United States District Court,
E.D. Texas, Texarkana Division.

ICON HEALTH & FITNESS, INC,
Plaintiff.
v.
HORIZON FITNESS, INC., et al,
Defendants.

No. 5:08CV26

May 7, 2009.

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CLAIM CONSTRUCTION ORDER CONSTRUING U.S. PATENT NOS. 5,512,025**;** 5,062,632**; AND** 5,104,120

CAROLINE M. CRAVEN**, United States Magistrate Judge.**

This Opinion construes terms in U.S. Patent Nos. 5,512,025 ("the '025 patent"), 5,062,632 ("the '632 patent"), and 5,104,120 ("the '120 patent")(collectively the "patents" or "patents in suit"). Plaintiff ICON Health & Fitness, Inc. ("Plaintiff" or "ICON") brings this cause of action against Horizon Fitness, Inc., Epix, Inc. d/b/a Vision Fitness, Matrix Fitness Systems, Corp., Johnson Health Tech North America, Inc., Johnson Health Tech Co. Ltd ., Keys Fitness Products, Inc., Keys Fitness Products, L.P., Spirit Manufacturing, Inc., Fitness Equipment Services, LLC d/b/a Sole Fitness, Dyaco International, Inc., and True Fitness Technology, Inc. (collectively "Defendants"), alleging Defendants infringe the patents-in-suit.

I.

Background FN1

A. Summary of the '025 Patent

The application for the '025 patent entitled "User-Programmable Computerized Console for Exercise Machines" was filed on July 2, 1991, and claims priority to U.S. Patent No. 4,998,725, which was filed on February 3, 1989. The patent describes a new way of controlling an exercise machine through the creation, display, and storage of user-designed exercise programs. ('025 Abstract).

The '025 patent specification describes the prior art as having exercise machine controllers that provide control of an exercise machine through "only manual operation, a choice of factory inserted programs, or both." ('025, 2:5-7). However, because individuals vary in their exercise needs, "it is desirable to provide home exercise machines with a console or control system which is operable by a user to easily design her or his own exercise program, and to store that program for future use." ('025, 1:41-46). Thus, the '025 patent addresses the need for an exercise machine with a user-programmable console that allows the user of an exercise machine to "simply and easily program a series of time segments in terms of exercise parameters including speed and difficulty or effort required per exercise movement." ('025, 2:29-36).

The '025 patent discloses an embodiment wherein an exercise apparatus includes a frame, a moveable element for the user to perform exercise movements, an adjustment means to adjust the difficulty of the movement, a console including a microprocessor or CPU to control the adjustment means, and a display for a user-designed or preset program. ('025, 2:40-3:31).

1. The Console Display

The console of the '025 patent includes a graphical program display comprising a plurality of columns of indicators, such as light emitting diodes ("LED") or a liquid crystal display ("LCD"). ('025, 6:19-23, 52-53). Each individual LED can be in an illuminated or non-illuminated state. ('025, 6:23-26). "Within a column, the relative vertical positions of indicators correspond to different respective difficulty levels of a particular exercise difficulty parameter, in rank order from lowest difficulty at the bottom to highest difficulty at the top." ('025, 6:35-39). Each column of indicators represents one time segment of an exercise program. ('025, 6:27-28). According to one embodiment of the '025 patent, the total length of the exercise program is divided into "N" equal time segments where N equals the total number of columns. ('025, 6:30-33).

2. Creating a User-Designed Exercise Program

The '025 patent discloses that a user may use keys on the console to enter a user-designed program. ('025, 7:33-35). To create a user-designed program, the user first selects the key for the user-programmability function on the console. ('025, 7:35-38). For example, as shown in Figures 3 and 4, the user would press one of the "USER" keys to illuminate the program currently stored for that key (all of the initial values may be zero, with only the lowest level of LED lit). ('025, 7:35-40; Figs. 3, 4). Once the user-defined program option has been selected, the user can program each time segment (graphically represented by a column of indicators) by operating the corresponding plus or minus key to increase or decrease the desired difficulty for that segment. ('025, 7:40-43). Once the desired difficulty levels have been entered (as indicated by the height of the illuminated indicators in each column of the display) the program is stored and can be recalled by pressing the corresponding "USER" key. ('025, 7:43-45).

According to Plaintiff, the user-designed program disclosed and claimed in the '025 patent can either be pre-programmed or programmed while the user is exercising. Pre-programmability occurs when the user designs and saves his or her own user-designed program prior to working out. After the user has programmed the desired routine, the user can then press start and exercise according to the sequence of difficulty levels entered. ('025, 7:33-47).

Plaintiff contends save-as-you-go programming allows the user to begin exercising without first creating a user-designed program. As the user exercises at desired levels of difficulty, the console will "remember" the changes made to the difficulty level during the workout and save those levels as a "user" program. When the user is finished working out, the console of the exercise apparatus stores the exercise routine completed by the user as a user-designed workout for later recall. ('025, 7:56-63).

According to Defendants, the '025 patent claims are generally directed to control consoles for exercise machines that utilize a specific type of user-designed exercise program, namely one in which the user sets the difficulty level for each individual time segment in the program in advance of the workout. ('025, 7:33-47; 17-22)(Feinberg Depo., at 196:11-14). Such user-designed programs are distinguished from preset or canned programs already saved on the control system. ('025, 1: 63-67). The '025 patent further discloses that, "in a user-designed program," "the difficulty levels for any segment ... may be altered during execution of the program (during performance of the exercise by the user)" and this altered program can be stored at the end of the program. (*Id* . at 7:56-63). Defendants assert the '025 patent file history confirms that the applicants relied on this feature of the user designing a program by "selecting the difficulty level for each individual time segment" as a feature distinguishing their device over the prior art. ('025 Patent File History at ICONJHT 325) (Feinberg Depo., at 195:8-13).

Defendants take issue with Plaintiff's summary of the '025 patent, arguing Plaintiff attempts "in a backhand manner" to redefine the scope of the '025 patent. Specifically, Defendants contend Plaintiff implies that the '025 patent covers *any* "save-as-you-go" exercise programs, *i.e.,* any program that permits the user to make changes to the program during exercise and to then save that modified program. According to Defendants, the claims of the '025 patent are clear-each and every individual time segment must first be specified by the user for it to qualify as a "user-designed exercise program" within the meaning of the '025 patent claims; changes can then be made during exercise "in a user-designed program," but this does not mean the ' 025 patent covers every "save-as-you-go" exercise machine.

B. Summary of the '632 Patent

The application for the '632 patent entitled "User Programmable Exercise Machine" was filed on December 22, 1989, and issued on November 5, 1991. FN2 Similar to the ' 025 patent, the invention disclosed in the ' 632 patent also concerns user-designed programs for exercise machines. The ' 632 patent discloses user-moveable indicators that allow a user to select various relative positions of the indicators. ('632, 2:45-49). The positions of the indicators correspond to relative values of difficulty levels. ('632, 2:45-49).

According to an embodiment described in the '632 patent, the user-moveable indicators "may be ... light emitting diodes (LEDs) or liquid crystal diode (LCD) segments to display, for example, a single illuminated light or a 'ribbon' of LCD segments. Such illuminated indicators are 'moveable' by means of the user adjusting some type of electronic controller to control the position of the indicator." ('632, 2:54-61).

According to another embodiment described in the '632 patent, the user-moveable indicators are "slide potentiometers." (*See, e.g.,* '632, 2:49-54; 5:13-20). A slide potentiometer is a switch that can be slid to different positions by the user, much like an equalizer board used in stereo/sound equipment. Regardless of the particular embodiment, the user-moveable indicators disclosed in the '632 patent are adjusted by the user to select relative speed or incline values by moving the indicators into relative vertical positions which represent different speed or incline values. ('632, 5:13-20). The asserted claims of the '632 patent only cover

pre-programmed user-defined workouts.

C. Summary of the '120 Patent

The application for the '120 patent entitled "Exercise Machine Control System" was filed February 3, 1989, and issued April 14, 1992. The '120 patent describes and claims a system for controlling an exercise machine which has a resistance mechanism that can vary the resistance of exercise between a hard configuration and an easy configuration. ('120, 1:44-53). The exercise machine of the '120 patent also includes an indicator that indicates the relative selection of resistance between easy and hard. ('120, 1:53-59). The exercise machine also gathers feedback information, such as pulse data and calorie burn data, which it displays to the user so that the user can extemporaneously control the resistance of the exercise machine to regulate his or her own pulse rate. ('120, 2:4-5, 3:66-4:8).

D. Procedural Background of the Current Proceeding

The parties filed claim construction briefs and respective responses thereto, and on February 18, 2009, the Court held a claim construction hearing. After considering the parties' submissions, arguments of counsel, and all other relevant pleadings and papers, the Court finds that the claims of the patents should be construed as set forth herein.

II.

The Legal Principles of Claim Construction

A determination of patent infringement involves two steps. First, the patent claims are construed, and, second, the claims are compared to the allegedly infringing device. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455 (Fed.Cir.1998) (en banc).

The claims of a patent define the invention to which the patentee is entitled the right to exclude." Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir.2005) (*en banc*). In claim construction, courts examine the patent's intrinsic evidence to define the patented invention's scope. C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 861 (Fed.Cir.2004); Bell Atl. Network Servs. ., Inc. v. Covad Commc'ns Group, Inc., 262 F.3d 1258, 1267 (Fed.Cir.2001).

The legal principles of claim construction were recently examined by the Federal Circuit in Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir.2005) (*en banc*). Reversing a judgment of non-infringement, an *en banc* panel specifically identified the question before it as: "the extent to which [the court] should resort to and rely on a patent's specification in seeking to ascertain the proper scope of its claims." Id. at 1312. Addressing this question, the Federal Circuit specifically focused on the confusion that had amassed from its scattered decisions on the weight afforded dictionaries and related extrinsic evidence as compared to the intrinsic record. Ultimately, the court found that the specification, "informed, as needed, by the prosecution history," is the "best source for understanding a technical term." Id. at 1315 (*quoting* Multiform Dessicants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478 (Fed.Cir.1998). However, the court was mindful of its decision and quick to point out that *Phillips* is not the swan song of extrinsic evidence, stating:

[W]e recognized that there is no magic formula or catechism for conducting claim construction. Nor is the court barred from considering any particular sources or required to analyze sources in any specific sequence, as long as those sources are not used to contradict claim meaning that is unambiguous in light of the

intrinsic evidence.

Phillips, 415 F.3d at 1324. Consequently, this Court's reading of *Phillips* is that the Federal Circuit has returned to the state of the law prior to its decision in Texas Digital Sys. v. Telegenix, Inc., 308 F.3d 1193 (Fed.Cir.2002), allotting far greater deference to the intrinsic record than to extrinsic evidence. "[E]xtrinsic evidence cannot be used to vary the meaning of the claims as understood based on a reading of the intrinsic record." Phillips, 415 F.3d at 1319.

Additionally, the Federal Circuit in *Phillips* expressly reaffirmed the principles of claim construction as set forth in Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995) (*en banc*), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed.Cir.1996), and Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111 (Fed.Cir.2004). Thus, the claim-construction principles taught by these cases remain in force. Claim construction is a question for the court. Markman, 52 F.3d at 979. The claims of a patent define that which "the patentee is entitled the right to exclude." Innova, 381 F.3d at 1115. And the claims are "generally given their ordinary and customary meaning" as the term would mean "to a person of ordinary skill in the art in question at the time of the invention, *i.e.,* as of the effective filing date of the patent application." Vitronics, 90 F.3d at 1582. However, the Federal Circuit stressed the importance of recognizing that the person of ordinary skill in the art "is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification ." Phillips, 415 F.3d at 1313.

Advancing the emphasis on the intrinsic evidence, the *Phillips* decision explains how each source, the claims, the specification as a whole, and the prosecution history, should be used by courts in determining how a skilled artisan would understand the disputed claim term. *See, generally, id.* at 1314-17. The court noted that the claims themselves can provide substantial guidance, particularly through claim differentiation. Using an example taken from the claim language at issue in *Phillips,* the Federal Circuit observed that "the claim in this case refers to 'steel baffles,' which strongly implies that the term 'baffles' does not inherently mean objects made of steel." *Id.* at 1314. Thus, the "context in which a term is used in the asserted claim can often illuminate the meaning of the same term in other claims." *Id.* Likewise, other claims of the asserted patent can be enlightening, for example, "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Id.* at 1315 (*citing Liebel-Flarsheim Co. v. Medrad, Inc.,* 358F.3d 898, 910 (Fed.Cir.2004)).

Still, the claims "must be read in view of the specification, of which they are part." Markman, 52 F.3d at 978. In *Phillips,* the Federal Circuit reiterated the importance of the specification, noting that "the specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.' " 415 F.3d at 1315 (*quoting* Vitronics, 90 F.3d at 1582). To emphasize this position, the *Phillips* court cites extensive case law, as well as "the statutory directive that the inventor provide a 'full' and 'exact' description of the claimed invention." *Id.* at 1316 (*citing* Merck & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1371 (Fed.Cir.2003)); *see also* 35 U.S.C. s. 112, para. 1. Consistent with these principles, the court reaffirmed that an inventor's own lexicography and any express disavowal of claim scope is dispositive. *Id.* at 1316. Concluding this point, the court noted the consistency with this approach and the issuance of a patent from the Patent and Trademark Office and found that "[i]t is therefore entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims." *Id.* at 1317.

Additionally, the *Phillips* decision provides a terse explanation of the prosecution history's utility in construing claim terms. The court simply reaffirmed that "the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.* (*citing* Vitronics, 90 F.3d at 1582-83). It is a significant source for evidencing how the patent office and the inventor understood the invention. *Id.*

Finally, the Federal Circuit curtailed the role of extrinsic evidence in construing claims. In pointing out the less reliable nature of extrinsic evidence, the court reasoned that such evidence 1) is by definition not part of the patent, 2) does not necessarily reflect the views or understanding of a person of ordinary skill in the relevant art, 3) is often produced specifically for litigation, 4) is far reaching to the extent that it may encompass several views, and 5) may distort the true meaning intended by the inventor. *See id.* at 1318. Consequently, the Federal Circuit expressly disclaimed the approach taken in *Texas Digital*. While noting the *Texas Digital* court's concern with regard to importing limitations from the written description-"one of the cardinal sins of patent law," the Federal Circuit held that "the methodology it adopted placed too much reliance on extrinsic sources such as dictionaries, treatises, and encyclopedias and too little on intrinsic sources, in particular the specification and prosecution history." *Id.* at 1320. Thus, the court renewed its emphasis on the specification's role in claim construction.

Many other principles of claim construction, though not addressed in *Phillips,* remain significant in guiding this Court's charge in claim construction. The Court is mindful that there is a "heavy presumption" in favor of construing claim language as it would be plainly understood by one of ordinary skill in the art. Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999); *cf. Altiris, Inc., v. Symantec Corp.,* 318 F.3d 1364, 1372 (Fed.Cir.2003) ("[S]imply because a phrase as a whole lacks a common meaning does not compel a court to abandon its quest for a common meaning and disregard the established meaning of the individual words."). The same terms in related patents are presumed to carry the same meaning. *See* Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1334 (Fed.Cir.2003) ("We presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning.") "Consistent use" of a claim term throughout the specification and prosecution history provides "context" that may be highly probative of meaning and may counsel against "[b]roadening of the ordinary meaning of a term in the absence of support in the intrinsic record indicating that such a broad meaning was intended...." Nystrom v. TREX Co., 424 F.3d 1136, 1143-46 (Fed.Cir.2005).

Claim construction is not meant to change the scope of the claims but only to clarify their meaning. Embrex, Inc. v. Serv. Eng'g Corp., 216 F.3d 1343, 1347 (Fed.Cir.2000) ("In claim construction the words of the claims are construed independent of the accused product, in light of the specification, the prosecution history, and the prior art.... The construction of claims is simply a way of elaborating the normally terse claim language[ ] in order to understand and explain, but not to change, the scope of the claims.") (citations and internal quotations omitted). Regarding claim scope, the transitional term "comprising," when used in claims, is inclusive or open-ended and "does not exclude additional, unrecited elements or method steps." CollegeNet, Inc. v. ApplyYourself, Inc., 418 F.3d 1225, 1235 (Fed.Cir.2005) (citations omitted). Claim constructions that read out a preferred embodiment are rarely, if ever, correct. Vitronics, 90 F.3d at 1583-84.

Another consideration in claim construction is prosecution disclaimer which is typically invoked to limit the meaning of a claim term that would otherwise be read more broadly. *See* Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed.Cir.2003)("[W]here the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary

meaning of the claim congruent with the scope of the surrender."). "[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable." Id. at 1326. The Federal Circuit has "declined to apply the doctrine of prosecution disclaimer where the alleged disavowal of claim scope is ambiguous." Id. at 1324.

A patentee may set out the elements of a claim in a so-called means-plus-function format. 35 U.S.C. s. 112, para. 6. The patentee may recite in the claim a "means for" achieving a certain function. In exchange for this convenience in claim drafting, the patentee must disclose corresponding structure in the specification. O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583 (Fed.Cir.1997). If the patentee fails to provide corresponding structure sufficient to enable a person of ordinary skill in the art to make and use the invention, then the claim is invalid. See 35 U.S.C. s. 112, para. 1. If the patentee provides sufficient corresponding structure, then the claim scope encompasses that structure "and its equivalents." Id. at s. 112, para. 6; *see also* Default Proof Credit Card Sys. v. Home Depot U.S.A., Inc., 412 F.3d 1291, 1298 (Fed.Cir.2005). A corresponding structure need not enable the claimed invention, rather it need only "include all structure that actually performs the recited function." Default Proof Credit Card Sys., 412 F.3d at 1298. A structure disclosed is only a "corresponding structure" if the "specification or prosecution history clearly links or associates that structure to the function recited in the claim." Med. Instrumentation & Diagnostics Corp. v. Elekta, 344 F.3d 1205, 1210 (Fed.Cir.2003). Accused devices employing the same or equivalent structure will be found to literally infringe the claim. WMS Gaming, Inc. v. Int'l Game Tech., 184 F.3d 1339, 1350 (Fed.Cir.1999) (noting that "to establish literal infringement of a means-plus-function claim, the patentee must establish that the accused device employs structure identical or equivalent to the structure disclosed in the patent and that the accused device performs the identical function specified in the claim").

While claim construction is a matter for the Court, it need not provide a new definition or rewrite a term, particularly when the Court finds the term's plain and ordinary meaning is sufficient. The Federal Circuit recently addressed this issue in O2 Micro International Ltd. v. Beyond Innovation Technology Co., 521 F.3d 1351 (Fed.Cir.2008). In *O2 Micro,* the Federal Circuit considered the term "only if" in independent claim 1 which requires "a DC/AC converter circuit comprising: a feedback control loop circuit ... adapted to generate a second pulse signal ... only if said feedback signal is above a predetermined threshold." *Id*. at 1356. The defendant asserted that its controllers did not satisfy the limitation of claim one because there were circumstances where the feedback signal controlled power to the load "even though the feedback signal falls below the predetermined threshold." *Id*. Two defendants had asked the district court to construe the term "only if" to mean "exclusively or solely in the event that," another defendant argued the term to mean "never except when," and the plaintiff argued that no construction was needed. *Id*. at 1357. The district court had noted that there was a dispute as to whether "only if" would have an exception but chose to rule that the term needed no construction. *Id*.

The Federal Circuit noted that "[a]t trial, the 'only if' limitation was a key issue disputed by the parties." *Id*. at 1358. The Federal Circuit stated that the "purpose of claim construction is to 'determin[e] the meaning and scope of the patent claims asserted to be infringed." *Id*. at 1360 (*citing* Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995) (en banc)). The Federal Circuit clarified that "[w]hen the parties raise an actual dispute regarding the proper scope of these claims, the court, not the jury, must resolve that dispute." *Id*. (*citing* Markman, 52 F.3d at 979). The primary dispute, as acknowledged by the district court, was whether the "only if" limitation applied during the "the steady state operation of the switching circuit" or at all times without exception. *Id*. at 1360. The Federal Circuit noted that the parties had agreed to the "meaning" of the term but not to the claim's "scope." *Id*. at 1361. The Federal Circuit stated that "[a] determination that a claim term 'needs no construction' or has the 'plain and ordinary

meaning' may be inadequate when a term has more than one 'ordinary' meaning or when reliance on a term's 'ordinary' meaning does not resolve the parties' dispute." *Id*. The Federal Circuit found that the district court's failure to construe "only if" effectively allowed the jury to construe the term. *Id*. at 1362. The Federal Circuit also recognized, however, that "district courts are not (and should not be) required to construe *every* limitation present in a patent's asserted claims." *Id*. (emphasis in original) (*citing* Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc., 249 F.3d 1341, 1349 (Fed.Cir.2001); U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed.Cir.1997)).

As explained by one district court, there is a heavy presumption that a claim term carries its ordinary meaning. *Bd. of Trustees of the Leland Stanford Junior University v. Roche Molecular Sys.,* 2007 U.S. Dist. LEXIS 87219, at (N.D.Cal. Nov. 27, 2007) (*citing* Phillips, 415 F.3d at 1314). The court further explained that some terms, such as "therapeutically effective," are commonplace terms that a juror could understand without further direction from the court. *Id*. The court found that the terms "do not need to be construed because they are neither unfamiliar to the jury, confusing to the jury, nor affected by the specification or prosecution history." *Id*. at *19-*20 (*citing* Ethicon, 103 F.3d at 1568 ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.")). However, the Federal Circuit held that "[w]hen the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it." O2 Micro, 521 F.3d at 1362.

The Court concludes that when two parties offer different constructions, or if one side argues for ordinary meaning, then the Court must first determine whether it has a duty to resolve the meaning and the scope. While it is a district court's duty is to construe the claims, part of this duty is to determine the extent which to construction is even necessary. With regard to meaning, where additional language may be unduly limiting, confusing, or redundant, it is in a court's power to determine that no construction is necessary. A court may decline to adopt constructions that violate claim construction doctrine, such as improperly importing limitations, and may still construe terms to have their ordinary meaning. *See* id. at 1360.

Guided by these principles of claim construction, this Court directs its attention to the patents in suit and the disputed claim terms.

III.

Claim Construction Background

A. Background

In the parties' Joint Claim Construction and Prehearing Statement ("Prehearing Statement"), the parties identified twelve claim terms whose meanings are disputed. Since the filing of the Prehearing Statement, the parties have reduced the number of disputed terms to eight terms.

B. The Disputed Claim Terms

The parties request construction of the following eight limitations or phrases: (1) U.S. Patent No. 5,512,025 **("A plurality of arrays of electrical indicators, each said array representing one of said time segments, and said indicators being arranged within each said array to visually represent a series of**

difficulty levels ranging between a low and a high difficulty," and "**a second series of columns**"); (2) U.S. Patent No. 5,062,632 ("**a plurality of indicators associated with said frame proximate each other, said plurality of indicators being moveable with respect to each other by the user to select and to continually visually indicate a sequential set of relative values of said difficulty,**" and "**a plurality of indicators proximate each other ... each said indicator moveable by user to a relative position with respect to others of said indicators**"); and (3) U.S. Patent No. 5,104,120 ("**calorie burn rate signal,**" "**providing conversion means and connecting it to said pulse detector to receive said pulse signal and for generating a calorie burn rate signal and supplying a signal reflective of said calorie burn rate and for supplying said pulse signal,**" "**extemporaneously manually operating ... during performance of the exercises without interrupting said performance of exercises to adjust ... between an easy configuration ... and a hard configuration,**" and "**exercise machine**").

C. The Undisputed Claim Terms

The parties have agreed on the construction of the following claim terms. From the '025 patent, the parties agree "a chassis mounted to said frame" should be construed as "a chassis physically or frictionally attached to the frame of the exercise machine." The parties further agree "a chassis mountable to said frame" should be construed as "a chassis that is or is capable of being physically or frictionally attached to the frame of the exercise machine."

From the '120 Patent, the parties agree a "pulse signal" should be construed as a "signal corresponding to a detected pulse related to a singular hear bear from the user or corresponding to a detected pulse rate from the user." The parties agree "pulse rate" should be construed as "data or information reflective of the number of heartbeats of the user per unit of time." The parties agree "moveable member mechanically associated with said frame; [moveable track associated with said frame]" should be construed as "a moveable member (*e.g.*, treadmill belt assembly) physically or frictionally attached to the frame of the exercise machine."

The Court agrees with the parties' proposed constructions. The Court now considers the disputed claim terms.

IV.

Claim Construction Analysis

A. The '025 Patent

1. "A plurality of arrays of electrical indicators, each said array representing one of said time segments, and said indicators being arranged within each said array to visually represent a series of difficulty levels ranging between a low and a high difficulty" (Claims 1, 13, 22, 23, 25)

a. The Parties' Proposed Constructions

Plaintiff's Proposal	*Defendant's Proposal*
"A display on the console of an exercise machine, having arrangements of indicators, such as LED or LCD displays, each arrangement representing a different time segment and each indicator within each arrangement representing different difficulty levels. The height and length of each arrangement (representing levels of difficulty ranging from low to high) is set by the user and displayed thereby creating a user designed exercise workout."	"A plurality of arranged light emitting diodes, liquid crystal displays, or light bulbs, each said arrangement representing one time segment."

b. Discussion

The first part of Plaintiff's proposed construction for this term states: "A display on the console of an exercise machine, having arrangements of indicators,FN3 **such as** LED or LCD displays" (emphasis added). According to Plaintiff, the plain language of this term indicates the electrical indicators are not limited to any specific type or types of indicators. Plaintiff does not dispute that the electrical indicators may include LED or LCD displays. However, Plaintiff asserts the term should not be limited to these two types of indicators.

Defendants contend their proposed construction of this term comports with the plain and ordinary meaning of this term, as one of ordinary skill in the art would understand it in the context of the '025 patent and its file history. Regarding Defendants' identification of the "electrical indicators" as "light emitting diodes, liquid crystal displays, or light bulbs," Defendants argue their construction is supported by the intrinsic and extrinsic evidence. According to Defendants, the only embodiments disclosed in the patent separate the time segments of a program into a plurality of arrays of light-emitting diodes (LEDs), light crystal displays (LCDs), or light bulbs, where the LEDs, LCDs, or light bulbs light up to a height which indicates the difficulty parameter of an exercise workout. ('025, Figs. 3 and 4).

Defendants contend the '025 patent repeatedly refers to the display means as including LEDs, LCDs or low voltage bulbs, but describes no other alternatives. ('025, 4:31-36; 6:50-52). Defendants point out that Plaintiff's expert, Dr. Feinberg, could not think of any other equivalent electrical indicators that could be used in the context of the '025 patent other than LEDs, LCDs, or light bulbs. (Feinberg Depo., 188:14-189:4). Defendants further argue this disputed phrase is a partial description of the input display means, which the parties agree is a means-plus-function term under 35 U.S.C. s. 112, para. 6. Accordingly, Defendants assert it cannot be broader than the structures shown in the '025 patent (particularly since Plaintiff and its expert can identify no other equivalent structures).

The plain meaning of the claim term "a plurality of arrays of electrical indicators, each said array representing one of said time segments" requires *multiple* arrays of electrical indicators, each of the *multiple* arrays representing a separate time segment. Describing the plural number of arrays as a singular "display" having a singular "arrangement of indicators" contravenes the plain language of the '025 patent claims. The importance of this "plurality of arrays" was highlighted in the prosecution history where the patent applicants added this plural limitation to the claims in order to distinguish over cited prior art (U.S. Patent No. 4,938,474 to Sweeney et al.) showing a single array of LED lights. Such statements during prosecution are persuasive evidence that this term should not be construed in the manner proposed by Plaintiff. *See, e.g.,* Phillips, 415 F.3d at 1317.

Plaintiff's proffered technical expert, Dr. Feinberg, recognized the distinction between a single "array" and a

"plurality of arrays." (Feinberg Depo., 180:20-22) ("In other words, you have an array of indicators, and this is a plurality of these arrays, which means there's multiple arrays.")). Dr. Feinberg further testified that a display comprising a *single* column of LEDs would not qualify as a "plurality of arrays of electrical indicators." (*Id*. at 188:10-13 (Q. "Okay. If you had a single column of LEDs, would that qualify as a plurality of arrays of electrical indicators?" A. "Not in the context of the '025 patent.")). Thus, Plaintiff's proposed definition, which adds a singular "display" limitation, even in conjunction with the "arrangements" limitation, contradicts the plain language of the '025 patent, its file history, and testimony of its own proffered expert.

Therefore, the Court's construction will utilize the beginning portion of Defendants' proposed language ("a plurality of arranged"). However, the Court modifies Defendants' proposed construction to emphasize that the "plurality of arranged" indicators **may** be LED or LCD displays. Importantly, the specification of the '025 patent indicates that the console display has an arrangement of indicators that may include light emitting diodes (LEDs), liquid crystal displays (LCDs) or low wattage bulbs. "As noted, the display means is here selected to be an array of light emitting diodes (LEDs). Other visual indication devices may be selected, including a liquid crystal display arrangement as well as low wattage bulbs." ('025, 4:31-35; *see also* 5:1-11; 6:19-26, 51-53). Neither the plain language of this term, nor the disclosure from the '025 specification, limits the electrical indicators to LEDs, LCDs, or light bulbs.

Defendants' proposed construction improperly limits the scope of the term by limiting the electrical indicators to LEDs, LCDs, or light bulbs. While LEDs, LCDs, and light bulbs are disclosed in the specification, Defendants' attempt to import specific embodiments from the specification into the claim violates well-established principles of patent law. *See Phillips, 415* F.3d at 1323 ("... persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments").

The next portion of Plaintiff's proposed construction for this term states: "each arrangement representing a different time segment." Both Plaintiff and Defendants agree that each arrangement of indicators represents a different time segment. (*See* Prehearing Statement at Exhibit 3 pg. 6). Plaintiff's proposal gives meaning to this phrase by including in its construction the following: "each indicator within each arrangement represent[s] different difficulty levels." The specification makes clear that each arrangement of indicators represents a different time segment and that each indicator within each arrangement represents different difficulty levels. ('025, 6:23-35; see also 3:14-28).

However, Plaintiff's definition improperly adds language, stating that "[t]he height or length of each arrangement (representing levels of difficulty ranging from low to high) is set by the user and displayed, thereby creating a user designed exercise workout." Although the written description in the '025 specification discloses that the height or length of each arrangement (representing levels of difficulty from low to high) is set by the user and displayed for the user, thereby creating a user-designed exercise program. ('025, 6:35-39;7:33-47; *see also* 2:29-36, 3:14-28), the Court agrees with Defendants that this language is unnecessary and goes beyond the disputed claim language. Plaintiff's reference to the "height or length" of each arrangement being "set by the user" and therefore creates "a user designed exercise workout" is not found anywhere in the disputed claim language. The requirement that the individual specify the difficulty level for each individual time segment to create a user designed exercise program is already set forth in the claim language describing the control means for each of the independent claims. ('025, 17:12-18; 13:39-44; 19:52-63; 20:28-37). Adding this language again in the description of the input display means is superfluous and not required by the claim language itself.

c. Court's Construction

Accordingly, the Court construes the term "**a plurality of arrays of electrical indicators, each said array representing one of said time segments, and said indicators being arranged within each said array to visually represent a series of difficulty levels ranging between a low and a high difficulty**" to mean: "**a plurality of arranged indicators, such as LED or LCD displays, each said arrangement representing a time segment and each indicator within each arrangement representing a different difficulty level.**"

2. "A second series of columns" (Claims 8, 22)

a. The Parties' Proposed Constructions

Plaintiff's Proposal	*Defendant's Proposal*
"A second arrangement of indicators for a second difficulty parameter can be shown on the console display(s)."	"An additional, separate and distinct series of columns."

b. Discussion

Plaintiff argues its construction is consistent with the plain and ordinary meaning of "a second series of columns," which is devoid of any requirement that the second series of columns be displayed at the same time as the first series of columns or that it be a separate and distinct series of columns. According to Plaintiff, the plain language of this term leaves open the possibility for one graphical display that alternates between graphs of the two difficulty parameters (*i.e.*, the single graphical display shows the first difficulty parameter and then switches to show the second difficulty parameter).

Plaintiff further contends its construction is consistent with the specification of the '025 patent, which discloses that a single graphical display can show two different difficulty parameters:

In the alternate embodiment (FIG.4.), a first program/display segment 490 is provided and a second program/display segment 492. The second program display segment is used to control and display a second exercise difficulty parameter. If the exercise apparatus is a treadmill, segment 490 is configured to govern treadmill speed while segment 492 is configured to govern treadmill incline. **In yet another embodiment, a single block 490 may govern either speed or incline depending upon which of the associated 'program speed,' key 494 or 'program incline' key 496 (shown in phantom) have been pressed.**

('025, 6:54-64) (emphasis added).

On the other hand, Defendants contend the "second series of columns" referenced in claims 8 and 22 refers to an additional, separate and distinct series of columns, from the "plurality of arrays of electrical indicators" mentioned in claims 1 and 22. As described in the '025 patent and as stated by Plaintiff's expert, Dr. Feinberg, a "column" is synonymous with "array" and can be a linear arrangement. ('025, 6: 19-39; 7: 25-32; 7:50-54; 8:29-37) (Feinberg Depo., 202:4-9; 202:17-20; 203:7-10). According to Defendants, a "series of columns" refers to multiple columns in order or succession. ('025, 6:19-39; 7:25-32; 7:50-54; 8:29-37).

As described above and in claims 1 and 22 of the '025 patent, a "plurality of arrays of electrical indicators" refers to multiple arrangements (or columns) of electrical indicators. Each individual "array" of indicators

represents one time segment for displaying a first difficulty parameter. Multiple time segments are therefore represented by a plurality of arrays.

The "second series of columns" refers to an additional series of columns, separate from the first plurality of arrays. As claims 8 and 22 further state, this second series of columns is "arranged to display said sequence of levels of said second difficulty parameter in accordance with said user-designed program." ('025, 18:8-10; 20:10-13). An example of such multiple series of columns is shown in Figure 4 of the '025 patent, where there are two separate segments (each with its own series of columns) 490 and 492, with each separate segment identifying a particular difficulty parameter such as incline or speed. ('025, 6:48-60; 8:16-24). As set forth in the claim language, this "second series of columns" is referring to an additional series of columns, separate from the first "plurality of arrays."

As urged by Defendants, Plaintiff's proposed construction eliminates the plural nature of the "second series of columns." Plaintiff's proposal would allow for a single display of indicators that alternates between difficulty levels. However, the plain meaning of "a second series of columns" requires that the console have not just one, but two series of columns.

Under Plaintiff's proposal, a single set of electrical indicators that operates to display two difficulty parameters, one alternating to the other would satisfy the limitation. There is no second series of columns of light-emitting diodes, light crystal displays, light bulbs, or other electrical indicators. Plaintiff refers to a portion of the '025 specification that identifies "yet another embodiment" besides Figure 4, namely one in which "a single block 490 may govern either speed or incline." According to Defendants, this alternate embodiment is not claimed in claims 8 or 22; there is only a single set of columns of electrical indicators, and no *second* series of columns. The Court agrees this alternate embodiment may fall within other claims (like independent claim 1), but it is not encompassed by claims 8 or 22, which require at least two series of columns, a first and a second.

The Court rejects Plaintiff's proposed construction, which improperly reads out the "second series of columns" limitation from claims 8 and 22.

c. The Court's construction

The Court construes the term **"a second series of columns"** to mean **"an additional series of columns."**

B. The '632 Patent

1. "A plurality of indicators associated with said frame proximate each other, said plurality of indicators being moveable with respect to each other by the user to select and to continually visually indicate a sequential set of relative values of said difficulty" (Claim 1)

a. Parties' Proposed Construction

Plaintiff's Proposal	*Defendants' Proposal*
"A display on the console of an exercise machine, having at least two columns of indicators, such as LED or LCD displays, which show a user different time segments (e.g., horizontal axis) and	"A plurality of slide potentiometers that are used to select and display an ordered set of resistance levels which

difficulty levels (e.g., vertical axis). The height or length of each column is set by the user and displayed prior to exercising in order to create a pre-programmed exercise workout having variable difficulty levels for each discrete time segment."

are effected one at a time in a timed sequence. A plurality of indicators does not include LEDs associated with push buttons."

b. Discussion

The central dispute between the parties regarding this term is whether the "plurality of indicators" can include LED or LCD displays or if they are limited to slide potentiometers. The first sentence of Plaintiff's construction, "a display on the console of an exercise machine, having at least two columns of indicators, such as LED or LCD displays, which show a user different time segments (e .g., horizontal axis) and difficulty levels (e.g., vertical axis)," goes to the heart of the parties' dispute. According to Plaintiff, the specification reveals that the "plurality of indicators" can include *any* device, including LED or LCD displays. Plaintiff further asserts the doctrine of claim differentiation supports its proposal that the indicators can be more than slide potentiometers.

According to Defendants' proposed construction, the plurality of indicators is limited to slide potentiometers. Defendants assert the specification supports their proposed construction. Defendants rely on the abstract of the '632 patent which defines the indicators as follows:

An exercise apparatus with a control mechanism is disclosed. The control mechanism is linked to a bank of horizontally arranged **slide potentiometers, which act as user-movable indicators. The user can move these indicators up and down to indicate an ordered set of relative difficulty values....**

('632 at Abstract)(emphasis added).

Defendants do not dispute that the specification contemplates embodiments in addition to slide potentiometers, and Plaintiff does not dispute that there are many references to slide potentiometers throughout the specification and that the use of slide potentiometers in the '632 patent was the preferred embodiment. However, Plaintiff asserts the use of slide potentiometers is merely *one* of several embodiments of a plurality of indicators described in the specification. For example, the specification states that the user-movable indicators may be "any device that allows a user to select various relative positions of the indicators to correspond to relative difficulties of exercise...." ('632, 2:45-48).

The specification of the '632 patent further discloses that the "indicators" can be any device, including LED or LCD displays. The user-movable indicators may be provided by *any device* that allows a user to select various relative positions of the indicators to correspond to relative difficulties of exercise that he plans to "program" into the machine. For example, such indicators *may be* a bank of slide potentiometers arranged horizontally so that the user can move the potentiometers up and down to indicate a corresponding set of relative values. The relative vertical positions of the indicators are indicative of the relative values they represent. *Alternatively, the indicators may be visually indicated by light emitting diodes (LED's) or liquid crystal diode (LCD) segments to display, for example, a single illuminated light or a "ribbon" of LCD segments. Such illuminated indicators are "moveable" by means of the user adjusting some type of electronic controller to control the position of the indicator.* ('632, 2:45-62) (emphasis added). This disclosure expressly states that the use of slide potentiometers is an "example" and that LEDs or LCDs may be utilized as the user-moveable indicators. Given the foregoing embodiments disclosed in the specification, the Court agrees with Plaintiff that it is improper to limit the construction of this term to the single

embodiment of slide potentiometers.

What is more, under the doctrine of claim differentiation, "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." Phillips, 415 F.3d at 1315. Claim 2 of the '632 patent depends from claim 1. ('632, Claims 1, 2). Claim 2 states: "An exercise apparatus according to claim 1 wherein said indicators include slide potentiometers...." Because claim 2 limits the indicators to being at least slide potentiometers, claim 1 must be broader; that is, claim 1 must be an apparatus that is not limited to slide potentiometers. *See* Dow Chemical Co. v. U.S., 226 F.3d 1334, 1341-42 (Fed.Cir.2000)(applying doctrine of claim differentiation and concluding that an independent claim should be given broader scope than a dependent claim to avoid rendering the dependent claim redundant); *see also* Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed.Cir.1999) (explaining that the doctrine of claim differentiation "normally means that limitations stated in dependent claims are not to be read into the independent claims from which they depend.").

According to Defendants, their proposed construction properly acknowledges and incorporates the clear disavowal of claim scope made by the patent applicants during prosecution of the application which resulted in the ' 632 patent. Specifically, Defendants argue the additional embodiments were disclaimed from the scope of the claims during prosecution. Defendants further argue claim differentiation is merely a rebuttable presumption. *N*. Am. Vaccine, Inc. v. Am. Cyanamid Co., 7 F.3d 1571, 1577 (Fed.Cir.1993) ("While it is true that dependent claims can aid in interpreting the scope of claims from which they depend, they are only an aid to interpretation and are not conclusive."). Where a contrary construction is dictated by the prosecution history, the presumption created by the doctrine of claim differentiation is overcome. *See* Regents of Univ. of Cal. v. Dakocytomation Cal., Inc., 517 F.3d 1364, 1375 (Fed.Cir.2008) (holding that despite the fact that dependent claims were directed to a wider embodiment than the independent claim, the applicants' disavowal of claim scope during prosecution required construction of the independent claim as limited to that narrower embodiment). Defendants contend they have shown that a contrary construction for this term is dictated by the prosecution history.

The Federal Circuit requires consideration of the file history as it is part of the intrinsic record of the patent. Phillips, 415 F.3d at 1317. In an office action dated September 5, 1990, the Examiner rejected claims 1, 3-8 and 11 under 35 U.S.C. s. 102(b) as anticipated by U.S. Patent No. 4,708,337 ("Shyu"). ('632 Patent File History at ICONJHT 390894). The Examiner stated that Shyu discloses "a plurality of indicators associated with the frame and movable with respect to each other to *visually indicate* an ordered set of relative values (Fig.8, 331-341)(emphasis in original)." (Id. at ICONJHT 390895). Additionally, claims 2 and 12-16 were rejected under 35 U.S.C. s. 103 as being unpatentable over Shyu. The Examiner stated:

Shyu does not specifically disclose the plurality of indicators are associated with the slide potentiometers for input data to the control means and the plurality of indicators having the first set of indicators corresponding to the relative values of speed of track power means and second set of indicators corresponding to the relative values of angles of incline which are arranged in horizontal rows as required. However, such limitations are old and well known, such as disclosed by Kaneko et al. (U.S. Pat. No. 4,504,968, see Fig. 2)....

(Id. at ICONJHT 390896).

The applicants filed a response to this office action on January 7, 1991. In response to the rejection of claims

1, 2-8 and 11, they stated:

Shyu is said to teach ... a plurality of indicators moveable with respect to each other to visually indicate an ordered set of relative values. However, the indicators of Shyu are not properly, as claimed, physically 'moveable with respect to each other.' **Rather, they are LEDs associated with push buttons.** Moreover, the indicators of Shyu only display one value of a given parameter at a time and not an ordered set of relative values as recited in claim 1.

(Id. at ICONJHT 390911)(emphasis added).

Given this response, Defendants assert the applicants expressly distinguished the "plurality of indicators moveable with respect to each other" of the invention from "LEDs associated with push buttons," that were known in the prior art. According to Defendants, despite the fact that the suitability of LEDs was disclosed in the specification, the applicants' argument effectively disavowed LEDs as not included in the term "plurality of indicators moveable with respect to each other." *See* Seachange Int'l, Inc. v. C-COR Inc., 413 F.3d 1361, 1372-73 (Fed.Cir.2005) (holding that "where an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of otherwise broad claim language.").

In the same amendment, in response to the Examiner's rejection of claims 2 and 12-16 as obvious over Shyu in view of Kaneko, the applicants further stated as follows:

As noted above, Shyu does not teach a set of indicators showing an ordered set of values of a single treadmill parameter. Kaneko does not remedy this deficiency. Instead, Kaneko discloses the use of slide potentiometers in an audio device to adjust the relative levels of different sound components which are played simultaneously. In contrast, **in the instant invention a series of slide potentiometers is used** to select and display an ordered set of resistance levels which are effected one at a time in a timed sequence.

('632 Patent File History at ICONJHT 390911-12)(emphasis added).

Defendants assert this clear disavowal of claim scope was made in support of patentability of claims 12-16 (corresponding to claims 10-14 in the issued patent), all of which require "a plurality of indicators." Because this same language is used in claim 1, Defendants assert it is presumed that "a plurality of indicators" has the same meaning and scope whether it appears in claim 1 or claim 11. Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1328 (Fed.Cir.2006) ("[T]he same terms appearing in different claims in the same patent ... should have the same meaning unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims.").

Defendants assert their proposed construction of "plurality of indicators" as "slide potentiometers" should be adopted by the Court. At a minimum, Defendants contend this limitation should explicitly be construed to not cover a column of lights (*e.g.,* LEDs, LCDs, etc.) associated with push buttons, since the patent applicants clearly gave up that scope of coverage during prosecution.

Contrary to Defendants' arguments, claim differentiation applies between claims 1 and 2. The Court finds no statement was made in the prosecution history to disclaim the scope of claim 1, and claim differentiation thus establishes that the indicators in claim 1are not limited to slide potentiometers. Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed.Cir.2005) ("[T]he presence of a dependent claim that adds a particular limitation

gives rise to a presumption that the limitation in question is not present in the independent claim.").

The Federal Circuit has held that prosecution disclaimer must be clear and unambiguous. Seachange, 413 F.3d at 1373 ("A disclaimer must be clear and unambiguous."); *see also* Phillips, 415 F.3d at 1317 ("Yet because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes."). In *Omega Eng'g, Inc. v. Raytek Corp.,* the Federal Circuit explained prosecution disclaimer in this way:

The doctrine of prosecution disclaimer is well established in Supreme Court precedent, precluding patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.... We have, however, declined to apply the doctrine of prosecution disclaimer where the alleged disavowal of claim scope is ambiguous.... To balance the importance of public notice and the right of patentees to seek broad patent coverage, we have thus consistently rejected prosecution statements too vague or ambiguous to qualify as a disavowal of claim scope.... Rather, we have required the alleged disavowing statements to be both so clear as to show reasonable clarity and deliberateness, ... and so unmistakable as to be unambiguous evidence of disclaimer.

334 F.3d 1314, 1325-26 (Fed.Cir.2003).

Here, the statements relied upon by Defendants in the prosecution history are not clear, unambiguous statements evidencing disclaimer of scope. Defendants cite two rejections by the patent examiner, the first rejection was based on 35 U.S.C. s. 102 (anticipation) and the second was based on 35 U.S.C. s. 103 (obviousness). (Response at 30). With respect to the first rejection, wherein the Examiner rejected claims 1, 3-8, and 11 as being anticipated by Shyu, Defendants rely on the fact that the Examiner cites Shyu as disclosing "a plurality of indicators associated with the frame and moveable with respect to each other to visually indicate an ordered set of relative values (Fig.8, 331-341)."

However, according to Plaintiff, the Examiner's rejection was based on Figure 8, items 331-341 of the Shyu patent ('632 Patent File History at ICONJHT 390895), and items 331-341 in Figure 8 of the Shyu patent encompass many LEDs. Shyu describes these LEDs in the following manner:

Referring to FIG. 8, ... there is a name plate 331, a belt speed meter 332 and display panel 333 on the upper portion. The display panel 333 further consists of a display 334 for displaying the number of steps, pace, heat dissipated and slope, a display 335 for distance and time, and a display 336 for pulse rate.... There is a warning signal light group 337, operation status lights group 338, data input lights group 339, slope indication lights group 340 and memory data display lights group 341 shown on the controller panel 33.

(Ward Decl., Exh. 11 at 4:41-54). As stated in the applicants' response to the office action, the LEDs disclosed by Shyu are not moveable with respect to each other. The LEDs in Figure 8 are different than what is disclosed in the ' 632 patent, where LEDs or other indicators are a bank of moveable indicators that can be moved with respect to each other to create a user-designed program. (*See* '632, 2:45-63; 5:13-20).

Applicants did not disclaim LEDs in response to the office action of September 5, 1990. Rather, the applicants distinguished the LEDs used in Shyu from the LEDs used in the '632 patent. Even so, a statement limiting the ' 632 patent to slide potentiometers would be contrary to the disclosure in the specification and the claims. Phillips, 415 F.3d at 1317 ("Yet because the prosecution history represents an ongoing

negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.").

The second portion of the prosecution history upon which Defendants rely was in the same office action where claims 2 and 12-16 were rejected under 35 U.S.C. s. 103 as being unpatentable over Shyu in view of Kaneko. ('632 Patent File History at ICONJHT 390896). According to Plaintiff, the Examiner was citing Kaneko (U.S. Patent No. 4,504,968) because the invention in Kaneko (not related to exercise equipment) used slide potentiometers. (Id.). In response to this rejection, that was focused on the slide potentiometers of Kaneko, the applicants stated:

As noted above, Shyu does not teach a set of indicators showing an ordered set of values of a single treadmill parameter. Kaneko does not remedy this deficiency. Instead, Kaneko discloses the use of slide potentiometers in an audio device to adjust the relative levels of different sound components which are played simultaneously. In contrast, in the instant invention a series of slide potentiometers is used to select and display an ordered set of resistance levels which are effected one at a time in a timed sequence. Kaneko neither shows nor suggests the use of slide potentiometer inputs in such a manner.

(Id. at ICONJHT 390911).

Contrary to Defendants' contentions, this statement is not a disavowal of claim scope. *See* Seachange Int'l, 413 F.3d at 1373 ("A disclaimer must be clear and unambiguous."). In context, the Examiner was making a rejection of claims 2 and 12-16 based on Kaneko disclosing slide potentiometers. In response, the applicants distinguished the slide potentiometers used in the ' 632 patent from those in Kaneko. ('632 Patent File History at ICONJHT 390911). In other words, the applicants' argument is that the '632 patent discloses using slide potentiometers as a preferred embodiment in an exercise device; Kaneko's disclosure of slide potentiometers is for use in audio devices and sound components which is different from the scope of the '632 patent. This statement does not clearly or unambiguously state that "the '632 patent is limited to slide potentiometers."

For these reasons, the Court agrees with the first sentence of Plaintiff's proposed construction with the exception of the phrase "such as LED or LCD displays." Although the Court is not limiting the construction to slide potentiometers, slide potentiometers should also be included in the Court's construction. Therefore, the Court will utilize the following: "a display on the console of an exercise machine, having at least two columns of indicators, such as LED or LCD displays or slide potentiometers, which show a user different time segments (e.g., horizontal axis) and difficulty levels (e.g., vertical axis)."

The second sentence of Plaintiff's proposed construction is as follows: "the height or length of each column is set by the user and displayed prior to exercising in order to create a preprogrammed exercise workout having variable difficulty levels for each discrete time segment." Plaintiff asserts this sentence, which makes clear this term applies only to pre-programmed exercise workouts (*i.e.,* workouts that the user programs prior to working out), is also supported by the intrinsic evidence.

The '632 patent discloses user-programmability of exercise workouts. ('632, 3:26-33; *see also* 8:9-21). Claim 1 states: "said plurality of indicators being moveable with respect to each other by the user *to select and to continually visually indicate a sequential set* of relative values of said difficulty." ('632, 9:9-12). Claim 1 requires that a user select and continually visually indicate a sequential set of values. Plaintiff argues this requirement precludes programming of the exercise device while working out because in the

save-as-you-go programming, the user does not have the sequential set of upcoming steps. According to Plaintiff, this is differentiated from claim 9, which has no such language and would encompass both save-as-you-go and pre-programmable exercise workouts.

Plaintiff further asserts an embodiment disclosed in the '632 specification supports its proposed construction limiting claim 1 to pre-programmed machines only:

In the 'programmable' mode, the user is allowed to select the time that he plans to exercise and to input eight speed and inline settings. The user then sets the eight incline sliders 166 in panel 122 at eight relative inclines. The user *then* presses the program start key 128 to start the program. Button 128 is associated with switch SI of FIG. 7. Walking belt 22 must be fully stopped before the start key 128 is depressed, or the programming mode will not start.

('632, 8:9-11, 20-25)(emphasis added).

Defendants argue that Plaintiff's proposed construction improperly combines elements of the "control means" limitation into the construction of this term. The '632 patent is directed to an exercise apparatus with a control mechanism that is touted as being "easily operated by users." ('632, 3:26-27). According to the "Summary of the Invention," the control means is operatively linked to a plurality of user-movable indicators, where the indicators are "positioned with respect to each other to visually indicate an ordered set of relative values." (Id. at 2:19-23). The control means provides a sequence of steps of difficulties of exercises corresponding in relative amounts to the selected set of relative values. (Id. at 2:23-27).

The specification dictates that the pre-programmability feature of the claims is based on the control means.

In the programmable mode, the user is allowed to select the time that he plans to exercise and to input eight speed and incline settings. **The treadmill controller controls the speed and incline of the treadmill automatically for the length of the time set.**

('632, 8:9-13)(emphasis added).

The "Summary of the Invention" section further supports Defendants' position:

Exercise machines of the invention provide a control system that is easily operated by users. The user need merely select a set of relative values on a group of indicators, and the exercise apparatus will use the set of relative values to provide a corresponding selected routine of relative exercise intensities to the use. Thus, users are able to effectively and easily 'program in' a selected exercise routine.

(Id. at 3:26-33)(emphasis added).

The Court is not convinced the second sentence of Plaintiff's proposed construction is warranted. The Court finds no support in the intrinsic record for the specific language contained in the second sentence of Plaintiff's proposed construction. As indicated above, the Court will utilize a modified version of Plaintiff's first proposed sentence: "a display on the console of an exercise machine, having at least two columns of indicators, such as LED or LCD displays or slide potentiometers, which show a user different time segments (e.g., horizontal axis) and difficulty levels (e.g., vertical axis)."

c. Court's Construction

Accordingly, the Court construes the claim term **"a plurality of indicators** associated with said frame **proximate each other,** said plurality of indicators **being moveable with respect to each other** by the user to select and to continually visually indicate a sequential set of relative values of said difficulty" to mean: **"a display on the console of an exercise machine, having at least two columns of indicators, such as LED or LCD displays or slide potentiometers, which show a user different time segments (e.g., horizontal axis) and difficulty levels (e.g., vertical axis)."**

2. "A plurality of indicators proximate each other ... each said indicator being moveable by user to a relative position with respect to others of said indicators" (Claim 11)

a. Parties' Proposed Construction

Plaintiff's Proposal	*Defendants' Proposal*
"A display on the console of an exercise machine, having at least two columns of indicators, such as LED or LCD displays, which show a user different time segments (e.g., horizontal axis) and difficulty levels (e.g., vertical axis). The height or length of each column is set by the user and displayed prior to exercising in order to create a pre-programmed exercise workout having variable difficulty levels for each discrete time segment."	"A plurality of slide potentiometers that are used to select and display an ordered set of resistance levels which are effected one at a time in a timed sequence. A plurality of indicators does not include LEDs associated with push buttons."

b. Discussion

This term is similar to the first "plurality of indicators ..." term discussed above for the '632 patent. The parties have proposed the same respective constructions for both terms as well as the same arguments in support of their proposed constructions. For the same reasons discussed above, the Court utilizes the first sentence of Plaintiff's proposed construction for this term.

c. Court's Construction

Accordingly, the Court construes the term **"a plurality of indicators proximate each other ... each said indicator being moveable by user to a relative position with respect to others of said indicators"** to mean: **"a display on the console of an exercise machine, having at least two columns of indicators, such as LED or LCD displays or slide potentiometers, which show a user different time segments (e.g., horizontal axis) and difficulty levels (e.g., vertical axis)."**

C. The '120 Patent

1. "Calorie burn rate signal" (Claim 8)

a. Parties' Proposed Construction

Plaintiff's Proposal	*Defendants' Proposal*
"Data reflecting calories burned."	"A signal corresponding to the calculated number of calories being burned by the user per unit time, e.g., kilocalories per hour, at a moment during the user's exercise."

b. Discussion

The parties' disagreement over this term centers around the issue of whether the calorie data must be of a specific unit of measurement. Defendants' construction requires that the calories be an instantaneous rate. Plaintiff's construction includes calorie burn data but, according to Defendants, is not limited to a *rate* of calorie burn.

As support for its proposed construction, Plaintiff first focuses on the word "signal" in the term "calorie burn rate signal." According to Plaintiff, the word "signal" is broad in meaning and includes anything that serves to indicate. (Brienza Declaration, para. 5). Plaintiff asserts a "signal" of a user's calorie burn rate can be any type of data that indicates a rate of calorie burn.FN4 For example, under Plaintiff's proposal, a calorie burn rate signal could be a running total of the number of calories that have been burned over the course of a person's workout; a calorie burn rate signal could also be a number of calories being burned over a specific unit of time. Plaintiff relies on testimony from Defendants' expert, Dr. Timothy Mickelson, that an exercise machine that displays a running total of the number of calories that a person has burned over the course of his or her workout is a "signal" of the user's calorie burn rate. (Mickelson Depo., 124:12-125:24; 162:13-18). During his deposition, Dr. Mickelson admitted that a running total of calories expended "certainly could" be a signal of a person's calorie burn rate.

Q. So you would agree, though, that an exercise machine that displays a running total of calories would signal to the user of that exercise, the rate at which the user is burning calories, right?

A. It certainly could.

(Id. at 125:14-24).

Plaintiff further asserts, even if the word "signal" were deleted from the "calorie burn rate signal" term, a running total of the number of calories burned over the course of a person's workout would still be a calorie burn rate signal, as long as the elapsed time of a user's workout is also displayed on the exercise machine console. If a running total of calories burned by a person during a workout and the elapsed time of that workout are both displayed, a rate of calorie burn would simply be the total number of calories burned over the elapsed time. According to Plaintiff, a person need only know the amount of time that he or she has been working out and the total number of calories burned in order to know his or her "calorie burn rate."

Plaintiff also relies on the embodiments of the invention disclosed in the specification of the '120 patent. According to the "Summary of the Invention" of the '120 patent, "[t]he display means ... *is capable of displaying pulse data and calorie burn data*." ('120, 2:4-5)(emphasis added). According to Plaintiff, Figure 1 of the '120 patent, which shows a console of an exercise machine capable of performing the method of claim 8, does not limit the way in which the calorie information is displayed. What is more, Plaintiff asserts the specification of the '120 patent provides: "Upon operation of the knob, the user can in turn control his or her own pulse rate and in turn his or her own rate of and **total calorie burn** assuming the average amount of calories are burned for a given degree or quantity of exercise." ('120, 5:46-50)(emphasis added).

Plaintiff points out that claim 2, unlike claim 8, of the '120 patent requires that a "rate of calorie burn" be displayed. Plaintiff does not dispute that this language requires a rate, or a number of calories being burned over a specific unit of time. However, Plaintiff asserts that if the patentee wanted the scope of claim 8 to be

limited to a rate of calorie burn, he would have used the phrase "rate of calorie burn," as he did in claim 2. According to Plaintiff, the fact the patentee used the term "calorie burn rate signal" in claim 8 and not "rate of calorie burn" confirms that he did not want the calorie burn data of claim 8 to be limited to a rate.

Finally, Plaintiff takes issue with Defendants' proposed construction of "calorie burn rate signal" because it seeks to add the term "at a moment during the user's exercise" or "instantaneous" to the claim term at issue. Plaintiff asserts there is no support in the claims of the '120 patent, its specification, or its prosecution history for this addition. While Plaintiff agrees that an instantaneous calorie burn rate is one of many calorie burn rate signals that are embraced by a proper construction of this term, Plaintiff disagrees that the construction of "calorie burn rate signal" should be limited to an *instantaneous* calorie burn rate as proposed by Defendants.

According to the Defendants, the proper construction for this term is "a signal corresponding to the calculated number of calories being burned by the user per unit time, e.g. kilocalories per hour, at a moment during the user's exercise." Defendants assert that Plaintiff's proposal wrongly conflates two different manners of displaying caloric information: "calorie burn rate" and "total calories expended." According to Defendants, the difference between "total calories expended" and "calorie burn rate" is clear: one is a total, and the other is a rate.

As one example urged by Defendants, if a user started exercising and looked at the display initially, it would show a total calories burned of zero kilocalories and a calorie burn rate of, say, 600 kilocalories per hour. Minute by minute, the total would steadily tick upward until, after ten minutes of exercise at that rate, the total calories burned would be 60 kcal. However, the rate of burn would remain the same. If the user wanted to increase the difficulty level so that she was burning 1200 kcal per hour, another ten minutes of exercise would steadily boost the total calories burned to 180 kcal.

Defendants assert the patent applicants expressly distinguished prior art displaying total calories expended by asserting that this very same prior art did not display a "calorie burn rate." The original claims of the '120 patent recited "calorie burn data," rather than "calorie burn rate," to describe the information displayed by the exercise machine. ('120 Patent File History at ICONJHT 523-25). The patent examiner objected to this usage because "calorie burn data" lacked clear antecedent basis and suggested that it should instead be recited as "calorie burn rate." (Id. at ICONJHT 542-43).

The Examiner also rejected original claims 1-3, 7, and 8 as anticipated under 35 U.S.C. s. 102(b) by a prior art reference (EP 199,442, hereafter, "the Tsuyama reference") that disclosed a display of "calorie burn data." (Id. at ICONJHT 544-45). The Tsuyama reference expressly discusses a display of total calories burned during the course of the exercise workout, referred to within Tsuyama as "EC" or "exhausted calories." (EP 199,442 to Tsuyama, at Fig. 1 (showing display of "EC"), Fig. 5(6) ("EC" display of 40 kcal), Fig. 5(9) ("EC" display of 45 kcal), p. 13, lines 13-16 ("With respect to the display on the liquid crystal display unit 28, symbol "ETM" indicates elapsed time ... "EC" calorie exhausted by exercise ..."), p. 17, line 13-p. 21, line 17 (discussing exercise machine's display of calories exhausted during exercise)).

In response to the rejection over Tsuyama, the applicants amended the rejected claims to recite "calorie burn rate" rather than "calorie burn data." ('120 Patent File History at ICONJHT 555-58). Additionally, the applicants distinguished the "calorie burn rate" of claim 8 from the display of total calorie burn disclosed in the Tsuyama reference:

Claims 1-3, 7, and 9 are rejected as being anticipated by Tsuyama. The display means of Tsuyama does not include a display of the user's pulse rate in real time, or calorie burn rate (page 13, line 3 through page 14, line 19; FIG. 1).

(Id. at ICONJHT 564).

Plaintiff erroneously contends that use of the phrase "rate of calorie burn" in claim 2 means that use of "calorie burn rate signal" in claim 8 implies the data displayed on the machine of claim 8 could encompass total calories expended. However, Plaintiff's argument contradicts another argument advanced by the applicants during prosecution. Specifically, the patent applicants represented to the Patent Office that the invention of claim 8 (a method claim) did not have a broader scope than the invention of claims 1 through 7 (apparatus claims):

[T]he claims as currently amended are not patentably distinct; the apparatus of Claim 1 cannot be used to practice another and materially different process than that set forth in Claim 8, nor can the method as claimed be practiced by hand or by materially different process.

('120 Patent File History at ICONJHT 571-72).

Importantly, the '120 patent itself distinguishes between the "rate of" calorie burn and "total" calorie burn as different types of calorie burn data. ('120, 5:46-50) ("Upon operation of the knob, the user can in turn control his or her own pulse rate and in turn his or her own *rate of and total calorie burn* assuming the average amount of calories are burned at a given degree or quantity of exercise.") (emphasis added). Claim 8 refers only to the former type of data, not the latter. ('120, 6:61-8:19).

The technical experts in this case agree that "calorie burn rate" refers to the number of calories burned by the user *per unit time*. (Pittaway Decl. at para. 10)(Mickelson Depo., at 126:1-18, 130:13-19)(Brienza Depo., at 83:6-14). The Court finds that Defendants' proposed construction distinguishes between the signal and the calorie burn rate. The signal corresponds to or is reflective of the "calculated number of calories being burned by the user per unit time" "at a moment during the user's exercise."

The latter phrase makes clear that total calories burned over the course of the user's exercise are not included within a proper construction of the disputed term. Rather, the signal is reflective of the rate at a particular moment during the user's exercise, not over the entire exercise. Defendants' proposed construction, when viewed in the context of the invention itself, properly allows the user to adjust the difficulty of his or her exercise based on an observation of the pulse signal display and the calorie burn rate display. ('120, 8:13-19). Whereas the user's observation of the *rate of calorie burn* would help the user make a determination as to whether the difficulty of the exercise should be increased or decreased (*e.g.,* to correspond to a higher or lower calorie burn rate), a display of *total calories* expended over the course of the workout would not help the user in determining how to regulate the pace of the exercise.

The prosecution history reveals the applicants distinguished the Tsuyama reference, which displayed total calories expended (not calorie burn rate), on the basis that claim 8's "display of pulse rate and calorie burn rate aids the user in deciding whether to continue to exercise or to change the difficulty of the exercise while exercising.... Claim 8 as amended also recites the step of observing such pulse rate and also calorie burn rate signals and manually operating the control means in response to those signals." (Id.). Plaintiff's proposed construction fails to meet this expressed purpose by failing to eliminate the need for the user to

mentally calculate the rate of calorie burn (thereby gauging the level of difficulty) from the total calories burned over the elapsed exercise time.

Simply stated, the Court finds Defendant's proposed construction of "calorie burn rate signal" is the correct one with one alteration.FN5 Construing "calorie burn rate signal" to mean "a signal corresponding to the calculated number of calories being burned by the user per unit of time, e.g., kilocalories per hour, during the user's exercise" comports with the term's plain and ordinary meaning.

c. Court's Construction

Accordingly, the Court construes the term **"calorie burn rate signal"** to mean: **"a signal corresponding to the calculated number of calories being burned by the user per unit of time, e.g., kilocalories per hour, during the user's exercise."**

2. "Providing conversion means and connecting it to said pulse detector to receive said pulse signal and for generating a calorie burn rate signal and supplying a signal reflective of said calorie burn rate and for supplying said pulse signal" (Claim 8)

a. Parties' Proposed Construction

Plaintiff's Proposal	*Defendant's Proposal*
"Circuitry that (1) is connected to the pulse detector for receiving pulse signals; (2) generates data reflecting calories burned; and (3) supplies display data reflecting pulse and calories burned."	"The conversion means uses a pulse signal from the user to calculate the user's calorie burn rate. The conversion means then forwards the calculated calorie burn rate signal and the pulse signal to the display means."

b. Discussion

The parties agree that "conversion means" is a means-plus-function term and is, thus, governed by 35 U.S.C. s. 112 para. 6. The parties also agree that the function of the conversion means is "to receive said pulse signal and for generating a calorie burn rate signal and supplying a signal reflective of said calorie burn rate and for supplying said pulse signal." The parties disagree over the corresponding structure identified in the specification of the '120 patent for performing the function of the conversion means.

Plaintiff contends the structure disclosed in the specification of the '120 patent for performing this function is "circuitry." ('120, 3:56-65). According to Plaintiff, Plaintiff's and Defendants' experts agree with Plaintiff's position and have testified that circuitry is the structure disclosed in the ' 120 patent for performing the function of the conversion means. (Brienza Declaration, para. 6) (Mickelson Depo., 187:9-17) (Pittaway Depo., 35:5-36:2; 36:22-37:2).

Plaintiff further argues Defendants improperly infuse functionality into their proposed construction of this term. Plaintiff states the part of Defendants' proposed structure that reads "that calculates a calorie burn rate signal based on the received pulse signal" is not structure, but function. In construing means-plus-function claims, functions are not to be imported from the specification. Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1113 (Fed.Cir.2002) ("The court must construe the *function* of a means-plus-function limitation to include the limitations *contained in the claim language, and only those limitations*." (emphasis added)). Plaintiff contends "circuitry" is structure, and Defendants' proposed requirement that the circuitry

"calculate a calorie burn rate signal based on the received pulse signal" is not structure but a function of the structure.

The next disputed issue between the parties is whether the conversion means can generate a calorie burn rate signal based on any available data such as a user's weight, age, and/or workout difficulty level or whether, as urged by Defendants, the conversion means uses a pulse signal from the user to calculate the user's calorie burn rate. Although Plaintiff acknowledges the conversion means receives a pulse signal according to the plain language of this term, Plaintiff argues nothing in claim 8 of the '120 patent or in the specification limits the data received by the conversion means to a pulse signal. To the contrary, Plaintiff argues the specification of the '120 patent recognizes the pulse signal as merely exemplary of the data that *can be* received by the conversion means. Dr. Brienza relied on the following portion of the specification of the '120 to support his position that the conversion means can receive more than just pulse rate feedback data: "The display means 92 also includes feedback means and conversion means to convert feedback data *such as* pulse rate data." ('120, 5:12-14) (emphasis added). Thus, according to Plaintiff, the proper construction of this term would allow the conversion means to receive a pulse signal, as well as other data, including a user's weight, age, and/or workout difficulty level.

Defendants contend that Plaintiff, without any support in the specification, construes the "conversion means" element such that it can generate a calorie burn signal based on any available data and without use of the pulse signal, the sole input shown going into the conversion means. Defendants contend the ' 120 patent and its file history specifically require that the calorie burn rate signal be generated based on a calculation utilizing the only input shown in the '120 patent for the conversion means-the pulse signal.

The "Summary of the Invention" section of the specification describes the conversion means as receiving a signal reflective of the user's pulse, stating that "[a]s known, the conversion means assumes that an average number of calories are burned at a given pulse rate, given that the pulse rate reflects the degree of exertion during the exercise." ('120, 1:66-2:4). Figure 7 of the '120 patent shows "a block diagram of portions of the control system of *the instant invention*." (Id. at 2:50-51) (emphasis added).

According to the specification, Figure 7 shows that:

Pulse data is detected by a pulse clip 36 which is appended to the user as hereinbefore stated. The pulse data is transmitted via conductor 38, through connector 40 and receptacle 42, to the conversion means 43 via conductor 41. As hereinbefore stated, the conversion means 43 converts the pulse data using constants to supply selected display data via conductor 45 to the display means 47.

(Id. at 5:31-38). In other words, the conversion means of "the invention" receives pulse signals from the user and generates a new signal (the calorie burn rate signal) based on assumed values or constants at a given detected pulse rate.

As urged by Defendants, such descriptions of the "invention" are strong evidence that the conversion means should be construed as Defendants propose. *See, e.g.,* C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 864 (Fed.Cir.2004) (explaining that "[s]tatements that describe the invention as a whole, rather than statements that describe only preferred embodiments, are more likely to support a limiting definition of a claim term;" limiting claim's scope because patent described "invention" rather than embodiments); Astrazeneca AB Aktiebolaget Hassle, KBI-E, Inc. v. Mut. Pharm. Co., Inc., 384 F.3d 1333, 1338-40 (Fed.Cir.2004) (limiting claims to attributes described as being "of the invention"); Genzyme Corp. v.

Transkaryotic Therapies, Inc., 346 F.3d 1094, 1099 (Fed.Cir.2003) (limiting claims where "[n]otably, the 'Summary of the Invention' explicitly states that the 'present invention,' not merely a preferred embodiment," has the limitation and where "the multitude of working examples, drawings, and diagrams" show the limitation).

In the embodiment described in the specification, the conversion means is connected to receive pulse signals from the user and to generate selected display data based on the received input:

The control means of FIG. 1 also includes feedback means which were shown to be a pulse clip 36 for interconnection to a finger, earlobe or similar appendage or portion of the body. The pulse clip 36 is known to those skilled in the art and senses the pulse of the user and transmits signals reflective thereof via conductors 38 to a connector 40 for further connection via receptacle 42 to a conversion system. That is, ***circuitry is provided*** to convert the biological data being received from the clip 36 through the connector 40 and receptacle 42. The ***conversion means converts the pulse data*** being transmitted into selected display data which may be shown on the face 44 of a display means which is here shown positioned for observation by the user performing exercises on the exercise machine. The circuitry (not shown) is available and may be easily assembled by those skilled in the art.

('120 at 3:49-65).

Although, as a general rule, claims are not limited to the structure disclosed in the patent, that is not the case with means-plus-function terms like "conversion means." Such terms are strictly limited, by statute, to the "corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. s. 112, para. 6. Here, the only structure disclosed in the '120 patent for the "conversion means" element is circuitry that calculates the calorie burn rate signal based on the received pulse signal. This Court should construe this element accordingly.

Plaintiff wrongly suggests that the file history of the '120 patent supports its proposed construction. Specifically, Plaintiff contends that when claim 8 of the '120 patent was originally filed, the claim *did* require that the conversion means use the pulse rate to calculate the calorie burn rate signal. However, in an amendment dated July 2, 1991, the patentee specifically amended claim 8 to eliminate the exclusive reliance on the pulse rate to calculate the calorie burn rate signal. *See* Second Amendment Under 35 C.F.R. s. 1.312 dated July, 2, 1991. According to Plaintiff, by deleting the language "converting said pulse signal to a calorie burn rate," the patentee's intention with regard to this term is clear: the pulse signal can be, but is not required to be, used in the generation of the calorie burn rate signal.

More specifically, Plaintiff argues that unlike claim 8, claims 1 and 2 of the '120 patent require the pulse signal to be used to calculate the calorie burn rate.FN6 Again, Plaintiff contends that if the patentee wanted the calorie data of claim 8 to be calculated based on pulse data, he would have used the same language used in claims 1 and 2 to do so. However, the language that is used in claim 8 of the ' 120 patent to define the way that the calorie burn data is calculated is different from the language used to define this calculation in claims 1 and 2. Relying on claim differentiation principles, Plaintiff asserts the conversion means of claims 1 and 2 is presumed to differ in scope from the conversion means of claim 8.

Viewed in context, the communications between the patent applicants and the Patent Office reveal that the conversion means only generates a calorie burn rate signal based on calculations derived from the pulse signal. The conversion means was originally claimed as a means for "convert[ing] the pulse signal to a rate

of calorie burn," with the display means displaying both "pulse data and calorie burn data." ('120 Patent File History at ICONJHT 523-24).

In the first Office Action, the Examiner objected to the specification as failing to provide an adequate written description and rejected the claims as indefinite under 35 U.S.C. s. 112. Specifically, the Examiner questioned "how is the 'rate of calorie burn' being determined (as per claim 2)." (Id. at ICONJHT 541). The Examiner further objected: "In addition, as per claim 2, since the detected pulse signal has been converted to a rate of calorie burn by the conversion means, it is not understood as to how the pulse data and calorie burn data can be displayed by the display means at the same time." (Id. at ICONJHT 542). The Examiner understood the "converting" language to mean that the pulse signal was physically converted into calorie burn data and therefore the pulse signal no longer existed (and thus could not be displayed).

Defendants assert the applicants represented to the Examiner that the pulse signal was not being physically converted into a calorie burn rate signal, but rather was being used as the basis for generating the calorie burn rate signal, and that both signals could then be passed onto the display means. (*See also* id. at ICONJHT 563 (amending claim 2 to recite that both signals are provided to the display means)). The applicants subsequently made a clarifying amendment to claim 8 to delete this physical conversion language and to confirm that the calorie burn data was supplied directly to the display means for display. (Id. at ICONJHT 607-08).

Despite Plaintiff's arguments to the contrary, the prosecution history did not expand the range of structures disclosed for the conversion means. In fact, the applicants' communications with the Patent Office confirm that the conversion means generates a calorie burn rate signal based on a calculation using the only input coming into the conversion means, namely the pulse signal. Plaintiff's suggestion that calorie burn rate signal can be calculated by some other undisclosed structure in some undisclosed manner without the use of the pulse signal is not supported by the intrinsic evidence.

Defendants' construction of the "conversion means" element properly corresponds to the statutory requirements of 35 U.S.C. s. 112, para. 6, and in light of the '120 patent and its file history viewed by one of ordinary skill in the art. Specifically, nothing in the '120 patent shows any other structure or input for calculating calorie burn rate other than through the pulse signal coming into the conversion means. Plaintiff speculates, without reference to the patent, that the conversion means could receive "other data" such as "a user's weight, age, and/or workout difficulty level." (ICON Br. at p. 25). Plaintiff's proffered expert, Dr. Brienza, testified that the resistance level (adjusted through control knob 12, for example, in Figure 1) could be used to calculate calorie burn rate since it was part of the overall console of the exercise device. (Brienza Depo., at 88:11-90:12). However, Dr. Brienza's testimony conflicts with the intrinsic evidence. During the prosecution of the application, the Examiner specifically questioned the relationship between the knob for adjusting resistance level and the conversion means. ('120 Patent File History at ICONJHT 541). In response, the applicants stated that "[k]nob 12 is nowhere indicated to be connected to the conversion means." (*See* id. at ICONJHT 559). There is nothing else in the ' 120 patent to suggest that a user's weight, age, or other data can be used to calculate the calorie burn rate signal.

Although the Court agrees with Plaintiff's use of the word "circuitry" as structure, the Court finds Plaintiff's proposal otherwise improperly broadens the claims to cover embodiments that were never contemplated by the patentee. Specifically, the Court agrees with Defendants that the conversion means uses a pulse signal from the user to calculate the user's calorie burn rate.

c. Court's Construction

Accordingly, the Court construes the term **"providing conversion means and connecting it to said pulse detector to receive said pulse signal and for generating a calorie burn rate signal and supplying a signal reflective of said calorie burn rate and for supplying said pulse signal"** to mean: **"circuitry that (1) connects to the pulse detector for receiving pulse signals; (2) calculates a user's calorie burn rate based on the pulse signal(s); and (3) forwards the calculated calorie burn rate signal and the pulse signal to the display means."**

3. "Extemporaneously manually operating ... during performance of the exercises without interrupting said performance of exercises to adjust ... between an easy configuration ... and a hard configuration" (Claim 8)

a. Parties' Proposed Construction

Plaintiff's Proposal	*Defendant's Proposal*
"Bi-directional controls for a user's spontaneous adjustment between difficulty levels without interrupting exercise."	"Manual operation by the user during performance of exercise on the exercise machine without interrupting the performance of exercise."

b. Discussion

The principle dispute between the parties' proposed constructions is whether "bi-directional controls" should be included in the construction. According to Defendants, nothing in the specification, prosecution history, or claim language limits this term to bi-directional controls. Defendants assert unidirectional controls were available.

On the other hand, Plaintiff explains that in order for a user to be able to manually operate the difficulty level of an exercise machine without interrupting the performance of the exercise, a bi-directional control is required. According to Plaintiff, a bi-directional control enables a user to either increase or decrease the difficulty level of an exercise machine between an easy and a hard configuration. An example of a bi-directional control would be a knob that could be rotated in either direction or buttons associated with an increase and a decrease in difficulty. Plaintiff asserts the specification of the '120 patent discloses bi-directional difficulty adjustment controls.

The control system 10 includes control means which are here shown to include a knob 12 which is *operable between an easy configuration* 14 *and a hard configuration* 16. That is, knob 12 can be rotated between the easy configuration 14 and the hard configuration 16 as desired by the user to in turn regulate the resistance means of an exercise machine[.]

('120, 2:57-63) (emphasis added).

Plaintiff asserts exercise machines with unidirectional difficulty controls are unable to adjust between difficulty levels. "To achieve a lower difficulty level on a unidirectional control that only increases the difficulty level, the user would be required to increase the difficulty level until a maximum is reached, at which point the difficulty level resets to a minimum difficulty level. Changing the difficulty level on an exercise machine that has a unidirectional difficulty control would interrupt the performance of the exercise." (Plaintiff's Br. at pg. 28) (October 24, 2008, Deposition of Dr. David Brienza, 59: 10-60: 16).

Plaintiff further asserts it properly includes the word "spontaneous" in its proposed construction to reflect the requirement that the manual operation recited be extemporaneous.

The Court agrees with Defendants that the proper construction for this term requires that the user adjust the exercise machine while exercising. Figures 1, 5 and 6 depict several embodiments of the invention where a knob is used to vary the degree of difficulty during exercise. With respect to these figures, the patentee stated: "The degree of difficulty or resistance being imposed to the performance of the exercise is controlled and adjusted by control means which are here shown to be adjustment knobs 12 (FIG.1), 86 (FIG.5) and 110 (FIG.6)." ('120, 5:42-46). The patent further provides:

With the display of a particular biological function such as pulse, the user may operate the knob 12 to a pre-selected scale point such as the third dot 32 to vary the hardness of the exercise to achieve a particular pulse or pulse rate which would then be displayed on the screen 44. Thus the user can *extemporaneously* devise and operate an exercise program to regulate his or her own pulse rate *in real time throughout the period of exercise*.

(Id. at 3:68-4:8) (emphasis added).

Defendants' proposed definition is also consistent with the file history for the '120 patent. As originally filed, the relevant clause of claim 8 read "providing a control means interconnected to the resistance means of the exercise machine; operating the resistance means between an easy configuration ... and a hard configuration...." ('120 Patent File History at ICONJHT524-25). The Examiner rejected claim 8 over U.S. Patent 4,708,337 to Shyu. (Id. at ICONJHT 543-44). The Examiner argued that "Fig. 1 of Shyu clearly discloses the chassis positioned on the exercise machine with the control means, conversion means and display means positioned thereon for operation by the user." (Id. at ICONJHT 544). In response to this rejection, the applicants amended claim 8 to require "manually operating said control means to adjust said resistance means between an easy configuration ... and a hard configuration...." (Id. at ICONJHT 558). In conjunction with this amendment, the applicants argued:

the control system of Shyu operates entirely according to preset programs which do not include a manual mode (Figs.9-20). Once an exercise program is started, it appears that the user cannot alter any of the selected exercise parameters except by stopping the machine (Tables 2, 3, and 4). In contrast, the user of the claimed the [sic] control system may extemporaneously vary the hardness of the exercise, pulse rate achieved, duration, and calories burned, according to the user's immediate experience and desires and without interrupting the exercise.... Claim 8 is amended ... to also recite steps of manual extemporaneous operation.

(Id. at ICONJHT 564). Thus, the applicants distinguished over the prior art by arguing that the claimed invention permitted the user to vary the hardness of the exercise without interrupting the exercise. Accordingly, the prosecution history is also consistent with Defendants' proposed construction of "extemporaneously manually operating," which means "manual operation by the user during performance of exercise on the exercise machine without interrupting the performance of the exercise."

Turning to the issue of "bi-directional controls," as proposed by Plaintiff, the Court first notes said language does not appear anywhere in the specification. What is more, Defendants assert Plaintiff's definition is also erroneous because it ignores the context of the claim, which is a "method claim" where "extemporaneously manually operating" refers to an *action by the user,* and does not implicate any particular *structure or*

mechanism, such as "bidirectional controls." Relying only on extrinsic testimony of its expert Dr. Brienza, Plaintiff argues that a bi-directional control is required in order for the user to be able to manually operate the machine without interrupting the exercise, because changing the difficulty level on an exercise machine with unidirectional controls would interrupt the performance of the exercise.

However, at the time the application leading to the '120 patent was filed, it was known that unidirectional controls could be used to vary the level of exercise difficulty without interrupting exercise. As explained by Defendants' expert, Dr. Mickelson, this was accomplished by the use of an internal time-delay (often shown by a flashing indicator) which would allow the user to select the level of exercise by scrolling through the non-desired levels, before the control mechanism would implement the selected level. For example, an exerciser using a machine at level 5 of a maximum of 10 levels who wished to exercise at level 3 could repeatedly push a selector button through levels 6, 7, 8, 9, 10, 1, 2 and finally 3, and after a moment, the control means would implement level 3. (Mickelson Decl. at para. 4).FN7

The Court is not convinced, as urged by Plaintiff, that only a bidirectional control could be used to extemporaneously manually operate an exercise apparatus during performance of the exercise without interruption. Other mechanisms known at the relevant time, such as unidirectional controls, could be used to "extemporaneously manually operate" an exercise apparatus, and thus, there is simply no reason to limit the disputed phrase to a "bidirectional controls ." (*See* id.).

c. Court's Construction

Accordingly, the Court construes the term **"extemporaneously manually operating ... during performance of the exercises without interrupting said performance of exercises to adjust ... between an easy configuration ... and a hard configuration"** to mean: **"manual operation by the user during performance of exercise on the exercise machine without interrupting exercise."**

4. "Exercise machine" (Claim 8)

a. Parties' Proposed Construction

Plaintiff's Proposal	*Defendant's Proposal*
"Treadmills, elliptical trainers, stationary bikes, steppers, and the like typically found in fitness clubs and home exercise systems."	Plain and Ordinary Meaning

b. Discussion

According to Plaintiff, claim 8 of the '120 patent, when read in light of the specification, would be understood by those of ordinary skill in the art to include only stationary-type exercise machines. (Brienza Declaration, para. 9). Plaintiff asserts those of ordinary skill in the art would not understand claim 8 of the '120 patent to cover bicycles or other non-stationary machines. Thus, Plaintiff asserts the construction of the term "exercise machine" should be limited to "treadmills, elliptical trainers, stationary bikes, steppers, and the like typically found in fitness clubs and home exercise systems."

Plaintiff asserts Defendants' expert, Dr. Mickelson, agrees that the scope of the term "exercise machine" should be limited to stationary-type exercise machines.

Q. So you would agree then with a construction of the term exercise machine that would be limited to just those machines that are stationary exercise machines; is that right?

A. Yes.

(Mickelson Depo.,202:2-6).

Defendants do not believe the term "exercise machine" requires any construction at all. According to Defendants, an "exercise machine" has a plain and ordinary meaning to one of skill in the art that does not require further restatement or construction. *See* O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1362 (Fed.Cir.2008) (noting that claim construction is not an obligatory exercise in redundancy and does not require the restatement of every limitation present in a patent's asserted claims); U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed.Cir.1997) (same); *see also SRAM Corp. v. Fox Factory, Inc.,* 2005 U.S. Dist. LEXIS 29164, at *8, 11-12 (N.D.Ill. Nov. 18, 2005) (holding that "relatively rigid system" and "fluid flows between said first and second chambers" had readily understandable plain meanings and required no further construction).

To the extent a restatement is necessary, Defendants assert Plaintiff's experts agree that an "exercise machine" is readily understood to those of skill in the art as a machine or device for achieving bodily exertion for the sake of developing and maintaining physical fitness, including for health reasons or conditioning. (Feinberg Depo., at 176:9-177:2) (Brienza Depo., at 35:14-19, 44:18-45:16). Brienza agreed that an exercise machine is "a machine or device for achieving bodily exertion for the sake of developing and maintaining physical fitness," but he clarified that an exercise machine "would have those characteristics, among other characteristics." (Brienza Depo. at 35:14-24).

Plaintiff cites no support in either the '120 patent or its file history for its specialized definition of "exercise machine," which is contrary to its plain meaning. Plaintiff's expert Dr. Brienza testified that the "exercise machine" of claim 8 should not be limited to the specific embodiments shown in the '120 patent simply because they were stationary devices. (Brienza Depo., at 15:22-17:9).

Additionally, the language of the claims contradicts Plaintiff's construction. Claim 7 of the '120 patent expressly recites an "exercise machine" that is a "stationary exercise cycle." Clearly, the inventors knew how to use the word "stationary" and could have used it to limit "exercise machines" if they had so desired. They did not use such "stationary" language and thus it should not be imported into claim 8 now.

There is no justification for adding a "stationary" limitation to the phrase "exercise machine" as that term is used in claim 8 of the '120 patent. "Exercise machine" has a plain meaning to those of ordinary skill in the art, including Plaintiff's own experts, and there is nothing in the '120 patent or its file history to suggest that the applicants limited "exercise machine" to stationary devices only. *See Elbex* Video, Ltd. v. Sensormatic Elec. Corp., 508 F.3d 1366, 1371 (Fed.Cir.2007) ("Claim terms are entitled to a 'heavy presumption' that they carry their ordinary and customary meaning to those skilled in the art[.]").

c. Court's Construction

The Court construes the term **"exercise machine"** to mean **"a machine or device for achieving bodily exertion for the sake of developing and maintaining physical fitness, including for health reasons or conditioning."**

V. CONCLUSION

Accordingly, the Court hereby construes the claim terms consistent herewith. A chart summarizing these constructions is attached as Exhibit A.

FN1. Unless otherwise noted, the Court utilizes the following summaries from Plaintiff's claim construction brief.

FN2. The '025 patent is a continuation-in-part of the '632 patent.

FN3. Although Plaintiff's claim construction chart provides that Plaintiff's proposed construction for this term is a "display on the console of an exercise machine, having *an arrangement* of indicators ...," at the claim construction hearing, Plaintiff stipulated to the following: "A display on the console of an exercise machine, having *arrangements* of indicators...."

FN4. Defendants question whether adding the word "signal" to the claim term makes a difference as urged by Plaintiff. According to Defendants, the word "signal" in the claim term "calorie rate burn signal" does not change the fact that the construction must reflect a rate, not a total, of calories expended by a user during an exercise workout.

FN5. The Court is not convinced the construction should include the words "at a moment" before "during the user's exercise" as proposed by Defendants.

FN6. According to claim 1 of the '120 patent, the "conversion means ... convert[s] said pulse signal into selected biological display data." ('120 patent, 6:20-21). According to claim 2, the "selected biological display data includes a rate of calorie burn." ('120 patent, 6:27-28).

FN7. Plaintiff argues that having to press a button 8 times and then having to wait for "a moment" would clearly interrupt the performance of an exercise.