United States District Court,
N.D. Illinois, Eastern Division.

CUMMINS-ALLISON CORP., an Indiana Corporation,
Plaintiff.
v.
GLORY LTD., a Japanese Corporation; Glory Shoji Co., Ltd., a Japanese Corporation; and Glory (U.S.A.) Inc., a California Corporation,
Defendants.

Feb. 12, 2003.

Patent holder brought infringement action against competitor over patented method and apparatus for currency discrimination and counting. On patent holder's motion for preliminary injunction, the District Court, Schenkier, United States Magistrate Judge, reported and recommended that: (1) phrase "automatically denominating" was disclosure of function; (2) prosecution history limited patent to non-continuous, single-output evaluation device; (3) patent holder failed to show that it was likely that accused products infringed literally or by doctrine of equivalents upon patent; (4) field testing of prototype by customers was not invalidating public use; (5) competitor failed to raise substantial question regarding obviousness; (6) increased speed of invention was not obvious; and (7) patent holder failed to carry its burden of showing that it would suffer irreparable harm.

Motion denied.

Court-Filed Expert Resumes

6,459,806. Construed.

REPORT AND RECOMMENDATION

SCHENKIER**, Magistrate J.**

This is an action for infringement of United States Patent No. 6,459,806 ("the '806 patent"), issued on October 1, 2002 to the plaintiff, Cummins-Allison Corp. ("Cummins"), for a "Method and Apparatus for Currency Discrimination and Counting." Plaintiff filed this action on October 1, 2002-the same day that the '806 patent issued-against Glory (U.S.A.), Inc., a California corporation, and two related Japanese corporations: Glory Ltd., the parent corporation of Glory (U.S.A.), and Glory Shoji Co., Ltd., a separate subsidiary of Glory Ltd. In its complaint, Cummins alleges that all three defendants have infringed all 133 claims of the '806 patent by marketing four models of desktop currency discriminators (which, as more fully discussed below, are machines that are used to determine the authenticity and denomination of a stack of currency, and tabulate its value)-Glory's GFR-110, GFR-120, GFR-S60 and GFR-S80 machines (hereinafter, these will be referred to as the "110," "120," "S60," and "S80," respectively).

On the same day that Cummins filed its complaint, Cummins also filed a motion for preliminary injunction (doc. # 3). In that motion, Cummins seeks a preliminary injunction only against Glory (U.S.A.) and not the Japanese corporate defendants; directs the motion at only two of the four charged Glory products, the S60 and S80; and focuses on selected claims of the '806 patent that Cummins alleges are infringed by these products: independent claims 40, 76 and 101, and dependent claims 41-43, 46-48, 77-78, 81, 105, 108, and 110-111. By an order dated October 3, 2002, the presiding district judge referred the motion for preliminary injunction to this Court for a Report and Recommendation (doc.5-6).

Pursuant to that referral, the Court conducted a status hearing in the case on October 9, 2002, and asked for the parties' suggestions as to the manner in which they wished to proceed on the motion. After receiving and considering those suggestions, on October 15, 2002, the Court entered an order allowing the parties a period of 30 days to take discovery, setting a schedule for further briefing on the motion for preliminary injunction, and setting a hearing date for December 5 and 6, 2002 (doc. # 14). On November 20, 2002, Glory timely submitted its opposition to Cummins' motion a 57-page memorandum of law, along with numerous declarations and exhibits. In light of the volume of Glory's response, at a status conference on November 21, 2002, Cummins asked for additional time to reply, which the Court granted. The Court extended the time for Cummins' reply brief to December 6, 2002, and struck the December 5-6, 2002 hearing date (doc. # 28). On December 6, 2002, Cummins timely filed its reply memorandum and supporting exhibits: the memorandum of law was of similar length to that filed by Glory, 51 pages, and the supporting declarations and exhibits were even more voluminous.

At a status hearing on December 11, 2002, the parties agreed that the extensive written evidentiary submissions made it unnecessary to receive further evidence in open court at a hearing. As a result, the Court set the matter for oral argument on January 10, 2003 (doc. # 50). At that hearing, the Court also allowed Glory an opportunity to make a further submission concerning the extent to which the Japanese corporate defendants maintain assets in the United States, and any undertaking or obligation they have to pay a judgment were one to be rendered against Glory. Glory availed itself of that opportunity, on December 27, 2002, filed a supplemental memorandum directed to those questions.

On January 10, 2003, the Court heard more than three hours of oral argument. At the close of that proceeding, the Court allowed Glory (U.S.A.) an opportunity to further supplement the record concerning the undertaking of the Japanese corporate defendants to pay any judgment that might be entered against Glory (U.S.A.). Glory filed a supplemental memorandum on this issue on January 17, 2003, which engendered further filings by Cummins on January 23, 2003, and then by Glory on January 24 and 28, 2003.

After careful consideration of these parties' oral argument and written submissions, as well as the governing legal principles, the Court respectfully recommends that the motion for preliminary injunction be denied. The findings and analysis that underlie this recommendation are set forth below.

I.

We begin with a summary of the relevant background facts. In some instances, we will reserve for more extended discussion certain factual matters in the sections of this Report that address the issues of likelihood of success on the merits, irreparable harm and balance of the hardships.

A. The Parties.

Cummins is an Indiana corporation based in Mount Prospect, Illinois. Cummins is in the business of designing and manufacturing methods and equipment for receiving stacks of United States currency; analyzing the individual bills of currency to identify which ones are genuine, and to determine their denomination; and totaling the value of the genuine currency bills in the stack. This type of product is used by banks and other enterprises (such as, casinos and armored car services) to process currency that they receive.

Glory (U.S.A.)-which hereinafter will be identified simply as "Glory" is a California corporation. Like Cummins, Glory is in the business of selling a wide-range of money-handling equipment to banks and businesses that handle large volumes of cash. Glory is the United States subsidiary of Glory, Ltd. Glory, Ltd. is the entity that develops and manufactures the currency counting equipment that is then marketed by Glory in the United States. Glory Shoji, also a Japanese corporation, is a subsidiary of Glory, Ltd. which is responsible for shipping the product manufactured by Glory, Ltd. to Glory for sales in the United States.

B. Events Preceding the Application for the '806 Patent**.**

Cummins filed the application for the '806 patent on December 2, 1999, as Application No. 9/453,200 ("Application No. '200"). However, that application was the sixth in a long series of patent applications filed by Cummins, dating back to February 5, 1990, concerning methods and apparatus for currency discrimination and counting. In all but Application No. '111 (*i.e.,* the last five patent applications), the specifications accompanying the claims-that is, the summary, the background and the preferred embodiment(s) of the invention (together with the drawings to illustrate that embodiment(s))-were *identical*. Cummins admits this fact (*see* Cummins Reply, Gatz Dec., at 2 n.1). In this written specification, the inventor describes in great detail a controlled stopping action and a single output pocket as the method used by the claimed sensing and correlation software for culling out spurious bills. The preferred embodiment also, however, in a single phrase of a single sentence describes diverting ... [spurious bills] to a separate stacker bin" ('806 Patent, Col. 17, lines 62-63).

Despite this reference, as will be described below, at least four of five patents issued with the specific limitation of a single output pocket and a controlled stopping action. Whether the '806 Patent issued on a similar basis is the question before us. As an aid to the analysis and resolution of that question, we discuss below the prosecution of these prior applications, as well as other contemporaneous related events.

1. Application No. 07/475,111 ("Application No. '111").

On February 5, 1990, Cummins filed Application No. '111, which was titled "Method and Apparatus for Currency Discrimination and Counting" (Cummins Reply, Gatz Dec., Ex. A). One of the stated objectives of the invention claimed by Cummins in Application No. '111 was to provide a system for identifying currency that was "spurious" (that is, not genuine); discriminating among the denominations of the currency; and totaling the value of the genuine bills identified. This system also aimed to be more compact and economical than prior systems which, according to Cummins. tended to be large and very expensive. The first generation of currency scanners in the United States were large, heavy, and expensive ($60,000 to $1,000,000); and, as a result of their size and cost, sale of these scanners were limited (Cummins Mem., Ex. 1 (Jones Dec.), para.para. 8-12). In 1989, prior to Cummins submitting Application No. '111, the Mosler/Toshiba CF-420 machine had been introduced into the United States. The Mosler/Toshiba CF-420 machine performed the functions of identifying, discriminating among denominations, denominating and counting currency, and was smaller than earlier generation scanners. However, this particular machine nonetheless was expensive (costing at least $20,000) and heavy (weighing over 100 pounds) (Cummins

Reply, Second Jones Dec., para. 35).

At some point in 1991 (precisely when is a matter of some dispute), while Application No. '111 was pending, Cummins introduced into the United States market the JetScan 4060. The JetScan differed from the Mosler/Toshiba product in several ways. *First,* the JetScan had one output pocket, which received both currency denominated as genuine, as well as spurious bills. Conversely, the Mosler/Toshiba product had a main output pocket for bills identified as genuine, an overflow output pocket, and a reject pocket for bills identified as mutilated or spurious. *Second,* the JetScan utilized an interrupted mode of operation, meaning that the system halted when a spurious (that is, non-genuine) bill was found (so that it could be removed immediately), as contrasted with the Mosler/Toshiba product, which utilized a continuous operation system that sent spurious or mutilated currency to a separate reject pocket rather than stopping the scanning process. *Third,* the processing speed of the JetScan was faster than that of the Mosler/Toshiba unit. *Fourth,* the JetScan was much smaller than the Mosler/Toshiba machine and listed for twenty percent of its list price (Cummins Reply, Second Jones Dec., para. 35).

2. Application No. 07/885,648 ("Application No. '648").

On May 19, 1992, Cummins filed Application No. '648, which also is entitled, "Method and Apparatus for Currency Discrimination and Counting." This application was designated as a continuation-in-part of Application No. '111 (which Cummins abandoned in a notice received in the Patent and Trademark Office ("PTO") on July 6, 1992). Application No. '648 contained (with insignificant changes) the same discussion of the background and summary of the invention as found in Application No. '111 (and in the '806 patent). After certain of the claims in Application No. '648 were rejected by the examiner and cancelled or amended by Cummins, Application No. '648 was granted as Patent No. 5,291,196 ("the '196 patent") on March 15, 1994. Like the Cummins Jet-Scan 4060, the drawings and the preferred embodiment of the invention set forth in the '196 patent disclosed a machine with a single output pocket (to collect both denominated currency and bills identified as spurious), and with an interrupted mode of operation (the conveyance of bills through the scanner stopping after a spurious bill is identified and sent to the output pocket, so that the spurious bill could be manually removed by an operator and would not be commingled with genuine bills).

Also in 1994 (it is unclear from the evidence whether before or after the issuance of the '196 patent), Glory introduced for sale into the United States the GFR-100 machine. The GFR-100 contrasted with the Cummins JetScan 4060, in that the GFR-100 utilized a continuous mode of operation that is, the conveyance of currency bills through the scanner did not stop upon identification of a spurious bill. In addition, unlike the JetScan 4060, the GFR-100 utilized two output pockets-one for the accumulation of genuine currency that was denominated and counted, and a separate output pocket for receiving bills that were rejected because they were spurious. It was this separate output pocket, specifically dedicated to receiving rejected bills, that permitted the GFR-100 to be operated continuously. Because the rejected bills were not sent to the same output pocket as genuine bills, as with the JetScan 4060, there was no need to stop the conveyance of bills to prevent the commingling of genuine and spurious bills after the scanning process was completed.

By late 1994, Cummins was aware of the entry of the GFR-100 into the market. In an internal memorandum dated December 15, 1994, Douglas Mennie, Cummins' President, reported on his visit to the New York Transit Authority on December 13, where he observed and evaluated the "new Glory currency scanner" (Glory Mem., Adli Dec., Ex. 27). The memorandum noted the operating characteristics and specifications of the GFR-100-including the presence of a separate reject tray. Mr. Mennie commented that, in his opinion, the use of a separate pocket to accumulate rejected bills was not superior to the JetScan 4060 approach of

stopping the machine when a spurious bill is encountered: "[i]t was my opinion after watching this operation that it is much more convenient to deal with a no call or suspect document at the time that it happens, due to the fact that eventually it must be dealt with" (Id. at CG0013516). Mr. Mennie expressed the opinion that "Glory has much more work to do before they can compete on a performance level with the current Cummins JetScan" (Id.). It would take Glory "a year or more ... to get to the point where they can compete with the JetScan in a side-by-side test" (Id. at CG0013516, 517).

3. Application No. 08/127,334 ("Application No. '334").

On September 27, 1993, while Application No. '648 was still pending, Cummins filed Application No. '334. This application was designated as a continuation of Application No. '648. Application No. '334 cancelled or amended certain claims originally asserted in Application No. '648 and added new claims, but did not make any change to the specification in Application No. '334 (except to note that this was a continuation of Application No. '648). After certain claims were rejected and/or amended, the PTO allowed the application and granted Patent No. 5,467,405 ("the '405 patent") on November 14, 1995.

4. Application No. 08/339,337 ("Application No. '337").

On November 14, 1994, during the pendency of Application No. '334, Cummins filed Application No. '337, which Cummins described as a continuation of Application No. '334. Once again, Cummins made no modification to the specification of this application, other than to note that it was a continuation of Application No. '334.

On July 18, 1995, Cummins filed a "petition to make special" the PTO's consideration of Application No. '337, which in substance was a request to expedite its consideration. In support of that petition, Cummins stated that the basis for expedited consideration was Cummins belief that certain of the claims asserted in Application '337 were unquestionably infringed by a currency discriminator that Toyocom USA, Inc. began to market in late 1994 and early 1995 (Cummins Reply, Gatz Dec., Ex. D., Bates Nos. CG0000728 through 732). Cummins' petition was supported by the declarations of Paul Kitch. Cummins' legal counsel in connection with the patent application, and Douglas Mennie, Cummins' Vice President of Manufacturing. The petition did not identify the model number of the Toyocom unit in question, but presumably it was the NS-100: a currency scanner unit that stopped when identifying a spurious bill and utilized one output pocket without a separate pocket for rejected bills (Glory Mem., Adli Dec., Ex. 31). Cummins' petition did not assert that the Glory GFR-100 machine would infringe any of the claims asserted in Application No. '337.

On September 28.1995, the PTO granted Cummins' petition to make special. Thereafter, on April 8, 1996, the examiner rejected claims 34 through 113 of the application (claims 1 through 33 already having been cancelled) (Cummins Reply, Gatz Dec., Ex. D., at GC0000673-79). The examiner rejected those claims on the ground that they would improperly extend the right to exclude already granted in claim 1 of the '196 patent. The examiner stated that "there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent [the '196 patent]" (Id. at CG0000676). In addition, the examiner rejected claims 34 through 46 and 86 through 113 on the grounds that they were rendered obvious by certain prior art-the Jones patent (No. 4,114,804) and the O'Maley patent (No. 4,179,685) (Id. at CG0000672-9).

In response, Cummins filed an amendment to the application, filed a "terminal disclaimer" tied to the '196 patent in order to overcome the double patenting objection based on obviousness, and provided its explanation of why the Jones and O'Maley patents were not disabling prior art (Id. at CG0000657-668).

Cummins asserted that the invention claimed in Application No. '337 was distinguishable from the prior art because Cummins' claimed invention combined the features of a means for flagging a bill that is not identified as genuine, halting the transport mechanism when a non-genuine bill is identified, and routing the non-genuine bill to the same output bin that receives genuine currency (as opposed to routing it to a separate reject output bin) (Id. at CG000662-3). In explaining further why the claimed invention was not obvious, Cummins pointed to the "long felt need" for a currency discriminating device that is "compact, light weight, and more affordable" than the large, expensive models of currency discrimination devices previously available (Id. at CG000665). Cummins explained that the single output pocket "contributes to these attributes by reducing the mechanical complexity of the device including a reduction in the number of parts" (Id.). Cummins also pointed to the long coexistence of single-pocket note counters and multi-pocket discriminators, without the "single pocket" and "discrimination" characteristics being combined in one unit (Id. at CG0000666). As one example of this coexistence, Cummins pointed to the marketing by Glory, Ltd. of a multi-pocket discriminator in 1986-presumably a reference to the Glory UF-1 multi-pocket discriminator, which Glory asserts was the predecessor to the GFR-100. Cummins did not assert in this submission that continuous transport multi-pocket discriminators would infringe the invention claimed in Application No. '337.

Ultimately, Cummins overcame the initial rejection by the examiner, and on November 25, 1997, Application No. '337 was allowed and issued as Patent No. 5,692,067. By late 1997, Cummins also was aware of the presence of the Glory GFR-100 as a competitor to the JetScan product.

In early 1996, Cummins provided its sales personnel with information on how to market against the GFR-100. The information sheet indicated Cummins' awareness that the Glory unit had a separate reject pocket for rejected bills, which allowed for continuous operation. Glory sales people were told that, while the separate reject pocket "seems impressive," it did not improve accuracy or save time because rejected bills would end up in the reject pocket for all manner of reasons, while the JetScan (and Toyocom) units "stopped for each bill and allowed an identification of the reason that the particular was rejected" (*See* Glory Mem., Adli Dec., Ex. 31). Moreover, Cummins was aware during the pendency of Application No. '337 that it lost sales to customers who elected to acquire the Glory GFR-100 instead of the JetScan (*see,* Glory Mem., Adli Dec., Ex. 32) (lost sales to a bank and a casino in late 1996); Ex. 33 (lost sale on 18 units to the Triborough Bridge and Tunnel Authority in New York in mid-1997). The Cummins personnel reporting these lost sales noted the importance of the Glory GFR-100 "extra pocket" feature as instrumental to the customers' decisions.

In 1996 or 1997, Cummins began selling a multi-pocket version of the JetScan product (Cummins Reply, Jones Sec. Dec. para. 31). Cummins has offered testimony that it had envisioned offering a multiple-pocket scanner as early as 1990, but decided initially to focus its resources on the single-pocket version (Id. at para.para. 31-32). Cummins has offered no documentary evidence to corroborate Mr. Jones' recollection on this point, and has not offered any evidence that Cummins was considering a decade ago a unit that employed a continuous operation and not a "controlled stopping function."

5. Application No. 08/841,203 (Application No. '203).

On April 29, 1997, prior to the issuance of the '067 patent, Glory filed Application No. '203, which was a continuation of Application No. '337 (the application that ultimately led to the '067 patent). Again, there was no material change in the specification of this application as compared to the specification in Application No. '337 (or, for that matter, the predecessor applications). Application No. '203, as initially filed, added 20

new claims. On February 3, 1998, the examiner rejected all of the pending claims in Application No. '203 on several grounds, including double patenting in light of claim 1 of the '196 patent and claim 30 of '067 patent, and on the grounds of obviousness based on the prior art in the Jones and O'Maley patents (which were cited by the examiner in connection with Application No. '337). The examiner also rejected certain claims as anticipated by the Glory GFB-200/210/220/230 desktop banknote counter, which the examiner described as containing, among other things, a device for detecting different banknote denominations during counting; a detection function which flags a banknote that is not identified by stopping the counting process, and a single output receptacle (*see* Cummins Reply, Gatz Dec., Ex. E, CG0001566-74).

In response to this rejection, on April 30, 1998, Cummins filed a terminal disclaimer of the '196 and '067 patents (Id. at CG0001558-64). On the same date, Cummins filed an amendment to Application No. '203 that cancelled one of the rejected claims, amended one of the other claims, and added 34 new claims (Id. at CG0001539-57). In response to the examiner's rejection of claims as obvious in light of the Jones and O'Maley patents, Cummins asserted that the Jones and O'Maley patents covered "structurally and functionally different [machines] and would not be considered in combination, unless one has seen the applicants' machine" (Id. at CG0001551). Cummins described the Jones machine as a counting device "which contains means for detection of counterfeit bills, but is not able to determine the denomination of the bills which it is counting ... [although] [i]t does have the capability of stopping the machine if a suspect note is detected" (Id. at CG0001552). By contrast, Cummins said that O'Maley "describes a device which can determine the denomination of bills, but instead of flagging suspect bills, it diverts them to a separate output bin ... [and] does not provide for stopping the machine in order to retrieve a suspect bill" (Id.). Cummins asserted that its machine was not merely a combination of O'Maley and Jones, "because it does not contain all of their features." Cummins wrote that "Applicants' machine is able to determine the denomination of bills, to detect counterfeit bills, and to flag the presence of a counterfeit bill" (Id. at CG0001551, 1552). Cummins said that if its machine merely combined all the features of O'Maley and Jones, "*it would stop when a suspect bill was detected and also divert it to a separate bin. The applicant's machine does not do that ...*" (Id. at CG0001552) (emphasis added). In distinguishing the claimed invention from the Glory GFB-200 series of units cited by the examiner, Cummins noted, among other things that those Glory machines stopped when a suspect bill was detected but left both the suspect bill and the next bill in the output tray, whereas the applicant's machine "features stopping the machine such that *only* the suspect bill is deposited in the output tray for inspection" (Id. at 1552-53) (emphasis in original).

Thereafter, on November 25, 1998, Cummins filed another amendment to Application No. '203, which amended some of the previous claims and added 117 new claims. On March 9, 1999, Cummins filed an amendment cancelling one of those claims, and supplementing its reply to the examiner's rejection (Id. at CG000469-717). In that supplemental reply, Cummins sought to distinguish the O'Maley patent from certain of the rejected claims on the ground that "O'Maley teaches the use of at least two output receptacles" (Id. at CG000470), whereas the rejected claims all provided for only a single output receptacle. Cummins repeated its position that its claimed invention took the "single output receptacle arrangement disclosed in the note counter of Jones and combine[d] this feature with the purported currency denomination discriminator as taught by O'Maley," which was not obvious from those two patents (Id.).

On March 16, 1999, the examiner rejected all of the pending claims on Application No. '203 on the ground of undue multiplicity (Id. at CG0000451-53). In reply, on July 1, 1999, Cummins cancelled those rejected claims, and added 93 new claims (the number indicated by the examiner as the maximum that should be submitted). Thereafter, on July 16, 1999, Cummins filed another amendment, which revised 24 of the 93 claims that had been filed two weeks earlier. On October 15, 1999, the examiner issued a notice of

allowability; on February 22, 2000, Application No. '203, as finally revised, issued as Patent No. 6,028,951 ("the '951 patent").

During the nearly three years between the date that Cummins initially filed Application No. '203 and the date that the '951 patent issued, the Cummins JetScan product continued to compete with the Glory GFR-100 product in the marketplace. On April 6, 1998, a Cummins representative prepared a memorandum outlining the reasons that First Tennessee Main Bank Vault had selected the GFR-100 over the Cummins JetScan product (Glory Mem., Adli Dec., Ex. 26). The Cummins representative reported that the perception among tellers at the bank was that the Glory GFR-100 was faster and more accurate than the Cummins product, was simple to use and required little maintenance. The Cummins representative noted that "the fact that [the GFR-100] does not stop [when encountering a spurious bill] gives the perception that it is running much faster."

Also in 1998, Cummins filed a patent infringement suit against Glory and Glory, Ltd. *Cummins-Allison Corp. v. Glory USA, Inc. et al.,* 98 C 6673 (N.D.Ill.). In that action, Cummins alleged that Glory's GFB-700 product infringed two Cummins patents: the '067 patent (which is in the chain of the '806 patent), and Patent No. 5,790,697 (which is not in the chain of the '806 patent). This lawsuit alleged infringement only with respect to the Glory GFB-700 (which utilized only one output pocket) and not the Glory GFR-100 (which contained two output pockets and a continuous operation). In April 1999, the action was dismissed pursuant to a settlement. As part of the settlement, Cummins agreed that Glory would seek to replace the GFB-700 with the GFR-100 at certain customer locations, and that Cummins would not sue either Glory or the customers who receive the replacement GFR-100 machines. As part of the proposed settlement, Glory also sought an agreement that Cummins would not sue over the sale of the GFR-100 and any other products that were "insubstantially different" from the GFR-100. Cummins refused that request (*see* Gatz Dec., Ex. N, P, and Q).

6. Application No. 09/453,200 (Application No. '200).

On December 2, 1999, Cummins filed Application No. '200, which was a continuing application of Application No. '203. Shortly before the filing of this application, in November 1999, Glory began sales of the S80-one of the types of machines that is the subject of this preliminary injunction motion. At that time, Glory had a meeting with Cummins to demonstrate the S80 product. On December 2, 1999, the same day that Cummins filed Application No. '200, Cummins wrote a letter to Glory stating that, in connection with the S80, "[a]s with the introduction of any new product, there is a recognized potential for issues relative to intellectual property rights of others" (Cummins Reply, Jones Sec. Dec., Ex. 1). Cummins also stated that it was difficult for Cummins to assess intellectual property issues without more information. Cummins asked Glory for an S80 scanner (which Cummins would buy) and various items of software, schematic and operating information. By a letter dated December 20, 1999 (Glory Mem., Adli Dec., Ex. 28), Glory responded to Cummins that this offer to purchase suggested that Cummins believed that the "GFR-S80 may be relevant to certain patents owned by Cummins," which Glory said "is surprising to us since the GFR-S80 is based upon the technology and principles embodied in the prior machines and prior technology." Glory requested that Cummins identify the United States patents that Cummins believed might be relevant to the S80, as well as the effective filing date of any claims that Cummins believed would be relevant to the S80.

It does not appear that either Cummins or Glory provided the requested information prior to suit. The Court notes that at oral argument, counsel for Cummins stated that it was not clear that the S80 (or the S60) would infringe any of the predecessor patents in the '806 chain-which are the '196, '405, '067 and '951 patents.

As originally filed, Application No. '200 contained 50 claims. Thereafter, on June 12, 2000, Cummins filed an amendment, revising two of the claims and adding 300. On May 29, 2001, the examiner rejected all of the claims on grounds of undue multiplicity, expressing the view that the number of claims sufficient to define Cummins' invention should not exceed 70 claims. After a meeting with the examiner, it was agreed that Cummins would limit its application to what, at that time, were numbered claims 238 through 376-a total of 138 claims. Cummins then canceled seven of those claims, reducing the number to 131, and adding two new claims, to bring the total number to 133 claims.

On November 13, 2001, the examiner rejected all of those claims (Cummins Reply, Gatz Dec., Ex. F, CG0000042-48). The examiner rejected a number of the claims as unpatentable on the grounds of double patenting over certain claims of the '067 patent. The examiner stated that, although the conflicting claims and the two patents were not identical, because the '067 patent did not specify counterfeit detection features in the claims, "adding such features into the patent claims would have been obvious to one of ordinary skill in the art." The examiner also rejected the claims as unpatentable in light of the Jones and O'Maley patents, on the ground that it would have been "obvious to one of ordinary skill in the art to add the function which determines the denomination of a bill as taught by O'Maley" to the device taught in Jones. And, the examiner also found those claims as anticipated by the Glory GFB-200/210/220/230 desktop banknote counter.

In response, on January 23, 2002, Cummins amended one of the claims, and expressed its disagreement with the examiner's rejections (Id. at CG0000013-16). With respect to the examiner's reliance on the Jones and O'Maley patents, Cummins repeated its earlier arguments that there was no prior teaching that would have suggested combining selected features of the two references. In addition, Cummins asserted that neither Jones nor O'Maley taught or suggested "automatically denominating bills of a plurality of U S denominations," or doing so at rates of speed in excess of 800 bills per minute, or "delivering bills which have been evaluated to an output region comprising one and only one stacker wheel containing output receptacle," or "restacking bills that had been denominated in a single stack using a stacking mechanism comprising flexible blades," or restacking bills that had been denominated in a denominated bill output receptacle using a stacking mechanism comprising flexible blades," or "delivering bill that has been denominated to one and only one output receptacle." Cummins' response did not explain the meaning of the term "automatically denominating," which was first introduced into the claims in the June 2000 amendment to Application No. '200, or how that term relates to language used in previously asserted claims in Application No. '200 or in the previously issued '196, '405, '067 or '951 patents. On May 21, 2002, the examiner issued a notice of allowability of the pending claims. On October 1, 2002, Application No. '200, as finally amended, issued as the '806 patent.

During the pendency of Application No. '200, Glory marketed the S80 and the S60 products in competition with the Cummins JetScan products. Because of the sensitivity expressed by Cummins regarding the competitive information which was filed under seal, we include our analysis of the sales volume, selling price, gross margins and market share in Appendix A to this Report, which will be under seal.

II.

The determination of whether a preliminary injunction should issue in a patent case involves substantive matters unique to patent law. FN1 Thus, although the elements for obtaining a preliminary injunction are the same as those in other civil cases, and arise out of the federal rules of civil procedure, the standards for

issuance of a preliminary injunction are governed by the law of the Federal Circuit, while "purely procedural questions involving the grant of a preliminary injunction are controlled by the law of the appropriate regional circuit" here, the Seventh Circuit. *See* Hybritech Inc. v. Abbott Labs., 849 F.2d 1446, 1446 and n. 12 (Fed.Cir.1988).

FN1. In discussing the legal principles relevant to our analysis in Section II of this Report, we draw heavily upon our discussion in Panduit Corp. v. Band-It-Idex., Inc., No. 00 C 1461, 2000 WL 1121554, *10-13 (N.D.Ill. June 28, 2000), *aff'd.,* 25 Fed. Appx. 836, 2001 WL 1480724 (Fed.Cir. Nov.20, 2001).

To obtain a preliminary injunction pursuant to 35 U.S.C. s. 283, a party must establish: (1) reasonable likelihood of success on the merits; (2) irreparable harm; (3) the balance of the hardships tipping in its favor; and (4) the impact of the injunction on the public interest. "These factors, taken individually, are not dispositive; rather, the district court must weigh and measure each factor against the other factors and against the form and magnitude of the relief requested." Hybritech Inc., 849 F.2d at 1451. This "weighing" process is not unlike the Seventh Circuit's "sliding scale" approach to deciding motions for preliminary injunctions. *See* Abbott Labs. v. Mead Johnson & Co., 971 F.2d 6, 12 (7th Cir.1992). However, the first two factors, a reasonable likelihood of success on the merits and irreparable harm, are "critical" and the absence of either is sufficient to deny preliminary injunctive relief. Reebok Int'l. Ltd. v. J. Baker, Inc., 32 F.3d 1552, 1556 (Fed.Cir.1994). "The burden is always on the movant to show entitlement to a preliminary injunction." Reebok, 32 F.3d at 1555.

We will analyze each element necessary to determine the viability of Cummins' request for preliminary injunctive relief in this section. We begin with likelihood of success on the merits.

A.

In general, when deciding "likelihood of success on the merits" in a patent case, courts will employ a two step analysis. *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). *First,* the court determines the meaning and scope of the patent's claims. *Id*. Claim construction is a question of law for the court to decide. Markman, 517 U.S. at 384, 389-91. *Second,* the court compares the properly interpreted claims to the accused device to determine whether there is a likelihood that the plaintiff can prove, by a preponderance of the evidence at trial, that the latter infringes the former. *See* H.H. Robertson, Co. v. United Steel Deck, Inc., 820 F.2d 384, 390 (Fed.Cir.1987) (abrogated on other grounds) (grant of a preliminary injunction turns on likelihood that plaintiff will meet burden at trial of proving infringement). Claim comparison and/or coverage is a question of fact. *See* Markman, 517 U.S. at 384; Hybritech, 849 F.2d at 1455. In claim comparison, courts generally break the analysis regarding likelihood of success into two categories: (1) likelihood of success on the patent's validity, an affirmative defense that must be raised by the party opposing the motion for preliminary injunction, since validity is presumed as a matter of law from the patent's issuance, (2) and likelihood of success on infringement. *See generally* Hybritech, 849 F.2d at 1451-56. This Court's analysis will follow the same path, but we will address the issue of infringement before validity. And before either of those issues, we address claim construction.

B. Claim Construction.

Claim construction is "the process of giving proper meaning to the claim language." AbTox. Inc. v. Exitron

Corp., 122 F.3d 1019, 1023 (Fed.Cir.1997). "To ascertain the meaning of claims, we consider three sources: the claims, the specification, and the prosecution history." Markman, 52 F.3d at 979. These three sources are considered "intrinsic evidence." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). The claim language defines the scope of the patented invention. *Id*. *See also* SRI Intern. v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121 (Fed.Cir.1985) (claims measure the invention). The specifications and the prosecution history "provide a context to illuminate the meaning of the claim terms." AbTox, 122 F.3d at 1023. FN2

FN2. "It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, *i.e.,* the patent itself, including the claims, the specification and, if in evidence, the prosecution history." *Id*. Resort to extrinsic evidence is improper where the intrinsic evidence is sufficient to construe the patent claim. Vitronics, 90 F.3d at 1583. In this case, neither party has asserted that extrinsic evidence is necessary to the claim construction issues presented.

The claim language is the primary source of meaning. Generally, words in a claim are given their "ordinary" meaning. Vitronics, 90 F.3d at 1582; Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed.Cir.1995) (court must ascribe ordinary meaning to claim language unless it appears the inventor intended otherwise). However, the claims must be read in light of the specifications and, where the specifications indicate that the inventor has expressly defined a word in the claim so that it carries a particular rather than ordinary meaning, the court must give the meaning intended by the inventor, as revealed in the specifications. Vitronics, 90 F.3d at 1582. *See also* Markman, 52 F.3d at 979 ("[c]laims must be read in view of the specification, of which they are a part"). The specifications, however, should not be "read into" the claims where the claim language is clear and/or where the specifications reveal only a preferred embodiment or illustration of the claim, rather than a limitation on the meaning of particular claim language. *Id*.

Nonetheless, claims must "particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as [the] invention." 35 U.S.C. s. 112. If the claim language is ambiguous, then the specifications are the "single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582. The court also may look to the prosecution history of the patent as a source for determining the inventor's intended meaning. *Id*. The prosecution history consists of the complete record of the proceedings before the Patent and Trademark Office ("PTO"), including prior art references and any express representations made by the applicant regarding the scope of the claims. Vitronics, 90 F.3d at 1582, 1583. In particular, "[t]he prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir.1995).

Claim elements recited in "step-plus-function" form incorporate these general principles of construction, but are subject to certain additional statutory provisions. Step-plus-function claims must be interpreted under 35 U.S.C. s. 112, which provides that:

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.

Id. at para. 6. "Application of s. 112, para. 6 requires identification of the structure in the specification which performs the recited function." *Micro Chem.,* 194 F.3d at 1257. *See also* Amtel Cor. v. Information Storage Devices, Inc., 198 F.3d 1374, 1381-82 (Fed.Cir.1999) (the statute permits "inventors to use a generic means expression for a claim limitation provided that the specification indicates what structure(s) constitute(s) the means" because "[f]ulfillment of the [statute] ... cannot be satisfied when there is a total omission of structure"). The case law interpreting Section 112(6) employs a two-part analysis for claim construction: step one requires identification of the claimed function and step two requires identification of the relevant structure in the specification "necessary to perform that function." *Micro Chem.,* 194 F.3d at 1257-58. FN3 This two-part process is guided by several overarching legal principles.

FN3. Although the statute uses the word "corresponding," the federal circuit case law interpreting the statute frequently uses the word "necessary." In a previous opinion, we wrote that "[t]he word 'necessary' " was a "gloss on the word 'corresponding,' which reflects governing Federal Circuit law that we are bound to follow." *See* Panduit Corp., 2000 WL 1121554, *12-13.

First, "[t]he statute does not permit limitation of a means-plus-function [or step-plus-function] claim by adopting a function different from that explicitly recited in the claim." *Micro Chem.,* 194 F.3d at 1258. *Second,* "the statute [does not] permit incorporation of structure from the written description beyond that necessary to perform the claimed function." *Id*. *See* Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1308-09 (Fed.Cir.1998) (structure "unrelated to the recited function" disclosed in the patent is irrelevant to s. 112, para. 6). *Third,* "[t]he individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function." Odetics, Inc. v. Storage Technology Corp., 185 F.3d 1259, 1268 (Fed.Cir.1999). *Fourth,* "[i]dentification of corresponding structure may embrace more than the preferred embodiment." *Micro Chem.,* 194 F.3d at 1258.

With respect to the first part of this process, identification of a claimed function, there are several additional legal principles that are of importance in this case. The "use of the term 'steps for' signals the drafter's intent to invoke s. 112, para. 6." Masco Corp. v. United States, 303 F.3d 1316, 1326 (Fed.Cir.2002). However, that language is sufficient to implicate Section 112(6) "only when steps plus function without acts are present." *Id*. (quoting *O.J*. Corp. v. Tekmar Co., 115 F.3d 1576, 1582). Moreover, where the phrase "step for" is absent, that alone is not cause to find that Section 112(6) is not applicable. The Federal Circuit has explained that "while traditional 'means' language does not automatically make an element a means-plus-function element, conversely, lack of such language does not *prevent* a limitation from being construed as a means-plus-function limitation." Mas-Hamilton Group v. La Gard, Inc., 156 F.3d 1206, 1214 (Fed.Cir.1998) (emphasis in original). If the defendant can show that the claimed element is written to describe a function rather than an act (or, put differently, contains no act), then the absence of sufficiently definite structure or material to perform the claimed function requires application of Section 112(6), and thus incorporation of that portion of the specifications necessary to perform the claimed function. *See* Mas-Hamilton Group, 156 F.3d at 1213-14; *see also* Seal-Flex, Inc. v. Athletic Track and Court Construction, 172 F.3d 836, 849-50 (Fed.Cir.1999) (cited in Masco, 303 F.3d at 1327).

In *Seal-Flex,* the Federal Circuit provided guidance in distinguishing between an "act" and a "function":

the "underlying function" of a method claim element corresponds to what that element ultimately accomplishes in relationship to what the other elements of the claim and the claim as a whole accomplish.

"Acts," on the other hand, correspond to how the function is accomplished.

172 F.3d at 849-50. We will revisit this guidance on the distinction between "act" and "function" in our claim construction, below. FN4

FN4. Cummins contends that the Court is navigating through unchartered waters if it holds that a method claim element is a step-plus-function limitation (Cummins Reply at 28). We disagree. It is well-established by statute and case law that claim elements may be expressed in step-plus-function form. Seal-Flex 172 F.3d at 849-50 (interpreting 35 U.S.C. s. 112(6)).

1. The Disputed Claims.

The independent claims of the '806 patent that are claims at issue-claims 40, 76, and 101 read as follows:

Claim 40 states:

40. A method of processing currency bills using a U.S. currency evaluation device comprising:

receiving a stack of bills to be evaluated in an imput receptacle of the device including bills of a plurality of denominations, each bill being rectangular and having a wide dimension and a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path in a transport direction with their narrow dimension parallel to the transport direction;

automatically denominating bills of a plurality of U.S. denominations; and

restacking bills that have been denominated in a denominated bill output receptacle using a stacking mechanism comprising flexible blades;

wherein after processing the entire stack of bills, the denominated bill output receptacle contains a set of bills, all of whose denominations are known, including bills of a plurality of denominations.

Claim 76 states:

76. A method of processing currency bills using a high-speed U.S. currency evaluation device comprising:

receiving a stack of bills to be evaluated in an input receptacle of the device;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 800 bills per minute;

automatically denominating and totaling bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute; and

delivering any bill that has been successfully evaluated and totaled to one and only one output receptacle.

Claim 101 states:

101. A method of processing currency bills using a high-speed U.S. currency evaluation device comprising:

receiving a stacking of bills to be evaluated in an input receptacle of the device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path in a transport direction at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction; and

automatically denominating bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute.

The dependent claims at issue are 41-43, 46-48, 77, 78, 81, 105, 108, 110, and 111. These dependent claims relate generally to the specifics of the denominating function (*e.g.,* size of the bills, printing and displaying value), as well as the speed at which currency is "denominated." To the extent relevant to the analysis, we discuss those claims in light of the independent claims to which they relate.

2. Analysis of Disputed Claims.

[1] [2] Independent claims 40, 76 and 101 are "method" claims. They describe the process claimed by the '806 patent for evaluating a "plurality" of United States ("U.S.") currency-that is, currency of differing denominations. The specific claim elements put at issue by Glory are: "automatically denominating bills of a plurality of U.S. denominations" (Claim 40, Col. 30, lines 41-42); "automatically denominating and totaling bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute" (Claim 76, Col. 36, lines 47-49); and "automatically denominating bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute" (Claim 101, Col. 38, lines 48-50). These elements are disputed because the parties do not fully agree on the purpose and/or meaning of the phrase "automatically denominating."

Cummins argues that the phrase "automatically denominating"-like the words receiving, transporting, and restacking in the remainder of Claim 40-calls out an act to be performed by the device as part of the "method" or process of "currency evaluation," and not a function. For its part, Glory urges this Court to read "automatically denominating" as a "function" that limits these claims, under the step-plus-function doctrine found in 35 U.S.C. s. 112(6), to the structure, material or acts identified in the written specifications of the '806 patent necessary to perform that function. After careful review of the disputed claim language in the '806 patent, this Court finds that the term "automatically denominating" is subject to Section 112(6) because it discloses a function without disclosing the structure, material or acts necessary to perform it. FN5

FN5. Hereinafter, the Court will refer to the components necessary to perform the denominating function as a "structure" even though many of these components resemble acts rather than material or a structure made of material. We choose this word, not because it has any special meaning under s. 112(6), but because use of the word "acts"-in the context of the arguments made by Cummins would be confusing.

We begin construction of the disputed claims with the plain and ordinary words of the patent claim itself. Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989-90 (Fed.Cir.1999). If the scope of the claims cannot be unambiguously determined by reference to the plain language in the disputed claims, then

the Court may interpret the disputed claim language in light of the specifications and prosecution history. *Id.*

The dictionary meaning of "denominating" (or "denominate") is "to name" or to "designate." MERRIAM WEBSTER'S COLLEGIATE DICTIONARY, at 308-09 (10th ed.1997). Cummins conceded during oral argument that the word "denominating" in the context of the '806 patent claims at issue means more than "to name" and, instead, embraces both *identifying* the denomination of a bill of currency (that is, whether a piece of currency is a $1, or a $5, or a $10 bill), *and discriminating* among spurious or "bad bills" (those that cannot be identified as genuine) and "good bills" (those that can be identified as genuine).

There is no real leap of logic or linguistics in Cummins' concession. Claim 40 refers to the accumulation in the output bin of "a set of bills, all of whose denominations are *known,* including bills of a plurality of denominations" (here, the word "denominations" may carry its dictionary meaning) (Col. 33, lines 50-52) (emphasis added). Claim 76 refers to delivery of bills to the output bin that have been "successfully evaluated" (Col. 36, line 50), and Claim 101 refers to placing bills in the input bin "to be evaluated" (Col. 38, line 40). To perform this evaluation, the currency device must necessarily "know" the bills that it is evaluating. For several reasons, we construe this dual purpose encompassed within the phrase "automatically denominating" as the disclosure of a function rather than a discrete action for performing some other function.

First, to "denominate," in the way the disputed claim term is written, the device must perform multiple acts to achieve the end results of identification and discrimination. For example, the device must optically scan the narrow portion of the bill, compare the scanned data with the correlation data stored in the software, and stop the machine when a bill is identified as spurious, so that it may be removed from the output bin. The term "automatically denominating" is shorthand for this series of acts which result in an "evaluation," and which, in turn, constitutes the underlying function for the entire invention and for the claims at issue. In the words of the *Seal-Flex* test, the term automatically denominating "corresponds to what that element ultimately accomplishes in relationship to what the other elements of the claim and the claim as a whole accomplish." 172 F.3d at 849-50.

[3] *Second,* if we accepted Cummins' invitation to construe "automatically denominating" as an "act" for performing the evaluation of U.S. currency, and to stop reading at the literal language, then the '806 patent would achieve a virtual monopoly in the currency evaluation device market (as we understand it), because it would cover *any* method for evaluating (*i.e.,* identifying and discriminating among) a plurality of U.S. currency and thus *any* "structure" for achieving that function. A claim "cannot be construed so broadly to cover every conceivable way or means to perform" that function. Mas-Hamilton Group, 156 F.3d at 1214. Moreover, as we discuss below, such a reading also would create serious validity problems with respect to prior art. We decline to read the patent language in a way that likely would invalidate the patent.

Third, both the identification and discrimination aspects of the claimed "automatically denominating" function necessarily require a structure for culling out spurious bills from those that are genuine and thus ultimately "denominated" or named. But, the disputed claims fail to disclose any structure for performing that function. Thus, this Court finds that the claim language, read plainly, supports the view that disputed claims 40, 76 and 101 are step-plus-function claims subject to the limitations of Section 112(6). FN6

FN6. The cases Cummins cites to support the notion that "automatically denominating" is an act are inapposite to the disputed claim term in this case. *First,* we do not accept the proposition that the decision in O.I. Corp. v. Tekmar Co., 115 F.3d 1576 (Fed.Cir.1997), precludes a finding that a verb ending in "ing"

cannot be written as a function subject to s. 112(6). We read *O.I. Corp*. merely to warn against a blanket rule that every "ing" verb used as an element in a method claim is subject to the statute. *Id*. at 1583. *Second,* we find Masco Corp. v. United States, 303 F.3d 1316 (Fed.Cir.2002) and Serrano v. Telular Corp., 111 F.3d 1578 (Fed.Cir.1997)-as well as the other cases cited by Cummins in its reply-inapposite on the issue of whether "automatically denominating" is an act, rather than a function. In *Masco,* the term "transmitting a force" was construed as an act rather than a function. The federal circuit rejected the argument that the word "transmitting" was too amorphous to be an act and instead used the *Seal-Flex* test to determine that "transmitting a force" in the context of the disputed claims in that case was an act for performing the function of "driving the lever into the cam." 303 F.3d at 1327. The Court also found that the plain meaning of the word "transmitting" in the dictionary "described an act for accomplishing the identified function." Our case is distinguishable from *Masco* because "denominating" has a special meaning given to it by the inventor and cannot be reduced to a plain, dictionary definition that discloses an act for performing some other function; "denominating" is, as we explain above, a function (and we think too amorphous to be an act). The *Serrano* case is also distinguishable because we do not find the term "automatically denominating" to be "practically identical" to the phrase "automatically determining"-as Cummins contends (Cummins Reply at 31). "Automatically determining," in the context of the *Serrano* claim, was an act. For the reasons we have explained, we do not find "automatically denominating" to be in the same category, given Cummins' special and conceded meaning for it.

Construing "automatically denominating" in the disputed claims as a step-plus-function claim element means that this element will be construed narrowly and limited in scope to only the structure necessary for performing the denominating (*i.e.,* identification and discrimination) function. *See, e.g.,* Overhead Door Corp. v. Chamberlain Group, 194 F.3d 1261, 1271-73 (Fed.Cir.1999). Both the written specifications and the prosecution history are consulted to answer the question of scope presented by the step-plus-function claims. *See id*. There may be only one structure disclosed in the specification and/or prosecution history that performs the claimed function, Cortland Line Co. v. Orvis Co., 203 F.3d 1351, 1357 (Fed.Cir.2000), or there may be more than one structure disclosed for performing the recited function. Ishida Co. v. Taylor, 221 F.3d 1310, 1316 (Fed.Cir.2000). The proper claim construction identifies all the relevant and/or alternative structures necessary to perform the function and allows the disputed claim to cover all of them. Ishida, 221 F.3d at 1316.

It is important to remember, however, that "before finally concluding" that a disputed term "encompasses" several alternative meanings and/or structures, the court "must determine whether the specification or prosecution history clearly demonstrates that only one of the multiple meanings [and/or structures] was intended." Inverness Medical Switzerland GmbH v. Warner Lambert Co., 309 F.3d 1373, 1378 (Fed.Cir.2002). This search for a single limitation is not to be confused with the well-settled rule against incorporating preferred embodiments "such as those often present in a specification" into a claim limitation. *Id*. (quoting Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed.Cir.1988)). That rule only applies when the *preferred* embodiment is being chosen over other disclosed alternatives to limit a claim term with language broader than the limitation imposed by the preferred embodiment. *Id*. Where there is evidence in the prosecution history, for example, that the inventor intended to limit the claim to the preferred embodiment, or to any embodiment, then that evidence will carry the day on the issue of claim construction. Id. at 1379-80.

As discussed below, we find that the written specifications do not provide a definitive answer regarding the necessary structure for performing the "automatically denominating" function. But, the prosecution history

of the '806 patent and its parent applications tell the tale. The tale told by the prosecution history is that of inventors who may have intended to broaden the '806 patent claims beyond a non-continuous, single-output evaluation device, but who could not accomplish this objective, despite the change to broader language in the '806 patent, because the patent examiner never removed his prior art objections. Specifically, the inventors had to limit the '067 and '951 patent claims, based on the same prior art obviousness objections by the patent examiner, to a non-continuous, single output evaluation device. Based on our review of the entire prosecution history for the '806 patent, we find that the disputed '806 patent claims must be limited in the same way that Cummins limited the parent claims, because prior art covers the broader claims that Cummins disavowed to obtain the '067 and '951 patents, but now wants to reclaim through litigation.

(a) The Specifications.

The written specifications have several parts: the abstract, the background, the summary, the drawings (and a description of them), and a description of the preferred embodiments. The invention claimed by the '806 patent is titled "Method and Apparatus for Currency Discrimination and Counting." The parties have no issues regarding the apparatus covered by the invention. The only claims at issue, as indicated, are the method claims, and more particularly, the method claims for currency discrimination and identification-not counting. We therefore focus on those portions of the specifications that regard the structures necessary to perform those functions.

In the abstract, the inventor describes "an improved method ... for discriminating between currency bills of different denominations [that] uses an optical sensing and correlation technique based on the sensing of bill reflectance characteristics obtained by illuminating and scanning a bill along its narrow dimension." The parties agree that this "optical sensing and correlation technique" is a software system. FN7 We will refer to it as software here. The rest of the abstract goes on to describe how this software distinguishes between bills of different denominations and how the software performs "denomination identification"-identification of a bill "as belonging to the denomination." In other words, the software described in the specifications incorporates a process for identifying "known" (genuine) versus "unknown" (spurious) bills. The abstract speaks of a correlation number system for achieving such identification and/or discrimination, but it does not say what the software does with the bills that are known and what it does with the bills that are unknown. The claims say what the invention does with the known bills (it stacks them in a "denominated bill output receptacle" ('806 patent, Col. 33, lines 46-47), or "one and only one output receptacle" (Id., Col. 36, line 51); but, it is not clear from the abstract what additional structure is needed for discriminating between the spurious and genuine bills and dealing with the spurious ones.

FN7. In the background, the inventor states that "optical sensing" is a "commonly used" technique ('806 patent, Col. 1, line 49). Thus, although this portion of the software claimed by the '806 patent is necessary structure for performing the claimed function of evaluation, the inventor is not claiming an "invention" as to this aspect of the software.

The background of the invention describes the invention as "relating, in general, to currency identification" and "more particularly to a method ... for automatic discrimination ... of different denominations ...." ('806 patent, Col. 1, lines 24-27). The background goes on to describe the "related art" and draws a distinction between "systems capable of handling only a specific type of currency" and "complex systems which are capable of identifying and discriminating among and automatically counting multiple currency denominations" (Id., Col. 1, lines 35-40). The '806 patent claims an invention that falls into the latter, more

complex system category.

The background section then proceeds to describe the "major obstacle" and "major problem" of conventional currency discrimination systems as being the tension between the desire for speed and accuracy: that is, the need to acquire an amount of data from the scanned bill sufficient to compare to the stored sample patterns in the software program of known bills in order to determine genuineness and denomination (which ordinarily had required scanning on the longer dimension of currency bills), versus the amount of "time required to analyze test data and compare it to predefined parameters in order to identify the currency bill under scrutiny, and the rate at which successive currency bills may be mechanically fed through and scanned" ('806 patent, Col. 1, lines 63-66). The background describes the problem as being that "systems capable of accurate currency discrimination are costly, mechanically bulky and complex, and generally incapable of both currency discrimination and identification at high speeds with a high degree of accuracy" (Id., Col. 2, lines 30-35).

The summary of the invention picks up from that point, and identifies the way in which the "present invention" solves those identified problems. Specifically, "[i]t is a principal object of the present invention to provide an improved method ... for identifying and counting currency bills comprising a plurality of currency denominations" ('806 patent, Col. 2, lines 38-41). The summary further calls out some other objectives of the invention, namely, to increase the speed and accuracy of the devices that both count and perform the task of "denomination discrimination" among a plurality of types of United States currency; and, to be compact in physical form, more economical, and more uncomplicated in construction and operation (Id., Col. 2. lines 45-50).

The "improved method" disclosed as the "principal object" of the invention is comprised of "an improved optical sensing and correlation technique adopted to both counting and denomination discrimination of currency bills" that "is based on" among other things-"scanning a bill along its narrow dimension, approximately about the central section of the bill" ('806 patent, Col. 2, lines 57-58). From this disclosure, it appears that the inventors are claiming a structure that comprises an improved software that adds a "correlation technique" that "scans" a bill "along its narrow dimension" (Id., Col. 2, line 57) and also "on the bill surface" (Id., Col. 2, line 61; Col. 3, line 5). The narrow dimension portion is expressly claimed (Id., Col. 33, lines 38, 41-42, 46): the correlation software and scanning on the bill's surface is not. Thus, the summary discloses the structure of the software that the inventors claim will help them achieve the identification aspect of the denominating function, but the summary does not tell us what structure to use for the discrimination aspect of that function because we still do not know what to do with the non-denominated (unknown or spurious) bills.

Thus, we move to the description of the preferred embodiments (and their corresponding drawings) (the "description"). The overwhelming majority of the description (all twelve pages, except for one arguable reference in one sentence in one paragraph, which we discuss below) discloses a currency evaluation device that employs a controlled stopping feature as part of the optical sensing and correlation technique that stops the device after a spurious bill is detected, and deposits the bill into the output bin so that it maybe removed before another bill is deposited on top of it (*see, e.g.,* '806 patent, Col. 15, lines 24-30, Col. 16, lines 16-24). The description discloses, in great detail, a device that stops as part of the discrimination step of the evaluation process. Moreover, because the device stops "the transport of a bill that has been identified as 'spurious" ' (Id., Col. 17, line 60), such a device needs only one single stacker bin (or output receptacle)-which is consistent with the desire, expressed in the summary, for a device that is "compact" (Id., Col. 2, line 49). The drawings for the description only show a device with one output receptacle or stacker (*see,*

e.g., '806 patent, Figures 11 and 13-15), and the description-like the language in Claim 40-refers exclusively to " *a* conventional stacking station where sensed and counted bills are collected" (Id., Col. 4, lines 1-3) (emphasis added) and " *the* stacker" (*See, e.g.,* id., Col. 17, line 12). FN8

FN8. We recognize that the articles "a" and "an" are not invariably synonymous with "one," but can mean "more than one, depending on the context in which the article is used." Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977 (Fed.Cir.1999); *see also* Tate Access Floors, Inc. v. Maxcess Technologies Inc., 222 F.3d 958, 966 n. 4 (Fed.Cir.2000) (giving "a" and "an" a plural meaning "in view of the embodiment disclosed in the specifications"). For reasons discussed in the text, we read the embodiment, the balance of the specifications and the prosecution history all to suggest that these articles be given their singular meaning.

The only reference in the specifications that may arguably be read as disclosing a multi-output bin device is found in one "fleeting" passage in the description:

Another advantage accruing from the reduction in processing time realized by the present sensing and correlation scheme is that the response time involved in *either stopping the transport of a bill* that has been identified as "spurious", i.e., not corresponding to any of the stored master characteristic patterns, *or diverting such a bill to a separate stacker bin,* is correspondingly shortened. Accordingly, the system can conveniently be programmed to set a flag when a scanned pattern does not correspond to any of the master patterns. The *identification of such a condition* can be used to stop *the bill transport drive motor* for the mechanism.

('806 patent, Col. 17, lines 57-67) (emphasis added). Cummins argues that the reference a "separate stacker bin" expressly disclosed an invention with two output pockets: one for known bills, and one for spurious or rejected bills (Cummins Reply at 25). Cummins repeated this contention at oral argument, and further argued that the preceding reference to "stopping the transport of a bill that has been identified as 'spurious" ' calls out the preferred embodiment disclosed in the description.

This latter interpretation strikes the Court as implausible, because stopping the transport of a bill that has been identified as spurious is not what the preferred embodiment discloses. Rather, the preferred embodiment discloses an invention that allows the transport of the spurious bill to continue until it is deposited in the output pocket; then and only then does the transport stop, so that no additional bills will be deposited into the pocket on top of the spurious bill. Thus, we read this language to refer to an approach different from that in the preferred embodiment discussed at length in the description.

Cummins' interpretation of the reference to diverting a spurious bill to a separate stacker bin, on the other hand, is not facially implausible. The word "divert" would suggest redirecting the spurious bill from the path that a known or genuine bill would follow, and the reference to a "separate" stacker could be interpreted as a separate, dedicated output pocket that would receive only spurious or rejected bills. On the other hand, the reference to diverting the spurious bill to a separate stacker could be read as expressing in different words the preferred embodiment; the single output pocket which accumulates known currency in substance becomes a reject bin when a spurious bill is deposited into it, and the system then stops so that no other bills-known or spurious-can be deposited in that pocket until the spurious bill is removed. During oral argument, counsel for Cummins conceded that this language could be read as referring to the system of handling spurious bills disclosed in the preferred embodiment.

In the Court's view, the immediately following sentences in Column 17 do not resolve the question. The first sentence, introduced by the word "accordingly," suggests that what follows is the result of either stopping the transport of the bill or depositing it in a stacker bin. But, the sentence that follows the word "accordingly" merely says that the system can be programmed to set a "flag" when a spurious bill is identified-which would have to be done under any embodiment to ensure that the spurious bill is not commingled with genuine bills. This sentence does not shed light on what method of handling the bills identified as spurious is disclosed in the preceding sentence. And, the next sentence states that identification of a spurious bill "can be used to stop the bill transport drive motor for the mechanism" ('806 patent, Col. 17, Lines 66-67) that would be necessary to the approach described at length in the preferred embodiment (stopping the transport immediately after the spurious bills is deposited in the output pocket), or in an alternative approach (set forth in Col. 17, lines 59-60) (stopping the transport of the bill that has been identified as spurious, before it reaches the output pocket). But, identification that stops the transport of a spurius bill would not be necessary if there was a separate output pocket dedicated to receiving spurious bills, since in that event there would be no need to stop the transport to avoid commingling known and spurious bills. On the other hand, the fact that this sentence states that identification of a spurious bill "can be used" to stop the bill transport drive can be read to mean that it "need not be used" to do that-which could be consistent with a continuous output system that contains two pockets, one exclusively dedicated to genuine bills and the other to spurious or rejected bills (*i.e.*, the " *separate* stacker bin").

For these reasons, we find the passage upon which Cummins relies for its disclosure of a multi-pocket continuous operation unit to be ambiguous. Accordingly, we look to the prosecution history.

(b) The Prosecution History.

It is in the prosecution history for the '806 patent, and the history of its predecessor or parent patents, especially the '067 and '951 patents, that we find the answer to our question regarding the proper scope of the term "automatically denominating" in the disputed claims. We focus, in particular, on the discriminating function since the identification function for recognized bills only requires the structure of software identified in the specifications as the "optical sensing and correlation technique." We therefore look to the prosecution history for the sole purpose of identifying the structure necessary to perform the discrimination function, and to consider Glory's assertion that Cummins has disavowed any claim to a two-pocket continuous operating unit (Glory Mem. at 45). We review the governing legal principles first.

The relevant legal rule is known as "prosecution history estoppel." "Prosecution history estoppel precludes a patentee from obtaining in an infringement suit patent protection for subject matter which it relinquished during prosecution in order to obtain allowance of the claims." Mark I Marketing Corp. v. R.R. Donnelly & Sons Co., 66 F.3d 285, 36 U.S.P.Q.2d 1095, 1099-1100 (Fed.Cir.1995). "The standard for determining whether particular subject matter was relinquished is an objective one that depends on what a competitor reasonably would conclude from the patent's prosecution history. The application of prosecution history estoppel is a question of law." *Id*. (internal citations omitted). The relevant "history" is not limited to the particular patent-in-suit if that patent is part of a "continuation-in-part application." *Id*. FN9 Rather, the prosecution history must be examined with respect to the entire history of the patent-in-suit to determine whether estoppel applies. *Id*. (citing Jonsson v. Stanley Works, 903 F.2d 812, 818 (Fed.Cir.1990) (prosecution history of parent application in a continuation-in-part series relevant to understanding claim scope). When viewing this entire history, the examining court must be careful "to determine whether and what subject matter was surrendered to procure issuance of the patent." *Id*. Thus, the case law confirms that "any interpretation that is provided or disavowed in the prosecution history ... shapes the claim scope." *See,*

e.g., Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249 n. 3 (Fed.Cir.1998) (citing Loctite Corp. v. Ultraseal, Ltd., 781 F.2d 861, 867 (Fed.Cir.1985) (holding that term not limited by the specifications was nonetheless "expressly defined" in a narrow manner in the prosecution history). This rule applies in a step-plus-function method claim where a court is searching for the structure or structures necessary to perform the claimed function. *See* Personalized Media v. Int'l Trade Comm'n, 161 F.3d 696, 704-05 (Fed.Cir.1998).

FN9. "A CIP (continuation-in-part) application contains subject matter from a prior application and may also contain additional matter not disclosed in the prior application:" *Augustine,* 181 F.3d at 1301. "Different claims of such an application may therefore receive different effective filing dates." *Id.* "Subject matter that arises for the first time in the CIP application does not receive the benefit of the filing date of the parent application." *Id.* Thus, the decision on the proper priority date-the parent application date or the CIP application date-for subject matter claimed in a CIP application depends on when that subject matter first appeared in the patent disclosures. To decide this question, a court must examine whether the "disclosure of the application relied upon reasonably convey[s] to the artisan that the inventor bad possession at that time of the later claimed subject matter." *Id.*

"[T]he prosecution history of a parent application may limit the scope of a later application using the same claim term." Augustine Medical, Inc. v. Gaymar Indus., Inc., 181 F.3d 1291, 1300 (Fed.Cir.1999); Elkay Manufacturing Co. v. Ebco Manufacturing Co., 192 F.3d 973, 981 (Fed.Cir.1999); Mark I Marketing Corp., 66 F.3d 285, 36 U.S.P.Q.2d at 1100. For example, where the inventor claims certain limitations in response to the patent examiner's rejection of the patent or certain claims within it, those limitations will be read into the disputed claim. This rule has the effect of preventing an inventor from being able to recapture subject matter through broad claims in a continuation-in-part application for a new patent that was surrendered in a parent application in order to obtain issuance of that patent. Augustine, 181 F.3d at 1298-99.

Surrender of subject matter can occur either by the amendments filed or arguments made by an applicant to overcome the patent examiner's objections to the disputed claims. *Id.* In particular, "the prior art may aid in determining the scope of an estoppel." *Id.* at 1299. Specifically, during prosecution a patentee cannot add a claim limitation in a parent application to overcome prior art and then later assert in a continuation-in-part application for another patent, which is subject to the same prior art objections, that the prior claim limitation is not binding on the patent-in-suit. *Id.* at 1299-1301. FN10

FN10. Cummins asserts that this legal principal is limited to parent applications with the same *literal* language in the disputed claims (Cummins Reply at 26). We disagree. The two cases that Cummins cites to support this proposition, Advanced Cardiovascular Systems, Inc. v. Medtronic, Inc., 265 F.3d 1294 (Fed.Cir.2001), and *Al-* Site Corp. v. VSI Inat'l, Inc., 174 F.3d 1308, 1322-23 (Fed.Cir.1999), are distinguishable from this case. In *Medtronic,* for example, specific limitations were added to claim terms in the parent application that did not appear, literally or functionally, in the successive patent-in-suit, 265 F.3d at 1305. That is not the case here where the claim terms, although they use different literal language, describe the same function to be performed by the device when it discriminates among a plurality of bills. *Al-Site* is also distinguishable from our case because, there, the court found that claim language in the parent application was different than that found in the patent-in-suit and had a different meaning. Thus, the specific limitations added to the claims in the parent application had no relevance to the claims at issue in the patent-in-suit. As indicated below, we find that the disputed claims of the '806 patent are functionally the same as those that were limited by Cummins to overcome prior art objections to what became the '067

and '951 patents.

The '806 patent was issued as part of a continuation-in-part process that included prosecution of the '067 patent (based on Application No. '337) and '951 patent (based on Application No. 203). The prosecution history of these two parent applications is especially relevant to the disputed claims of the '806 patent because the same patent examiner, Mr. Phouc Tran, raised the same prior art objections to the disputed claims in the '806 patent as he did to claims that were *functionally the same as* those in the '067 and '951 patents (*i.e.*, claims disclosing the identification and discrimination functions that later were reduced to the shortened term "denominating" in the '806 patent).

The patent examiner initially rejected certain claims in the '067, '951 and '806 patents on the grounds that they were rendered obvious over certain prior art in particular, the Jones and the O'Maley patents. Jones discloses a device that counted currency with an apparatus that included an input receptacle; a single output receptacle for receiving evaluated bills; a transport mechanism for transporting bills; a discriminating unit for evaluating the bills; and a means for flagging a bill when the identity of the bill could not be determined by the discriminating unit. However, the Jones device does not determine the denomination of the bill. It is the O'Maley invention that both determines the denomination of a bill and discriminates between genuine bills and spurious bills. But, the O'Maley device discloses a continuous operation that did not count the currency, and "teaches the use of at least two output receptacles" (Cummins Reply, Gatz Dec., Ex. D, CG0000662): one for rejected or spurious bills and the other for denominated or successfully evaluated bills. Thus, although the patent claims did not literally read on either the Jones or O'Maley patents, the patent examiner initially rejected the disputed claims in the Cummins' patent applications as invalid under 35 U.S.C. s. 103, because he thought it was "obvious" to combine the two inventions into one device: the Cummins' invention, as disclosed in the '067, '951 and '806 patents.

It is this Court's view that Cummins persuaded the examiner to issue the claims that were initially rejected based on the Jones/O'Maley prior art by limiting Cummins' claims, including those that are disputed in this lawsuit, to a non-continuous device using a single output receptacle for denominated and non-denominated bills. Our reasons for this conclusion are as follows.

With respect to Application No. 200 (which led to the '806 patent), the examiner rejected all pending claims under 35 U.S.C. s. 103 for obviousness in light of the Jones and O'Maley prior art (Cummins Reply, Gatz Dec., Ex. F, CG0000014). To overcome this objection, Cummins argued that the examiner had engaged in impermissible hindsight to combine the two references and that the invention claimed by what is now the '806 patent teaches a device that is distinguishable from the simple note counter invented by Jones and the denomination discriminator invented by O'Maley (Id. at CG0000014-15). Cummins argued that the claims of the '806 patent were distinguishable from the prior art because they contain, among other things, the limitations "automatically denominating bills of a plurality of U.S. denominations," "delivering any bill that has been denominated to one and only one output receptacle," delivering bills which have been evaluated to an output region comprising one and only one stacker wheel containing output receptacle," and "delivering any bill that has been denominated to one and only one output receptacle" (Id. at CG0000015). In other words, Cummins did not provide any arguments outside the claimed language to overcome the examiner's obviousness objections. We, therefore, look to the prosecution history of the parent applications for clues regarding the scope of the disputed claims.

Although the disputed claim language in the applications for the '067 and '951 patents is not *literally* the

same as what appears in the '806 patent's disputed claims, the identification and discrimination function claimed by the '067 and '951 patents is the same as that claimed by Cummins in the '806 patent. Thus, we find the prosecution history of the '067 and '951 patents relevant to the determination of what "automatically denominating" in the disputed claim is limited to and thus covers (*i.e.*, what the necessary structure is for performing that aspect of the identification and discrimination function).

It is clear from the prosecution history of the parent applications for the '067 and '951 patents that Cummins limited the scope of the claims regarding the discrimination function in those patents to a non-continuous, single output receptacle. In the face of the Jones/O'Maley prior art objections by the examiner, Cummins distinguished the claims in the '067 and '951 patents by arguing that the inventions did more than combine the teachings of the single output receptacle note counter invented by Jones (an invention with the ability to flag unknown bills, including counterfeits, by stopping the machine, but which could not determine the denomination of the bills it was counting) with O'Maley's multiple output receptacle denomination discriminator (Cummins Reply, Gatz Dec., Ex. E, CG0001552; Ex. D, CG0000662-63). According to Cummins, the claims of the '067 and '951 patents discriminated, denominated and counted using a single-output receptacle and a controlled stopping function, so that spurious or rejected bills could be removed and thus culled out from the genuine bills that would be denominated, counted and deposited in the output receptacle (Id., Ex. D at CG0000662-663; Id., Ex. E, CG0001551-1552).

Specifically, with regard to the '067 patent, Cummins successfully distinguished its claims from the prior art by arguing that it was not obvious to combine a denomination discriminator, which necessarily needed to do something with unknown bills, with a single output receptacle. The invention was the combination of those features, and the combination worked due to the controlled stopping feature and the software that allowed the unknown bill to be removed without commingling it with the known bills (Id., Ex. D, CG0000662). Cummins further explained to the examiner that this combination of a currency discriminator utilizing a single-pocket satisfied a "long felt need" for a unit that was more compact, lighter and more attributable than previously available systems, and that the single output pocket "contributes to these attributes by reducing the mechanical complexity of the device including a reduction in the number of parts" (Id., Ex. D, CG0000665). This point is consistent with Cummins' stated objective in the summary of the '067 (and '806 patent) that an object of the invention was to create a unit that is "compact, economical, and has uncomplicated construction and operation" (*compare* '067 patent, Col. 2, lines 41-42; and '806 patent, Col. 2, lines 49-50). As evidence that the '067 patent was not obvious, Cummins pointed to the long coexistence of single-pocket note counters and multi-pocket discriminators, without characteristics of a "single pocket" and a discrimination function being combined in one unit (Cummins Reply, Gatz, Dec., Ex. D, GC0000666).

With regard to the '951 patent, Cummins again distinguished its claims from the Jones/O'Maley prior art by arguing that it was not obvious to combine a denomination discriminator that flagged not only unknown bills, but also spurious bills, with a note counter in a single device that contained only one output receptacle for known and unknown bills (Cummins Reply, Gatz Dec., Ex. E, CG0001552). In particular, Cummins argued that the combination of prior art would teach a device that "would detect counterfeit bills and determine their denomination" (as well as, presumably, count the denominated bills), but "it would stop when a suspect bill was detected *and also divert* it to a separate bin" (Id.) (emphasis added). Because the Cummins' invention "does not do that" Cummins argued that there was "no suggestion that such a combination" could "be made" (Id.). In addition, Cummins distinguished other prior art cited by the examiner (the Glory GFB-200 series) by pointing out that the cited Glory units deposited both a suspect bill and the next bill into the output tray, whereas the Cummins' invention "features stopping the machine such

that only the suspect bill is deposited in the output tray for inspection" (Id., Ex. E, 0001553).

The Court finds that these statements by Cummins expressly limited the claims of the '067 and the '951 patents to a currency evaluation device that performed the identification and discrimination function by using a non-continuous, single output receptacle. In overcoming the examiner's objectives, Cummins asserted that this "combination" of features was distinct and not obvious from the prior art because the prior art did not teach the art of discrimination and identification using a single output receptacle; and, the only way such an art could be achieved was by using a stopping mechanism for the discrimination that did not divert the spurious bills to a separate stacker bin or output receptacle. Given this history, which preceded the application for the '806 patent, it is difficult to see how the discrimination step in the denominating function-broadly identified as "denomination discrimination" in the *same* specifications used for the '067 and '951 patents-can avoid being limited to a non-continuous currency evaluation device comprising a single output receptacle.

In so stating, we acknowledge that Cummins' use of broader claim language in the '806 patent may have been intended to cover a broader range of devices than the non-continuous, single output receptacle evaluation system to which Cummins limited itself in order to overcome the examiner's prior art rejections and obtain issuance of the '067 and '951 patents. And, we further recognize that in responding to the examiner's same prior art rejection in the application leading to the '806 patent, Cummins did not expressly state that its invention was limited to a device with a controlled stopping function and a single output receptacle-as we believe Cummins clearly did in connection with the '067 and '951 patents. But, at the same time, in addressing the examiner's prior art rejections in the prosecution of the '806 patent, Cummins did not expressly indicate that it was seeking by its new claim language an invention covering the continuous operating machine with multiple output pockets. Rather, Cummins simply pointed the examiner to the new claim language which contained the term "automatically denominating"-a term that was not used in the prior patents and that Cummins did not explain. Cummins did nothing to alert the examiner that it was seeking to cover by the '806 patent what it had previously disavowed, in order to avoid a rejection due to prior art, in obtaining the '067 and '951 patents. Nor can Cummins point to the brief passage in Col. 17 of the '806 patent to a unit that would "divert [spurious bills] to a separate stacker bin" as revealing this intent; that same passage in the specifications of the '806 patent also appears in the '067 and '951 patents.FN11

FN11. In light of the prosecution history, Cummins' reliance on this language does not carry the day. A fair reading of the prosecution history shows either (a) that this language, which was in the applications for '067 and '951 patents, does not mean what Cummins now claims, or else Cummins would not have told the examiner that its invention was a one output device with a controlled stopping function, or (b) that the cited language means what Cummins claims, but that Cummins disavowed any effort to obtain a patent for a multi-output continuous operation unit when confronted with prior art that jeopardized the issuance of the patents at all.

The fact remains that the discriminating step in the evaluation function of the '806 patent is functionally the same as that step in the '067 and '951 patents. It stands to reason that the same limitations would apply to that step, despite linguistic differences in the claim language. Otherwise, the broad claims now urged by Cummins would run headlong into the combination taught by Jones and O'Maley, and the Cummins' inventors admitted as much in prosecution of the '951 patent (Gatz Dec., Ex. E, at CG0001552) ("A combination of the machines of O'Maley and Jones ... would detect counterfeit bills and determine their denomination, as the applicants' machine does. However, it would stop when a suspect bill was detected and

also divert it to a separate bin").

In sum, we refuse the invitation to allow Cummins to recapture through litigation subject matter that it surrendered to obtain issuance of the '067 and '951 patents-and thus the '806 patent. This Court finds that the proper construction of "automatically denominating" in the '806 patent's disputed claims is limited to a non-continuous currency evaluation device that has only one output receptacle.

C. Claim Comparison and Literal Infringement.

Thus, we reach the issue of infringement. Given our construction of the disputed terms, the literal infringement and/or claim coverage question is relatively straightforward.

Claim comparison and literal infringement is a question of fact. Tate Access Floors, Inc. v. Maxcess Technologies, Inc., 222 F.3d 958, 964 (Fed.Cir.2000). A claim is literally infringed if each properly construed claim element reads on the accused product or process. Jeneric/Pentron Inc. v. Dillon Co., 205 F.3d 1377, 1382 (Fed.Cir.2000). The claim need not read on the entirety of an accused product. SunTiger Inc. v. Scientific Research Funding Group, 189 F.3d 1327, 1336 (Fed.Cir.1999) ("If a claim reads merely on a part of an accused device, that is enough for infringement"). For claim elements written in step-plus-function language, literal infringement occurs only when the accused product employs a step identical to the step disclosed in the patent's specification to perform the identical function of the claim element, or employs a step that is the structural equivalent to the step disclosed in the patent's specification to perform the identical function of the claim element. Kemco Sales Inc. v. Control Papers Co., 208 F.3d 1352, 1364 (Fed.Cir.2000).

[4] We find that Cummins has failed to make a clear showing of a likelihood of success on the infringement prong of the preliminary injunction test. The accused Glory products, the S60 and S80 devices, can be operated in both continuous and non-continuous modes because they have two output receptacles: a stacker bin for denominated bills and a reject pocket for spurious bills. Although the Court is troubled by the fact that the accused devices can be operated in a non-continuous mode for purposes of the discrimination step, we do not find it likely that Cummins would establish literal infringement, because the '806 patent is limited by its prosecution history to a device that *must* stop (a diverting step for non-denominated bills would invalidate the '806 patent's claims in light of the prior art). Because the stopping function for spurious bills means that the device claimed by the '806 patent needs only one output receptacle, the fact that the accused devices have two output receptacles is irrelevant for purposes of the infringement analysis because a claimed stopping function can operate with one or multiple output pockets. The key is that the '806 patent is limited to a device that stops, but the accused devices do not have to stop but can also run continuously.

To infringe-literally or by the doctrine of equivalents-the '806 patent would have to read on every relevant element in the accused devices. FN12 It cannot read on every relevant element of the accused devices because the accused devices incorporate a diverting feature that Cummins might like to claim as one potential embodiment of its inventions (and perhaps has conceived of doing since the very first patent application filed in 1990), but that Cummins disavowed in the PTO because the broader claim always ran headlong into the prior art. Accordingly, the Court finds that Cummins has not made a clear showing that it is likely to succeed on the merits of its infringement claim against Glory.

FN12. With respect to the identification aspect of the denomination function, Cummins makes a half-hearted pass at arguing that the software used by the accused devices may infringe by equivalence

(Cummins Reply at 32-33). The Mouri Declaration offered by Glory in its submission does not support a finding of infringement by equivalence under Section 112(6) with respect to the disclosed software for performing the identification aspect of the denomination function. Based on Mr. Mouri's description of the software employed by the accused devices, it appears that there is no correlation technique used and that the bills are scanned on the front and the back side of the bills, rather than simply on the surface of the bill. This seems to be a material difference in how the software identifies genuine bills and "denominates" them. This difference would preclude literal infringement and infringement by equivalence.

III.

In this section, we address the validity challenges raised by Glory with respect to the disputed claims. The Court believes that the foregoing claim construction obviates most of these challenges. Indeed, we note that there is an inverse relationship with respect to the issues of infringement and invalidity in this case. If the claims are construed broadly to cover the accused devices, as Cummins asserts, then there is a substantial question as to their validity; if the claims are construed more narrowly, as Glory argues and as we have found, then they likely are saved from invalidity but, as explained above, they fail to cover the accused devices.

Consequently, based on our claim construction, we find that there is a strong likelihood that the disputed claims are valid. We begin our analysis with the relevant legal standards.

A.

In general, "[f]or an invention to be patentable, it must be (1) of patentable subject matter, (2) useful, (3) new, and (4) nonobvious. Before an inventor can obtain a patent for a patentable invention, he or she must (1) be an original inventor, (2) avoid the statutory time bars, (3) adequately disclose the invention, and (4) distinctly claim the invention." PATENT LAW & PRACTICE, Chapter 4, at 61 (Fed. Judicial Center, 3d ed.2001) [hereinafter "PATENT LAW"].

At the preliminary injunction stage, there is a statutory presumption, created by 35 U.S.C. s. 282, that a patent issued by the PTO is valid. *See, e.g.,* New England Braiding Co., Inc. v. A.W. Chesterton Co., 970 F.2d 878, 882 (Fed.Cir.1992). But, this presumption "does not relieve a patentee who moves for a preliminary injunction from carrying the normal burden of demonstrating that it will likely succeed on all disputed liability issues at trial, even when the issue concerns the patent's validity." *Id.* A defendant accused of infringement must therefore affirmatively challenge the patent's validity. *Id.* "If the alleged infringer raises a substantial question concerning validity, *i.e.,* asserts an invalidity defense that the patentee cannot prove 'lacks substantial merit,' the preliminary injunction should not issue." Helifix Ltd. v. Blok-lok, Ltd., 208 F.3d 1339, 1351 (Fed.Cir.2000). Under recent case law, the defendant only has the burden of raising "substantial questions" of invalidity on evidence that is less than the clear and convincing evidence needed to support a judgment of invalidity at trial. *See, e.g.,* Amazon.com, Inc. v. Barnesandnoble.com. Inc., 239 F.3d 1343, 1358 (Fed.Cir.2001) ("[i]n resisting a preliminary injunction ... one need not make out a case of actual invalidity. Vulnerability is the issue at the preliminary injunction stage, while validity is the issue at trial. The showing of a substantial question as to invalidity thus requires less proof than the clear and convincing showing necessary to establish invalidity itself"). The plaintiff then must show the defense "lacks substantial merit." *Helifix,* 208 F.2d at 1351.

Glory raises three invalidity defenses one under 35 U.S.C. s. 102; one under 35 U.S.C. s. 103; and one

under 35 U.S.C. s. 112(1). Section 102 applies when the invention is not "new" and/or lacks "novelty." Any patent invalidated under Section 102 is said to be invalid for lack of "novelty" due to "anticipation"-which means that there is a single piece of relevant prior art that teaches all the claimed elements of the patent. PATENT LAW, at 66. Under Section 102(b), Glory makes a public use defense (*i.e.,* that Cummins was using a machine embodying all the claimed elements in the '806 patent more than one year prior to May, 19, 1992, the date Glory says is the priority date for the patent, without an obligation of secrecy).

Section 103 applies when the invention is obvious based on the prior art that came before it. Any patent invalidated under Section 103 is said to be invalid for "nonobviousness"-which means that its claimed subject matter reflects an "obvious" combination of elements already patented by the prior art. PATENT LAW, at 73-74. In other words, invalidity due to anticipation under Section 102 refers to a single prior art reference, and invalidity due to obviousness under Section 103 refers to a combination of prior art references. Under Section 103(a), Glory argues that the '806 patent was obvious in light of prior art.

Section 112(1) requires that the inventor "describe in the specification the invention covered by the claims." PATENT LAW, at 90. Glory argues here that the '806 patent fails for lack of the written description necessary under Section 112(1).

We will address each of these three validity challenges in turn.FN13

FN13. This Court will not address Glory's post-briefing argument regarding "enablement" made for the first time during oral argument.

B.

Title 35 U.S.C. s. 102 states, in relevant part, that:

(a) "A person shall be entitled to a patent unless the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States,....

Glory's Section 102 defense focuses on the "public use" portion of subsection (b).

"A person is not entitled to a patent if the invention disclosed therein was in public use in this country more than one year before the application date for the patent. 35 U.S.C. s. 102(b)." New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co., 298 F.3d 1290, 1297 (Fed.Cir.2002). An invalidating public use under Section 102(b) is not necessarily "open and visible in the ordinary sense," but, rather, "includes any use of the claimed invention by a person other than the inventor who is under no limitation, restriction, or obligation of secrecy to the inventor." *Id.;* Woodland Trust v. Flowertree Nursery Inc., 148 F.3d 1368, 1370 (Fed.Cir.1998) ("publicly accessible" means a use taken without any affirmative steps to conceal it).

To find an issued patent invalid under the public use doctrine, the machine used must be one that embodies

all of the elements in the claimed subject matter. Juicy Whip, Inc. v. Orange Bang, Inc., 292 F.3d 728, 737 (Fed.Cir.2002), *cert. denied,* --- U.S. - - - - , 123 S.Ct. 537, 154 L.Ed.2d 426, 2002 WL 31060497 (Nov. 12, 2002) (to prove invalidity from prior public use, "the party with the burden of proof must show that 'the subject of the barring activity met each of the limitations of the claim, and thus was an embodiment of the claimed invention' ") (internal citation omitted). *See also* RCA Corp. v. Data General Corp., 887 F.2d 1056, 1061 (Fed.Cir.1989). However, if the inventor was merely "testing claimed features of his invention [,]" then the use is not considered to be invalidating, despite its otherwise public nature. New Railhead, 298 F.3d at 1297 (citing EZ Dock, Inc. v. Schafer Sys., Inc., 276 F.3d 1347, 1353 (Fed.Cir.2002)). Testing the claimed features of an invention occurs "[w]hen an evaluation period is reasonably needed to determine if the invention will serve its intended purpose." Seal-Flex, Inc. v. Athletic Track & Court Constr., 98 F.3d 1318, 1324 (Fed.Cir.1996).

The fact that such testing takes place in the public (for example, at a customer site rather than in a laboratory) is not dispositive of whether the use constitutes "testing." *See* City of Elizabeth v. Am. Nicholson Pavement Co., 97 U.S. 126, 134-35, 24 L.Ed. 1000 (1877) (it is not necessary for the inventor to test the machine in the "shop" or laboratory: "if used under the surveillance of the inventor, and for the purpose of enabling him to test the machine, and ascertain whether it will answer the purpose intended," then the use is considered experimental and not public). *See also* Pfaff v. Wells Electronics, Inc., 525 U.S. 55, 64, 119 S.Ct. 304, 142 L.Ed.2d 261 (1998) ("an inventor who seeks to perfect his discovery may conduct extensive testing without losing his right to obtain a patent for his invention even if such testing occurs in the public eye. The law has long recognized the distinction between inventions put to experimental use and products sold commercially"). It also does not matter whether the inventor gains marketing advantages from the public nature of the testing. Allied Colloids Inc. v. American Cyanamid Co., 64 F.3d 1570, 1575 (Fed.Cir.1995) ("Commercial purpose underlies virtually every contact between inventor and potential customer. When testing an invention entails customer contact, that does not convert an otherwise experimental purpose into a public use"); Seal-Flex, 98 F.3d at 1322 (reversing district court finding that, as a matter of law, contacts with potential future customers triggered one-year statutory bar, when at the time the contacts were made it was not known whether the invention would perform satisfactorily under actual conditions of use).

In sum, the issue is not whether there is public knowledge of the invention (no matter how many people know about it); the issue is whether there is public use of a machine that was reduced to practice. T.P. Labs., Inc. v. Professional Positioners, Inc., 724 F.2d 965, 970 (Fed.Cir.1984) (citing City of Elizabeth, 97 U.S. at 136). On this issue, "secrecy alone is an ineffective gauge of experimentation." New Railhead, 298 F.3d at 1299. As the Federal Circuit has explained:

The fact that the device was not hidden from view may make the use not secret but non-secret use is not *ipso facto* "public use" activity. Nor, it must be added, is all secret use *ipso facto* not 'public use' within the meaning of the statute, if the inventor is making commercial use of the invention under circumstances [that] preserve its secrecy.

T.P. Labs., 724 F.2d at 972 (internal citations omitted).

To determine whether the claimed invention that was "tested" was "reduced to practice" it is helpful to determine when the inventor realized that the invention as later claimed indeed worked for its intended purpose. Once such a point in the process is realized, it is safe to say that further "experimentation" is not really experimentation or testing, and would "constitute a barring public use." New Railhead, 298 F.3d at

1297; RCA Corp. v. Data Gen. Corp., 887 F.2d 1056, 1061 (Fed.Cir.1989) ("experimental use, which means perfecting or completing an invention to the point of determining that it will work for its intended purpose, ends with an actual reduction to practice"). However, a machine that tests well and/or does not reveal any need for change or modification will not invariably meet the standard of working for its intended purpose. City of Elizabeth, 97 U.S. at 135. A related principle is that if a machine that is tested is, in fact, modified before it goes into production for commercial sale, then the machine that was tested before the patent application was filed has not been reduced to practice. *Id*. In short, the issue is whether the inventor began to practice the claimed invention in the public arena for the purposes for which it was designed.

With these legal principles in mind, we examine Glory's public use argument. Glory contends that "[t]he '806 patent is invalid under 35 U.S.C. s. 102(b) since a machine embodying all of the claimed elements was publicly used more than a year prior to the filing date of May 19, 1992 by third parties without an obligation of secrecy" (Glory Mem. at 26). Cummins raises a number of arguments in response. *First,* Cummins contends that Glory's public use argument lacks substantial merit "because the alleged 'public use' consisted solely of experimental testing of Cummins' invention" and "many of the facts relating to this experimental testing were presented to the [PTO]" (Cummins Reply at 13-14). Consequently, implies Cummins, the PTO had before it the public use issue and did not refuse issuance of the '806 patent on the basis of public use (Id. at 14). *Second,* Cummins argues that this experimental testing was done pursuant to confidentiality agreements (Id. at 20-21). *Third,* Cummins argues that the machines tested between January 17 and April 25, 1991 did not embody the mixed-mode, high speed claims present in the '806 patent's disputed claims 76 and 101 (and some of their dependent claims), and that the invention thus was not reduced to practice until August 1991-less than one year before the application date (Id. at 22-23, citing Graves Dec., para.para. 9-10). *Fourth,* Cummins argues that independent Claim 40 and dependant Claims 41-42 and 46-48 in the '806 patent are not even at issue with respect to the public use defense because those claims are entitled to claim priority from the first patent application (Application No. '111) that Cummins filed on February 5, 1990 and, accordingly, are unaffected by any public use alleged by Glory (Cummins Reply at 14 n.5).

In a nutshell, Glory is arguing that the machines that Cummins designed and tested in December 1990 and early 1991 were "reduced to practice" and, therefore, in "public use" more than one year prior to May 19, 1992, the date that Cummins filed Application No. '648 (which continued in part the abandoned Application No. '111), which-through four subsequent continuation applications-resulted in the '806 patent. This argument assumes that the disputed claims in the '806 patent all hail from Application No. '648, rather than from the abandoned Application No. '111, since a filed patent application would moot a public use defense as to any claims that could claim priority from a 1990 application. Cummins, however, argues that Claim 40-and most of its dependent claims-take priority from Application No. '111, filed on February 5, 1990 (Cummins Reply at 1). For "obvious" reasons (no pun intended), we deal with this dispute before we analyze the remaining public use arguments.

1.

If Claim 40 and dependent Claims 41-42, and 46-48 in the '806 patent take priority from the Application No. '111, filed on February 5, 1990, then the public use defense does not apply and cannot invalidate those claims.FN14 Cummins argues that Claim 40 is entitled to priority from Application No. '111 because Claim 40 (like the invention claimed in Application No. '111) did not incorporate a controlled stopping feature (or an 800 bills per minute processing speed), as did the 1992 application and its progeny (Cummins Reply at 1-2). Conversely, Glory contends that all of the '806 patent claims must claim priority from Application No. '648, which was filed on May 19, 1992, because the term "automatically denominating" in Claim 40 of the

'806 patent must be read to incorporate a controlled stopping operation based on the disclosures in the 1992 application and in every CIP application leading up to the '806 patent-including the prosecution history of this patent family (Glory Mem. at 26-27). We agree with Glory on this point.

FN14. But, based on the Court's construction of Claim 40, the earlier priority date would not ultimately help Cummins obtain a preliminary injunction. Even if Claim 40 and dependent claims 41-42, 46-48 were entitled to the earlier date, and read so that neither the claims nor specifications of Application No. '111 call out a controlled stopping operation limitation, these facts would not save Claim 40 from invalidity (if we read that claim broadly to cover a device that could stop or divert bad bills to a separate stacker bin), in light of the prior art (specifically, the O'Maley and Jones patents). Thus, were we to read the claim as broadly as Cummins urges (to cover the accused devices and thus provide a basis for infringement), there would be serious Section 103 validity problems for Claim 40 (and its dependent claims) to overcome-problems we believe Cummins would not likely be able to overcome, for purposes of obtaining a preliminary injunction.

Cummins correctly points out that Application No. '111 did not specifically claim a device with a controlled stopping operation (Cummins Reply at 2). Instead, the only reference to "stopping" is in the written specifications for the Application No. '111, which merely recited the language we already have analyzed regarding "stopping the transport of a bill ... or diverting such a bill to a separate stacker bin" (Id., Gatz Dec., Ex. A, at CG0001873)-language that appears in the specifications not only of Application No. '111, but in every succeeding application through the issuance of the '806 patent. By contrast, the controlled stopping feature, a limitation claimed in Application No. '648 is a necessary limitation to the term "automatically denominating" in Claim 40. Thus, we find that Claim 40 and its dependent claims are not entitled to claim priority from the Application No. '111. Instead, the Court finds that Claim 40 and its dependent claims-like the other claims at issue here-must take priority from Application No. '648, filed on May 19, 1992. That said, we move now to the question of invalidity by public use under Section 102.

2.

[5] The public use question is integrally tied to the priority date issue because Cummins began using a prototype JetScan 4060 in the public on January 17, 1991 and continued this use through April 25, 1991 (Glory Mem., Adli Dec., Ex. 1). In this case, the relevant filing date is May 19, 1992 when Application No. '648 was filed. Thus, if (1) Cummins' testing of its JetScan 4060 (a device known as the "CRC" prototype) between January 17 and April 25, 1991 would constitute a "public use"; and (2) the JetScan 4060 reads on the '806 patent (because the CRC embodies its claims), then this use would invalidate the '806 patent because the JetScan 4060 was being used in the public more than one year prior to the filing date of Application No. '648 which lead to issuance of the '196 patent and, through CIP applications, to the '806 patent. For the reasons that follow, the Court finds that Cummins' "use" of the CRC prototype of the JetScan 4060 was not an invalidating public use.

Because the initial burden is on Glory to produce evidence raising a substantial question of invalidity under the public use clause of Section 102(b), we begin with the evidence submitted to us on this question. Glory uses several pieces of evidence to support its public use argument, namely, the declaration of Per Torling (Glory Mem., Adli Dec., Ex. 1), as well as the deposition transcript of Douglas Mennie (Id., Ex. 17), and several memoranda authored by Mr. Mennie (*E.g.,* id., Exs. 4-5). Glory also cites, among other things, various reports of those who tested the machines at issue (Id., Exs. 8, 10, 13-16). Based on our review of the evidence, we find that Cummins has made a clear showing that Glory's public use argument lacks

substantial merit.

First, the declaration of Per Torling, upon which Glory relies heavily for its arguments, was before the patent examiner during prosecution of the '806 patent (Glory Mem. at 30-31). The presumption of validity that an issued patent carries is based on the assumption that the patent examiner considered all relevant evidence bearing on validity and properly issued the patent over that evidence. PATENT LAW, at 52. That is, courts do not presume that the patent examiner erred unless, for example, it can be shown that relevant prior art was not brought to the examiner's attention. *American Hoist,* 725 F.2d at 1359-60. The fact that the Torling declaration was affirmatively before the examiner at the time the '806 patent issued persuades us that, although the examiner knew that the CRC prototypes had been tested during the January 17-April 25, 1991 period by commercial clients of Cummins, he issued the '806 patent anyway.

Glory argues that the Torling declaration was deficient in several important ways, thereby depriving the patent examiner of important information that he needed to make a proper validity determination (Glory Mem. at 30). For example, Glory contends that Mr. Torling only represented that the CRC machines "resembled" the devices disclosed in the '196 patent (Id.). Glory further contends that Mr. Torling did not tell the examiner that the '806 patent "was based on the machines tested by Cummins from December 1990 to May 1991" (Id.). Glory also argues that, although the CRC test machines were the primary subject of the Torling declaration, Mr. Torling failed to disclose that, prior to the field tests, Cummins had extensively tested two machines "at the Glenview State Bank" and had reduced the machine to practice there (Id.). According to Glory, Cummins also failed to disclose that the field testing sites were "the facilities of potential customers" for Cummins (Id., citing Adli Dec., Exs. 3, 6, 9); that potential customers testing the CRC machines and their employees "did not sign confidential agreements with respect to information regarding such machines"; that these testing sites "were not subject to control by Cummins" as reflected by the fact that these machines were left at the sites for as long as four weeks or more (Id. at 30-31); and that a customer of Cummins actually ordered a JetScan 4060 on May 29, 1991, before production began (Id., Adli Dec., Exs. 20, 21).FN15

FN15. The declaration of Thomas G. Mack answers this last point raised by Glory. There, Mr. Mack explains that the customer bought a JetScan 4060 "sight unseen" (Cummins Reply, Mack Dec. para. 9), and did not receive delivery of that machine until August 14, 1991, after production of the machine had begun (Id. para.para. 10-11).

In addition, Glory points to a memorandum by Mr. Mennie that indicates his awareness of the need to apply for patents on the CRC prototypes before expanding testing at customer sites. However, the record shows that expansion of testing to other sites outside the Chicago area (*i.e.,* the third phase or "beta test" program) occurred even though a patent application had not been filed before that time (Glory Mem., Adli Dec., Ex. 11; Cummins Reply, Second Mennie Dec., para.para. 7, 10, 19). Glory cites to cases that have held that each of these factors unlimited use, lack of confidentiality, and lack of control over the equipment prior to a patent application-can support a public use finding (Glory Mem. at 32) (citing cases).FN16 Glory also emphasizes that early tests were successful and invites the Court to draw from this evidence the inference that the successful nature of these tests reveal that the machine had been reduced to practice (Glory Mem. at 33-35).

FN16. The cases Glory cites to show that non-confidential testing may be an invalidating public use are factually distinguishable from this case. In Lough v. Brunswick Corp., 86 F.3d 1113, 1122 (Fed.Cir.1996),

cited by Glory for the proposition that any use of the invention by a person other than the inventor who is not under an obligation of secrecy may constitute a public use, the court held that while the patentee, Lough, could have tested his invention with friends, his failure to inspect how the device was used (*i.e.,* installed) precluded a finding that such use was experimental. Although Glory asserts that one Cummins' machine was left unattended at a customer test site for up to four weeks at a customer test site, the Torling declaration provides ample evidence that Cummins was monitoring the test results on a continuous basis (*see, e.g.,* Glory Mem., Adli Dec., Ex. 1 para.para. (K)(3)(c), (K)(4)(c), (K)(6)(b)). The case of Baxter Int'l Inc. v. Cobe Labs., Inc., 88 F.3d 1054 (Fed.Cir.1996), cited by Glory for the proposition that laboratory use without a confidentiality agreement may constitute a public use, is distinguishable because there the testing was done by third parties to fine tune the invention for their own purposes, rather than the intended purpose of the inventor. There is no such assertion by Glory here. Finally, Baker Oil Tools v. Geo Vann, Inc., 828 F.2d 1558 (Fed.Cir.1987), cited by Glory for the proposition that an inventor's loss of control over the invention while in the hands of a purchaser constitutes a public use, is distinguishable because, in that case, there was an admission that the tested invention had been reduced to practice. Id. at 1561. There is no such admission here.

In our view, none of this evidence satisfies Glory's burden of raising a substantial question regarding public use. Although Cummins has failed to produce a signed confidentiality agreement from any of its customers-perhaps Glory's strongest evidence in support of a public use finding-the fact that there is no definitive proof that such an agreement was ever signed does not render Cummins' *other* efforts to obtain confidentiality ineffective. Cummins has submitted a declaration from Mr. Mennie, who states that Cummins' customers were under an obligation of secrecy and were required to sign documents attesting to this understanding (Cummins Reply at 20; Second Mennie Dec. para.para. 10, 30). This declaration is sufficient proof at this preliminary phase, in the absence of any evidence by Glory to the contrary, that efforts were made by Cummins to ensure that the field testing was confidential and that it could trust its customers to maintain the confidence they were asked to keep. Evidence of such efforts persuades the Court that Cummins sought to secure confidentiality during the testing period. And, although such testing may have, as Glory asserts in the Mouri declaration, created a "buzz in the marketplace," Mr. Mouri's statement is pure speculation and even if correct-is not enough to undermine Mr. Mennie's sworn statement that Cummins sought confidentiality from its customers during testing of the CRC prototype.

Cummins' evidence also shows that the CRC prototypes, which were tested in early 1991, did not embody each and every element of the '806 patent claims at issue here. The declaration of Bradford T. Graves ("Graves Declaration") shows that during the testing period, the CRC prototypes could not operate at speeds faster than 700 bills per minute (Cummins Reply, Graves Dec., para.para. 8-9, 13-14). According to Mr. Graves, it was not until August 1991 that Cummins added software, developed by Mr. Graves, that allowed the Cummins' JetScan 4060 to process currency at speeds faster than 700 bpm-from 800 bpm up to 1000 bpm. The '806 patent claims a device that can process currency in mixed modes "at a rate in excess of 800 bills per minute" (Claim 76, Col. 36, lines 48-49; Claim 101, Col. 38, lines 49-50). Consequently, the CRC machines tested did not embody the subject matter claimed by the '806 patent and, thus, could not have been in "public use." Thus, the '806 patent cannot be held invalid based upon a public use/reduction to practice argument, and the Court finds that there has been no invalidating public use of the device claimed by the '806 patent.FN17

FN17. We are not persuaded by Glory's evidence that the field tests of the CRC machine were "very encouraging" or "worked well." Even if that were so, what "worked well" in early 1991 was different from

the machine as modified in August 1991, and for which Application No. '648 was filed in May 1992. Moreover, arrayed against these few statements of success with the operation of the CRC machine is plenty of evidence that chronicles failures by the machine to perform as intended and/or problems by operators with the machine during the testing (Cummins Reply, Second Mennie Dec., Ex. 17, para.para. 6, 23-24, 29,32-41; Torling Dec., para.para. K.2-5). For both reasons, Glory has not offered sufficient proof that the CRC was reduced to practice because it performed as it was intended to perform while used in public. *See* City of Elizabeth, 97 U.S. at 135.

C.

The issue under Section 103, as indicated above, is whether the '806 patent claims are invalid because they are obvious in light of the prior art. Section 103 states, in relevant part:

A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

In Graham v. John Deere Co., 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966), the Supreme Court explained the process for considering a Section 103 defense:

Under 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

Id. at 17-18. The Federal Circuit has said that only after considering the four *Graham* criteria together can the decision maker make the legal determination of whether the invention was nonobvious. The Federal Circuit has described these criteria as: (1) a determination of the scope and content of the prior art; (2) a determination of the differences between the prior art and the claims at issue; (3) a determination of the level of ordinary skill in the pertinent art; and (4) a determination of which, if any, secondary considerations are relevant and the effect of those secondary considerations. *See, e.g.,* Mitsubishi Elec. Corp. v. Ampex Corp., 190 F.3d 1300, 1308-09 (Fed.Cir.1999), *cert. denied,* 529 U.S. 1054, 120 S.Ct. 1556, 146 L.Ed.2d 461 (2000).

In Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561 (Fed.Cir.1987), *cert. denied,* 481 U.S. 1052, 107 S.Ct. 2187, 95 L.Ed.2d 843 (1987), the Court further observed that:

With the involved facts determined, the decision maker confronts a ghost, i.e., "a person having ordinary skill in the art," not unlike the "reasonable man" and other ghosts in the law. To reach a proper conclusion under s. 103, the decision maker must step backward in time and into the shoes worn by that "person" when the invention was unknown and just before it was made. In light of *all* the evidence, the decision maker must then determine whether the patent challenger has convincingly established ... that the claimed invention as a whole would have been obvious at *that* time to *that* person.

Id. at 1566-68 (emphasis in original). Thus, a decision maker must avoid the use of hindsight in piecing

together bits and parts of prior art to create the invention claimed by the patent-in-suit. *See, e.g.,* In re Kotzab, 217 F.3d 1365, 1369-72 (Fed.Cir.2000). To avoid "hindsight reconstruction," the Federal Circuit has required actual evidence of a suggestion, teaching, or motivation to combine prior art references. Ecolochem Inc. v. Southern Cal. Edison Co., 227 F.3d 1361, 1371-72 (Fed.Cir.2000); In re Dembiczak, 175 F.3d 994, 999 (Fed.Cir.1999). This evidence may come from the prior art references, from knowledge of one with ordinary skill in the art, or from the nature of the problem that needs to be solved by the invention. Ruiz v. A.B. Chance Co., 234 F.3d 654, 667 (Fed.Cir.2000); *Dembiczak,* 176 F.3d at 999.

With those legal principles in mind, we now turn to the evidence offered by Glory to support its' Section 103 obviousness defense. As stated, the Court recognizes that the '806 patent carries with it a statutory presumption of validity that Glory must affirmatively overcome with evidence creating a substantial question of invalidity. *See, e.g.,* New England Braiding Co., Inc. v. A.W. Chesterton Co., 970 F.2d 878, 882 (Fed.Cir.1992). *See also* Amazon.com. 239 F.3d at 1358. Glory submits evidence of several prior art references that it argues creates a substantial question as to the '806 patent's validity (Glory Mem. at 14-17). In reply, Cummins argues that all but one of the prior art references that Glory uses for its obviousness defense (*i.e.,* the Intel '286 processor) were considered by the patent examiner during prosecution of the '806 patent (Cummins Reply at 4). Thus, Cummins correctly notes that the burden on Glory to show a substantial question exists is "especially heavy":

When no prior art other than that which was considered by the PTO examiner is relied on by the [challenger], [the challenger] has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job, which includes one or more examiners who are assumed to have some expertise in interpreting the references and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents.

American Hoist & Derrick Co. v. Sowa & Sons, Inc., 725 F.2d 1350, 1359 (Fed.Cir.1984).

After reviewing the prior art evidence, we find that Glory has failed to raise a substantial question regarding validity that would overcome the statutory presumption in favor of the disputed claims of the '806 patent, as the Court has construed them. The prior art references that Glory focuses on are: (1) the Mosler/Toshiba CF-420; (2) the Billcon D-202/204; (3) the Glory GFB-230 note counter; (4) the Glory GSA-500 currency counter discriminator; and (5) the advent of speedier "microprocessors" in and around 1989, prior to Application No. '648, filed on May 19, 1992. To make its case with respect to these prior art references, Glory has proffered the declaration of Mr. Philip C. Dolsen, an expert with "ordinary skill in the art," to opine on the relevance of the prior art references to the claimed subject matter. In rebuttal, Cummins has offered the declaration of its own expert with "ordinary skill in the art": Mr. Robert L. Stevenson. Mr. Dolsen offers a claim chart to illustrate why and how he believes that the prior art taught and/or suggested (either alone or in combination) the claims in the '806 patent (Glory Mem., Dolsen Dec., Ex. 7). Mr. Stevenson, on the other hand, simply concludes, based on his expertise, that the '806 patent was not obvious in light of the prior art references cited by Glory because: (1) the prior art machines operated differently; and (2) the technologies and components of the prior art machines had been "known for more than a decade" or two, "yet no one made a machine like that described and claimed in the '806 patent until after that machine was introduced to the marketplace" (Cummins Reply, Stevenson Dec., para. 5). Mr. Stevenson further opined that "Mr. Dolsen used hindsight to arrive at his conclusions, and even to select the items that he uses to arrive at his hindsight-combinations." (Id.)

Glory's Section 103 arguments focus on each disputed independent claim in the '806 patent. We will adopt

the same structure for our analysis of the independent claims-Claims 40, 76 and 101-and the dependent claims in light of this Court's claim construction.FN18 The four *Graham* factors then will be addressed.

FN18. We note that if the claims were construed as Cummins would have us do, then there would be serious validity problems not only in light of the Jones and O'Maley references cited by the patent examiner, but also the Mosler machine that Glory focuses on as the prior art reference that leaves the '806 patent "vulnerable" (Glory Mem. at 30).

1. Claim 40.

[6] As for Claim 40, we find that Glory has not raised a substantial question as to the elements of that claim which were obvious in light of the Mosler/Toshiba CF-420 ("Mosler machine") GSA 500, Billcon D-2-2/204 ("Billcon machine"), and GFB-230 machines. We address each machine separately.

First, with respect to the Mosler machine, Glory's expert, Mr. Dolsen, opines that each limitation in Claim 40 is present in the Mosler machine, except that the stacking mechanism in the Mosler machine does not use flexible blades (Glory Mem., Dolsen Dec., Ex. 7, para.para. 17-18). Based on the Court's construction of Claim 40 in the '806 patent, we fail to see how the '806 patent reads on the Mosler prior art. Although the '806 patent and the Mosler machine both embody input hoppers, similar internal components (*e.g.,* an optical sensor system mounted on the transport mechanism), and a counting function for mixed denominations (Glory Mem., Dolsen Dec., para. 7), one or more output pockets for denominated bills, the similarities end here. Claim 40, as construed, is limited to a single output pocket for rejected, non-denominated bills, and requires the transport mechanism covered by the '806 patent to stop after it scans the next bill immediately following a bill identified as spurious. The Mosler machine utilized multiple output pockets (*e.g.,* a reject output pocket (stacker); an "overflow" stacker; and a main output pocket where denominated bills are stacked and counted) and a mixed-mode speed of 600 bills per minute ("bpm") (Id., para.para. 9-10).FN19 These different output pockets reflect the capability of the Mosler machine to operate in what Glory calls "different operation modes." The device claimed by the '806 patent, as construed, is limited to a single operation mode: it stops when it detects a bad bill, and restarts once that bad bill is removed from the output pocket. Although a separate output pocket or even multiple output pockets could be added to the device claimed by the '806 patent-so that this hypothetical device might resemble the Mosler machine in appearance-the addition of these pockets would not change the fact that the device claimed by the '806 patent must stop. The Mosler machine does not contain such a limitation (Id., para.para. 8(a)-8(f)). It therefore fails to teach the invention claimed by the '806 patent.

FN19. Since speed is not an issue in Claim 40, we reserve our distinctions on that element for Claims 76 and 101.

Second, the GSA-500 is a device that "does not stop when a reject bill is encountered. When the GSA-500 encounters a bill that it cannot discriminate (a "reject"), it diverts the reject bill to the reject pocket, while continuing to transport the subsequent bills" (Glory Mem., Mouri Dec., para. 24). This continuous feed element sets the GSA-500 apart from the invention claimed by Cummins in the '806 patent family-which, as construed, requires the device to stop when encountering a "rejected" bill. This difference is not inconsequential since Glory offers no evidence of a suggestion, teaching or motivation to combine the currency identification and discrimination components of the GSA-500 with a device that stops instead of

diverts when rejected bills are identified. Thus, we find that the GSA-500 fails to establish an obvious prior art reference for Claim 40.

[7] *Third,* the Billcon machine cannot teach the claimed elements of the '806 patent because it does not constitute relevant prior art. It is undisputed that the Billcon machine "was designed solely for use with Japanese currency, and was used and sold only in Japan" (Cummins Reply at 5). However, prior art relied upon to support an obviousness defense under Section 103 must qualify as prior art under Section 102, and under Section 102, prior art must be "known or used by others in this country" or "in public use of on sale in this country." 35 U.S.C. s. 102. Because both of these sections require knowledge or acts inside the United States, Glory would need to provide some evidence that the Billcon machine met that standard. It has not provided such evidence, and thus it has failed to raise a substantial question of invalidity in light of this prior art.FN20 In addition, the GFB-230, like the Billcon machine, was designed to process foreign (German) currency (Glory Mem. at 16 (citing Mouri Dec. para.para. 17, 18)). The Court finds that Glory has not shown why the GFB-230 qualifies as prior art, for the same reasons that the Billcon machine does not constitute prior art.

FN20. We note that if the Billcon machine did qualify as prior art under the patent statute, its similarity to the device claimed by the '806 patent, at least as to Claim 40, would raise a substantial question regarding Section 103 validity.

2. Claim 76.

[8] Mr. Dolsen's claim chart asserts that each limitation of Claim 76 is present in the Mosler machine, except for the speed (Glory Mem., Dolsen Dec., Ex. 7, para.para. 17-18). We do not agree that speed is the only difference between the Mosler machine and the device claimed by the '806 patent, for the reasons given with respect to Claim 40. Moreover, we find that speed is an important element in Claim 76. Glory has failed to provide evidence or argument that would persuade the Court that it would have been obvious to increase the speed of the discriminator on the Mosler machine from 600 bpm to 800 or 1000 bpm without some motivation, teaching or suggestion to do so. Moreover, while it might be "obvious" (in a common sense, not a patent, way) that an increase in speed would make a machine more desirable, there is no evidence that the means for doing so were obvious (in the patent sense) from the prior art references.

We find that the GSA-500 fails to render Claim 76 obvious for the same reasons we found that it fails to render Claim 40 obvious. Nor do we believe Claim 76 is obvious in light of the Billcon or GFB-230 machines, for two reasons. *First,* for the reason given with respect to Claim 40, these machines are not prior art for purposes of this analysis. *Second,* as to the Billcon machine, its slower speed would sufficiently distinguish it, in the Court's mind, from the device claimed by the '806 patent.

3. Claim 101.

[9] Glory argues that the Dolsen claim chart shows that each limitation of Claim 101 is present in the Mosler machine "except for the rate of transporting and denominating the U.S. currency bills at more than 800[bpm]" (Glory Mem. at 18). Glory further argues that "[a]lthough the Mosler machine transports and denominates U.S. bills at a speed of 600 bpm, a speed of 800 bpm was an obvious design modification and a natural consequence of increased performance of microprocessors available at the time of the invention" (Id.). The design modification was obvious, says Glory, because the Mosler machine had been designed at a time (the 1970s) when the fastest microprocessor would only process at 600 bpm; by the time the '806 patent

issued, the microprocessors could process bills at a rate of 1000 bpm, as reflected by Glory's GFB-230, which was introduced in 1986 (Id.).

The Court is unpersuaded that this argument has substantial merit. We do not accept the notion that it was obvious from the Mosler device to claim every element of Claim 101, including the speed (which, as construed, does not read on the Mosler device in multiple ways that have nothing to do with speed), simply because microprocessors were faster at the time the '806 patent issued. And, even if such a motivation, teaching or suggestion were obvious, the claims in the '806 patent do not read on the Mosler machine due to the controlled stopping and single output pocket elements which, as in Claims 40 and 76, are claimed in Claim 101. Nor is Claim 101 obvious in light of the GSA-500 because of its continuous mode of discriminating rejected bills. And, the Billcon and GFB-230 references are not prior art for the reasons stated above and cannot invalidate Claim 101.

4. The Dependent Claims.

According to Glory, the Dolsen claim chart also shows that "each and every limitation of dependent claims 41-43, 46-48, 77, 78, 81, 105, 108, 110 and 111 is present in the Mosler and/or the Billcon prior art" (Glory Mem. at 21). For the reasons given with respect to the independent claims, the Court finds that this argument fails to raise a substantial question of invalidity under Section 103 with respect to the Mosler, Billcon and GFB-230 machines.

Similarly, we find meritless Glory's argument regarding its own GSA-500 as a prior art reference that makes dependent claims 48, 81 and 111 obvious under Section 103 (Glory Mem. at 21). Glory argues that these dependent claims "require detecting light reflected off passing bills, generating a reflected light characteristic information signal, and generating a denomination signal in response thereto" (Id.). Glory argues that these steps were performed by Glory's GSA-500 more than one year before May 19, 1992 (Id., citing Mouri Dec., para. 22). Cummins does not really address this argument. Instead, it cryptically refers to "optical currency scanners using reflected light" as "previously known" in the O'Maley patent (Cummins Reply at 7).

Whether the GSA-500 used the same or an equivalent software claimed by the '806 patent is not clear from the Mouri declaration. Without a clear showing, we find that Glory has failed to satisfy its burden of raising a substantial question regarding Section 103 validity with respect to dependent claims 48, 81 and 111.

5. The Four *Graham* Factors.

As indicated earlier, the Federal Circuit requires consideration of the four *Graham* factors in assessing validity under Section 103. The first *Graham* factor, scope and content of the prior art, cuts in favor of finding validity, at least with respect to the claims as the Court has construed them. Were we to construe the disputed claims as Cummins would have us do, to cover *any* denomination method and *any* number of output pockets, then the scope of the disputed claims would be so broad that there would be substantial merit to Glory's invalidity defense in light of the prior art. However, as construed, the device claimed by the '806 patent is limited to a device with a single output pocket and a controlled stopping feature. Under that construction, we do not see substantial merit in Glory's argument.

The second *Graham* factor, differences between the prior art and the claims at issue, has been addressed in our claim-by-claim analysis above. As indicated there, this factor also weighs in favor of validity.

The third *Graham* factor, the perspective of one who has an ordinary level of skill in the pertinent art,

further supports the view that there is not a substantial question of Section 103 invalidity with respect to the disputed claims in the '806 patent. As Cummins notes, a person with ordinary skill in the art at the time of the '806 patent invention had an engineering degree plus a year or more of engineering experience in designing electromechanical devices (Cummins Reply at 8 (citing Second Mennie Dec., para. 43)). As is evident from our claim construction, we believe that one who did possess such experience would construe the claims as the Court has done, in light of the prosecution history. We find that such a person would find that the '806 patent claims, limited as they are, were not obvious in light of the cited prior art references.

The fourth *Graham* factor, the effect of "secondary considerations" such as long felt need, the long coexistence of inexpensive note counters and costly discriminators without development of the kind of machine created by Cummins, and the commercial success of Cummins' JetSean 4060, are all indicative that the prior art did not teach or suggest the invention. Glory has not offered any evidence to refute Cummins' arguments with respect to these secondary considerations.

Accordingly, in light of the foregoing analysis, we find that Glory has failed to raise a substantial question under Section 103 regarding the validity of the '806 patent.

D.

Glory's final invalidity argument is that the disputed claims in the '806 patent are invalid for lack of a written description under 35 U.S.C. s. 112. Section 112 states, in relevant part:

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

Based on our review of the applicable legal principles, case law, and arguments, this Court finds that, based on our construction of the disputed claims, Glory has failed to raise a substantial question under Section 112 with respect to the written description. The written description of the '806 patent amply supports the device that the Court has held it covers. The invalidity problem, if any, arises if the claims are construed the way that Cummins would have us construe them, namely, to cover continuously operating multiple outpocket currency denominators such as the accused devices. Were we to construe the claims in that way, then we would find substantial merit to Glory's contention that the claims are invalid for lack of a written description. Our reasons for these conclusions follow.

We begin with the relevant legal principles, which we derive, in part, from the treatise, PATENT LAW & PRACTICE.

The inventor must describe in the specification the invention covered by the claims. Because the claims are an integral part of the specification, whatever is described in the original claims is necessarily described in the specification. Problems arise when the inventor seeks to change his or her original claims while relying on the specification for a description of what is in the changed claims. The issue for the decision maker is whether the specification describes what is in the new claims.

Id. at 90 (citing Kolmes v. World Fibers Corp., 107 F.3d 1534, 1539 (Fed.Cir.1997) (new claims added in continuation-in-part application). The treatise goes on to point out that:

It is not necessary for the specification to describe word for word what is in the new claims, but it must convey to those skilled in the art that the inventor was in possession, at the time the specification was filed, of what is in the new claims. It is not sufficient that the specification describes an invention that makes obvious the subject matter of the new claims. The decision of whether the description-of-the-invention requirement is satisfied is made on a case-by-case basis with little, if any, precedential value given to earlier, fact-specific decisions.

Id. at 90-91.

In the '806 patent, the same written specification set forth in all the prior parent applications was used to describe the new, broader claims at issue in this case. That specification, as explained in this opinion, described in detail a device that used a controlled stopping method with a single output pocket to perform the denomination (*i.e.,* identification and discrimination) function claimed by the patent. The specifications only briefly and, as we have explained, ambiguously-refer to a device that arguably, instead of stopping, employed a "diverting" method that utilized a "separate stacker bin." Although this ambiguous phrase was present in the written specifications all the way back to the first application filed on February 5, 1990, this single reference, in the Court's view, would not be particular enough-especially in light of drawings that disclosed an entirely different device-to provide notice to one skilled in the art that the patent-in-suit claimed a multiple outpocket, continuously operating currency discrimination device alone or in combination with the single output pocket, noncontinuous device that is particularly described in the specifications. Without this particular description, and/or at the very least an adequate written description of such a device, the Court could not hold that the new claim language in the '806 patent covered a broader range of devices, including the accused devices, than the devices described in the specifications. In other words, if Cummins were to have the construction of the disputed claims that it wants, there would be a substantial question as to whether these claims would be invalid for lack of a written description under Section 112.

As construed, however, the claims survive Glory's written description challenge because they are limited to the device described in infinite detail by the written specifications. Given this construction, we find that Glory's Section 112 argument is without substantial merit.

IV.

Glory argues that even if Cummins were to make a clear showing of infringement and validity, the doctrine of prosecution laches would bar Cummins from enforcing its claimed rights in the '806 patent against Glory. The prosecution laches doctrine finds its origins in Woodbridge v. United States, 263 U.S. 50, 44 S.Ct. 45, 68 L.Ed. 159 (1923), and Webster Electric Co. v. Splitdorf Elec. Co., 264 U.S. 463, 44 S.Ct. 342, 68 L.Ed. 792 (1924), and within the last year has been reaffirmed by the federal circuit as a viable defense that has not been overridden by intervening amendments to the patent laws. *See* In re Borgese II, 303 F.3d 1362 (Fed.Cir.2002); Symbol Techs. v. Lemelson Med., 277 F.3d 1361 (Fed.Cir.2002). Under this doctrine, the holder of a valid patent nonetheless may be barred from enforcing it if there was an unreasonable and unexplained delay in prosecuting the patent claim, and the alleged infringer has suffered prejudice as a result. Here, Glory alleges that Cummins unreasonably and inexcusably delayed by failing to assert (to the extent it did so) a claim covering a multi-pocket machine until June 2000. At the time, Cummins amended the application that led to issuance of the '806 patent, despite knowing that Glory was marketing a multi-pocket machine as far back as 1994 (with the introduction of the GFR-100). Cummins also settled the

earlier litigation with Glory in 1999 by agreeing that Glory could replace the single-pocket machines at issue in that lawsuit (the GFB-700) with the multi-pocket GFR-100. In response, Cummins argues that the doctrine of prosecution laches does not apply at all as a matter of law and, in any event, there was no unreasonable or inexcusable delay and no prejudice to Glory. We address each of these arguments in turn.

A.

[10] Cummins asserts that the doctrine of prosecution laches is inapplicable to this case as a matter of law because the application for the '806 patent was filed after passage of the General Agreement on Tariffs and Trade Uruguay Round Agreement Act ("GATT"), 35 U.S.C. s. 154. Under GATT, for all continuation applications filed after June 8, 1995 (such as Application No. '200, which led to the '806 patent), the patent expires 20 years after the effective filing date of the application. As a result, delays by an applicant in the prosecution process cannot serve to extend the life of a patent, because no matter how long the prosecution takes, the life of the patent can be no longer than 20 years after the application date. According to Cummins, this means that the fundamental purpose of the prosecution laches doctrine to prevent an applicant from achieving the advantage of extending the life of the patent by delaying the prosecution-has no place in the post-GATT world, and thus should not apply to a post-GATT patent (Cummins Reply at 36-38).

In *Symbol Techs.,* the Federal Circuit rejected the argument that the doctrine of prosecution laches had been legislatively foreclosed by amendments to the Patent Act in 1952, which allowed for continuation and divisional applications. In reaching that conclusion, the federal circuit pointed to the absence of any legislative history indicating an intent to eliminate the judicially created defense of prosecution laches. Symbol Techs., 277 F.3d at 1366.

In this case, Cummins has cited no legislative history in connection with the passage of GATT that indicates an intent to override the doctrine of prosecution laches; and, during oral argument, Cummins counsel indicated that he was not aware of any such legislative history. Moreover, when enacting GATT, Congress made no parallel change to 35 U.S.C. s. 282, which expressly authorizes the defense of unenforceability, to specify that one particular type of unenforceability defense-prosecution laches no longer would be available.

Consistent with the mode of analysis employed by the court in *Symbol Techs.,* we are not willing to disregard Supreme Court and Federal Circuit precedent recognizing the doctrine of prosecution laches, in the absence of a clear legislative directive that it no longer applies. Thus, as did the only other court to address the question in a written opinion, Digital Control, Inc. v. McLaughlin Mfg. Co., 225 F.Supp.2d 1224 (W.D.Wa.2002), we reject the argument that the doctrine of prosecution laches, as a matter of law, cannot apply to post-GATT patents.

B.

[11] On the question of unreasonable and unexplained delay, we find that Cummins has not made a clear showing of likelihood of success. That is not to say that the preliminary injunction record shows that Glory likely will prevail on this defense. This case does not fit the mold of *Woodbridge,* in which the PTO had delayed the issuance of a patent (at the request of the patentee) for one year and, after the PTO then neglected to issue the patent for nine years, and the patentee sought to add claims to cover innovations that had occurred during that extended period, 263 U.S. at 52, or *Borgese,* in which the patentee had failed to take any meaningful action to advance the patent application for many years, despite warnings by the examiner, 303 F.3d at 1364-66. By contrast, in this case, Cummins consistently pursued its continuation claims, leading to the issuance of five separate patents: the '196 patent, issued on March 15, 1994; the '405

patent, issued on November 14, 1995; the '067 patent, issued on November 25, 1997; the '951 patent, issued on February 22, 2000; and the '806 patent, issued on October 1, 2002. Moreover, Cummins makes the point that the examiner, who was familiar with the prosecution history, did not refuse to issue the '806 patent on the ground of any dilatory conduct by Cummins, which the examiner plainly had the authority to do. *See* Borgese, 303 F.3d at 1367 (pointing out that the PTO's "authority to sanction undue delay is even broader than the authority of a district court to hold a patent unenforceable").

However, there are facts on the other side of the ledger that prevent the Court from concluding that Cummins has clearly established that it likely will prevail on this element of the prosecution laches defense. To the extent that the '806 patent contains claims that cover a two-pocket unit (which, for the reasons we have described above, it is by no means clear that Cummins will establish), those claims first appeared in the amendments in June 2000 to the application leading to the '806 patent. Yet, Cummins knew by 1994 that Glory had introduced into the market a two-pocket unit that competed with the Cummins JetScan products. At no time during the prosecution of the '405, '067, or '951 patents did Cummins add the claims it now contends cover two-pocket units. There was certainly nothing that Cummins had added to its invention during those years that would explain this change the specification for the '806 patent is, in all substantive regards, identical to the specifications in the '405, '067 and '951 patents.

[12] Cummins argued that it cannot be criticized for this conduct, since Cummins' actions conformed to the requirements of the continuation application process. However, compliance with the continuation process does not automatically immunize Cummins from the prosecution laches defense; the Federal Circuit has held that the doctrine "may be applied to bar enforcement of a patent that issued after unreasonable and unexplained delay in prosecution, even though the patent applicant complied with pertinent statutes and rules." Borgese, 303 F.3d at 1367. And, indeed, in *Webster Electric Co.,* the Supreme Court found unreasonable delay even though there was no violation of the then-applicable rules. 264 U.S. at 465. In that case, the patent had issued in 1916; prior to issuance, in 1915, the inventor filed a divisional application that included nine claims of a recently issued patent, in order to provoke an interference proceeding; and, after the inventor lost the interference proceeding, he added two new claims that were not part of the interference proceeding, which then issued as a patent in 1918. In light of *Webster* and the Federal Circuit's recent statements in *Borgese,* the Court rejects the argument that compliance with the continuation-in-part process automatically renders the prosecution laches argument inapplicable.

But, Cummins makes another point: until 2000, it did not seek to add the claims to the '806 patent that it now asserts covers the two-outlet unit, because it was not until the advent of the S60 and S80 that Cummins viewed the Glory products as a serious competitive threat. The Federal Circuit has held that

"there is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitors product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitor's product the applicant's attorney has learned about during the prosecution of a patent application. Any such amendment or insertion must comply with all statutes and regulations, of course, but, if it does, its genesis in the market place is simply irrelevant and cannot of itself evidence deceitful intent."

Kingsdown Med. Consultants v. Hollister, Inc., 863 F.2d 867, 874 (Fed.Cir.1988). However, the evidence submitted at the preliminary injunction stage has raised questions concerning the credibility of Cummins' assertion that it was so dismissive of the competitive threat presented by the two-outlet GFR-100 product. Cummins plainly was aware of sales lost by Cummins to the GFR in 1996 and 1997 (Glory Mem., Adli

Dec., Exs. 32, 33), and in 1998 (*Id.,* Ex. 26).

Cummins suggests that these examples of lost sales are not merely the tip of an iceberg of numerous lost sales, but constitute the whole iceberg. Maybe full discovery will substantiate that contention. But, we note that the information from the International Trade Commission shows that between 1995 and 1998, Cummins' estimated market share of scanner sales dropped, and Glory's estimated share increased (Cummins Reply, Bero Dec., Ex. A). This evidence would tend to suggest that there were some Glory products (including the GFR-100) that were competing against the JetScan with a level of success not so different from that now being achieved by the S60 and S80. On this record, we conclude that there are unanswered questions that persuade us that Cummins has not clearly established that it would prevail on this prong of the prosecution laches defense.

C.

As to the second prong, prejudice to Glory, once again the record is far from conclusive. Glory claims that it was prejudiced because-from the introduction of the GFR-100, through the introduction of the S60 in 1999, and the continued marketing of the S60 and S80 through 2002-Glory committed substantial development, design, manufacturing, marketing and sales resources to these products, without having any knowledge or notification that there was a specific patent that Cummins claimed covered those products. And, in fact, during oral argument Cummins conceded that, in its view, prior to the '806 patent none of the predecessor patents in the chain unambiguously covered the GFR-100, the S60 or the S80 products.

However, the evidence on prejudice is muddled. To begin with, Glory does not at this time assert that in developing its products, Glory relied on Cummins not having-or seeking-a patent that would cover the products. Although Glory's memorandum on the prosecution laches argument refers to Cummins as being "estopped" from enforcing the patent (Glory Mem. at 41), at oral argument Glory made clear that it was not arguing prejudice in the form of detrimental reliance of the type that would be required to establish equitable estoppel. Indeed, it may be that discovery will disclose that Glory did not specifically rely on Cummins' actions or inactions in prosecuting the patents, but rather on other considerations-such as, opinions of counsel concerning the scope of the Cummins patents (which Glory has indicated it possesses).

Moreover, there are other issues that raise a question about the prejudice argument, at least after early 1999 when Cummins and Glory settled the prior litigation concerning the GFB-700 product. At that time, Cummins refused Glory's request for a covenant not to sue concerning that product or any others that are "insubstantially different" (Cummins Reply, Gatz Dec., Exs. N, P, Q)-which would include the S60 and S80, in Glory's view. And, in 1999, Glory was concerned that Cummins would claim that the S80 product infringed Cummins patents, and said so to Cummins in writing (Glory Mem., Adli Dec., Ex. 28). Thus, as of early 1999, Glory would have a hard time establishing that it had no awareness that Cummins might assert infringement claims against these products. But, that does not answer the question of prejudice to Glory from any delay between 1994 and 1999 in Cummins pursuing claims that clearly would cover a two output pocket device, and it does not answer the claim as to whether Glory, by that point, had invested so much in the GFR and then the S60 products to make it too late to turn back once Glory got wind that Cummins might challenge those products-especially since, when Glory asked, Cummins did not disclose what patents it thought would cover the S60 or S80 products.

In sum, the Court finds that Glory is not precluded from asserting the defense of prosecution laches because the '806 patent is a post-GATT patent, and Cummins has not clearly established a likelihood that it will

overcome this defense.

V.

We now turn to the question of irreparable harm. In considering that question, we address at the threshold Cummins' argument (Cummins Mem. at 9) that it "is entitled as a matter of law to a presumption of irreparable injury."

Case law cited by each side holds that if the movant "clearly establishes" the likelihood of success element necessary for preliminary injunction relief, the movant is then entitled to a rebuttable presumption of irreparable harm. Polymer Techs., Inc. v. Bridwell, 103 F.3d 970, 973 (Fed.Cir.1996) (plaintiff would be entitled to a rebuttable presumption of irreparable harm if it "clearly established the first factor (likelihood of success) "by making a 'clear showing' of both validity and infringement") (citing Smith International, Inc. v. Hughes Tool Co., 718 F.2d 1573, 1581 (Fed.Cir.) *cert. denied,* 464 U.S. 996, 104 S.Ct. 493, 78 L.Ed.2d 687 (1983); High Tech Medical Instrumentation, Inc. v. New Image Industries, Inc., 49 F.3d 1551, 1556 (Fed.Cir.1995) ("a presumption of irreparable harm arises when a patentee makes a clear showing that a patent is valid and that it is infringed"); Nutrition 21 v. United States, 930 F.2d 867, 871 (Fed.Cir.1991)(a "clear showing" of likelihood of success is necessary to create a presumption of irreparable harm); Roper Corp. v. Litton Sys., Inc., 757 F.2d 1266, 1271-72 (Fed.Cir.1985) ("where validity and infringement have been *clearly* established," irreparable harm is presumed) (emphasis in original). In cases where the presumption has applied, the "clear showing" required to invoke the presumption either was assumed, as in Polymer Techs., 103 F.3d at 974; or was beyond question, as in Smith, 718 F.2d at 1579-80, where the question of patent validity was conclusively established through earlier proceedings and the defendant did not contest infringement at the injunction hearing.

On the other hand, in *High Tech Med. Instrumentation,* the appeals court reversed the issuance of a preliminary injunction, finding that the plaintiff's proof of likelihood of success was not sufficiently strong to trigger the rebuttable presumption of irreparable harm. 49 F.3d at 1556. Likewise, in *Nutrition 21,* the appeals court vacated an injunction in part on the ground that the district court had erroneously afforded plaintiff the rebuttable presumption of irreparable harm, despite the absence of a clear showing of likelihood of success. 930 F.2d at 871. And, in *Roper,* the Court affirmed the denial of a preliminary injunction, noting that there was no clear showing of infringement and therefore-even if plaintiff were given the benefit of a rebuttable presumption of irreparable harm-there was no error in denying the injunction. 757 F.2d at 1272.

For the reasons explained above, the Court finds that Cummins has failed to make a "clear showing" that it likely will prevail on its claim. Thus, Cummins is not entitled to invoke the rebuttable presumption of irreparable harm in this case. Instead, Cummins bears the burden of showing that it will suffer irreparable harm in the absence of injunctive relief. We now consider the proofs submitted by the parties on this point.

A.

[13] Cummins submits that, without the protection of a preliminary injunction, Cummins immediately will have to drop its average selling price by 40 percent in order to compete with Glory; that despite this dramatic price decrease, in the next year Cummins still will experience a 50 percent decrease in sales; and that the reduction in sales will result in a 20 percent increase in manufacturing costs (owing to fewer units sold to absorb certain fixed costs), and thus lower profitability (Cummins Reply, Jones Sec. Dec., para.para. 7-11). Cummins asserts that this dramatic turn of events will result in a huge loss of gross margin in 2003 alone (*Id.,* para. 12), and that the loss of money and market share would be irreparable for several reasons:

(1) Cummins expresses skepticism about the adequacy of Glory's assets to satisfy substantial judgment, and about the responsibility or willingness of Glory' Japanese parent and related corporations to pay such a judgment for Glory; (2) money alone would not remedy the substantial number of lost customers, because there are a relatively small number of customers in the market who purchase scanners only periodically (since they are durable and tend to last for some number of years); and (3) the lost revenues will result in Glory having to layoff key employees and to substantially decrease its expenditures in research and development, which would be "devastating" to Cummins' long-term plans to grow and develop (*Id.,* para.para. 13-16, 37-40).

All of these arguments turn on the credibility of Cummins' economic loss projections. And the problem for Cummins is that it has failed to make the case that, in fact, Cummins likely will suffer the dire economic loss it predicts in the absence of preliminary injunctive relief.

It is often the case that, when assessing the question of irreparable harm, courts considering preliminary injunction motions are faced with an alleged infringing product that has not yet entered the market, or has done so only recently. As a result, courts frequently must consider the question of irreparable harm without the benefit of an historical record of the effect on plaintiff from sales of the allegedly infringing product. But, that is not the case here. We have a record of three years of competition in the marketplace between the Cummins JetScan products and the Glory S60 and S80 products. And, there is nothing about that historical record that provides a basis for the lost revenue projections offered by Cummins.

B.

Cummins says that in order to compete with the Glory products, Cummins will have to slash its selling price for the JetScan products to the bone (Cummins Reply, Jones Sec. Dec. para. 8). Yet, the historical record shows that since 2000, the first full year that the Glory S80 and S60 products were in the market, Cummins' average selling price per unit remained stable (*Id.,* Bero Dec., Schedule 11; *see also* Appendix A to this Report). Thus, in three years of competition with Glory, Cummins has not found it necessary to lower its average selling price of the JetScan products in order to compete with Glory. And, during that same three-year period, Cummins' gross margin on sales did not decrease, but increased slightly (*Id.*).

Likewise, Cummins' prediction that it would lose 50 percent of its existing sales, even with this substantial price decrease, is difficult to square with the last three years of experience in competition between Cummins and Glory. Although Cummins experienced a drop in sales in 2001 (*see* Appendix A to this Report), in the other years of competition with Glory's S60 and S80 products Cummins increased its sales (*Id., see also* Cummins Reply, Bero Dec., Schedule 1). Moreover, Cummins' own projection-as set forth in the Bero Declaration-is that between 2001 and 2002 Cummins' unit sales of the JetScan product would increase by more than Glory's unit sales of the S60 and S80 (*Id.*). As expressed in terms of market share, Cummins' calculations show that its share of the market would increase between 2001 and 2002, while Glory's share would decrease (*Id.*).

In short, while Cummins argues that continued sales by Glory of the S60 and S80 will cause Cummins to suffer a precipitous and dramatic decrease in sales and selling price, three years of actual experience tell a very different story. The historical record shows that after initial successes by Glory, Cummins has been able to compete effectively-so much so that, in the most recent year, it has been able to increase its sales at a greater rate than Glory (in absolute numbers). Moreover, Cummins has been able to achieve this result *and* a modest increase in average gross margin, all without dropping its average selling price (Appendix A).

Cummins urges that this historical record does not accurately reflect what the future would hold for two reasons. The Court finds neither reason convincing.

First, Cummins argues that Glory has a history of engaging in predatory pricing in the United States market (Cummins Mem., Jones First Dec., para.para. 28, 29). The evidence that Cummins offers for this proposition is weak. Cummins points to the sale by Glory in the 1980's of automated coin wrappers for less than $13,000, when Glory typically sold those for the range of $20,000 per unit (*Id.,* para. 28). However, according to Glory, this was an action taken by one of its distributors to move inventory of a particular model of coin wrapper that was being terminated, and thus was a one-time "end of life" sales promotion. *Second,* Cummins argues that Glory's predatory pricing is shown by the fact that for certain products, Glory offers a list price in Japan of more than $3,000, but in the United States has an average net selling price of some $900 (*Id.,* para. 29). However, Glory points out that this comparison to *list* price in Japan and *selling* price in the United States is comparing apples and oranges. We cannot conclude what this evidence shows without knowing more details about the Japanese market, and what the list and sales prices are in that market.

Moreover, Cummins' reliance on this evidence suffers from an additional weakness: it does not reflect Glory's actions over the past three years in marketing the S60 and S80 products. Glory has pointed to testimony indicating that in its head-to-head competition with Cummins, there were times that Glory offered the lower price, and other times in which Cummins offered the lower price (*see* Glory Mem. at 51).

Second, Cummins argues that however Glory may have competed with Cummins in the past, Cummins has evidence that Glory now plans to engage in massive price cutting in order to gain market share. As the sole evidence of this alleged plan, Cummins points to a sale made by Glory in May 2002 to Bank of America (Cummins Mem., Jones First Dec., para.para. 31-32); Cummins Reply, Jones Sec. Dec., para.para. 19-21). It is undisputed that that particular sale was made by Glory at a per unit price of $2,030. The parties dispute whether that bid (which included various upgrades and other items that Glory did not charge for because Glory said it would provide them as part of routinely scheduled maintenance) was equivalent to one alternative Cummins proposed, as well as whether Bank of America selected Glory because it preferred the machine and was unhappy with Cummins record of service (*compare* Glory Mem. at 51-52 with Cummins Reply, Jones Sec. Dec., para.para. 21-23).

The Court finds that this lone Bank of America transaction is insufficient to support Cummins' claim that Glory is poised to commence (or already has commenced) a massive predatory pricing campaign. The evidence submitted does not persuade the Court that the Bank of America transaction reflects Glory selling the product at an unsustainable price. Glory's gross margin on that sale (*see* Glory Mem. at 51 n.27) was far lower than Cummin's gross margin; but, Cummins level of gross margin in part reflects the nature of the structure it chose to account for costs (Cummins Reply, Jones See. Dec., para. 18). Without knowing more about Glory's cost accounting structure, the Court cannot conclude that its gross margin on the Bank of America transaction reflects selling at unreasonably low prices. Moreover, the Bank of America transaction was just that: one transaction. Cummins has offered no evidence of other transactions of recent vintage in which Glory has sold units at what Cummins believes to be an unfairly low price. And, Cummins' argument is further called into question by Cummins' own data through September 2002, which shows that Cummins itself did not find it necessary to reduce average selling price or gross margin in order to sustain-and, indeed, increase-its level of sales (Appendix A).

"[N]either the difficulty of calculating losses in market share, nor speculation that such losses might occur, amount to proof of special circumstances justifying the extraordinary relief of an injunction prior to trial." Nutrition 21, 930 F.2d at 871 (citing Nuclear-Chicago Corp. v. Nuclear Data, Inc., 465 F.2d 428 (7th Cir.1972)). While Cummins has offered speculation here, it has offered no proof that it likely will suffer the losses it predicts. If Glory is the incorrigible predatory pricer that Cummins paints it to be, there is scant evidence of it offered here. The Court finds that the linchpin to Cummins' irreparable harm argument-that in the absence of a preliminary injunction, Cummins will experience drastically-reduced selling prices, huge losses of sales, and increased selling costs-is not supported by the evidence. As a result, we find that Cummins has not established that it will suffer irreparable harm in the form of being blocked from the market, or losing key employees and future development opportunities.

C.

There are two other irreparable harm arguments that Cummins has raised which bear further discussion.

[14] *First,* Cummins argues that a preliminary injunction should issue because where, as here, "a patentee does not license a patent, the infringement of that patent inherently causes irreparable harm" (Cummins Mem. at 11; Cummins Reply at 46). For that proposition, Cummins cites the *Polymer Techs,* decision. However, in *Polymer Techs.,* the Federal Circuit reviewed a district court's denial of a preliminary injunction in which the district court had assumed without deciding that the plaintiff would clearly establish a likelihood of success, gave the plaintiff the benefit of presumed irreparable harm, and then found that the presumption had been rebutted. It was in that specific context that the Federal Circuit explained that the ability of the defendant to fully compensate plaintiff's monetary damages "does not alone justify its finding that Westmark rebutted the presumption of irreparable harm." Polymer Techs., 103 F.3d at 976. Here, of course, the Court has found that plaintiff has failed to clearly establish a likelihood of success, and that the presumption of irreparable harm does not apply. Cummins has not cited any authority in cases where the rebuttable presumption of irreparable harm does not apply that treat the decision not to license a patent, by itself, as enough to conclusively establish irreparable harm. We are unwilling to do so here; instead, while we recognize that "the nature of the patent grant weighs against holding that monetary damages will always suffice to make the patentee whole, *Hybritech, Inc. v. Abbott Lab.,* 89 F.2d 1446, 1456-57 (Fed.Cir.1988), "there is no *presumption* that money damages will be inadequate in connection with a motion for an injunction pendente lite." Nutrition 21, 930 F.2d at 871 (emphasis in original); *see also* High Tech Medical Instrumentation, 49 F.3d at 1557.

Second, plaintiff has expressed concern about the ability of the domestic defendant. Glory, to respond to a substantial judgment, and the willingness or responsibility of the Japanese defendants to do so if Glory cannot. Whatever the ability of Glory to respond to a judgment if it were to extend into seven figures, there is no doubt that Glory, Ltd. has the financial wherewithal to do so. The initial submissions about Glory, Ltd.'s willingness to use its assets to pay a judgment against Glory (if one is rendered) raised certain questions. On December 27, 2002, in response to the Court's invitation, Glory submitted an indemnity agreement entered into between Glory and Glory, Ltd., in which Glory, Ltd. agreed to indemnify Glory in the event of an adverse judgment, along with that submission, Glory offered a declaration indicating that a judgment against Glory, Ltd. would be enforceable in Japan (Glory Supplemental Mem., Exs. 2 and 3).

But, there were holes in these assurances: the indemnity did not on its face run to the benefit of Cummins, the indemnity was qualified and could be eviscerated were Glory not to perform certain conditions over which Cummins had no controls, and the declaration addressed the enforceability of a judgment against

Glory, Ltd. and not Cummins' ability to enforce an indemnity between Glory, Ltd. and Glory.

Glory endeavored to address these shortcomings, and has offered a further showing that Glory, Ltd. now has guaranteed "absolutely and unconditionally" payment of final judgment of any monetary award that might be obtained by Cummins against Glory (Glory Supplementation Regarding Irreparable Harm, Ex. 1., para. 1). The guarantee specifically states that Cummins is an intended third-party beneficiary; that Glory, Ltd. "will not contest the enforcement in Japan of any final monetary judgment obtained by plaintiff against GLORY USA" in this case; that Glory, Ltd. will "cooperate with and assist Cummins-Allison Corporation in connection with any effort to obtain recognition and enforcement in Japan of any final money judgment"; and that the Guaranty will be governed by New Jersey law (*Id.,* para.para. 3-6).

While Cummins expresses dissatisfaction with this Guaranty, in the Court's view many of its objections are make weight: (1) as to the concern that Cummins cannot enforce the Guaranty, that would appear contrary to Cummins being expressly identified as a third-party beneficiary, *see* Broadway Maint, Corp. v. Rutgers, 180 N.J.Super. 350, 434 A.2d 1125, 1128 (N.J.Super.1981) (under New Jersey law, which governs the interpretation of the Guaranty, intended third-party beneficiaries may sue on the contract); (2) as to the concern about Glory Shoji not being a signatory, there is no evidence as to why the guaranty of the parent, Glory, Ltd., is not enough; and (3) as to the concerns about the effect of a bankruptcy of Glory, there is no indication that a bankruptcy is likely. As for the concern that Glory, Ltd. and Glory Shoji have not submitted to jurisdiction in this case, that has been covered by the amendment to their answer that admits jurisdiction and venue.

One point raised by Cummins does give the Court some pause: that is Glory, Ltd's agreement to not oppose-and, indeed, to assist-in the enforcement of a judgment against Glory U.S.A. Thus, this might not extend enforcing in Japan a judgment obtained here against Glory, Ltd. on the Guaranty. But, given the admission of jurisdiction, it would not appear that enforcement of the judgment in Japan would be denied (*see* Glory Supplemental Mem. at 5-6 and Ex. 3). And, to remove any doubt, the Court finds that Glory, Ltd. should sign an amended Guaranty with Glory in which Glory, Ltd. specifically agrees not to contest enforcement in Japan of any judgment on the Guaranty (or a judgment by a United States court on the Guaranty) against Glory, Ltd., and will affirmatively assist Cummins with enforcement in Japan-as Glory, Ltd. has said it would do (*see* Glory 01/28/03 Reply at 4).

D.

Finally, we address one other point raised on the question of irreparable harm, this one by Glory. Glory argues that Cummins' failure to take steps to expedite consideration of Application No. '200, which resulted in the issuance of the '806 patent, shows that Cummins did not "genuinely believe[ ] that infringement by Glory was causing its sustained irreparable injury" (Glory Mem. 54). Cummins rejoinder is that the failure to expedite the proceeding shows nothing of the sort, and instead was simply the result of Cummins' belief-based on its experience with the prosecution of the '067 patent that it would not "accelerate the timing of the PTO's issuance of a patent" (Cummins Reply 39 n.15; Mennie Sec. Dec., para.para. 44-46).

While surely not dispositive by itself, the Court finds that this evidence raises some question about Cummins' claim of irreparable harm. Application No. '200 was filed on December 2, 1999-after Glory had displayed to Cummins the S80 product, and after Cummins knew that Glory was placing that product in the market. Given the present claims by Cummins of the dire consequences that will result if Glory is allowed to continue to market the product pending this litigation, one reasonably might have expected Cummins to

have taken every possible step to attempt to expedite consideration of the application. We are somewhat skeptical about Cummins' assertion that it thought an effort to expedite the process by filing a petition to make special was futile, because such a petition was filed and granted during the prosecution of the '067 patent, and it still took three years from the filing of the application to the issuance of the patent. To begin with, Cummins did not file the petition until that application was eight months old. Moreover, after the petition was granted on September 28, 1995, Cummins filed three amendments between that date and December 18, 1995, with the result being that at that time there were 79 claims pending. In less than four months, on April 8, 1996, the examiner rejected all of the claims. This led to a series of interviews, further amendments, and other orders by the examiner between May 9, 1996 and December 9, 1996. On March 18, 1997, the examiner issued a notice of allowability, and the patent then issued on November 25, 1997.

In reviewing this prosecution history, it is impossible for the Court to conclude that the petition to make special had no effect on the pace of the PTO's consideration of the application, or how much of the delay was due to actions by Cummins. But, it is hard to see how the petition to make special would have slowed the consideration process that led to the '067 patent. And so, when Cummins filed the application for the '806 patent, there was no reason for Cummins not to file the petition to make special if it thought that the S80 would infringe the '806 patent, and that there would be significant harm that resulted to Cummins.

For all of the foregoing reasons, the Court finds that Cummins fails to make a strong showing of irreparable harm, and thus a preliminary injunction should not be granted.

VI.

We now turn to the final two considerations relevant to Cummins' motion for preliminary injunction: the balance of the hardships and the public interest. Given the Court's determination that Cummins has not established a clear showing of either likelihood of success or a strong case of irreparable harm, consideration of these final two considerations is unnecessary. *See* Polymer Techs., 103 F.3d at 973-74 ("a trial court need not make findings concerning the third and fourth factors if the moving party fails to establish either of the first two factors"). Nonetheless, in the interest of completeness, we address briefly our views concerning the balance of the hardships and the public interest.

A.

[15] In considering the balance of the hardships, the Court must examine whether the plaintiff would suffer from the erroneous denial of preliminary injunction more than the defendant would suffer from the improvident grant of a preliminary injunction. Hybritech, Inc., 849 F.2d at 1457; *see also* American Hosp. Supply Corp. v. Hosp. Products Ltd., 780 F.2d 589, 593 (7th Cir.1985) (in deciding whether to grant a preliminary injunction, the trial judge "must choose the course of action that will minimize the costs of being mistaken"). In this case, the Court finds that the balance of hardships does not weigh strongly in favor of granting a preliminary injunction.

First, Cummins claims that Glory would not be substantially harmed by the entry of an injunction because the desktop currency discriminators constitutes a small percentage of Glory's total sales (Cummins Reply at 48)-a fact that Glory has conceded (*see* Glory Mem. at 53). However, a significant portion of Cummins' revenue is derived from products other than the JetScan (Cummins Reply, Bero Dec., Schedule 6; *see also* Appendix A to this Report). Thus, as is the case with respect to the S60 and S80 Glory products, the JetScan products do not constitute Cummins sole, or even principle, source of revenue.

Second, Cummins says that the harm it will suffer if put out of business due to the erroneous denial of a preliminary injunction is greater than the harm Glory will suffer if put out of business due to an improvidently granted preliminary injunction, because Cummins employs more people in the United States than does Glory (Cummins Reply at 50). This point has some surface appeal. But, it strikes the Court that, carried to its logical end, this argument would always lead to the balance of hardships favoring the larger corporate entity, which is not a result that we can endorse. The balance of hardships should not turn merely on the size of the party. *See* American Hosp. Supply, 780 F.2d at 598 (in considering a preliminary injunction request, "[w]e attach no legal significance to the difference in the size of the parties"). What's more, the fact of the size differential arguably cuts the other way: if Cummins' size means it is better able to withstand pre-judgment losses without becoming insolvent than is Glory, then the loss of jobs would become more likely if Glory is erroneously restrained than if Cummins is erroneously denied a preliminary injunction.

Third, Cummins argues that any harm that Glory might suffer is the result of its calculated decision to introduce an infringing product into the market (Cummins Reply at 49). That certainly would be true if there had been a determination on the merits that the S60 and/or S80 products infringe a valid and enforceable Cummins patent; in that situation, Glory could not be heard to complain about the final injunction. But, in balancing the hardships, the Court must not only consider the harm that Glory would suffer if a final (or, for that matter preliminary) injunction were properly granted, but also the harm from an improvidently granted injunction. The Court finds it difficult to conclude that when Glory commenced marketing the S80 product in late 1999, it "assumed the risk" that, in 2003, a federal court might erroneously enter preliminary injunction against the sale of that product (and the S60) based on a patent that had not been issued or applied for by Cummins. And, indeed, with respect to the patents that preceded the '806, Cummins acknowledged during oral argument that the Glory S60 and S80 units do not clearly infringe those patents.

B.

[16] We now turn to the question of public interest. Cummins argues that the public interest weighs in favor of preliminary injunctive relief because of the public interest in the enforcement of valid patents (Cummins Mem. at 13); because, absent preliminary injunction, Cummins will lose sales, its employees will lose jobs, and the United States will lose tax revenue (Cummins pays a larger share of its sales revenue in United States income taxes than does Glory) (Cummins Reply at 50); and, because Cummins is the only United States manufacturer which studies counterfeit detection of United States currency, and its product is important to government agencies that fight counterfeiting (Cummins Reply at 50). These arguments do not persuade the Court that there is a strong public interest to be vindicated by granting preliminary injunctive relief.

As to the public interest in the enforcement of valid patents, *see e.g.* Hybritech, 849 F.2d at 1458, there is a countervailing public interest in competition. *See II.* Tool Works, Inc. v. Grip-Pak, Inc., 906 F.2d 679, 684 (Fed.Cir.1990). In this case, Cummins has failed to make a clear showing of likelihood of success on its claim that the '806 patent is valid and infringed. As a result, the Court finds that the public interest in the enforcement of valid patents does not trump the public interest in competition. That is particularly so because, according to Cummins, the only suppliers of these currency discriminators in the United States are Cummins and Glory. Thus, a preliminary injunction enjoining Glory from selling the S60 and S80 in the United States would leave Cummins as the only supplier-a situation that would not further the public interest in competition.

In these circumstances, the public interest does not weigh in favor of Cummins request for preliminary injunctive relief.

CONCLUSION

For the foregoing reasons, the Court respectfully recommends that Cummins' motion for preliminary injunction (doc. # 3) be denied. Specific written objections to this report and recommendation may be served and filed within 10 business days from the date that this order is served. Fed.R.Civ.P. 72(a). Failure to file objections with the district court within the specified time will result in a waiver of the right to appeal all findings, factual and legal, made by this Court in the report and recommendation. *See* Video Views, Inc. v. Studio 21, Ltd., 797 F.2d 538, 539 (7th Cir.1986).