

United States District Court,
D. Nevada.

JAPAN CASH MACHINE CO., LTD & JCM American Corp,
Plaintiffs.

v.

MEI, INC,
Defendant.

No. 2:05-CV-1433-R CJ-RJJ

Sept. 13, 2007.

Michael D. Rounds, Watson Rounds, PC, Reno, NV, William J. Hughes, Jr., Cooper Levenson April Niedelman & Wagenheim, PA, Atlantic City, NJ, David B. Abel, DLA Piper LLP, Los Angeles, CA, for Plaintiffs.

Edmond R. Bannon, Jonathan A. Marshall, Jorge M. Torres, Lewis E. Hudnell, Lewis E. Hudnell, Fish & Richardson P.C., New York, NY, Lori N. Brown, Reed J. Werner, Starr Hope Arvey, Harmon & Davies, P.C., Las Vegas, NV, for Defendant.

ORDER

ROBERT C. JONES, District Judge.

This matter comes before the Court on the parties' proposed claim constructions with respect to disputed terms in two United States patents. The Court has considered all briefs in support of the proposed claim constructions, all related pleadings and documents on file, and oral argument on behalf of all parties and issues the following Order.

BACKGROUND

Plaintiffs Japan Cash Machine Co., Ltd. and JCM American Corporation (together "JCM" or "Plaintiff") allege that Defendant MEI, Inc. ("MEI" or "Defendant") has infringed on certain claims in two of JCM's patents. Specifically, JCM asserts that MEI infringed on U.S. Patent No. 5,372,361 ("the '361 patent"), entitled "Bill Validator with Bar Code Dector," and U.S. Patent No. 5,420,406 ("the '406 patent"), entitled "Bill Handling Apparatus with Exchangeable Pusher for Stacker." JCM and MEI are innovators in designing electronic transaction systems for vending and gaming machines. Both patents-in-suit relate to features of bill validators that receive, authenticate, sort, and stack currency and bar coded tickets. The parties compete for the sales of these bill validators for use in gaming machines to casinos and gaming manufacturers.

On December 2, 2006, JCM filed its Complaint against MEI, alleging two claims of patent infringement. On January 25, 2006, MEI filed its Answer, asserting the affirmative defenses of lack of infringement, patent invalidity, estoppel by prosecution history, unreasonable delay, and lack of notice. MEI also counterclaimed, asking for declaratory relief through a finding of non-infringement and patent invalidity. Pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), the Court has set a hearing for June 1, 2007 to construe the disputed claim terms in the two patents. The parties now bring their proposed construction and rebuttal briefs (# 36, 37, 44, 45) before the Court for the *Markman*

hearing.

I. Legal Standard for Claim Construction

Patent claim construction is a question of law for the Court. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). When interpreting a claim, the Court looks first to the intrinsic evidence of record, which consists of the claims, the specification, and the prosecution history. *Interactive Gift Exp., Inc. v. CompuServe Inc.*, 256 F.3d 1323, 1331 (Fed.Cir.2001). "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996)).

When interpreting the intrinsic evidence, the Court looks first to the actual claim language. *Id.* If the claim language is clear on its face, then the Court considers other intrinsic evidence solely to determine if those sources show a deviation from the claim's clear language. *Id.* The Court should give a claim's words its "ordinary and customary meaning." *Philips v. AWH Corp.*, 415 F.3d 1303, 1312-1313 (Fed.Cir.2005) (en banc) (quotation omitted). However, the Court may construe a claim term differently from its ordinary meaning in at least four instances. *See, e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366-67 (Fed.Cir.2002). First, if a patentee "acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history." *Id.* at 1366. Second, "if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention." *Id.* at 1366-67. Third, if a patentee's chosen term " 'so deprive[s] the claim of clarity' as to require resort to the other intrinsic evidence for a definite meaning." *Id.* at 1367 (quoting *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed.Cir.1999)). Finally, if a patentee phrased the claim in step-or means-plus-function format, "a claim term will cover nothing more than the corresponding structure or step disclosed in the specification, as well as equivalents thereto...." *Id.* (citations omitted).

In construing a claim term's ordinary meaning, the Court must view the terms through the lens "of a person of ordinary skill in the art in question" as of the patent application filing date. *Philips*, 415 F.3d at 1313. "Importantly, 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." *Id.* For example, other claims in the patent in question may assist in determining a claim term's meaning because courts should generally construe claim terms consistently throughout the patent. *Id.* at 1314. Additionally, differences between claims within the patent may also assist because "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 1314-15. Furthermore, "limitations stated in dependent claims are not to be read into the independent claim from which they depend." *Nazomi Commc'ns, Inc. v. Arm Holdings, PLC*, 403 F.3d 1364, 1370 (Fed.Cir.2005) (citation omitted).

Second, the Court looks to the specification because it " '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.' " *Philips*, 415 F.3d at 1315 (quoting *Vitronics*, 90 F.3d at 1582). In reviewing the specification, the Court must not read into the claims the limitations of particular embodiments and examples appearing in the specification. *Comark Commc'ns., Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed.Cir.1998). The Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." *Philips*, 415 F.3d at 1323.

Third, the Court may consider the prosecution history, which consists of "the complete record of the proceedings before the [Patent and Trademark Office ("PTO")] and includes the prior art cited during the examination of the patent." *Id.* at 1317. The prosecution history "provides evidence of how the PTO and the inventor understood the patent," and it may demonstrate whether the patentee "limited the invention in the

course of prosecution, making the claim scope narrower than it would otherwise be." *Id.* However, "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." *Id.*

If a claim limitation is not clear after reviewing the intrinsic evidence, the Court may then refer to extrinsic evidence such as expert testimony, inventor testimony, dictionaries, and learned treatises. *Interactive Gift Exp., Inc.*, 256 F.3d at 1332. However, "[s]uch instances will rarely, if ever, occur." *Id.* at 1332 (citing *Vitronics*, 90 F.3d at 1585). The Court may consider extrinsic evidence throughout claim construction to understand the underlying technology, and the Court may "consult technical treatises and dictionaries at any time ... to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." *Vitronics*, 90 F.3d at 1584 n. 6. Prior art may render expert testimony inapplicable or unnecessary because it may indicate what those skilled in the art generally believe a certain term means. *Id.* at 1584.

Finally, when construing a means-plus function format, as certain disputed claims here involve, the Court is governed by 35 U.S.C. s. 112, par. 6, which provides: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." The use of the word "means" in a claim creates a rebuttable presumption that the claim is written in mean-plus-function format and that section 112 applies. *Callicrate v. Wadworth Mfg., Inc.*, 427 F.3d 1361, 1368 (Fed.Cir.2005). This presumption is rebutted if the claim itself recites sufficient structure, material, or acts to perform the claimed function. *Id.* at 1368. Construction of a means-plus-function claim involves two steps. First, a court must ascertain the function recited by the claim. Then, it must identify the structures in the specification that perform the recited function. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed.Cir.2006). The structures disclosed in the specification for performing the function recited by a "means for" element are limitations on a claim written in means-plus-function format. *De Graffenried v. United States*, 20 Cl.Ct. 458, 481 (Ct.Cl.1990); *Frank's Casing Crew*, 389 F.3d at 1378.

On appeal, a district court's claim construction is reviewed de novo. *See, e.g.*, *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1248 (9th Cir.2005) (citing *Laitram Corp. v. NEC Corp.*, 62 F.3d 1388, 1392 (Fed.Cir.1995)).

II. The '406 Patent

The '406 patent discloses a bill validator with a bar code detector that can authenticate and ascertain the value of currency and gaming tickets. The first bill validation devices used in gaming machines were limited by the fact they could only pay out in coins or tokens, leading to rapid coin depletion and the need for continuous restocking. The '406 patent intended to resolve these problems by incorporating a bar code detector/printer that could both print out bar coded tickets and redeem these tickets for use. These devices are now commonly known as "Ticket-In-Ticket-Out," or "TITO," and have become almost universally adopted by casinos.

The '406 patent is directed to the apparatus and program logic for performing the dual functions of validating currency and reading bar code containing tickets. The bill or ticket is received through a passageway, directed through a transport mechanism, and read by an inlet, optical, magnetic, infrared, or bar code sensor positioned over the currency or ticket as it passes underneath at a controlled speed. For currency, the discriminator means validates the bill by detecting its magnetic or optical features. For documents or tickets, a bar code sensor transmits information received from the bar code to a processor, which receives the data and compares it to data stored in a memory device for validation. The '406 bill validator thus performs the dual functions of bill and bar code validation.

The '406 patent issued on May 30, 1995 based on a U.S. application filed on December 28, 1993, claiming priority to a Japanese application filed on December 28, 1992. The Examiner initially rejected the claims on August 12, 1994, arguing that it would be obvious to incorporate the infrared bar code and analysis of prior patent Treacy (U.S. Patent No. 3,163,758) into the bill coin changer of prior patent Steiner (U.S. Patent No. 4,482,058). Treacy claims a process to read letters or code written in a specific manner. Steiner includes means for validating a specific type of currency, but not tickets or coupons. In its November 14, 1994 Amendment, the Applicants distinguished the ' 406 Patent claims from the prior art, arguing that it would not be obvious to combine a device like Treacy to Steiner because each was specifically designed to only validate one type of tender, and to reject all other types. Following a clarifying amendment, the Examiner issued the '406 application. MEI contends that other prior art, not mentioned in the prosecution history, disclose similar gaming machines that include a dual purpose bill validator capable of accepting both currency and coupons. See Bittner patent, U.S. Patent No. 5,290,033 ("033 patent" or "Bittner").

The '406 patent includes one independent claim and thirteen dependent claims. JCM asserts infringement of claims 1, 3, 4, 7, 8, 9, 11, and 12. The parties now agree on the construction of claims 3, 4, 9, 11, and 14. Claims 1, 7, 8, and 12 remain disputed.

A. Claim 1

1. " A bill validator comprising conveyer means for transporting a bill inserted from an inlet to an outlet along a passageway "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
A bill validator comprising conveyer means for transporting a bill inserted from an inlet to an outlet along a passageway	The conveyer means includes one or more conveyer belts wound around one or more rive pulleys, rollers or wheels, and a drive motor. Equivalents include conveyer rollers or wheels which act directly upon the bills or other documents in the passageway, with or without intervening belts or the like.	This term encompasses the structures disclosed in the specification that are clearly linked to the recited function of "transporting a bill inserted from an inlet to an outlet along a passageway," if any, and their equivalents. This claim limitation is limited to: A pair of conveyer belts wound around a pair of drive pulleys and a motor and their structural equivalents.

Court's Construction: "The conveyer means includes structures with one or more conveyer belts wound around one or more rive pulleys, rollers or wheels, and a drive motor, and their equivalents."

The parties agree that this claim is written in means-plus-function format, triggering 35 U.S.C. s. 112, par. 6. Under this provision, a means-plus-function construction requires that a "claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." Construction of a means-plus-function claim involves two steps. First, a court must ascertain the function recited by the claim. Then, it must identify the structures in the specification that perform the recited function and their equivalents. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed.Cir.2006). The structures disclosed in the specification for performing the function recited by a "means for" element are limitations on a claim written in means-plus-function format. *De Graffenried v. United States*, 20 Cl.Ct. 458, 481 (Ct.Cl.1990); *Frank's Casing Crew*, 389 F.3d at 1378.

Here, the specification provides that "a pair of conveyer belts ... wound around a pair of drive pulleys" will perform the transporting function. ' 406 Patent at 3:62-64. The specification further provides that "a conveyor motor" and "pusher roller" would urge the bill toward the magnetic sensors. *Id.* at 4:41-45, 4:66-

67. JCM argues that the claim covers various combinations of these identified structures and their equivalents, including a drive motor to drive one or more conveyor belts wound around one or more drive pulleys, rollers or wheels positioned along a bill passageway. MEI counters s. 112 limits the claim to the structure disclosed in the specification, meaning a pair of conveyer belts wound around a pair of drive pulleys driven by a motor. Section 112 does impose a limiting construction, but it allows for consideration of equivalents to the structure identified in the specification. A conveyer system comprised of one or more belts and pulleys would be functionally equivalent to the specified structure with "pairs" of belts and pulleys. Therefore, the Court adopts JCM's proposal with minor alteration.

2. " sensor means positioned in the vicinity of said passageway for detecting a magnetic or optical feature of the bill "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
Sensor means positioned in the vicinity of said passageway for detecting a magnetic or optical feature of the bill	A sensor that performs the recited function. If the specification is used, structures disclosed in the specification for performing the function of "detecting a magnetic or optical feature of the bill," include any of the magnetic sensors, inlet sensors, and infrared sensors, located so as to detect features of the bill or document as it moves along the passageway.	<p>The term encompasses the structures disclosed in the specification that are linked to the recited function of "detecting a magnetic or optical feature of the bill," if any, and their equivalents.</p> <p>This claim is limited to: three inlet sensors and an infrared sensor, all located adjacent to the path of the bill and their structural equivalents.</p>

Court's Construction: "A sensor that performs the recited function. Structures disclosed in the specification for performing the function of detecting a magnetic or optical feature of the bill, include any of the magnetic sensors, inlet sensors, and infrared sensors, and their equivalents, located so as to detect features of the bill or document as it moves along the passageway."

The parties dispute whether this claim is written in means-plus-function format. The element contains means and function language, but also recites some structure within the claim for performing the function, which would remove the claim from s. 112's analysis. This structure, however, does not appear sufficient to recite the stated function, so means-plus-function analysis is used. The specification teaches that a plurality of sensors may be used to perform this function of "detecting a magnetic or optical feature of the bill":

The bill validator is equipped with a magnetic sensor 20 of a magnetic head or Hall IC mounted in vicinity of the passageway 13 to detect ferrous ink printed in predetermined positions of the bills.... [M]ounted on the frames 30 and 31 are three inlet sensors 21 to 23, bar code sensors 24 and 25 and infrared sensor 26 each of which is a photo-coupler including a light emitting diode (LED) and light receiving transistor (LRT) so that the photo coupler photoelectrically converts into electric signals light which is reflected on or passed through a bill or document.

'406 Patent at 3:65-4:7. The specification suggests that the validator may include a magnetic sensor, a Hall IC, inlet sensors, and an infrared sensor. The claim also specifically states that the sensors may detect magnetic *or* optical features of a bill. Therefore, there is no reason to limit the claim to "three inlet sensors and an infrared sensor" as MEI suggests. The claim language is open-ended and the specification teaches that a variety of sensors can be used to detect the bill properties. Thus, this claim should be constructed to cover any of the various sensors positioned in the bill passageway. As such, the Court adopts JCM's

construction....

3. " a bar code detector means for photoelectrically converting bar code pattern printed on a document inserted into said inlet into existing electric signals "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
a bar code detector means for photoelectrically converting bar code pattern printed on a document inserted into said inlet into existing electric signals	<p>Structures for performing the function of photoelectrically converting a bar code pattern printed on a document inserted into said inlet into electric signals, include photocouplers such as light emitting diodes and/or light receiving transistors.</p> <p>Equivalent structures include any of the various bar code detectors known to a person of ordinary skill in the art that can convert light which is reflected on or passed through a document into electric signals.</p>	<p>This term encompasses structures disclosed in the specification that perform the recited function of "photoelectrically converting bar code pattern printed on a document inserted into said inlet into electric signals," if any, and their equivalents.</p> <p>The function of transforming the bar code set forth on a document into electrical signals that represent the bar code in its entirety.</p> <p>This term is limited to bar code sensors, which are themselves comprised of a photocoupler including light emitting diodes and light receiving transistors and their structural equivalents.</p>

Court's Construction: "Structures for performing the function of photoelectrically converting a bar code pattern printed on a document inserted into said inlet into electric signals, including photocouplers such as light emitting diodes and/or light receiving transistors. This term is limited to bar code sensors, which are themselves comprised of a photocoupler including light emitting diodes and light receiving transistors and their structural equivalents."

This claim is also written in means-plus-function format. The parties essentially agree that the claim covers bar code sensors which are photocouplers that photoelectrically detect the data on bar code patterns printed on a document. The specification states that "the bar code sensor emits a light beam toward a front surface of the document within the passageway and the LRI of the bar code sensor 25 receives the light beam reflected on the front surface of the bill. Accordingly, the bar code sensors 24 and 25 optically detect bar code printed on either of one of the front and back surfaces of bills." *Id.* at 4:29-35. The bar code detector means literally covers bar code sensors that include light emitting diodes and light receiving transistors. The parties argue over the scope of the bar code sensor claim. JCM contends that equivalent structures include any bar code sensor that can "convert light which is reflected on or passed through a bill or a document into electric signals."

MEI counters that this interpretation is too broad, given the means-plus-function limitation, because the claim and specification only refer to sensors producing electric signals that "represent the bar codes in their entirety." Because the patent language only speaks of the bar code detector photoelectrically converting bar code patterns "printed on documents," and the bar codes printed on documents only contain entire bar codes, MEI maintains that the electric signals represented in this claim limitation must represent a bar code in its entirety. As such, MEI rejects JCM's more expansive interpretation which potentially covers structures that detect magnetic and optical features of bills through a "photoelectrically converting" process. This limitation is not supported by the claim language or specification. Rather, the bar code comparator can perform its matching function by converting specific bar code data to a digital data stream and match that

data with stored information. The bar code comparator need only recognize a correspondence between read and stored bar code data. Therefore, the Court should reject MEI's limiting comparison construction. However, given the limiting nature of s. 112, the Court should also reject JCM's proposed language interpreting equivalent structures so broadly. Section 112 requires that the claim be restricted to the structures identified in the specification and their reasonable equivalents. Therefore, the Court adopts JCM's initial construction, but adds MEI's construction concerning structural equivalents....

4. " said bar code detector means connected with a discriminator means "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
said bar code detector means connected with a discriminator means	The bar code sensors (of the bar code detector) that convert the bar code pattern into electrical signals are electrically connected to the discriminator means.	The bar code sensors that carry out the function of "photoelectrically converting bar code pattern printed on a document inserted into said inlet into electrical signals" are connected with a discriminator means located inside the bill validator.

Court's Construction: "The bar code sensors that carry out the function of 'photoelectrically converting bar code pattern printed on a document inserted into said inlet into electrical signals' are connected with a discriminator means located inside the bill validator."

This claim language was inserted into claim 1 during prosecution. It appears the amendment was added for purposes of clarification rather than limitation. The parties only dispute whether the discriminator means must be located inside the bill validator. The claim only states that the bar code detector means is "connected with a discriminator means," but does not specify the location. *Id.* at 7:42-44. The specification does not state where the discriminator means is to be located. However, it does imply that the discriminator means is located inside the bill validator. It teaches that the magnetic sensors, inlet sensors, bar code sensors, and infrared sensors are connected to corresponding input terminals of the CPU. *Id.* at 4:59-64. Later, the specification states that the "CPU is composed of a one-chip microcomputer and discrete ICs or circuits which are not shown but comprises discriminator means connected with ... bar code sensors." *Id.* at 5:3-6. Drawing on these passages from the specification, MEI argues that because the CPU is an internal device and the discriminator means is closely connect to it, the discriminator means must also be located inside the validator. This argument is persuasive. Therefore, MEI's proposal limiting the discriminator means' location to inside the validator is adopted.

5. " said discriminator means for receiving signals from said sensor means to generate outputs in order to drive said conveyor means when said discriminator means detects a predetermined magnetic or optical pattern for a genuine bill "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
said discriminator means for receiving signals from said sensor means to generate outputs in order to drive said conveyor means when said discriminator means detects a predetermined magnetic or optical pattern for a genuine bill	The discriminator means is a programmable or programmed device containing software or other stored machine instructions that performs the function of activating the conveyor means when electric signals received from the sensors coincide with predetermined magnetic or optical patterns of a genuine bill or bar coded ticket.	Said discriminator means performs the function of activating the conveyor means when electric signals received from the sensor means coincide with pre-selected magnetic or optical patterns of a genuine bill.

A bill memory, bill comparator, a ferrous detector and their equivalents.

Court's Construction: "The discriminator means is a programmable or programmed device containing software or other stored machine instructions that performs the function of activating the conveyor means when electric signals received from the sensors coincide with predetermined magnetic or optical patterns of a genuine bill."

First, the parties dispute whether this claim triggers the means-plus-function analysis of s. 112. The claim does not describe sufficient structure to overcome the presumption caused by use of "means" as the discriminator means is described as including a bar code memory, bar code comparator, and so forth. Therefore, this claim is interpreted as a means-plus-function limitation. The parties further dispute the scope of the claim. JCM argues that the specification provides for any programmable device that communicates with the sensors and drives the conveyor after detecting a predetermined magnetic or optical pattern. MEI responds that the claim only covers bill authentication, not bar code authentication. MEI further argues that the discriminator means must include a ferrous detector. The specification supports JCM's broader construction. The patent repeatedly teaches that the bill validator contains sensors and discriminator means capable of authenticating both ferrous labeled bills and bar coded documents. See *Id.* at 5:46-7:12. Therefore, MEI's limiting construction should be rejected and the Court adopts JCM's construction.

6. " wherein said discriminator means comprises a bar code memory for storing predetermined bar code patterns "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
wherein said discriminator means comprises a bar code memory for storing predetermined bar code patterns	A memory device or structure associated with the programmable or programmed device which can store data that represent predetermined bar code patterns.	A structure of the discriminator means that stores electrical signals that represent a pre-selected list of possible bar code patterns set forth on a document in their entirety.

Court's Construction: "A structure of the discriminator means that stores electric signals that represent a pre-selected list of possible bar code patterns."

As noted previously, the parties dispute whether the discriminator means can be located anywhere, or whether it must reside in the validator. Here, the parties dispute whether the bar code memory is a structure associated with or contained within the discriminator means. The claim language and specification support MEI's limiting proposal. The claim states that the bar code memory is part of the discriminator means: "said discriminator means comprises a bar code memory...." *Id.* at 7:49-51. Furthermore, as previously discussed, the specification places the discriminator means inside the bill validator as part of the internal CPU. This suggests the bar code memory must be located inside the bill validator, and not in any "operative location," as JCM suggests. MEI also argues that the bar code comparing function requires that the bar code pattern printed on a document in its entirety be matched with bar code patterns stored in the bar code memory. There is little support for such an interpretation in the specification. The specification only states that "the bar code comparator compares bar code signals read out through bar code sensors 24, 25 from the document with bar code signals stored in the bar code memory." *Id.* at 5:29-32. Nowhere does the specification teach that the bar code memory stores images of the bar codes. Rather, it only requires that data corresponding to bar codes be stored. Therefore, the Court adopts MEI's proposal, but deletes the limitation requiring that bar code patterns be stored as images from documents in their entirety.

7. " and a bar code comparator for comparing bar code signals read out through said bar code detector means with bar code signals stored in said bar code memory "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
and a bar code comparator for comparing bar code signals read out through said bar code detector means with bar code signals stored in said bar code memory	The bar code comparator may be an integrated circuit, or a programmable or programmed device such as a central processing unit (CPU) that compares the signals or data received from the bar code detector to signals or data stored in the bar code memory.	<p>Bar code comparator: an integrated circuit of the CPU inside a bill validator that performs the claimed function of comparing bar code signals read out through said bar code detector means with bar code signals stored in said bar code memory.</p> <p>Comparing bar code signals read out through said bar code detector means with bar code signals stored in said bar code memory: determining whether the electric signals received from the bar code detector means which represented the bar code pattern printed on a document in its entirety are the same as the electric signals representing any pre-selected bar code pattern stored in the bar code memory.</p>

Court's Construction: "An integrated circuit of the CPU inside a bill validator that compares the signals or data received from the bar code detector to signals or data stored in the bar code memory."

First, the parties dispute the nature and location of the bar code comparator. As previously noted, the claim language clearly states that the discriminator means "comprises" the bar code memory and bar code comparator. Thus, these elements are structures of the discriminator means. As the discriminator means is tied to the CPU unit, an internal device, the bar code memory and bar code comparator are also located within the bill validator. Second, the parties dispute the process the comparator uses to match scanned bar codes with stored valid bar codes. MEI seeks a limiting construction requiring that the bar code be imaged as an electrical pattern from the entire document. This limitation is not supported by the claim language or specification. Rather, the bar code comparator can perform its matching function by converting specific bar code data to a digital data stream and match that data with stored information. The bar code comparator need only recognize a correspondence between read and stored bar code data. Therefore, the Court rejects MEI's limiting comparison construction. The claim is construed utilizing MEI's definition of a bar code comparator, and JCM's stated method of comparison.

8. " after or before said discriminator means decides whether said document is a genuine bill "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
after or before said discriminator means decides whether said document is a genuine bill	The bar code comparator of the discriminator means is capable of comparing the bar code signals to the memory before or after the bill comparator determines whether the document inserted in the bill validator is a genuine bill.	Agrees with JCM's proposal

Court's Construction: "The bar code comparator of the discriminator means is capable of comparing the bar code signals to the memory before or after the bill comparator determines whether the document inserted in the bill validator is a genuine bill."

As MEI agrees with JCM's proposed construction, and the proposal is reasonable, the Court adopts this interpretation....

9. " *said bar code comparator generating a drive signal to said conveyor means to transport said document to said outlet when said bar code comparator detects coincidence of said bar code signals from said sensor means and bar code memory* "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
said bar code comparator generating a drive signal to said conveyor means to transport said document to said outlet when said bar code comparator detects coincidence of said bar code signals from said sensor means and bar code memory	The bar code comparator sends an electrical signal that is communicated to the controller of the motor of the conveyor that causes the document to move towards the outlet of the passageway after the determination of a correspondence between the signal or data from the bar code sensor and the signals or data stored in the bar code memory.	The bar code comparator sends an electrical signal to the conveyor means that cause the document to move towards the outlet after the comparator first determines that a one-to-one correspondence exists between the bar code signals from the sensor means and the bar code signals stored in the bar code memory.

Court's Construction: The bar code comparator sends an electrical signal that is communicated to the controller of the motor of the conveyor that causes the document to move towards the outlet of the passageway after the determination of a correspondence between the signal or data from the bar code sensor and the signals or data stored in the bar code memory.

MEI first contends that this claim language is indefinite because "sensor means" is improperly used. MEI argues that the specification and prosecution history disclose that sensor means refer to sensors used to detect the magnetic or optical sensors of a bill, whereas bar code sensors refer to sensors that read and validate bar code patterns on documents. Thus, MEI maintains that sensor means and bar code sensors are separate structures with separate functions and this claim's relation of sensor means to bar code comparison renders the claim indefinite and invalid. In support of this argument, MEI first notes that the specification and drawings distinguish between sensor means on one hand and bar code means on the other. The specification does identify "inlet sensors," "infrared sensors," and "bar code sensors." *Id.* at 4:1-3. However, the specification does not distinguish between "sensor means" and "bar codes sensors." MEI also points to the prosecution history, which relates "sensor means" to detecting the magnetic and optical features of a bill, and "bar code sensors" to document validation. '406 Patent Amendment at 3-4. While the prosecution history uses the term, "sensor means" to describe inlet and infrared sensors, it is reasonable to interpret the term to describe sensors in general, whether inlet, infrared, or bar code. The specification and claim language nowhere distinguish between sensor means on one hand and bar code sensors on the other. Therefore, the reference to sensor means delivering bar code signals does not render claim 1 indefinite.

Aside from JCM's substitution of "bar code sensor" for "sensor means," the parties' proposed constructions do not materially differ. The Court finds that "sensor means" is just a general description for any kind of sensor, including bar code sensors, rendering the two constructions the same. For sake of clarity as to the type of sensor involved, JCM's proposal is adopted.

B. Claim 3

"The bill validator of claim 1 wherein said sensor means includes infrared sensor which generates

permeation pattern of infrared ray passing through said documents"

Stipulated Construction: "The bill validator having all of the limitations of claim 1 in which the sensor means includes an infrared sensor that generates a permeation pattern by passing infrared light through documents inserted into the bill validator."

C. Claim 4

"The bill validator of claim 1 wherein said sensor means includes optical sensors positioned adjacent to said inlet of the bill validator"

Stipulated Construction: "The bill validator of claim 1 and the structures corresponding to at least one of the optical sensors is located next to an entryway of the bill validator...."

D. Claim 7

1. " The bill validator of claim 1 wherein said discriminator means includes a bill memory for storing predetermined magnetic or optical patterns "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
The bill validator of claim 1 wherein said discriminator means includes a bill memory for storing predetermined magnetic or optical patterns	The bill validator having all of the limitations of claim 1 and a bill memory for storing predetermined magnetic or optical patterns of a genuine bill.	A structure of the discriminator means that stores a pre-selected list of possible magnetic or optical patterns of a genuine bill.

Court's Construction: The bill validator having all of the limitations of claim 1 and a bill memory for storing predetermined magnetic or optical patterns of a genuine bill.

The parties essentially agree on the interpretation of this claim. The Court adopts JCM's proposal because it is more clear and better tracks the language of the claim.

2. " a bill comparator for comparing magnetic or optical signals read out through said sensor means with bill pattern signals stored in said bill memory "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
a bill comparator for comparing magnetic or optical signals read out through said sensor means with bill pattern signals stored in said bill memory	An integrated circuit or a portion of a CPU that compares magnetic or optical signals read out through said sensors with bill pattern signals stored in the bill memory.	Invalid; or

Bill comparator: an integrated circuit of the CPU in a bill validator that performs the function of "comparing magnetic or optical signals read out through said sensor means with bill pattern signals stored in said bill memory."
 Comparing function: the function of determining whether magnetic or optical signals received from the sensor means coincide with any bill pattern signals stored in the bill memory which represent a preselected list of possible magnetic or optical patterns of a genuine bill.

Court's Construction: "An integrated circuit or a portion of a CPU that compares magnetic or optical signals

read out through said sensors with bill pattern signals stored in the bill memory."

MEI first contends that claim 7 is invalid because, as a dependent claim, it does not "specify a further limitation of the subject matter claimed." 35 U.S.C. s. 112, para. 4. MEI notes that claim 7 merely recites the same structures and discriminator means disclosed in claim 1. However, this dependent claim does add a further limitation on independent claim 1. Whereas claim 1 defines a discriminator means as having a *bar code* memory and *bar code* comparator, claim 7 defines the discriminator means as having a *bill* memory and *bill* comparator for bill comparison and validation. Thus, claim 7 discloses a bill validator based on claim 1 that utilizes a bill memory and bill comparator to perform bill authentication through matching magnetic or optical patterns. The claim is valid.

Apart from the issue of validity, MEI's proposed construction of a bill comparator should be adopted. As previously discussed, the claim language and specification imply that the discriminator means, bill memory, and bill comparator are connected to the internal CPU. Therefore, MEI's construction placing the comparator in the validator is preferred. MEI's construction of the magnetic and optical data matching process better comports with the specification, which teaches, "the CPU 40 compares the received magnetic detection signals with the predetermined magnetic patterns stored in the magnetic pattern memory to determine whether or not these patterns are coincident and thereby to determine whether the inserted bill is genuine or not." '406 Patent at 6:11-19. Therefore, the Court adopts MEI's proposed construction.

3. " said bill comparator generating a drive signal to said conveyor means to transport said bill to said outlet when said bill comparator detects coincidence of said bill pattern signals from said sensor means and bill memory "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
said bill comparator generating a drive signal to said conveyor means to transport said bill to said outlet when said bill comparator detects coincidence of said bill pattern signals from said sensor means and bill memory.	The bill comparator sends an electrical signal to the conveyor means that causes the bill to move towards the outlet after the bill comparator determines that a correspondence exists between the bill pattern signals detected by the sensors and the magnetic or optical patterns stored in the bill memory.	The bill comparator performs the function of sending an electrical signal to the conveyor means that causes the bill to move towards the outlet after the bill comparator first determines that a one-to-one correspondence exists between the bill pattern signals detected by the sensor means and the predetermined magnetic or optical patterns stored in the bill memory.

Court's Construction: "The bill comparator sends an electrical signal to the conveyor means that causes the bill to move towards the outlet after the bill comparator determines that a correspondence exists between the bill pattern signals detected by the sensors and the magnetic or optical patterns stored in the bill memory."

The parties essentially agree on the interpretation of this claim, with MEI only insisting on inclusion of language defining, "one-to-one correspondence" and "predetermined ... patterns." The Court finds no need to add these limiting phrases and construes the claim according to JCM's simpler proposal.

E. Claim 8

"The bill validator of claim 1 wherein said optical sensor produces outputs which are used for validation of a bill"

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
The bill validator of claim 1 wherein said optical sensor	The bill validator having all of the limitations of claim 1 and in which the sensors for detecting	Claim 8 is not amenable to

produces outputs which are used for validation of a bill

optical features produce outputs used to determine validity of genuine notes.

construction, and it is, therefore, indefinite.

Court's Construction: "The bill validator having all of the limitations of claim 1 and in which the sensors for detecting optical features produce outputs used to determine validity of genuine notes."

MEI argues that claim 8 is indefinite and invalid because "optical sensors" do not refer to any sensors in the specification. It notes that an optical sensor cannot refer to a bar code sensor or lever sensor because these sensors are used for document validation, not bill validation. It further argues that optical sensor cannot refer to an infrared sensor under the doctrine of claim differentiation because an infrared sensor is already claimed in claim 3. *See Versa Corp. v. Ag-Bag Int'l Ltd.*, 392 F.3d 1325, 1330 (Fed.Cir.2004). However, this argument fails as "optical sensor" in claim 8 appears to correspond to "inlet sensors" from the specification. The patent teaches that inlet sensors detect "infrared permeation pattern of the coupon" and compares that pattern with a stored memory pattern for validation. '406 Patent at 6:68-7:12. Therefore, claim 8 admits a definite construction and the Court adopts JCM's construction, which is otherwise reasonable.

F. Claim 9

"The bill validator of claim 1 wherein said bar code memory and said bar code comparator are provided in said discriminator means"

Stipulated Construction: "The bill validator having all of the limitations of claim 1 and in which the bar code memory and bar code comparator are located inside the discriminator means."

G. Claim 11

"The bill validator of claim 1 wherein said discriminator means detects bar code before detection of whether or not the document is a genuine bill"

Stipulated Construction: "The bill validator having all of the limitations of claim 1 and in which the discriminator means detects whether or not a bar code is printed on a document before detecting whether the document is a genuine note...."

H. Claim 12

"The bill validator of claim 1 further comprising a motor encoder for generating pulses to detect exact position of said document within said passage"

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
The bill validator of claim 1 further comprising a motor encoder for generating pulses to detect exact position of said document within said passage.	The bill validator having all of the limitations of claim 1 and also including a motor encoder for generating pulses in response to rotation of the motor in order to detect exact position of the document within the passageway.	A bill validator having all of the limitations of claim 1 which also has a motor encoder for generating electric pulses in response to rotated angles of the motor as the document moves along the conveyor means in order to detect the exact position of the document within the passageway.

Court's Construction: "The bill validator having all of the limitations of claim 1 and also including a motor encoder for generating pulses in response to rotation of the motor in order to detect exact position of the document within the passageway."

The parties essentially agree on this claim's interpretation. The only material difference between the proposals is that MEI limits the claim by only accounting for "electric" pulses. The specification teaches that the motor encoder generates both magnetic and electric pulses. *Id.* at 5:11-16. Therefore, MEI's limitation is

rejected and the Court adopts JCM's construction.

I. Claim 14

"The bill validator of claim 1 wherein said sensor means includes at least an inlet sensor capable of detecting overlapped bills from the amount of light passing through the bill"

Stipulated Construction: "The bill validator having all of the limitations of claim 1 including at least one sensor located adjacent to an entryway of the bill validator that detects overlapped bills by measuring the amount of infrared light that passes through the bill or overlapped bills."

III. *The '361 Patent*

The '361 patent claims a bill validator component called a stacker. A stacker is a storage box for authenticating currency as it accumulates over time. Typically, a bill validator is assembled inside a vending or gaming machine. A customer places the currency into an inlet, which is attached to a transporter. The transporter moves the currency past sensors that authenticate and value the note. Once authenticated, the conveyor moves the currency to the stacker where it is stored for subsequent removal. To remove the currency, the stacker is detached from the transporter and removed from the inside. The '361 patent discloses such a bill handling device that contains a removable pusher and stacker. It distinguishes itself from the prior art on the grounds that previous stackers were not detachable, and thus could not be removed, exchanged or repaired without removing the entire bill validators.

The '361 patent issued on December 13, 1994. It has one independent claim and eight dependant claims. JCM asserts infringement of claims 1, 2, 4, 6, and 7. The parties agree on the construction of claim 7 and dispute the meaning of claims 1, 2, 4, and 6.

A. Claim 1

1. " *In a bill handling apparatus including a validator for checking a bill fed into the apparatus whether or not said bill is genuine* "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
In a bill handling apparatus including a validator for checking a bill fed into the apparatus whether or not said bill is genuine	A bill handling apparatus that is provided with a paper money detecting device, i.e., a validator, that identifies the authenticity and/or denomination of a bill, bank note, or other paper currency inserted into the apparatus.	A money exchanging or vending machine that is provided with a paper money detecting device, i.e., the validator, that identifies the authenticity and/or denomination of a bill, bank note, or other paper currency inserted into the apparatus.

Court's Construction: "A bill handling apparatus that is provided with a paper money detecting device, i.e., a validator, that identifies the authenticity and/or denomination of a bill, bank note, or other paper currency inserted into the apparatus."

The parties essentially agree on the interpretation of this claim, with the only material difference being MEI's limitation of "a bill handling apparatus" to a money exchanging or vending machine containing a validator. There is no reason to narrowly define the claim to only include a money exchanging or vending machine. While the patent description of the prior art mentions that the proposed invention might be included in these machines, the patent nowhere indicates that these are the only possible embodiments. '361 Patent at 1:13-17. Therefore, the Court adopts JCM's proposal.

2. " *a stacker detachably mounted in the apparatus and having a casing for defining a compartment to store the accumulated bills* "

Stipulated Construction: "A box that houses accumulated bills for storage and removal and that is capable of being detached from and re-attached to the bill handling apparatus."

3. " a transporter for transporting the bill along a passageway from said validator to said stacker, the improvement comprising: a chamber defined by said casing of said stacker "

Stipulated Construction: "Transporter" clause: "A structure for conveying the bill along a passageway from the validator to the stacker." "Chamber" clause: "A space within the casing of the stacker that houses the pusher."

4. " a pusher removably located within said chamber of said stacker and drivingly connected with said transporter for pushing the bill into the compartment "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
a pusher removably located within said chamber of said stacker and drivingly connected with said transporter for pushing the bill into the compartment;	A pusher, a device for pushing bills from the chamber, can be inserted into and removed from the chamber of the stacker. The transporter is coupled to the pusher to provide a drive force that cause the pusher to push the bill into the compartment of the stacker.	A device for pushing bills from the chamber to the compartment is inserted into and removed from the chamber, the device is coupled to the transporter such that operation of the transporter causes the device to push the bill from the chamber into the compartment.

Court's Construction: "A pusher, a device for pushing bills from the chamber, can be inserted into and removed from the chamber of the stacker. The transporter is coupled to the pusher to provide a drive force that cause the pusher to push the bill into the compartment of the stacker."

The parties essentially agree on this interpretation. JCM cautions that MEI's proposal is potentially unclear because it implies that all transporter operation causes pusher motion. The specification teaches that in some cases transporter operation does not trigger movement. *Id.* at 6:50-58. Therefore, JCM's proposal is more accurate and is adopted.

5. " an opening formed in said casing in the vicinity of said chamber for passing said pusher "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
an opening formed in said casing in the vicinity of said chamber for passing said pusher;	The casing has an opening large enough to allow the pusher to be inserted through the opening into the chamber.	An aperture fashioned within the body of the casing through which the pusher is passed, located in an area of the casing near the chamber, and which occupies less than the entire surface of any side wall of the casing within which it is located.

Court's Construction: "The casing has an opening large enough to allow the pusher to be inserted through the opening into the chamber, and is located in an area of the casing near the chamber."

The parties dispute two points: the need to discuss the vicinity of the opening to the chamber, and the size of the opening. JCM's construction largely ignores both issues and MEI addresses them. First, MEI contends that the claim language, "in the vicinity of said chamber," indicates that the opening must be located near the chamber. Figure 3 of the specification supports this interpretation as it shows the pusher being inserted through the opening 50a, which is adjacent to the chamber 53. Therefore, MEI's proposal appropriately places the opening near, or "in the vicinity," of the chamber. JCM's argues that this

interpretation improperly limits the claim to a preferred embodiment from the specification. *See* Phillip, 415 F.3d at 1323. However, this argument overlooks the fact that the language, "in the vicinity," is imported from the claim, not the specification. Therefore, MEI's location limitation is adopted.

As to the size of the opening, MEI contends that it must be smaller than the entire surface of the casing wall in which it is located. For support, MEI notes that the claim language provides that the opening is "formed in [the] casing," and thus should be less than the size of the casing. MEI also observes that the opening shown in figure 3 of the specification occupies less than the entire surface area of the side wall of the casing. It further argues that adopting JCM's broad opening interpretation would allow the doorway to serve as the opening for the pusher, when it would be blocked by the stopper. MEI's proposed size limitation appears to improperly incorporate features described in the specification into this claim limitation. The fact that the opening is "formed in [the] casing," and that figure 3 show an opening smaller than the side wall of the casing do not mean the opening must always be that size. Rather, it seems possible that the opening could occupy the entire wall of a casing and still function as intended. Therefore, JCM's interpretation that the opening be "large enough to allow the pusher to be inserted through the opening into the chamber" is reasonable. The Court adopts JCM's construction, but add MEI's limitation concerning the location of the opening.

6. " a slit-shaped inlet formed in a base plate of said pusher for receiving the bill within said pusher "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
a slit-shaped inlet formed in a base plate of said pusher for receiving the bill within said pusher	A slot or opening at the base of the pusher through which a bill can be inserted edgewise to the pusher assembly.	A narrow opening fashioned within the base plate of the pusher through which the bill is capable of being passed. A "base plate" is a structural component of the pusher that forms a part of the side wall of the casing when the pusher is passed into the chamber through the opening.

Court's Construction: "A slot or opening at the base of the pusher through which a bill can be inserted edgewise to the pusher assembly."

The parties essentially agree on the interpretation of the "slit-shaped inlet." JCM's construction is adopted as it more clearly indicates that the bill is received inside the pusher, as the claim discloses. The parties disagree over the proper interpretation of the "base plate," with MEI contending that the base plate must form part of the side wall of the casing, and JCM opposing this reading but providing no alternate interpretation. Based on figure 4 and the specification, the parties agree that the base plate is an L-shaped structure of the pusher. *See* '361 Patent at 5:35-36. However, there is no statement from the claim or specification stating that the base plate must form part of the side wall. While figure 4 suggests this is the case, there is no need to limit this claim by interpreting base plate to always form part of the side wall. Therefore, JCM's construction is adopted.

7. " said inlet being connected to an exit of the passageway of the transporter "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
said inlet being connected to an exit of the passageway of the transporter.	The slot or opening aligned with an opening at the exit of the transporter passageway.	The portion of the pusher base plate forming the slit-shaped inlet contacts the structures that define the passageway at the rear exit of the transporter.

Court's Construction: "The portion of the pusher base plate forming the slit-shaped inlet contacts the

structures that define the passageway at the rear exit of the transporter."

MEI argues that JCM's interpretation is lacking because it fails to account for the engagement of the pusher with the transformer. The specification holds that "the stacker 50 is inserted into the frame 2 of the apparatus so that the inlet 59 of the pusher is connected with the rear exit 22b of the guide members 22." *Id.* at 7:41-43. MEI notes that it also provides that "at the same time, the passive gear 44 of the pusher 30 comes into engagement with the end gear 26b to transmit rotating force from the passive gear 44 to the end gear 26c." As the claim teaches that the inlet is "connected" to the transporter exit, the specification supports MEI's construction and it is adopted.

B. Claim 2

1. " The bill handling apparatus of claim 1, wherein said transporter comprises a motor for driving an endless belt and "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
The bill handling apparatus of claim 1, wherein said transporter comprises a motor for driving an endless belt and	The bill handling apparatus having all of the limitations of claim 1 and, a motor that powers the movement of an endless belt around one or more rollers in the transporter.	A motor powers the movement of an endless belt in the transporter and

Stipulated Construction: "A motor powers the movement of an endless belt in the transporter and"

2. " an end gear driven by said motor "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
an end gear driven by said motor	a gear located near the exit of the passageway that is powered by the motor.	a gear located in the transporter near the exit of the passageway of the endless belt that is powered by the motor

Court's Construction: "a gear located near the exit of the passageway that is powered by the motor."

The parties essentially agree on this claim interpretation. JCM only cautions that MEI's construction of the "end gear" is confusing because of the inclusion of "endless belt" in the interpretation. The belt does not solely define the passageway, so this inclusion is unnecessary and potentially confusing. Therefore, JCM's proposal is adopted.

3. " said pusher comprises a passive gear for operating link members to push said bill from the chamber into the compartment, said passive gear being brought into engagement with said end gear of the transporter for driving connection "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
said pusher comprises a passive gear for operating link members to push said bill from the chamber into the compartment,	a driven passive gear that drives link members or arms that extend to push the bill from the chamber into the compartment of the stacker.	The claim limitation "passive gear" means: A gear that depends on the operation of the end gear for its operation.

The claim limitation "link members to push said bill from the chamber into the compartment" means: An X shaped structure attached to the

means. An X-shaped structure attached to the pusher and movable by the motor to mechanically push a bill from the chamber into the compartment of the stacker.

Agrees with JCM.

said passive gear being brought into engagement with said end gear of the transporter for driving connection. The motor drives the passive gear of the pusher through engagement with the end gear of the transporter.

Court's Construction: "A driven passive gear that drives link members or arms that extend to push the bill from the chamber into the compartment of the stacker. The motor drives the passive gear of the pusher through engagement with the end gear of the transporter."

The parties agree on the interpretation of the latter clause, "said passive gear ...", and JCM's proposal is adopted. The Court also construes the first clause according to JCM's proposal. The only difference between the two constructions is that in interpreting "link members" as an "X-shaped structure," MEI seeks to incorporate embodiments from the specification. The claim language here only states that "link members" push the bill from the chamber into the compartment. The specification teaches that "this pushing device has link members connected into X shape...." *Id.* at 1:46-47. As previously noted, it is improper to add structural limitations from the preferred embodiment into claims. *Philips*, 415 F.3d at 1323. Therefore, the Court construes the claim according to JCM's proposal.

4. " said passive gear being capable of being disengaged from said end gear when said stacker is removed from the transporter "

Stipulated Construction: "The passive gear of the pusher can be taken out of engagement with the end gear of the validator transporter when the stacker is removed from engagement with the validator."

C. Claim 4

1. " The bill handling apparatus of claim 1, wherein said pusher comprises link members and a pusher plate hingedly connected with said link members "

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
The bill handling apparatus of claim 1, wherein said pusher comprises link members and a pusher plate hingedly connected with said link members	The bill handling apparatus having all of the limitations of claim 1 and the pusher has link members or arms that can extend, these are attached by hinges to a plate surface of the pusher.	"Pusher plate": a surface of the pusher that pushes bills from the chamber to the compartment of the stacker. "Link members": An X-shaped structure attached to the pusher and movable by the motor to mechanically push a bill from the chamber into the compartment of the stacker. The pusher plate is connected by hinges to the link members.

Court's Construction: "The bill handling apparatus having all of the limitations of claim 1, and the pusher has link members or arms that can extend, which are attached by hinges to a plate surface of the pusher. The

pusher plate is a surface of the pusher that pushes bills from the chamber to the compartment of the stacker."

The only real dispute between the parties here is that MEI again seeks to define "link members" as an "X-shaped structure," in accordance with the specification. As already discussed, it is inappropriate in claim construction to incorporate a preferred embodiment from the specification in claim construction. Other than this limitation, the parties materially agree on the claim interpretation. As JCM does not account for the term "pusher plate," the Court incorporates MEI's interpretation of the term into JCM's proposed construction.

2. " said link members traveling said pusher plate between the retracted and extended positions by virtue of elastic force of a spring and driving force of a motor provided in the transporter "

Stipulated Construction: "The pusher plate moves towards and away from the compartment as the link members extend and retract about their hinges due to the elastic force of a spring and the driving force of the motor in the transporter."

D. Claim 6

"The bill handling apparatus of claim 1, wherein said stacker comprises a pair of guide members each attached on a side wall of the casing; and a back plate movable along said pair of guide members"

Claim Terms	JCM's Proposed Construction	MEI's Proposed Construction
The bill handling apparatus of claim 1, wherein said stacker comprises a pair of guide members each attached on a side wall of the casing; and a back plate movable along said pair of guide members;	the stacker contains guide members, structures attached to the sidewalls of the casing, and a back plate of the stacker moves along the guide members.	The stacker contains a pair of rails attached to a sidewall of the casing along which the back plate moves.

Court's Construction: "The stacker contains guide members, structures attached to the sidewalls of the casing, and a back plate of the stacker moves along the guide members."

The parties essentially agree on the interpretation of the claim. The only dispute is that MEI seeks to define "guide members" as "rails attached to a sidewall." JCM counters that there is no need to restrict the interpretation of "guide members" to "rails," and argues that the "guide members" can be attached to more than one sidewall. The specification states that the stacker contains cutaways "that respectively engage with a pair of guide members 55 respectively arranged on side walls of the casing." '361 Patent at 7:5-11. Thus, it implies that the guide members can be attached to more than one side wall. Additionally, while "rails" reasonably approximates the intended meaning of "guide members," there is no need to limit the claim with this interpretation. Therefore, JCM's proposal is adopted.

E. Claim 7

"The bill handling apparatus of claim 6, wherein said stacker further comprises a spring for resiliently urging the back plate toward the pusher; and a pair of stoppers each provided at both ends of said guide members to prevent said back plate from entering into a front portion of said compartment."

Stipulated Construction: "The stacker has a spring attached to the back plate which moves the back plate toward the pusher in the chamber through elastic force. The guide members have structures that keep the back plate in a rear portion of the compartment of the stacker."

CONCLUSION

IT IS HEREBY ORDERED that the disputed patent claims in U.S. Patent Nos. 5,372,361 and 5,420,406 are hereby interpreted according to the constructions and stipulations specified in this Order.

D.Nev.,2007.

Japan Cash Machine Co., Ltd. v. MEI, Inc.

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