of symbol containing elements: each column of said matrix comprising a portion of a simulated rotatable reel of said symbol containing elements; and wherein each of said symbol containing elements of at least one consecutive run of said symbol containing elements of at least one said reel is caused to display an identical symbol. Preferably, said identical symbol is selected by a game controller from a subset of available symbols." **'869, 2:9-14.**

(2) "In a further broad form of the invention there is provided a method for increasing probability of a winning outcome on a gaming machine . . . [p]referably, said identical symbol is selected from a look-up table of said subset of identical symbols." **'869, 2:66-67, 3:16-17.**

---

[1] While the parties have asserted different constructions to these and other terms, even assuming Konami's construction of the terms analyzed in this order, the Court would still reach the same conclusions and holdings.

(3) "In yet a further broad form of the invention there is provided a method of implementing a game or gaming machine; said method including the steps of: (c) providing a gaming machine with a control module; said module including a microprocessor, a working memory and a data storage device connections means, (d) writing program code to said data storage device, (e) connecting said data storage device to said control module. In a still further broad form of the invention there is provided media for storing enabling digital code retaining devices including, read only memory (ROM) and erasable programmable read only memory (EPROM), compact flash cards and PCMCIA cards; said media further including disc-based storage devices." **'869, 3:33-48.**

(4) Figure 3, described by the patent as "a schematic representation of an 'inner reel' or look-up table." **'869, 3:58-59.**

(5) [First Preferred Embodiment]: "A *game controller (not shown) pre-selects at random*, at the initiation of a game sequence, a potential win element for each reel from the set of elements. That is, the game controller predetermines which element, and therefore which symbol, will be displayed at the end of the game, and may therefore contribute to a winning outcome. . . . In this preferred embodiment, the number of elements in a run and the location of the consecutive run or runs within the strip are predetermined and remain constant for each game played on the machine. The identical symbol which populates these consecutive run or runs of elements may be considered as one of a set of 'inner reel' symbols. The game controller *(not shown)* determines the identical symbol to be displayed in each consecutive element of the run or runs of consecutive elements in which the symbol is to be shown. The selection of the identical symbol is through a notional rotation of an 'inner reel' **34** shown as a strip of elements and symbols in FIG. **3.** *This 'inner reel' is in effect a look-up table and is not displayed, but its simulated rotation and 'coming to rest' determines which symbol will populate the run or runs of consecutive elements of the left-most reel.* The symbols of the 'inner reel' or look-up table from which the selection is made, are a sub-set of the set of symbols displayed in the remaining non-'inner reel' elements of the left-most reel." **'869, 4:26-61.** (emphasis added).

C. The Prosecution History

The parties have invoked the prosecution history of the patents in this case, especially the '869 patent, to support their arguments regarding the construction of central terms in the independent claims.

The Court recognizes the legal significance of this history in construing the claims at issue in this case. See generally Lemelson v. General Mills, Inc., 968 F.2d 1202, 1206, (Fed. Cir. 1992)("The prosecution history gives insight into what the applicant originally claimed as the invention, and often what the applicant gave up in order to meet the Examiner's objections.") Because the remaining patents are descendant or familial patents of the '869 patent, obtained with terminal disclaimers, the prosecution history of the '869 patent, especially as it relates to

disavowals or limitations of the claims, is controlling as to the claims of the other three familial patents in this case. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1333 (Fed. Cir. 2003)(noting that "prosecution disclaimer may arise from disavowals made during the prosecution of ancestor patent applications"); see also Microsoft Corp. v. Multi–Tech Sys., Inc., 357 F.3d 1340, 1349 (Fed. Cir. 2004) ("[T]he prosecution history of one patent is relevant to an understanding of the scope of a common term in a second patent stemming from the same patent application.")

The Court finds the final stages of the prosecution history of the '869 patent instructive in this case. After an initial non-final rejection, and responsive amendments and arguments, the prosecution office issued a final rejection on January 26, 2010. In rejecting claims 1 and 21 as unpatentable over U.S. Patent Application Publication No. 2004/0058727 ("Marks"), the examiner stated:

> "The Examiner submits that Marks's approach of using a random number generator . . . where the gaming device stores random number generators for use in generating random symbols, identical symbols, outcomes and the like[] is substantially equivalent for the same purpose as the arrangement of spinning of a non-visible inner reel. Both function substantially the same as to randomly determining identical symbols or replicator symbols to be used in the game of chance. It appears that skilled artisan [sic] would have not only found it equivalent but obvious to describe the effect of a random number generator in the sense of spinning an inner non-visible reel as it appears to be only descriptive language describing the functions of a common random number generator and look-up table or the like . . . It would appear to be clear to a skilled artisan that both look-up tables and random number generators are widely well known in the art and utilized in a majority of games of chance to generate random outcomes." ECF No 148, 10-11.

After requesting a continued examination, Plaintiff submitted a Response to the Final Action. Plaintiff emphasized that its patent claimed a device in which the consecutive runs of identical symbols are displayed and visible during "rotation" of the outer or simulated reels and the symbols are selected by means of a unique process of spinning a non-visible inner reel. Following an interview, the Patent Office issued a Notice of Allowability. Regarding the Marks prior art reference, the examiner stated:

> "Marks discloses that a string of identical symbols may be displayed on a display device (figure 3A), however, in Marks the string of identical symbols appears to be on a single symbol containing element (i.e. symbol position) of the column or reel. On the contrary, the claimed invention requires a consecutive string of three or more symbol containing

elements (i.e. symbol positions) to be populated with the identical symbol. This allows the perception of the same symbol to remain on the display device during rotation as the same identical symbol is viewed multiple times. Moreover, Marks and the totality of the prior art searched and cited of record appears to fail in disclosing a simulated rotatable reel including sections that are fixed for each play of the game and at least one section of the consecutive string of symbol containing elements that is populated with said identical symbol anew for each play of the game. *Further, such population of the identical symbol occurs by a process in which a notional, non-visible inner reel is virtually rotated to select one of a subset of symbols to populate the section of the consecutive string.* Consequently, as the totality of the claimed invention is not taught by the prior art, claims 1-5, 7-13, 15-22, 24, 26, & 27 are allowed." ECF No. 148, 13-14 (emphasis added).

This particular sequence of rejection and subsequent allowance is instructive as to the process or steps that can be claimed regarding the "notional non-visible inner reel" referenced in the '869 patent. This is to say that the "notional non-visible inner reel" cannot simply represent the use of a random number generator with a look-up table to randomly select symbols—some of which would be identical—to appear on a display device with simulated digital reels. The January 26, 2010 rejection with its reference to known prior art in Marks makes this clear. While the examiner did note the difference in the '869 patent versus Marks with regard to the appearance of the "consecutive string of three or more symbol containing elements," the examiner emphasized the "process", i.e., the structure for the selection and placement of these symbols, taught by the invention was the virtual rotation of a "non-visible inner reel." Indeed, the examiner could not have allowed the patent based simply upon the manner or configuration of the slot symbols as they *appeared* to the player on the digital simulated reels as this would have reflected unallowable "pure functional claiming." Blackboard, Inc. v. Desire2Learn, Inc., 574 F.3d 1371, 1385 (Fed Cir. 2009). Rather, the patent was allowed based upon the "totality of the claimed invention," which includes the claimed virtual rotation process, which is the process by which the matrix of symbols is created and selected for display on the simulated rotating reels. Thus, one of the central questions that remains for this order is whether the "process" of a "notional non-visible inner reel" "virtually" rotating is actually disclosed in the claims or specification of the '869 patent. This question and the inquiry into whether all of the claimed functions have associated structure is explored below.

. . .

. . .

D. Factual Findings and Expert Testimony

Both parties' experts testified as to the knowledge of one of ordinary skill in the art at the time the '869 patent and other patents were issued, including industry standards and standard technology. Based on this testimony and the record of the hearing, the Court makes the following findings of fact.

First, there were a limited number of game development "kits" used by game developers. The kits included random number generators or other random selection mechanisms using known mathematical formulas. Importantly, these random number generators provide different options for a developer in terms of the range of numbers that can be provided and the extent of true randomness of the numbers generated. A game developer would need to know the specific requirements of the game(s) to determine which random number generators would properly serve the needs of the game(s). Moreover, random number generators still require individual programming or customization based upon the needs of the developer. As the Plaintiff's expert conceded and the Court finds, different game designers could implement random number generator methodologies in different ways. This is to say that random number generators are not all equivalent and they do not all perform equally. While state law regulations, such as those in Nevada, set requirements for randomness, this does not establish the programming required for the random number generator. That programming is predominantly a function of the requirements or algorithm of the game for which the random number generator is being used.

Additionally, and perhaps more importantly, a slot machine game such as the invention disclosed in the '869 patent and related patents requires separate programming or a specific algorithm to translate the "seed" number generated by a random number generator into either a symbol element, a stop position on a reel strip layout, or some other randomly chosen aspect of the final simulated reel display seen by the player. As Plaintiff's own expert testified, and the Court finds, there must be, after the generation of a large number from the random number generator, a "***process*** to turn [this large number] into a random selection that would compress that number into a random selection within the range of positions on each reel." The aforementioned "process" is not a standard part of a random number generator's programming or a standard part

of game developer kits for slot machines. This process is not a standard algorithm or set of programming associated with a generic "processor" or "game controller" in the industry that is known to one of ordinary skill in the art. As Plaintiff's expert acknowledged, *different* mathematical operations could "be employed to transform the randomly selected number into a reel stop position." The Court finds that, to one of ordinary skill in the art of slot machine game design, this process entails specific programming or a specific algorithm that cannot be determined simply by knowing the final display of game symbols on a simulated digital reel display.

The Court also finds based upon the expert testimony and record that look-up tables may be used and relied upon in different ways to determine the final display of symbols on a simulated digital reel. For example, in this case, the two parties have implemented a similar outcome on a simulated reel—the repeated depiction of an identical symbol—yet they have achieved that outcome by a different ordering and use of look-up tables or templates in conjunction with probability tables/formulae.

The Court further finds that to one of ordinary skill in the art the term "game controller" would be a generic description of the combination of a processor, memory and input/output device but would not connote or identify specific algorithms or programming except that such games must have some dynamic process of random selection of symbols. The game controller simply allows the interaction of inputs/outputs with the processor and related memory. A game controller would not have standard algorithms or programming for a game itself. The Court finds that there is no commercially-available or generic processor or game controller that comes with standard programming to perform—without additional programming and coding—all of the various functions associated with a generic slot game.

IV. MEANS-PLUS-FUNCTION

High 5 argues that the asserted claims of all of the patents are invalid as indefinite under 35 U.S.C. § 112.

. . .

. . .

A. Legal Standard

1. General

Sections (a), (b), and (f) of 35 U.S.C. § 112 provide:

"(a) In general.--The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention." 35 USC § 112(a).

"(b) The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention." 36 USC § 112(b).

"(f) Element in claim for a combination.--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." 36 USC § 112(f)[2]

Subsection (f), often referred to as "means-plus-function" claiming, applies to claims that describe a function or outcome of an invention, rather than the "structure" or means of obtaining that outcome. <u>Williamson v. Citrix Online, LLC</u>, 792 F.3d 1339, 1349 (Fed. Cir. 2015). "In exchange for the ability to use a generic means expression for a claim limitation, the applicant must indicate in the specification what structure constitutes the means. ***Such structure must be clearly linked or associated with the claimed function***. Failure to specify the corresponding structure in the specification amounts to impermissible pure functional claiming. Although [§ 112 ¶ 6] statutorily provides that one may use means-plus-function language in a claim, one is still subject to the requirement that a claim 'particularly point out and distinctly claim' the invention. If an applicant does not disclose structure for a means-plus-function term, the claim is indefinite." <u>Ergo Licensing, LLC v. CareFusion 303, Inc.</u>, 673 F.3d 1361, 1363 (Fed. Cir. 2012)(emphasis added).

"The dispositive question in an indefiniteness inquiry is whether the claims, not particular claim terms, read in light of the specification delineating the patent, and the prosecution history,

---

[2] Courts have sometimes referred to this as subsection (6) or ¶6. As it appears in this Opinion, 6 and (f) are used interchangeably.

fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." Cox Communication, Inc. v. Sprint Communication Company LP, 838 F.3d 1224, 1231 (Fed. Cir. 2016) (internal citations and quotation marks omitted).

2. Applicability of Means-Plus-Function Analysis

"Use of the word 'means' creates a presumption that § 112 ¶ 6 applies." Williamson, 792 F.3d at 1348. "When a claim term lacks the word 'means' the opposite presumption applies. The presumption can be overcome where a claim fails to recite sufficient definite structure or else recites function without reciting sufficient structure for performing that function." Id.

"By contrast, if the claim merely recites a generic nonce word and the remaining claim language, specification, prosecution history, and relevant external evidence provide no further structural description to a person of ordinary skill in the art, then the presumption against means-plus-function claiming is rebutted . . . if a claim recites a generic term that, properly construed in light of the specification, lacks sufficiently definite structure to a person of ordinary skill in the art, the presumption is overcome and the patentee has invoked means-plus-function claiming." Id.

3. Adequacy of Structure if Means-Plus-Function Applies

"Construing a means-plus-function claim term is a two-step process. The court must first identify the claimed function. Then, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function. Where there are multiple claimed functions . . . the patentee must disclose adequate corresponding structure to perform all of the claimed functions. If the patentee fails to disclose adequate corresponding structure, the claim is indefinite." Williamson, 792 F.3d at 1351-52 (internal citations and quotation marks omitted).

"Structure disclosed in the specification qualifies as 'corresponding structure' if the intrinsic evidence clearly links or associates that structure to the function recited in the claim. Even if the specification discloses corresponding structure, the disclosure must be of 'adequate' corresponding structure to achieve the claimed function. Under 35 U.S.C. § 112, paras. 2 and 6, therefore, *if a person of ordinary skill in the art would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim, a means-plus-function clause is indefinite.*" Id. at 1352 (internal citations omitted)(emphasis added).

"The party alleging that the specification fails to disclose sufficient corresponding structure must make that showing by clear and convincing evidence." TecSec, Inc. v. Int'l Business Machines Corp., 731 F.3d 1336, 1349 (Fed. Cir. 2013).

The Federal Circuit has provided more specific guidance as to determining structure for computer-related or computer software-based inventions. The Federal Circuit has noted that "to one of skill in the art, the structure of computer software is understood through, for example, an *outline of an algorithm, a flowchart, or a specific set of instructions or rules*." Apple Inc. v. Motorola Inc., 757 F.3d 1286, 1298-99 (Fed. Cir. 2014) (internal citations and quotation marks omitted)(emphasis added).

"Structure may also be provided by describing the claim limitation's operation, such as its input, output, or connections. The limitation's operation is more than just its function; it is how the function is achieved in the context of the invention." Id. at 1299.

In Aristocrat Technologies Australia Pty Ltd. v. Int'l Game Technology, 521 F.3d 1328 (Fed. Cir. 2008), a case relied on heavily by Defendant, the Federal Circuit reviewed a means-plus-function analysis for a claim pertaining to a novel form of slot machine. "The game disclosed in the . . . patent purportedly increases player interest in slot machines by providing the player with greater control over the definition of winning opportunities. It allows the player to define the winning opportunities based on symbols displayed on the top and side of a multi-line screen representing slot machine reels. Using the invention on a 3x5 screen, for example, the player can define numerous different arrangements that will allow the player to win for some subset of the 243 possible winning combinations." Id. at 1330. The patentee argued that the disclosure in the specification of a "general purpose, programmable microprocessor," or "standard microprocessor base gaming machine with appropriate programming," was sufficient to support the means-plus-function claim. The Federal Circuit disagreed. The court ultimately concluded that simple references to computer processors in the specification provided insufficient structure to support the claim, reasoning:

> "In cases involving a computer-implemented invention in which the inventor has invoked means-plus-function claiming, this court has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or

microprocessor. The point of the requirement that the patentee disclose particular structure in the specification and that the scope of the patent claims be limited to that structure and its equivalents is to avoid pure functional claiming . . . For a patentee to claim a means for performing a particular function and then to disclose only a general purpose computer as the structure designed to perform that function amounts to pure functional claiming. Because general purpose computers can be programmed to perform very different tasks in very different ways, simply disclosing a computer as the structure designated to perform a particular function does not limit the scope of the claim to 'the corresponding structure, material, or acts' that perform the function, as required by section 112 paragraph 6. . ."[A] general purpose computer programmed to carry out a particular algorithm creates a new machine because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software. The instructions of the software program in effect create a special purpose machine for carrying out the particular algorithm. Thus, in a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm." Id. at 1333 (internal citations and quotation marks omitted).

Importantly, in Aristocrat the Federal Circuit ultimately concluded that it was immaterial if one skilled in the art could create the program or algorithm from scratch—the relevant inquiry is whether one skilled in the art, having reviewed the disclosed specification of the patent, "would have understood that disclosure to encompass software to perform the function, and been able to implement such a program." Id. at 1337.

Other cases have addressed the algorithm requirement and the circumstances under which a "general purpose computer" provides sufficient structure for a means-plus-function claim. In Ergo Licensing, the Federal Circuit found that the claim for "programmable control means" for an infusion system used to meter and deliver multiple fluid sources into a patient's body, could not be supported by the "recitation of 'control device' throughout the specification." 673 F.3d at 1363. The Ergo Licensing court reasoned that such a "control device" was the equivalent of a general purpose computer that precedent had found insufficient to support a claim without the disclosure of an algorithm. Id. at 1364. The court noted that a general purpose computer may be sufficient where the function can be carried out by a computer *without* any special programming, but that occurs only in "rare circumstances." Id. at 1365. The court reiterated that while algorithms may be described "in prose," it must still constitute "*a step-by-step procedure for accomplishing a given result.*" Id. (emphasis added).

Importantly for this case, in <u>Williamson</u>, the Court rejected the argument that depictions of "a representative display from the presenter computer system" constituted supporting structure, reiterating the necessity of the underlying method in the form of an algorithm. <u>Williamson</u>, 792 F.3d at 1354.

B. DISCUSSION

1. The Parties' Arguments

High 5 does not make particularized arguments as to each claim it asserts is invalid. Rather, High 5 argues that the asserted claims and limitations are expressed in functional terms, and generally speak to outcomes—how the symbols are displayed or arranged, or respond to inputs, without providing in the claims or the specification sufficient technological or algorithmic structure to support those functions. High 5 relies extensively on <u>Aristocrat Technologies Australia Pty Ltd.</u> and its progeny to support the claim that the complex electronic display functions at issue here require technical supporting structure, specifically algorithms or sufficient explanations to construct supporting algorithms.

High 5 argues that the word "processor" in and of itself is not sufficient structure to support the claimed functions. High 5 asserts that it is undisputed that the claimed functions cannot be performed without software, and therefore merely claiming a "processor" is insufficient. The specification does not provide any description or discussion of the type of processor, or any software, algorithm, or code. The named inventor admitted that the "processor" at issue is an "ordinary" processor in his deposition.

High 5 also argues that the term "game controller" similarly is not sufficient to perform the claimed functions as no algorithm or software code is disclosed in any of the patents. High 5 asserts that in the '810 and '955 patents, the asserted claims use "game controller" instead of "processor." The specification does not describe the game controller, but does state that it is "not shown." Yoshimi, the inventor, characterized the "game controller" as being a "CPU" that "may also have ROM or RAM." High 5 asserts that this indicates that the game controller is also a generic processing device or processor with no underlying structure disclosed.

Konami argues principally that the Aristocrat line of cases does not apply, as terms such as "processor" and "game controller" are well-known names for definite structures, and that they adequately support the claims such that the presumption against means-plus-function is not overcome. Konami cites to Apple Inc.: "Hence, where a claim is not drafted in means-plus-function format, the reasoning in the Aristocrat line of cases does not automatically apply, and an algorithm is therefore not necessarily required. The correct inquiry, when 'means' is absent from a limitation, is whether the limitation, read in light of the remaining claim language, specification, prosecution history, and relevant extrinsic evidence, has sufficiently definite structure to a person of ordinary skill in the art. Here, the answer is yes." 757 F.3d at 1298.

Konami further cites to Typhoon Touch Technologies v. Dell, Inc., 659 F.3d 1376 (Fed. Cir. 2011) for the assertion that structure for software functions can consist of "an outline of an algorithm, a flowchart, or a specific set of instructions or rules," and "need only disclose sufficient structure for a person of skill in the field to provide an operative software program for the specified function." Id. at 1385 (analyzing means-plus-function claim).

Konami argues that even if the terms "processor" and "controller" appear generic to a lay person, they convey sufficient structure to one with skill in the art. Konami argues that these terms, in conjunction with, for example, "display device," "memory device," and "memory device used to store data," provide sufficient structure to one of ordinary skill. "In common parlance in the gaming arts, "processor," and "game controller"—which includes a processor, a memory, and inputs/outputs—do not invoke means-plus-function and should be held to be definite for all the reasons discussed below."

Konami argues that "method claims that parallel apparatus claims do not invoke means-plus-function." Konami argues that its process claims must be distinguished from apparatus claims. See O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1583 (Fed. Cir. 1997) ("But claiming a step by itself, or even a series of steps, does not implicate section 112, ¶ 6. Merely claiming a step without recital of a function is not analogous to a means plus a function . . . If we were to construe every process claim containing steps described by an "ing" verb, such as passing, heating, reacting, transferring, etc. into a step-plus-function limitation, we would be limiting process claims

1 in a manner never intended by Congress.").

2   Konami argues that claim 19 of the '869 patent and claim 21 of the '540 patent, recite "a

3 processor of the gaming machine configured to . . ." while claim 10 of the '955 patent and claim

4 8 of the '810 recite the step of "initiating, via the game controller." Konami argues that these are

5 steps to an end, rather than "functions" and as such 112(f) should not apply. Konami argues that

6 both "processor" and "game controller" provide sufficient structure to support the claims of which

7 they are a part.

8   Konami notes that only claim 1 of '869 (the first independent claim of the parent patent),

9 recites a "processor configured to" and argues that the language "to execute" in that claim provides

10 sufficient structure. Konami argues that the specifications' reference to a "control module" that

11 includes "microprocessor and working random access memory" provides additional structure that

12 supports these claims, and that one of ordinary skill would understand that "control module" and

13 "game controller" are synonymous. Providing as an example claim 1 of the '810 patent, Konami

14 argues that "a commercially available off-the-shelf processor is capable of imitating an instance

15 of the game" and "random selection." Konami argues that the functions recited in the claims,

16 including "to initiate," "to randomly select" and "to replace," would be understood by one of

17 ordinary skill in the art, as functions that an ordinary "game controller" would be capable of

18 producing.

19   Finally, Konami asserts that even if 112(f) applies, the specification sufficiently describes,

20 "in prose" the underlying algorithms, to support the claim. Focusing on the specification in the

21 '955 patent, Konami argues the following algorithm in prose exists:

22   "The first step is to 'pre-select at random, at the initiation of a game sequence, a potential

23 win element for each reel from the set of elements.' '955 Patent, 4:29-31. Secondly, 'at
least one reel, the first left-most reel, is arranged to have at least one run of an identical

24 symbol in each of a number of consecutive elements,' where the game controller
'determines the identical symbol to be displayed in each consecutive element of the run or

25 runs of consecutive elements in which the symbol is to be shown.' '955 Patent, 4:36-39,

26 52-55. The specification further discloses the procedure for the random selection of the
identical symbol as being 'selected from a look-up table of [the] subset of available

27 symbols;' and in terms of a "notional rotation of an 'inner reel' 34 shown as a strip of
elements and symbols in FIG. 3 [and where] this inner reel is in effect a lookup

28 table…'" '955 Patent, 3:16-17; 4:52-60."

Konami asserts that this disclosure offers sufficient structure to one of ordinary skill in the art.

2. Discussion

a. Means-Plus-Function Applies

The Court finds that the presumption against means-plus-function claiming has been rebutted as to the specifications and asserted claims in the four patents at issue in this case. There is no dispute that the relevant specifications and respective terms do not use the word "means." The Court nonetheless finds that the specifications in this case disclose various functions without disclosing or teaching a corresponding structure for these functions. This finding arises from a review of all the patents, beginning first with an analysis of the specification of the '869 parent patent. The asserted claims focus almost exclusively on the output or manner of display of the symbols on the simulated rotated reels visible to the player without disclosing the underlying programming or algorithms which create the structure for the "process" of "virtually spinning" the "notional non-visible inner reel" or the "process" for random selection from a subset of symbol elements. Specifically, for example, the asserted claims and specification of the '869 disclose a number of functions for which there must a concomitant adequate disclosure of structure. Claim 1 discloses a "gaming machine comprising: a *processor configured to execute a game* displaying a matrix of symbol containing elements" on a simulated reel with at least "one section in which a consecutive run of three or more of said symbol containing elements is populated by an identical symbol." Claim 1 then describes a function or process by which "said identical symbol is *randomly selected* anew for each play of the game, wherein said identical symbol is selected by *virtually spinning a notional, non-visible inner reel* comprising a subset of said plurality of symbols." (emphasis added). Claim 19 of this patent further discloses that the selection process of the processor including the run of consecutive symbols must represent a "method for *increasing probability* of a winning outcome" while still maintaining the consecutive run of symbols and ensuring that "all other remaining symbols containing elements of said simulated rotatable reel [sic] are populated with fixed symbols from the plurality of symbols for each play of the game" where the "subset of said plurality of symbols is arranged on a notional non-visible inner reel, such that said identical symbol is randomly selected anew for each play of the game by virtual rotation

of said notional non-visible inner reel." (emphasis added).

The asserted claims for the '869 patent and the descendant patents disclose other terms possibly related to accomplishing the above-noted and other functions for the slot game invention for the four patents. For example, the specification for the '869 patent discloses that a "*game controller* (not shown) pre-selects at random, at the initiation of a game sequence, a potential win element for each reel." '869, 4:26-32. The '869 patent also discloses a "gaming machine with a *control module*; said module including a microprocessor, a working memory and a data storage device." '869, 3:33-48. Claim 1 of the '540 patent discloses a "*processor* configured to execute a game" with similar functional output. Claim 1 of the '810 patent discloses a "gaming machine comprising: a *memory device* configured to store data representing a reel" and a "*game controller* configured to." Claim 19 of the '955 patent discloses a "*memory device* configured to store data representing a reel," a "display device configured to display a matrix [of symbols]," and a "game controller configured to initiate the instance of a game."

Importantly, regardless of the terms disclosed in the respective specifications or asserted claims, the Court finds that the four patents all disclose that the gaming machine "processor" (and/or "game controller" and/or "memory device" and/or "display device" and/or "control module") must perform, at least, the following functions:

(a) display a "matrix" of "simulated rotatable reel[s]" and determine the manner of the display in terms of the number of rows or columns or other manner of visual arrangement,

(b) maintain an identifiable "subset" of "a plurality of symbols" to be placed in symbol positions on the digital display of "simulated reels,"

(c) "pre-select" which symbols will appear in whatever chosen matrices of display exist for the duration of each play of the game,

(d) determine based upon an "assigned" "hierarchy of probability" the "winning arrangement of symbols" over multiple iterations of the game and then determine the display and selection of the set of symbols for each play of the game,

(e) maintain and follow a flowchart or algorithm identifying the "fixed" or pre-determined "symbol element" positions of the displayed symbols on the "simulated reel[s]" including

- 19 -

a "pre-select[ed]" "win element," a "consecutive run" of "identical symbols," and a "random" selection of symbols from the subset of symbols "pre-select[ed]" for the entire iteration of a game for the non-identical symbol positions,

(f) randomly determine when the "consecutive run" of "identical symbols" will be a part of the winning selection of the game, and

(g) "increase[e] probability of a winning outcome" in direct relation to the consecutive run of identical symbols or the matrix of symbols appearing with the consecutive run of symbols.

And these functions only represent the essential functions disclosed in the four patents. This list is not intended to be a complete list of all of the functions associated with the four patents at issue in this case.

The specifications and asserted claims for the four patents, however do not disclose sufficient structure to accomplish all of the functions noted. This is especially true of the selection of symbols functions noted. First, it is undisputed that no algorithm or flowchart or customized step-by-step random selection process is disclosed in any of the patents. While the various patents contain figures or drawings, they do not individually or collectively represent flowcharts or algorithms that could adequately serve as a basis for programming software for the computer related devices in the invention. Indeed, the specification of the '869 patent explicitly concedes that the process for selection of symbols by means of the "game controller" is "*not shown*" in the specification (or the claims). (emphasis added). The specification further acknowledges in the first preferred embodiment that the related process for "populat[ing]" the symbols in the symbol positions by means of "spinning" the "inner reel" which "is in effect a look-up table" is also "*not displayed*." These processes are not disclosed in any further detail in the descendant patents. Thus, the very processes or structures that are essential to the selection and display functions of the invention are not, by explicit acknowledgment, disclosed in the patents.

Second, the Court rejects Konami's argument that "processor" and "game controller" are terms connoting adequate structure for the associated functions to individuals with ordinary skill in the art of slot machine design and that such structure may be observed in "off-the-shelf"

processors known to individuals in the industry. Konami did not present competent or persuasive evidence of the existence of such commercial processors that could perform the identified functions associated with invention. The Court finds that the expert testimony and record in this case did not establish the existence of such off-the-shelf commercial processors which could readily and adequately perform the functions noted above and disclosed in the asserted claims. Quite the contrary, the expert testimony confirmed that the multiple functions and outcomes associated with the invention would require unique and specific programming based on a customized algorithm(s) or specific flowchart(s) to accomplish the range of functions disclosed in the slot machine invention of the four patents at issue in this case. While slot machine game design kits might perform some of the noted functions, there was no evidence presented that such kits or other "off-the-shelf" processors could be readily and adequately programmed to perform the functions disclosed in the four patents.

Konami's argument represents a conflation of the capabilities of a generic processor with the standard structure associated with an "off-the-shelf" commercially available process. The fact that a commercially available processor, like a general computer, has the capacity to be programmed to perform the functions disclosed in the patent does not mean that the specific programming or software necessary to perform the specific functions of the invention are a standard component or aspect of these generic processors. As noted, in fact, to one of ordinary skill in the art, it is and would be understood that such standard processors or game controllers or game kits would require particular additional programming or coding to perform the functions of the patents in this case.

For the reasons noted (and for the additional reasons following)[3], the Court finds that means-plus-function analysis applies to the specifications and claims of the four patents at issue in this case.

b. Means-Plus-Function Analysis

---

[3] The Court notes that there is some tension and overlap between the initial inquiry as to whether means-plus-function applies to the construction of the claims and the subsequent inquiry as to whether the claims and/or specification disclose sufficient structure to avoid a finding of indefiniteness. For this reason, the Court's determinations and reasoning on both inquiries should be considered conjunctively and not discreetly.

As noted, means-plus-function analysis involves a two-step process. "The court must first identify the claimed function. Then, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function. Where there are multiple claimed functions . . . the patentee must disclose adequate corresponding structure to perform all of the claimed functions." Williamson, 792 F.3d at 1351-52. (internal citations and quotation marks omitted). In cases like this one "involving a special purpose computer-implemented means-plus-function limitation" federal law requires that "the structure disclosed in the specification be more than simply a general purpose computer or microprocessor." Noah Sys. Inc. v. Intuit Inc., 675 F.3d 1302, 1313 (Fed. Cir. 2012)(internal citations and quotations omitted).

The Court has already identified functions disclosed in the invention which serve as the basis for the analysis in this opinion. See supra Section IV.B.2.a. These functions, enumerated previously, can be divided into to two basic categories: (a) game display functions and (b) game symbol selection/placement functions. The Court further elaborates here on why the patents do not disclose sufficient associated structure in relation to the specific functions taught in the patents.

The Court finds that the "processor" in Claims 1 and 19 of the '869 patent, the "processor" in Claims 1 and 21 of the '540 patent, the "game controller" in Claims 1, 8 and 15 of the '810 patent and the "game controller" and "memory device" in Claims 1, 10 and 19 of the '955 patent are not meaningfully distinguishable from the "general purpose computer" without structure noted in Aristocrat. 521 F.3d at 1333. As the specification notes, the structure or outline of the process of the "game controller" is "*not shown*" in the patents. And the specifications certainly do not disclose an algorithm or flowchart or other structure for the programming of a general purpose computer. For example, Claim 1 of the '869 Patent teaches a "gaming machine comprising: a processor configured to execute a game displaying a matrix of symbol containing elements." This language does not suggest anything beyond a general purpose processor or computer. The Claim goes on to describe what *appears* on the "display": "a simulated rotatable reel comprising sections of symbol containing elements" with "at least one section in which a consecutive run of three or more of said symbol containing elements is populated by an identical symbol so that, as the simulated rotatable reel rotates, a consecutive string of said same identical symbol is sequentially

1 displayed." This language does not provide clear instruction or direction as to an algorithm or

2 programming to create or generate what is on "display." The description of what is displayed in

3 terms of a consecutive run of symbols on one reel of a set of simulated rotating reels does not itself

4 suggest or indicate sufficient underlying structure or programming for the processor, since there

5 may be, as noted by experts here, multiple ways to achieve these displays. Noah Sys. Inc., 675

6 F.3d at 1317 (noting that the fact that "various methods might exist to perform a function is

7 precisely why the disclosure of specific programming is required")(internal citations and

8 quotations omitted).

9   Similarly, Claim 19 of the '869 patent discloses a "method for increasing probability of a

10 winning outcome on a gaming machine" with said method comprising a processor of the gaming

11 machine configured to "arrange" a display of symbols "as the simulated rotatable reel rotates" as

12 the player is watching. Beyond merely stating that the symbols would be "randomly" selected

13 while still maintaining a consecutive run of symbols in one reel, this claim also does not disclose

14 a specific algorithm, code or programming to program the "processor" to increase the probability

15 of winning while still performing the various functions disclosed in the invention. Merely

16 describing a sequence of visual outcomes does not provide structure as to how the software

17 displays, selects and tracks the selection and placement of symbols in the symbol positions. As the

18 Federal Circuit noted in Williamson, simply offering a "representative display" of the outcome of

19 programming or software coding does not itself disclose sufficient structure to avoid a finding of

20 impermissible functional claiming. 792 F.3d at 1354.

21   Indeed, the Court finds based upon the expert testimony of the witnesses in this case that

22 specific forms of look-up tables, such as the inner reel layout presented by Konami at the hearing

23 or the staggered interactive tables presented by High 5, in conjunction with an enumeration of the

24 timing of the selection of symbols, are the types of flowcharts with a set of probabilities and a

25 programmed random number generator(s) that would need to be disclosed to identify the

26 associated underlying structure. Based upon the record here, including the testimony of both

27 experts, the Court does not find that a person of ordinary skill in the art would understand the

28 specifications to disclose sufficient or adequate structure in terms of an algorithm or flowchart(s)

1 to support the identified functions in the four patents at issue in this case.

2 The few intimations of structure in the patents are insufficient to completely address all of

3 the disclosed functions in the patents. For example, there is a reference in Claim 19 to a process

4 by which "said identical symbol is *randomly* selected anew for each play of said game." The

5 reference to "random" selection would suggest the use of a random number generator in the

6 process of choosing the symbols that appear on the display of simulated rotatable reels. Even this

7 assumption of the use of a RNG does not sufficiently disclose the associated structure. First, this

8 claim goes on to indicate that the process for random selection is "by *virtually spinning a notional,*

9 *non-visible, inner reel* comprising a plurality of said symbols." (emphasis added). The asserted

10 claims of the '869 patent, however, never disclose what this "virtual" process consists of – not

11 even a single step let alone the "step-by-step procedure for accomplishing a given result" that is

12 required for identifying structure. <u>Ergo Licensing</u>, 673 F.3d at 1365.

13 Perhaps most importantly, the '869 patent was allowed based upon the examiner finding

14 that the process of a "notional non-visible inner reel" "virtually" spinning represented a unique

15 process apart from simply the use of a random number generator with a look-up table. That is, the

16 inventor overcame the examiner's final rejection based upon obviousness in relation to the prior

17 art of the Marks patent application by convincing the examiner that this process of "virtual

18 spinning" of a "notional non-visible inner reel" was not simply use of a look-up table and random

19 number generator as disclosed in Marks but something more and/or different. Indeed, the examiner

20 explicitly referenced the "process in which a notional, non-visible inner reel is virtually rotated to

21 select one of a subset of symbols to populate the section of the consecutive string process" as a

22 basis for allowing the patent in reference to Marks. Konami cannot now claim that this "notional

23 non-visible inner reel" is actually nothing more than the use of a random number generator with a

24 look-up table when the inventor specifically disavowed this to obtain the patent. <u>General Mills,</u>

25 <u>Inc.</u>, 968 F.2d at 1206, (noting that "[t]he prosecution history gives insight into what the applicant

26 originally claimed as the invention, and often what the applicant gave up in order to meet the

27 Examiner's objections."). Importantly, this disavowal and this Court's finding that the inventor of

28 the '869 patent disclosed a unique process beyond a simple random number generator and look-

up table applies to the subsequent patents as well. Raytek Corp., 334 F.3d at 1333 (noting that "prosecution disclaimer may arise from disavowals made during the prosecution of ancestor patent applications").

Konami also argues that general "processor"-type terms have been held to constitute sufficient structure to support a claim. In Cox Communication, the Federal Circuit reviewed a claim for invalidity where the parties had stipulated that means-plus-function analysis did not apply. The Court found that "processing system" did not render the claim indefinite. However, in so doing the court emphasized that the novelty protected by the patent consisted of the "method" and "steps of these methods, not with the machine that performs them." Cox Communication, 838 F.3d at 1229. Moreover, "the specification provides certain algorithmic details." Id. at 1233. Konami's reliance on Cox is misguided, particularly where the Federal Circuit has made clear that invalidity applies to a claim in its entirety, and a vague term will not necessarily invalidate a claim where that term is not relevant to the novelty that is the protected invention, and where the term is clarified by the specification. See id. at 1233. Here, however, the inventor claimed a specific process for virtually spinning a notional non-visible inner reel, yet he never actually disclosed the process or algorithm for this selection process—a process which is central to the alleged novelty of the invention.

Even if the virtual spinning of a notional non-visible inner reel was construed as nothing more than use of a random number generator and a look-up table, this would still not provide sufficient guidance to one of ordinary skill in the art to understand the associated structure for the patented slot game. As noted previously, the patents would need to further disclose some form of flowchart or algorithm beyond simply describing the outcome displayed on the visible digital reels. The Court finds, based upon the evidence adduced in this case, that the mere disclosure of the use of a random number generator does not itself disclose a particular structure, as the random number generator must itself be programmed or chosen based upon how it will be used by the algorithm or flowcharts for the slot game.

Konami's illustrative reference to the '955 patent's "steps" in terms of when symbols are selected is unpersuasive as to structure. The patents do not disclose sufficient structure describing

how the symbol selected by the "inner reel" is populated into the "outer reel." It says nothing about how the technology used for the "outer reels"—possibly templates defining the reels, along with random number generation and look-up tables to determine stopping positions, though this too, is undefined—would interact with or incorporate the "inner reel," such that the consecutive runs are filled with the repeated symbol selected by the inner reel. The patents do not disclose how the standard technology for the outer reels may or may not be modified in some way in order to incorporate the symbol selected by the inner reel. The asserted claims and specifications provide scant information at all about how the inner and outer reels relate, and how they must be modified in order for one to be used to "populate" the other. Merely using the word "populate" is not sufficient, particularly where the patent does not disclose any details as to the technology supporting the remainder of the machine, including any detail as to the templates, random number generators, and look-up tables that may support the "spinning" of the "outer," or visible reels. Even if one of ordinary skill could figure out how to perform this function, the proper inquiry is whether one of ordinary skill "would have understood that *disclosure* [of the patent] to encompass software to perform the function and been able to implement such a program." Aristocrat, 521 F.3d at 1337. "[I]t is not proper to look to the knowledge of one skilled in the art apart from and unconnected to the disclosure of the patent." Id. (internal quotation marks omitted).

Furthermore, the Court finds that the figures and drawings in the patents not only provide

FIG. 3C

- 26 -
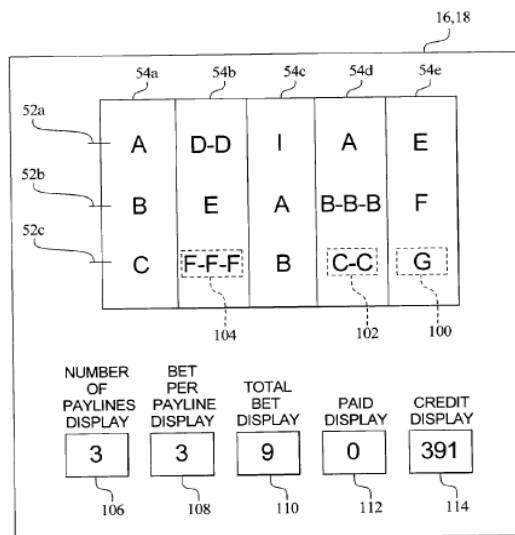
insufficient illustrative structure but they actually render the asserted claims and specification more confusing and difficult to discern for one of ordinary skill in the art. For example, unlike the depictions of the repeated symbol disclosed in the prior art in the Marks, figure 1 in the '869 patent (and other patents) does not actually depict a consecutive run of an identical symbol on one simulated reel.

[Fig. 3C – Marks – U.S. Patent Application Publication – US 2004/0058727]
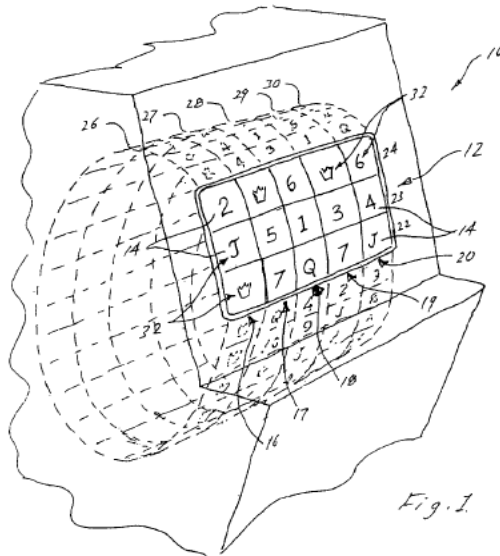
[Fig. 1 – U.S. Patent No. – US 8,096,869 B2]

The '869 patent allegedly discloses in Figure 2 a "schematic representation of the elements and symbols of portions of the first or left-most rotatable reel of FIG. 1", but the reel appears to be displayed horizontally and does not correspond to the numbering or stop positions in Figure 1 or the symbols actually displayed in Figure 1. As Konami acknowledged at the hearing in this case, these two figures present a confusing and inchoate disclosure of underlying structure associated with the patents in this case.
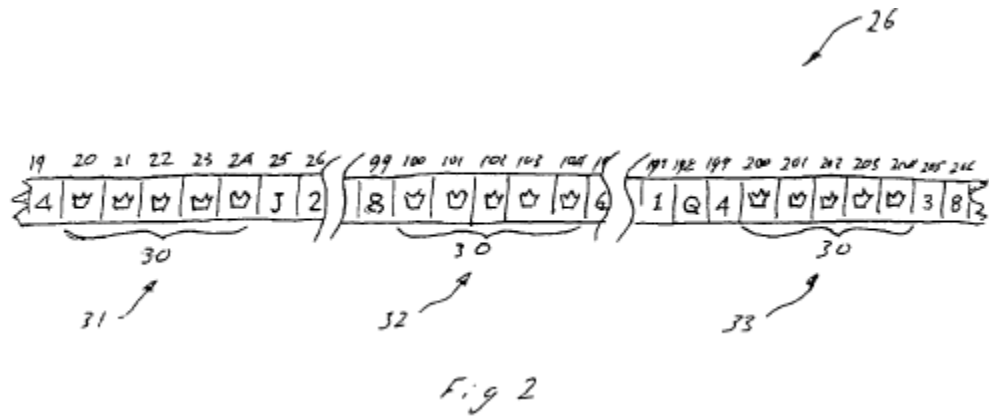
[Fig. 2 – U.S. Patent No. – US 8,096,869 B2]

Figure 3 of the '869 patent dislcoses no further guidance as to a flowchart or algorithm to one of ordinary skill in the art. While it purports to disclose "a schematic representation of an 'inner reel' or look-up table", the disclosure is inadequate and incomplete to establish the details of flowchart or algorithm to program the slot machine game. Unlike the reel strip layout Konami presented at the hearing in this case, Figure 3 does not disclose sufficient detail about the full range of symbol positions including the consecutive run of symbols and the process of their random selection along with that of the remaining symbols for the reel positions.

[Fig. 3 – U.S. Patent No. – US 8,096,869 B2]
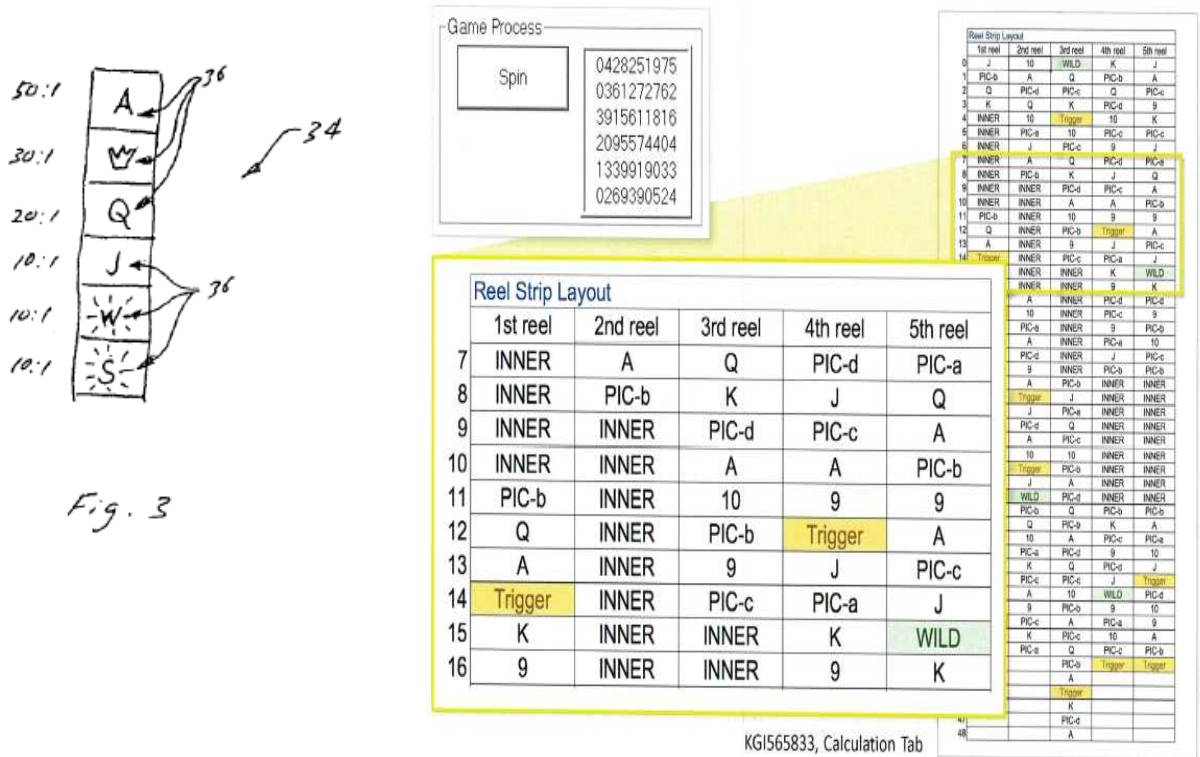
[Konami Hearing Exhibit – Reel Strip Layout]

The Court finds based upon the expert testimony and evidence presented at the hearing that the figures disclosed in the '869 patent (which are similarly disclosed in the subsequent patents) would not indicate to one of ordinary skill in the art sufficient structure for the functions disclosed in the patents.

ABSTRACT IDEA

High 5 argues that the claims are invalid as abstract under 35 U.S.C. § 101.

C. Legal Standard

A defendant must prove invalidity by clear and convincing evidence. See Microsoft Corp. v. 141 Ltd. Partnership, 564 U.S. 91, 95 (2011).

"In Mayo Collaborative Services v. Prometheus Laboratories, Inc., 132 S. Ct. 1289 (2012), [the Supreme Court] set forth a framework for distinguishing patents that claim laws of nature,

natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts. If so, we then ask, what else is there in the claims before us? To answer that question, we consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application. We have described step two of this analysis as a search for an inventive concept—i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself." Alice Corp Pty. Ltd. v. CLS Bank Inter., 134 S. Ct. 2347, 2355 (2014). In Alice Corp Pty. Ltd., the Supreme Court reviewed patents held ineligible as abstract. These included an algorithm for converting binary-coded decimal numerals into pure binary form, Gottschalk v. Benson, 409 U.S. 63, 71-72 (1972); a mathematical formula for computing "alarm limits" in a catalytic conversion process, Parker v. Flook, 438 U.S. 584, 594-94 (1978); a method for hedging against financial risk of price fluctuation, Bilski v. Kappos, 561 U.S. 593 (2010); a "blackjack variation," with standard playing cards, laying out discrete rules and a step-by-step process for the dealer to follow, In re Smith, 815 F.3d 816, 817-18 (Fed. Cir. 2016); and claims "adding conventional computer components to well-known business practices." Enfish, LLC v. Microsoft Corp., 822 F.3d 1327, 1338 (Fed. Cir. 2016).

In Enfish, the Court reviewed patents falling into the final category: "[T]he claims at issue in Alice and Versata can readily be understood as simply adding conventional computer components to well-known business practices. See Alice, 134 S. Ct. at 2358–60; Versata Dev. Grp., 793 F.3d at 1333–34 (computer performed "purely conventional" steps to carry out claims directed to the "abstract idea of determining a price using organization and product group hierarchies"); see also Mortgage Grader, Inc. v. First Choice Loan Servs. Inc., 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (claims attaching generic computer components to perform "anonymous loan shopping" not patent eligible); Intellectual Ventures I LLC v. Capital One Bank (USA), 792 F.3d 1363, 1367–69 (Fed. Cir. 2015) (claims adding generic computer components to financial budgeting); Ultramercial, Inc. v. Hulu, LLC, 772 F.3d 709, 714–17 (Fed. Cir. 2014) (claims

applying an exchange of advertising for copyrighted content to the Internet); buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1354–55 (Fed. Cir. 2014) (claims adding generic computer functionality to the formation of guaranteed contractual relationships." Enfish, LLC v. Microsfot Corp., 822 F.3d 1327, 1338 (Fed. Cir. 2016).

In In re TLI Communications LLC Patent Litigation, the Federal Circuit explained that "generalized steps to be performed on a computer using conventional computer activity" are not "directed to an improvement in the functioning of a computer" and as such are "directed to an abstract idea." 823 F.3d 607, 612 (Fed Cir. 2016). The TLI Court determined that "the claims here are not directed to a specific improvement to computer functionality. Rather, they are directed to the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem presented by combining the two." Id. In rejecting the subject patent in step two of the analysis, the Court noted that "[i]t is well-settled that mere recitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea. Rather, the components must involve more than performance of well-understood, routine, conventional activities previously known to the industry." Id. at 613 (internal citations and quotation marks omitted).

D. Discussion

The Court finds that Konami's (i.e. the original inventor's) patents' claims individually and collectively are invalid for abstractness.

High 5 argues that the claims at issue here are directed towards what are essentially game rules, albeit in the context of a computerized "game," and that pursuant to In re Smith, and In re TLI Communications LLC Patent Litigation, the abstract concept of the manner in which the "game" is played or depicted, or the arrangement of the symbols in the course of the game, is not patentable, even if it is executed through the use of various technological components, generically recited.

Konami, emphasizing the burden of proof, argues that "[t]he Konami claims cover a gaming machine that displays virtual reels having sections of identical, repeating symbols

separated by sections of non-identical and thus non-repeating symbols, so that the displayed sections of repeating symbols heighten player anticipation of a potential win. The Court here should determine that the claimed solution overcomes a problem recognized in the industry in which 'machines and games therefore that offer novel and stimulating variations . . . are eagerly sought.'"

Konami further argues that, even if the claims are deemed to recite generic computer system components that are not in themselves inventive, the Court should find the "ordered combination" of the limitations, comprising a game in which "as the simulated rotatable reel rotates, consecutive string of the identical symbol . . . is sequentially displayed," to be sufficient. Konami notes that in In re Smith, the Court posited in dicta that a novel game employing an original deck of cards might be patentable. Konami asserts that their patents are equivalent to a new deck of cards; they cover a new and original virtual reel for a slot machine. "In gaming systems prior to this invention, reels did not exhibit identical symbols in consecutive positions, nor where symbols on the reel randomly selected to change from game to game... While some of the individual computer hardware components may be conventional, the limitations defining this inventive concept all depend on the unconventional configuration recited in the claims."

Pursuant to Alice Corp., the Court first asks whether the patents are directed toward a patent-ineligible concept, such as an abstract idea. The Court finds that the patents at issue in this case are directed toward a patent-ineligible concept regarding "rules of a game," i.e. slot machine game rules. High 5's analogy to game rules is compelling. As laid out above, the patents recite essentially generic computing components, within the pre-existing framework of the "game" of a slot machine. These components perform the functions of what may be described as an aesthetic variation on a play of the game—the game is played such that the reels display consecutive runs of the same symbol. As explained here previously in significant detail, the primary focus of the patents, as acknowledged even by Konami, is displaying a consecutive run of a randomly selected identical symbol in one reel of the simulated digital reels in each iteration of a game as a means of increasing interest in the game and "increasing probability of a winning outcome." As the Federal Circuit found in In re Smith, claims directed to new game rules or variations of a game are directed

to an abstract patent-ineligible concept. 815 F.3d at 818. The Court thus finds that the four patents

at issue in this case are directed to altering the rules of the game regarding slot games and are thus

directed to a patent-ineligible concept.

This Court's inquiry does not end with a finding that the patents are directed toward a

patent-ineligible concept. As Konami points out, the Court in In re Smith provided the explicit

caveat that the invention of a "game using a new or original deck of cards" could potentially

survive the second-step inquiry under Alice. In re Smith, 815 F.3d at 817-18. These patents may

overcome a finding of invalidity for abstractness if they nonetheless disclose an "inventive concept

sufficient to transform the claimed abstract idea into a patent-eligible" invention. Id. at 819.

The Court does not find that the claims here individually, collectively, or in ordered

combination disclose an "inventive concept" as explained in In re Smith. The reasoning in that

case is equally applicable to the facts of this case. The Court rejects Konami's argument that the

ordered combination of claims results in an inventive concept by virtue of the unique display or

configuration of symbols on the simulated reels. While the claims at issue here may disclose a

different configuration of the displayed symbols in a slot machine game, they do not disclose a

new game or a new technology directed to the slot game. The claims both individually and in an

ordered combination disclose "purely conventional steps to an abstract idea." Id. Selecting an

identical symbol for a consecutive run of symbols in one simulated digital reel, at least as disclosed

in the asserted claims here, does not represent a new form of selection or derive from a new

technology associated with slot games. This selection process, as conceded by Konami, relies upon

the use of random number generators and look-up tables. While these technological components

require programming, as the examiner noted in his initial rejection of the patent application, the

patents' use of these components does not represent a nonobvious ordered combination.

Moreover, the Court does not agree that the mere configuration of a consecutive run of

symbols in one simulated reel represents something more than changing the rules of the game. A

generic slot game, as noted by experts in this case, has ever changing symbols selected at random.

Realigning and altering the display of symbols on simulated spinning reels is the very essence of

the generic slot game. Changing how often a symbol appears and where it appears in a slot game

without more is simply altering the manner of display of random symbols – i.e. changing the rules of the game. Changes to game rules of a generic slot machine using conventional technology are not patentable.

Ironically, the claims fail this second step inquiry in part for the same reasons that they failed the means-plus-function analysis. Specifically, the parent '869 patent was allowed *inter alia* because it disclosed an alleged unique method of random selection – virtual spinning of a notional non-visible inner reel. However, a review of the specification and asserted claims indicates that the inventor never actually provided the structure or programming for this process. Consequently, Konami cannot establish that this selection process represents an inventive concept or new technology (or selection process) directed to a generic slot game.

V.   CONCLUSION

IT IS ORDERED that High 5 Games' Motion for Summary Judgment, ECF No. 92, is GRANTED. The Clerk of Court is directed to enter judgment in favor of Defendant and Counterclaimant High 5 Games, LLC on all asserted claims. All other motions are denied without prejudice as moot. The Clerk of Court is instructed to close this case.

DATED this 21st day of February, 2018.

_____
RICHARD F. BOULWARE, II
UNITED STATES DISTRICT JUDGE