PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of **CERTAIN AUTOMATED TELLER MACHINES, ATM PRODUCTS, COMPONENTS THEREOF, AND PRODUCTS CONTAINING THE SAME**	**Inv. No. 337-TA-972**

INITIAL DETERMINATION ON VIOLATION OF SECTION 337

Administrative Law Judge Dee Lord

(November 30, 2016)

Appearances:

For Complainants Diebold, Inc. and Diebold Self-Service Systems:

Patrick J. Flinn, Esq., David S. Frist, Esq., Keith E. Broyles, Esq., and Joshua Weeks, Esq. of Alston & Bird LLP in Atlanta, GA; and Adam D. Swain, Esq. of Alston & Bird LLP in Washington, DC.

For Respondents Nautilus Hyosung America, Inc., Nautilus Hyosung Inc., and HS Global, Inc.:

Michael J. McKeon, Esq., Kevin C. Wheeler, Esq., Timothy W. Riffe, Esq., Linhong Zhang, Esq., and Daniel A. Tishman, Esq. of Fish & Richardson P.C. in Washington, DC; and Jacqueline Tio, Esq. of Fish & Richardson in Atlanta, GA.

Pursuant to the Notice of Investigation (Nov. 17, 2015) and Commission Rule 210.42, this is the Administrative Law Judge's final initial determination on violation and recommended determination on remedy and bonding in the matter of *Certain Automated Teller Machines, ATM Products, Components Thereof, and Products Containing the Same*, Inv. No. 337-TA-972. 19 C.F.R. § 210.42(a)(1).

For the reasons discussed herein, it is my final initial determination that there is a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importation, and/or the sale within the United States after importation of certain automated teller machines, ATM products, components thereof, and products containing the same by reason of infringement of U.S. Patent Nos. 6,082,616 and 7,832,631.

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The following abbreviations may be used in this Initial Determination:

Tr.	Transcript
WS	Witness Statement
DWS	Direct Witness Statement
RWS	Rebuttal Witness Statement
JX	Joint Exhibit
CX	Complainants' exhibit
CPX	Complainants' physical exhibit
CDX	Complainants' demonstrative exhibit
RX	Respondents' exhibit
RPX	Respondents' physical exhibit
RDX	Respondents' demonstrative exhibit
CPHB	Complainants' pre-hearing brief
CIB	Complainants' initial post-hearing brief
CRB	Complainants' reply post-hearing brief
RPHB	Respondents' pre-hearing brief
RIB	Respondents' initial post-hearing brief
RRB	Respondents' reply post-hearing brief

I. BACKGROUND

A. Procedural History

The Commission instituted this investigation in response to a complaint alleging violations of section 337 of the Tariff Act of 1930, as amended, by reason of infringement of certain claims of U.S. Patent No. 6,082,616 ("the '616 patent"); U.S. Patent No. 7,121,461 ("the '461 patent"); U.S. Patent No. 7,229,010 ("the '010 patent"); U.S. Patent No. 7,249,761 ("the '761 patent"); U.S. Patent No. 7,314,163 ("the '163 patent"); and U.S. Patent No. 7,832,631 ("the '631 patent"). 80 Fed. Reg. 72735-36 (2015). The purpose of this investigation is to determine:

> whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain automated teller machines, ATM modules, components thereof, and products containing the same by reason of infringement of one or more of claims 1, 2, 5-8, 10, 16-18, 20, 22, 23, 26, and 27 of the '616 patent; claims 1-8, 12-18, and 21-27 of the '461 patent; claims 1-15, 18-20, 22-26, and 28-30 of the '010 patent; claims 1-4, 6, 14, 15, and 19 of the '761 patent; claims 1-5 and 13-24 of the '163 patent; and claims 1-8 and 12-20 of the '631 patent, and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

Id. at 72736. The investigation was instituted on Friday, November 20, 2015, by publication of the Notice of Investigation in the *Federal Register*. *Id.* at 72735; *see* 19 C.F.R. § 210.10(b). The target date was originally set for March 20, 2017, Order No. 4 (Dec. 7, 2015), and was subsequently extended to March 30, 2017. Order No. 37 (Nov. 18, 2016).

Pursuant to Order No. 12 (Apr. 28, 2016), the investigation was terminated as to all asserted claims of the '461 and '761 patents pursuant to the withdrawal of allegations regarding these patents. *See* Comm'n Notice (May 11, 2016). Pursuant to Order No. 14 (May 24, 2016) and Order No. 15 (June 7, 2016), the investigation was terminated as to claims 2, 17, 18, 20, 22,

and 23 of the '616 patent; claims 2-12, 15, 18, 22-23, and 28-30 of the '010 patent; claims 1-5 and 13-19 of the '163 patent; and claims 8 and 12-17 of the '631 patent. *See* Comm'n Notice (June 22, 2016); Comm'n Notice (July 5, 2016).

Pursuant to Order No. 21 (June 28, 2016), the investigation was terminated as to the asserted claims of the '163 patent because the claims were directed to ineligible subject matter under 35 U.S.C. § 101. *See* Comm'n Notice (July 28, 2016).

Pursuant to Order No. 23 (Aug. 23, 2016), certain ATM modules were found on summary determination to not infringe the '631 patent. *See* Comm'n Notice (Sept. 22, 2016).

A four-day evidentiary hearing was held on August 29, 2016 through September 1, 2016.

B. The Private Parties

1. Complainants

The Complainants in this investigation are Diebold, Inc. and Diebold Self-Service Systems ("Diebold"). Complaint ¶ 1. Diebold, Inc. is a corporation organized and existing under the laws of the State of Ohio, having a principal place of business at 5995 Mayfair Road, North Canton, Ohio. *Id.* ¶ 8. Diebold Self-Service Systems is a New York general partnership that is a wholly-owned subsidiary of Diebold, Inc., having a principal place of business at the same address in North Canton, Ohio. *Id.* ¶ 21.

2. Respondents

The Respondents in this investigation are Nautilus Hyosung Inc., Nautilus Hyosung America Inc., and HS Global Inc. (collectively, "Nautilus"). Complaint ¶ 2. Nautilus Hyosung Inc. is a company organized and existing under the laws of South Korea, having a principal place of business at 281 Gwangpyeong-ro, Gangnam-Gu, Seoul, South Korea. *Id.* ¶ 23. Nautilus Hyosung Inc. is a subsidiary of Hyosung Corporation. *Id.* ¶ 24. Nautilus Hyosung America Inc.

is a company organized under the laws of the state of Delaware, with its principal place of business at 6641 N. Beltline Road, Suite 100, in Irving, Texas. *Id.* ¶ 25. Nautilus Hyosung America Inc. is a wholly owned subsidiary of Nautilus Hyosung Corporation, which is a subsidiary of Hyosung Corporation. *Id.* ¶ 26. HS Global Inc. is a U.S. company with a principal place of business at 381 Thor Pl. in Brea, California. *Id.* ¶ 28.

C. Patents and Technology at Issue

The remaining asserted claims in this investigation are claims 1, 5-8, 10, 16, 26, and 27 of the '616 patent; claims 1, 13, 14, 19, 20, and 24-26 of the '010 patent; and claims 1-7 and 18-20 of the '631 patent. These three asserted patents relate to different aspects of automated teller machines ("ATMs").

1. '616 Patent

U.S. Patent No. 6,082,616 (JX-0001, "the '616 patent") relates to an enclosure for an ATM that includes a rollout tray with components such as a display and a keypad, and a service opening on the bottom of the rollout tray that enables access to service the components. '616 patent at 2:7-25.

Claim 1 of the '616 patent recites:

> An automated banking machine apparatus comprising:
>
> a housing bounding an interior area, the housing having a first opening to the interior area;
>
> a rollout tray movably supported on the housing, the rollout tray including a wall portion, a service opening extending through the wall portion, wherein the rollout tray is movable between a first position wherein the tray extends outward from the first opening and the service opening is accessible from outside the housing, and a second position wherein the tray is within the interior area and the service opening is not accessible from outside the housing;
>
> a first serviceable component mounted in supporting connection with the tray and overlying the service opening, the serviceable component

> having a service point, and wherein the service point is accessible from outside the housing by extending a tool upwardly through the service opening when the tray is in the first position.

'616 patent at 8:8-25. Claims 5-8, 10, and 16 are dependent upon claim 1. *Id.* at 8:38-56, 8:62-65, 9:38-41. Claims 26 and 27 are independent claims with limitations similar to claim 1—claim 26 adds an "upper wall" element and claim 27 adds a "fascia" element. *Id.* at 11:3-43.

The specification of the '616 patent describes an improved enclosure for an automated banking machine ("ABM"). '616 patent at 1:9-12. Figure 1 depicts a preferred embodiment:

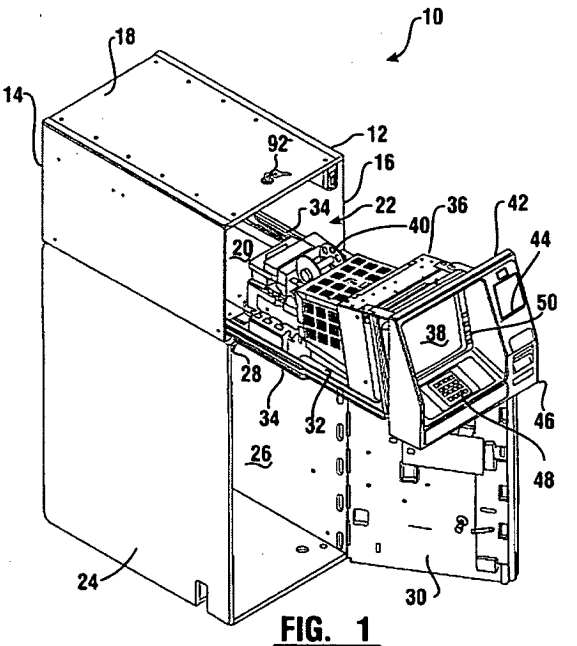

FIG. 1

Id., Fig. 1. ABM 10 is an ATM. *Id.* at 3:10-11. The ATM's housing 12 is located on top of chest 24. *Id.* at 3:11-12 and 3:19-20. Chest 24 encloses secure area 26, which houses critical components and valuable documents, such as currency and currency dispensers. *Id.* at 3:21-25. Rollout tray 32 is mounted on slides 34 in housing 12. *Id.* at 3:38-43. The slides allow the rollout tray to be retracted into the housing from the extended position shown in Figure 1. *Id.*

The rollout tray supports various components of the ATM, including display 36, receipt printer 40, and fascia 42. *Id.* at 3:44-4:2.

A key feature of the rollout tray is service opening 54 in the tray's lower wall 52:

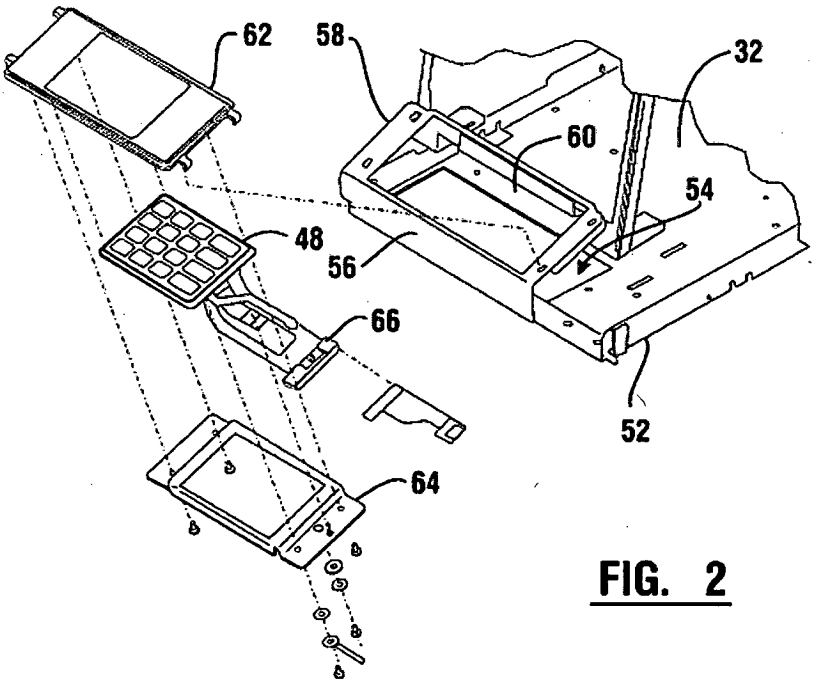

FIG. 2

'616 patent, Fig. 2. When the tray is in the extended position, service points of the components mounted on the tray can be accessed from underneath the tray through the service opening. *Id.* at 5:21-25. For example, keypad 48 is mounted on keypad mounting plate 62, which in turn is mounted to the tray's upper wall 58. *Id.* at 4:19-24. Keypad securing plate 64 is used to hold the keypad in position on the keypad mounting plate. *Id.* at 4:26-29. The keypad securing plate is positioned below the keypad mounting plate and secured with fasteners. *Id.* at 4:25-28. If the keypad needs to be replaced, it can be disengaged from the tray by removing fasteners. *Id.* at 5:28-34. After it is disengaged from the tray, the keypad can be removed through the service opening. *Id.* The fasteners holding the keypad in place are "service points." *Id.* at 5:25-29 ("In the embodiment shown the service points include fasteners 98 holding the keypad in position.

The removal of fasteners 98 which hold the keypad securing plate 64 enables the keypad to be disengaged from the upper wall.").

2. '010 Patent

U.S. Patent No. 7,229,010 (JX-0002, "the '010 patent") relates to a mechanism for transporting documents through an ATM that allows for storage in two different storage areas. '010 patent at 3:41-4:7. For example, "bills may be stored in one compartment while checks are stored in another." *Id.* at 4:2-5.

Claim 1 of the '010 patent recites:

> 1. An automated banking machine comprising:
>
> at least one input device adapted to receive at least one input from users of the machine;
>
> at least output device adapted to provide at least one output to users of the machine;
>
> at least one currency dispenser adapted to dispense currency from the machine to users of the machine;
>
> an item accepting opening adapted to receive into the machine, sheet items from users of the machine;
>
> at least one sheet item transport in the machine, wherein the at least one transport is in operative connection with the item accepting opening, and wherein the at least one transport includes a pair of disposed sheet supporting rail portions;
>
> a storage area, wherein the rail portions of the at least one transport extend in the storage area between a first sheet storage location in the storage area and a second sheet storage location in the storage area;
>
> a movably mounted plunger member in the storage area, wherein the plunger member is movable transversely between the rail portions;
>
> at least one drive in operative connection with the plunger member, wherein the at least one drive is operative to selectively move the plunger transversely between the rail portions;

> wherein the plunger member is movable between the rail portions in the storage area in both a first transverse direction and a second transverse direction opposed of the first transverse direction, wherein the plunger member can move a sheet from the rail portions and into the first sheet storage location while moving in the first transverse direction, and wherein the plunger member can move a sheet from the rail portions and into the second sheet storage location while moving in the second transverse direction.

'010 patent at 23:19-53. Dependent claim 13 depends from claim 1 through intervening dependent claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, and incorporates numerous limitations including backing plates, a scanning sensor, a printer, and sheet moving transports. *Id.* at 23:54-25:33. Dependent claim 14 adds additional limitations for noncontact sensors used to align the sheet to claim 13. *Id.* at 25:34-46. Dependent claim 19 adds a limitation to claim 14 for an escrow area. *Id.* at 25:63-65. Dependent claim 20 adds a limitation to claim 14 where data is sent corresponding to an image of a portion of the check. *Id.* at 25:66-26:2. Dependent claim 24 adds a processor and a scanning sensor to claim 1. *Id.* at 26:26-34. Dependent claim 25 limits claim 24 to checks. *Id.* at 26:35-36. Dependent claim 26 adds a magnetic sensor to claim 25. *Id.* at 26:37-43.

The specification of the '010 patent describes a deposit accepting device that is part of an ATM. '010 patent at 5:36-52. In one embodiment, documents such as checks are moved into a storage area vertically, transported by belts and guided by rails. *Id.* at 18:59-63. There are two available storage locations for the checks, and a plunger is used to move the checks into one storage area or the other. *Id.* at 18:63-20:3. Figure 31 shows the check (labeled 614) entering the storage area:

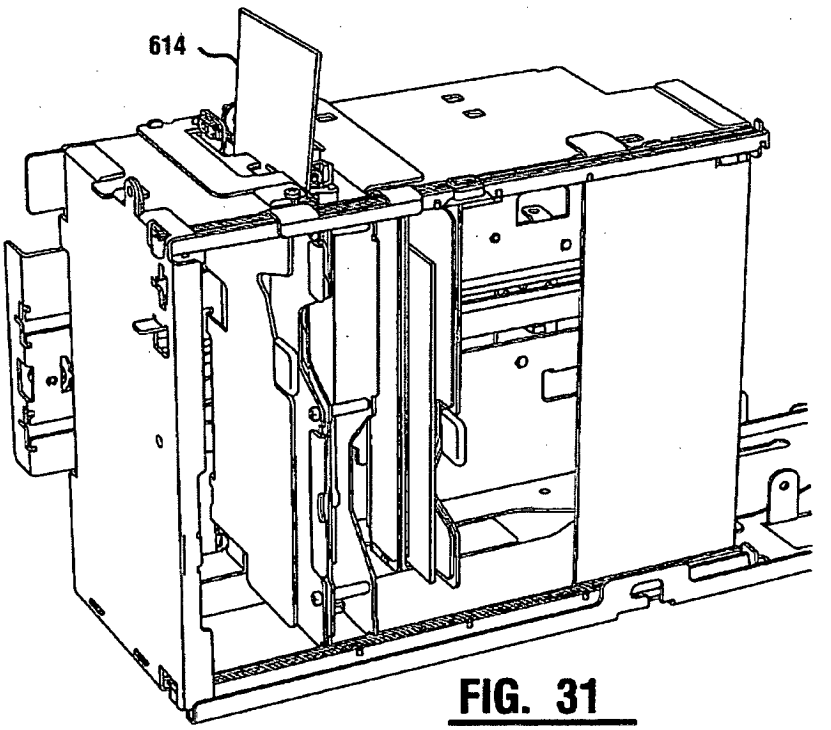

FIG. 31

Id. at Fig. 31. The rails that support the check are depicted in Figure 29, and a side-view of the belts and rails is shown in Figure 30:

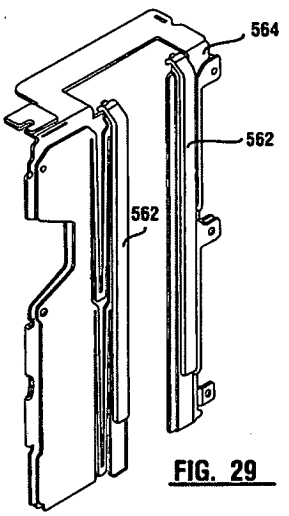

FIG. 29

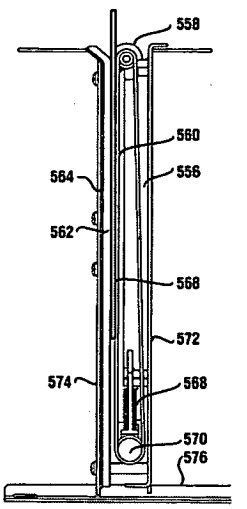

FIG. 30

Id. at 14:58-15:10, Figs. 29, 30.

3. '631 Patent

U.S. Patent No. 7,832,631 (JX-0004, "the '631 patent") relates to a method for reading magnetic ink character recognition ("micr") data from checks that are inserted into ATMs. '631 patent at 2:15-30. This micr data is printed in magnetic ink on checks using an established international standard. *See* RX-0318 (ANSI X9 TG-2-1995, "Understanding and Designing Checks"); RX-0319 (ISO 1004 1995, "Information processing – Magnetic ink character recognition – Print specifications").

Claim 1 of the '631 patent recites:

> 1. A method of sensing magnetic indicia on at least one financial check, comprising:
>
> (a) receiving at least one check in an automated banking machine, wherein the at least one check includes a check comprising magnetic indicia encoded in a micr line thereon;
>
> (b) sensing through operation of at least one sensor in the machine, a width associated with the check, wherein the at least one sensor is in operative connection with at least one processor in the machine;
>
> (c) moving responsive at least in part to the width sensed in (b), at least one of two magnetic read heads in the machine, wherein the at least one magnetic read head is moved responsive at least in part to operation of the at least one processor, wherein the at least one magnetic read head is moved such that the micr line on the check is aligned with one of the magnetic read heads regardless of a facing position of the check;
>
> (d) moving the check past the two magnetic read heads in the machine responsive at least in part to operation of the at least one processor;
>
> (e) sensing micr line data on the check with one of the two magnetic read heads.

'631 patent at 41:24-46. Dependent claim 2 adds limitations that allow for receiving a plurality of checks in a stack. *Id.* at 41:47-52. Dependent claim 3 adds an additional step of aligning a check that is separated from the stack. *Id.* at 41:53-57. Dependent claim 4 further requires that the alignment includes a transverse transport. *Id.* at 41:58-61. Dependent claim 5 requires the

transverse transport to align the check with a fixed magnetic read head in two of four possible facing positions. *Id.* at 41:62-67. Dependent claim 6 requires the check to be aligned with a second movable magnetic read head in two of four possible facing positions. *Id.* at 42:1-5. Dependent claim 7 further adds a step of interpreting the micr line data. *Id.* at 42:6-13. Independent claim 18 is a method claim that includes many of the same limitations for using two magnetic read heads to read micr line data "regardless of the facing position of the check." *Id.* at 43:10-44:12. Dependent claim 19 requires that one magnetic read head be movable, and dependent claim 20 requires that the other magnetic read head be fixed. *Id.* at 44:13-18.

In an exemplary embodiment of the invention, edge sensors are used to align a check, and a width sensor determines the position of a movable micr head, as depicted in Figure 44:

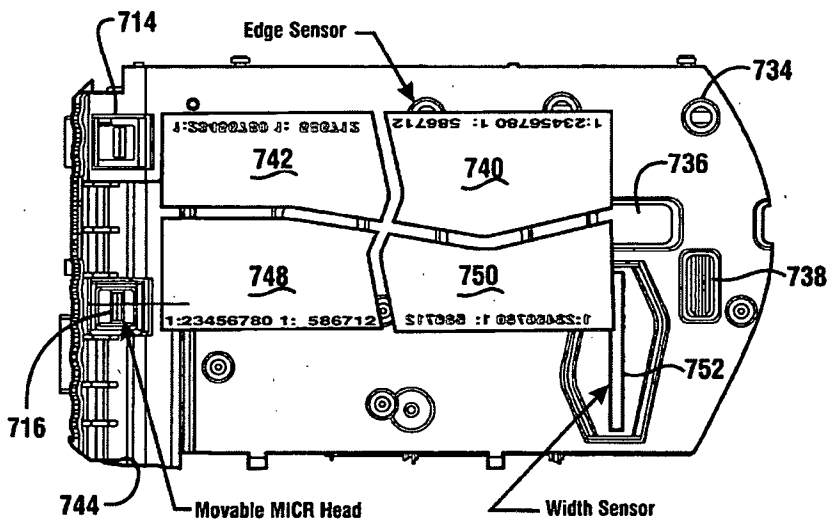

FIG 44

Id. at Fig. 44, 30:51-32:22. The two magnetic heads can read the magnetic micr line in four different orientations. *Id.* at 31:15-43.

D. Products at Issue

The products at issue are ATMs, which can be roughly divided between full-service bank ATMs and lower cost retail ATMs. The full-service ATMs contain modules that allow customers to deposit checks, and are thus accused of infringing the '010 patent and/or the '631 patent. The retail ATMs are generally only accused of infringing the '616 patent.

The specific Nautilus ATMs accused of infringing the '616 patent are the Halo, Halo S, NH2600, MX2600, Halo II and MX2600SE, MX5000CE and MX5000SE, MX5200XP, MX5200W7, MX5200SE, MX5300, MX5300CE, MX5300XP, and MX5600. CIB at 5; RIB at 8. Nautilus ATMs including a bulk check acceptor ("BCA") module are accused of infringing the '010 patent, which include the MX7600DR, MX7600DS, MX7600FFL, MX7600I, MX7600R, MX7600T, MX7600TL, MX7600TR, and MX8700TCX ATMs. CIB at 4; RIB at 8. The Nautilus BCA module and the cash and check in module ("CCIM") are accused of infringing the '631 patent, and these modules are installed in the MX7600DA, MX7600DR, MX7600DS, MX7600FFL, MX7600I, MX7600R, MX7600TA, MX7600T, MX7600TL, MX7600TR, MX7800 Lobby, MX7800D, MX7800I, MX7800TTW, MX8200QT, MX8700QT 2.5.5, MX8700TCX, MX8700QT2.5.1, and MX8800 ATMs. CIB at 3; RIB at 8.

Diebold also asserts that certain of its ATMs practice the asserted patents. Diebold asserts that the Opteva 500, Opteva 500r, Opteva 500e, Opteva 520, Opteva 522, Opteva 522r, Opteva 522e, Opteva 560, and Opteva 720 front load practice the '616 patent. CIB at 5; RIB at 18. Diebold asserts that its IDM5 module practices the '010 patent, and this module is installed in the Opteva 720, Opteva 740, Opteva 750, Opteva 760, Opteva 858, and Opteva 878 ATMs. *Id.* Diebold asserts that its IDMbd module practices the '631 patent, and this module is installed in the Diebold 3700, Diebold 7700, Diebold 7780, Diebold 7790, Opteva 720, Opteva 720r,

Opteva 740, Opteva 750, Opteva 760, Opteva 828, Opteva 858, Opteva 868, and Opteva 878 ATMs. *Id.*

E. Witness Testimony

I received testimonial evidence in this investigation in the form of witness statements, live testimony, and deposition designations.

1. Fact Witnesses

At the hearing, Diebold presented the testimony of several of its employees. Timothy Hoover is a principal product manager. CX-1873C; CX-1981C; Tr. at 85-135. Christopher Rowe is a vice-president of engineering. CX-1874C; Tr. at 137-166. Todd Bidwell is a vice-president of finance. CX-1876C; Tr. at 167-181. David Kraft is a terminal engineer. CX-1888C; Tr. at 182-189. Sean Rogers is a director of product management. CX-1875C; Tr. at 189-213. Michael Ryan is a senior principal engineer. CX-1871C; Tr. at 214-221.

Nautilus also presented the testimony of two of its employees. Bo Kim is a vice-president of operations and engineering. RX-1511C; Tr. at 591-639. Mike Henson is a director of training. RX-1512C.

2. Expert Witnesses

The private parties also rely on several outside experts to render opinions on infringement, invalidity, and remedy. Dr. William Singhose is an expert for Diebold, and he was qualified as an expert in electromagnetic components and sensors, mechanical engineering, and the subject matter of the '631 patent. CX-1872C; CX-1980C; Tr. at 222-240; *see id.* at 223:23-224:7 (expert qualification). Dr. Thomas Kurfess is another expert for Diebold, and he was qualified as an expert in mechanical engineering, electromechanical components, and the subject matter of the '616 and '010 patents. CX-1877C; CX-1979C; Tr. at 240-425, 818-873; *see id.* at

245:14-23 (expert qualification). Dr. Charles Reinholtz is an expert for Nautilus who offered opinions regarding the '616 and '010 patents, and he was qualified as an expert in electromechanical systems and engineering. RX-1184C; RX-1513C; Tr. at 428-590; *see id. at* 430:10-24 (expert qualification). Dr. Robert Stevenson is an expert for Nautilus who offered opinions regarding the '631 patent, and he was qualified as an expert in sensors and control of electromagnetic components. RX-1185C; Tr. at 640-766; *see id.* at 641:24-642:6 (expert qualification). Dr. Thomas Vander Veen was qualified as an economic expert for Nautilus who offered opinions related to remedy and bond. RX-1516C; Tr. at 767-809; *see id.* at 768:6-13 (expert qualification); RX-345 (CV).

3. Deposition Designations

The private parties submitted additional testimony through deposition designations pursuant to Commission Rule 210.28(g). Order No. 35 (Aug. 26, 2016). Diebold submitted designated deposition transcripts for Bo Kim (CX-1682C and CX-1683C), Eui Sun Choi (CX-1685C), Jae-Hoon Kwak (CX-1688C), Jaehun Yi (CX-1689C); Sang Eun Um (CX-1693C), and Yoon Soo Park (CX-1695C). Nautilus submitted designated deposition transcripts for Charles Bartholomew (RX-0817C), Christopher Rowe (RX-0818C), Damon Blackford (RX-0819C), Douglas Kovacs (RX-0820C), Keith Carpenter (RX-0828C), Michael Ryan (RX-0830C), Sean Rogers (RX-0831C), Harry Graef (RX-0834C), Thomas Van Kirk (RX-0835C), Timothy Hoover (RX-0836C), Todd Bidwell (RX-0837C), and William Beskitt (RX-0838C).

II. JURISDICTION

In order to have the power to decide a case, a court or agency must have both subject matter jurisdiction and jurisdiction over either the parties or the property involved. 19 U.S.C.

§ 1337; *Certain Steel Rod Treating Apparatus and Components Thereof*, Inv. No. 337-TA-97, Commission Memorandum Opinion, 215 U.S.P.Q. 229, 231 (1981).

A. Subject Matter Jurisdiction

Section 337 confers subject matter jurisdiction on the International Trade Commission to investigate, and if appropriate, to provide a remedy for, unfair acts and unfair methods of competition in the importation, the sale for importation, or the sale after importation of articles into the United States. *See* 19 U.S.C. §§ 1337(a)(1)(B) and (a)(2). Nautilus does not dispute that all of the accused ATMs and modules have been imported into the United States. RIB at 19; CX-1894C at RFA 1; CX-1649C. Thus, I find that the Commission has subject matter jurisdiction over the articles accused in this investigation under section 337 of the Tariff Act of 1930. *See Amgen Inc. v. Int'l Trade Comm'n*, 565 F.3d 846, 854 (Fed. Cir. 2009) ("In this case, the Commission had jurisdiction as a result of Amgen's allegation that Roche imported an article . . . covered by the claims of a valid and enforceable United States patent.").

In Order No. 23, I identified a dispute of material fact regarding the importation of certain Nautilus ATM modules. Order No. 23 at 4 (Aug. 23, 2016). Respondents offered testimony at the hearing that CCIM modules with software version [redacted] and BCA modules with software version [redacted] and [redacted] have been imported. RX-1511C (Kim RWS) at Q&A.9-26. Diebold does not dispute this evidence but argues that there is no evidence that the new modules have been used in the United States. CIB at 7. This argument relates to infringement and not to importation, however, and the issue of infringement for these modules was decided on summary determination. Order No. 23 at 4-5.[1] The Commission

[1] The modules were found not to infringe in Order No. 23, but this does not affect the Commission's jurisdiction over these products: "As is very common in situations where a

therefore has subject matter jurisdiction over the modules identified in Order No. 23 in addition to the accused ATMs and modules.

B. Personal Jurisdiction

Nautilus responded to the Complaint and Notice of Investigation, participated in the investigation, appeared at hearings, and submitted pre- and post-hearing briefs. Thus, I find that the respondents have submitted to the personal jurisdiction of the Commission. *See Certain Miniature Hacksaws*, Inv. No. 337-TA-237, USITC Pub. No. 1948, Initial Determination at 4, 1986 WL 379287, *1 (October 15, 1986) (unreviewed by Commission in relevant part).[2]

C. In Rem Jurisdiction

The Commission has *in rem* jurisdiction over the accused products by virtue of respondents' concession that they have been imported into the United States. *See Sealed Air Corp. v. U.S. Int'l Trade Comm'n*, 645 F.2d 976, 985-86 (C.C.P.A. 1981) (holding that the ITC's jurisdiction over imported articles is sufficient to exclude such articles).

III. U.S. PATENT NO. 6,082,616

The '616 patent is entitled "Automated Banking Machine Enclosure," and it issued on July 4, 2000, from an application filed on June 2, 1998. Kim R. Lewis, Richard C. Lute, Jr., Terry E. Doll, Douglas A. Kovacs, Michael A. Durbin, Deborah S. Addy, and James A. Zweifel are identified as inventors, and Diebold is the assignee. A copy of the '616 patent was admitted as JX-0001, and its file history is JX-0005. There is no meaningful dispute between the parties

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tribunal's subject matter jurisdiction is based on the same statute which gives rise to the federal right, the jurisdictional requirements of section 1337 mesh with the factual requirements necessary to prevail on the merits. In such a situation, the Supreme Court has held that the tribunal should assume jurisdiction and treat (and dismiss on, if necessary) the merits of the case." *Amgen Inc. v. U.S. Int'l Trade Comm'n*, 902 F.2d 1532, 1536 (Fed. Cir. 1990).

[2] In addition, Respondents Nautilus Hyosung America Inc. and HS Global Inc. are located in the United States. *See* Complaint ¶¶ 25, 28; Response to Complaint ¶¶ 25, 28 (Dec. 14, 2015).

on the level of ordinary skill in the art for the '616 patent, with both parties' experts testifying that a person of ordinary skill in the art would have had a combination of experience and education in mechanical engineering, typically consisting of a minimum of a bachelor degree in mechanical engineering or a related field and 3-5 years of relevant work experience. CIB at 10-11 (citing CX-1979C (Kurfess RWS) at Q&A.40); RX-1184C (Reinholtz DWS) at Q&A.24-27.

A. Claim Construction

In the *Markman* order in this investigation, the term "service opening" was construed to mean "an opening through which serviceable components are accessible for servicing," and the term "in supporting connection" was construed to mean "connected to and supported by." Order No. 17 (June 13, 2016).[3] In an order denying summary determination regarding the technical prong of domestic industry, the limitation requiring that the service opening is not accessible in the second position was construed to mean that the service opening is not accessible for servicing. Order No. 24 (Aug. 23, 2016).

Despite the determinations in the *Markman* order and on summary determination, the parties continue to dispute the scope of the claim language in the '616 patent. In particular, the parties have conflicting views regarding the application of the construction for "service opening" to the accused products. Nautilus contends that the "service opening" limitation is not infringed because the purpose of the openings in the accused products is not "for servicing." RIB at 24-32. Nautilus's expert, Dr. Reinholtz testified in his witness statement: "Any opening can conceivably

[3] The parties also agreed to the construction of "automated banking machine" as "any of the types of devices that enable carrying out transactions involving the transfer of funds or value electronically, including but not limited to ATMs, cash dispensers, credit card terminals, ticket dispensers, utility payment terminals, smart card value transfer terminals and devices that perform similar functions," and the construction of "housing bounding an interior area" as "a structure bounding an interior area from which the rollout tray extends and into which the rollout tray is retracted." Order No. 17 at 2.

be used for service with the right tool . . . . So I think it is relevant how an opening is used." RX-1513C (Reinholtz RWS) at Q&A 62. Diebold argues that "accessible for servicing" describes capability, not actual or intended use. CIB at 21. Diebold cites Federal Circuit case law warning against interpreting an apparatus claim based upon intended use: "Construing a non-functional term in an apparatus claim in a way that makes direct infringement turn on the use to which an accused apparatus is later put confuses rather than clarifies, frustrates the ability of both the patentee and potential infringers to ascertain the propriety of particular activities, and is inconsistent with the notice function central to the patent system." *Paragon Sols., LLC v. Timex Corp.*, 566 F.3d 1075, 1091 (Fed. Cir. 2009). Nautilus does not dispute this case law, stating in its reply brief that its non-infringement argument "is not premised on either the intent of the designer or the actual use of the identified holes." RRB at 10. Nautilus argues instead that the identified openings in the accused products do not allow access for real service, relying on an admission by Diebold's expert, Dr. Kurfess, that "accessible for servicing" refers to "meaningful, real service." Tr. (Kurfess) at 279:11-24. Nautilus has failed to clearly articulate any objective standards, however, for determining whether any service is "real" or "meaningful."

Diebold characterizes the dispute regarding the "service opening" as a matter of claim construction. CIB at 21-22; CRB at 3-5. Nautilus does not explicitly argue for a new construction but relies on evidence from the file history to support its non-infringement argument. RIB at 30. I agree with Diebold that the parties' continued dispute regarding the claimed "service opening" must be resolved in the context of claim construction. As set forth in Order No. 24, further claim construction is appropriate after the *Markman* order where a dispute arises in the context of the parties' contentions. Order No. 24 at 7. The construction for "service opening" adopted in the *Markman* order fails to resolve the parties' dispute on infringement and

must be clarified.

A claim construction analysis starts with the language of the claims. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). The claims of the '616 patent not only require a "rollout tray ... [including] a service opening," but also "a first position wherein . . . the service opening is accessible from outside the housing." '616 patent at 8:11-16 (claim 1), 11:6-11 (claim 26), 11:27-31 (claim 27). Several dependent claims provide examples of service through the service opening. Claims 4, 5, and 7 describe a "removable keypad ... wherein the keypad is removable through the service opening when the tray is in the first position." *Id.* at 8:33-37 (claim 4), 8:38-42 (claim 5), 8:48-53 (claim 7). Claims 3 and 9 describe, respectively, "an image adjusting knob" and an "image adjustment knob." *Id.* at 8:29-32 (claim 3), 8:57-61 (claim 9).

"[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). The specification of the '616 patent describes the claimed keypad and image adjustment knob in more detail. The first discussion of service through the service opening states: "Service points on the keypad are accessible through the service opening and the keypad is enabled to be removed from the machine by passing it through the service opening." '616 patent at 2:18-21. With regard to the adjustment knobs, the specification states: "The image adjusting knob is enabled to be accessed through the service opening when the rollout tray is in the extended position." *Id.* at 2:21-25. These components and the claimed service opening are illustrated and described in more detail in Figure 8:

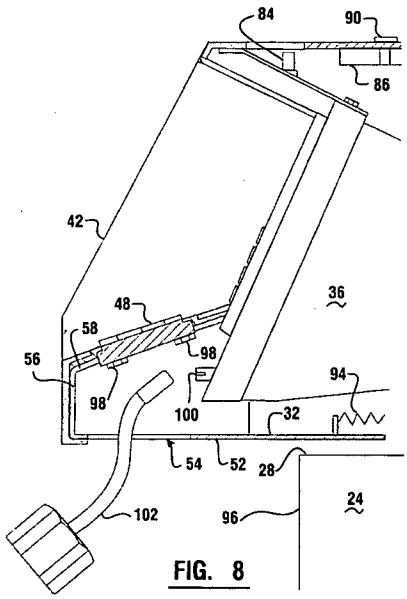

FIG. 8

Id. at Fig. 8. In the context of this figure, the specification describes the removal of the keypad through the service opening:

> In the embodiment shown the service points include fasteners 98 holding the keypad in position. The removal of fasteners 98 which hold the keypad securing plate 64 enables the keypad to be disengaged from the upper wall. The keypad may be disconnected electrically and removed from the machine through the service opening 54. The keypad may thereafter be subsequently replaced with another keypad. This facilitates replacing a keypad which has worn out or malfunctioned.

Id. at 5:25-33. The specification further describes the adjustment of the image adjusting knobs through the service opening:

> Display 36 includes image adjusting knobs 100. The image adjusting knobs are used to adjust the picture provided by the display. Typically such adjustments include brightness, contrast and hue, for example. The image adjusting knobs in the preferred embodiment are accessible through the lower recess 72 in the surround plate 70, which enables them to be accessed through the service opening 54.
>
> FIG. 8 shows a tool 102 with a flexible stem which includes an aperture or recess for accepting the image adjusting knobs therein. Such a tool enables turning the adjusting knobs when the tool is extended upwardly through the service opening 54. Of course other tools may be used for purposes of contacting and moving service points such as fasteners 98 and knob 100.

Id. at 5:34-49. These two examples of service through the service opening provide a context for understanding the "service opening" limitation. There is no evidence for a construction that considers the intent of the designer, as suggested by Nautilus, but there is support for a limitation requiring that servicing of serviceable components is "enabled" by the service opening. *Id.* at 2:18-25, 5:25-33, 5:34-49. This limitation is not clearly embodied in the construction for "service opening" adopted in the *Markman* Order, where I observed that "[t]he specification repeatedly describes the 'service opening' in terms of allowing access to the serviceable component." Order No. 17 at 16. Instead of using the term "allow," however, the specification repeatedly uses the term "enable" in the context of the service opening. *See* '616 patent at 2:18-25, 5:25-33, 5:34-49. In the examples of service for the keypad and the image adjusting knobs in the preferred embodiment, the service opening enables access to these two components that are not accessible through other means.

The prosecution history provides further support for a limitation requiring that the service opening enable access to serviceable components. The "service opening" limitation was the subject of the only amendments to the claims during the prosecution of the '616 patent. On October 8, 1999, in the first and only office action, all of the pending claims were rejected as either being anticipated by or obvious in view of U.S. Patent No. 5,483,047 to Ramachandran *et al.* (RX-0378, "Ramachandran"). JX-0005 at DBITC0000206-209. Although the examiner did not identify a particular structure in Ramachandran as a "service opening," rollout trays are disclosed as "a pair of adjacent trays each of which . . . are extendible individually out of one of the openings so that the components thereon may be serviced." RX-0378 at 2:56-61. As shown in Figure 2, mounting the components on these trays allows a technician servicing the ATM "to stand on one side and extend the tray on the opposed side to service the components thereon.

Thereafter, the technician may retract the extended back tray into the machine, move to the opposed side and extend the other tray." *Id.* at 3:1-6.

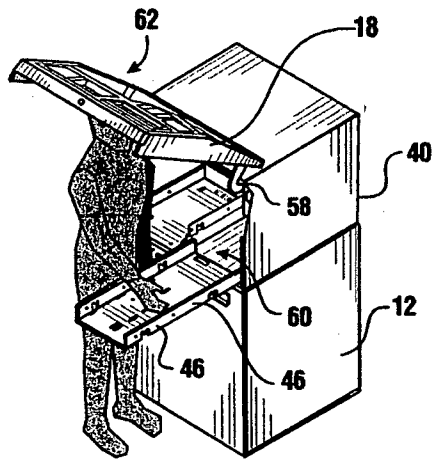

FIG. 2

Id. at Fig. 2. In close-up drawings, the bottom of one of the rollout trays disclosed in Ramachandran is shown to have circular and slot-shaped openings:

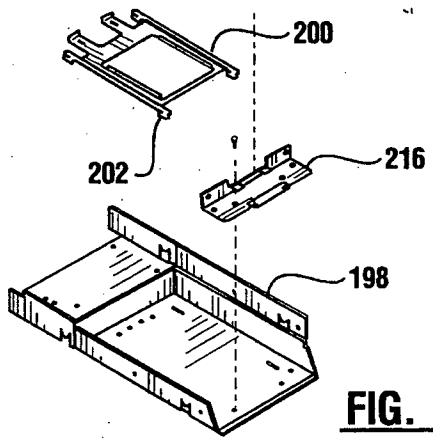

FIG. 25

Id. at Fig. 25. These openings are used to fasten the monitor mounting assembly (216, 200) to the rollout tray. The circular openings are for fasteners, while the slot-shaped openings hold projections 202 on the bottom of slide bracket 200. *Id.* at 9:45-10:16.

In response to the office action, Diebold amended claim 1 "to further define the service

opening." JX-0005 at DBITC0000161.[4] When describing the claimed service opening, Diebold states: "With the tray (32) moved forward, service points may be accessed through the service opening (54). Service points may be located in positions, such as below the keypad (48) or the fascia (42), that are generally only accessible through the service opening (54)." *Id.* at DBITC0000164.[5] When distinguishing the Ramachandran prior art, Diebold complains that the examiner's rejection "does not state in any way that is reasonably understandable by Applicants, where the elements recited in . . . claim 1 are allegedly found in the cited art." *Id.* at DBITC0000165-66. Diebold distinguishes the prior art by arguing that the ATM disclosed in Ramachandran allows a technician to service the machine "while not having to leave the area into which rollout trays may be extended." *Id.* Diebold thus argues that in Ramachandran there is "no need for a 'service opening' that permits a 'tool' to extend therethrough because the trays move outward to enable access to the components." *Id.* at DBITC0000166-67. The patent was allowed following Diebold's amendments to the claims. *Id.* at DBITC0000239-240.

Diebold's statements in the prosecution history confirm that the claimed service opening must enable access to serviceable components. Diebold represents to the PTO that the service

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[4] Diebold amended the language of claim 1 to require that the rollout tray have a "wall portion" and that the service opening "extend[] through the wall portion." *Id.* at DBITC0000153. Diebold also amended the claim to specify that the service point of the serviceable component be "accessible by a tool from outside the housing through the service opening." *Id.* In a supplemental response, Diebold further amended claim 1 to require that the serviceable component overlie the service opening and its service point be accessible "by extending a tool upwardly through the service opening." *Id.* at DBITC0000198.

[5] Diebold made a similar statement to the PTO in response to a petition for *inter partes* review of the '616 patent. *See* RX-0290, IPR2016-00580, Patent Owner's Preliminary Response at 2 (May 24, 2016) ("[The] rollout tray described in the 616 Patent . . . includes a service opening that enables personnel to access portion of the serviceable components mounted on or in proximity to the tray that are not otherwise accessible."). The PTO declined to institute the *inter partes* review, IPR2016-00580, Paper No. 10 (Decision) (Aug. 22, 2016), but the PTO's decision does not affect any of the analysis in this initial determination.

opening enables access to service points "that are generally only accessible through the service opening." JX-0005 at DBITC0000162. Diebold further distinguishes prior art where there is "no need for a 'service opening'" because components can be serviced from above. *Id.* at DBITC0000168-69. Requiring that the service opening enable access to serviceable components is further consistent with the expert testimony requiring that the claimed service be "meaningful, real service." Tr. (Kurfess) at 279:11-24. Service that is conducted through an opening is not meaningful if there is no need to use the opening.

Accordingly, the intrinsic evidence supports a modification of the construction for "service opening" as an opening through which serviceable components are accessible for servicing, where the opening enables access to the serviceable components.

B. Infringement

Diebold accuses fifteen Nautilus ATM models of infringing claims 1, 5-8, 10, 16, 26, and 27 of the '616 patent. CIB at 11.

1. Legal Standards

Section 337(a)(1)(B)(i) prohibits "the importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that – (i) infringe a valid and enforceable United States patent or a valid and enforceable United States copyright registered under title 17." 19 U.S.C. §1337(a)(1)(B)(i). The Commission has held that the word "infringe" in Section 337(a)(1)(B)(i) "derives its legal meaning from 35 U.S.C. § 271, the section of the Patent Act that defines patent infringement." *Certain Electronic Devices with Image Processing Systems, Components Thereof, and Associated Software*, Inv. No. 337-TA-724, Comm'n Op. at 13-14 (December 21, 2011). Under 35 U.S.C. § 271(a), direct infringement of a patent consists of making, using, offering to sell, or

selling the patented invention without consent of the patent owner.

"An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996) (citation omitted). Infringement must be proven by a preponderance of the evidence. *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988). A preponderance of the evidence standard "requires proving that infringement was more likely than not to have occurred." *Warner-Lambert Co. v. Teva Pharm. USA, Inc.*, 418 F.3d 1326, 1341 n.15 (Fed. Cir. 2005).

A complainant must prove either literal infringement or infringement under the doctrine of equivalents. Literal infringement requires the patentee to prove that the accused device contains each and every limitation of the asserted claim(s). *Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l, Inc.*, 389 F.3d 1370, 1378 (Fed. Cir. 2004). "If even one limitation is missing or not met as claimed, there is no literal infringement." *Elkay Mfg. Co. v. EBCO Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999). Literal infringement is a question of fact. *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1332 (Fed. Cir. 2008).

Where literal infringement is not found, infringement nevertheless can be found under the doctrine of equivalents. Determining infringement under the doctrine of equivalents "requires an intensely factual inquiry." *Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc.*, 212 F.3d 1377, 1381 (Fed. Cir. 2000). According to the Federal Circuit:

> Infringement under the doctrine of equivalents may be found when the accused device contains an "insubstantial" change from the claimed invention. Whether equivalency exists may be determined based on the "insubstantial differences" test or based on the "triple identity" test,

> namely, whether the element of the accused device "performs substantially the same function in substantially the same way to obtain the same result." The essential inquiry is whether "the accused product or process contain elements identical or equivalent to each claimed element of the patented invention[.]"

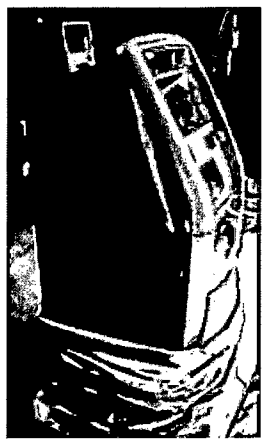
TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1376-77 (Fed. Cir. 2008) (citations omitted). Thus, if an element is missing or not satisfied, infringement cannot be found under the doctrine of equivalents as a matter of law. *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538-39 (Fed. Cir. 1991).

2. Accused Products

The fifteen accused ATM models are grouped into six different series. CIB at 11. The Halo series includes the Halo, Halo S, NH2600, and MX2600. *Id.* at 11-12. The Halo II series includes the Halo II and MX2600SE. *Id.* at 12. The MX5000 series includes the MX5000CE and MX5000SE. *Id.* at 12-13. The MX5200 series includes the MX5200XP, MX5200W7, and MX5200SE. *Id.* at 13. The MX5300 series includes the MX5300, MX5300CE, and MX5300XP. *Id.* at 14. The MX5600 series is just one model, the MX5600. *Id.* at 15. The Halo, Halo II, MX5200, and MX5600 series ATMs are accused of infringing claims 1, 6-8, 10, 16, 26, and 27 of the '616 patent. *Id.* at 15-20. The Halo, MX5200, and MX5600 series ATMs are accused of infringing claim 5. *Id.* at 16-17. The MX5000 and MX5300 series are only accused of infringing claim 27. *Id.* at 19-20. Diebold relies on the testimony of Dr. Kurfess to group these ATMs, CX-1877C (Kurfess DWS) at Q&A.658-683, and there is no dispute regarding this grouping for the purpose of analyzing infringement of the '616 patent. CIB at 11-15; RIB at 29.

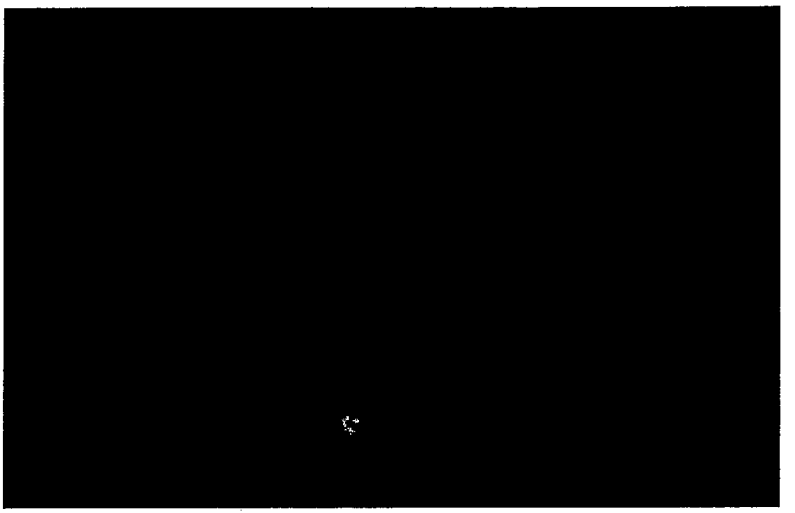
Although there are differences in the structure of each group of ATMs, several critical features are the same. The Halo II (RPX-0056C) was demonstrated as an exemplary product at

the hearing, and it is the focus of the parties' post-hearing briefs. RIB at 19-48; CRB at 7-9. Diebold's expert Dr. Kurfess inspected and photographed the Halo II.



CX-0223C; *see* CX-1877C (Kurfess DWS) at Q&A 723. The interior of the Halo II ATM includes components on a rollout tray that extends from the ATM housing.

CX-0224C; *see* CX-1877C (Kurfess DWS) at Q&A 703. When the rollout tray, is extended, the fascia (*i.e.*, the front panel) of the Halo II can rotate forward, exposing a cutout in the tray, where a bracket (underneath the ATM keypad) sits in the normal, operative position.



CX-0233C; *see* CX-1877C (Kurfess DWS) at Q&A 773. The fascia can be rotated further forward to allow access to many components from the back of the panel.

CX-0236C; *see* CX-1877C (Kurfess DWS) at Q&A.833. In this forward position, the cutout below the keypad is exposed as the [redacted] lift away from the tray. As discussed below, Diebold has identified similar cutouts as the "service opening" in each of the accused ATMs.

3. Undisputed limitations (claims 1, 26, 27)

The parties do not dispute the majority of the limitations in the asserted independent

claims. CIB at 15-21; RRB at 17-18. In particular, there is no dispute that the accused ATMs are "automated banking machines" (claims 1, 26, 27). CIB at 15, 18-19 (citing CX-1877C (Kurfess DWS) at Q&A.686-694, 1026-1027, 1052-1059). In addition, there is no dispute that the accused ATMs have "a housing bounding an interior area," and the housing has "a first opening to the interior area" (claims 1, 26, 27). *Id.* (citing CX-1877C (Kurfess DWS) at Q&A.695-740, 1028-1029, 1060-1088). Further, there is no dispute that the accused ATMs have "a rollout tray movably mounted in supporting connection with the housing" (claims 1, 26, 27). *Id.* at 15, 18, 20 (citing CX-1877C (Kurfess DWS) at Q&A.741-752, 1030-1033, 1089-1097). There is also no dispute that the rollout tray in the accused ATMs includes "a wall portion" (claim 1). *Id.* at 16 (citing CX-1877C (Kurfess DWS) at Q&A.753-761). There is no dispute that each of the accused ATMs includes a "serviceable component having a service point" (claims 1, 26, 27). *Id.* at 16, 19, 27 (citing CX-1877C (Kurfess DWS) at Q&A.836-854, 1040-1041, 1122-1148). And there is no dispute that the accused ATMs have a "fascia" (claim 27). *Id.* at 17-18, 20-21 (citing CX-1877C (Kurfess DWS) at Q&A.972-1006, 1160-1182).

The parties dispute several limitations in the asserted claims, which are addressed below. In all of the asserted independent claims, the parties dispute several limitations related to the "service opening" and the "second position." Claim 1 also includes a disputed "overlying" limitation. In addition, claim 26 includes a disputed "upper wall" limitation.

4. The "service opening" limitation (claims 1, 26, 27)

The primary dispute between the parties relates to the "service opening" limitation of the asserted claims. Each of the asserted independent claims requires a "rollout tray ... [including] a service opening," and "a first position wherein . . . the service opening is accessible from outside the housing." '616 patent at 8:11-16 (claim 1), 11:6-11 (claim 26), 11:27-31 (claim 27). The

claims further require a "service point" wherein "the service point is accessible from outside the housing . . . through the service opening when the tray is in the first position." *Id.* at 8:21-25 (claim 1), 11:16-19 (claim 26), 11:36-39 (claim 27). Claim 1 also requires that "the service point is accessible from outside the housing by extending a tool upwardly through the service opening." *Id.* at 8:21-25. These limitations will be considered together because they relate to the same "service opening" claim language and similar infringement evidence. As discussed above, the "service opening" limitation requires an opening through which serviceable components are accessible for servicing, where the opening enables access to the serviceable components.

Diebold identifies a "service opening" at the front of the rollout tray in each of the accused ATMs and cites evidence from its expert Dr. Kurfess, where he removes a keypad and other components through the alleged service opening of certain exemplary ATMs. CIB at 23-24 (citing CPX-0023C, CPX-0024C, CPX-0025C, CPX-0026C, CPX-0034C, CPX-0022C, CPX-0042C). Diebold also identifies additional components in each type of ATM that are accessible through the alleged service opening. *Id.* at 24. Nautilus argues that these openings are merely cutouts and gaps that do not provide access for servicing but rather exist to [redacted] when the front panel of the ATM is in the operative position. RRB at 5-11. The particular openings and components identified in each of the accused ATMs are discussed in more detail below. With the exception of the MX5600, these openings do not enable access to serviceable components, as required by the "service opening" limitation.

a. Halo II Products

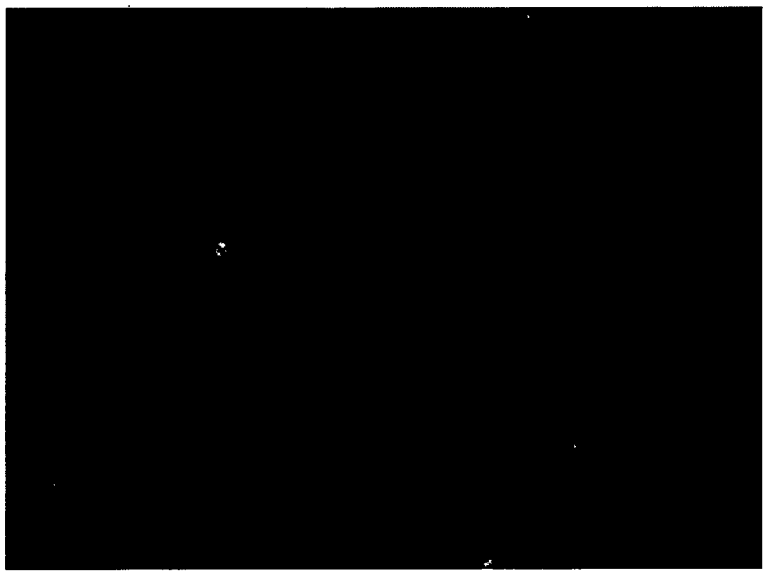
The Halo II (RPX-0056C) was demonstrated extensively at the hearing. The serviceable components that Diebold identifies in the Halo II are the keypad (*i.e.*, electronic pin pad or "EPP") and the speaker. CIB at 23-24. To demonstrate service of the keypad, Diebold points to

videos of Dr. Kurfess removing the keypad through the opening in the tray of the Halo II. *Id.* at 23 (citing CPX-0024C, CPX-0025C, CPX-0026C). In these videos, Dr. Kurfess uses pliers to disconnect [redacted] and a screwdriver to [redacted]. *See* CX-1877C (Kurfess DWS) at Q&A952-957 (citing CPX-0024C, CPX-0025C, CPX-0026C). Dr. Kurfess extends the pliers through the alleged service opening to disconnect the first electrical connection. CPX-0025C at 00:00-00:10. Dr. Kurfess also uses pliers to [redacted], but this appears to be done entirely below the tray and outside of the opening. *Id.* at 00:10-00:18. To remove the [redacted], Dr. Kurfess [redacted]. *Id.* at 00:18-01:30. The only part of this service that occurs through the service opening is the [redacted], but this disconnection is not enabled by the service opening. As Dr. Kurfess admitted at the hearing, the [redacted] are also accessible from above the service tray when the fascia is rotated forward. *See* Tr. (Kurfess) at 338:19-339:10.

Dr. Reinholtz contends that there would be no impact on how the keypad is serviced in the absence of the cutout in the rollout tray because the Nautilus ATMs are designed to be serviced from above. RX-1513C (Reinholtz RWS) at Q&A.90. Mike Henson, Nautilus's director of training, explains that Nautilus technicians service the keypad (EPP) in the Halo II by rotating the fascia forward and then removing the screws and electrical connections from above. RX-1512C (Henson RWS) at Q&A.20-32. He further states that he has never accessed the EPP from below the tray, and he has "never instructed anyone to service the EPP through the cutout." *Id.* at Q&A.39-40. Although Dr. Kurfess has shown that it is possible to disconnect [redacted] through the opening in the tray, this same disconnection can be performed from

entirely above the rollout tray. The alleged service opening thus does not enable access to the serviceable component, as required by the revised claim construction.

Dr. Kurfess identifies a second component that can be serviced through the opening: a speaker. CX-1877C (Kurfess DWS) at Q&A772-773, 864. In a video, he removes the [redacted]. CPX-0026. As with the keypad discussed above, however, only [redacted], and Diebold's infringement case thus rests upon this [redacted]. In Dr. Kurfess's witness statement, he provides a photograph of a screwdriver extending through the opening to access the top screw.

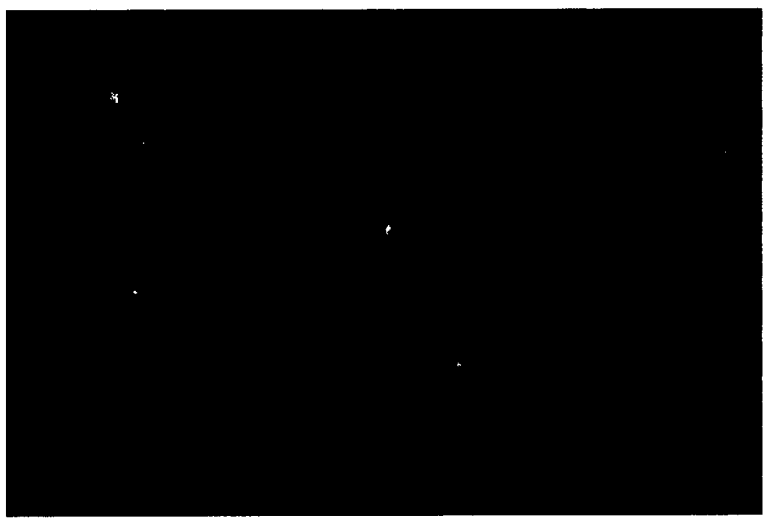


CX-0679C. In this photograph, there appear to be [redacted] that Dr. Kurfess does not access through the opening. It is evident from Dr. Kurfess's video, CPX-0026C, that these screws are accessible without reaching through the opening when the front panel is rotated forward. Most of the screws and [redacted] appear to be only accessible from above, and Mr. Henson confirms that Nautilus technicians do not service the [redacted] from below the tray. RX-1512C (Henson RWS) at Q&A.39-40. Mr. Henson's testimony is consistent with the video and the photograph, which appear to show that even the

top screw is accessible from above, particularly when the fascia is rotated forward. Thus, for the same reasons that Dr. Kurfess's removal of the keypad does not prove infringement, his removal of the [redacted] does not prove infringement. The opening in the tray does not enable access to service the keypad or [redacted], and the Halo II thus does not literally infringe the "service opening" limitation of the asserted claims of the '616 patent.

b. Halo Series

For the Halo series products, Diebold identifies a similar opening at the front of the rollout tray.

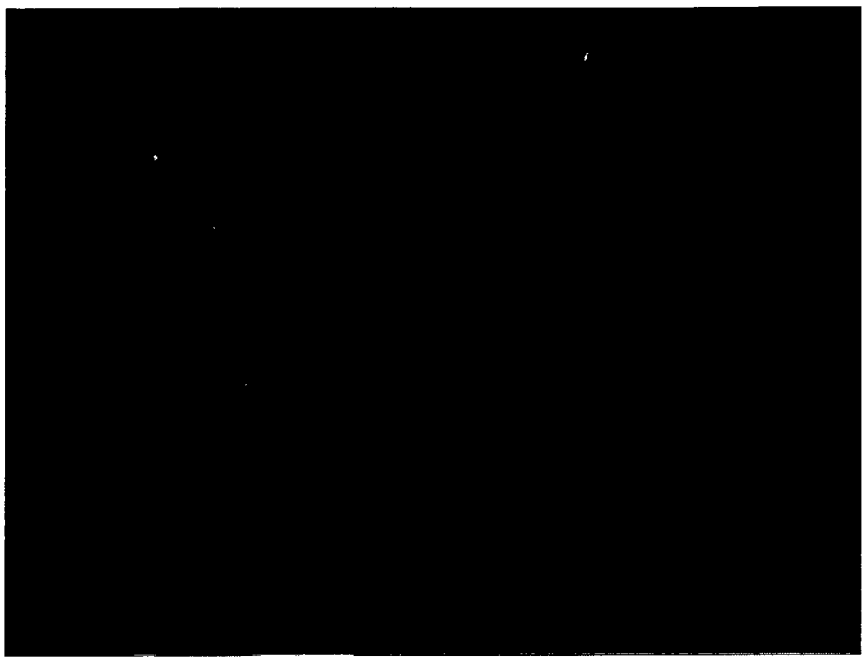


CX-0183C; *see* CX-1877C (Kurfess DRW) at Q&A.765. In a video, Dr. Kurfess demonstrates the removal of the keypad through this opening by [redacted]. CPX-0023C. Dr. Kurfess accesses both [redacted] through the opening. *Id.* at 00:27-1:28.

Nautilus argues, however, that the electrical connections are accessible from above in the Halo, just as they are in the Halo II. RRB at 7. In addition, Nautilus argues that the screws

attaching [redacted] do not need to be removed to service the keypad. *Id.* at 7-8. Only the [redacted] need to be removed to facilitate the removal of the keypad (with its [redacted] attached). *Id.*; *see* RX-1512C (Henson RWS) at Q&A.41-55 (describing service of Halo series ATMs). Nautilus thus contends that Dr. Kurfess's performance of service tasks through the opening is "contrived" and is inconsistent with the service instructions provided by Nautilus.

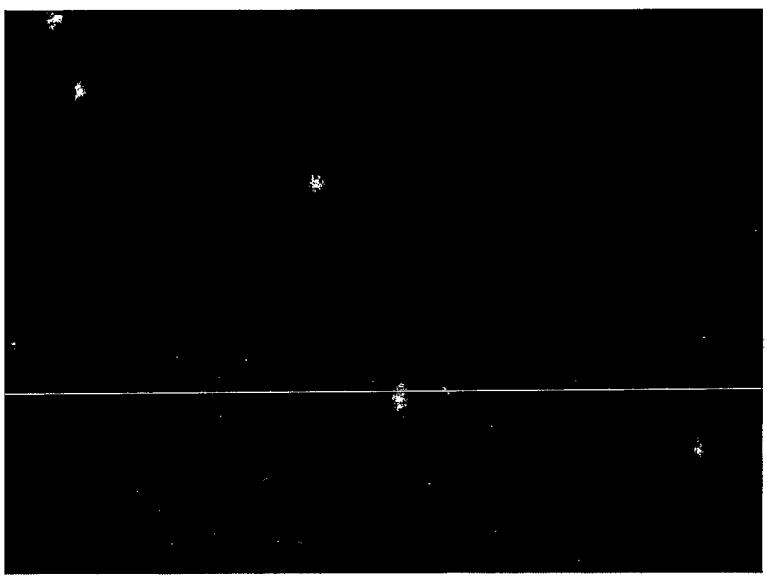
I agree with Nautilus that Diebold has failed to show infringement of the "service opening" limitation for the Halo ATMs. The [redacted] that Dr. Kurfess removes through the opening in the Halo ATM appear to be accessible from above the service opening when the fascia is rotated forward. The screws that Dr. Kurfess accesses through the opening appear to be unnecessary for removal of the keypad, and the video shows that attempting to remove the keypad through the opening is unnecessarily difficult, as the [redacted] does not fit through the opening, and Dr. Kurfess must reach around the keypad to push it through from above. CPX-0023C at 2:30-2:54. It is apparent from the video and from photographs of the fascia rotated forward that the keypad and [redacted] are accessible for service without touching any of the screws that Dr. Kurfess accesses through the opening.



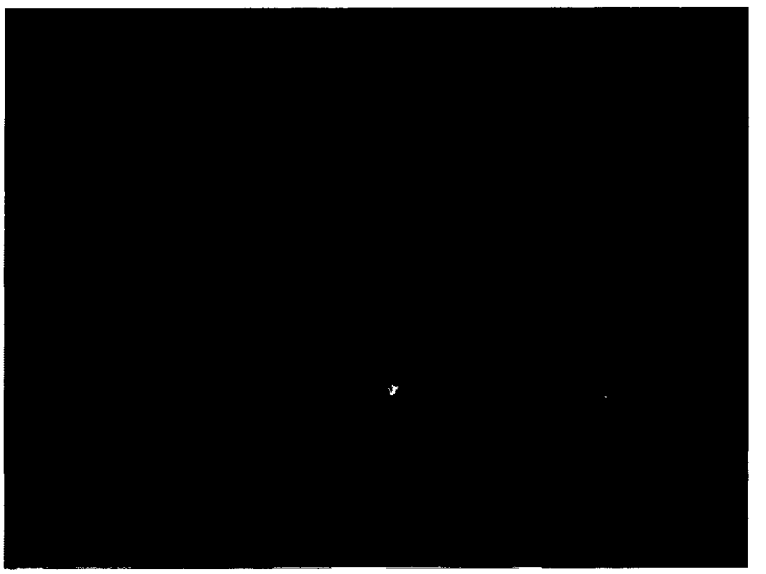
RX-1536C. *See* RX-1512C (Henson RWS) at Q&A.52. Accordingly, the opening does not enable access to the keypad for servicing, and the Halo series ATMs do not literally infringe the "service opening" limitation of the '616 patent.

c. MX5000 Series

In the MX5000 series ATMs, Diebold identifies a gap at the front of the service tray as the alleged service opening.



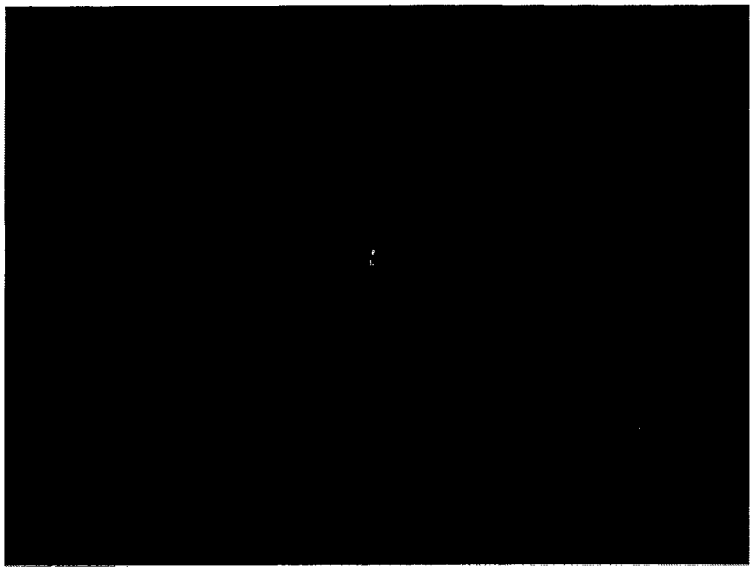
CX-0710C; *see* CX-1877C (Kurfess DRW) at Q&A.1103. Dr. Kurfess provides a set of photographs showing tools extending towards the alleged service opening. CX-1877C (Kurfess DRW) at Q&A.1153 (citing CX-0716C, CX-0717C, CX-0720C, CX-0724C). All of these photographs appear to show service occurring at or near the plane of the opening, however, and it does not appear that any of the depicted service is to a component that is above the opening.



CX-0724C. Some of these service points may move above the opening when the fascia is rotated forward, but Diebold has submitted no evidence that service could be performed through the opening in the rotated position. Unlike the other ATM models, Mr. Kurfess does not rely on any videos demonstrating service of the MX5000 series. Moreover, Mr. Henson testifies that the MX5000 series ATMs are serviced from above the tray, not below. RX-1512C (Henson RWS) at Q&A.56-65. Given this record, the MX5000 series ATMs have not been shown to infringe the "service opening" limitation under any claim construction.

d. MX5200 Series

The MX5200 series ATMs also have an opening at the front of the rollout tray that Diebold identifies as the alleged service opening.



CX-0469C; *see* CX-1877C (Kurfess DRW) at Q&A.767. In a video, Dr. Kurfess demonstrates the removal of a [redacted]. CPX-0034C. The card reader is far above the opening, *id.* at 0:05-0:30, and at least two of the screws on the mounting bracket and one of the electrical connectors appears to sit above the opening. *Id.* at 0:50-1:10, 1:45-1:52.

Nautilus argues, however, that the service that Dr. Kurfess demonstrates is "contrived" and is inconsistent with the way that technicians service the MX5200 ATMs. RRB at 7-8. Nautilus argues that Dr. Kurfess's access to the screws holding the card reader is awkward and that "no technician would reasonably choose" to perform service in that way. *Id.* at 10 n.5. Nautilus further argues that the electrical connections are accessible from above, and the screws attaching the [redacted] do not need to be removed to service the keypad. *Id.* at 7-8. Mr. Henson explains that the proper way to service the keypad and card reader is from above the tray. RX-1512C (Henson RWS) at Q&A.77.

I agree with Nautilus that Diebold has failed to show infringement of the "service opening" limitation in the MX5200 series ATMs. When the fascia is rotated forward, it is clear that the screws holding the card reader and the electrical connections for the keypad are accessible from above.

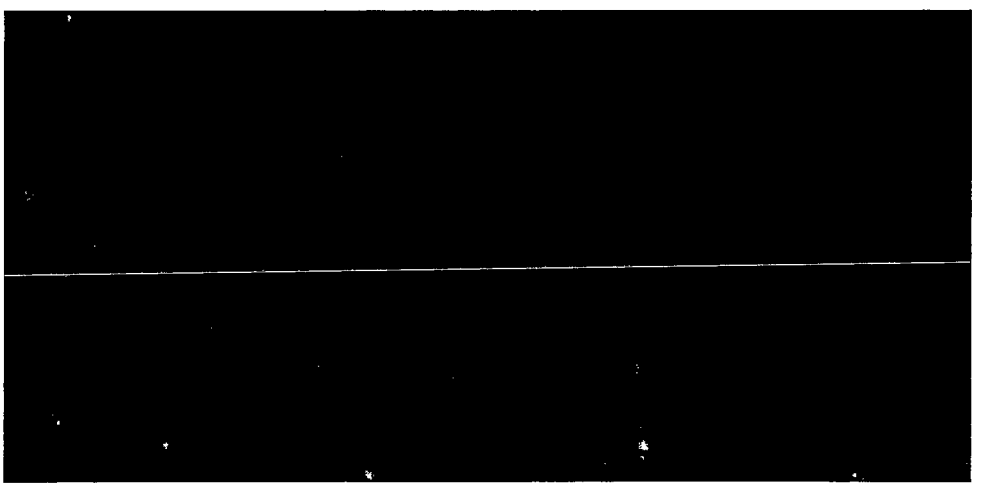
RX-1536C. *See* RX-1512C (Henson RWS) at Q&A.73-75. Moreover, Dr. Kurfess is only able to [redacted], corroborating Mr. Henson's testimony that service is preferably performed from above. CPX-0034C at 0:30-0:42. In addition, removing the screws attaching the keypad to the [redacted] appears to be unnecessary to the removal of the keypad, and doing so causes the [redacted] to slip, requiring Dr. Kurfess to support the [redacted] by hand while completing his demonstration. CPX-0034C at 1:48-2:17. It is apparent from the record that the [redacted] and the keypad are accessible for service without performing any service through the opening. Accordingly, the opening does not enable access to these components for servicing, and the MX5200 series ATMs do not literally infringe the "service opening" limitation of the '616

patent.

e. MX5300 Series

The MX5300 series ATMs also have an opening at the front of the rollout tray that Diebold identifies as the alleged service opening.

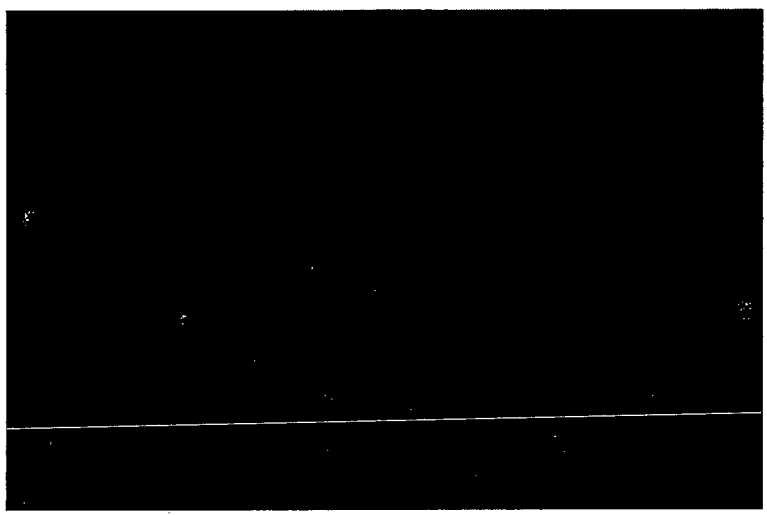
CX-0403C; *see* CX-1877C (Kurfess DRW) at Q&A.1104. Dr. Kurfess identifies a service manual and provides a set of photographs showing tools extending towards the alleged service opening. CX-1877C (Kurfess DRW) at Q&A.1105 (citing CX-1218C), Q&A.1154 (citing CX-0556C; CX-0557C; CX-0559C; CX-0562C; CX-0563C). Dr. Kurfess appears to misidentify the plane of the service opening, however, highlighting an "opening" that extends from the bottom of a lip that extends down from the rollout tray.



CX-1877C (Kurfess DRW) at Q&A.1154 (citing CDX-2.0187C). This merely identifies the bottom edge of an opening, however, which appears to be at least an inch below the rollout tray. None of the serviceable components identified by Dr. Kurfess appear to be accessible "through" the opening because they are below the plane of the rollout tray, and thus within the opening itself. The service manual appears to identify some screws that may be above the plane of the rollout tray when the fascia is rotated forward, but the manual does not show these screws being accessed for service, and Diebold has submitted no evidence that these screws are accessible through the alleged service opening. CX-1218C at 4-21 (NH_972-00042371). Unlike the other ATM models, Mr. Kurfess did not submit any videos demonstrating service of the MX5300 series. Mr. Henson testifies that the MX5300 series ATMs are serviced from above the tray, not below. RX-1512C (Henson RWS) at Q&A. 79-80. Given this record, the MX5300 series ATMs have not been shown to infringe the "service opening" limitation under any claim construction.

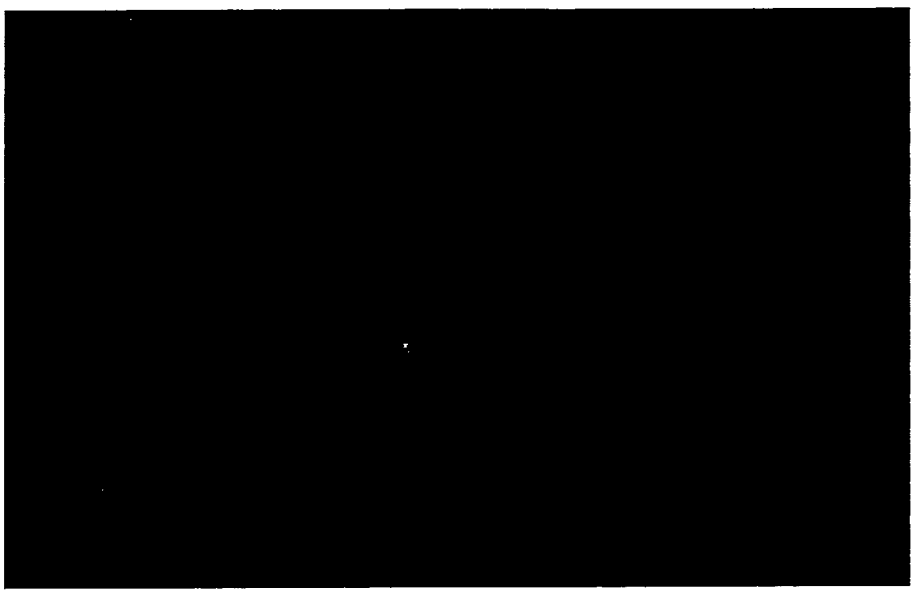
f. MX5600

The MX5600 ATM also has an opening at the front of the rollout tray that Diebold identifies as the alleged service opening.



CX-0442C; *see* CX-1877C (Kurfess DRW) at Q&A.768. Diebold further identifies a service

manual with instructions for removing the keypad.



CX-1206C at 3-17 (NH_972-00043932). In a video, Dr. Kurfess demonstrates the removal of the keypad by removing [redacted] using a screwdriver, then loosening one screw using a screwdriver before turning it further by hand, then removing [redacted] using pliers, loosening [redacted] using pliers before turning them further by hand, and then removing [redacted] using a screwdriver. CPX-0042C; CPX-0022C. Notably, Dr. Kurfess does not follow the Nautilus manual when removing the keypad, removing [redacted] that are not identified in the manual, and attempting to complete the service while the fascia is rotated back, in the operative position, rather than rotating the fascia forward, as recommended in the manual. CX-1206C at 3-16 (NH_972-00043931). Unsurprisingly, Dr. Kurfess is unable to remove the keypad in this position, even after he removes [redacted]. CPX-0042C at 2:15-3:20. It is unclear whether he removes [redacted] after rotating the fascia forward, *id.* at 3:05-3:20, but he is finally able to remove the keypad with the fascia in the forward position. CPX-0022C.

As with Dr. Kurfess's other demonstrations, the majority of the service he performs is below and outside the opening. The only service that he performs through the opening is [redacted]. CPX-0042C at 0:48-1:15. Dr. Kurfess [redacted], *id.*, which is consistent with the instructions in the manual. CX-1206C at 3-17 (NH_972-00043932). Both parties refer to these top screws as "thumbscrews." CIB at 26; RRB at 8-9. Notably, these thumbscrews appear to be above the opening both when the fascia is rotated back (as depicted in Dr. Kurfess's video) and when the fascia is rotated forward (as depicted in the manual).

Nautilus argues that the service that Dr. Kurfess demonstrates is "contrived" and is inconsistent with the way that technicians service the MX5600 ATMs. RRB at 7-8. Nautilus highlights the fact that Dr. Kurfess was unable to remove the keypad in his initial attempt, RRB at 8 n.3, and argues that the use of pliers to loosen the thumbscrews is not "genuine service." *Id.* at 9. Mr. Henson testifies that the MX5600 is serviced from above, but he does not address the instruction manual or the thumbscrews depicted therein. RX-1512C (Henson RWS) at Q&A.91-101. Mr. Henson's testimony regarding the MX5600 appears to conflict directly with the documentary evidence in the service manual.

The evidence that Diebold has presented for the MX5600 supports a finding that this ATM has an infringing service opening. The service manual explicitly depicts [redacted] thumbscrews that are accessed through the service opening from below. Dr. Kurfess accessed these thumbscrews through the service opening using both pliers and his fingers, demonstrating infringement of the "service opening is accessible from outside the housing through the service opening" limitations of claims 26 and 27, and the "service opening is accessible from outside the housing by extending a tool upwardly through the service opening" of claim 1. Nautilus has

offered no direct evidence that these thumbscrews are accessible from above, and a preponderance of the evidence thus supports a finding that the service opening enables access to these thumbscrews. Even under an interpretation of "service opening" that considered the designer's intent, the MX5600 would infringe this limitation. As evidenced by the service manual, the thumbscrews are designed to be accessed from below, and removing these thumbscrews is a meaningful step in servicing the keypad. Accordingly, the MX5600 infringes the "service opening" limitations of claims 1, 26, and 27.

g. Doctrine of Equivalents

Diebold further argues that the accused products infringe the "service opening" limitation under the doctrine of equivalents. CIB at 24-25. Dr. Kurfess offers his opinion that the accused ATMs have an opening that "accomplishes substantially the same function, in substantially the same way, to achieve substantially the same result as claimed in the 616 Patent." CX-1877C (Kurfess DRW) at Q&A.775. Diebold argues that the differences between the accused products and the claims are insubstantial. *See TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1376-77 (Fed. Cir. 2008) ("Infringement under the doctrine of equivalents may be found when the accused device contains an 'insubstantial' change from the claimed invention.").

For the Halo, Halo II, MX5000, MX5200, and MX5300 ATMs that were found not to literally infringe the "service opening" limitation, there are substantial differences that preclude a finding of infringement under the doctrine of equivalents. As now construed, the function of the "service opening" is to enable access to the serviceable components for servicing. The identified openings in the Halo, Halo II, and MX5200 may allow limited access to serviceable components, but allowing a second option for accessing serviceable components is substantially different from enabling access for servicing. In the MX5000 and MX5300 ATMs, there is no evidence that the

identified openings provide any access to serviceable components. Thus, there is no infringement of this limitation under the doctrine of equivalents.

5. The "second position" limitation (claims 1, 26, 27)

Nautilus argues that the accused ATMs do not infringe the limitation requiring a second position wherein the claimed service opening "is not accessible from outside the housing." RIB at 36-42. This limitation is in all three independent claims. '616 patent at 8:17-19 (claim 1), 11:12-14 (claim 26), 11:32-34 (claim 27). In Order No. 24, this limitation was addressed in the context of the technical prong of domestic industry, and the "is not accessible" claim language was construed to mean that the service opening "is not accessible" when it is not accessible for servicing, and there is no requirement that it be "never accessible" in the second position. Order No. 24 at 11 (Aug. 23, 2016). To be consistent with the construction of "service opening" discussed above, an opening is not accessible in the second position when serviceable components are not accessible for servicing through the opening.

Nautilus argues that there are other openings in the accused ATMs that allow access to the service opening even when the rollout tray is in the claimed "second position." RIB at 36-42; RRB at 11-13. Dr. Reinholtz identifies several instances where he was able to access an accused service opening with the [redacted]. RX-1513C (Reinholtz RWS) at Q&A.129-152. In particular, Dr. Reinholtz states that in the accused ATMs, the fascia can be rotated forward to provide access to the service opening even when the rollout tray is retracted. *Id.* at Q&A.131-132 (citing RX-1488C at NH_972-0052998). In addition, Dr. Reinholtz identifies a [redacted] in each of the accused ATMs that allows limited access to the service opening when the rollout tray is retracted. *Id.* at Q&A.133-152. As set forth in Order No. 24, the mere existence of these doors and other openings does not demonstrate non-infringement. Order No. 24 at 7-11. Each

of Dr. Reinholtz's examples of service through the opening must be examined to determine whether the "second position" limitation is infringed.

Dr. Reinholtz first asserts that the accused service openings can be accessed from above when the fascia is rotated forward. RX-1513C (Reinholtz RWS) at Q&A.131-132. He does not identify any serviceable components that can be serviced through the identified openings, however, and based on the evidence discussed above for each series of accused ATMs, there are no such components that can be serviced through an opening in the rollout tray from above. There is no basis for finding non-infringement based on rotating the fascia forward in the second position.

Dr. Reinholtz further identifies limited access through the service opening when the [redacted] on the accused ATMs. RX-1513C (Reinholtz RWS) at Q&A.133-152. For the MX5000, Dr. Reinholtz was able to extend his fingers through the alleged service opening from above when the [redacted]. *Id.* at Q&A.135 (citing RX-0734C). For the MX5600, Dr. Reinholtz was able to insert his finger through the bottom of the alleged service opening when the [redacted]. *Id.* at Q&A.136 (citing RX-0735C and RX-0736C). For the Halo II, Dr. Reinholtz was able to unscrew [redacted] the keypad when the [redacted]. *Id.* at Q&A.142 (citing RX-1517C). For the Halo series, Dr. Reinholtz attaches a photo showing that certain screws are visible when the [redacted]. *Id.* at Q&A.144 (citing RX-1518C). For the MX5000, Dr. Reinholtz testifies that [redacted] are visible, and he was able to remove an electrical connection when the [redacted]. *Id.* at Q&A.146 (citing RX-1519C and RX-1520C). Also for the MX5200, Dr. Reinholtz testifies that [redacted] are visible, and he was able to remove an electrical connection when the [redacted]. *Id.* at Q&A.148 (citing RX-

1521C and RX-1522C). For the MX5300, Dr. Reinholtz testifies that [redacted] when the [redacted]. *Id.* at Q&A.150 (citing RX-1523C). For the MX5600, Dr. Reinholtz attaches a photo showing that certain screws are visible when the [redacted], contending that a screw driver could access these screws. *Id.* at Q&A.152 (citing RX-0735C and RX-0736C). Although Dr. Reinholtz has successfully demonstrated some limited access to serviceable components when the [redacted] for each group of accused ATMs, none of the evidence he cites shows access to servicing through an alleged service opening. Merely extending fingers through an opening does not show service of any serviceable component. The screws and electrical connections that Dr. Reinholtz identifies are all located within or below the alleged service opening, as discussed above in the context of the "service opening" limitation. Nautilus has failed to show any basis for non-infringement based on access for servicing when the [redacted].

Diebold has carried its burden to show infringement of the "second position" limitation. Relying on the testimony and analysis of Dr. Kurfess, Diebold identifies evidence that the rollout tray for each accused ATM retracts into the interior of the housing, and in this position, the service opening is not accessible for servicing. CX-1877C (Kurfess DWS) at Q&A.777-796, 1036-1037, 1111-1121. Nautilus fails to rebut this evidence, and all of the accused ATMs thus infringe this limitation.

6. The "overlying" limitation (claim 1)

Claim 1 of the '616 patent requires "a first serviceable component . . . overlying the service opening." '616 patent at 8:19-21. Nautilus contends that the serviceable components identified by Diebold are not "overlying" the service opening in the accused ATMs. RIB at 32-

36. Diebold relies on Dr. Kurfess's identification of specific "serviceable components" in each of the accused ATMs. CX-1877C (Kurfess DWS) at Q&A.821-835.

For the Halo II, Dr. Kurfess specifically identifies the [redacted] as a component overlying the service opening. CX-1877C (Kurfess DWS) at Q&A.821, 828. Nautilus argues that the [redacted] is offset from the alleged opening, but there is nothing in the patent requiring that "overlying" preclude a serviceable component that is offset from the service opening. RIB at 34; RRB at 14-15. One of the examples of a serviceable component in the specification, the image adjusting knob, is offset from the service opening in the preferred embodiment. '616 patent at 5:34-49, Fig. 8 (component number 100). Although the Halo II does not infringe the "service opening" limitation, as discussed above, the [redacted] is a serviceable component that meets the "overlying" limitation of the claim for the alleged opening.

For the MX5200, Dr. Kurfess identifies the [redacted] as a component overlying the service opening. CX-1877C (Kurfess DWS) at Q&A.821, 824, 829. Nautilus argues that Diebold has failed to carry its burden on this limitation, RIB at 34, but there is sufficient evidence that the [redacted] overlies the alleged opening in the MX5200. In particular, Dr. Kurfess demonstrated the removal of [redacted] screws from the [redacted] through the opening, CPX-0034C at 0:05-0:30, and photographs show the [redacted] visible through the opening from below. CX-1877C (Kurfess DWS) at Q&A.829 (citing CX-0305C). Although the MX52000 series does not infringe the "service opening" limitation, as discussed above, the [redacted] is a serviceable component that meets the "overlying" limitation of the claim for the alleged opening.

Dr. Kurfess also identifies the keypad in each of the accused ATMs as a component overlying the service opening. CX-1877C (Kurfess DWS) at Q&A.822-833. As discussed

above in the context of the "service opening" limitation, however, the keypad in each of the accused ATMs extends through the alleged service opening with at least [redacted] screws for the mounting bracket in each ATM being located below the service opening. *See* RX-1513C (Reinholtz RWS) at Q&A.102-113. Dr. Kurfess contends that when the fascia is rotated in the Halo and Halo II, the keypad "further" overlies the service opening, CX-1877C (Kurfess DWS) at Q&A.831, but the evidence shows that the keypad remains partially below the service opening even in this rotated position. RX-1513C (Reinholtz RWS) at Q&A.105, 107; *see also* CPX-0025 at 0:15-0:20, CPX-0023 at 0:10-0:20. The keypad thus extends through the alleged opening in every one of the accused ATMs, and this positioning does not literally infringe the "overlying" limitation of claim 1 of the '616 patent.

Diebold argues that although the keypad does not literally overlie the service opening, this limitation is infringed under the doctrine of equivalents. CIB at 39. Dr. Kurfess opines that the openings in the accused products perform the claimed function of allowing service of components that would have been otherwise inaccessible if not for the opening. CX-1877C (Kurfess DWS) at Q&A.834. Diebold argues that the accused ATMs perform this function in the same way as the '616 patent by the relative position of the component in relation to the opening. CIB at 39. But this stretches the doctrine of equivalents beyond any reasonable limits. The keypads in the accused ATMs are accessible for servicing in a substantially different way from the claimed invention; the keypads are serviceable components that extend down through the opening rather than overlying the opening and relying on service access through the opening. The keypads in the accused ATMs do not infringe this limitation either literally or under the doctrine of equivalents.

Accordingly, only the Halo II and the MX5200 series ATMs have been shown to infringe

the "overlying" limitation of claim 1 of the '616 patent. The Halo and MX5600 series ATMs have not been shown to infringe the "overlying" limitation.[6]

7. The "upper wall" limitation (claims 6, 26)

Claim 26 and dependent claim 6 require an "upper wall in supporting connection with the tray . . . wherein the service point is disposed between the wall and the service opening" '616 patent at 8:43-47, 11:19-23. Nautilus contends that the "upper wall" identified by Diebold in the accused ATMs does not meet the claimed limitation. RIB at 43-45. For the Halo series, Dr. Kurfess identifies an "[redacted]" as the claimed upper wall. CX-1877C (Kurfess DWS) at Q&A.910. For the Halo II, MX5200, and MX5600 series, Dr. Kurfess identifies a "[redacted]." *Id.* at Q&A.911-913. Nautilus argues that these components are part of the fascia in the accused ATMs and that the fascia must be a distinct structure from the "upper wall," relying on the opinions of Dr. Reinholtz. RIB at 43-45; RX-1513C (Reinholtz RWS at Q&A.117-128. Diebold argues that Nautilus is improperly reading a limitation from the specification into the claims. CIB at 44-45, CRB at 14-15.

I agree with Diebold that there is no requirement in the claims that the "upper wall" be separate from the fascia. Although these are identified as separate structures in the preferred embodiment, *see* '616 patent at 4:12-16, 46-51 (Figs. 6, 8), there is no statement in the specification making an explicit distinction between the upper wall and fascia, and Nautilus has not explained why distinguishing these two structures is important to the invention. The claims also do not support Nautilus's non-infringement argument. Notably, there are no claims in the '616 patent that claim both an "upper wall" and a "fascia." While dependent claim 6 describes "an upper wall in supporting connection with the tray, the wall disposed above the service

[6] The MX5000 and MX5300 series ATMs are not accused of infringing claim 1.

opening," *id.* at 8:43-47, dependent claim 10 separately describes "a fascia in supporting connection with the tray, and wherein the fascia covers the first opening when the tray is in the second position." *Id.* at 8:62-65. These two claims are separately dependent upon claim 1, and there is nothing that precludes Diebold from identifying a structure as the upper wall of claim 6 that is also part of the fascia of claim 10. The intrinsic evidence does not support Nautilus's reading of this claim limitation.

As discussed above, however, neither the Halo, Halo II, or MX5200 series ATMs have an infringing "service opening," and thus these products do not have an infringing "service point" that is "disposed between the wall and the service opening." For the MX5600, Dr. Kurfess identifies [redacted] screws that are disposed between the service opening and the fascia ledge. These include the thumbscrews that Dr. Kurfess was able to access through the opening, demonstrating infringement of the "service opening" limitation. Accordingly, the MX5600 literally infringes the "upper wall" limitations of claim 6 and 26.[7] The Halo, Halo II, and MX5200 series ATMs do not infringe this limitation because they do not include an infringing "service opening."[8]

8. The "fascia" limitation (claims 10, 27)

Claim 27 and dependent claim 10 require "a fascia in supporting connection with the tray, and wherein the fascia generally covers the first opening when the tray is in the second position." '616 patent at 8:62-65, 11:41-43. The parties do not dispute that each of the accused ATMs includes a fascia that meets this limitation. CIB at 17-18, 20-21. Diebold relies on testimony from Dr. Kurfess regarding this limitation. CX-1877C (Kurfess DWS) at Q&A.972-1006, 1160-1182. Accordingly, I find that the Halo, Halo II, MX5200, and MX5600 series

[7] The MX5600 does not infringe claim 6 because it does not meet the "overlying" limitation of claim 1, as discussed above.
[8] The MX5000 and MX5300 series ATMs are not accused of infringing claims 6 or 26.

ATMs infringe the "fascia" limitation of claim 10 (although none of these ATMs infringe claim 1), and the Halo, Halo II, MX5000, MX5200, MX5300, and MX5600 series ATMs infringe the "fascia" limitation of claim 27 (although only the MX5600 infringes the "service opening" limitation of claim 27).

9. Additional dependent claims (claims 5, 7, 8, 16)

The limitations in dependent claims 5, 7, 8, and 16 are either undisputed or redundant of other limitations that have been discussed above, and none of these claims are infringed by any accused ATMs because none of the accused ATMs infringe all the limitations of independent claim 1.

Claim 5 requires that the claimed first serviceable component "includes a keypad," that "the keypad overlies the service opening in an operative position of the keypad," and that "the keypad is removable through the service opening when the tray is in the first position." '616 patent at 8:38-42. Diebold accuses the Halo, MX5200, and MX5600 series ATMs of infringing claim 5, based on testimony from Dr. Kurfess. CIB at 16-17 (citing CX-1877C (Kurfess DWS) at Q&A.876-902). Although there is no dispute that each of these ATMs includes a keypad, these keypads do not overlie the accused service opening, as discussed above in the context of the "overlying" limitation of claim 1. In addition, the Halo and MX5200 series ATMs do not infringe the "service opening" limitations of claim 1. Accordingly, the Halo, MX5200, and MX5600 series ATMs do not infringe claim 5.

Claim 7 requires that the claimed first serviceable component "includes a keypad," that "when the keypad is in an operative position the keypad is in supporting connection with the upper wall," and that "the keypad is removable through the service opening when the tray is in the first position." '616 patent at 8:48-53. Diebold accuses the Halo, Halo II, MX5200, and

MX5600 series ATMs of infringing claim 7, based on testimony from Dr. Kurfess. CIB at 17 (citing CX-1877C (Kurfess DWS) at Q&A.934-958). There is no independent dispute regarding these claim limitations, *see* RRB at 17, but none of these ATMs infringe claim 7 because they do not meet all the limitations of claim 1.

Claim 8 requires that the upper wall of claim 6 "includes an access opening," and the keypad of claim 7 "extends through the access opening in the operative position." '616 patent at 8:54-56. Diebold accuses the Halo, Halo II, MX5200, and MX5600 series ATMs of infringing claim 8, based on testimony from Dr. Kurfess. CIB at 17 (citing CX-1877C (Kurfess DWS) at Q&A.962-968). There is no independent dispute regarding these claim limitations, *see* RRB at 17-18, but none of these ATMs infringe claim 8 because they do not meet all the limitations of claim 1.

Claim 16 requires "a chest positioned below the interior area, and wherein the service opening is disposed outward and above the chest when the tray is in the first position." '616 patent at 9:37-41. Diebold accuses the Halo, Halo II, MX5200, and MX5600 series ATMs of infringing claim 16, based on testimony from Dr. Kurfess. CIB at 17 (citing CX-1877C (Kurfess DWS) at Q&A.1010-1022). There is no independent dispute regarding these claim limitations, *see* RRB at 17-18, but none of these ATMs infringe claim 16 because they do not meet all the limitations of claim 1.

10. Summary of infringement findings

Only one of the accused ATMs, the MX5600, infringes any of the asserted claims of the '616 patent. The MX5600 infringes claims 26 and 27, but it does not infringe claims 1, 5-8, 10, or 16.

The Halo, Halo II, and MX5200 series ATMs do not infringe claims 1, 6-8, 10, 16, 26 or

27. The Halo and MX5200 series ATMs do not infringe claim 5. The MX5000 and MX5300 do not infringe claims 26 and 27 (and were not accused of infringing the other asserted claims).

C. Domestic Industry – Technical Prong

Diebold contends that the Opteva 500, Opteva 520, Opteva 522, Opteva 560, and Opteva 720 series ATMs practice claims 1, 5-8, 10, 16, 26, and 27 of the '616 patent. CIB at 47-49.

1. Legal Standards

To meet the technical prong, the complainant must establish that it practices at least one claim of the asserted patent. *Certain Point of Sale Terminals and Components Thereof*, Inv. No. 337-TA-524, Order No. 40 at 17-18 (April 11, 2005). "The test for satisfying the 'technical prong' of the industry requirement is essentially [the] same as that for infringement, *i.e.*, a comparison of domestic products to the asserted claims." *Alloc v. U.S. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003).

2. Domestic Industry Products

Diebold groups its domestic industry ATMs into five series. CIB at 47-49. The Opteva 500 series includes the Opteva 500, Opteva 500r, and Opteva 500e. *Id.* at 47. The Opteva 520 ATM is in its own series. *Id.* The Opteva 522 series includes the Opteva 522r and Opteva 522e. *Id.* at 48. The Opteva 560 is in its own series, and the Opteva 720 is in its own series. *Id.* at 48-49. Diebold relies on the testimony of Dr. Kurfess to group these ATMs, CX-1877C (Kurfess DWS) at Q&A.1189-1200, and there is no dispute regarding this grouping for the purpose of analyzing the practice of the '616 patent. CIB at 47-49; RIB at 49-53.

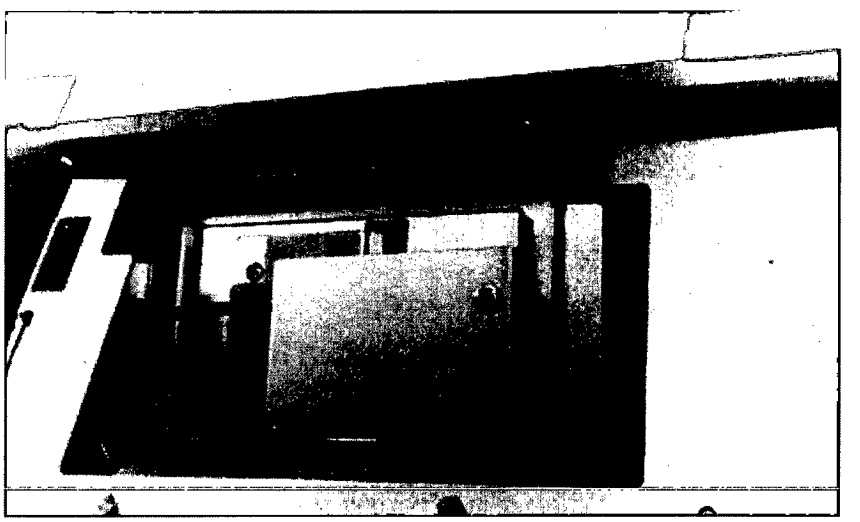
3. Undisputed Limitations (claims 1, 26, 27)

The parties do not dispute the majority of the limitations in the asserted independent claims. CIB at 49-55; RRB at 18-21. The only disputed limitations are the "service opening"

and "second position" limitations. Diebold relies on the testimony of Dr. Kurfess for infringement of claims 1, 26, and 27. *See* CX-1877C (Kurfess DWS) at Q&A.1201-1375 (claim 1), 1516-1541 (claim 26), 1542-1561 (claim 27). I find that this evidence is sufficient to show that the asserted Opteva ATMs practice the undisputed limitations of claims 1, 26, and 27. The disputed limitations are discussed further below.

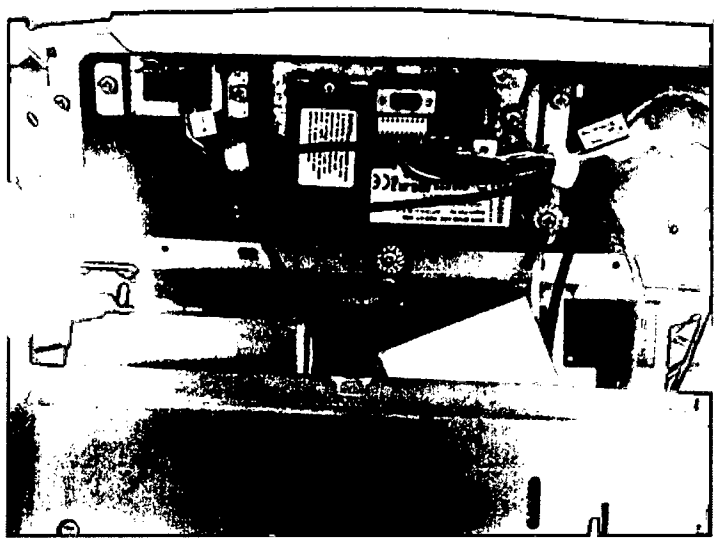
4. The "service opening" limitation (claims 1, 26, 27)

The primary dispute regarding the technical prong mirrors the parties' arguments on infringement. As discussed above, the "service opening" limitation requires an opening through which serviceable components are accessible for servicing, where the opening enables access to the serviceable components. Dr. Kurfess identifies a "service opening" at the front of the rollout tray in each of the domestic industry ATMs. CX-1877C (Kurfess DWS) at Q&A.1279-1238. Dr. Kurfess provides photographs from below the Diebold ATMs, showing the alleged service openings. The photograph of the Opteva 500 shows an opening at the bottom of the rollout tray with visible screws that appear to be accessible through the opening.

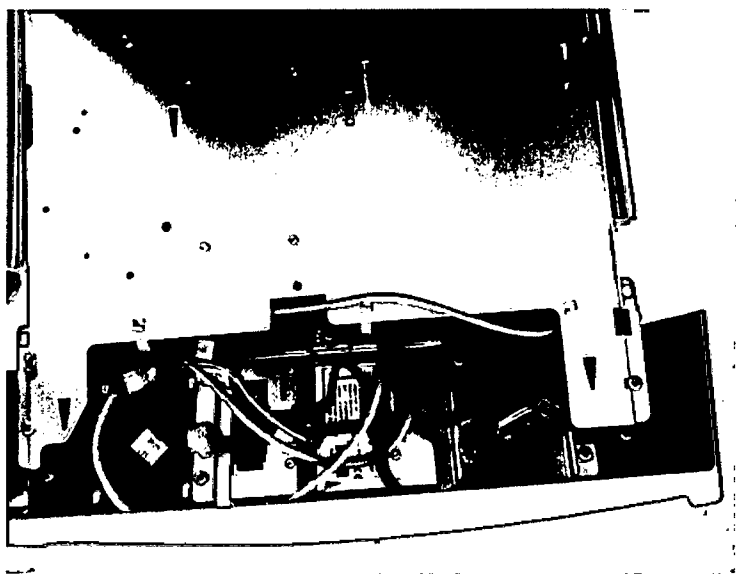


CX-1162C; *see also* CX-1877C (Kurfess DWS) at Q&A.1279. The photograph of the Opteva 520 similarly shows an opening at the bottom of the rollout tray with visible screws that appear

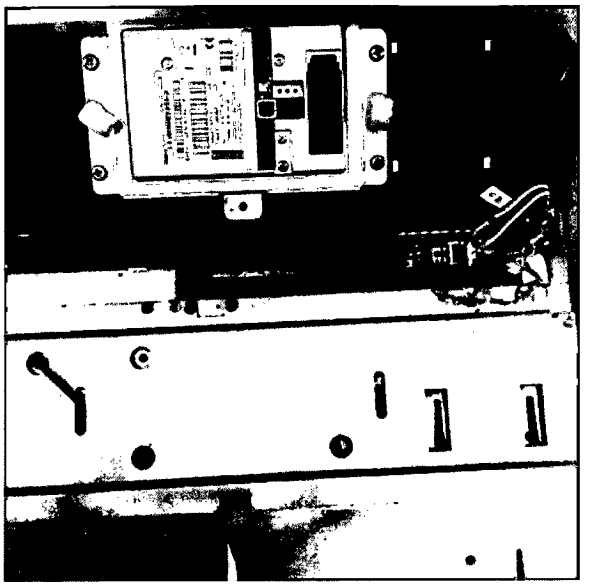
to be accessible through the opening.



CX-1176C; *see also* CX-1877C (Kurfess DWS) at Q&A.1280. The photograph of the Opteva 522 also shows an opening at the bottom of the rollout tray with visible screws that appear to be accessible through the opening.



CX-1170C; *see also* CX-1877C (Kurfess DWS) at Q&A.1281. The photograph of the Opteva 560 also shows an opening at the bottom of the rollout tray with visible screws that appear to be accessible through the opening.



CX-1182C; *see also* CX-1877C (Kurfess DWS) at Q&A.1282. Finally, the photograph of the Opteva 720 also shows an opening at the bottom of the rollout tray with visible screws that appear to be accessible through the opening.

CX-0821C; *see also* CX-1877C (Kurfess DWS) at Q&A.1283. Dr. Kurfess further relies on service manuals for the Diebold Opteva ATMs, depicting service of the keypad from below the rollout tray. CX-1877C (Kurfess DWS) at Q&A.1288-1292 (citing CX-1113C (Opteva 500 manual), CX-1114C (Opteva 520 manual), CX-1121C (Opteva 522 manual), CX-1136C (Opteva 560 manual), CX-0137C (Opteva 720 manual). Diebold also submits the testimony of David Kraft, a Diebold employee, who testifies that he personally removed the keypad from the Opteva

ATMs by extending a screwdriver through the opening. CX-1888C (Kraft DWS) at Q&A.4-22 (Opteva 500), 28-41 (Opteva 520), 55-65 (Opteva 522 front load), 71-81 (Opteva 522 rear load), 87-103 (Opteva 560), 109-122 (Opteva 720 front load). Another Diebold employee, Sean Rogers, testifies that he has observed the removal and replacement of keypads through the service opening in Diebold ATMs. CX-1875C (Rogers DWS) at Q&A.69-73.

Nautilus argues that Dr. Kurfess's evidence is insufficient to show that there is a "service opening" meeting the limitations of the '616 patent because he has not shown that service personnel actually perform real or meaningful service through the identified openings. RIB at 48-49; RRB at 18-21. Nautilus dismisses the testimony of Mr. Kraft and Mr. Rogers by arguing that they are not service technicians and do not train service technicians. RRB at 19-20. Nautilus further identifies pages in the Opteva 500 manual instructing technicians to remove the fascia assembly (with the keypad attached) before removing the keypad. CX-1113C at 972DBD0005784; *see* Tr. (Kurfess) at 425:3-7. Although this is compelling evidence that service technicians would not typically service the keypad through the opening while it is on the rollout tray, the asserted claims are apparatus claims, and as discussed above, the intent of the designer is not critical to infringement. The "service opening" limitation merely requires that the opening enables access to the serviceable components, and the photographs, manuals, and witness testimony confirm that the openings in each of the Opteva ATMs enable access to a keypad for servicing.

Nautilus raises a secondary argument that the alleged "service opening" in the Opteva 520, Opteva 560, and Opteva 720 series is not "extending through the wall portion" of the rollout tray as required by claim 1, and is not part of the rollout tray, as required by claim 26. RIB at 50-52; RRB at 20-21. Nautilus argues that the alleged openings are merely gaps between the end

of the rollout tray and the fascia. *See* CX-1176C; CX-1182C; CX-0821C. Diebold argues that there are extensions of the rollout tray that border the openings in these ATMs that should be considered part of the rollout tray. CIB at 60; CRB at 19. I agree with Diebold that the openings created by these extensions are sufficient to meet the "rollout tray including a service opening" of claim 26. However, the openings created by these extensions are not "through the wall portion" of the rollout tray, as required by claim 1. Nevertheless, I find that these openings meet this limitation under the doctrine of equivalents. An opening that extends from the end of a bottom wall portion to the end of the rollout tray is insubstantially different from an opening that extends through the wall portion. This opening performs the same function of enabling access to serviceable components in the same way, with the same result.

Accordingly, I find that all of the asserted Opteva ATMs practice the "service opening" limitation of claims 1, 26, and 27.

5. The "second position" limitation (claims 1, 26, 27)

Nautilus further argues that Diebold has failed to establish that the Opteva ATMs practice the limitation of claims 1, 26, and 27 requiring a second position wherein the claimed service opening "is not accessible from outside the housing." RIB at 29-50; RRB at 21-22. The Diebold Opteva ATMs have a "safe door" that allows access to the inside of the ATMs, and Nautilus argues that Diebold failed to present sufficient evidence that the service opening is not accessible through these doors. *Id.* Nautilus's argument regarding access through the safe door was directly addressed in Order No. 24, which denied summary judgment on this issue. Order No. 24 (Aug. 23, 2016). Nautilus now submits testimony from Dr. Reinholtz, raising questions as to whether the service openings in the Opteva ATMs are accessible when the safe door is open. RX-1513C (Reinholtz RWS) at Q&A.179-152. In particular, Diebold cites deposition testimony

from a Diebold witness, Thomas Van Kirk, who states that part of the keypad can be seen when the safe door is open. RX-0835C at 330:10-22.

Nautilus fails to present any evidence, however, showing that the keypad or any other component in any of the Opteva ATMs is accessible for servicing when the safe door is open. Diebold admits that the keypad may be able to be seen through the service opening, but Dr. Kurfess testifies that "you would not be able to perform real service through that opening." CX-1877C (Kurfess DWS) at Q&A.1309. This is confirmed by the testimony of David Kraft, who verified that he could not service the keypad when the rollout tray is retracted or when the safe door is open. CX-1888C (Kraft DWS) at Q&A.23-27 (Opteva 500), 42-46 (Opteva 520), 66-70 (Opteva 522 front load), 82-86 (Opteva 522 rear load), 104-108 (Opteva 560), 123-127 (Opteva 720 front load). Sean Rogers further corroborated this testimony. CX-1875C (Rogers DWS) at Q&A.73-78. This evidence is more than sufficient to carry Diebold's burden on this limitation.

Accordingly, I find that all of the asserted Opteva ATMs practice the "second position" limitation of claims 1, 26, and 27.

6. The "upper wall" limitation (claims 6, 26)

The "upper wall" limitation of claims 6 and 26 is not contested for domestic industry. CIB at 51-52. Diebold submits testimony from Dr. Kurfess identifying an "upper wall" in each of the asserted Opteva ATMs. CX-1877C (Kurfess DWS) at Q&A.1408-1435, 1537-1540. I find that this evidence is sufficient to show that the asserted Opteva ATMs practice this limitation.

7. The "fascia" limitation (claims 10, 27)

The "fascia" limitation of claims 10 and 27 is not contested for domestic industry. CIB at

52-55. Diebold submits testimony from Dr. Kurfess identifying a "fascia" in each of the asserted Opteva ATMs. CX-1877C (Kurfess DWS) at Q&A.1474-1497, 1557-1560. I find that this evidence is sufficient to show that the asserted Opteva ATMs practice this limitation.

8. Additional dependent claims (claims 5, 7, 8, 16)

The limitations of claim 5 related to the keypad are not contested for domestic industry. CIB at 50. Diebold submits testimony from Dr. Kurfess identifying a "keypad" in each of the asserted Opteva ATMs. CX-1877C (Kurfess DWS) at Q&A.1378-1390. I find that this evidence is sufficient to show that the asserted Opteva ATMs practice this limitation.

The limitations of claim 7 related to removing the keypad through the service opening are not contested for domestic industry. CIB at 51. Diebold submits testimony from Dr. Kurfess identifying a "keypad" in each of the asserted Opteva ATMs. CX-1877C (Kurfess DWS) at Q&A.1439-1453. I find that this evidence is sufficient to show that the asserted Opteva ATMs practice this limitation.

The limitations of claim 8 related to the keypad and upper wall are not contested for domestic industry. CIB at 51-52. Diebold submits testimony from Dr. Kurfess identifying a "keypad" in each of the asserted Opteva ATMs. CX-1877C (Kurfess DWS) at Q&A.1457-1470. I find that this evidence is sufficient to show that the asserted Opteva ATMs practice this limitation.

The limitations of claim 16 related to the chest are not contested for domestic industry. CIB at 51-52. Diebold submits testimony from Dr. Kurfess identifying a "keypad" in each of the asserted Opteva ATMs. CX-1877C (Kurfess DWS) at Q&A.1501-1514. I find that this evidence is sufficient to show that the asserted Opteva ATMs practice this limitation.

Accordingly, I find that the Opteva 500, Opteva 520, Opteva 522, Opteva 560, and

Opteva 720 series ATMs practice claims 1, 5-8, 10, 16, 26, and 27 of the '616 patent.

D. Invalidity

Nautilus contends that the '616 patent is invalid in view of the Diebold 1064i ATM and U.S. Patent No. 6,068,101 to Dickinson (RX-0027, "Dickinson"). RIB at 52-88. The application that led to the '616 patent was filed on June 2, 1998, with a provisional application filed on November 28, 1997. JX-0001.

1. Legal Standards

It is the respondent's burden to prove invalidity, and the burden of proof never shifts to the patentee to prove validity. *Scanner Techs. Corp. v. ICOS Vision Sys. Corp. N.V.*, 528 F.3d 1365, 1380 (Fed. Cir. 2008). "Under the patent statutes, a patent enjoys a presumption of validity, *see* 35 U.S.C. § 282, which can be overcome only through facts supported by clear and convincing evidence . . . ." *SRAM Corp. v. AD-II Eng'g, Inc.*, 465 F.3d 1351, 1357 (Fed. Cir. 2006); *see also Microsoft Corp. v. i4i Ltd. P'ship*, 131 S. Ct. 2238, 2242-2253 (2011) (upholding the "clear and convincing" standard for invalidity).

The clear and convincing evidence standard placed on the party asserting an invalidity defense requires a level of proof beyond the preponderance of the evidence. Although not susceptible to precise definition, "clear and convincing" evidence has been described as evidence that produces in the mind of the trier of fact "an abiding conviction that the truth of a factual contention is 'highly probable.'" *Price v. Symsek*, 988 F.2d 1187, 1191 (Fed. Cir. 1993) (quoting *Buildex, Inc. v. Kason Indus., Inc.*, 849 F.2d 1461, 1463 (Fed. Cir. 1988)).

a. Anticipation

Pursuant to 35 U.S.C. § 102,[9] a patent claim is invalid as anticipated if:

> (a) 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;
>
> (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;
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent;"
>
> (g)(2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.

35 U.S.C. § 102 (2008). "A patent is invalid for anticipation if a single prior art reference discloses each and every limitation of the claimed invention. Moreover, a prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference." *Schering Corp. v. Geneva Pharm., Inc.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003) (citations omitted).

b. Obviousness

Section 103 of the Patent Act states:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, 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. Patentability shall not be negatived by the manner in which the invention was made.

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[9] As explained in the revision notes and legislative reports in 35 U.S.C.A. § 100 (May 13, 2015), the language of 35 U.S.C. § 102 that was effective prior to the America Invents Act controls in this Investigation.

35 U.S.C. § 103(a) (2008).[10]

"Obviousness is a question of law based on underlying questions of fact." *Scanner Techs.*, 528 F.3d at 1379. The underlying factual determinations include: "(1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) objective indicia of non-obviousness." *Id.* (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966)). These factual determinations are often referred to as the "*Graham* factors."

The critical inquiry in determining the differences between the claimed invention and the prior art is whether there is a reason to combine the prior art references. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-21 (2007). In *KSR*, the Supreme Court rejected the Federal Circuit's rigid application of the teaching-suggestion-motivation test. While the Court stated that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does," it described a more flexible analysis:

> Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue . . . . As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

Id. at 418. Since *KSR*, the Federal Circuit has announced that, where a patent challenger contends that a patent is invalid for obviousness based on a combination of prior art references,

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[10] *See supra*, n.9.

"the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device . . . and would have had a reasonable expectation of success in doing so." *PharmaStem Therapeutics, Inc. v. Viacell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007).

In addition to demonstrating that a reason exists to combine prior art references, the challenger must demonstrate that the combination of prior art references discloses all of the limitations of the claims. *Hearing Components, Inc. v. Shure Inc.*, 600 F.3d 1357, 1373-1374 (Fed. Cir. 2010) (*abrogated on other grounds by Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S.Ct. 2120 (2014)) (upholding finding of non-obviousness based on the fact that there was substantial evidence that the asserted combination of references failed to disclose a claim limitation); *Velander v. Garner*, 348 F.3d 1359, 1363 (Fed. Cir. 2003) (explaining that a requirement for a finding of obviousness is that "all the elements of an invention are found in a combination of prior art references").

2. Diebold 1064i ATM

The Diebold 1064i is an ATM that was released in 1992. *See* RX-0098C (1064i Manual); RX-0087C (Diebold interrogatory response) at .004-005. Nautilus has identified a manual for the 1064i ATM, dated October 1993 (RX-0098C), and relies on Dr. Reinholtz's analysis of this manual and his inspection of a 1064i ATM that was made available by Diebold in Akron, Ohio. RX-1184C (Reinholtz DWS) at Q&A.99-164. Diebold argues that the 1064i manual is not prior art because there is no evidence that it was available to the public, but Nautilus is relying on the 1064i ATM itself, not the manual, as prior art. Similarly, Diebold argues that there is no evidence dating the 1064i ATM that Dr. Reinholtz inspected, but whether or not that specific ATM is prior art is not dispositive. There is no dispute that there were 1064i

ATMs on sale and in public use before the priority date for the '616 patent, and both the manual and the inspection of a physical ATM by Dr. Reinholtz are evidence of the structure of the 1064i ATMs at that time. Where the manual and Dr. Reinholtz's inspection show the same structure, that is strong evidence of what existed in the prior art. Where there are discrepancies between the manual and Dr. Reinholtz's inspection, the evidence is less convincing.

a. Undisputed limitations

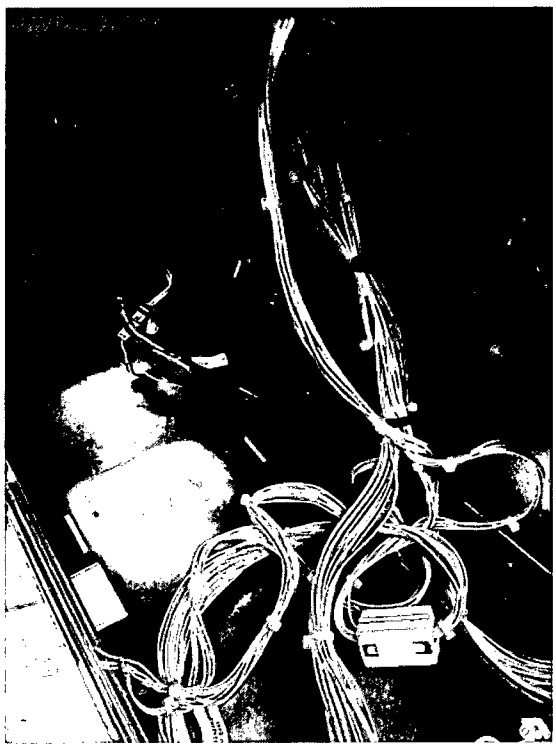
Dr. Reinholtz relies upon testimony from Douglas Kovacs, one of the inventors of the '616 patent, that the only difference between the patent and the 1064i is the service opening. RX-1184C (Reinholtz DWS) at Q&A.105. Diebold implicitly agrees with this contention, only disputing limitations related to the claimed service opening in the 1064i. CIB at 66-68; CRB at 20-23. The "service opening" limitation is discussed in detail further below.

For the undisputed limitations of claim 1, Dr. Reinholtz cites evidence that the 1064i ATM is an "automated banking machine" with a "housing," a "first opening," and a "rollout tray" with a "wall portion." RX-1184C (Reinholtz DWS) at Q&A.107-110. He further cites evidence that the rollout tray is moveable between "a first position wherein the tray extends outward from the first opening" and "a second position wherein the tray is within the interior area." *Id.* at Q&A.125-126. Dr. Reinholtz further identifies "serviceable components" having "service points." *Id.* at Q&A.127-130. Dr. Reinholtz also identifies a "keypad," "upper wall," and "chest" meeting the limitations of the asserted dependent claims. *Id.* at Q&A.136-147. Dr. Reinholtz further identifies a separate prior art reference, U.S. Patent No. 5,734,136 to Newcomer ("Newcomer," RX-0277), disclosing a keypad. *Id.* at Q&A.132-135. Dr. Reinholtz cites this same evidence in support of his opinions on claims 26 and 27. *Id.* at Q&A.148-164. There is no dispute that the 1064i ATM renders these limitations anticipated or obvious, except

to the extent that they implicate the "service opening" limitation.

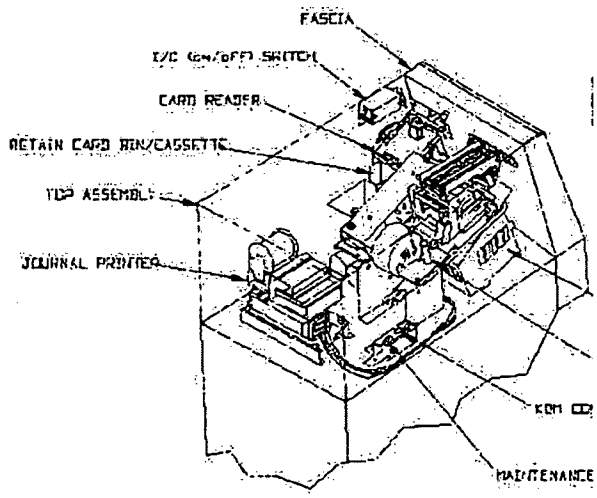
b. Service opening

For the service opening limitation, Dr. Reinholtz identifies a small cutout in the rollout tray that he photographed during his inspection of the 1064i. RX-1184C (Reinholtz DWS) at Q&A.111.



RX-0730C. Dr. Reinholtz offers his opinion that there are serviceable components that can be accessed through this opening. RX-1184C (Reinholtz DWS) at Q&A.112-114.

Diebold argues that Nautilus has identified no evidence that the identified opening existed in the 1064i ATM prior to the filing of the '616 patent, and there is no disclosure of such an opening in the 1064i manual. CIB at 67-68; CRB at 23. The tray depicted in the manual does not have any identified opening, and figures in the manual appear to show components, *e.g.*, a printer and a retained card bin, on that side of the tray.



RX-0098C at 972DBD00047782; *see also* CX-1979C (Kurfess RWS) at Q&A.122. All of these components appear to be easily serviced from above, and Nautilus does not point to anything in the manual describing service of a component through any opening from below the tray. It is thus unclear whether 1064i ATMs at the time of the manual included the opening that Dr. Reinholtz identifies, and unlikely that any such openings were used for service. The discrepancy between the manual and Dr. Reinholtz's inspection makes Nautilus's evidence regarding this limitation unclear and unconvincing.

Even if the inspected ATM was reliable evidence of the structure of 1064i ATMs available prior to the critical date, the identified opening fails to meet the limitations in the construction for "service opening." In the photographs cited by Dr. Reinholtz, it is apparent that any screws or wires that are accessible through the opening are also accessible from above the tray. The opening therefore does not enable service of any component, and does not disclose the claimed "service opening." Nautilus has failed to provide clear and convincing evidence that this limitation was present in the 1064i ATM before the application for the '616 patent was filed, and I therefore find that the asserted claims of the '616 patent are not invalid in view of this prior art device.

c. Gussack

Nautilus argues that even if the claimed "service opening" is not present in the 1064i ATM, it would have been obvious to modify the 1064i to include a service opening, relying on a 1953 patent, U.S. Patent No. 2,655,422 to Gussack (RX-0270, ("Gussack"). RIB at 60-61; RRB at 27-28. Gussack is a patent that describes sliding drawers with removable panels that allow access for servicing components from below the drawer. RX-0270 at 5:55-69. Dr. Reinholtz testifies that it would have been obvious for one of ordinary skill in the art to modify the rollout tray in the 1064i ATM to include a service opening as disclosed in Gussack. RX-1184C (Reinholtz DWS) at Q&A.122-124. Nautilus argues that Gussack teaches the well-known concept of providing service access from below the bottom of a slide-out tray and that a skilled artisan would be able to use this concept to modify the 1064i to include the claimed service opening. RRB at 28.

Diebold argues that Gussack is fundamentally incompatible with the rollout tray in the 1064i. CIB at 69-70; CRB at 23-24. In particular, Diebold argues that the components in the 1064i are already serviceable from above, and there is no need for any service opening in the bottom of the rollout tray. *Id.* Moreover, the removable panels in Gussack constitute the entire bottom of the drawer, which would be incompatible with the rollout tray in the 1064i, which has several components attached to it. CX-1979C (Kurfess RWS) at Q&A.217.

I agree with Diebold that Nautilus has failed to show that one of ordinary skill in the art would have applied the teachings of the removable panel of Gussack to the rollout tray in the 1064i ATM. Although the Supreme Court deemphasized rigid tests for obviousness in *KSR*, the court recognized that "[a] patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art," and "it can be

important to identify a reason that would have prompted a person of ordinary skill in the art to combine the elements as the new invention does." 550 U.S. at 401. Nautilus has failed to identify any credible reason to modify the rollout tray of the 1064i ATM with a service opening. All of the components on the tray appear to be serviceable from the side or from above, and Nautilus has not identified any reason that one of ordinary skill in the art would be motivated to enable access to any serviceable component in the 1064i ATM from below. While Gussack discloses drawers with side walls that may make access from below preferable to access from the side or from above, the 1064i ATM has no such obstructions. There is no convincing evidence that one of ordinary skill in the art would have modified the 1064i ATM with the removable panels of Gussack, and I thus find that the asserted claims of the '616 patent are not rendered obvious by this combination of prior art.

3. Dickenson

Nautilus contends that the asserted claims of the '616 patent are rendered obvious by another patent, U.S. Patent No. 6,068,101 to Dickenson ("Dickenson," RX-0278), in combination with certain other references. RIB at 72-87; RRB at 28-30. Dickenson was filed on October 11, 1996, and it discloses a gaming machine containing a currency mechanism that receives, sorts and dispenses bills upon a payout. RX-0278 at 2:1-5. There is no dispute that Dickenson discloses an "automated banking machine" with a "housing" including a "first opening," but Diebold disputes Nautilus's contentions with respect to almost every other claim limitation, including the rollout tray, service opening, service points, and a removable keypad. CIB at 70-77; CRB at 24-28.

a. Rollout Tray

Dr. Reinholtz identifies a currency mechanism mounted on a telescoping "trackway"

disclosed in Dickenson as evidence for the presence of the claimed "rollout tray." RX-1184C (Reinholtz DWS) at Q&A.172 (citing RX-0278 at 5:11-16, Figs. 2, 5, 6).

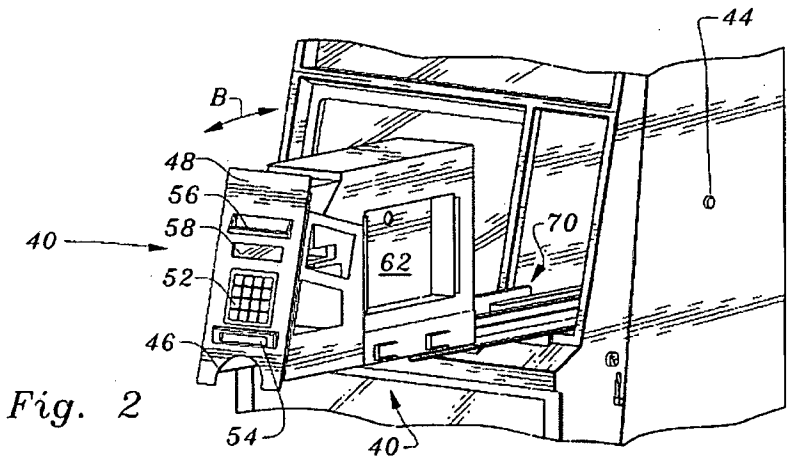


Fig. 2

RX-0278 at Fig. 2. Diebold argues that this testimony is conclusory, and that it fails to meet Nautilus's burden to show invalidity by clear and convincing evidence. CIB at 71-72. The presence of a rollout tray with a wall portion meeting the limitations of the '616 patent are confirmed, however, by cross-sectional views of the currency mechanism and trackway in Dickenson.

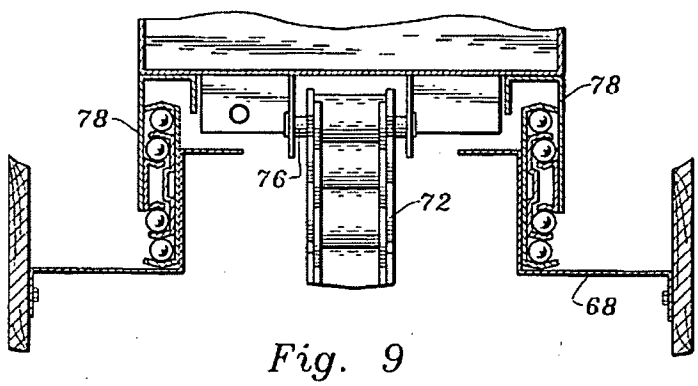
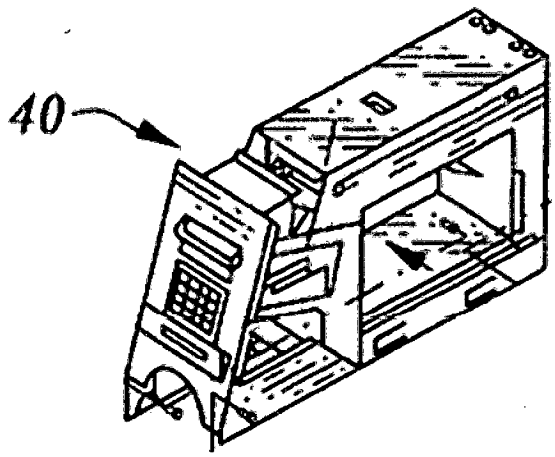


Fig. 9

RX-0278 at Fig. 9; *see* RX-1184C (Reinholtz DWS) at Q&A.173-174. Nautilus has met its burden to show that Dickenson discloses a rollout tray.

b. Service Opening

Dr. Reinholtz highlights a portion of Figure 4 of Dickenson as an alleged "service opening" in the rollout tray.



RX-1184C (Reinholtz DWS) at Q&A.175 (citing RX-0278 at Fig. 4). Dr. Reinholtz admits that Dickenson does not explicitly describe any opening in the location that he highlights, nor does Dickenson describe the servicing of any components through any alleged opening. *Id.* Nevertheless, Dr. Reinholtz points to other structures in Dickenson, including a coin slot, that point toward the presence of an opening in the location indicated. *Id.* at Q&A.176. Dr. Kurfess testifies in rebuttal that neither the text nor figures in Dickenson disclose the opening highlighted by Dr. Reinholtz. CX-1979C (Kurfess RWS) at Q&A.291-294. Dr. Kurfess states that the lines identified by Dr. Reinholtz are merely used to indicate the relationships between different parts of Figure 4, not to show any opening. *Id.* A full view of Figure 4 appears to confirm Dr. Kurfess's interpretation.

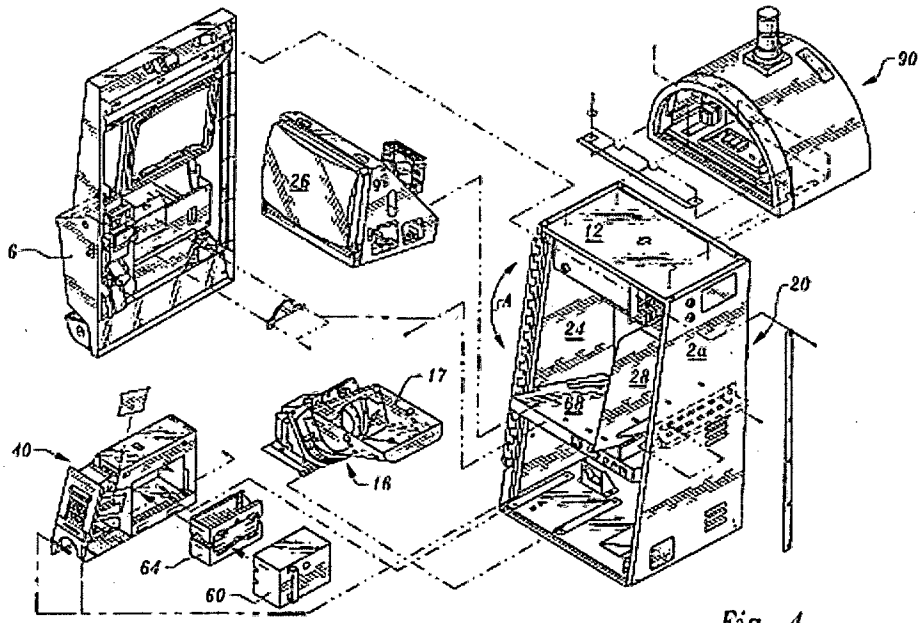


Fig. 4

RX-0278 at Fig. 4. The presence of an opening in the location identified by Dr. Reinholtz is at best ambiguous. Even if the opening were disclosed in Dickenson, there is no evidence that it meets any of the limitations of a "service opening" as claimed in the '616 patent. There is no description of service through any such opening in Dickenson; Dr. Reinholtz merely opines that it would be "obvious to try" to service the keypad through the alleged opening. RX-1184C (Reinholtz DWS) at Q&A.179. Even if this testimony were credible, it cannot meet the limitations in the claim construction for "service opening," which require that the opening enable access to serviceable components. The sides of the Dickenson rollout tray are open, and the keypad and other components appear to be readily accessible from the side. In this open design, any alleged opening in the location identified by Dr. Reinholtz would not enable access to service and thus would not meet this limitation.

Nautilus has failed to present clear and convincing evidence of any opening in the rollout tray of Dickenson, and the alleged opening identified by Dr. Reinholtz does not meet the limitations of a "service opening."

c. "First position" and "second position"

Notwithstanding the absence of any "service opening," there is no dispute that Dickenson discloses a tray that is movable between a first position outside the housing, where the alleged opening would be accessible, and a second position inside the housing, where the alleged opening would not be accessible. *See* RX-1184C (Reinholtz DWS) at Q&A.181-182.

d. "Serviceable component having a service point"

Nautilus contends that Dickenson discloses a keypad and LED display that are serviceable components within the meaning of the claims of the '616 patent. *See* RX-1184C (Reinholtz DWS) at Q&A.183-184. Conceding that there is no explicit disclosure of a service point on the keypad or LED display in Dickenson, Dr. Reinholtz proposes an obviousness combination with U.S. Patent No. 5,734,136 to Newcomer ("Newcomer," RX-0277), which discloses a keypad with screws that can be serviced with an appropriate tool. RX-1184C (Reinholtz DWS) at Q&A.185-188. I agree with Nautilus that it would have been obvious to one of ordinary skill in the art that the keypad and LED display in Dickenson have service points, such as screws, and that it would have been obvious to use different keypad designs, such as the one disclosed in Newcomer. There is no evidence, however, that any service points for the machine in Dickenson would be accessible for service through any service opening. As discussed above, there is no service opening disclosed in Dickenson, and both the keypad and LED display are accessible from the side. Accordingly, while Dickenson and Newcomer render the "service point" limitations obvious, these references fail to disclose that the service points are "accessible from outside the housing . . . through the service opening."

Accordingly, I find that the asserted claims of the '616 patent are not invalid in view of Dickenson alone or in combination with Newcomer.

4. Secondary Considerations of Non-Obviousness

Diebold identifies certain secondary considerations of non-obviousness that relate to the '616 patent, including a long-felt need, copying, and commercial success. CIB at 77-79. Although this issue is moot in light of Nautilus's failure to make a *prima facie* case for obviousness, Diebold's evidence on secondary considerations is weak and self-serving, and would be entitled to no weight if the '616 patent were found to be obvious.

Diebold's evidence regarding a long-felt need rests solely upon the testimony of one of the inventors, Douglas Kovacs, that the invention "solved a large problem for the service organization" of "having to remove the fascia and the monitor to get to the keypad." CX-1979C (Kurfess RWS) at Q&A.378 (citing RX-0820C (Kovacs Dep. Tr. at 290:11-18). This is not objective evidence that helps place the prior art in the context of the time of the invention, but the type of hindsight testimony from an interested party that secondary considerations are supposed to counteract. *See Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1378 (Fed. Cir. 2012) (These objective criteria thus help turn back the clock and place the claims in the context that led to their invention."). Diebold presents no evidence of copying other than Dr. Kurfess's infringement opinions. CX-1979C (Kurfess RWS) at Q&A.379-380. The Federal Circuit has consistently found such evidence to be insufficient to show copying, which "requires the replication of a specific product," which may be shown by evidence of reverse-engineering or that a competing product is a virtually identical replica." *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). As discussed above, most of Nautilus's ATMs do not infringe the asserted claims of the '616 patent, and there is no evidence that the design of any of the accused ATMs was copied from Diebold. Diebold's evidence of commercial success is similarly conclusory and fails to tie the sales of Diebold ATMs to the '616 patent. *See* CX-

1979C (Kurfess RWS) at Q&A.381-383; *Wm. Wrigley Jr. Co. v. Cadbury Adams USA LLC*, 683 F.3d 1356, 1363-65 (Fed. Cir. 2012) ("Our case law clearly establishes that the patentee must establish a nexus between the evidence of commercial success and the patented invention.").

E. Laches

Nautilus argues that Diebold's assertion of the '616 patent should be barred based on the equitable doctrine of laches. RIB at 88-92. "To prove laches, a defendant must show that the plaintiff delayed filing suit an unreasonable and inexcusable length of time after the plaintiff knew or reasonably should have known of its claim against the defendant; and the delay resulted in material prejudice or injury to the defendant." *See Wanlass v. General Elec. Co.*, 148 F.3d 1334, 1337 (Fed. Cir. 1998) (citations omitted). The viability of laches defenses in section 337 proceedings is currently before the Commission in *Certain Lithium Metal Oxide Cathode Materials, Lithium-Ion Batteries for Power Tool Products Containing Same, and Power Tool Products with Lithium-Ion Batteries Containing Same* ("*Lithium-Ion Batteries*"), Inv. No. 337-TA-951, Comm'n Notice (Oct. 11, 2016), 81 Fed. Reg. 71534-35 (Oct. 17, 2016) (scheduling public hearing on laches, *inter alia*). The Supreme Court is also currently considering the viability of laches defenses in the context of patent injunctions. *See SCA Hygiene Products Aktiebolag v. First Quality Baby Products, LLC*, 807 F.3d 1311 (Fed. Cir. 2015) (*en banc*), *cert. granted* 136 S.Ct. 1824.

Nautilus contends that Diebold knew of allegedly infringing Nautilus ATMs since at least 2006, [redacted]. RIB at 88-91. [redacted]. CX-1981C (Hoover RWS) at Q&A.42-45; RX-0094C (2007 OEM agreement). [redacted]

[redacted]. *Id.* at Q&A.46; Tr. (Hoover) at 113:1-114:19; RX-0148C (Diebold letter dated Sept. 16, 2008). [redacted]. *See* CX-1682C (Kim Dep. Tr.) at 109:2-15. Diebold argues that it did not unreasonably delay in asserting infringement because [redacted]. CX-1981C (Hoover RWS) at Q&A.47-58; RX-0094C (2007 OEM agreement); RX-0141C (inventory addendum to OEM agreement). Diebold further argues that Nautilus failed to show sufficient evidence of prejudice. CIB at 244-245; CRB at 28-30.

Regardless of how the Commission decides the viability of laches defenses in *Lithium-Ion Batteries*, I find that it fails in this investigation. The only Nautilus ATM that has been found to infringe any claim of the '616 patent is the MX5600, and there is no evidence that Diebold unreasonably delayed in asserting its infringement claim against this ATM. Although Nautilus has presented evidence that [redacted], there is no such evidence regarding the MX5600. The only evidence of knowledge cited by Nautilus is deposition testimony from a Diebold witness stating that "there are product management individuals that are fully aware when a competitor enters the market." RX-0819C (Blackford Dep. Tr.) at 385:1-8. This testimony is insufficient to show that Diebold knew or reasonably should have known of its infringement claim prior to filing the complaint. As discussed above, there are material differences between the [redacted] series ATMs and the MX5600 regarding the alleged service opening, and Diebold's knowledge of the structure of the [redacted] does not extend to the MX5600. Moreover, the differences between the service openings in the [redacted] series and the

MX5600 are not open and notorious, but require access to the rollout tray using a key. *See Wanlass v. Fedders Corp.*, 145 F.3d 1461, 1467 (Fed. Cir. 1998) (reversing summary judgment on laches where "infringement could not be determined without purchasing the accused air conditioner, dismantling it, and testing the motor inside, and hence the allegedly infringing activity was not open and notorious . . . .").

In addition, Nautilus has failed to carry its burden on prejudice, citing its expenditures in the U.S. market but failing to establish a nexus between these expenditures and the alleged delay. *See State Contracting & Engineering Corp. v. Condotte America, Inc.*, 346 F.3d 1057, 1066-67 (Fed. Cir. 2003) (requiring defendant "to establish a nexus between the delay in filing suit and their asserted economic injury."). Moreover, Nautilus has failed to demonstrate any evidentiary prejudice that can be tied to the alleged delay. Although one co-inventor of the '616 patent, Mr. Kim Lewis, was unavailable during this investigation, there is no evidence that he became unavailable during the alleged period of delay. Similarly, there is no evidence that the availability of prior art was affected during the alleged period of delay.

Accordingly, Nautilus has failed to show that Diebold's infringement claims are barred by the doctrine of laches.

IV. U.S. PATENT NO. 7,229,010

The '010 patent, entitled "Check Accepting and Cash Dispensing Automated Banking Machine System and Method," issued on June 12, 2007, from an application filed on March 8, 2006. Thomas A. Van Kirk, Jon E. Washington, Brian Jones, William D. Beskitt, Harry Thomas Graef, David A. Peters, Damon J. Blackford, Dale H. Blackson, Edward L. Laskowski, Songtao Ma, Tim Crews, Kenneth Turocy, Douglas T. Dominick, Jason J. Smolk, Brian E. Lucas, and Bradley Lightner are identified as inventors, and Diebold is the assignee. A copy of the '010

patent was admitted as JX-0002, and its file history is JX-0006.

A. Claim Construction

No claim construction disputes relating to the'010 patent were raised prior to the *Markman* hearing. *See, generally*, Diebold's Initial Claim Construction Brief (Apr. 1, 2016); Nautilus's Initial Claim Construction Brief (Apr. 1, 2016). Diebold and Nautilus agreed that the term "automated banking machine," which appears in the preamble of claim 1, should be construed to mean "any device which is used for carrying out transactions involving transfers of value." Order No. 17 (June 13, 2016) at 2. As the investigation progressed, however, a dispute arose between the parties regarding the construction of the term "pair of disposed sheet supporting rail portions," which appears in claim 1. This claim construction dispute is addressed below.

B. Infringement

Diebold accuses Nautilus ATMs containing a bulk check acceptor module ("BCA") of infringing claims 1, 13, 14, 19, 20, 24, 25, and 26 of the '010 patent. CIB at 85-86. The model numbers of the accused ATMs are the MX7600DR, MX7600DS, MX7600FFL, MX7600I, MX7600R, MX7600T, MX7600TL, MX7600TR, and MX8700TCX. *Id.* Nautilus raises two non-infringement arguments. Its primary non-infringement argument is that the accused BCAs do not have the "pair of disposed sheet supporting rail portions" as required by the asserted claims. RIB at 99-104. Diebold contends that the accused BCAs satisfy this claim limitation either literally or under the doctrine of equivalents. CIB at 92-96. Nautilus's second argument is that because the asserted claims contain limitations that are directed to functionalities provided by the ATMs, not the BCAs, the claims are not infringed by the importation of BCAs unincorporated into ATMs. RIB at 104-05. Diebold counters that Nautilus's importation of

unincorporated BCAs constitutes indirect infringement of the asserted claims by way of contributory infringement and induced infringement. CIB at 97-100.

1. Legal Standards

The legal standards for direct infringement are set forth above in the context of the '616 patent. For the '010 patent, Diebold also relies on theories of indirect infringement, including contributory and induced infringement.

Contributory infringement requires the patentee to prove that: (1) there is an act of direct infringement in violation of section 337; (2) the accused device has no substantial non-infringing uses; (3) the component is a material part of the invention; and (4) the accused infringer imported, sold for importation, or sold after importation within the United States, the accused components that contributed to another's direct infringement. *Certain Electronic Devices With Image Processing Systems, Components Thereof, and Associated Software*, Inv. No. 337-TA-724; Comm'n Op. (Dec. 21, 2011) at n.9 (citing *Spansion, Inc. v. U.S. Int'l Trade Comm'n*, 629 F.3d 1331, 1353 (Fed. Cir. 2010)). In addition to the foregoing factors, the patentee must also demonstrate that the alleged infringer "knew that the combination for which its components were especially made was both patented and infringing." *Golden Blount, Inc. v. Robert H. Peterson Co.*, 365 F.3d 1054, 1061 (Fed. Cir. 2004) (quoting *Preemption Devices, Inc. v. Minn. Mining & Mfg., Co.*, 803 F.2d 1170, 1174 (Fed. Cir. 1986)).

Section 271(b) of the Patent Act prohibits inducement: "[w]hoever actively induces infringement of a patent shall be liable as an infringer." 35 U.S.C. § 271(b). *See DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1305 (Fed. Cir. 2006) (*en banc*) ("To establish liability under section 271(b), a patent holder must prove that once the defendants knew of the patent, they actively and knowingly aided and abetted another's direct infringement.") (citations omitted).

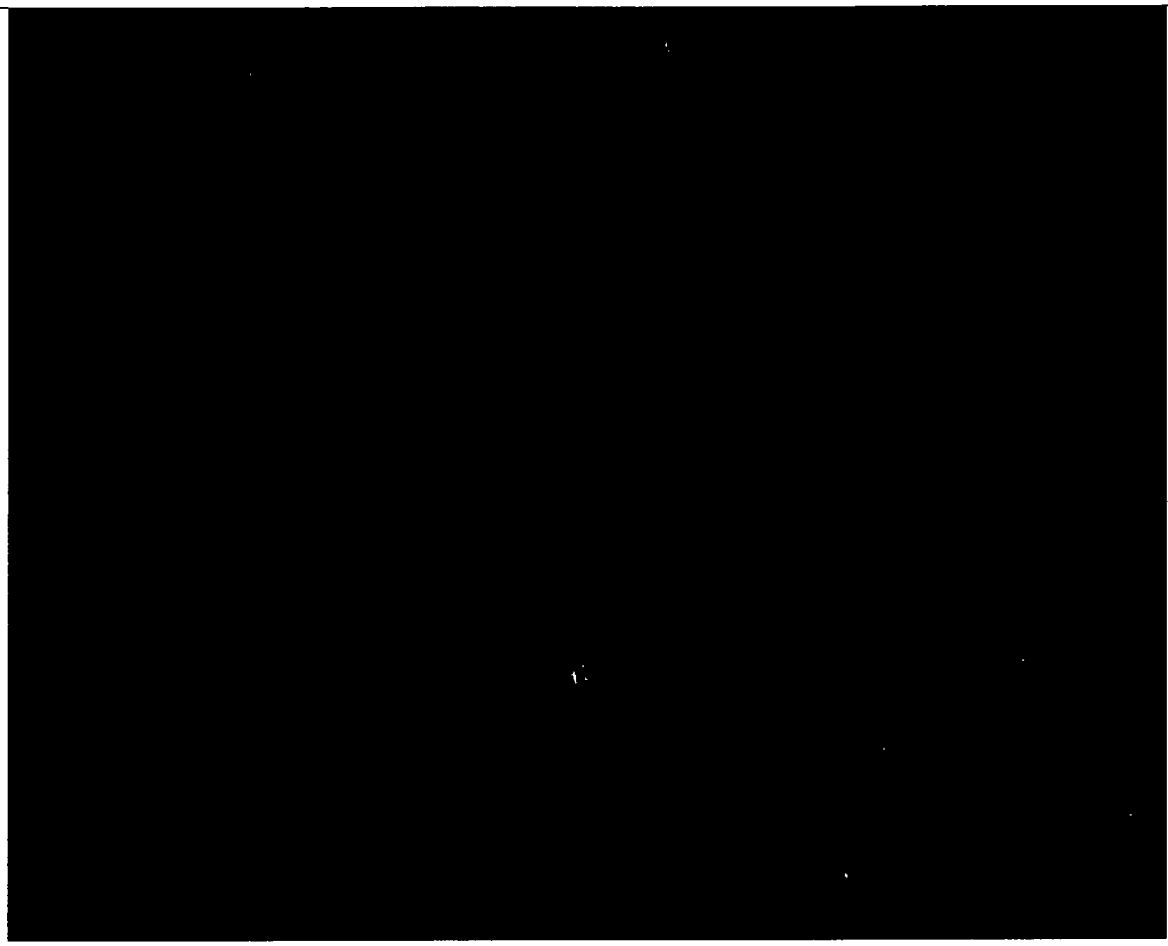
"The mere knowledge of possible infringement by others does not amount to inducement; specific intent and action to induce infringement must be proven." *Id.* (citations omitted). In *Suprema, Inc. v. International Trade Comm'n*, the Federal Circuit upheld the Commission's interpretation that the phrase "articles that infringe" in section 337 "covers goods that were used by an importer to directly infringe post-importation as a result of the seller's inducement." 796 F.3d 1338, 1352-53 (Fed. Cir. 2015).

2. The disputed limitation: "pair of disposed sheet supporting rail portions"

Asserted claim 1 requires an automated banking machine with a "sheet item transport" having a "pair of disposed sheet supporting rail portions." '010 patent, col. 23:28-32. This limitation is required by the remaining asserted claims, which depend directly or indirectly from claim 1. Nautilus argues that the accused BCA does not have a "sheet item transport" with a pair of sheet supporting rails, while Diebold contends that this limitation is satisfied by the accused BCA either literally or under the doctrine of equivalents. In order to understand the parties' dispute, the structure and operation of the accused BCA must be understood.

a. The BCA

The BCA is an ATM module designed to accept and sort checks deposited in bulk, *i.e.*, multiple checks deposited at the same time. The BCA itself is comprised of different modules. Checks deposited into the BCA progress through different modules within the BCA until they are stored in [redacted] check storage bins. CX-1877C (Kurfess DWS) at Q&A.84; CX-187C (BCA Spare Parts Manual) at NH_972-00048987. This annotated schematic from a Nautilus manual shows the location of the modules in the BCA:

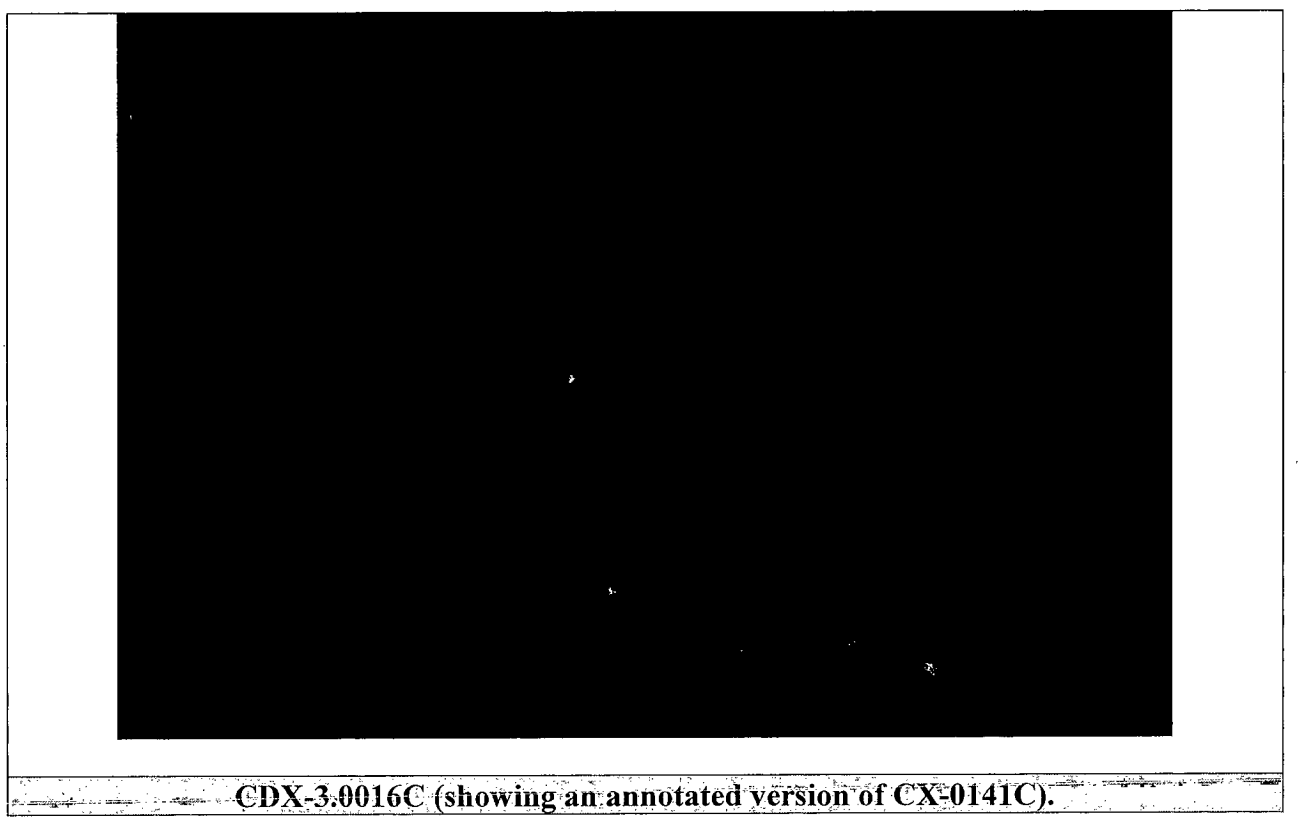


CX-187C (BCA Spare Parts Manual) at NH_972-00048987 (annotations in original)

Deposited checks are accepted by the [redacted] module. CX-1877C (Kurfess DWS) at Q&A.84. The [redacted] module can accept a stack of checks, as well as a single check. *Id.* If a stack of checks is deposited, the [redacted] module separates the checks so that they can be further processed individually. *Id.* After the checks are separated, a check is transported from the [redacted] module to the [redacted] module. The [redacted] module aligns the check [redacted]. *Id.* at Q&A.91-93. The check is transported from the [redacted] module to the [redacted] module. *Id.* at Q&A.104-06. The [redacted] module reads the MICR line of the check and collects images of the [redacted] of the check. *Id.* at Q&A.107-10. The check is then

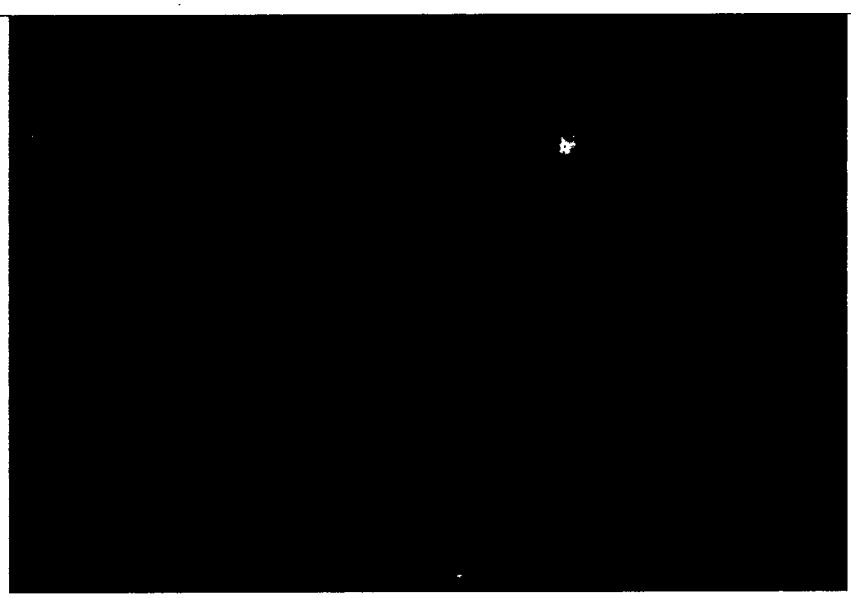
transported to the [redacted] module. *Id.* at Q&A.111-13. The [redacted] module holds the check until [redacted]. *Id.* at Q&A.114-17. [redacted], the check is transported to the [redacted] module. *Id.* at Q&A.118. The [redacted] module endorses the check with information required by the bank or owner/operator of the ATM. *Id.* at Q&A.119-20. After it is endorsed, the check is transported to the [redacted] module, also called the "check box." *Id.* at Q&A.121. The structure and operation of the check box is central to the parties' dispute.

The check box has a storage area to store deposited checks consisting of [redacted]. *Id.* at Q&A.122. [redacted] can store up to [redacted], whereas [redacted]. *Id.* The check box, as seen from above, is shown below:



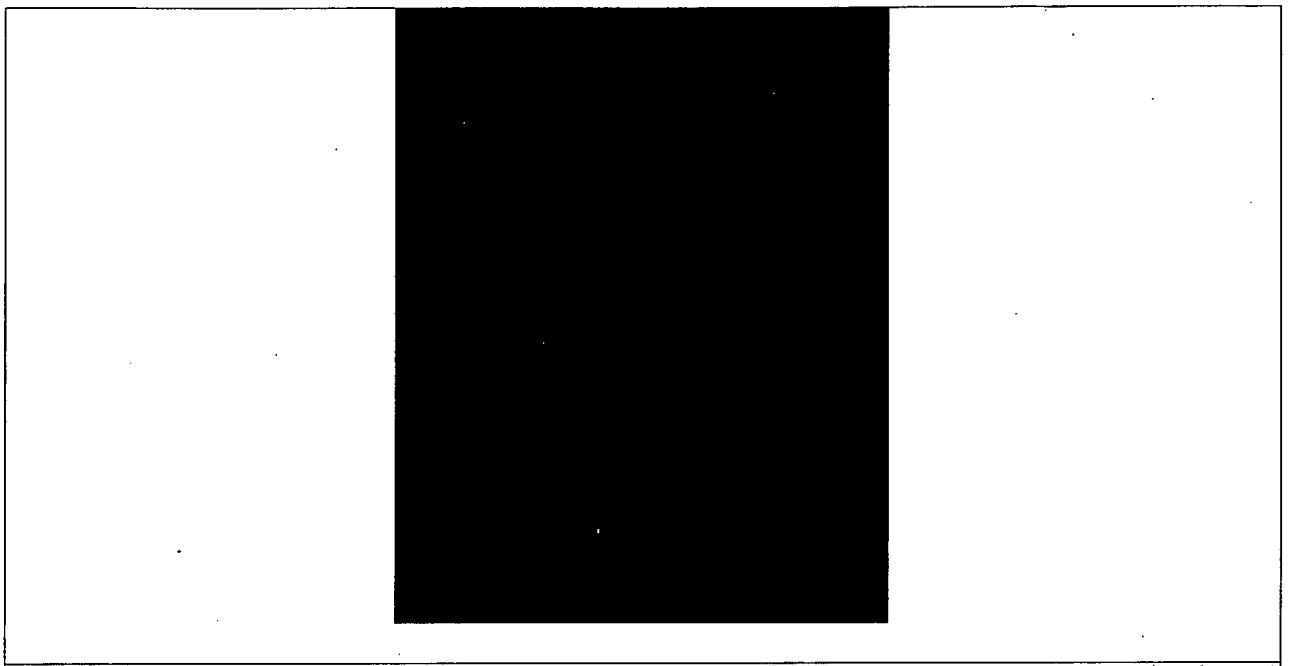
CDX-3.0016C (showing an annotated version of CX-0141C).

Checks are transported into the check box from [redacted]. CX-1877C (Kurfess DWS) at Q&A.133. [redacted]. *Id.* at Q&A.126, 133. [redacted], the belt transport moves the check to the bottom of the check box. Hrg. Tr. (Reinholtz) at 549:5-9; 555:7-22. As the check is being transported [redacted] of the check [redacted] passes between two moving walls. CX-1877C (Kurfess DWS) at Q&A.133. The positions of the belt transport, the [redacted], and the moving walls relative to each other are shown in the following representation:

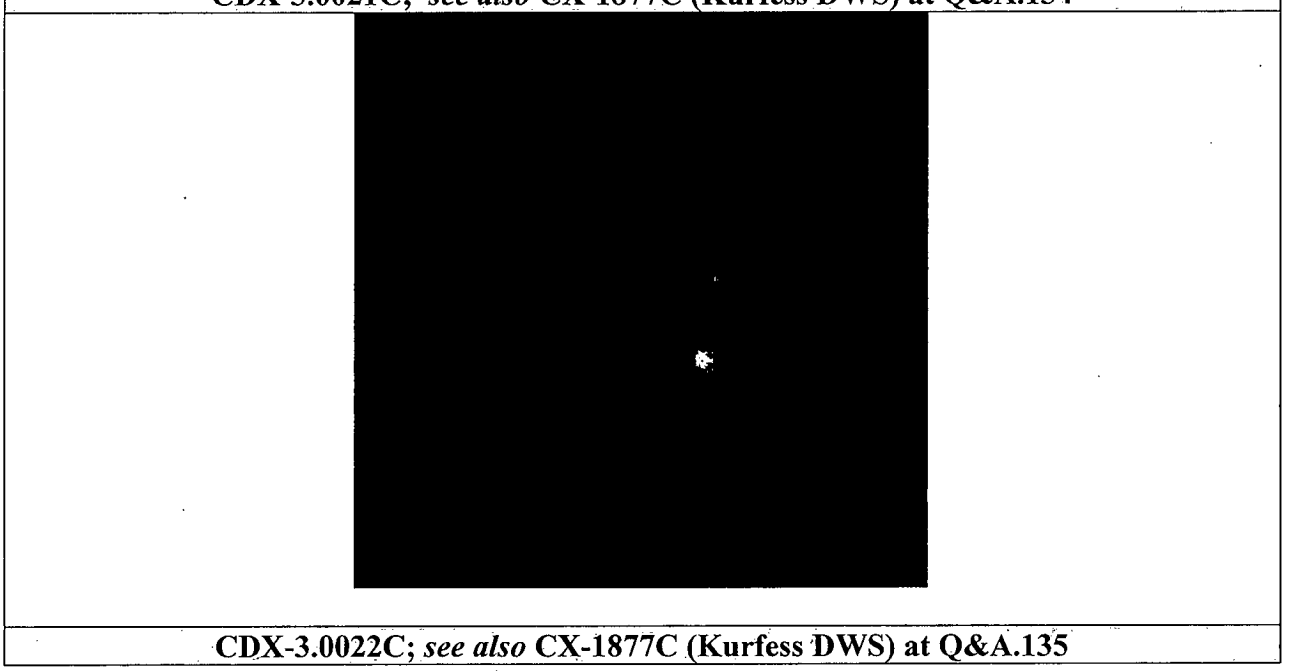


CDX-3.0020C (misspelling in original); *see also* CX-1877C (Kurfess DWS) at Q&A.132.

The belt transport and tension balls hold the check in an upright position as the check is moved to the [redacted] the check box. CX-1877C (Kurfess DWS) at Q&A.143. The movement of the check in the [redacted] module is depicted in the following two representations:



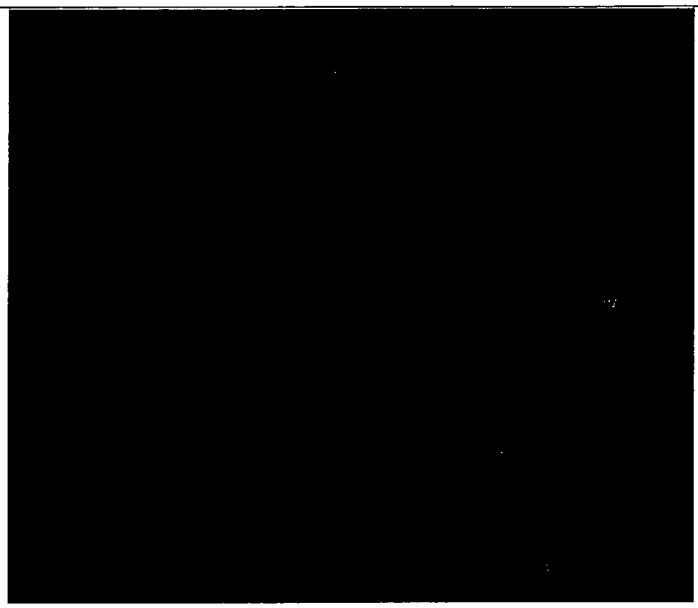
CDX-3.0021C; *see also* CX-1877C (Kurfess DWS) at Q&A.134



CDX-3.0022C; *see also* CX-1877C (Kurfess DWS) at Q&A.135

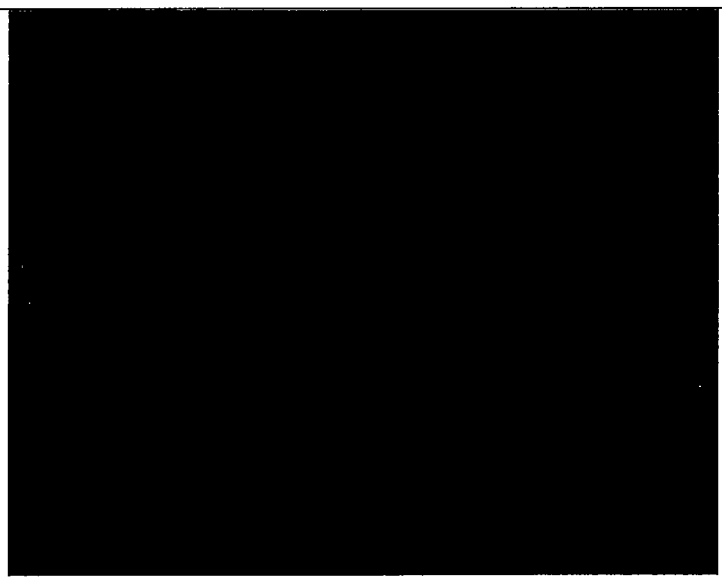
After the leading edge of the check reaches the [redacted] of the check box, a push bar moves between the movable walls and the belt transport-tension ball apparatus from one bin to the other bin. CX-1877C (Kurfess DWS) at Q&A.136-38. As a result of this movement, the check is pushed into the bin to which the bar is moving. *Id.* at Q&A.138. For example, in order to move a check into [redacted], the push bar is placed into a waiting position in [redacted] before the

check is moved into position. *Id.* at Q&A.139. The representation below depicts the push bar, labelled "plunger" by Diebold's expert, in its waiting position in [redacted]:



CDX-3.0024C; CX-1877C (Kurfess DWS) at Q&A.140.

After the check is moved to the bottom of the check box, the push bar moves into [redacted]:



CDX-3.0025C; CX-1877C (Kurfess DWS) at Q&A.141.

As the push bar moves toward [redacted], it comes into contact with the check and the moveable wall closest to [redacted] retracts away from the push bar so that the check can be pushed into [redacted]:

CDX-3.0025C; CX-1877C (Kurfess DWS) at Q&A.141

To move a check into [redacted], the push bar is moved to a waiting position in [redacted] and, after the check is in position, moved into [redacted]. CX-1877C (Kurfess DWS) at Q&A.139. In this operation, the moveable wall closest to [redacted] retracts to facilitate the check's movement into that bin, while the moveable wall closest to [redacted] remains in position. *Id.*

b. The accused BCA does not have a sheet item transport with a pair of disposed sheet supporting rail portions.

To satisfy claim 1's requirement of a "pair" of "rail portions," Diebold identifies structures in the accused BCA that it contends correspond to a first rail and a second rail. For the first rail, Diebold identifies the four [redacted] that press the check against the belt transport. By pressing the check against the belt transport, the [redacted] ensure that the check is engaged with the belt transport. Hrg. Tr. (Reinholtz) at 549:5-9; 555:7-22. Nautilus does not contest that the [redacted] identified by Diebold are a "rail" within the meaning of the patent.

For the second rail, Diebold identifies the moveable walls. CIB at 92. Diebold does not, however, argue that each moveable wall is a rail and that it can rely on either wall as a second rail. Rather Diebold argues that both moveable walls together constitute a single rail. CIB at 92 ("The second sheet supporting rail portion is the moveable walls that are positioned on the opposite side of the vertical transport and serve to guide the check into position for plunging in either [redacted]."); *see also* CX-1877C (Kurfess DWS) at A.263 (similar). Nautilus advances several arguments as to why the moveable walls should not be considered to be a rail. Nautilus argues that a claim limitation requiring a rail cannot be satisfied by a wall because walls and rails are distinct structures. RIB at 36-38. Nautilus also argues that the claims require the rails to be part of the sheet item transport and the BCA's moveable walls play no role in the transportation of checks into the check box. *Id.* Finally, Nautilus argues that the pair of moveable walls and the [redacted] are so dissimilar in terms of structure and function that they cannot be considered to be a "pair."

For the *Markman* proceedings, neither party identified claim terms from the '010 patent as needing claim construction. Although Diebold argues that Nautilus should be precluded from advancing its non-infringement argument because Nautilus failed to identify "pair of supporting rail portions" for claim construction, the onus was not on Nautilus to do so. Nautilus's non-infringement argument is premised on the plain and ordinary meanings of common English words: "pair," "supporting," and "rail." In contrast, as explained below, Diebold's infringement argument is premised on claim constructions that are inconsistent the terms' plain and ordinary meanings.

c. A wall is not a rail.

There is no dispute that the accused BCA's movable walls are "walls." Diebold argues, however, that the term "rail" should be construed to mean a structural member or support. CIB at 93. Under this proposed construction, Diebold argues that "rail" encompasses "walls." Diebold does not cite any record evidence in support of its proposed construction.[11] The only evidence offered by either party concerning the definition of "rail" is the testimony of Nautilus's expert witness, who testified that a rail is a long and narrow member. RX-1513C (Reinholtz RWS) at A.244 ("An elongated member, or a long, narrow member, that something rides on is typically what is thought of as a rail."). Dr. Reinholtz's understanding of a rail is fully consistent with the language of unasserted claims and the specification.

Consistent with Dr. Reinholtz's understanding of the term, the specification uses "rail" to refer to long, narrow structures. This can be seen in Figure 29, which depicts "rail 562":

[11] Although Diebold quotes portions of the definitions of "rail" from Merriam Webster Online and American Heritage Dictionary (2000 Ed.), CIB at 93, the dictionary definitions were not entered into evidence and the incomplete excerpts from those dictionaries contained in Diebold's briefing will not be considered.

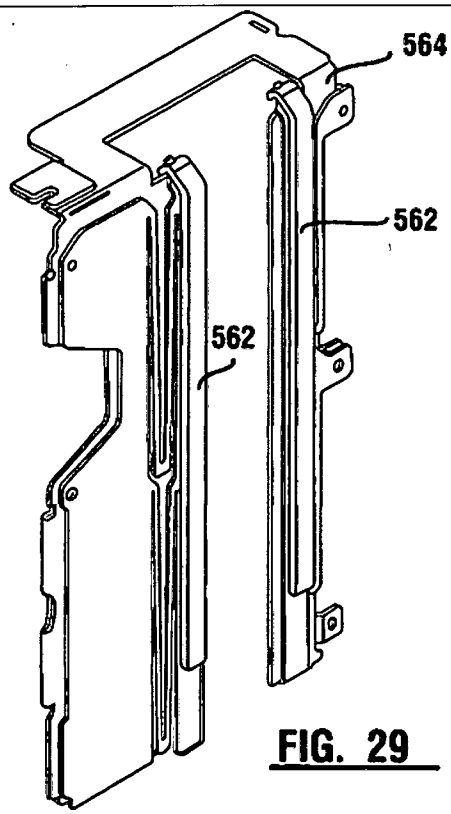


FIG. 29

'010 patent, Fig. 29; *see also* '010 patent, col. 15:4-10

Further, the patent uses the terms "wall" and "rails" to describe different types of structures. For instance, claims 7 and 8, which depend indirectly from claim 1, add the requirement that the storage bins must be bounded by "wall portions," and use "rail portions" to refer back to the "pair of sheet supporting rail portions" recited in claim 1:

> a pair of disposed first wall surfaces bounding the first storage location and in opposed facing direction of the first backing plate;
>
> wherein when the plunger member moves the sheet from engagement with the rail portions to the first storage location. . . .

'010 patent, col. 24:43-col. 45-50 (claim 7); col. 24:61-66 (claim 8) (similar). Thus, "walls" and "rails" must be presumed to have different meanings. *See CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("In the absence of any

evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.").

Accordingly, I reject Diebold's argument that "rail" should be construed to encompass "wall," and find that the terms refer to two different structures.

d. The moveable walls are not sheet supporting structures in the "sheet item transport."

The claimed rail portions are "sheet supporting" structures in the sheet item transport. Diebold contends that the BCA's vertical transport corresponds to the "sheet item transport." The movable walls, however, do not act as sheet supporting structures for BCA's vertical transport. As a check enters the [redacted] module one long edge of the check is engaged by the belt transport. CX-1877C (Kurfess DWS) at Q&A.133. Immediately facing the belt transport are [redacted]. *Id.* at A.126. The [redacted] press the edge of the check against the belt transport so that the belt transport can move the check to the [redacted] of the checkbox. Hrg. Tr. (Reinholtz) at 549:5-9, 555:7-22. As the check is being transported [redacted], the opposing long edge of the check passes between the two moveable walls. CX-1877C (Kurfess DWS) at Q&A.133. While the thickness of a typical check is between 0.075 and .203 millimeters, a gap of approximately [redacted] times the thickness of a check—separates the moving walls. RX-1513C (Reinholtz DWS) at Q&A.225. As a result, the walls do not support the check as it is being moved to the bottom of the check box. *Id.* Diebold's arguments to the contrary are unpersuasive.

First, Diebold argues that moveable walls satisfy the claim limitation because they "guide the check into position for plunging in either [redacted]." CIB at 93. In essence, Diebold is arguing that the claim should be interpreted to require "guide rail portions," instead of "supporting rail portions." In addition to improperly rewriting a claim limitation, Diebold's

argument is problematic because the movable walls do not guide the check as it is being moved to the [redacted] of the checkbox. The gap between the walls is [redacted] times the thickness of check; therefore the walls may not even come into contact with the check as it is being transported to the bottom of the checkbox.

Moreover, as shown by the surrounding claim language, dependent claims, and the specification, the claimed rail portions "support" the sheet by coming into engagement with it by pressing against it. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314-17 (Fed. Cir. 2005). Any interpretation of an independent claim must be consistent with the claims that depend from it. *Wright Medical Tech., Inc. v. Osteonics Corp.*, 122 F.3d 1440, 1445 (Fed. Cir. 1997) ("[W]e must not interpret an independent claim in a way that is inconsistent with a claim which depends from it . . . .") (internal citation omitted). Claims 5 and 6, which depend from claim 1 through intervening dependent claims, show that the claimed "rails" support the check by coming into "engagement" with it. Claim 5 requires that the plunger be moved to the "second transverse side of the rail portion opposite the first storage location." '010 patent at col. 24:27-34. This claimed movement must occur "prior to the sheet being in engagement with the rail portions." *Id.* Claim 6, which depends directly from claim 5, requires that the plunger be moved to the "first transverse side of the rail portions opposite the second storage location prior to the sheet being in engagement with the rail portions." *Id.* at col. 24:35-42. Claim 7 and 8, which depend from claims 5 and 6, require the plunger "move[] the sheet from engagement with the rail portions" into one of the storage bins. *Id.* at col. 24:49-53; col. 24:64-35:2.

The requirement that the check come into engagement with the rails, however, is not found in claims 5-8 or intervening dependent claims 2-4. Rather the antecedent basis for the sheet coming into engagement with the rails must be an inherent characteristic of claim 1's

"sheet supporting rail portions." *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359 (Fed. Cir. 2001) ("There can be no dispute that mathematically an inherent characteristic of an ellipse is a major diameter. The prior recitation of 'an ellipse' therefore, provides the antecedent basis for 'an ellipse having a major diameter.'"); Manual of Patent Examining Procedure, § 2173.05(e) ("Inherent components of elements recited have antecedent basis in the recitation of the components themselves."). The plain language of claim 1 requires that the rails "support" the sheet as it is being transported by the sheet item transport ("the at least one transport includes a pair of disposed sheet supporting rail portions") and that the plunger move the "sheet from the rail portions." '010 patent, col. 23:27-32; col. 23:44-53. This language when read in conjunction with the dependent claims clearly indicates that the rails must come into engagement with the check.

In order to come into engagement with the check, the rails press against it. The specification describes a document that "engages a vertical transport 556" in the preferred embodiment. '010 patent, col. 14:64-65. Vertical transport 556, which corresponds to the claimed "sheet item transport," has two "rails 562," each of which faces an opposing belt flight. *Id.* at col. 15:1-4. To help "assure the document can be moved between the belt flights and the rails in sandwiched relation," "rails 562 are biased toward the belt flights by a resilient material." *Id.* at col. 15:4-8. The specification makes clear that a check passing in close proximity to the rails is not the same as coming into engagement with the rails. In describing the operation of a transport that moves the check when it is first deposited into the ATM, the specification describes the check "being moved in engaged relation between a belt flight 442 and rollers 444." '010 patent, col. 6:31:34. In this description, the specification distinguishes between the check being engaged with the belt flight and rollers and the check simply being in close proximity to

the belt flight and rollers: "[R]ollers 444 extend in openings 446 in an upper platen 448 to engage or at least move in very close proximity to belt flight 442." *Id.* at col. 6:33-35.

In the accused products, the moving walls do not press against a check as it is being moved by the tension ball-belt flight. Notably, in his description of the check entering the vertical transport, while Diebold's expert describes "the belt transport with the aid of the tension balls" as engaging one edge of the check, he does not describe the moving walls as engaging the opposing edge of the check. CX-1877C (Kurfess DWS) at A.133. Rather he describes the edge of the check as simply being "positioned between the moving walls" so that it is "guided downward to the bottom of the bin storage area by the moving walls." *Id.*

The second argument advanced by Diebold relies on the hearing testimony of Nautilus's expert, Dr. Reinholtz, describing the movement of the BCA's push bar in relation to the moving walls. CIB at 96-97. Diebold argues that Dr. Reinholtz admitted at the hearing that the moving walls serve as "a surface that will guide the check vertically into the check box." CIB at 97. Diebold's argument, however, is based on a mischaracterization of Dr. Reinholtz's testimony. As described by Dr. Reinholtz, after the check is transported to the bottom of the [redacted] module, the push bar pushes the check against the wall closest to the bin in which the check is being stored. Tr. at 541:22-543:6 (Reinholtz). The movement of the push bar and moving walls are [redacted]. *Id.* Through this [redacted] movement, the wall provides pressure on the edge of the check to facilitate the check's movement into the storage bin. Tr. at 541:22-543:12 (Reinholtz). Thus, contrary to Diebold's characterization of this testimony, Dr. Reinholtz is not describing the interaction between the check and the moving walls while the check is being moved "[redacted]," rather he is describing the

interaction between the check and the moving walls as the check is being moved horizontally into one of the storage bins. *See also* CX-1877C (Kurfess DWS) at A.139 ("If a check is to be stored in [redacted], for example, the plunger will move to a waiting position within [redacted] such that ***when the check has reached the bottom of the vertical transport***, it may be pushed into Bin 2 by the movement of the plunger from [redacted]. Conversely, if a check is to be stored in [redacted], the plunger must be moved to a waiting position within [redacted] such that ***when the check has reached the*** [redacted] ***of the*** [redacted] ***transport***, it can be pushed into [redacted] by the movement of the plunger from [redacted].") (emphasis added).

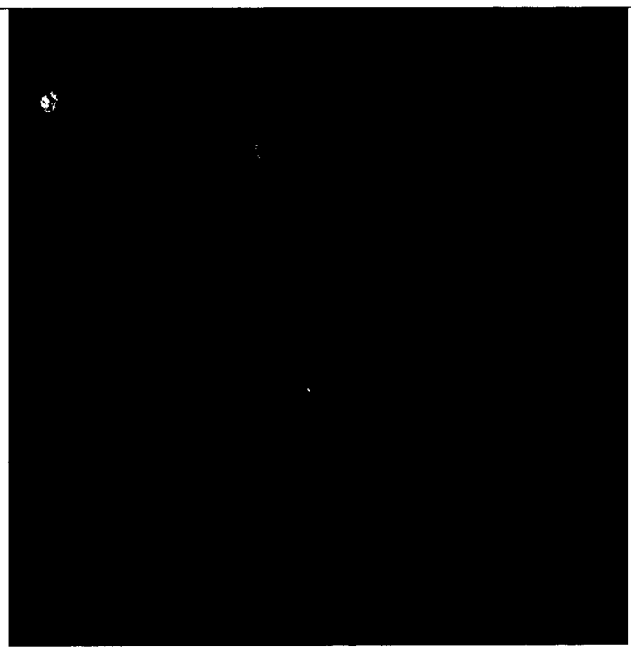
e. Diebold has failed to identify a pair of rails.

Assuming *arguendo* that a moveable wall can be considered a rail, Diebold's infringement read is flawed on an additional ground. The claim requires a pair of rails and Diebold's infringement read fails to identify a pair of structures corresponding to the claimed rails. Rather Diebold identifies three distinct structures, each of which constitutes a rail under Diebold's proposed construction of "rail." For the first rail, Diebold identifies a single structure: the structure holding the [redacted]. For the second rail, however, Diebold identifies a set of two structures: two moving walls. Under Diebold's proposed construction of "rail" as "simply a structural member or support," each wall can be considered a rail. CIB at 93 (internal quotation marks omitted). As confirmed at the hearing by its expert, however, Diebold is not arguing that it can rely on either wall as the second rail, but rather that the pair of moving walls constitutes a single rail:

> JUDGE LORD: So are you saying that the moving walls are one half of a pair and the other half of the pair are the [redacted] and the belt?
>
> DR. KURFESS: Yes, exactly. Well, just the balls. Sort of the—but conceptually, yes, [redacted] and the belt you know, guide it.

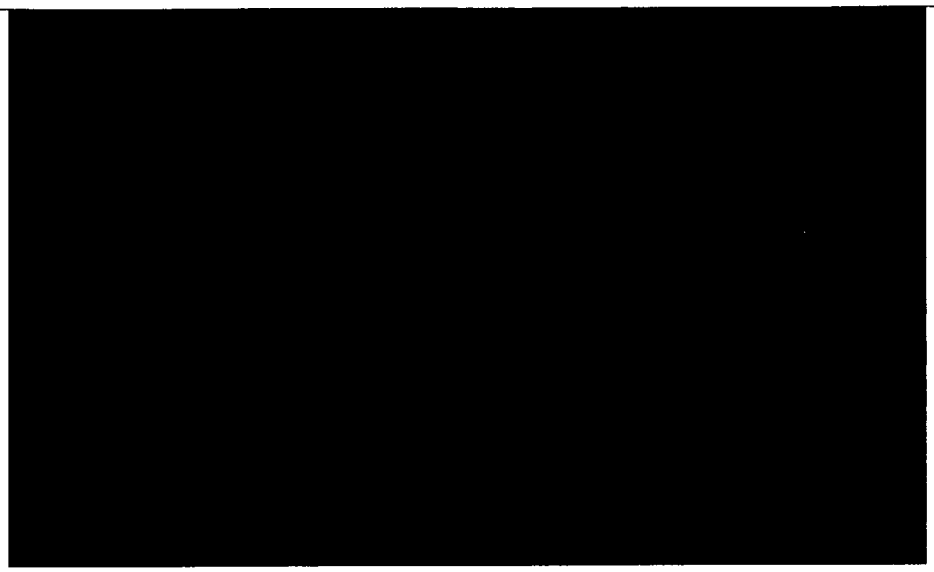
Hrg. Tr. (Kurfess) at 407:16-21.

Unlike the [redacted] identified by Diebold as the first rail, the moveable walls are on different sides of the check as it is moved into the check box:



CDX-3.0021C; *see also* CX-1877C (Kurfess DWS) at Q&A.133, 134

The walls are not only located on different sides of the check, they are capable of moving independently of each other. As shown in the representation below, as the plunger engages the check and begins to push the check into the storage bin, the movable wall closest to the bin in which the check will be stored retracts away from the plunger, while the other moveable wall remains in place:



CDX-3.0026C; *see also* CX-1877C (Kurfess DWS) at Q&A.142-43

Accordingly, to the extent the moveable walls are "structural members or supports" as argued by Diebold, each wall is a separate member or support. Diebold cannot rely on three rails (the [redacted] structure and, under its proposed construction of "rail," the two moving walls) to satisfy a limitation requiring a "pair" of rail portions. *Innovad, Inc. v. Microsoft Corp.*, 260 F.3d 1326 (Fed. Cir. 2001) ("The claim language does not preclude other switches on the exterior of a dialer unit, such as another switch to choose a different preprogrammed telephone number. The term 'single,' however, precludes the use of multiple switches to perform the activating function for one phone number."); *Research in Motion Ltd. v. Dataquill BVI, Ltd.*, 2008 WL 4977370, at *7 (N.D. Tex. 2008) ("Accordingly, the Court holds that the term 'comprises one or two manually operable switches' does not preclude the use of other switches for other functions, but does preclude the use of more than two switches to perform the recited function: scrolling said display in a first and/or second direction."). Moreover, the pair of supporting rails is an antecedent for a number of the limitations appearing in claim 1 and the asserted dependent claims. Diebold needed to identify two of the three rails (*e.g.*, the [redacted]

[redacted] structure and one of the moving walls) as the claimed pair and to demonstrate that this pair satisfied the various claim limitations. Diebold did not do so.

f. Nautilus's BCA does not infringe under the doctrine of equivalents.

Diebold argues that if the accused BCA is found not to satisfy the limitation "pair of sheet supporting portions" literally, it does so under the doctrine of equivalents. CIB at 96-97. Diebold argues that the claimed rail provides support by "serv[ing] as a surface that will guide the check vertically into the check box," and that the moving walls of the BCA perform the same function and obtain the same result in substantially the same way. *Id.* The premise for Diebold's argument is flawed. As discussed above, the function of the supporting rails is not simply to guide the check as it is being moved into the check box. The rails must also come into engagement with the check by pressing against it, a function which is not performed by the moving walls. Accordingly, because the walls do not perform substantially the same function as the claimed rail portions, the walls and rail portions cannot be equivalent structures. *TIP*, 529 F.3d at 1376-77 ("Whether equivalency exists may be determined based on the 'insubstantial differences' test or based on the 'triple identity' test, namely, whether the element of the accused device 'performs substantially the same function in substantially the same way to obtain the same result.'"). Moreover, as discussed above, Diebold has not shown that the movable walls guide the check as it is being transported to the [redacted] of the checkbox.

3. Nautilus does not indirectly infringe the asserted claims.

Diebold's indirect infringement claims are predicated on an ATM incorporating the accused BCA directly infringing the asserted claims. For the reasons discussed above, however, I found that the accused BCA does not satisfy the claim limitation "pair of disposed sheet

supporting rail portions" either literally or under the doctrine of equivalents. Accordingly, because an ATM with a BCA would not infringe the claims, the importation of unincorporated BCA modules does not indirectly infringe the asserted claims. *Limelight Networks, Inc. v. Akamai Tech., Inc.*, 134 S.Ct. 2111, 2118 (2014) ("[O]ur case law leaves no doubt that inducement liability may arise 'if, but only if, there is . . . direct infringement.'") (quoting *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 81 S.Ct. at 602 ("[I]t is settled that if there is no direct infringement of a patent there can be no contributory infringement .").

C. Domestic Industry – Technical Prong

Diebold asserts that its ATMs containing a Fifth Generation Intelligent Depository Module ("IDM5") practice the asserted claims of the '010 patent. CIB at 101-107. These include the Opteva 720, Opteva 740, Opteva 750, Opteva 760, Opteva 858, and Opteva 878 (collectively "IDM5 ATMs"). *Id.* Nautilus argues that Dr. Kurfess's domestic industry analysis addressed only the structure and functionality of the IDM5 and did not address the claim limitations directed to structures and functionality provided by the ATM itself. RIB at106-07.

There is no dispute that the IDM5 has been installed on IDM5 ATMs. CX-1875 (Rogers DWS) at A.103-04; CX-1981C (Hoover RWS) at A.38-39. Nor does Nautilus contend that the Diebold ATMs incorporating the IDM5 would not satisfy all of the claim limitations. *See, e.g.*, RRB at 41. Rather Nautilus's only argument is that Diebold failed to prove that its ATMs practice the asserted claims because its expert did not address the limitations directed to ATM functionality. *Id.* Contrary to Nautilus's argument, Dr. Kurfess, in fact, testified that the IDM5 ATMs satisfy each and every limitation of the asserted claims. CX-1877C (Kurfess DWS) at Q&A.476-632. Moreover, there is no requirement that Diebold's expert address each limitation of the asserted claims, so long as Diebold can cite record evidence that the unaddressed

limitations are satisfied. In its initial post-hearing brief, Diebold provided a claim chart identifying evidence that each limitation of the asserted evidence was met by the Diebold IDM5 ATMs. CIB at 101-06. In its reply brief, Nautilus fails to identify any limitation that it contends is not shown by the evidence cited by Diebold. RRB at 41.

The evidence identified by Diebold, relying on the testimony of Dr. Kurfess, is shown in the chart below:

Claim	Limitation	IDM5 ATMs
1	An automated banking machine comprising:	IDM5 ATMs are automated banking machines. CX-1877C (Kurfess DWS) at Q&A.482-83.
	at least one input device adapted to receive at least one input from users of the machine;	IDM5 ATMs all have input devices such as a pin-pad and card reader. CX-1877C (Kurfess DWS) at Q&A.484-86, Q&A.493-509; CX-1384C; CX-0073C; CX-0074C; CX-0075C; CX-0076C; CX-0077C; CX-0137C.
	at least [one] output device adapted to provide at least one output to users of the machine;	IDM5 ATMs include at least a display screen, receipt printer, or statement printer. CX-1877C (Kurfess DWS) at Q&A.487-89, Q&A.493-509; CX-1384C; CX-0073C; CX-0074C; CX-0075C; CX-0076C; CX-0077C; CX-0137C.
	at least one currency dispenser adapted to dispense currency from the machine to users of the machine;	The IDM5 ATMs each contain a currency dispenser. CX-1877C (Kurfess DWS) at Q&A.493-509; CX-1384C; CX-0073C; CX-0074C, CX-0075C; CX-0076C; CX-0077C; CX-0137C; CX-1873C (Hoover DWS) at Q&A.14-16.
	an item accepting opening adapted to receive into the machine, sheet items from users of the machine;	Each IDM5 ATM has an opening through which checks are received from a user. CX-1877C (Kurfess DWS) at Q&A.509-12; CX-0119C; CX-1981C (Hoover RWS) at Q&A.38-A.41.
	at least one sheet item transport in the machine, wherein the at least one transport is in operative connection with the item accepting opening,	The IDM5 ATMs have a series of transports, including a front transport, a rear transport, and a bin transport that take the check from the opening, through the alignment and scanning process, and into the check storage bin. CX-1877C (Kurfess DWS) at Q&A.513-17; CX-1359C at 972DBD00034584.
	and wherein the at least one transport includes	IDM5 ATMs contain a pair of "bin transport rub rails" that guide the check into the storage area. CX-1877C (Kurfess

	a pair of disposed sheet supporting rail portions;	DWS) at Q&A.518-20; CX-1359C at 972DBD00034780.
	a storage area, wherein the rail portions of the at least one transport extend in the storage area between a first sheet storage location in the storage area and a second sheet storage location in the storage area;	IDM5 ATMs contain a storage area with two storage bins. CX-1877C (Kurfess DWS) at Q&A.521-24; CX-0122C.
	a movably mounted plunger member in the storage area, wherein the plunger member is movable transversely between the rail portions;	IDM5 ATMs contain a movably mounted plunger, sometimes called a "bin plunger," or "stuffer," that moves transversely between the rail portions to push checks into the two storage bins. CX-1877C (Kurfess DWS) at Q&A.525-26; CX-1877C (Kurfess DWS) at Q&A.459-72; CX-1871C (Ryan DWS) at Q&A.70-85; CPX-0187C (Bin.cpp); CPX-0193C (LinearCam.cpp).
	at least one drive in operative connection with the plunger member, wherein the at least one drive is operative to selectively move the plunger transversely between the rail portions;	The plunger in the IDM5 ATMs is driven by a motor that moves the plunger transversely between the rails to push the check into bin 1 or bin 2. CX-1877C (Kurfess DWS) at Q&A.459-72, Q&A.527-28; CX-1871C (Ryan DWS) at Q&A.70-85; CPX-0187C (Bin.cpp); CPX-0193C (LinearCam.cpp).
	wherein the plunger member is movable between the rail portions in the storage area in both a first transverse direction and a second transverse direction opposed of the first transverse direction,	The plunger of the IDM5 ATMs moves in two different, opposed transverse directions between the rail portions. Movement of the plunger is controlled by software that causes the plunger motor to move the plunger. Movement of the plunger into a storage area causes a check to be stored in that area. CX-1877C (Kurfess DWS) at Q&A.440-82, Q&A.529-30; CX-1871C (Ryan DWS) at Q&A.70-85; CPX-0187C (Bin.cpp); CPX-0193C (LinearCam.cpp).
	wherein the plunger member can move a sheet from the rail portions and into the first sheet storage location while moving in the first transverse	The plunger of the IDM5 ATMs moves in two different, opposed transverse directions between the rail portions. Movement of the plunger is controlled by software that causes the plunger motor to move the plunger. Movement of the plunger into a storage area causes a check to be stored in that area. CX-1877C (Kurfess DWS) at Q&A.440-82, Q&A.529-30; CX-1871C (Ryan DWS) at Q&A.70-85; CPX-0187C

	direction, and wherein the plunger member can move a sheet from the rail portions and into the second sheet storage location while moving in the second transverse direction.	(Bin.cpp); CPX-0193C (LinearCam.cpp).
2	The machine according to claim 1 and further comprising:	*See* claim 1.
	a first backing plate movably mounted in the storage area and bounding the first storage location	IDM5 ATMs have backing plates in both bins that serve as boundary to the storage bins. CX-1877C (Kurfess DWS) at Q&A.534-36; CX-0126C.
	a first biasing mechanism in operative connection with the first backing plate and biasing the first backing plate to move toward the rail portions;	The backing plates in the IDM5 ATMs are spring-loaded and serve to bias the backing plates towards the vertical transport and rail portions. CX-1877C (Kurfess DWS) at Q&A.537-42; CX-0128C; CX-0117C.
	wherein movement of the plunger member in the first transverse direction causes the first backing plate to move against the force of the first biasing mechanism in the first transverse direction and the sheet to be in supporting connection with the first backing plate.	In IDM5 ATMs, the movement of the plunger as it pushes a check into a bin will cause the check to come into contact with either the spring-biased backing plate or checks that are stacked between the backing plate and the wall portion, thus causing the backing plate to move against the force of the spring. CX-1877C (Kurfess DWS) at Q&A.543.
3	The machine according to claim 2 and further comprising:	*See* claim 2.
	a second backing plate movably mounted in the storage area and bounding the second storage location;	IDM5 ATMs have a second backing plate in bin 2 that bounds the second storage area. CX-1877C (Kurfess DWS) at Q&A.544-546; CX-0126C.
	a second biasing	The IDM5 has a second biasing mechanism, much like the

	mechanism in operative connection with the second backing plate and biasing the second backing plate to move toward the rail portions;	first biasing mechanism, that serves to bias the second backing plate, in bin 2, towards the vertical transport and rail portions. CX-1877C (Kurfess DWS) at Q&A.547.
	wherein movement of the plunger member in the second transverse direction causes the second backing plate to move against the force of the second biasing mechanism in the second transverse direction, and the sheet to be in supporting connection with the second backing plate.	In IDM5 ATMs, the movement of the plunger member as it pushes the check into bin 2 will cause the second backing plate in that bin to move forward, against or opposite the second transverse direction, to meet the check against the force of the second biasing mechanism. CX-1877C (Kurfess DWS) at Q&A.548-49; CX-0078C.
4	The machine according to claim 3 and further comprising:	*See* claim 3.
	at least one processor in operative connection with the at least one drive;	IDM5 ATMs include a processor aboard the main CCA and those on the CCAs connected to the main board, which are also connected to the plunger drive motor. CX-1877C (Kurfess DWS) at Q&A.420-424, Q&A.550-51.
	at least one sensing device in operative connection with the at least one processor, wherein the at least one sensing device is operative to sense the indicia on the sheet;	The main CCA of the IDM5 ATMs, which includes a processor, is operatively connected with the sensors in the IDM5 that obtain the check image and MICR data from the check. CX-1877C (Kurfess DWS) at Q&A.420-24, Q&A.552-53.
	wherein the at least one processor is operative responsive to indicia sensed on the sheet to operate the drive to move the sheet to one of the first storage location and second storage location.	The main circuit board of the IDM5 ATMs transmits the transaction data (including the MICR line), image file of the check, and other indicia via computer network. IDM5 ATMs then receives information back from the host, which instructs the IDM5 ATMs as to which storage bin the check is to go into. The plunger then moves according to those instructions and is thus responsive to the sensed indicia. CX-1877C (Kurfess DWS) at Q&A.554-59; CX-1874C (Rowe DWS) at Q&A.52-54, 61.
5	The machine according	*See* claim 4.

	to claim 4 and further comprising:	
	a sheet path in the machine, wherein the sheet path extends between the item accepting opening and the storage area,	The sheet path of the IDM5 ATMs extends from the opening through to the check storage area. CX-1877C (Kurfess DWS) at Q&A.560-61; CX-1359C.
	and wherein the at least one sensing device is adapted to sense indicia on the sheet in the sheet path,	IDM5 ATMs contain an upper and lower scanner, as well as a MICR head, located along the sheet path. CX-1877C (Kurfess DWS) at Q&A.562-63.
	and wherein the at least one processor is operative to position the plunger member on a second transverse side of the rail portion opposite the first storage location prior to the sheet being in engagement with the rail portions,	The processors of the IDM5 ATMs position the plunger in a pre-stuffed position, within one of the storage bins, before the check descends into the storage bin. The plunger then moves from the pre-stuffed position into the opposite storage bin, pushing the check into the opposite storage bin. CX-1877C (Kurfess DWS) at Q&A.459-72, Q&A.564-67; CX-1359C at 972DBD00034577; CX-1871C (Ryan DWS) at Q&A.70-85; CPX-0187C (Bin.cpp); CPX-0193C (LinearCam.cpp).
	whereby movement of the plunger member in the first transverse direction when the sheet is between the rail portions, moves the sheet to the first storage location.	In the IDM5 ATMs, the transverse movement of the plunger from the pre-stuffed positon to the stuffed position causes the check to be stored in the storage bin. CX-1877C (Kurfess DWS) at Q&A.564-A. 68.
6	The machine according to claim 5	*See* claim 5.
	wherein the at least one processor is operative to position the plunger member on a first transverse side of the rail portions opposite the second storage location prior to the sheet being in engagement with the rail portions,	When the IDM5 ATMs deposit a check into either storage bin, the plunger must be positioned in a waiting position in the opposite bin prior to the check being transported into the bin. CX-1877C (Kurfess DWS) at Q&A.569-71.
	whereby movement of	In the IDM5 ATMs, when the check is to be plunged into bin

	the plunger member in the second transverse direction when the sheet is between the rail portions moves the sheet to the second storage location.	2, the push bar moves in the second transverse direction, through the rail portions, into bin 2 to push the check to its destination. CX-1877C (Kurfess DWS) at Q&A.572.
7	The machine according to claim 6 and further comprising:	*See* claim 6.
	a pair of disposed first wall surfaces bounding the first storage location and in opposed facing direction of the first backing plate;	The wall surfaces of the IDM5 ATMs are the metal plates that sit on both sides of the vertical transport. The wall surface in bin 1 serves as a boundary to bin 1 and faces opposite the first backing plate. CX-1877C (Kurfess DWS) at Q&A.573-77; CX-0123C.
	wherein when the plunger member moves the sheet from engagement with the rail portions to the first storage location, the plunger member moves in the first transverse direction between the first wall surfaces and moves the sheet in the first transverse direction beyond the first wall surfaces;	In the IDM5 ATMs, the push bar moves the check from engagement with the rail portions into the first storage location, bin 1, by moving between the two rail portions and beyond the two wall surfaces. CX-1877C (Kurfess DWS) at Q&A.578-79.
	and wherein after the sheet is in the first storage location, when the plunger member moves in the second transverse direction from the first storage location, the sheet is positioned between the first wall surfaces and the first backing plate.	In the IDM5 ATMs, once the check is in bin 1, the push bar then moves away from that bin, in the second transverse direction, towards bin 2. When this happens, the check is then positioned between the first wall surfaces and the backing plate. CX-1877C (Kurfess DWS) at Q&A.580-81.
8	The machine according to claim 7 and further comprising:	*See* claim 8.
	a pair of opposed	IDM5 ATMs contain a pair of opposed second wall surfaces

	second wall surfaces bounding the second storage location and in opposed facing direction of the second backing plate;	that form a boundary of the second storage location, bin 2, and sit opposite of the second backing plate. CX-1877C (Kurfess DWS) at Q&A.582-85; CX-0125C.
	wherein when the plunger member moves the sheet from engagement with the rail portions to the second storage location, the plunger member moves in the second transverse direction between the second wall surfaces and moves the sheet in the second transverse direction beyond the second wall surfaces;	In the IDM5 ATMs, the push bar moves the check from engagement with the rail portions into bin 2, the second storage location, by moving between the two rail portions, beyond the two wall surfaces. CX-1877C (Kurfess DWS) at Q&A.586-87.
	and wherein thereafter when the sheet is in the second storage location, and the plunger member moves in the first transverse direction from the second storage location, the sheet is positioned between the second wall surfaces and the second backing plate.	In the IDM5 ATMs, after the plunger member has moved in the second traverse direction to push the sheet up against the second backing plate, it then moves in the opposite direction the first traverse direction, leaving the check between the first wall surfaces and the backing plate. CX-1877C (Kurfess DWS) at Q&A.588.
9	The machine according to claim 8	*See* claim 8.
	wherein the rail portions extend generally vertically in the storage area, and wherein when the plunger member moves transversely between the rail portions the plunger member moves generally horizontally.	The rail portions of the IDM5 ATMs are part of the vertical transport, which is positioned vertically in the storage area. The plunger moves horizontally between the rail portions. CX-1877C (Kurfess DWS) at Q&A.589-92.

10	The machine according to claim 9	*See* claim 9.
	wherein the at least one sensing device comprises a scanning sensor,	IDM5 ATMs contain several sensing devices that serve as scanning sensors including the upper and lower image scanners as well as the MICR head. CX-1877C (Kurfess DWS) at Q&A.593-94.
	and wherein the at least one processor is operative responsive to the scanning sensor to generate data corresponding to an image of at least a portion of the sheet.	IDM5 ATMs contain upper and lower scanners that capture images of the check, and the processor of the IDM5 generates image data of the check. CX-1877C (Kurfess DWS) at Q&A.595-98; CX-1359C at 972DBD00034573.
11	The machine according to claim 10	*See* claim 10.
	wherein the at least one sensing device further comprises a magnetic sensing device.	IDM5 ATMs include a MICR head, which reads magnetic ink from the check. CX-1877C (Kurfess DWS) at Q&A.599
12	The machine according to claim 11 and further comprising:	*See* claim 11.
	at least one printer adjacent the sheet path, wherein the at least one printer is in operative connection with the at least one processor, and wherein the at least one printer is adapted to print indicia on the sheet in the sheet path.	IDM5 ATMs include an ink jet printer and a stamper. CX-1877C (Kurfess DWS) at Q&A.420-24, Q&A.600-04; CX-1359C at 972DBD00034666-34670, 34573
13	The machine according to claim 12 and further comprising	*See* claim 12.
	a first sheet moving transport and a second sheet moving transport, wherein the first sheet moving transport moves the sheet in a first sheet moving direction and the second sheet moving transport moves the	The Align Station of the IDM5 ATMs has two perpendicular sheet moving transports including four forward transport rollers (the first transport) and two alignment rollers (the second transport), which move the check right or left (a second sheet moving direction), perpendicular to the first moving direction. CX-1877C (Kurfess DWS) at Q&A.605-06.

	sheet in a second sheet moving direction generally perpendicular of the first sheet moving direction.	
14	The machine according to claim 13 and further comprising:	*See* claim 13.
	a plurality of noncontact sensors disposed along the first direction, wherein each of the plurality of noncontact sensors is in operative connection with the at least one processor;	IDM5 ATMs contain a plurality of noncontact sensors in the align station along the first direction. CX-1877C (Kurfess DWS) at Q&A.607-09; CX-1359C at 972DBD00034571; Align.cpp (isrAlign(), isrAlignProcess(), isrAlignDocument().
	at least one second transport drive in operative connection with the second transport and the at least one processor;	The second transport drive of the IDM5 ATMs is the align stepper motors which are in connection with the processor and operate the alignment wheels/rollers, which is the second transport. CX-1877C (Kurfess DWS) at Q&A.610-11.
	wherein the at least one processor is operative to cause the sheet to be aligned in the first sheet moving direction by moving the sheet in the second sheet moving direction and sensing the sheet with a plurality of noncontact sensors.	The alignment motors of the IDM5 ATMs, which drive the alignment wheels/rollers, operate with the three alignment sensors to move the document into an aligned position by moving it in the second moving direction, which is generally perpendicular to the forward direction. CX-1877C (Kurfess DWS) at Q&A.420-24, Q&A.612-66; CX-1359C at 972DBD00034571
19	The machine according to claim 14	*See* claim 14.
	wherein the sheet path includes an escrow area between the at least one sensing device and the storage area.	The sheet path in the IDM5 ATMs includes an escrow area, which is where the check sits while the IDM5 waits for instructions on how the check should be stored. CX-1877C (Kurfess DWS) at Q&A.617-20; CX-1359C at 972DBD00034706, 972DBD00034658.
20	The machine according to claim 14	*See* claim 14.
	wherein the sheet	The IDM5 ATMs include a processor on the main CCA,

	comprises a check and wherein the at least one processor is operative to cause to be sent from the machine data corresponding to an image of at least a portion of the check.	which operates to send image data of deposited checks from the machine. CX-1877C (Kurfess DWS) at Q&A.420-24, Q&A.621-22.
24	The machine according to claim 1 and further comprising:	*See* claim 1.
	at least one processor;	IDM5 ATMs have a processor including the main CCA. CX-1877C (Kurfess DWS) at Q&A.420-24, Q&A.623.
	at least one scanning sensor operative to sense indicia on the sheet, wherein the at least one scanning sensor is in operative connection with the at least one processor;	IDM5 ATMs contain a scanning sensor, operative to sense indicia on a sheet, which is in operative connection with the at least one processor. CX-1877C (Kurfess DWS) at Q&A.624-25
	wherein the at least one processor is operative to cause to be sent from the machine, data corresponding to an image of at least a portion of the sheet.	The processor of the IDM5 ATMs, including the one on the main CCA board, is operative to send data corresponding to the check to a host. CX-1877C (Kurfess DWS) at Q&A.420-24, Q&A.626.
25	The machine according to claim 24	*See* claim 24.
	wherein the sheet comprises a check.	The only function of the IDM5 in an IDM5 ATM is to process checks. CX-1877C (Kurfess DWS) at Q&A.627.
26	The machine according to claim 25 and further comprising	*See* claim 25.
	at least one magnetic sensing device in operative connection with the at least one processor,	IDM5 ATMs have a magnetic sensing device, a MICR head, which senses the MICR line on a check, and is in operative connection with the main CCA. CX-1877C (Kurfess DWS) at Q&A.420-24, Q&A.628-29.
	wherein the at least one magnetic sensing device is operative to read micr data on the check, and wherein the	IDM5 ATMs send data corresponding to the micr data read from the check to the host. CX-1877C (Kurfess DWS) at Q&A.630-32; CX-1359C at 972DBD00034570.

	at least one processor is operative to cause to be sent from the machine, data corresponding to the micr data read from the check.	

Based on this evidence, I find that Diebold's IDM5 ATMs practice each of the asserted claims.

D. Invalidity

Nautilus contends that U.S. Patent No. 4,731,523 to Kozima (RX-0274, "Kozima") and Japanese Patent H02-75094 to Toshinori (RX-0281, "Toshinori") anticipate claim 1. RIB at 107-49. Nautilus also contends that the asserted claims of the '010 patent are obvious in view of either Kozima or Toshinori in combination with one or more secondary references. *Id.* According to Nautilus, both Kozima and Toshinori disclose the plunger mechanism and pair of disposed sheet supporting rail portions claimed in the '010 patent, while the secondary references disclose ATM-related features required by the asserted claims. *Id.* at 107. To satisfy the limitations directed to ATM functionalities, Nautilus relies on four references: U.S. Patent Publication No. 2005/0047642 to Jones (RX-0280, "Jones"), U.S. Patent No. 5,136,144 to Swinton (RX-0276, "Swinton"), U.S. Patent No. 7,051,928 to Kallin (RX-0279, "Kallin"), and Japanese Patent 3330815 to Arikawa (RX-0283, "Arikawa"). *Id.*

1. Prior-art status of the obviousness references

There is no dispute that references relied upon by Nautilus are prior art to the '010 patent. The '010 patent issued from an application filed on March 8, 2006. '010 patent, cover. The application claims priority to nine provisional applications filed between March 9, 2005 and May 6, 2005. *Id.*

The references that Nautilus contends disclose the claimed plunger mechanism and sheet supporting rails qualify as prior art under the pre-America Invents Act ("pre-AIA") version of 35 U.S.C. § 102.[12] Kozima is a U.S. patent entitled "Bill Receiving Device" and was issued on March 15, 1988, from an application filed on August 1, 1986. RX-0274, cover. Kozima claims priority to two Japanese applications filed on August 7, 1985 and September 25, 1985. *Id.* Kozima is prior art under 102(b). Toshinori is a Japanese patent application entitled "Method of Storing Sheets of Paper and a Storing Device for Sheets of Paper," and was published on March 14, 1990. RX-0281, cover. Toshinori is prior art under 102(b).

The references that Nautilus contends disclose the limitations directed to ATM features also qualify as prior art. Jones is a U.S. patent application entitled "Document Processing Method and System" and was published on March 3, 2005. RX-0280, cover. Jones is prior art under § 102(a). Swinton is a U.S. patent entitled "Depository Apparatus for Envelopes and Single Sheets" and was issued on August 4, 1992. RX-0276, cover. Swinton is prior art under 102(b). Kallin is a U.S. patent entitled "Document Diverter Apparatus for Use in a Self-Service Terminal" and issued from an application filed on September 15, 2004. RX-0279, cover. Kallin is prior art under 102(e). Arikawa is a Japanese patent entitled "Banknote Processing Machine," and was issued on September 30, 2002. RX-0283, cover. Arikawa is prior art under 102(b).

2. Level of ordinary skill in the art

Relying on the testimony of its expert, Dr. Kurfess, Diebold argues that a person of ordinary skill in the art would have had a bachelor degree in mechanical engineering or a related

[12] Because the application that led to the '010 patent was filed before March 16, 2013, the changes to 35 U.S.C. §§ 102 and 103 enacted in the America Invents Act do not apply. Manual of Patent Examination Procedure at § 2159.01. Accordingly, references to 35 U.S.C. §§ 102 and 103 in this section are to the pre-AIA versions.

field, and at least four years of working experience in the area of mechanical engineering. CIB at 84 (citing CX-1979C (Kurfess RWS) at Q&A.41). Although Nautilus did not address the level of ordinary skill in its initial or reply briefs, its expert, Dr. Reinholtz, testified that a person of ordinary skill in the art would have had a bachelor degree in mechanical engineering or a related engineering field and two to five years of work and/or research experience in the field of mechanical engineering or electro-mechanical systems. RX-1184C (Reinholtz DWS) at Q&A.28. Consistent with the testimony of both experts, I find that a person of ordinary skill in the art would have had a bachelor degree in mechanical engineering or a related field, and at least four years of working experience in the area of mechanical engineering.

3. Kozima

Kozima is directed to "a bill receiving device capable of stacking bills of two kinds by denomination." RX-0274 at col. 1:43-4. Kozima discloses a storage and sorting module similar to the one disclosed in the '010 patent. After a bill is deposited into the device it is conveyed to the storage area through "bill passage 3," which is "formed between a convey and drive means 30_1 and bill holding means 30_2." *Id.* at 4:19-20. Convey and drive means 30_1 includes a "pair of conveyor belts 33," and the bill holding means "consists of a pair of ribs 35 having rollers 34 provided in locations opposite to the conveyor belts 33." *Id.* at 4:25-26. Held "between the conveyer belts 33 and the rollers 34," the bill is "convey[ed] . . . downwardly" into the storage area. *Id.* at col. 4:33-38. There are two storage locations (receiving chamber 41 and receiving chamber 42) on either side of bill passage 3 (highlighted in yellow):

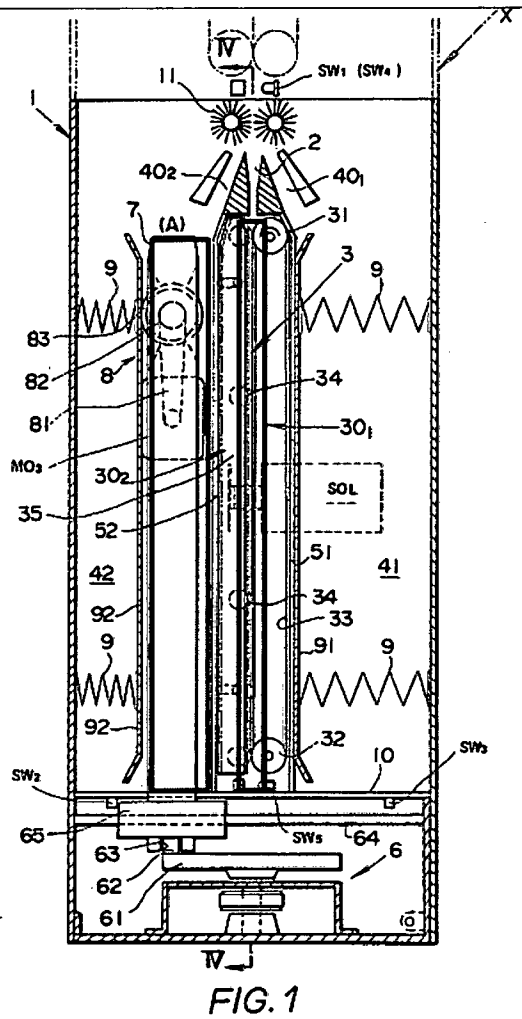


FIG. 1

RX-0274, Fig. 1 (annotated)

Pushing member 7 (highlighted in blue in the figure above) reciprocates between receiving chamber 41 and receiving chamber 42. RX-0274, col. 3:59-65. To store a bill in receiving chamber 41, pushing member 7 moves to a standby position in receiving chamber 42. *Id.* at col. 5:18-28. After the leading edge of the bill reaches the end of the bill passage, the pushing member moves to receiving chamber 41. *Id.* In so doing, the pushing member pushes the bill from ribs 35 into receiving chamber 41. *Id.* To store a bill in receiving chamber 42, the pushing member moves to a standby position in receiving chamber 41 and, after the bill is in position, moves to receiving chamber 42. *Id.* at col. 5:28-41.

Nautilus contends that claim 1 is anticipated by Kozima and that all of the asserted claims are obvious in view of Kozima in combination with one or more of Jones, Swinton, Kallin, or Arikawa.[13] For the reasons set forth below, I find that claim 1 is invalid as anticipated and that asserted claims 13, 14, 19, 20, 25, and 26 are not invalid as obvious.

a. Kozima anticipates claim 1.

Nautilus alleges that Kozima explicitly or inherently discloses the limitations of claim 1. RIB at 108-30. Diebold does not dispute that Kozima discloses the limitations of claim 1. CIB at 107-30; CRP at 38-47. As shown in the claim chart below, Nautilus has provided uncontroverted evidence, relying on the testimony of Dr. Reinholtz, that Kozima expressly or inherently disclosed each limitation of claim 1:

Claim 1	Kozima
An automated banking machine comprising:	Diebold and Nautilus agreed that the term "automated banking machine" should be construed to mean "any device which is used for carrying out transactions involving transfers of value." Order No. 17 (June 13, 2016) at 2. Neither party contends, however, that claim 1's preamble is limiting. RIB at 72; CIB at 87-92. If the preamble is found to be limiting, Kozima discloses a "device which is used for carrying out transactions involving transfers of value," in the form of a "bill discrimination device" that can be used in "a vending machine or a money exchanger." Kozima at col. 1:5-7, col. 4:6-12; RX-1184C (Reinholtz DWS) at Q&A.260.

[13] In its initial post-hearing brief, Nautilus asserted that "many of the claims are fully anticipated under 35 U.S.C. § 102." RIB at 107. Although Nautilus did not expressly identify the specific claims it contended were anticipated and the specific prior art references it contended were anticipatory, in sections ostensibly relating to obviousness, Nautilus asserted that Kozima disclosed each limitation of claim 1. RIB at 108-16. To the extent that it is found that Nautilus failed to preserve its anticipation argument, I find in the alternative that Kozima, by itself, renders claim 1 obvious.

at least one input device adapted to receive at least one input from users of the machine;	A person of ordinary skill in the art would understand that the vending machine or money exchanger as contemplated for use with the bill device of Kozima would necessarily include the claimed input device. RX-1184C (Reinholtz DWS) at Q&A. 273.
at least [one] output device adapted to provide at least one output to users of the machine;	A person of ordinary skill in the art would understand that the vending machine and/or money exchanger as contemplated for use with the bill device of Kozima would necessarily include the claimed output device. RX-1184C (Reinholtz DWS) at Q&A. 277.
at least one currency dispenser adapted to dispense currency from the machine to users of the machine;	Kozima includes a currency dispenser adapted to dispense currency from the machine to users of the machine. RX-0274 at col. 8:3-7, col. 9:15-23; RX-1184C (Reinholtz DWS) at Q&A.279.
an item accepting opening adapted to receive into the machine, sheet items from users of the machine;	Kozima has an item accepting opening to receive sheet items (bills) from users. RX-0274 at col. 6:7-13; RX-1184C (Reinholtz DWS) at Q&A.281.
at least one sheet item transport in the machine, wherein the at least one transport is in operative connection with the item accepting opening,	Convey and drive means 30_1 and bill holding means 30_2 disclosed in Kozima is a sheet item transport that is operatively connected to the sheet item opening. RX-274 at col. 4:19-31; RX-1184C (Reinholtz DWS) at Q&A.283.
and wherein the at least one transport includes a pair of disposed sheet supporting rail portions;	Ribs 35 of bill holding means 30_2 are a pair of disposed sheet supporting rail portions. RX-274 at col. 4:19-31, Figs. 1 and 4; RX-1184C (Reinholtz DWS) at Q&A.283.
a storage area, wherein the rail portions of the at least one transport extend in the storage area between a first sheet storage location in the storage area and a second sheet storage location in the storage area;	Ribs 35 extend between bill receiving chambers 41 and 42, which are bill storage locations. RX-274 at col. 3:41-68, Fig. 3; RX-1184C (Reinholtz DWS) at Q&A.284.
a movably mounted plunger member in the storage area, wherein the plunger member is movable transversely between the rail portions;	Bill pushing member 7 is located in the storage area and can move transversely between the ribs 35. RX-274 at col. 3:41-68, Fig. 2; RX-1184C (Reinholtz DWS) at Q&A.285.
at least one drive in operative connection with the plunger member, wherein the at least one drive is operative to selectively move the plunger transversely between the rail portions;	Reciprocating device 6 is connected to bill pushing device 7 and can selectively move bill pushing device 7 transversely between ribs 35. RX-274 at col. 3:58-68, Fig. 2; RX-1184C (Reinholtz DWS) at Q&A.286.
wherein the plunger member is movable between the rail portions in the storage area in both a first transverse direction and a	Bill pushing member 7 can move in a first transverse direction (from bill receiving chambers 41 to bill receiving chambers 42) and a second

second transverse direction opposed of the first transverse direction,	transverse direction (from bill receiving chambers 42 to bill receiving chambers 41). RX-274 at col. 7:5-10; col. 7:43-57, Fig. 5; RX-1184C (Reinholtz DWS) at Q&A.287
wherein the plunger member can move a sheet from the rail portions and into the first sheet storage location while moving in the first transverse direction, and wherein the plunger member can move a sheet from the rail portions and into the second sheet storage location while moving in the second transverse direction.	By moving in the first transverse direction, bill pushing device 7 can move a bill from ribs 35 into bill receiving chambers 41. RX-274 at col. 7:43-57, col. 11:38-57, Fig. 5; RX-1184C (Reinholtz DWS) at Q&A.287. By moving in the second transverse direction, bill pushing device 7 can move a bill from ribs 35 into bill receiving chambers 42. RX-274 at col. 7:5-10; col. 7:43-57, Fig. 5; RX-1184C (Reinholtz DWS) at Q&A.287.

Accordingly, I find that Kozima anticipates claim 1.

b. Kozima alone or in combination with other references does not render the asserted claims obvious.

Diebold does not dispute that Kozima discloses structures corresponding to the limitations of claim 1. CIB at 107-30; CRP at 38-47. The dependent claims, however, require elements that are not found in Kozima's "bill discrimination device." *See, e.g.*, '010 patent, col. 26:37-43 (claim 26) (requiring "at least one magnetic sensing device is operative to read micr data on the check"). In order to provide the missing limitations, Nautilus relies on various combinations of Kozima with one or more secondary references.

Other than the limitations of claim 13 and 14, Diebold does not dispute that the limitations of the asserted claims are disclosed in the proposed combinations. CIB at 107-30; CRP at 38-47. Diebold argues, however, that one of ordinary skill in the art would not have been motivated to combine Kozima with the secondary references. CIB at 107-19. For the reasons set forth below, I find that Nautilus has failed to show by clear and convincing evidence that one of ordinary skill in the art would have been motivated to combine Kozima with Jones, Swinton,

Kallin, or Arikawa.[14] As a result, all of Nautilus's proposed obviousness combinations fail. Furthermore, I find that Kozima and the secondary references do not disclose the limitations of claim 14 and that the limitations of claim 13 are not obvious in view of Kozima alone or in combination with other references.

i. There would have been no motivation for one of ordinary skill in the art to have combined Kozima with Jones, Swinton, or Kallin.

Nautilus argues that one of ordinary skill in the art would be motivated to combine Kozima's "bill receiving device with one of the ATMs disclosed in Jones, Swinton, and Kallin. RIB at 110-11. In support of this contention, Nautilus cites portions of Kozima's specification describing the disclosed "bill receiving device" as being "'small-sized and compact . . . with abundant functions'" and having a "'simplified structure.'" RIB at 100-11 (quoting RX-0274, col. 2:29-33; 12:31-32). While Kozima describes the "bill receiving device" as "small-sized and compact" and having a "simplified" structure, there is no evidence that it is smaller or simpler than the corresponding structures in Jones, Swinton, and Kallin. In *lieu* of providing meaningful comparisons of Kozima's "bill storage device" to the corresponding mechanisms disclosed in Jones, Swinton, and Kallin, Nautilus and its expert simply rely on Kozima's description of the "bill storage device" as being smaller, more compact, and simpler than certain unidentified devices. Kozima does not identify the devices to which it is comparing the "bill storage device,"

[14] The U.S. Patent and Trademark Office ("PTO") instituted *inter partes* review proceedings ("IPR") against the asserted claims of the '010 patent based on combinations relying on Kozima in view of Jones, Swinton, and Arikawa. *Nautilus Hyosung Inc. v. Diebold, Inc.*, IPR2016-00529, Institution Decision (Aug. 11, 2016). The PTO's decision to institute IPR proceedings is not a final determination on the merits. As acknowledged by counsel for Nautilus, the PTO's preliminary determination is not binding. Hrg. Tr. (Aug. 29, 2016) at 73:15-24. My analysis does not rely upon the PTO's decision.

and there is no basis for finding that the unidentified devices are those disclosed in Jones, Swinton, and Kallin.

Nautilus also argues that one of ordinary skill in art would also have been motivated to combine Kozima with Jones or Swinton because all three references disclose the use of multiple storage areas to store deposited documents or bills. *Id.*[15] Jones and Swinton, however, disclose ATMs that are already capable of storing documents and currency in two or more bins. *See, e.g.*, RX-276, col. 5:14-33, col. 10:43-col. 11:6, Fig. 2; RX-0280 at ¶¶ 140-145, Figs. 1s, 1t. Unless Kozima's "bill receiving device" offers an advantage over the corresponding mechanisms disclosed in Jones and Swinton there would have been no motivation to modify the ATMs. *Ex parte Tessler*, Appeal 2012-006616, at (Oct. 2, 2014) (". . . Kolk's system is already remotely controlled. We thus find the Examiner's rejection insufficient to explain what in the prior art would have prompted a person having ordinary skill in the art to include Petite's remote system into Kolk's remote temperature regulating system.") (internal citation omitted).

Although Dr. Reinholtz asserts that Kozima's "bill receiving device" would provide the Swinton ATM with "an improved mechanism for sorting the different types of checks," his assertion is conclusory and unsupported by any explanation as to how and why it would have been an improvement. RX-1184C (Reinholtz DWS) at Q&A.269. Similarly, while Dr. Reinholtz asserts that "Kozima teaches precisely the mechanism for simply and easily satisfying

[15] Although not relied on by Nautilus in support of its argument that one of ordinary skill would have been motivated to combine Kozima with Kallin, Kallin discloses storing checks in two different bins. Checks that are accepted for deposit by the ATM are stored in the storage bin, whereas checks that are rejected for deposit and not returned to the user are stored in a "reject bin." RX-0279, Fig. 9 (block 228 ("Store Cheque in Storage Bin"), block 244 ("Transport Cheque to Reject Bin")). Because Nautilus did not cite this portion of Kallin's disclosure in support of its argument, it will not be considered.

Jones' requirement for dual bins," he fails to explain why this is not already satisfactorily addressed by the mechanism disclosed in Jones. *Id.* at A.265.

For the foregoing reasons, Nautilus has failed to show by clear and convincing evidence that one of ordinary skill in the art would have had motivation to combine the ATMs disclosed in Jones, Swinton, and Kallin with Kozima's "bill receiving box."

ii. Claim 13's limitations are not rendered obvious by Kozima alone or in combination with Swinton or Arikawa.

Claim 13, which depends from claim 1 through intervening dependent claims 2-12, requires a first sheet moving transport that moves a sheet in a first direction and a second sheet moving transport that moves the sheet in a second direction. '010 patent, col. 25:27-33. The claim further requires that the second sheet moving direction be perpendicular to the first. *Id.* Nautilus contends that this limitation is disclosed in Kozima, Swinton, and Arikawa. Kozima discloses a single belt that doglegs in order to transport sheets in a first direction and then in a second direction:

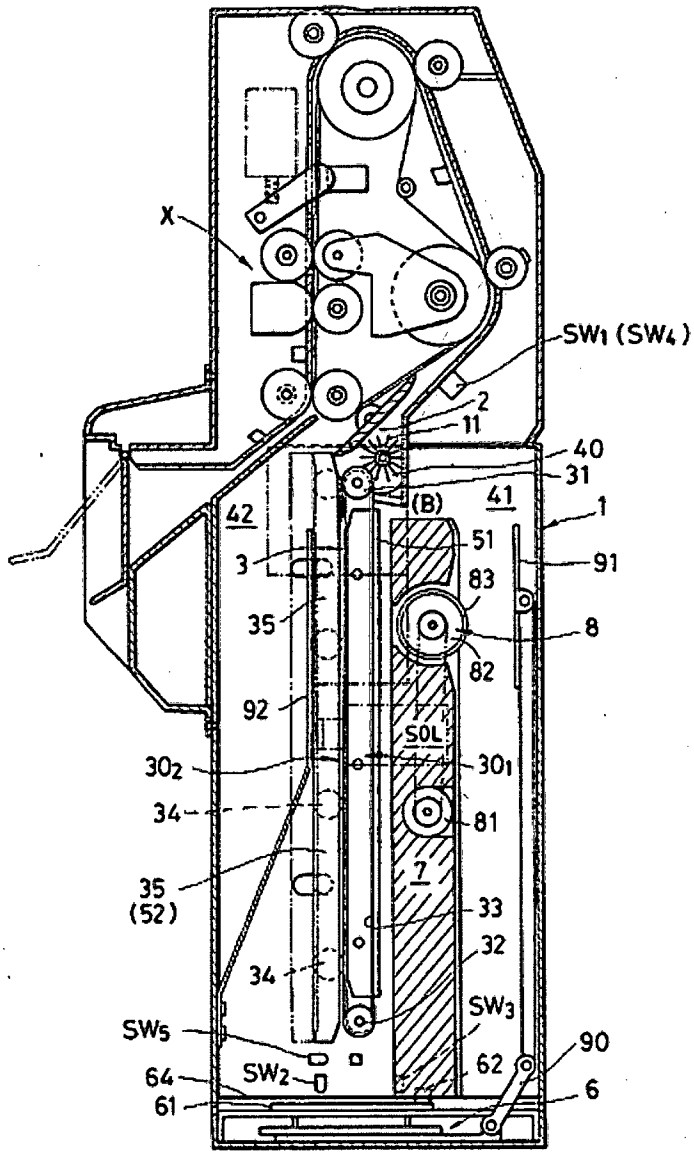


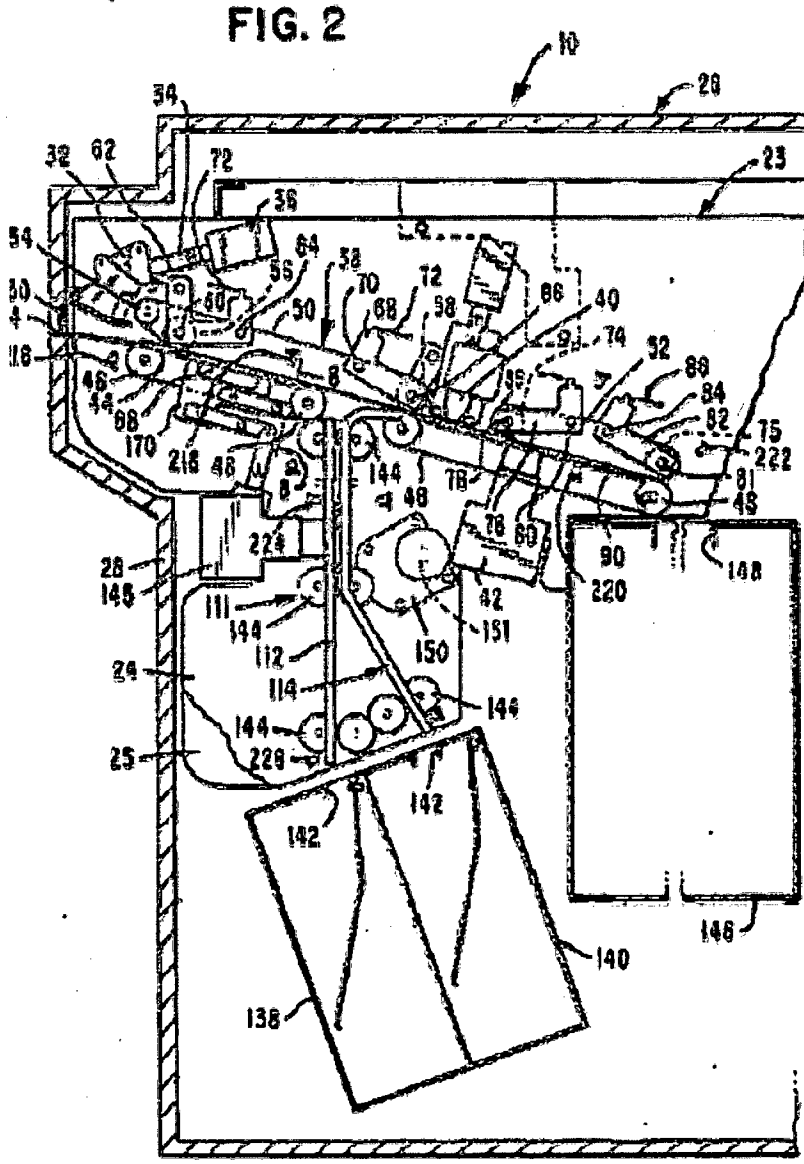
FIG. 13

RX-0274, Fig. 13

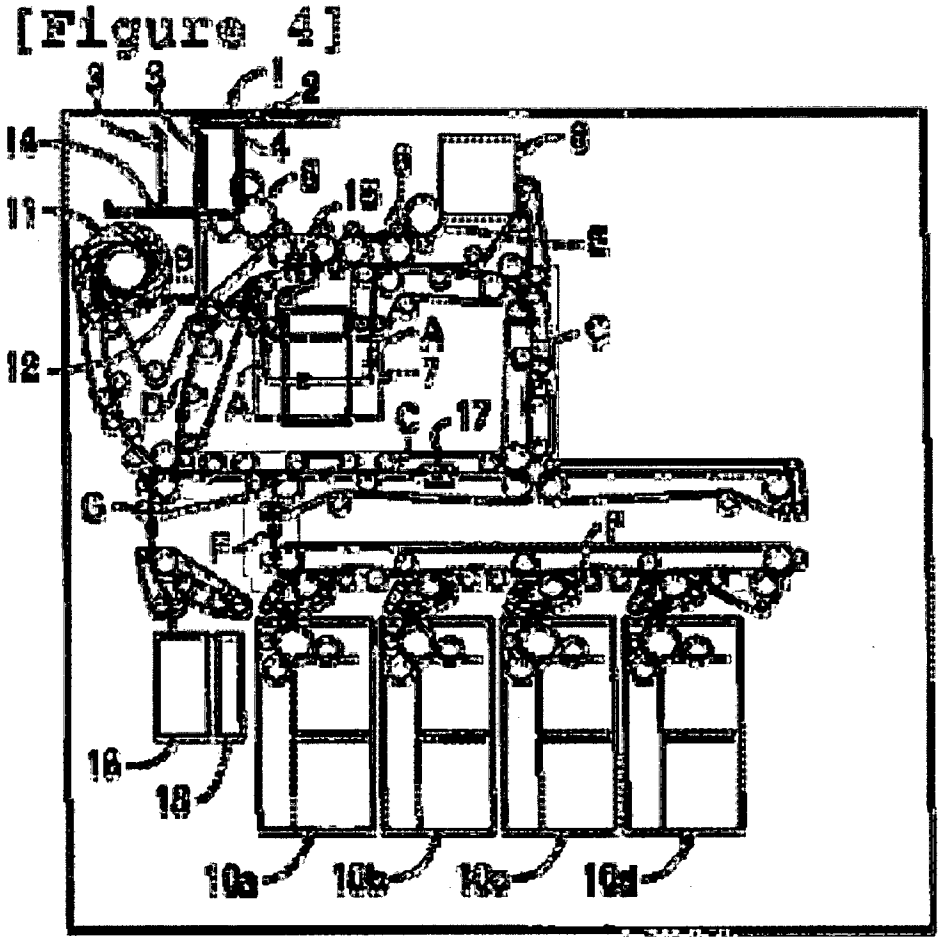
Although Nautilus asserts that "claim 13 does not exclude separate transports that are formed by a continuous moving belt," its assertion is conclusory. RIB at 123-24. The '010 patent distinguishes between "transport paths" and "transports." '010 patent, col. 2:12-16 ("[A]

check is received through an opening in the housing of the ATM and moved in a transport path therein in a first direction by a first transport."); col. 2:21-23 ("The second transports engage the document and are operative to move the document in the transport path a direction transverse of the first direction."). The specification further describes transports as separate and distinct structures such that a check being transported by the one transport must disengage from that transport before engaging with another transport. *Id.* at col. 2:18-21 ("The document is then disengaged from the first transport and engaged with a pair of second transports which are disposed from one another in the first direction."). Each transport disclosed in the specification has its own belt flights. *Id.* at col. 6:28-34 ("[A] first transport 440 operates to move the document into the document alignment area. In the exemplary embodiment the document is moved in engaged relation between a belt flight 442 and rollers 444."); col 15:1-2 ("The transport 556 includes a pair of disposed belts, each of which has belt flight 560."). Thus, I find that although Kozima discloses a first and a second transport path, it does not disclose a first and second transport as required by the claim.

In the alternative, Nautilus argues that a person of ordinary skill in the art would have modified Kozima to incorporate the perpendicular transports disclosed in Swinton and Arikawa:



RD-1273 (showing RX-0276, Fig. 2 with highlighting)



RDX-1275 (showing RX-0283, Fig. 4 with transports highlighted)

Nautilus, however, does not provide a motivation for why one of ordinary skill in the art would have done so. Kozima already has a second transportation path that is substantially perpendicular to the first transportation path. Both paths, however, are implemented by the same transport. Nautilus does not provide a reason as to why one of ordinary skill would replace the two path-one transport architecture disclosed in Kozima with an architecture requiring an additional transport.

With respect to Swinton, Nautilus does not identify any motivation to modify Kozima to incorporate the perpendicular transport disclosed in Swinton. RIB at 124-25. With respect to Arikawa, Nautilus argues that one of ordinary skill in the art would have been motivated to

modify Kozima to incorporate Arikawa's perpendicular transport paths because doing so would "provid[e] additional transport paths for separating soiled banknotes from non-soiled . . . banknotes." *Id.* at 127. Kozima, however, already discloses a mechanism that stores documents in different storage locations, and Nautilus offers no explanation as to why the architecture disclosed in Arikawa would be an improvement over the architecture disclosed in Kozima.

iii. Kozima alone or in combination with Jones, Swinton, or Kallin does not disclose the limitations of claim 14.

Claim 14 depends from claim 13 and is directed to the mechanism used to align checks and requires "a plurality of noncontact sensors disposed along the first direction." '010 patent, col. 25:36-39. A processor uses the sensors to "sens[e] the sheet" as it moves the sheet in the second sheet moving direction in order to align it in the first sheet moving direction. *Id.* at col. 25:42-46. The combinations proposed by Nautilus fail to disclose (1) the claimed plurality of non-contact sensors and (2) moving the sheet in the second direction to align it in the first direction.

a) The claimed plurality of non-contact sensors are not disclosed in Kozima, Swinton, or Jones.

Nautilus argues that Kozima, Swinton, and Jones each disclose the claimed plurality of non-contact sensors. With respect to Kozima, Nautilus relies on switches SW1 and SW4:

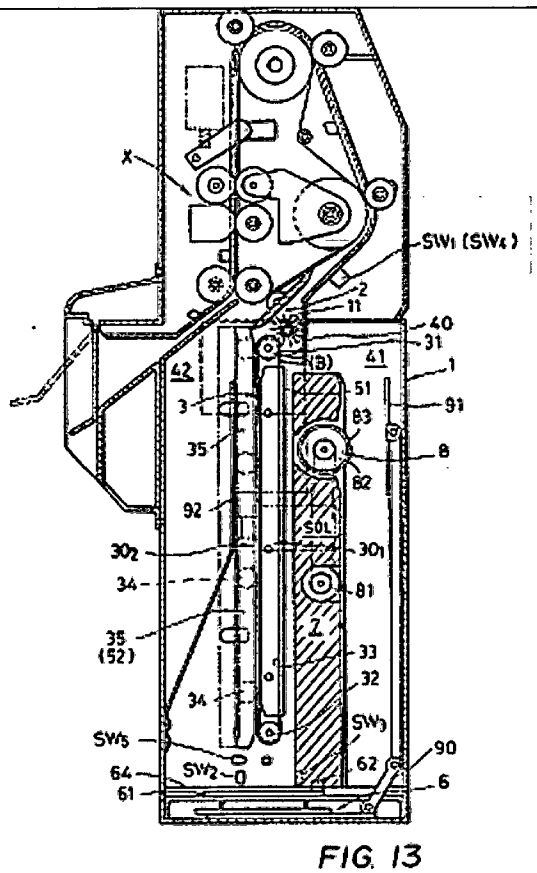


FIG. 13

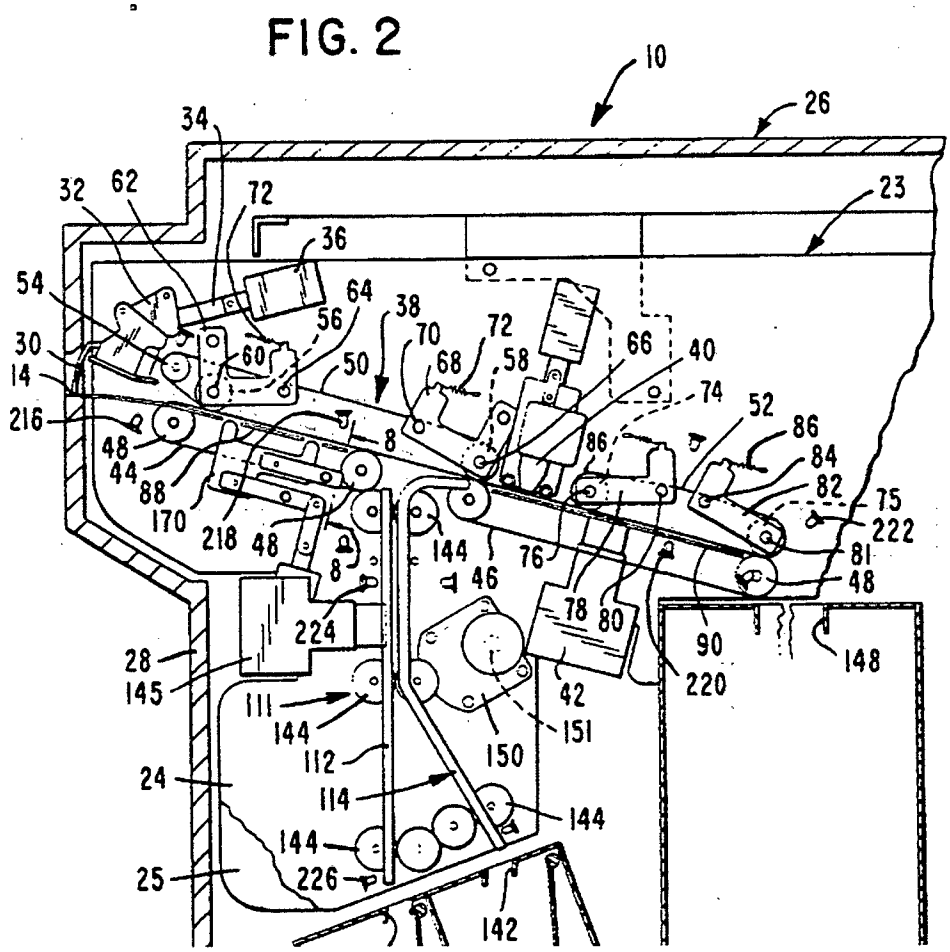
RX-0274, Fig. 13

Switch SW1 optically detects the presence or absence of a bill, and switch SW4, by "detecting the amount of transmitting light," determines whether there is a single bill or multiple bills lying on top of each other. RX-0274 at col. 4:13-15; col. 8:49-55. Nautilus's reliance on switches SW1 and SW4 to satisfy a claim limitation requiring a plurality of sensors is misplaced for two reasons. First, the switches are in different embodiments: "[I]n the present embodiment, no special switch SW4 is provided but the switch SW1 is concurrently used for this switch SW4 . . ." Thus, the embodiments in Kozima have a single non-contact sensor, SW1 or SW4, not a plurality of non-contact sensors. RX-0274 at col. 8:49-55. Second, the claim language requires

the switches to "sens[e] the sheet" as it is being aligned in the first direction. Switches SW1 and SW4 are not used in the alignment process.

In the alternative, Nautilus argues that it would have been obvious to modify Kozima to incorporate the non-contact sensors disclosed in Jones or Swinton. Jones discloses two side-edge sensors used to detect the width of a bill. RX-0280 at [0183]. The width of the bill is used to determine the denomination of the bill. *Id.* at [0184] ("Once the size of a bill is determined, the potential identity of the bill is limited to those bills having the same size."). The device in Kozima, however, already has "bill discrimination device X" to determine the denomination of a bill. RX-0274 at 4:6-12. Nautilus has not articulated a reason why one of ordinary skill in the art would have modified Kozima to implement a function it already had. Further, the side edge sensors are not used in the alignment process as required by the claim.

Nautilus also contends that Swinton discloses the claimed plurality of sensors in the form of optical sensors 216, 216, 218, and 220:



RX-0276, Fig. 2 (excerpted)

Although Diebold argues that Swinton does not disclose a plurality of non-contact sensors in a first direction, its argument is based on interpreting "along the first direction" to mean "along the first transport." RX-1979C (Kurfess RWS) at A.624 ("In addition, Swinton does not disclose the claimed configuration of 'a plurality of noncontact sensors disposed along the first direction,' meaning along the first transport."). Under Diebold's interpretation of "along the first direction," Swinton discloses a single non-contact sensor (optical sensor 218). Diebold, however, has not offered any argument or cited any evidence in support of its construction of

"along the first direction." Under the term's plain and ordinary meaning, optical sensors 216, 218, 220, and 222 are arrayed along the first direction.

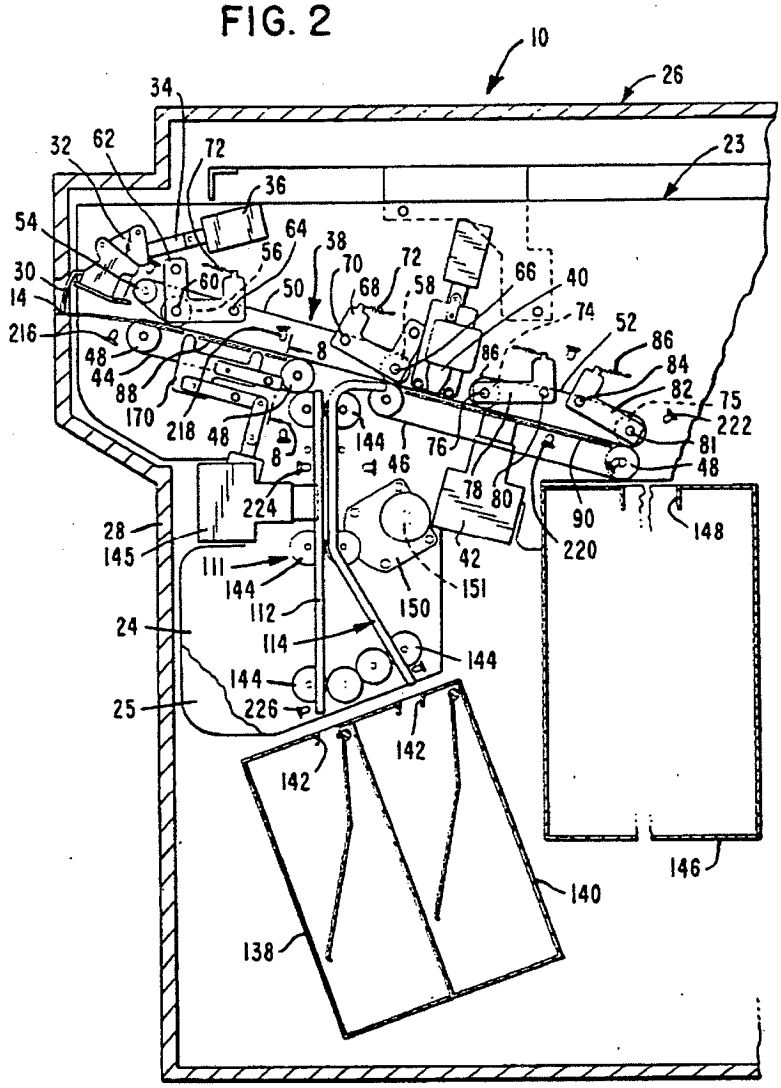
The sensors, however, are not used to sense the check during the alignment process. Sensors 216 and 218 are used by the "electronic control means 228" to determine whether to begin the alignment process. RX-0276 at col. 9:21-26. Sensor 216 is a thickness sensor, which determines whether the item deposited is a check or an envelope. *Id.* at col. 7:36-43. "If the thickness sensor 216 indicates that the deposit item is a check, the electronic control means 228 stops the operation of the main motor 150 in response to the sensing of the leading edge of the check by the sensor means 218" at which time electronic control means 228 initiates the alignment process. *Id.* at col. 9:21-38. Although they are used to determine whether to initiate the alignment process, sensors 216 and 218 are not used to sense the check during the alignment process. Sensor 220 senses the leading edge of the check after the alignment process has been completed. *Id.* at col. 9:52-60 ("After the check has been correctly aligned as just described . . . ."); col. 10:10-12 ("Feeding movement of the check continues until the leading edge of the check is sensed by the sensor means 220."). Sensor 222 is an "envelope container full sensor means" and determines whether container 146, which is used to store deposited envelopes, is full. *Id.* at col. 5:30-33; col. 9:1-9. Sensor 222 has no role in the alignment process because, unlike checks, envelopes do not undergo an alignment process. *Id.* at col. 8:27-68.

b) Neither Swinton nor Kallin disclose "moving the sheet in the second sheet moving direction" to align it in the "first sheet moving direction."

In addition to the sensors, claim 14 requires "moving the sheet in the second sheet moving direction" in order to align it in the "first sheet moving direction." To show this element, Nautilus relies on the disclosures of Swinton and Kallin. According to Nautilus, the

first and second sheet moving directions in Swinton correspond to the horizontal and vertical transportation paths highlighted below:

FIG. 2



RX-0276, Fig. 2

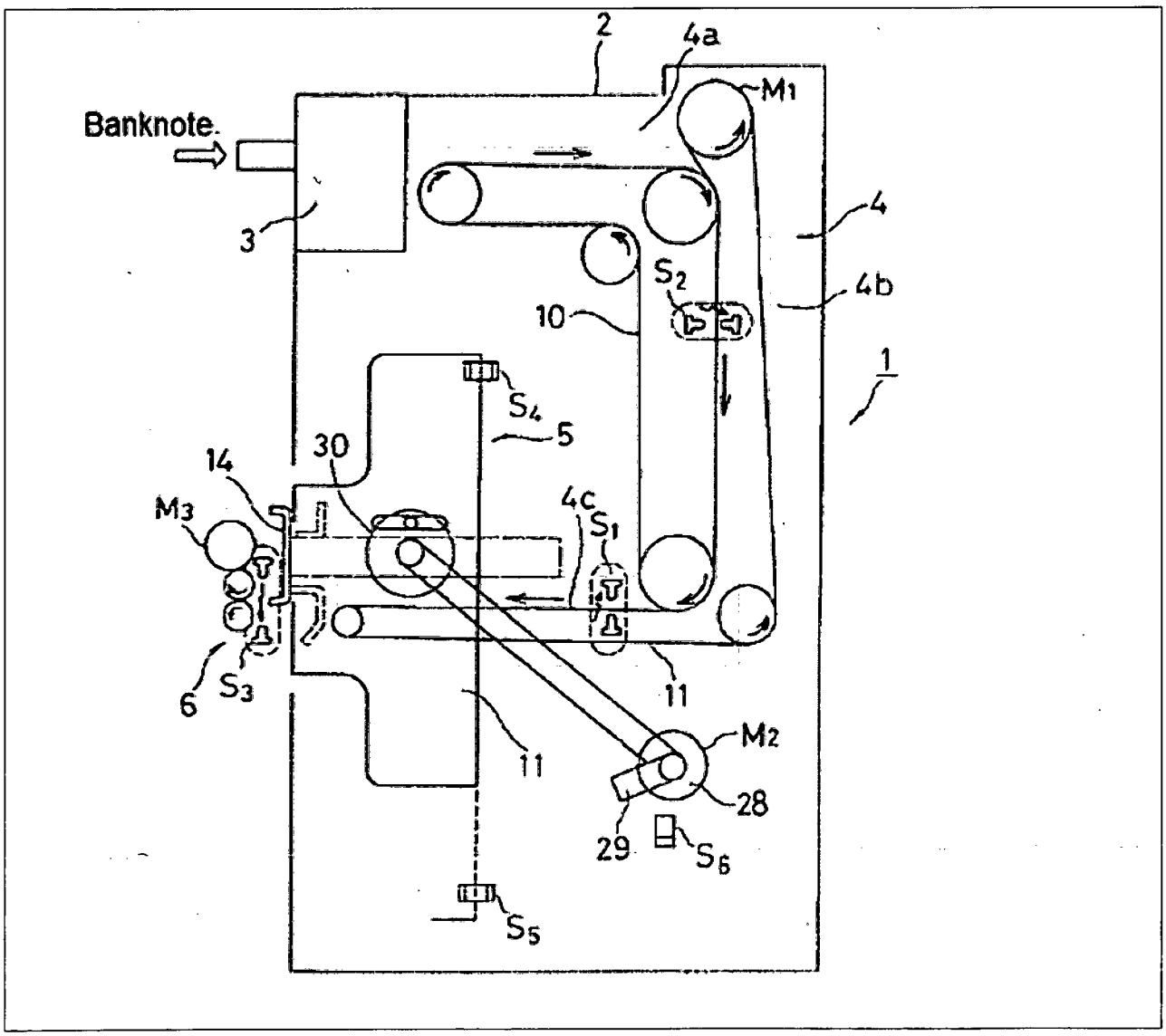
The sheet, however, is aligned in the first direction before it moves in the second direction. RX-0276 at col. 9:52-col. 10:42 ("After the check has been correctly aligned as just described. . . .").

Although Kallin discloses a "cheque 10 input/output transport mechanism 70" that includes "an alignment mechanism for aligning a cheque," RX-0279C at col. 5:10-17, Kallin does not describe how the alignment is performed. Nautilus has made no showing that Kallin

discloses moving the check in a second direction perpendicular to the first direction, much less that such movement is used to align the check.

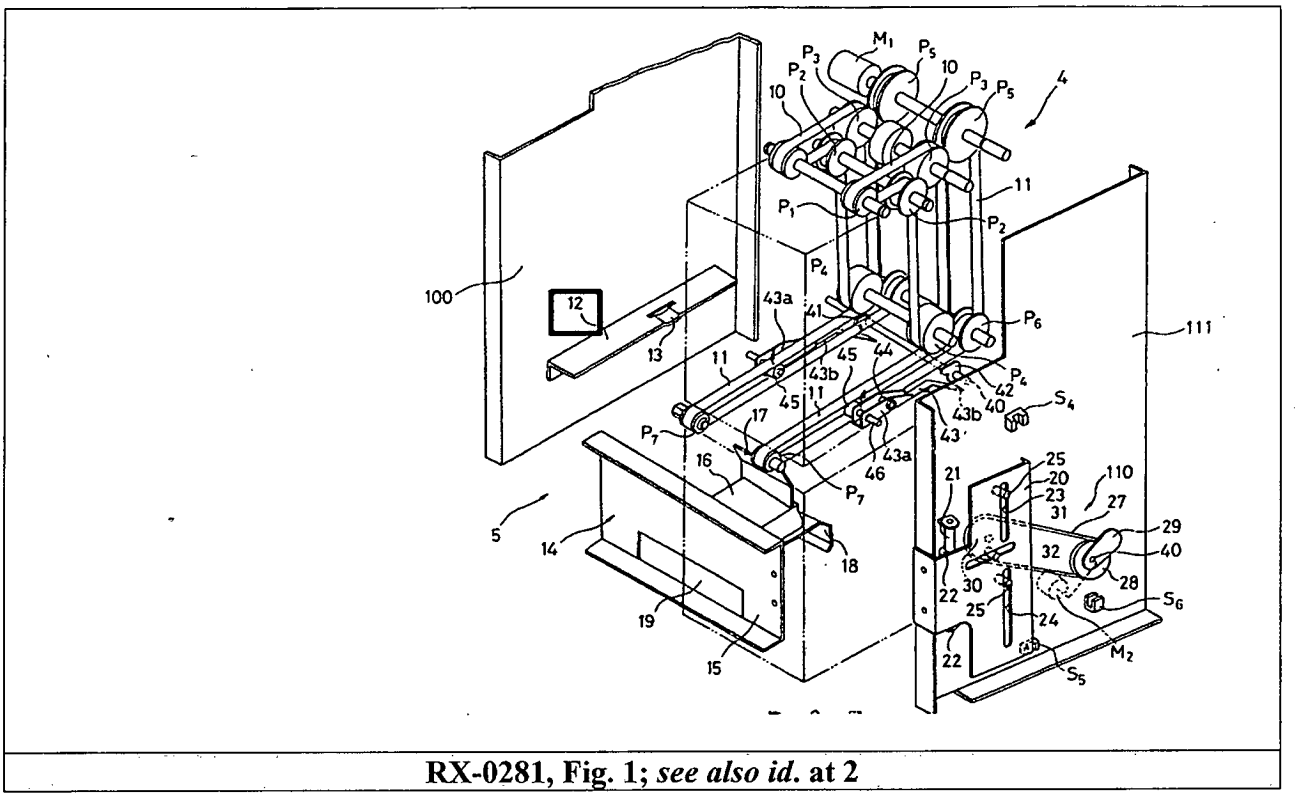
4. Toshinori

Toshinori discloses a device for storing "banknotes in change machines." RX-0281 at 2. The device is capable of processing and storing "two types of banknotes and the like" in a "first stacker" and a "second stacker." *Id.* at 2. Inserted bills are transported to "stacker box 5" by "conveyance means 4," which comprises a "first horizontal means 4," "vertical means 4b," and "second horizontal means 4c":



RX-0281, Fig. 1; *see also id.* at 2

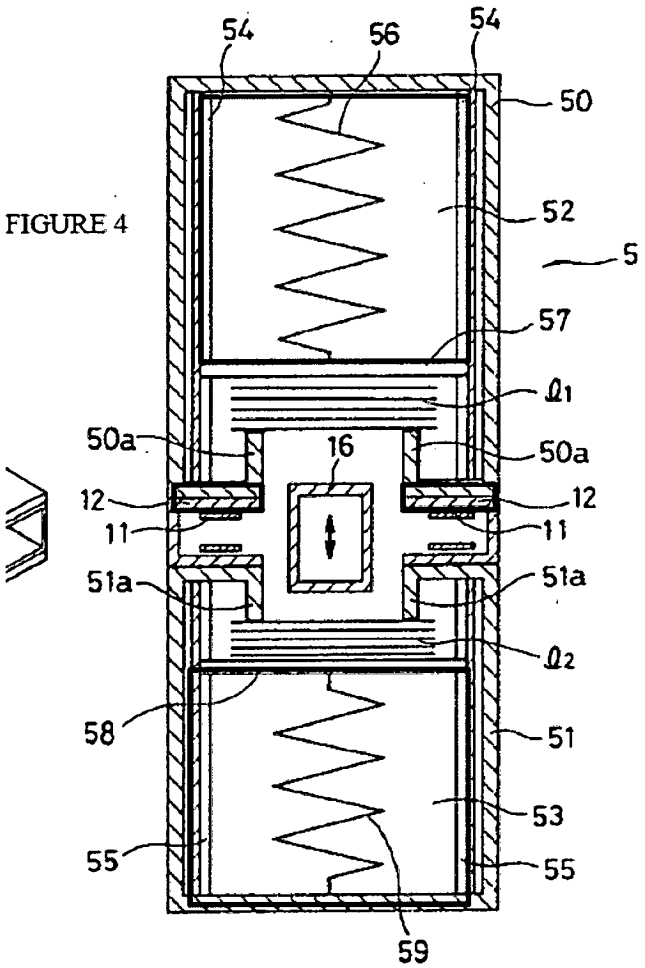
Guide panel 12 covers the upper sides of second horizontal means:



RX-0281, Fig. 1; *see also id.* at 2

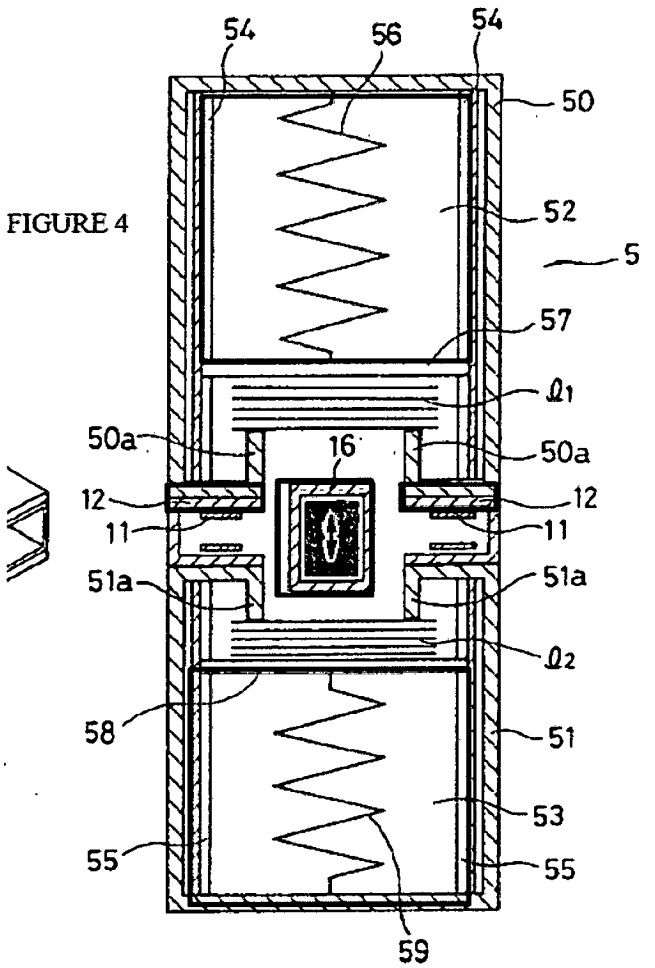
Guide panel 12 (highlighted in yellow) is located between two storage areas for bills, first stacker 52 and second stacker 53 (highlighted in blue):

FIGURE 4



RX-0281, Fig. 4

In order to push a banknote into an appropriate storage area (first stacker 52 or second stacker 53), bill sorting member 14, which includes supporting framework 16 (highlighted in green), is moved from one storage area to the other:



RX-0281, Fig. 4; *see also id.* at 4

a. Toshinori anticipates claim 1.

Nautilus alleges that Toshinori explicitly or inherently discloses each limitation of claim 1. RIB at 131-38.[16] Diebold does not dispute that Toshinori discloses the limitations of claim 1. CIB at 107-30; CRP at 38-47. As shown in the claim chart below, Nautilus has provided

[16] As with Kozima, Nautilus did not explicitly identify Toshinori as an anticipatory reference with respect to claim 1. RIB at 107. In the context of obviousness, however, Nautilus argued that Toshinori disclosed each limitation of claim 1. *Id.* at 131-38. To the extent that it is found that Nautilus failed to preserve its anticipation argument, I find in the alternative that Toshinori, by itself, renders claim 1 obvious.

uncontroverted evidence, relying on the testimony of Dr. Reinholtz, that Toshinori expressly or inherently disclosed each limitation of claim 1:

Claim 1	Toshinori
An automated banking machine comprising:	Diebold and Nautilus agreed that the term "automated banking machine," which appears in the preamble of claim 1, should be construed to mean "any device which is used for carrying out transactions involving transfers of value." Order No. 17 (June 13, 2016) at 2. Neither party contends, however, that claim 1's preamble is limiting. RIB at 72; CIB at 87-92. If the preamble is found to be limiting, Toshinori discloses an "automatic vending machines" with a "banknote acceptor in order to accept the banknotes." RX-0281at 2; *see also* RX-1184C (Reinholtz DWS) at Q&A.334.
at least one input device adapted to receive at least one input from users of the machine;	The "automatic vending machine" disclosed in Toshinori has a "purchase button" and "cancel button," which are input devices. RX-0281at 5; *see also* RX-1184C (Reinholtz DWS) at Q&A.342.
at least output device adapted to provide at least one output to users of the machine;	The "automatic vending machine" disclosed in Toshinori necessarily includes the claimed output device. RX-1184C (Reinholtz DWS) at Q&A.346. The "purchase button" and "cancel button," in addition to being input devices, provide an "output" to a user by "blinking." RX-0281at 2, 5; *see also* RX-1184C (Reinholtz DWS) at Q&A.346.
at least one currency dispenser adapted to dispense currency from the machine to users of the machine;	The "automatic vending machine" disclosed in Toshinori includes "exhaustion means 6" for dispensing incorrectly inserted banknotes back to the user. RX-0281 at 3, 6, Fig. 1; *see also* RX-1184C (Reinholtz DWS) at Q&A.348.
an item accepting opening adapted to receive into the machine, sheet items from users of the machine;	Bills can be inserted into the "automatic vending machine" disclosed in Toshinori. RX-0281 at 1 *et seq.*, Fig. 1; *see also* RX-1184C (Reinholtz DWS) at Q&A.350.
at least one sheet item transport in the machine, wherein the at least one transport	Conveyance means 4 transports bills inserted into the "automatic vending machine" disclosed in

is in operative connection with the item accepting opening,	Toshinori from the insertion slot to the storage area. RX-0281 at 3; and Fig. 1; *see also* RX-1184C (Reinholtz DWS) at Q&A.352, 353.
and wherein the at least one transport includes a pair of disposed sheet supporting rail portions;	Conveyance means 4 is comprised of first horizontal means 4a, vertical means 4b, and second horizontal means 4c. RX-0281 at 3. Guide panel 12 covers the upper side of second horizontal means 4c. RX-0281 at 3, Figs. 2, 4; *see also* RX-1184C (Reinholtz DWS) at Q&A.352, 353. Guide panel 12 corresponds to the claimed rail portions. RX-1184C (Reinholtz DWS) at Q&A.352, 353.
a storage area, wherein the rail portions of the at least one transport extend in the storage area between a first sheet storage location in the storage area and a second sheet storage location in the storage area;	Guide panel 12 extends into the storage area and is located between first stacker 52 and second stacker 53. RX-0281 at 3, 5, Figs. 2, 4; *see also* RX-1184C (Reinholtz DWS) at Q&A.352-54.
a movably mounted plunger member in the storage area, wherein the plunger member is movable transversely between the rail portions;	The "automatic vending machine" has "bank note sorting member 14," which includes "support framework 16." RX-0281 at 4. Bank sorting member 14 moves back and forth between the two storage locations. *Id.* at 4, Figs. 3, 4, *see also* RX-1184C (Reinholtz DWS) at Q&A.355. Bill sorting member 14's movement is transverse to guide panel 12. RX-0281 at Figs. 7, 9; RX-1184C (Reinholtz DWS) at Q&A.352-54.
at least one drive in operative connection with the plunger member, wherein the at least one drive is operative to selectively move the plunger transversely between the rail portions;	Drive motor M_2 moves bill sorting member 14 back and forth between the two storage locations RX-0281 at 4, 5, Fig. 1; *see also* RX-1184C (Reinholtz DWS) at Q&A.356.
wherein the plunger member is movable between the rail portions in the storage area in both a first transverse direction and a second transverse direction opposed of the first transverse direction,	Bank sorting member 14 moves back and forth between the two storage locations. *Id.* at 4, Figs. 3, 4, *see also* RX-1184C (Reinholtz DWS) at Q&A.355. Bill sorting member 14's movement in both directions is transverse to guide panel 12. RX-0281 at Figs. 7, 9; RX-1184C (Reinholtz DWS) at Q&A.352-54; 357.
wherein the plunger member can move a sheet from the rail portions and into the first sheet storage location while moving in the first transverse direction, and wherein the plunger member can move a sheet from the rail portions and into the second sheet storage location while moving in the second transverse direction.	By moving from first stacker 52 to second stacker 53, bill sorting member 14 can move a bill from guide panel 12 into second stacker 53. By moving from second stacker 53 to first stacker 52, bill sorting member 14 can move a bill from guide panel 12 into first stacker 52. RX-0281 at 4, 5, Figs. 7, 9; *see also* RX-1184C (Reinholtz DWS) at Q&A.357

Accordingly, I find that Toshinori anticipates claim 1.

b. Toshinori in view of Jones, Swinton, Kallin, or Arikawa does not render the asserted claims obvious.

Diebold does not dispute that Toshinori discloses the limitations of claim 1. CIB at 07-30; CRP at 38-47. The dependent claims, however, require elements that are not found in Toshinori's "bill discrimination device." *See, e.g.*, '010 patent, col. 26:37-43 (claim 26) (requiring "at least one magnetic sensing device is operative to read micr data on the check"). In order to provide the missing limitations, Nautilus relies on various combinations of Toshinori with one or more secondary references.

As with the combinations based on Kozima, other than the limitations of claim 13 and 14, Diebold does not dispute that the limitations of the asserted claims are disclosed in the asserted combinations. CIB at 107-30; CRP at 38-47. Diebold, however, argues that there would have been no motivation to combine Toshinori with the secondary references. CIB at 107-19. For the reasons set forth below, I find that Nautilus has failed to show by clear and convincing evidence that one of ordinary skill in the art would have been motivated to combine Toshinori with Jones, Swinton, Kallin, or Arikawa. As a result, all of Nautilus's proposed obviousness combinations fail. Furthermore, I find that Toshinori and the secondary references do not disclose the limitations of claim 14 and that the limitations of claim 13 are not obvious in view of Toshinori alone or in combination with other references.

i. There would have been no motivation for one of ordinary skill in the art to have combined Toshinori with Jones, Swinton, or Kallin.

Nautilus argues that one of ordinary skill in the art would have had motivation to combine the dual bin storage module disclosed in Kozima with the one of the ATMs disclosed Jones, Swinton, and Kallin. RIB at 110-11. With respect to Jones and Swinton, Nautilus argues

that Jones and Swinton disclose ATMs that store bills and documents in two storage locations, therefore one of ordinary skill in the art would have had motivation to modify the ATMs to incorporate Toshinori's dual-bin storage device. RIB at 132.[17]

As discussed above with respect to Kozima, Jones and Swinton already disclose storage devices for storing bills and documents in two or more storage locations. There would have been no motivation to modify Jones and Swinton to incorporate Toshinori's dual-bin storage device, unless Toshinori's storage device offered advantages over corresponding mechanisms disclosed in Jones and Swinton. Nautilus has not identified any such advantages. RX-1184C (Reinholtz DWS) at Q&A.339, 340. With respect to Jones, Nautilus's expert, failing to even acknowledge that Jones already discloses a mechanism for storing checks and other documents in more than one bin, simply asserts that "[a] person of ordinary skill in the art would have recognized that Toshinori teaches precisely the mechanism for simply and easily satisfying Jones' requirement for dual bins." *Id.* at A.339. With respect to Swinton, while Nautilus's expert testified that "Toshinori can provide Swinton with an improved mechanism for sorting the different types of checks," his opinion is conclusory and fails to provide a basis for finding that Toshinori's sorting and storage mechanism is an improvement over Swinton's. *Id.* at A.340.

With respect to Kallin, Nautilus's expert testified that one of ordinary skill in the art would have been motivated to modify the ATM disclosed in Kallin to incorporate Toshinori's bill receiving mechanism, because Toshinori's bill receiving mechanism allows for erroneously inserted notes to be returned to the user. *Id.* at Q&A.341. The ATM disclosed in Kallin, however, already has this functionality. RX-0279 at col. 1:36-40 ("If the user does not agree to

[17] As discussed above, *supra* n.15, Kallin also discloses the use of two bins to store checks. Because Nautilus does not cite this facet of Kallin's disclosure in support of its argument that there was a motivation to combine Toshinori with Kallin, it will not be considered.

the surcharge, then the cheque transport mechanism operates to transport the cheque in the reverse direction along the same cheque transport path to return the cheque to the user via the cheque slot."); col. 8:50-58 ("When a cheque return operation is initiated, the transport mechanism 70 reverses the direction of transport (step 240) to convey the cheque through the diverter apparatus 100 to the cheque input/output slot 56 to return the cheque to the user via the cheque input/output slot."). Because Nautilus does not offer a comparison between the return mechanisms disclosed in Toshinori and Kallin, there is no basis for concluding that Toshinori's return mechanism offers any advantages over Kallin's. In the absence of such advantages, one of ordinary skill in the art would not have had a motivation to combine the references.

On the foregoing basis, I find that Nautilus has failed to show by clear and convincing evidence that one of ordinary skill in the art would have modified the ATMs disclosed in Jones, Swinton, and Kallin to incorporate Toshinori's bill sorting and storage device.

ii. Claim 13's limitations are not obvious in view of Toshinori alone or in combination with Swinton and Arikawa.

Claim 13 depends from claim 1 through intervening dependent claims 2-12 and requires a first sheet moving transport that moves a sheet in a first direction and a second sheet moving transport in a second direction. '010 patent, col. 25:27-33. The claim further requires that the second direction be perpendicular to the first. *Id.* Nautilus contends these limitations are disclosed in Toshinori, Swinton, and Arikawa. Toshinori discloses a single transport that moves a bill on a first horizontal path, a vertical path, and a second horizontal path:

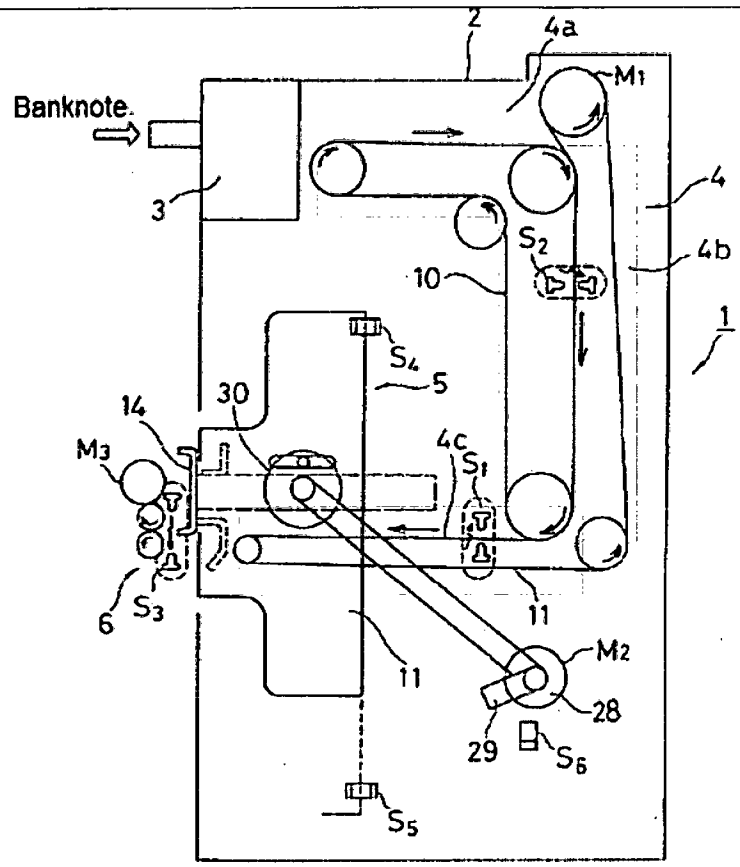


FIGURE 1

RX-0281, Fig. 1

For the reasons discussed above with respect to Kozima, a single transport does not satisfy claim 13's requirement for a first and second transport.

Nautilus argues that it would have been obvious to modify Toshinori to incorporate the perpendicular transports disclosed in Swinton and Arikawa. As with Kozima, however, Nautilus fails to articulate a reason why one of ordinary skill in the art would so modify Toshinori, when it already implements the same paths using a single transport. Nautilus does not provide a reason as to why one of ordinary skill would replace the Toshinori's two path-one transport architecture with an architecture requiring an additional transport.

Nautilus provides no motivation for modifying Toshinori to incorporate the perpendicular transport disclosed in Swinton. RIB at 146. With respect to Arikawa, Nautilus argues that one of ordinary skill in the art would have been motivated to modify Toshinori to incorporate Arikawa's perpendicular transport paths because it would "provid[e] additional transport paths for separating soiled banknotes from non-soiled ones banknotes." *Id.* at 147. Toshinori, like Kozima, however, already discloses a mechanism for storing documents in different storage locations, and Nautilus offers no explanation as to why modifying architecture disclosed in Toshinori would offer any advantage.

iii. Toshinori alone or in combination with other references does not disclose the limitations of claim 14.

Claim 14 requires "a plurality of noncontact sensors disposed along the first direction." '010 patent, col. 25:36-39. The claimed sensors are used by a processor to "sens[e] the sheet" as the processor aligns the sheet in the first sheet moving direction by moving it in the second sheet moving direction. *Id.* at col. 25:42-46. The combinations proposed by Nautilus fail to disclose (1) the claimed plurality of non-contact sensors and (2) aligning a sheet in the first direction by moving it in a direction perpendicular to the first direction.

a) The claimed plurality of non-contact sensors are not disclosed in Toshinori or the secondary references.

Nautilus argues that Toshinori, Swinton, and Jones each disclose the claimed plurality of non-contact sensors. With respect to Toshinori, Nautilus relies on sensors S_1 and S_2:

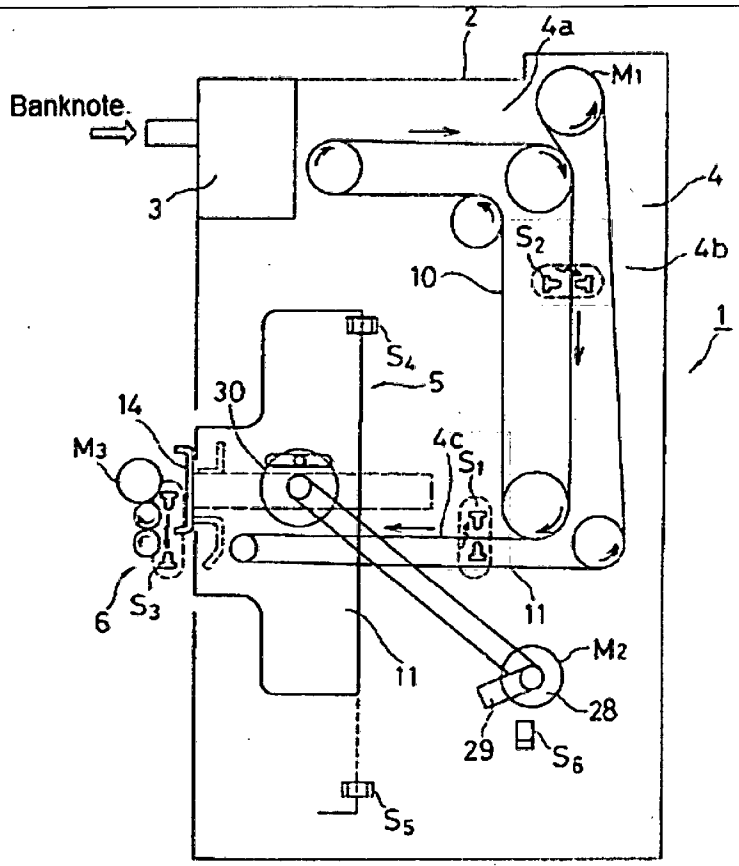


FIGURE 1

RX-0281, Fig. 1

As can be seen in Figure 1 of Toshinori, sensor S1 is located on the second horizontal transport path and sensor S2 is located on the vertical transport path, thus Toshinori does not disclose a plurality of non-contact sensors "along the first direction." Moreover, sensors S1 and S2 are not used to sense banknotes as they are being aligned, but instead are used detect the passage of banknotes along the second horizontal path and vertical path, respectively. RX-0281 at 4. Toshinori does not disclose any alignment process, much less one that uses sensors S1 and S2.

In the alternative, Nautilus argues that it would have been obvious for one of ordinary skill in the art to modify Toshinori to incorporate the non-contact sensors disclosed in Jones or Swinton. This argument fails for same reasons that it failed with respect to Kozima. The side-edge sensors disclosed in Jones are used to detect the width of a bill, so that the bill's denomination can be determined. RX-0280 at [0183-84]. The device in Toshinori, however, already has "discrimination device 3" to "discriminate[] the types of banknotes" inserted in the device. RX-0281 at 3. Nautilus has not articulated a reason why one of ordinary skill in the art would have modified Toshinori to implement a function it already has. Further, as discussed above with respect to Kozima, Nautilus has not presented any evidence or argued that the side edge sensors are used in the alignment process as required by the claim.

Nautilus contends that Swinton also discloses the claimed plurality of sensors in the form of optical sensors 216, 216, 218, and 220. As discussed above with respect to Kozima, these sensors are not used in the alignment process as required by the claim.

b) Neither Swinton nor Kallin disclose "moving the sheet in the second sheet moving direction" to align it in the first direction.

The final element of claim 14 requires moving a sheet in the second sheet moving direction in order to align it in the first sheet moving direction. Nautilus relies on the disclosures of Swinton and Kallin to show this element. As explained above with respect to Kozima, Nautilus fails to show that either reference discloses this limitation.

5. Summary of invalidity findings

Kozima anticipates claim 1 of the '010 patent but does not render any of the dependent claims obvious alone or in combination with Jones, Swinton, or Kallin.

Toshinori also anticipates claim 1 of the '010 patent but does not render any of the dependent claims obvious alone or in combination with Jones, Swinton, Kallin, or Arikawa.

V. U.S. PATENT NO. 7,832,631

The '631 patent, entitled "Method of Reading Coded Records including Magnetic Indicia on Checks Deposited in an Automated Banking Machine," issued on November 16, 2010, from an application filed on November 8, 2007. William D. Beskitt, David A. Peters, and Songtao Ma are identified as inventors, and Diebold is the assignee. A copy of the '631 patent was admitted as JX-0004, and its file history is JX-0008.

A. Claim Construction

Prior to the *Markman* hearing, the parties agreed to the construction of three terms in the claims of the '631 patent. Order No. 17 at 2. An "automated banking machine" is any device which is used for carrying out transactions involving transfers of value; the "facing position[s]" are any of the up, down, forward, and backward positions; and "at least one dimensional feature" is either the length or width. *Id.*

B. Infringement

Diebold accuses Nautilus ATMs that contain either a bulk check acceptor ("BCA") or a cash and check in module ("CCIM") of infringing claims 1-7 and 18-20 of the '631 patent. CIB at 135-164.

1. Legal Standards

The legal standards for infringement are set forth above in the context of the '616 and '010 patents. With respect to indirect infringement of a method claim, indirect infringement of method patents requires a direct infringement where all the method's steps have been performed, but another party, such as a customer may perform some of the claimed steps. *See*

Limelight Networks, Inc. v. Akamai Techs., Inc., 134 S. Ct. 2111. 2117-18 (2014). Section 271 defines both direct infringement and the two categories of indirect infringement, active inducement of infringement and contributory infringement. *Id.* at 1348. For indirect infringement violations under section 337, the direct infringement element may occur after importation, so long as all the other elements of indirect infringement are satisfied at the time of importation. *See Certain Vision-Based Driver Assistance System Cameras and Components Thereof*, Inv. No. 337-TA-907, Comm'n Op. at 19 (Dec. 1, 2015) (citing *Suprema, Inc. v. Int'l Trade Comm'n*, 796 F.3d 1338, 1348 (Fed. Cir. 2015)).

2. Accused Products

The functionality that is accused of infringing the claims of the '631 patent occurs within the BCA (Bulk Check Acceptor) and CCIM (Cash and Check in Module), which are modules within Nautilus ATMs that accept checks. CIB at 135-39. The MX7600DR, MX7600DS, MX7600FFL, MX7600R, MX7600T, MX7600TL, MX7600TR, and MX8700TCX contain a BCA module. *Id.* at Q&A.135-138 (citing CX-1697 at 11-12); CX-1688C (Kwak Dep. Tr.) at 38-39 (citing CX-1662C). The MX7600DA, MX7600DR, MX7600FFL, MX7600I, MX7600R, MX7600TA, MX7600T, MX7800 Lobby, MX7800D, MX7800I, MX7800TTW, MX8200QT, MX8700QT 2.5.5, MX8700QT2.5.1, and MX8800 contain a CCIM deposit module. CX-1872C (Singhose DWS) at Q&A.312-317 (citing CX-1697 at 11-12). These modules contain magnetic ink character recognition ("MICR") read heads and other components related to the asserted claims of the '631 patent, as discussed below.

3. Undisputed limitations (claim 1)

There is no dispute regarding the infringement of the majority of the limitations in claim 1 of the '631 patent, and Nautilus did not offer any expert testimony on non-infringement. *See*

Tr. at 642-643. Diebold's expert, Dr. William Singhose, identified evidence showing that the BCA and CCIM modules perform each of the steps of limitations (a), (c), (d), and (e) in claim 1 of the '631 patent. CX-1872C (Singhose DWS) at Q&A.486-641.

For the BCA, Dr. Singhose relies primarily on a BCA [redacted] Maintenance Manual (CX-1358C) as evidence of infringement. CX-1872C (Singhose DWS) at Q&A.141-43 (citing CX-1358C). This BCA manual shows that the BCA includes magnetic read heads that are used to sense the MICR line of a check, in accordance with the preamble of claim 1. *Id.* at Q&A.144-45, 490-91; CX-1358C at NH_972-00054764. The [redacted] module in the BCA is able to receive checks in a stack, which are separated one-by-one, meeting limitation (a) of claim 1. *Id.* at Q&A.495-497; CX-1358C at NH_972-00054764. Dr. Singhose further relies on a BCA [redacted] manual that describes functions and processing details in the source code that runs on the BCA. *Id.* at Q&A.174 (citing CX-1374C). The operation of the Nautilus ATMs is further confirmed by the deposition testimony of J.H. Kwak (CX-1688C). Based on this evidence, Dr. Singhose concludes that the [redacted] module of the BCA includes [redacted] MICR read heads that meet limitation (c) of claim 1, because one of the MICR read heads is movable in response to the width of the check so that the MICR line on the check is aligned with one of the read heads. *Id.* at Q&A.592-614; CX-1374C at NH_972-0007006, NH_972-0076998, NH_972-0077089; CX-1688C (Kwak Dep. Tr.) at 64-78. The BCA manuals further confirm that once the movable MICR read head has been moved into position, the check is moved past the MICR read heads, which read the MICR line, satisfying limitations (d) and (e) of claim 1. *Id.* at Q&A.244-306, 631-33, 637-39; CX-1358C at NH_972-00054764, NH_972-00054772-73; CX-1374C at NH_972-00077089.

For the CCIM, Dr. Singhose relies on a CCIM manual. CX-1872C (Singhose DWS) at

Q&A.141-43 (citing CX-1230C). The CCIM manual shows that the CCIM includes magnetic read heads that are used to sense the MICR line of a check, in accordance with the preamble of claim 1. *Id.* at Q&A.322-24, 490-91; CX-1230C at NH_972-00039760. The [redacted] module in the CCIM is able to receive checks in a stack, which are separated one-by-one, meeting limitation (a) of claim 1. *Id.* at Q&A.498-499; CX-1230C at NH_972-00039760. Dr. Singhose further relies on an [redacted] specification that describes functions and processing details in the source code that runs on the CCIM. *Id.* at Q&A.366 (citing CX-1351C). The operation of the Nautilus ATMs is further confirmed by the deposition testimony of J.H. Kwak (CX-1688C). Based on this evidence, Dr. Singhose concludes that the recognition module of the BCA includes [redacted] MICR read heads that meet limitation (c) of claim 1, because one of the MICR read heads is movable in response to the width of the check so that the MICR line on the check is aligned with one of the read heads. *Id.* at Q&A.615-630; CX-1351C at NH_972-00089538; CX-1688C (Kwak Dep. Tr.) at 130-40. The manuals further confirm that once the movable MICR read head has been moved into position, the check is moved past the MICR read heads, which read the MICR line, satisfying limitations (d) and (e) of claim 1. *Id.* at Q&A.354-378, 631-33, 637-39; CX-1230C at NH_972-00039760; CX-1351C at NH_972-00089538.

4. The "sensing" limitation (claim 1)

The only disputed limitation of claim 1 is step (b): "sensing through operation of at least one sensor in the machine, a width associated with the check." '631 patent at 41:30-31. Diebold relies on Dr. Singhose's testimony that a [redacted] in the BCA and CCIM senses the width of checks in the accused ATMs. CX-1872C (Singhose DWS) at Q&A.502-590. Nautilus argues that its products do not infringe this limitation because the [redacted] senses [redacted] data, which is used to calculate width, rather than directly sensing width, as required by the claim

language. RIB at 163-170; RRB at 54-56.

There is no support for Nautilus's argument in the plain language of the claims. Limitation (b) of claim 1 states: "sensing ***through operation of*** at least one sensor in the machine, a width associated with the check." '631 patent at 41:30-31 (emphasis added). This limitation does not require a sensor that directly senses width; in accordance with this language, the width of the check may be sensed "through operation of" a sensor, which clearly contemplates the use of components in addition to the sensor. This is further confirmed by the remaining language in limitation (b), which states that "the at least one sensor is in operative connection with at least one processor in the machine." *Id.* at 41:31-33. This is precisely how width is sensed in the BCA and CCIM. As described by Dr. Singhose, software running on a processor [redacted] uses data from [redacted] to calculate the width of a check. CX-1872C (Singhose DWS) at Q&A.504-526. The BCA manual explicitly describes this [redacted] as the "[redacted]," and states that the [redacted] is for "detecting the width of the aligned check." CX-1358C at NH_972-00054772-73. Similarly, software in the [redacted] module of the CCIM uses data from [redacted] to determine the width of a check. CX-1872C (Singhose DWS) at Q&A.562-572. This functionality is entirely consistent with the infringement of limitation (b) of claim 1.

In addition, reading the claim language as Nautilus proposes would be inconsistent with the specification of the '631 patent. The specification describes examples of a "width sensor 752," which "may include in some embodiments a plurality of aligned sensors, a linear array charge couple device (CCD) sensors or other sensors or groups of sensors that are operative to ***sense at least one dimension or property which corresponds to a width*** associated with a check." '631 patent at 31:44-50 (emphasis added). The specification further describes the

"capability of ***determining using signals from the sensor*** 752, the width of the aligned document." *Id.* at 31:52-54 (emphasis added). When describing the processor, the specification states that "the at least one ***processor is operative to determine a width*** associated with the check responsive to signals from sensor 752." *Id.* at 31:64-67 (emphasis added). Nothing in the specification requires a sensor to directly sense width but instead recognizes that sensors sense a "dimension or property which corresponds to a width," and that signals from the sensor are used by a processor to determine the width.[18] As Dr. Singhose explains, the CCD sensors described in the specification are very similar to the [redacted] used in the accused products, which also rely on a processor that uses signals from the sensors to determine width. CX-1872C (Singhose DWS) at Q&A.543-44.

The intrinsic evidence does not support Nautilus's reading of the "sensing" limitation, and accordingly, Diebold has shown that both the BCA and CCIM infringe every limitation of claim 1 of the '631 patent.

5. Claims 2-7 (BCA)

There is no dispute that the BCA infringes the limitations of dependent claims 2, 3, 4, 5, 6, and 7. CIB at 140-141; RIB at 170; CRB at 71. Dr. Singhose identifies evidence that the BCA receives a plurality of checks in a stack and then separates an individual check for processing using a picker, meeting the limitations of claim 2. CX-1872C (Singhose DWS) at Q&A.644-47; CX-1358C at NH_972-00054766. Dr. Singhose identifies an auto-alignment

[18] Nautilus's brief misleadingly refers to "width signals" as evidence that the sensors in the specification directly sense width, RIB at 166. The specification states: "The width signals thereafter enable the processor to cause the read head 716 to be positioned in an appropriate transverse position . . . ." '631 patent at 32:1-4. But this reference to "width signals" in the specification refers to signals used by the processor to determine width, and the word "thereafter" refers to the fact that this step occurs after the processor has determined a width using the signals. *Id.* at 31:64-68.

module that aligns checks in the BCA prior to the scanning modules, meeting the limitations of claim 3. *Id.* at Q&A.654-668; CX-1374C at NH_972-00077101. Dr. Singhose identifies a transverse transport in the BCA that meets the limitations of claim 4. *Id.* at Q&A.676-678. Dr. Singhose identifies the fixed MICR head in the BCA and evidence that the transverse transport aligns the MICR line on the check with the fixed MICR head in two of four possible facing positions of the check, meeting the limitations of claim 5. *Id.* at Q&A.688-89. Dr. Singhose identifies a movable MICR head in the BCA and evidence that the transverse transport aligns the MICR line on the check with the movable MICR head in two of four possible facing positions of the check, meeting the limitations of claim 6. *Id.* at Q&A.691-92. Finally, Dr. Singhose identifies a processor that interprets the MICR line data from the fixed and movable read heads, meeting the limitations of claim 7. *Id.* at Q&A.694-96. Accordingly, the BCA infringes each of these dependent claims.

6. Claims 2-7 (CCIM)

There is no dispute that the CCIM infringes the limitations of dependent claim 2. RIB at 170. Dr. Singhose identifies evidence that the CCIM receives a plurality of checks in a stack and then separates an individual check for processing using a picker, meeting the limitations of claim 2. CX-1872C (Singhose DWS) at Q&A.648-50; CX-1230C at NH_972-00039760, NH_972-00039767.

Nautilus contends that Diebold failed to show that the CCIM infringes claim 3. RIB at 170-172; RRB at 57-60. In his witness statement, Dr. Singhose identifies an [redacted] module in the CCIM as the component that practices the limitations of claim 3. CX-1872C (Singhose DWS) at Q&A.669-673. Dr. Singhose admits, however, that the [redacted] module receives checks after the MICR reading step. *Id.* at Q&A.343-345; Tr. (Singhose) at 230-33. This is

contrary to the claim language, which describes a step of "aligning the check" that occurs prior to the "sensing" step. '631 patent at 41:53-57. Dr. Singhose and Diebold concede that the [redacted] module is not the component that performs the claimed "aligning" step, but at the hearing, Dr. Singhose identified a different alignment that is performed on the check bundle before the MICR reading step. Tr. (Singhose) at 234:7-17, 235:25-236:9. Nautilus argues that this new infringement theory is waived because it was not raised in Diebold's pre-hearing brief or in any other previous disclosure. RRB at 57-59. Dr. Singhose's testimony is in the record, however, and it was elicited by repeated questions from Nautilus's counsel on cross-examination regarding this limitation. *See* Tr. at 230-236. Nautilus opened the door for Dr. Singhose to supplement his testimony, and although the inconsistency weighs against his credibility, there is no basis for striking his testimony from the transcript.

Dr. Singhose's new testimony regarding the alignment step is not sufficient to carry Diebold's burden to prove infringement, however. In addition to "aligning the check," claim 3 requires that "the check moves in the machine responsive at least in part to operation of the at least one processor." '631 patent at 41:55-57. Dr. Singhose offers no evidence regarding the operation of the processor in relation to the alignment of the check bundle, and Diebold has thus failed to prove infringement of this limitation. Accordingly, the CCIM has not been shown to infringe claim 3.

There is no independent dispute regarding infringement of claims 4-7, but the CCIM also does not infringe these claims because it does not infringe claim 3. *See* CIB at 140-41; RIB at 172.

7. Claims 18-20

There is no dispute that the BCA and CCIM modules infringe independent claim 18 and

dependent claims 19-20. CIB at 141-142; RIB at 172. Dr. Singhose identifies evidence of how the BCA and CCIM practice each limitation of claims 18, 19, and 20. CX-1872C (Singhose DWS) at Q&A.698-731.

Relying on evidence similar to that discussed above in relation to the "sensing" limitation, Dr. Singhose concludes that the BCA and CCIM modules obtain "at least one dimensional feature associated with a financial check including micr line magnetic data" – the width of the check. CX-1872C (Singhose DWS) at Q&A.699-700; CX-1358C at NH_972-00054772-73; CX-1351C at NH_972-00089538. Relying on evidence similar to that discussed above in relation to limitation (c) of claim 1 and dependent claims 4, 5, and 6, Dr. Singhose further identifies evidence that the BCA and CCIM modules include a check analysis area that includes "a check transport path in which checks are movable in any of four facing positions." *Id.* at Q&A.701-703; CX-1374C at NH_972-00076998; CX-1358C at NH_972-00054764; CPX-0061C. This same evidence shows that the check analysis area in the BCA and CCIM modules includes "plural magnetic read heads." *Id.* at Q&A.704-706; CX-1358C at NH_972-00054772-73; CX-1351C at NH_972-00089538. This evidence shows that the BCA and CCIM modules infringe limitation (a) of claim 18.

Again relying on evidence similar to that discussed above in relation to limitation (c) of claim 1, Dr. Singhose concludes that the BCA and CCIM modules operate "to move the first magnetic read head relative to the second magnetic read head" based on the width of the check, meeting limitation (b) of claim 18. CX-1872C (Singhose DWS) at Q&A.710-11; CX-1374C at NH_972-0076998; CX-1351C at NH_972-00089538. Relying on evidence similar to that discussed above in relation to limitations (d) and (e) of claim 1, Dr. Singhose concludes that the BCA and CCIM modules operate to move the check in the transport path, meeting limitation (c)

of claim 18. *Id.* at Q&A.715-16; CX-1358C at NH_972-00054772-73; CX-1351C at NH_972-00089538. Relying on evidence similar to that discussed above in relation to limitation (c) of claim 1, Dr. Singhose concludes that the BCA and CCIM modules operate to cause magnetic "reading of the micr line magnetic data regardless of the facing position of the check," meeting limitation (d) of claim 18. *Id.* at Q&A.723-724; CX-1374C at NH_972-0076998; CX-1351C at NH_972-00089538. The evidence thus shows that the BCA and CCIM modules infringe claim 18 of the '631 patent.

Relying on evidence similar to that discussed above in relation to limitation (d) of claim 1, Dr. Singhose further identifies evidence that the BCA and CCIM modules include a movable MICR read head, and that the read heads are "mounted adjacent the check transport path," meeting the limitations of claim 19. CX-1872C (Singhose DWS) at Q&A.728; CX-1374C at NH_972-0076998; CX-1351C at NH_972-00089538. In addition, Dr. Singhose identifies evidence that the BCA and CCIM modules include a fixed MICR read head, meeting the limitations of claim 20. *Id.* at Q&A.730. Accordingly, the BCA and CCIM modules infringe dependent claims 19 and 20 of the '631 patent.

8. Indirect Infringement

Nautilus argues that even if the BCA and CCIM modules infringe the limitations of the asserted claims, Diebold has failed to establish evidence of direct infringement in the United States. RIB at 153-63. Diebold contends that there is sufficient evidence of direct infringement in the United States. CIB at 149-156. Diebold further argues that Nautilus indirectly infringes the '631 patent through active inducement and contributory infringement. *Id.* at 157-163.

a. Evidence of Direct Infringement

Indirect infringement of method patents requires evidence of a direct infringement where

all the method's steps have been performed. *Limelight Networks, Inc. v. Akamai Techs., Inc.*, 134 S. Ct. 2111. 2117-18 (2014). This direct infringement may be proven either by specific instances of infringement or by circumstantial evidence showing the accused device "necessarily infringes the patent in suit." *ACCO Brands, Inc. v. ABA Locks Mfr. Co.*, 501 F.3d 1307, 1313 (Fed. Cir. 2007). Circumstantial evidence must show that at least one person directly infringed an asserted claim during the relevant time period. *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1318 (Fed. Cir. 2009). Expert testimony establishing that a product necessarily infringes under certain conditions may be sufficient if the conditions are clearly bounded. *See Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1326 (Fed. Cir. 2009); *ACCO*, 501 F.3d at 1313 (rejecting circumstantial evidence because the accused device could be used at any given time in a non-infringing manner). Also significant is whether an alleged infringer "instructs users to use a product in an infringing way." *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1366 (Fed. Cir. 2012) (citing *Lucent Techs.*, 580 F.3d at 1317).

For example in *Lucent*, the accused infringer designed its products to practice the claimed invention and instructed its customers to use the accused product in an infringing way. 580 F.3d at 1318. The Federal Circuit found such circumstantial evidence sufficient to support the jury's finding that someone other than Lucent's expert used the product in an infringing manner. *Id.* Following *Lucent's* reasoning, the court in *Toshiba* also found evidence regarding industry standards, press releases, end-user instructions, and distributed tools to be sufficient evidence for a direct infringement finding. 681 F.3d at 1365.

In *Toshiba*, the method claim described users recording specific data labels as part of writing data onto DVDs. *Id.* at 1364. Users usually have two options to write data onto a DVD, the disc-at-once mode, which finalizes the DVD and writes the patented data areas, and the non-

infringing multisession mode, which writes the data but does not finalize the DVD or write the patented data areas. *Id.* Appellants provided several key pieces of circumstantial evidence. *Id.* In order for the DVD to be useable outside of the recorder, the DVD must be finalized with the industry standard, which includes the patented data areas. *Id.* Instruction manuals also recommended using the device in an infringing manner, and the accused devices did not ship with the infringing configuration disabled. *Id.* Thus for end users to record DVD data that would be usable on other DVD machines, the DVD data would have to be finalized, which infringes the patent if the user follows the instruction manual and maintains the default settings. *Id.* The combination of industry standards, the need to finalize DVDs as part of normal use, the default settings, and the instruction manuals altogether supported the finding that the accused products directly infringed. *Id.*

Conversely in *Fujitsu* and *ACCO*, the accused products had non-infringing configuration options, and the Federal Circuit required the patent owners to show more than the capability of infringement and provide evidence supporting specific instances of direct infringement. *Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d 1321, 1328 (Fed. Cir. 2010); *ACCO*, 501 F.3d at 1313. The infringing option in *Fujitsu* was disabled by default, and the relevant standard and user manuals simply described how to use the product in an infringing manner rather than actively recommending it. *Fujitsu*, 620 F.3d at 1328. In *ACCO,* two sets of instructions described the infringing and non-infringing use, but the products sold only with instructions describing the non-infringing use. 501 F.3d at 1313. The only other evidence relied on by the patentee in *ACCO* was its expert testimony that the infringing mode was the "natural and intuitive way" to operate the device, but *ACCO*'s expert did not testify whether others actually used the device in the infringing mode. *Id.* The Federal Circuit thus held in *Fujitsu* and *ACCO* that circumstantial

evidence is insufficient to support a finding of direct infringement if it only shows capability of infringement, rather than a logical result that infringement necessarily must have occurred. *See Fujitsu*, 620 F.3d at 1329.

Here, the question is whether Diebold has provided sufficient evidence that depositing a check in the accused ATMs necessarily infringes the '631 patent through the use of the CCIM and the BCA. Diebold has identified various sources of circumstantial evidence to demonstrate that the accused products have been used to deposit checks and are at least capable of infringing the '631 patent claims at dispute. As discussed above, Diebold's expert witness Dr. Singhose analyzed the process of checks moving through the CCIM and BCA, relying on his review of source code and manuals. CX-1872C (Singhose DWS) at Q&A.139, 215-223, 318; CX-1358C at NH_972-00054764; CX-1374C at NH_972-00077006, NH_972-00077089; CX-1230C at NH_972-00039760; CX-1351C at NH_972-00089538. Diebold has also provided circumstantial evidence that Nautilus ATMs were used in the United States to deposit checks. CPX-0051 (marketing video created in Texas using Nautilus ATM); CX-1895 (Nautilus test procedures in the United States).

Nautilus does not appear to dispute that its ATMs are used for depositing checks in the United States. *See, e.g.,* Tr. (Opening Stmt.) at 78:9-16. Nautilus argues, however, that the bare act of depositing a check does not necessarily infringe the '631 patent claims because software configurations allow for non-infringing uses of the ATM. RIB at 153-157. Nautilus cites deposition testimony by its employees Mr. Kwak and Mr. Kim to establish optical character recognition ("OCR") as a non-infringing configuration available to customers. CX-1682C (Kim Dep. Tr.) at 163:4-164:17; CX-1688C (Kwak Dep. Tr.) at 96:10-97:16, 99:4-9. Mr. Kwak testified that "depending on the configuration value, you could use the MICR data value through

the two heads or purely through image you could obtain OCR MICR data." CX-1688C at 96:10-97:8. Nautilus also highlights design-around solutions as evidence that the hardware is, at the very least, capable of depositing checks without necessarily infringing. *See* Order No. 23 at 3 (finding that CCIM and BCA modules installed with certain software versions do not infringe the asserted claims). Beyond the general testimony that non-infringing configuration options exist, however, Nautilus has not provided specific details such as the mechanism for adjusting the configuration or whether customers may themselves change configurations after importation. Nautilus did not present an expert witness on non-infringement, did not cross-examine Dr. Singhose regarding the configuration options, and did not point to any reference to a configuration option in the manuals or the source code. The lack of clear evidence regarding the configuration options must be weighed alongside Diebold's circumstantial evidence, although the burden remains on Diebold to demonstrate infringement.

The evidence in this case does not closely align with any previous cases. Unlike in *Toshiba*, where the act of finalizing a DVD was inherently an infringing act, here, depositing a check does not inspire the same level of certainty regarding infringement because the patented method covers one particular method of scanning a check and not the general deposit process. Conversely, there is no evidence that the infringing MICR option was disabled by default, which was critical to the non-infringement finding in *Fujitsu*. 620 F.3d at 1328. Further, the manuals describe the infringing MICR read head technology in detail but do not appear to recommend or even mention the non-infringing options, which was critical for a finding of non-infringement in *ACCO*. *See* CX-1374C (BCA EP functions and processing details) at NH_972-00077006, NH_972-00077089; *ACCO*, 501 F.3d at 1313. Finally, Dr. Singhose examined the source code and a representative ATM, presented his findings of infringement without mentioning

configuration options in his witness statement, and he was not questioned on configuration options at the hearing. *See* CX-1872C (Singhose DWS); Tr. at 224-240.

Examining all the evidence, Dr. Singhose's analysis of the source code and manuals outweighs Hyosung's unsupported arguments regarding configuration options. Without more evidence that the configuration options were in the source code and available to customers, Dr. Singhose's unchallenged and detailed expert testimony carries considerable weight. Without some evidence that customers would be likely to use non-infringing alternatives, such as recommendations in a manual or default options, the case law supports a finding that the accused ATMs necessarily infringe when checks are deposited. Accordingly, Diebold has carried its burden to show direct infringement in the United States.

b. Induced Infringement

Section 271(b) of the Patent Act prohibits inducement: "[w]hoever actively induces infringement of a patent shall be liable as an infringer." 35 U.S.C. § 271(b). *See DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1305 (Fed. Cir. 2006) (*en banc*) ("To establish liability under section 271(b), a patent holder must prove that once the defendants knew of the patent, they actively and knowingly aid[ed] and abett[ed] another's direct infringement.").

There is no dispute that Nautilus had knowledge of the '631 patent at least by October 16, 2015, when Diebold sent a letter to Nautilus with allegations of infringement. CX-1227. Diebold also identifies manuals and marketing materials promoting the benefit of having a fixed and movable MICR read head to achieve 4-way MICR reading. CX-1872C (Singhose DWS) at Q&A.740-44; *see e.g.*, CX-1366C (MoniMax 7600 Maintenance Manual) at NH_972-0044113. Nautilus's manuals provide detailed instructions regarding how to install the BCA and CCIM in an ATM. CX-1872C (Singhose DWS) at Q&A.741-742. Nautilus argues that this evidence is

not sufficient to prove specific intent to encourage infringement, but there is also evidence that [redacted].[19] CX-1980C (Singhose RWS) at Q&A.566-74; CX-1927C; CX-1357C. The communications between Nautilus and [redacted] include a direct reference to the "[redacted]" feature, CX-1357C at NH_972-00109009, and a concern that [redacted]." CX-1927C at NH_972-00114316. This is strong circumstantial evidence that Nautilus had knowledge of Diebold's patented technology, copied it, and encouraged its customers to use it in an infringing way. *See SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1384-85 (Fed. Cir. 2013) (finding evidence of imitation sufficient to show actual knowledge of the asserted patent). At the very least, these facts support a finding that Nautilus was willfully blind regarding its infringing design, because it was aware of Diebold's moveable MICR read head design, [redacted], but nevertheless implemented this feature in the infringing ATMs. *See Certain Biometric Scanning Devices, Components Thereof, Associated Software, and Products Containing the Same*, Inv. No. 337-TA-720, Comm'n Op. at 12-16 (Nov. 10, 2011), *aff'd by Suprema, Inc. v. Int'l Trade Comm'n*, 626 Fed.Appx. 273, 281-82 (Fed. Cir. 2015). Accordingly, I find that Nautilus actively induces infringement of the '631 patent by its importation of the BCA and CCIM modules and ATMs containing such modules.

c. Contributory Infringement

Section 271(c) of the Patent Act prohibits contributory infringement: "Under 35 U.S.C. §

[19] Although the '631 patent did not issue until 2010, the Diebold ATMs that implemented the moveable MICR read head design were released in 2008. CX-1981C (Hoover WS) at Q&A.31. Moreover, the application for the '631 patent was published on June 5, 2008. JX-0004.

271(c), a party who sells a component with knowledge that the component is especially designed for use in a patented invention, and is not a staple article of commerce suitable for substantial noninfringing use, is liable as a contributory infringer." *Wordtech Sys., Inc. v. Integrated Networks Solutions, Inc.*, 609 F.3d 1308, 1316 (Fed. Cir. 2010).

As discussed above in the context of induced infringement, Nautilus had knowledge that the BCA and CCIM modules were especially designed for use in infringing the '631 patent. Nautilus argues that there are substantial non-infringing uses for these modules, however, which preclude a finding of contributory infringement. RIB at 162-63; RRB at 54. Nautilus contends that certain software versions do not infringe the '631 patent, but as discussed below, modules containing these software versions are not accused of infringement. Nautilus further argues that the BCA and CCIM modules have configuration options that turn off the infringing magnetic reading feature, but as discussed above, there is no reliable evidence that these configuration options are accessible by customers. Nautilus's final argument is that the CCIM module accepts both cash and checks, and that accepting cash is a non-infringing use. Combining cash and check acceptance into a single module does not prove a substantial non-infringing use, however. As the Federal Circuit held in *Lucent*, "an infringer should not be permitted to escape liability as a contributory infringer merely by embedding the infringing apparatus in a larger product with some additional, separable feature before importing and selling it." 580 F.3d 1301, 1320-21 (citing *Ricoh Co. v. Quanta Computer Inc.*, 550 F.3d 1325, 1337 (Fed. Cir. 2008) (internal quotations removed). The infringing feature of the CCIM, the 4-way magnetic MICR reading of checks, is suitable only for an infringing use, and the presence of other features in the CCIM does not allow Nautilus to escape liability for its contributory infringement. Accordingly, I find that Nautilus contributes to infringement of the '631 patent by its importation of the BCA and

CCIM modules.

9. Non-Accused Products

Pursuant to Order No. 23 (Aug. 23, 2016), Nautilus's CSM5x modules, CSM3x modules, CCIM modules with software version [redacted], and BCA modules with software versions [redacted] were found on summary determination to not infringe the '631 patent. *See* Comm'n Notice (Sept. 22, 2016). There is no dispute that the CSM5x and CSM3x modules have been imported, and as discussed above, Nautilus presented evidence at the hearing that the identified CCIM and BCA modules have also been imported. *See* RX-1511C (Kim RWS) at Q/A 9-26.

10. Summary of infringement findings

Nautilus actively induces infringement of claims 1-7 and 18-20 of the '631 patent by its importation of BCA modules and ATMs containing BCA modules, including the MX7600DR, MX7600DS, MX7600FFL, MX7600R, MX7600T, MX7600TL, MX7600TR, and MX8700TCX. Nautilus contributes to the infringement of claims 1-7 and 18-20 of the '631 patent by its importation of BCA modules.

Nautilus actively induces infringement of claims 1-2 and 18-20 of the '631 patent by its importation of CCIM modules and ATMs containing CCIM modules, including the MX7600DA, MX7600DR, MX7600FFL, MX7600I, MX7600R, MX7600TA, MX7600T, MX7800 Lobby, MX7800D, MX7800I, MX7800TTW, MX8200QT, MX8700QT 2.5.5, MX8700QT2.5.1, and MX8800. Nautilus contributes to the infringement of claims 1-2 and 18-20 of the '631 patent by its importation of CCIM modules.

Nautilus's CSM5x modules, CSM3x modules, CCIM modules with software version [redacted], and BCA modules with software versions [redacted] do not infringe any asserted claim of the '631 patent.

C. Domestic Industry – Technical Prong

Diebold asserts that the asserted claims of the '631 patent are practiced by the Diebold 3700, Diebold 7700, Diebold 7780, Diebold 7790, Opteva 720, Opteva 720r, Opteva 740, Opteva 750, Opteva 760, Opteva 828, Opteva 858, Opteva 868, and Opteva 878. CIB at 167-172. Diebold relies on the opinions of Dr. Singhose, who testifies that the IDMbd module in each of these Diebold ATMs practices claims 1-7 and 18-20 of the '631 patent. CX-1872C (Singhose DWS) at Q&A.767-983. For evidence regarding the operation of the IDMbd, Dr. Singhose relies primarily upon the IDMbd on-site repair manual (CX-1320C).

1. Claim 1

The only limitation of the asserted claims of the '631 patent that Nautilus disputes on domestic industry is the "sensing" limitation, and as discussed above, Nautilus's argument is based on an incorrect interpretation of the claim language. Nautilus did not offer any expert testimony regarding its domestic industry arguments. *See* Tr. at 642-643. Accordingly, there is no legitimate dispute regarding the practice of claim 1 of the '631 patent by the IDMbd module.

Dr. Singhose determines that the IDMbd module is a bulk document intelligent depository module that can read the MICR line of an inserted check, meeting the limitations of the preamble and limitation (a) of claim 1. CX-1872C (Singhose DWS) at Q&A.862-873; CX-1320C at 972DBD0034234. Dr. Singhose further identifies a CIS sensor, which is used to determine the width of a check in the IDMbd, meeting limitation (b) of claim 1. *Id.* at Q&A.874-902; CX-1320C at 972DBD00034236. Dr. Singhose further finds that the IDMbd includes two

MICR read heads that meet limitation (c) of claim 1, because one of the MICR read heads is movable in response to the width of the check so that the MICR line on the check is aligned with one of the read heads. *Id.* at Q&A.903-920; CX-1320C at 972DB00034236. Finally, Dr. Singhose concludes that once the movable MICR read head has been moved into position, the check is moved past the MICR read heads, which read the MICR line, satisfying limitations (d) and (e) of claim 1. *Id.* at Q&A.921-930; CX-1320C at 972DB00034240-41.

2. Claims 2-7

There is no dispute that the IDMbd practices the limitations of dependent claims 2, 3, 4, 5, 6, and 7. CIB at 167-68. Dr. Singhose identifies evidence that the IDMbd receives a plurality of checks in a stack and then separates an individual check for processing using a picker, meeting the limitations of claim 2. CX-1872C (Singhose DWS) at Q&A.931-36; CX-1320C at 972DBD00034236, 972DBD00024240. Dr. Singhose identifies an Align Station that aligns checks in the IDMbd prior to the scanning modules, meeting the limitations of claim 3. *Id.* at Q&A.937-44; CX-1320C at 972DBD00034236, 972DBD00024240. Dr. Singhose identifies a transverse roller in the IDMbd that meets the limitations of claim 4. *Id.* at Q&A.945-948; *see also id.* at Q&A.792-93. Dr. Singhose identifies the fixed MICR head in the IDMbd and evidence that the transverse transport aligns the MICR line on the check with the fixed MICR head in two of four possible facing positions of the check, meeting the limitations of claim 5. *Id.* at Q&A.949-52; CX-1320C at 972DBD00034470-71. Dr. Singhose identifies a movable MICR head in the IDMbd and evidence that the transverse transport aligns the MICR line on the check with the movable MICR head in two of four possible facing positions of the check, meeting the limitations of claim 6. *Id.* at Q&A.953-54; CX-1320C at 972DBD00034236. Finally, Dr. Singhose identifies a processor that interprets the MICR line data from the fixed and

movable read heads, meeting the limitations of claim 7. *Id.* at Q&A.956-58; CX-1320C at 972DBD00034236. Accordingly, the IDMbd infringes each of these dependent claims.

3. Claims 18-20

There is no dispute that the IDMbd module practices independent claim 18 and dependent claims 19-20. CIB at 168-69. Relying on evidence similar to that discussed above in relation to the "sensing" limitation, Dr. Singhose concludes that the IDMBD module obtains "at least one dimensional feature associated with a financial check including micr line magnetic data" – the width of the check. CX-1872C (Singhose DWS) at Q&A.959-963; CX-1224C (IDMBD Operating Guide) at 972DBD00030114. Relying on evidence discussed above in relation to limitation (c) of claim 1 and dependent claims 4, 5, and 6, Dr. Singhose concludes that the BCA and CCIM modules infringe limitation (a) of claim 18. *Id.* at Q&A.964-965. Again relying on evidence similar to that discussed above in relation to limitation (c) of claim 1, Dr. Singhose concludes that the IDMbd module operates "to move the first magnetic read head relative to the second magnetic read head" based on the width of the check, meeting limitation (b) of claim 18. CX-1872C (Singhose DWS) at Q&A.966-970. Relying on evidence similar to that discussed above in relation to limitations (d) and (e) of claim 1, Dr. Singhose concludes that the IDMbd module operates to move the check in the transport path, meeting limitation (c) of claim 18. *Id.* at Q&A.971-76. Relying on evidence similar to that discussed above in relation to limitation (c) of claim 1, Dr. Singhose concludes that the IDMbd module operates to cause magnetic "reading of the micr line magnetic data regardless of the facing position of the check," meeting limitation (d) of claim 18. *Id.* at Q&A.977-79. The evidence thus shows that the IDMbd module practices claim 18 of the '631 patent.

Relying on evidence similar to that discussed above in relation to limitation (d) of claim

1, Dr. Singhose further identifies evidence that the IDMbd module includes a movable MICR read head, and that the read heads are "mounted adjacent the check transport path," meeting the limitations of claim 19. CX-1872C (Singhose DWS) at Q&A.980-81. In addition, Dr. Singhose identifies evidence that the IDMbd module includes a fixed MICR read head, meeting the limitations of claim 20. *Id.* at Q&A.982-83. Accordingly, the IDMbd module practices dependent claims 19 and 20 of the '631 patent.

4. Use of the claimed method

Nautilus contends that Diebold has failed to prove that any claim of the '631 patent is used in any Diebold product. RIB at 176. Nautilus cites no case law setting forth standards for proving the use of a method patent in a domestic industry article, and it is unclear what evidence of use would be necessary to satisfy the statutory requirement for "articles protected by the patent." 19 U.S.C. § 1337(a)(1)(3). The relevant standard may also be different depending on Diebold's economic prong contentions, because Diebold relies upon service and assembly of ATMs under subprong (B) of section 337(a)(1)(3), and investments in the research and development of the IDMbd module under subprong (C). *See InterDigital Commc'ns, LLC v. Int'l Trade Comm'n*, 707 F.3d 1295, 1304 (Fed. Cir. 2013) ("As long as the patent covers the article that is the subject of the exclusion proceeding, and as long as the party seeking relief can show that it has a sufficiently substantial investment in the exploitation of the intellectual property to satisfy the domestic industry requirement of the statute, that party is entitled to seek relief under section 337.").

Nevertheless, as discussed above, Diebold has shown that the IDMbd module practices the asserted claims, and I find that Diebold has offered sufficient proof of the use of this module in Diebold ATMs to show the actual practice of the claims of the '631 patent. Dr. Singhose's

unrebutted testimony is that anyone who deposits a check using an ATM containing an IDMbd module will practice the claims of the '631 patent. CX-1872C (Singhose DWS) at Q&A.854. Mr. Rogers's uncontroverted testimony is that Diebold actively encourages its customers to deposit checks using its ATMs, and that one customer, [redacted], carries out over [redacted] check deposit transactions per week using ATMs equipped with IDMbd modules. CX-1875C (Rogers WS) at Q&A.82-83. In addition, Mr. Rogers testifies that Diebold generally tests the IDMbd during installation. *Id.* at Q&A.81. The circumstantial evidence also suggests that IDMbd modules are being used to deposit checks, because Diebold records show that, as of July 2015, there were 28,818 Diebold ATMs with IDMbds in service in the United States. CX-1875C (Rogers WS) at Q&A.88. This evidence is more than sufficient to show that the '631 patent method is actually practiced in Diebold ATMs.

D. Invalidity

Nautilus contends that the asserted claims of the '631 patent are invalid as obvious in view of Japanese patent application JP2004-110612A to Yasuhiko *et al.* (RX-0324, "Yasuhiko") combined with Korean patent KR10-613889 to Kim (RX-0322, "Kim"), and U.S. Patent No. 5,534,682 to Graef *et al.* (RX-0445, "Graef") or the Diebold prior art IDM 1 combined with Yasuhiko and U.S. Patent No. 5,875,259 to Mennie *et al.* (RX-0333, "Mennie"). RIB at 175-232.

1. Prior-art status of the obviousness references

There is no dispute that references relied upon by Nautilus for obviousness are prior art to the '631 patent. The '631 patent issued from an application filed on November 8, 2007. '631 patent, cover. The application claims priority to a provisional application filed on November 10, 2006.

Yasuhiko is a Japanese patent application entitled "Image Reading Apparatus with Magnetic Ink Data Reading Mechanism and Controlling Method Thereof," and was published on April 8, 2004. RX-0324, cover. Yasuhiko is prior art to the '631 patent under § 102(b). Kim is a Korean patent entitled "Bidirectionally Recognizable Magnetic Ink Character Reader" and was published on August 21, 2006. RX-0322, cover. Kim is prior art to the '631 patent under § 102(a). Graef is a U.S. patent entitled "Article Depositing Apparatus" that issued on July 9, 1996 from an application filed on March 21, 1995. RX-0445, cover. Graef is prior art to the '631 patent under § 102(b). The IDM 1 is a deposit module that was first sold in September, 1993. RX-0121C (Diebold's 4th Supp. Resps. to Interrog. No. 91) at .006. The IDM 1 is prior art to the '631 patent under § 102(b). Mennie is a U.S. patent entitled "Method and Apparatus for Discriminating and Counting Documents" that issued on February 23, 1999 from an application filed on March 7, 1995. RX-0333, cover. Mennie is prior art to the '631 patent under § 102(b).

2. Level of Ordinary Skill in the Art

Neither Diebold nor Nautilus address the appropriate level of ordinary skill in the art with respect to the '631 patent in their post-hearing briefs. Diebold's expert, Dr. Singhose, opines that a person of ordinary skill would have had combination of experience and education, typically consisting of a bachelor degree in mechanical engineering and four years of experience in mechanical engineering. CX-1980C (Singhose RWS) at Q&A.29. Nautilus's expert, Dr. Stevenson, opines that one of ordinary skill in the art would have had a bachelor degree in mechanical engineering, computer science, computer engineering, electrical engineering, or a closely related field, along with at least two years of industry experience in engineering electromechanical devices. RX-1185C (Stevenson DWS) at Q&A.85. The level of ordinary

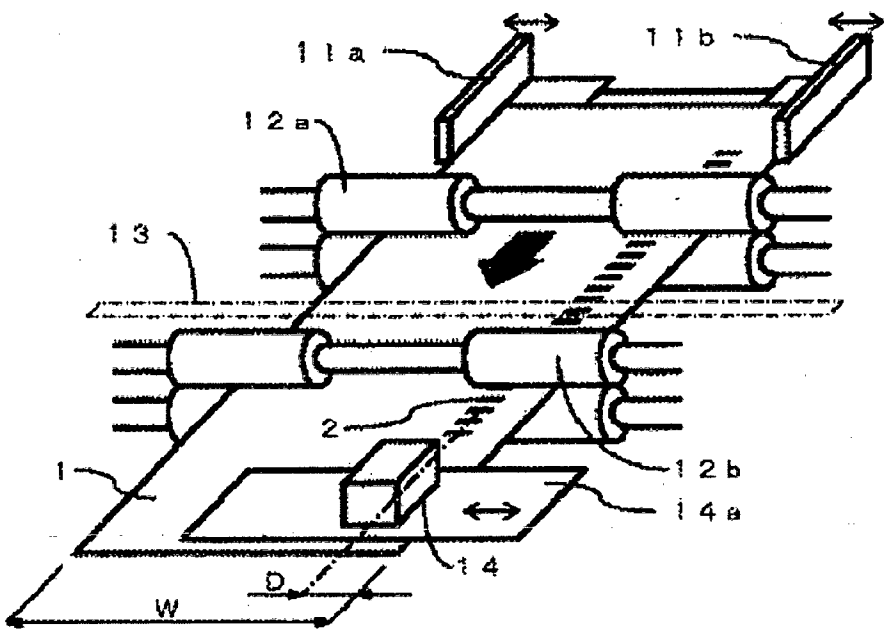
skill as articulated by Dr. Singhose is consistent with the subject matter of the '631 patent. Accordingly, I find that one of ordinary skill in art would have had a bachelor degree in mechanical engineering and four years of experience in mechanical engineering.

3. Yasuhiko in combination with Kim

Depending on how a check is inserted into an ATM, the MICR line will be in one of four different orientations: (1) left side, face up, (2) left side, face down, (3) right side, face up, and (4) right side, face down. The asserted claims are directed to a device that can read the MICR line in all four orientations using two MICR heads. Nautilus contends that Yasuhiko in combination with Kim would have rendered such a device obvious.

Yasuhiko discloses a system for reading a "magnetic ink character string . . . in an image reading apparatus." RX-0324 at [0001]. The system is depicted in Figure 1:

FIG. 1



RX-0324, Fig. 1 (excerpt)

The system's "magnetic reading unit 14" reads magnetic ink characters on documents of varying widths. *Id.* at [0093]. A "magnetic reading position setting mechanism 14a" "detects the width W of the document 1." *Id* at [0095]. Based on the detected width of the document, "magnetic reading unit 14" is moved "perpendicular to the direction of the feeding of the document 1" so that it is in position to read the magnetic characters. *Id.* at [0093-95]. Thus, an ATM incorporating the movable read head disclosed in Yasuhiko can read the MICR line on checks having different widths.[20] Such an ATM, however, still requires the user to insert the check so that side with the MICR line is on same side of the transport path as the movable read head.

In order implement an ATM that is capable of reading the MICR line irrespective of which side of the transport path the MICR line is on, Nautilus proposes combining Yasuhiko with Kim. Kim discloses a "magnetic ink character reader" that can read the MICR line of a check irrespective of which side of the transport path that the MICR line is on. RX-0322, Abstract. In order to accomplish this, the device disclosed in Kim has two fixed magnetic read heads (head parts (23a, 23b). RX-0322 at 4, Fig. 2, Fig. 3. According to Nautilus, in view of Kim, one skilled in the art would have been motivated to modify the device disclosed in Yasuhiko by adding a fixed magnetic read head, so that the resulting device would be able to read the MICR lines of deposited checks of varying widths irrespective of which side of the transport path the MICR line is on. For the reasons set forth below, I find that one of ordinary

[20] Claims 1 and 18 require the claimed methods be performed by an "automated banking machine." '631 patent, col. 41:26-29 (claim 1); 43:11-12 (claim 18). Diebold argues that this limitation is not disclosed or rendered obvious by Yasuhiko. Diebold acknowledges, however, that Yasuhiko's "check scanner" could be used in an ATM. CRB at 83. Diebold's argument that Yasuhiko does not render the "automated bank machine" limitations obvious is solely based on its contention that Nautilus waived the argument by not raising it in its pre-hearing brief. Nautilus, in fact, raised this argument in its pre-hearing brief. RPHB at 316-17, 317 n. 63. Accordingly, I find that that Yasuhiko renders the automated banking machine limitation obvious.

skill in the art would not have had motivation to modify Yasuhiko as proposed by Nautilus. Moreover, I find that Nautilus's proposed combination fails to disclose all of the limitations of the asserted patents.

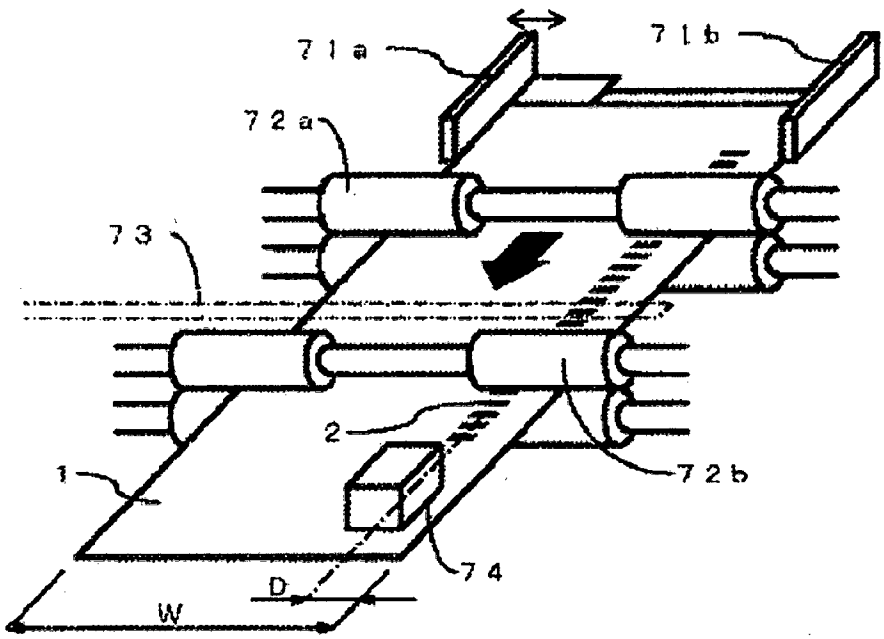
a. There would have been no motivation to modify Yasuhiko to add a fixed MICR head.

Nautilus argues that one of ordinary skill in the art would have been motivated to modify Yasuhiko to add a fixed MICR read head to allow processing of checks of different widths irrespective of whether the MICR line appears on the right side or left side of the transport path.[21] Nautilus argues that such a modification would have been obvious in view of Kim, which discloses the use of two fixed MICR read heads to process checks of identical widths irrespective of whether the MICR line appears on the right side or the left side of the transport path. An examination of the references shows that one of ordinary skill would have had no motivation to make the modifications proposed by Yasuhiko.

Yasuhiko discloses two systems that can process checks of varying widths. The first system is described as prior art to Yasuhiko and is depicted in Figure 18:

[21] Nautilus does not contend that one of ordinary skill in the art would have modified Yasuhiko by adding a movable MICR head. *See, e.g.*, RIB at 187 ("Similarly, employing a second fixed MICR reader like the one in Kim in Yasuhiko would eliminate the problem with movable MICR readers of needing to search for the MICR line, thereby improving processing speed, furthering the stated goal of automatic deposit/withdrawal apparatuses noted in Kim: allowing a user to 'quickly and simply deposit or withdraw checks without going through bank windows.'") (quoting RX-322 at 2).

FIG. 18

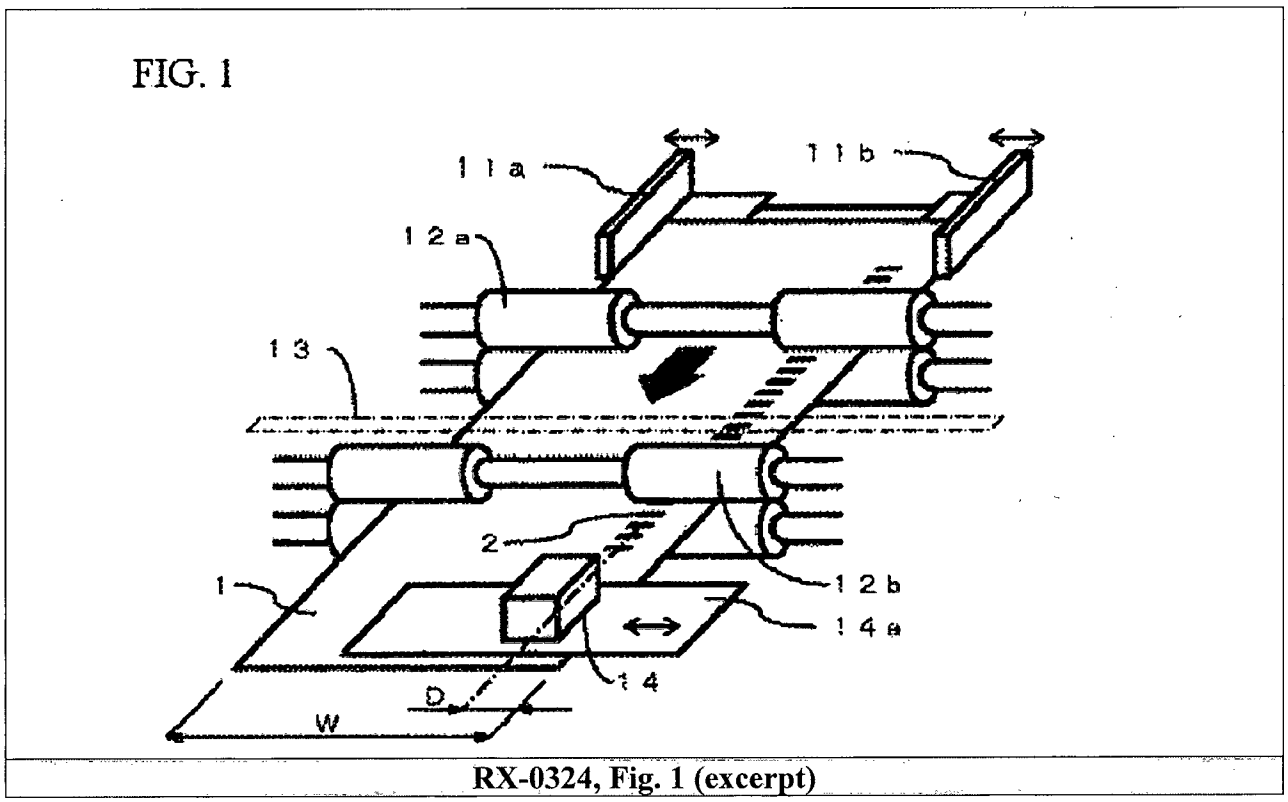


RX-0324, Fig. 18 (excerpt)

"Stationary side document guide 71b" and "moveable side document guide 71a" align "document 1" in the transport path so that it can be optically and magnetically read. RX-0324 at [0020]. After the entire surface of document 1 is image read by "image reading line 73," the document's "magnetic ink character string 2" is read by "magnetic reading unit 74," which is fixed. Because the magnetic ink character string 2 is a set distance from the edge of the check ("D"), magnetic reading unit 74 can be placed in a fixed position that enables it to read the magnetic ink character string of each document. *Id.* at [0022]. Because the location of a document's edge aligned against the "moveable side document guide 71a" will vary between documents according to each document's width, while the location of the edge aligned against the "stationary side document guide 71b" will remain constant, a fixed magnetic read head can only be used to read a MICR line along the edge aligned against the stationary side document guide. There would have been no motivation to add a second fixed magnetic read head to this

system because the system already has a fixed magnetic read head to read a MICR line along the edge aligned against the stationary side document guide, and a fixed magnetic read head could not be correctly positioned to read a MICR line along the edge aligned against moveable side document guide.

Yasuhiko describes the system depicted in Figure 18 as being problematic because for image reading it is beneficial for documents to be centered, rather than being justified to one side. *Id.* at [0023]-[0025]. To ensure documents being processed are centered, Yasuhiko discloses an embodiment that uses two movable document guides (11a, 11b):



RX-0324, Fig. 1 (excerpt)

To accommodate documents of different widths, document guides 11a and 11b move the same distance in opposing directions to ensure that the centerline of each document is in the same location in the transport path. *Id.* at [0089]-[0090]. Because the locations of both edges will vary between documents of different widths, the fixed magnetic read head of the prior art

system cannot be used to read magnetic ink character string 2. Instead, as described above, a movable magnetic read head ("magnetic read head 14") is positioned over magnetic character ink string 2 based on the width of the document ("W") and the distance between the edge of the document and magnet character ink string 2 ("D"). *Id.* at [0093]-[0095].

There would have been no motivation to add a fixed magnetic read head to the system depicted in Figure 1 because the locations of both edges of a document will vary between documents of different widths. Accordingly, a fixed magnetic read head could not be placed in a position where it would be able read a MICR line appearing along one of the edges of a document.[22]

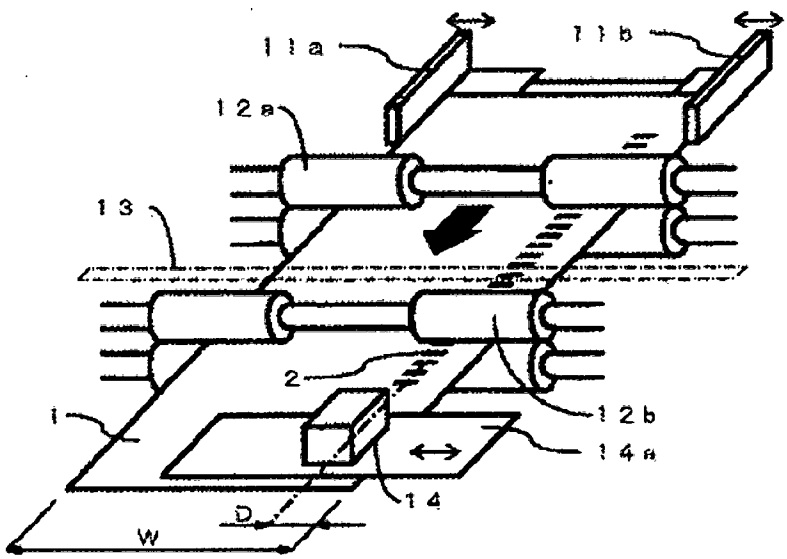
b. Yasuhiko in combination with Kim does not disclose all of the limitations of the asserted claims.

In addition to disputing that one of ordinary skill in the art would not have been motivated to modify Yasuhiko in view of Kim, Diebold argues that Nautilus's proposed combination does not disclose all of the elements of the asserted claims. In particular, the asserted claims require an ATM that can read a MICR line appearing on the right side or left side of the check irrespective of whether the check is face up or face down. '631 patent, col. 41:38-41 (claim 1) ("wherein the at least one magnetic read head is moved such that the micr line on the check is aligned with one of the magnetic read heads regardless of a facing position of the check . . . sensing micr line data on the check with one of the two magnetic read heads"); col. 44:10-12 (claim 18) ("operating the machine to cause magnetic read head reading of the micr

[22] In its reply post-hearing brief, Nautilus suggests that the system depicted in Figure 1 in combination with the system of depicted in Figure 18 renders obvious asserted claim 5, which requires a fixed MICR head and a moveable MICR head. RIB at 73-74. This argument was not raised in Nautilus's prehearing brief and is hereby deemed waived. Ground Rule 11.1 ("The post-trial brief shall discuss . . . those issues that are included in the pre-trial brief and any permitted amendments thereto. All other issues shall be deemed waived.").

line magnetic data regardless of the facing position of the check"). The device disclosed in Kim is expressly described as being incapable of reading the MICR line of a check inserted face down, instead of face up: "[S]ince the present invention is capable of recognizing the check in both left and right directions, all the checks may be recognized unless the user inserts the checks upside down, unlike the related art." RX-0322 at 5. Figure 1 of Yasuhiko depicts the movable read head (magnetic reading unit 14) reading the magnetic ink line of a document that is face up:

FIG. 1



RX-0324, Fig. 1

Yasuhiko is silent on whether the movable read head can read the magnetic ink line if the check is face down.

In an attempt to address this deficiency, Nautilus argues that "a person of ordinary skill in the art would understand that MICR readers can read through a check." CIB at 187 n. 20. In support of this argument, Nautilus cites U.S. Patent No. 7,474,780 to Volpa ("Volpa"), which discloses a "MICR station [that] can operate on the MICR markings through the paper of the document," and thus can read MICR markings "regardless of whether the front or back face of

the document faces the charge heads and the read heads." RX-0321, Volpa at 3:7-23. Importantly, Nautilus does not argue that one of ordinary skill would have combined Volpa's "MICR station" with Yasuhiko or Kim, but that "Volpa evinces that a person of ordinary skill in the art would understand that a magnetic reader can read through paper." CIB at 187 n. 20.

The magnetic read heads of Kim, however, cannot read through paper, RX-0322 at 5, and there is no evidence indicating that the read head of Yasuhiko can read through paper, RX-0324, Fig. 1. On the foregoing basis, I find that the proposed combination of Yasuhiko and Kim fails to disclose each limitation of the asserted claims.

4. Graef or the IDM 1 in combination with Yasuhiko and Mennie

Nautilus contends that either Graef or the IDM 1 in combination with Yasuhiko and Mennie renders the asserted claims obvious.[23] The IDM 1 is a check deposit module. RX-1185C (Stevenson DWS) at Q&A.287. As confirmed by Thomas Graef who—in addition to being the first named inventor on the Graef reference—was the lead technical engineer on the project that lead to the IDM 1, Graef and the IDM1 are closely related. RX-0834C (Graef Dep. Tr.) at 45:4-17; 142:3-20 (testifying that the Graef reference is "about" the IDM 1); *see also* CX-1980C (Singhose RWS) at Q&A.133); RX-1185C (Stevenson DWS) at A.287 ("So, where the documentation that I received was incomplete I looked to the Graef '682 patent to better understand how the IDM worked.").

[23] Nautilus petitioned the PTO to institute an IPR against the asserted claims. One of the grounds asserted in Nautilus's petition was that the claims were obvious over a combination of Graef, Mennie, and U.S. Patent Publication 2006/0196940 A1 ("Kawai"). IPR2016-00633, Decision, Paper No. 7 (Aug. 22, 2016) at 8. The PTO declined to institute an IPR, finding that "the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail." *Id.* at 35. As acknowledged by Diebold, however, the PTO's decision is not binding. CIB at 173 n. 12. My analysis of Nautilus's invalidity contentions does not rely on the PTO's decision.

Graef discloses "an apparatus for receiving, processing and sorting envelopes and single document deposits." RX-0445 at col. 1:9-12. Such "single document deposits" may include "checks, utility bills, or other sheet notes." *Id.* at col. 2:57-61. In order to read the MICR line of a deposited document, Graef employs a movable shuttle that includes a MICR head and a retro-reflective sensor. *Id.* at col. 9:6-12. The sensor detects whether a document is underneath it. *Id.* In order to read the MICR line of a document, the shuttle is first placed in a "location wherein the coded information would be expected on the document deposit." *Id.* at col. 20:31-36. In the event that the coded information is not found where initially expected, a central processing unit causes the transport belt to continually reverse itself in order to move the document past the MICR head, while at the same time, the shuttle moves "to a position where the coded information might be found." *Id.* at col. 20:33-44. The ANSI and ISO standards specify that the MICR line on a check must be printed at a set distance from the check's edge. RX-0828C (Carpenter Dep. Tr.) at 59:17-60:5; CX-1980C (Singhose RWS) at Q&A.250-51. Accordingly, if a check was being processed, the MICR line would only be "expected" and "be found" along one of the edges at the distance prescribed under the standards.

The IDM 1 is structurally and operationally similar to the apparatus disclosed in Graef. The IDM 1 has a shuttle with a MICR head and a retro-reflective sensor. RX-834C (Graef Dep. Tr.) at 113:14-114:20. The shuttle's sensor determines whether a check is underneath it by emitting light and detecting whether any light is reflected back. RX-834C (Graef Dep. Tr.) at 113:14-114:20. The shuttle moves as long as the sensor detects reflected light. *Id.* When the sensor reaches the edge of the check it will no longer detect reflected light at which point the shuttle stops. *Id.* The distance separating the sensor and the MICR read head on the shuttle is the same as the distance between the edge of the check and the MICR line. *Id.* As a result, when

the shuttle stops, the sensor will be positioned over the edge of the check and the MICR head will be positioned over where the MICR line would be, if the MICR line was along that edge. *Id.*

Graef and the IDM 1 do not disclose two elements required by the asserted claims: (1) positioning the MICR head based on a check's sensed width and (2) two magnetic read heads.[24] Nautilus argues that sensing a check's width and using that width to position the MICR read head would have been obvious either in view of Graef alone or in combination with Yasuhiko. Graef and the IDM 1 disclose the use of a single MICR read head. Nautilus argues that it would have been obvious to modify Graef and the IDM 1 to use a second a MICR read head in view of Mennie. For the reasons set forth below, I find Nautilus's arguments to be unavailing.

a. There would have been no motivation to modify Graef and the IDM 1 so that the MICR head is moved based on the check's sensed width.

As a preliminary matter, neither Graef nor the IDM 1 discloses moving the MICR head based on the sensed width of a check. Although Nautilus contends that sensing the location of the edges of the check somehow constitutes sensing the width of the check, this contention is contradicted by its own expert's testimony. Dr. Stevenson testified that there were a "number of options to determine where to move the MICR shuttle 90." RX-1185C (Stevenson DWS) at A.109. Dr. Stevenson identified three such "options": (1) moving the MICR head to a location where magnetic ink is magnetically sensed, (2) moving the MICR head to a location that is a fixed distance from the edge of the check, and (3) moving the MICR head to a location based on

[24] Claim 1 requires a system that senses "a width associated with the check" and "mov[es] responsive at least in part to the width sensed" a magnetic read head, whereas claim 18 requires a system that "obtain[s] at least one dimensional feature associated with a financial check" and moves a magnetic read head based in part on the "one-dimensional feature obtained." '631 patent, col. 41:31-36 (claim 1); col. 43:11-col. 44:7. For its invalidity arguments, Nautilus relies on the check's width to satisfy claim 18's "one dimensional feature" limitations. RIB at 226-28.

the width of the check. *Id.* The second option is disclosed in Graef and the IDM 1, and the third option is the method required by the asserted claims.

With respect to Graef, Dr. Stevenson also opines that "because Graef '682 discloses that 'the document deposit is aligned along the edge of platen 310,' the width is necessarily also known." *Id.* at A.108 (quoting RX-0445 at 20:1-2). Neither Dr. Stevenson nor Nautilus explains why so aligning the document means that the width of the document is necessarily known. Moreover, even if Dr. Stevenson is correct that aligning the document means that the system disclosed in Graef has necessarily determined the width of the document, the asserted claims require that the MICR head be "moved responsive at least in part to the width sensed." '631 patent, col. 41:34-35. The shuttles in Graef and the IDM 1 are not repositioned based on the width of the document; they are moved until they sense the edge of the document. Nautilus has not articulated any advantage to using the sensed width of the check to position the MICR head instead of the location of the edges.

Although Dr. Stevenson testifies that modifying Graef and the IDM 1 to use the check's width to determine where to position the MICR head would be advantageous because it would limit the need to search for the MICR line and limit the need to move the check back and forth, which would result in faster processing time and a decreased likelihood that checks will be damaged through "unnecessary movement," he does not explain how or why any these advantages would be realized. RX-1185C (Stevenson DWS) at A.110. While determining the width of a check would allow a system to position the MICR head over the area along the edge of the check that could contain the MICR line, this can also accomplished by locating an edge of the check and positioning the MICR head a set distance from the edge. RX-1185C (Stevenson DWS) at A.109.

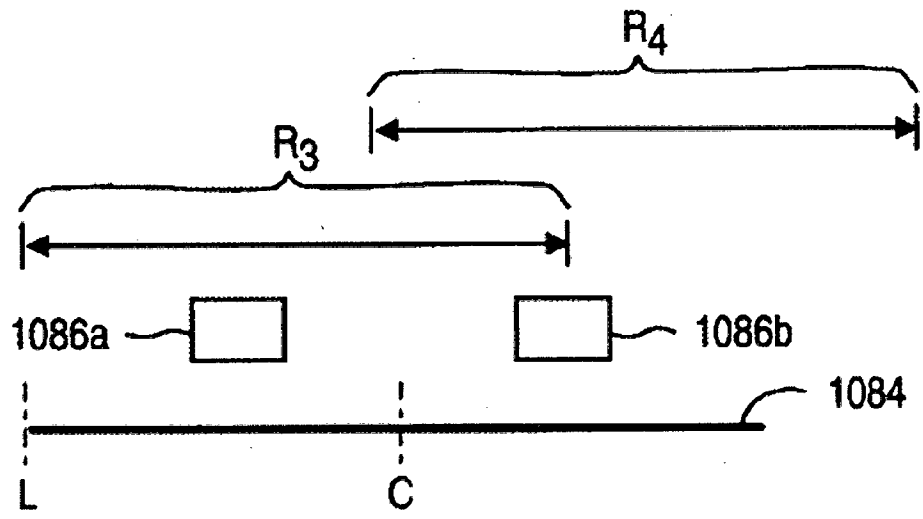
The "unnecessary movement" in Graef and IDM 1 that increases processing time and increases the likelihood of checks being damaged is the result of the MICR head being initially positioned over the wrong edge of the check so that it has to be relocated to the opposite edge. In the context of a system with one moveable MICR head—such as Graef and the IDM 1—using the check's width to determine where to initially position the MICR head does not eliminate the possibility that the MICR head will be initially positioned on the wrong edge, so that it has to be relocated to the opposing edge. Moreover, as discussed below, Nautilus contends that it would have been obvious to modify Graef and the IDM 1 by adding a fixed MICR head so that there would be a MICR head on each side of the transport path. Nautilus, however, has not identified any motivation to further modify the system so that the moveable MICR head is positioned based on the check's width, rather than the location of an edge. As proposed by Nautilus, the two MICR head system would not need to "continually reverse" the transport path as the moveable head moves to the opposing edge, because the fixed MICR head would already be in position to read the MICR line along the opposing edge.

b. One of ordinary skill in the art would not have had motivation to modify Graef and the IDM 1 to incorporate a second MICR head.

Both Graef and Mennie disclose single-MICR-head systems that can process checks irrespective of whether a check is inserted face up or face down or whether it is inserted so that the MICR line is on the right side or left side. RX-0123C at TG00007793-94; RX-1185C (Stevenson DWS) at Q&A.101. Nautilus argues that it would have been obvious in view of Mennie to modify Graef and the IDM 1 to incorporate a second MICR head, because such a modification would have resulted in faster processing times and eliminated the need for the

movable MICR head to move the entire width of the check. RIB at 207-08. Mennie, however, does not suggest the use of two magnetic read heads.

Mennie is directed to "an apparatus and method for discriminating among a plurality of document types such as currency bills of different denominations and/or from different countries." RX-0333 at col. 1:61-64. Mennie discloses a number of embodiments having one or more scanheads. Nautilus argues that the embodiment disclosed in Figure 23 renders the use of two laterally-disposed magnetic scanheads obvious. In this embodiment the bill that is to be scanned is "transported in a left justified manner along the transport path." *Id.* at col. 54:53-57. So aligned the bill (1084) is scanned by two moveable scanheads (1086a, 1086b), which are positioned based on the width of the bill:



RX-0333, Fig. 23

Id. at col. 54:58-65. As an alternative to using two moveable heads, Mennie teaches that a "hybrid system having both stationary and moveable scanheads" can be implemented. *Id.* at col. 55:11-13. Although the scanheads used in these embodiments are optical scanheads, not magnetic scanheads, Nautilus argues that Mennie expressly teaches that the scanheads can be

implemented as magnetic scanheads by stating with respect to an earlier embodiment that "the scanhead may employ a variety of detection means such as magnetic, optical, electrical conductivity, and capacitive sensors." *Id.* at 17:27-30.

When the Figure 23 embodiment and Mennie's discussion of different scanheads are examined in context, however, Nautilus's argument quickly loses its force. Mennie teaches that magnetic sensing can be used to help differentiate between bills of different denominations. Specifically Mennie teaches that magnetic sensing can detect (1) whether magnetic ink is present or absent in portions of printed *indicia* on the currency; (2) patterns arising from changes in magnetic flux or the strength of the magnetic fields along a bill; (3) patterns of vertical grid lines in the portrait area of bills; (4) the presence of a security thread, or (5) the total amount of magnetizable material of a bill. RX-0333 at col. 2:24-39. In addition to optical and magnetic sensing, Mennie also teaches that "other techniques of detecting characteristic information of currency" can be used "includ[ing] electrical conductivity sensing, capacitive sensing (such as for watermarks, security threads, thickness, and various dielectric properties) and mechanical sensing (such as for size, limpness, and thickness)." *Id.* at col. 2:55-60. Although it teaches that sensors other than optical sensors can be used to discriminate between different types of currency, Mennie describes optical sensing "as the more commonly used." *Id.* at col. 2:40-44; col. 22:1-13.

Consistent with its description of optical sensing as being the most commonly used, each embodiment disclosed in Mennie employs optical scanheads. RX-1185C (Stevenson DWS) at A.147 ("In general, the scanheads are described as being optical scanheads . . . ."). The only implementation of a non-optical scanhead disclosed in Mennie is a fixed magnetic scanhead used in conjunction with two optical scanheads. Specifically, Mennie teaches that the bill-scanning

system using two optical scanheads can be supplemented with "a magnetic scanhead," *Id.* at col. 22:1-2 ("In addition to the optical scanheads, the bill scanning system preferably includes a magnetic scanhead."); col. 22:13-16 ("The denomination determined by optical scanning of a bill is preferably used to facilitate authentication of the bill by magnetic scanning . . . ."). The magnetic scanhead measures the "magnetic content" of the bill, while the optical scanheads measure an optical characteristic of the bill, such as its "reflected light intensity." *Id.* at 22:41-49. Both the "magnetic content" and optical characteristic are indicative of particular denominations. *Id.* If both measurements are consistent, *e.g.*, both the optical characteristic and magnetic content indicate the bill is a $10 bill, the bill is accepted. *Id.* If the measurements are inconsistent, the bill is rejected. *Id.*

Accordingly, the less commonly used sensing techniques, such as magnetic sensing, are shown as being used in addition to not in *lieu* of optical sensing. There is no suggestion in Mennie that it would be advantageous to replace all of the scanheads in the Figure 23 embodiment, or any other embodiment, with magnetic scanheads. If one of ordinary skill in the art were trying to apply the teachings of Mennie to check processing, he or she would likely modify the Figure 23 embodiment to include a third scanhead to detect the presence or absence of magnetic ink. Not only is such a modification suggested by Mennie, RX-0333 at col. 22:1-1-49, such a system would resemble systems such as Diebold's IDM 3 and 4 products. RX-0828C (Carpenter Dep. Tr.) at 62:15-63:15. Instead of a MICR head these systems used optical sensors for optical character recognition and magnetic sensors to detect the presence of magnetic ink. *Id.* at 63:17-64:5. In the alternative, Mennie might lead one of ordinary skill to modify Graef and the IDM 1 to include a magnetic or optical sensor located upstream of the movable MICR head to determine which side of the check the MICR line was on, so that the movable MICR head

could be moved to the correct side. RX-0333 at 2:24-30 ("Magnetic sensing is based on detecting the presence or absence of magnetic ink in portions of the printed indicia on the currency by using magnetic sensors . . . .").

In contrast, Nautilus's argument that one of ordinary skill would have been motivated to modify Graef and the IDM 1 in view of Mennie to add a second MICR head appears to be suggested from the teachings of the asserted claims, rather than the prior art references. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) ("A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning."); *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 36 (1966) (cautioning fact finders "to resist the temptation to read into the prior art the teachings of the invention in issue"). Not only does Mennie, as discussed above, not suggest the proposed modification, such a modification would negate an aspect of the invention, which is touted as being "important." Specifically, Graef identifies as one of the advantages of the invention that it uses "only one magnetic read head" thereby "reduc[ing] the necessity of duplicate components." RX-0445 at 23:5-10 ("More importantly, an apparatus according to the present invention can scan, image and print onto one or both sides of a document deposit and accomplishes such scanning, imaging and printing, utilizing only one magnetic read head, one image/scanner and one print head.

In this respect, the ability to duplex a document deposit reduces the necessity of duplicate components."). Nautilus's proposed modification of adding a duplicate component in the form of a second MICR head would negate this very advantage. *Cheese Sys., Inc. v. Tetra Pak Cheese and Powder Systems, Inc.*, 725 F.3d 1341, 1362 (Fed. Cir. 2013 ("Even when all claim limitations are found in prior art references, the fact-finder must determine what the prior art

teaches, whether prior art teaches away from the claimed invention, and whether there was motivation to combine teachings from separate references.").

VI. DOMESTIC INDUSTRY – ECONOMIC PRONG

To satisfy the domestic industry requirement, Diebold relies on its investments in field service, manufacturing, engineering, and research and development. CIB at 204-227.

A. Legal Standards

In patent-based proceedings under Section 337, a complainant must establish that an industry "relating to the articles protected by the patent . . . exists or is in the process of being established" in the United States. 19 U.S.C. § 1337(a)(2). Subsection (3) of Section 337(a) provides:

> For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned –
>
> (A) significant investment in plant and equipment;
>
> (B) significant employment of labor or capital; or
>
> (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3). The domestic industry ("domestic industry" or "DI") requirement of Section 337 consists of an "economic prong" and a "technical prong." *Certain Stringed Musical Instruments and Components Thereof* ("*Stringed Musical Instruments*"), Inv. No. 337-TA-586, Comm'n Op. at 13, 2009 WL 5134139, at *10 (April 24, 2008). The Commission has adopted a flexible, market-oriented approach to the economic prong, favoring case-by-case determination in light of "the facts in each investigation, the article of commerce, and the realities of the marketplace." *Certain Male Prophylactic Devices* ("*Male Prophylactic Devices*"), Inv. No. 337-TA-546, Comm'n Op. at 39 (Aug. 1, 2007).

"Whether an investment is 'substantial' or 'significant' is context dependent." *Certain Printing & Imaging Devices & Components Thereof* ("*Printing and Imaging*"), Inv. No. 337-TA-690, Comm'n Op. at 31, 2011 WL 1303160, at *17 (Feb. 17, 2011). The Commission has recognized repeatedly that "the magnitude of the investment cannot be assessed without consideration of the nature and importance of the complainant's activities to the patented products in the context of the marketplace or industry in question." *Certain Kinesiotherapy Devices and Components Thereof,* Inv. No. 337-TA-823, Comm'n. Op. at 31 (July12, 2013) (citing *Printing and Imaging*, Comm'n Op. at 31-32, 2011 WL 1303160, at *17). There is, however, no threshold test for what is considered "significant." *Id.* at 33 (citing *Male Prophylactic Devices*, Comm'n Op. at 39). "Instead, the determination is made by 'an examination of the facts in each investigation, the article of commerce, and the realities of the marketplace.'" *Male Prophylactic Devices*, Comm'n Op. at 39 (quoting *Certain Double-Sided Floppy Disk Drives and Components Thereof (TEO),* Inv. No. 337-TA-215, USITC Pub. No. 1860, Comm'n Op. at 17 (May 1986)).

Several additional principles guide the analysis. Satisfaction of the economic prong generally is decided as of the date the complaint was filed. *See Motiva, LLC v. Int'l Trade Comm'n*, 716 F.3d 596, 601 n.6 (Fed. Cir. 2013); *Certain Television Sets, Television Receivers, Television Tuners, and Components Thereof*, Inv. No. 337-TA-910, Comm'n Op. at 75, 2015 WL 6755093 at *39 (Oct. 30, 2015); *Certain Coaxial Cable Connectors & Components Thereof & Products Containing Same*, Inv. No. 337-TA-650, Comm'n Op. at 51 n.17 (Apr. 14, 2010). In addition, under *Lelo, Inc. v. Int'l Trade Commission*, qualitative factors alone cannot support a domestic industry finding. 786 F.3d 879, 884-85 (Fed. Cir. 2015).

Further, under long-standing practice and in accordance with section 337(a)(2)'s express requirement that a domestic industry in the United States must relate to the articles protected by the patent, and section 337(a)(3)'s requirement that a domestic industry be established "'with respect to the articles protected by the patent,'" *see Certain Integrated Circuit Chips And Products Containing The Same* ("*Integrated Circuit Chips*"), Inv. No. 337-TA-859, Comm'n Op. at 47 (Aug. 22, 2014), expenditures must be allocable to the identified article(s) claimed to be protected by the patent. Quantification of relevant expenditures need not be exact, however. *See Printing & Imaging*, Comm'n Op. at 27, 2011 WL 1303160 at *15 (noting that the significance of a complainant's investments "is not evaluated according to any rigid mathematical formula."); *Stringed Musical Instruments*, Comm'n Op .at 26, 2009 WL 5134139 at *17 ("[a] precise accounting is not necessary, as most people do not document their daily affairs in contemplation of possible litigation.")

It also is well-established that there is no absolute number that will or will not satisfy the statutory requirement. *See Printing & Imaging,* Comm'n Op. at 31, 2011 WL 1303160 at *17 (Feb. 17, 2011) ("the magnitude of the investment cannot be assessed without consideration of the nature and importance of the complainant's activities to the patented products in the context of the marketplace or industry in question"); *accord, Lelo*, 786 F.3d at 884 (noting that the word "significant" denotes "an assessment of the relative importance of the domestic activities.") (citing *Certain Concealed Cabinet Hinges and Mounting Plates* ("*Concealed Cabinet Hinges*"), Inv. No. 337-TA-289, Comm'n Op. at 11, 1990 WL 10608981 (Jan. 8, 1990)). Arguments that a certain amount of investment satisfies the economic prong "without more" or "by any measure" are inconsistent with Commission precedent. *See id.* (finding no DI where "the ALJ was left to consider only the magnitude of complainant's expenditures in an absolute sense"). In particular,

where products are made abroad, there must be some way to determine whether the domestic investment is significant in light of the foreign investments—whether that method includes comparison of foreign and domestic investments or an evaluation of the value added to the product by the domestic activities. *See id.*, Comm'n Op. at 32-33; 2011 WL 1303160, at *18 ("'significance' as used in the statute denotes an assessment of the relative importance of the domestic activities") (citing *Concealed Cabinet Hinges*, Comm'n Op. at 32, 1990 WL 10608981, at *11).

B. Asserted Investments

1. Field Service Labor

Diebold's investments in field service labor were addressed on summary determination in Order No. 19 (June 22, 2016), and Diebold relies on substantially the same evidence in its post-hearing brief. CIB at 205-208. Sean Rogers, Diebold's director of global service product management, testified at the hearing in support of Diebold's domestic industry, describing warranty service and multi-year contracts for Diebold ATMs sold in the United States. CX-1875C (Rogers WS) at Q&A.21. Mr. Rogers provides a summary of field service investments for the asserted Diebold ATMs in 2008-2015, leading up to the filing of the complaint. CX-1875C (Rogers WS) at Q&A.52 (citing CPX-0094C). These expenditures include both labor and materials costs, and to allocate these investments between labor and materials, Mr. Rogers relies on a summary of expenditures for the entire Diebold service department. *Id.* at Q&A.37-41 (citing CPX-0094C). In 2015, labor costs represented [redacted] of the expenditures in Diebold's service department, and this percentage has been very stable between 2008 and 2015, ranging only between [redacted]. *Id.* at Q&A.41. Mr. Rogers further identifies materials investments that represent [redacted] of Diebold's total service investments. *Id.* at Q&A.41.

Mr. Rogers testifies that this department-wide ratio of labor to materials is likely to be representative of the expenditures for field service because all of Diebold's service activities are largely labor based, and the recent divestment of an electronic security group has caused the proportion of labor expenditures to go up, suggesting that the [redacted] proportion may understate the level of investment in labor for field service. *Id.* at Q&A.42-43. Applying the [redacted] labor and [redacted] materials proportions to Diebold's field service investments in 2015 yields the following investment amounts:

	Total Jan-Sept 2015	**Labor ([redacted]) Jan-Sept 2015**	**Materials ([redacted]) Jan-Sept 2015**
Opteva 500	[redacted]		
Opteva 520			
Opteva 522			
Opteva 560			
Opteva 720			
Opteva 740			
Opteva 750			
Opteva 760			
Opteva 858			
Opteva 878			

CX-1875C (Rogers WS) at Q&A.56-57 (citing CPX-0094C).[25]

Because different ATM models are asserted to practice each of the asserted patents, Diebold only identifies a subset of these expenditures for each patent. CIB at 210-227. For the '616 patent, Diebold only asserts expenditures related to the Opteva 500, Opteva 520, Opteva 522, and Opteva 560, and just under half of the expenditures for the Opteva 720.[26] *Id.* at 210-

[25] Diebold identifies expenditures for the entire period from 2008-2015, but as discussed *infra*, the 2015 expenditures are the most relevant and reliable evidence of Diebold's domestic industry.

[26] Because the expenditures for the Opteva 720 include some service of the Opteva 720r, an ATM that does not practice the '616 patent, Diebold discounts about half of these expenditures

212. This yields total labor expenditures of about [redacted] million and materials expenditures of about [redacted] million in 2015 attributable to products that practice the '616 patent. *Id.*; CX-1875C (Rogers WS) at Q&A.65-66.[27] For the '010 patent, the domestic industry products are the Opteva 720, Opteva 740, Opteva 750, Opteva 760, Opteva 858, and Opteva 878, but only some of these ATMs have the IDM5 module that practices the asserted claims. CIB at 213-215. In July 2015, only [redacted] of Diebold's Opteva ATMs had an IDM5 module installed. CX-1875C (Rogers WS) at Q&A.107-108 (citing CPX-0065C). Applying this ratio to the 2015 expenditures for the relevant ATMs yields a total of [redacted] million in labor expenditures and [redacted] thousand in materials expenditures attributable to products that practice the '010 patent. CIB at 213-214.[28] The domestic industry products for the '631 patent are the Opteva 720, Opteva 740, Opteva 750, Opteva 760, Opteva 858, and Opteva 878 models having an IDMbd installed. CIB at 217-221. In July 2015, [redacted] of Diebold's Opteva ATMs had an IDMbd module installed. CX-1875C (Rogers WS) at Q&A.107-108 (citing CPX-0065C). Applying this ratio to the 2015 expenditures for the relevant ATMs yields a total of [redacted] million in labor expenditures and [redacted] million in materials expenditures attributable to products that practice the '631 patent. CIB at 219.

Diebold contends that its investments in field service represent significant employment of labor or capital that meets the standards of subsection 337(a)(3)(B). CIB at 210-227; CRB at 93-

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by relying on a spreadsheet showing that in September 2015, there were [redacted] Opteva 720 front-loading ATMs (that practice the '616 patent) and [redacted] Opteva 720r rear-loading ATMs (that do not practice the '616 patent). CX-1875C (Rogers WS) at Q&A.27 (citing CPX-0084C).

[27] Mr. Rogers appears to make an arithmetic error when totaling these amounts in his witness statement, but while his calculated numbers are incorrect, it does not substantively change the analysis. *See* RRB at 82.

[28] Mr. Rogers makes an arithmetic error for the '010 patent similar to the mistake regarding the '616 patent domestic industry. *See supra* n.27; RRB at 85-86.

95. Whether these investments are significant "is not measured in the abstract or in an absolute sense, but rather is assessed with respect to the nature of the activities and how they are 'significant' to the articles protected by the intellectual property right." *Printing & Imaging*, Comm'n Op. at 26, 2011 WL1303160, at *15. Moreover, Diebold must show that this significance is quantitative, not merely qualitative. *See Lelo v. Int'l Trade Comm'n*, 786 F.3d at 884-85.

Respondents argue that Diebold's investments are overstated and unreliable. RIB at 233-236; RRB at 80-93. Although there are certain arithmetic errors in Diebold's reported expenditures, these errors do not materially affect the domestic industry analysis. *See* CRB at 91-93. Respondents further argue that Diebold's allocation between labor and materials is unreliable, relying on department-wide statistics rather than data specific to the ATMs that are asserted as domestic industry products. RIB at 235-236. The only evidence in the record regarding the reasonableness of this allocation, however, is Mr. Rogers's testimony that it this allocation is reasonable and consistent with his experience and observation. CX-1875C (Rogers WS) at Q&A.53-54. Although Diebold's allocations may not be perfect, I find Mr. Rogers's testimony to be credible and his allocations to be reasonable and reliable for the purpose of evaluating Diebold's domestic industry.

To quantify the significance of Diebold's service labor investments, Mr. Rogers testifies that the allocated service labor investments for certain older ATM models from 2008-2015 exceed the total sales revenue for the current ATMs in service, and the service investments for certain newer ATM models are a significant fraction of the sales revenue. CX-1875C (Rogers WS) at Q&A.67, 97, 114. Comparing service expenditures from 2008-2015 to the number of ATMs in service in 2015 is an unreliable test, however, because it is likely that many of the

ATMs serviced in 2008 are not the same ATMs in service in 2015. *See* RIB at 234-235. Any reliable comparison of service expenditures to sales revenue must be limited to 2015, which is the only year for which Diebold has identified the number of ATMs of each model that are in service. Limiting the analysis to a single year is likely to understate the amount of service per ATM because ATMs are serviced over many years rather than just one, but any attempt to extrapolate to multiple years would be speculation.[29]

Respondents criticize Mr. Rogers for relying on a "rough estimate" of the sales price for Diebold ATMs, RIB at 235, but the prices used by Mr. Rogers are consistent with the testimony of Tim Hoover, another Diebold manager, who calculated the average sales revenue per unit for each asserted ATM model. *Compare* CX-1875C (Rogers WS) at Q&A.67, 97, 114 to CX-1873C (Hoover WS) at Q&A.23-24 (citing CPX-0063C and CPX-0095C). Counting only the 2015 labor expenditures,[30] as discussed above, this revenue per unit can be used to evaluate the significance of labor expenditures in the context of Diebold's revenue for each ATM model.

	Units (Sept 2015)	**Avg. Rev./Unit (2011-2015)**	**Labor/Unit (Jan-Sept 2015)**	**2015 Labor / Revenue**
Opteva 500				
Opteva 520				
Opteva 522				
Opteva 560				
Opteva 720				

[29] As set forth in Order No. 19, Diebold could have offered evidence for the number of years that its ATMs are in service to aid in such an extrapolation. Order No. 19 at 10. Some relevant data appears in the record regarding the installation dates and yearly sales figures for the domestic industry ATMs, but Diebold does not rely on any of this information when attempting to demonstrate the significance of its investments. *See* CX-1875C (Rogers WS) at Q&A.26 (citing CPX-0084C); CX-1873C at Q&A.23 (citing CPX-0063C and CPX-0095C).

[30] Including materials expenditures would not meaningfully change the analysis because the materials expenditures are only a fraction of the labor expenditures. Respondents identify evidence that these materials expenditures count expenditures on parts that were manufactured abroad, which may not be domestic industry investments. RIB at 235.

Opteva 740	[redacted]
Opteva 750	
Opteva 760	
Opteva 858	
Opteva 878	

See CX-1875C (Rogers WS) at Q&A.26 (citing CPX-0084C); CX-1873C (Hoover WS) at Q&A.23-24 (citing CPX-0063C and CPX-0095C). The ratio between labor expenditures and revenue varies between [redacted] for each ATM model, with higher percentages generally corresponding to the older ATM models that are asserted to practice the '616 patent, and lower percentages corresponding to the newer ATM models that are asserted to practice the '010 and '631 patents.

As discussed above, these percentages likely understate the amount invested in service per ATM because ATMs are serviced over many years. If more information had been available regarding the service life of the asserted ATMs, the labor expenditures per ATM could be double, triple, or several multiples of the 2015 values. In addition, the percentages understate the significance of Diebold's service labor expenditures because they compare expenditures to revenue, rather than comparing labor expenditures to other expenditures (such as manufacturing costs) that Diebold invests in each ATM. Comparing service labor investments to the cost of making the ATM would be more analogous to the "value added" statistic used by the Commission in *Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm'n Op. at 43 (Aug. 1, 2007) (comparing the per-unit cost of the relevant product with per-unit domestic expenditures). Although there is no precise way to make this adjustment, Mr. Hoover identified a spreadsheet showing Diebold's revenues and costs for each ATM, CX-1873C (Hoover WS) at Q&A.19 (citing CPX-0063C), reporting gross margins up to [redacted] for individual ATM models.

The older ATM models that are asserted to practice the '616 patent [redacted], and the newer ATM models that are asserted to practice the '010 and '631 patents [redacted]. *See* CPX-0063C. Using costs rather than revenues would thus increase the quantitative significance of the service investments for each of the asserted ATMs, with the greatest effect on the newer ATM models. The 2015 labor-to-revenue ratios in the table above are thus a minimum baseline for evaluating the significance of Diebold's service labor expenditures, counting only the most reliable evidence.

Based on this evidence, I find that Diebold has demonstrated significant employment of labor and capital in its field service labor with respect to the '616 patent. For the Opteva 520, one of the ATMs that practices the '616 patent, Diebold's 2015 service labor per ATM represented nearly [redacted] of the average selling price for the ATM. As discussed above, this likely understates the amount of service expenditures over the life of an ATM, and Mr. Rogers estimated that the total service expenditures for the Opteva 520 would exceed the selling price if aggregated over the entire 2008-2015 time period. CX-1875C (Rogers WS) at Q&A.67. In addition, the '616 patent is directed to a service opening that enables certain types of service that are represented in Diebold's service labor expenditures, which is a qualitative factor that supports a finding of significance. *See Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm'n Op. at 42 (Aug. 1, 2007) (noting that the domestic activity "is directed to the practice of certain patent claims"). Based on these quantitative and qualitative factors, I find that Diebold has shown significant employment of labor and capital in its field service labor with respect to the '616 patent for at least the Opteva 520 ATM.

For the '010 and '631 patents, the quantitative and qualitative evidence is less compelling. The highest proportion of service labor to revenue for an ATM that practices one of

these patents is only [redacted] for the Opteva 750, and this is not quantitatively significant. *See, e.g., Lelo v. U.S. Int'l Trade Comm'n*, 786 F.3d at 882, 885 (observing that expenses in an amount that was "less than five percent of the total raw cost of the devices" was "quantitatively modest" and thus "insignificant"). As discussed above, this percentage likely understates the amount of service expenditures over the life of an ATM. Using a ratio of service labor to manufacturing costs rather than sales revenue would meaningfully increase this proportion for the ATM models like the Opteva 750, but it is unlikely that these increases would push these investments past the threshold for significance. Similarly, counting expenditures on service labor materials would only increase these proportions by a fraction of a percent. Even Mr. Rogers's most generous estimates placed the service labor investments for the '010 patent and '631 patents much lower than his estimates for the '616 patent. CX-1875C (Rogers WS) at Q&A.97, 114.[31] Moreover, there is qualitative evidence that weighs against the significance of Diebold's service investments for the '010 patent, because the IDM5 module that practices the '010 patent has been discontinued, and the number of Diebold ATMs using this module had declined to only [redacted] of in-service ATMs in 2015. *Id.* at Q&A.112. For the '631 patent, the number of Diebold ATMs using an IDMbd module is increasing, *id.* at Q&A.95, but this qualitative factor does not overcome the low quantitative proportion. Moreover, unlike the '616 patent, there is no evidence that the field service performed by Diebold is directly related to the '010 patent or '631

[31] As discussed above, these estimates unreliably incorporate service expenditures from previous years, and inclusion of these past years is particularly suspect for the '010 patent because the proportion of ATMs that practice this patent has decreased significantly during the 2008-2015 timeframe. *See* CX-1875C (Rogers WS) at Q&A.95, 112. Mr. Rogers's analysis thus incorrectly uses the small number of Opteva 750 ATMs with an IDM5 in 2015 to scale all of the service expenditures from 2008-2015, greatly inflating this proportion. *Id.* at Q&A.114.

patent claims. Diebold has thus failed to show that there is significant employment of labor and capital in field service labor with respect to the '010 and '631 patents.

2. Manufacturing and Assembly

Diebold manufactures and assembles certain of its ATMs at a facility in Greensboro, North Carolina. CIB at 208-210. For evidence regarding these manufacturing activities, Diebold relies on the testimony of Todd Bidwell, a vice-president of finance at Diebold overseeing manufacturing, global supply chain, and research and development. CX-1876C (Bidwell WS) at Q&A.1-4. Mr. Bidwell testifies that the Greensboro facility is a 260,000-square foot facility with about 120 employees. *Id.* at Q&A.13. Citing a spreadsheet showing Diebold's rent costs, Mr. Bidwell testifies that the base rent for the Greensboro facility is [redacted] per year. *Id.* at Q&A.24-25. Mr. Bidwell further testifies that Diebold keeps detailed information on its manufacturing and assembly expenses, and summarizes the manufacturing expenses for each asserted domestic industry ATM:

	Total Units (Jan 2014 - Sept 2015)	**Total Earned Hours (Jan 2014 - Sept 2015)**	**Total Direct Labor Spend (Jan 2014 - Sept 2015)**
Opteva 500	[redacted]		
Opteva 522			
Opteva 720			
Opteva 740			
Opteva 750			
Opteva 760			
Opteva 858/878			
IDMbd			

Id. at Q&A.29-32 (citing CPX-0064C).

Diebold only relies upon these manufacturing expenses to support its domestic industry for the '631 patent. CIB at 222-223. To allow a comparison with the 2015 field service

expenditures discussed above, Diebold counts only the manufacturing labor expenses for 2015, and then discounts these values based on Mr. Bidwell's testimony that [redacted] of Opteva ATMs manufactured in 2015 and 2016 included an IDMbd module. CIB at 222 (citing CX-1876C (Bidwell WS) at Q&A.35). This yields 2015 manufacturing labor expenses of [redacted] for the Opteva 720, [redacted] for the Opteva 740, [redacted] for the Opteva 750, [redacted] for the Opteva 760, and [redacted] for the Opteva 858/878. *Id.* Diebold contends that its aggregate investments are significant when the field labor and assembly are added together, but as discussed above, these investments must be considered in the context of the protected articles, which are the asserted ATMs. Using the data from Mr. Bidwell's testimony in the table above, the manufacturing labor investment per ATM is [redacted] for the Opteva 720, [redacted] for the Opteva 740, [redacted] for the Opteva 750, [redacted] for the Opteva 760, and [redacted] for the Opteva 858/878. *See* CX-1876C (Bidwell WS) at Q&A.32. This is between [redacted] of the average sales revenue for each ATM, which is only a modest addition to Diebold's labor expenditures discussed above. These additional investments in assembly make the evaluation of the economic prong a closer question, but it does not push Diebold's employment of labor and capital past the threshold of significance for the '631 patent.

3. Ongoing Engineering Expenses

Diebold's research, development, and engineering group is based in North Canton, Ohio, and Akron, Ohio, and according to Christopher Rowe, Diebold's vice president of global hardware and systems engineering, there were 150 employees in this group as of September 2015. CIB at 210 (citing CX-1874C (Rowe WS) at Q&A.10). Diebold relies on its research, development, and engineering expenses as evidence of substantial investment in the exploitation of the '010 patent and the '631 patent. CIB at 215-217, 223-227. These investments include

ongoing investments in hardware and software support for deposit automation modules, which include the IDM5 and IDMbd modules that practice the claims of the '010 patent and the '631 patent. CIB at 216 (citing CX-1874C (Rowe WS) at Q&A.40-51). Diebold does not track these expenditures by ATM model number, but based on the fact that roughly [redacted] of Opteva ATMs contain an IDM5 module, Diebold asserts that [redacted] of these expenses in 2015 can be attributed to the exploitation of the '010 patent. *Id.* at 216 (citing CPX-0065). Based on an estimate that [redacted] of Opteva ATMs contain an IDMbd module, Diebold asserts that [redacted] of these engineering expenses in 2015 can be attributed to the exploitation of the '631 patent.

Diebold's allocations fail to demonstrate the requisite nexus between its support activities and the asserted patents. To qualify as investments under subsection 337(a)(3)(C), expenditures must be exploitation of the asserted patent, not merely investments in the protected article. *Certain Integrated Circuit Chips and Products Containing the Same ("Integrated Circuit Chips")*, Inv. No. 337-TA-859, Comm'n Op. at 48 (Aug. 22, 2014). This includes expenditures that "are closely related to and enable exploitation of the patented technology. *Certain Marine Sonar Imaging Devices, Including Downscan and Sidescan Devices, Products Containing The Same, And Components Thereof* ("*Marine Sonar*"), Inv. No. 337-TA-921, Comm'n Op. at 65 (Jan. 7, 2016).

Diebold allocates its support expenditures by counting the proportion of ATMs that contain either an IDM5 or IDMbd module, but this allocation does not reliably tie the expenses to the exploitation of the asserted patents. Support activities that can be allocated to a protected article are not necessarily an exploitation of the asserted patents. *See, e.g., Certain Wireless Standard Compliant Electronic Devices, Including Communication Devices and Tablet Computers*, Inv. No. 337-TA-953, Order No. 40 at 13-14 n.6 (Dec. 18, 2015) (questioning

whether investments in maintaining a building could be counted as exploitation of a patent on a lightbulb within the building). Diebold admits that the claimed expenditures in software and hardware support are related to the Opteva ATMs generally rather than support that affects the particular IDM5 and IDMbd modules. *See* Tr. (Rowe) at 151-154. Diebold offers some testimony relating the functionality of the asserted Agilis software to claims of the '631 patent and '010 patent,[32] but there is no evidence that the asserted updates to the software had any relationship to the asserted patents. This distinguishes these asserted investments from the software updates in *Marine Sonar*, where the updates were specific to a part of the domestic industry product that embodied claims of the asserted patent. Inv. No. 337-TA-921, Comm'n Op. at 64-65. There is no evidence here that the software updates relate to check sorting in the IDM5 or MICR reading in the IDMbd, and Diebold admits that this software relates to many broad aspects of its ATMs. Tr. (Rowe) at 151-154. Diebold's allocation based on the number of ATMs in service that contain IDM5 or IDMbd modules does not cure the lack of nexus. There is no evidence that the software updates relate to the IDM5 or IDMbd modules at all, and the record is thus insufficient to determine whether any proportion of Diebold's hardware and software support activity relates to the exploitation of either the'010 patent or the '631 patent.

[32] "When a user deposits a check in a Diebold machine having an IDMbd, the Agilis application [redacted]." CX-1874C (Rowe WS) at Q&A.39-41, 61 (same for IDM5).

4. Research and Development

Diebold also asserts research and development expenses related to the development of the IDMbd module as evidence of exploitation of the '631 patent. CIB at 223. Mr. Rowe testifies that [redacted] million was spent between 2005 and 2010 by Diebold in the United States on the development of the IDMbd module, which included the development of the movable magnetic read head claimed in the '631 patent. CX-1874C (Rowe WS) at Q&A.26-30. Mr. Rowe admits, however, that the movable magnetic read head claimed in the '631 patent was only one of many features developed for the IDMbd. Tr. (Rowe) at 145-147. He explains that Diebold does not track expenses on a "subfeature" like the magnetic read head, and it is not "feasible" to make such an allocation. *Id.* at 146. Respondents argue that the failure to allocate these investments to the claimed magnetic read head is fatal to Diebold's domestic industry. RRB at 91-92. The Commission has held, however, that a "precise numerical allocation" is not necessary, and a "qualitative discussion of the relationship between the patented invention and the domestic investment can suffice." *Marine Sonar*, Comm'n Op. at 64 (citing *Integrated Circuit Chips*, Comm'n Op. at 49-50). William Beskitt, one of the co-inventors of the '631 patent, confirmed that the idea for using both a fixed and moveable magnetic read head was conceived during the development of the IDMbd. RX-0838C (Beskitt Dep. Tr.) at 50-60, 80-84. Mr. Rowe explains that the [redacted] million investment in the development of the IDMbd includes investments specific to the magnetic read head in addition to investments in the development of features that were required for the product to be commercially viable. Tr. (Rowe) at 145-146.[33] This is similar to

[33] Many of these other features relate to limitations in the claims of the '631, including limitations describing receiving a check and sensing its width (claim 1), receiving a plurality of checks (claim 2), aligning a check (claim 3), transporting a check (claim 4), and interpreting micr

the investments in software updates in *Marine Sonar*, which were "necessary for the functionality" of a component that practiced the asserted patent. *Marine Sonar*, Comm'n Op. at 65. Investments in the development of the IDMbd module, which include the conception and implementation of the invention claimed in the '631 patent, qualify as investments that are "closely related to and enable exploitation of the patented technology." *Id.* Accordingly, it is consistent with Commission precedent to consider the entirety of Diebold's [redacted] million investment as attributable to the exploitation of the '631 patent. *See Marine Sonar*, Comm'n Op. at 65.

In addition, Mr. Rowe testifies that Diebold's development of the IDMbd module was almost entirely domestic, with the [redacted] million investment in the United States representing more than [redacted] of the Diebold's global investment. CX-1874C (Rowe WS) at Q&A.30 (citing CPX-0097C, CPX-0098C, CPX-0099C, CPX-0073C, CPX-0079C).[34] This high proportion of domestic investment supports a finding that Diebold's investment in the research and development of the IDMbd module was substantial.

Respondents further challenge Diebold's assertion of these research and development expenditures because the majority of these investments occurred prior to 2010. *See* CX-1874C (Rowe WS) at Q&A.28; Tr. (Rowe) at 144-145. The Commission has held, however, that "[p]ast expenditures may be considered to support a DI claim as long as those investments pertain to the complainant's industry with respect to the articles protected by the asserted IP

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line data (claim 7). '631 patent at 41:24-42:13. As discussed above in the context of the technical prong, all of these claims are functionalities of the IDMbd module.

[34] Mr. Rowe also identifies an additional [redacted] in additional projects in 2015 related to the IDMbd module, but it is unclear whether these investments were necessary for the research and development of the IDMbd. *See* Tr. (Rowe) at 146-147. Whether or not these investments are included does not change the analysis of Diebold's domestic industry.

rights and the complainant is continuing to make qualifying investments at the time the complaint is filed." *Certain Television Sets, Television Receivers, Television Tuners, and Components Thereof*, Inv. No. 337-TA-910, Comm'n Op. at 68, 2015 WL 6755093, at *36 (Oct. 30, 2015); *see also Marine Sonar*, Comm'n Op. at 55. Here, as discussed above in the preceding sections, Diebold has continued to make qualifying investments related to the '631 patent in field service and assembly. Although these investments may not be significant enough to substantiate a domestic industry on their own, these ongoing qualifying activities warrant the consideration of Diebold's past research and development expenditures. Diebold's investments in developing the IDMbd module were a prerequisite to the ongoing field service and assembly of Diebold's ATMs containing the same IDMbd module. As discussed above, the proportion of Diebold ATMs that include an IDMbd module has been increasing each year, and this further confirms that Diebold's investment in the research and development of the IDMbd module is a substantial investment in the exploitation of the '631 patent under subsection 337(a)(3)(C).

5. Summary of Economic Prong Findings

As discussed above, I find that Diebold has satisfied the economic prong of the domestic industry requirement for the '616 patent under subsection 337(a)(3)(B) with significant employment of labor and capital in field service labor. In addition, I find that Diebold has satisfied the economic prong of the domestic industry requirement for the '631 patent under subsection 337(a)(3)(C) with substantial investments in research and development. Diebold has not satisfied the economic prong of the domestic industry requirement for the '010 patent under any subsection of section 337(a)(3).

VII. REMEDY & BONDING

Pursuant to Commission Rule 210.42(a)(1)(ii), I make the following recommended determination on remedy and bonding. 19 C.F.R. § 210.42(a)(1)(ii).

A. Limited Exclusion Order

Diebold seeks a limited exclusion order ("LEO") covering "all of the infringing articles as well as components and infringing redesigns." CIB at 228. Nautilus does not dispute that a LEO should be issued in the event that infringement is found but maintains that any LEO should be "narrowly tailored to permit the importation of parts needed for the replacement and repair of ATMs previously purchased by Nautilus Hyosung's customers." RIB at 243.

In a section 337 proceeding, the Commission has "broad discretion in selecting the form, scope, and extent of the remedy." *Viscofan, S.A. v. ITC*, 787 F.2d 544, 548 (Fed. Cir. 1986). In some cases, the Commission has deemed it to be in the public interest to permit respondents to sell replacement parts to consumers, *see Certain Personal Data and Mobile Commc'ns*, Inv. No. 337-TA-710, Comm'n Op. at 72-73 (Dec. 29, 2011) (LEO permitting replacement of entire device if refurbished); *Certain Combination Motor and Transmission Sys.*, Inv. No. 337-TA-561, Initial Determination at 193 (Feb. 13, 2007), USITC Pub. No. 4130 (Mar. 2010) (permitting replacement of transaxles for repair and replacement for consumers who had already purchased the products). The Commission has not delegated the public interest factors for my consideration in this decision, however, and I decline to make findings on issues that are not before me. Nautilus will have the opportunity to argue to the Commission that the public interest requires the exemption from a LEO that it seeks. At this stage of the proceedings, Nautilus has not presented sufficient information to warrant narrowing the remedy provided in the statute.

Nautilus argues that excluding infringing parts will harm current users of its ATMs but Nautilus must specify which infringing replacement parts are necessary to service the requirements of existing customers. *See Certain Biometric Scanning Devices*, Inc. No. 337-TA-720, Comm'n Op. at 26 (Nov. 10, 2011) (declining to issue "repair parts" exemption where "respondents have not made clear exactly what 'replacement parts' are necessary to import here")); *see also, Certain Optoelectronic Devices, Components Thereof & Prod. Containing Same ("Optoelectronic Devices")*, Inv. No. 337-TA-860, Comm'n Op. at 31 (May 9, 2014) (declining to narrow remedy where there was no evidence in the record that "Respondents' customers expect any replacement or warranty parts be the same part and not just a comparable part.")

Mr. Kim, Nautilus's vice president of operation and engineering, testified that the following items could not be replaced: "for example, the receipt printer, BCA (Bulk Check Acceptor), CCIM (Cash and Check in Module), BNA (Bundle Note Acceptor), recycler, and cash dispensers, such as the H-CDU, are all irreplaceable by another manufacturer." RX-1511C (Kim RWS) at Q&A. 2, 54). Nautilus's economic expert testified similarly, *see* RX-1516C (Vander Veen RWS) at Q&A.76 ("There are many reasons for an exemption for existing customers here. Such an exemption is warranted in this Investigation given the investment customers have made in their prior purchases of the Accused Products, the warranty and service contracts which exist for these products, the expectations of consumers of these products of continued availability of replacement products and components, and the difficulty and cost in obtaining alternative replacement products and components."). These witnesses testified that third parties could not replace these parts and even if they could, the [redacted] could not

[redacted]. The result would be that Nautilus customers would have to purchase new ATMs and re-configure them at enormous expense.

Of the irreplaceable items mentioned by Mr. Kim, only the BCA and CCIM are accused of infringement. It would be incorrect to base a finding of irreplaceability on other items, which will not be specifically excluded by any remedial order. Moreover, as Diebold points out, there is no evidence in the record from third parties concerning the effect of excluding the BCA, CCIM, or other items or the difficulty of replacing them. Such evidence typically would be presented in connection with the public interest.

Nautilus should be required to present more specific and objective evidence of harm to existing customers to warrant tailoring the remedy as requested. Accordingly, I recommend that in the absence of additional evidence of customer harm, a LEO be issued covering all infringing ATMs, including all infringing components and modules.

Nautilus requests that a certification provision be included in any LEO because the firmware on an ATM can make the difference between infringing and non-infringing use. I agree that it would be reasonable to require such a certification as part of a LEO, since it might otherwise be difficult for the Bureau of Customs and Border Protection to identify upon visual inspection goods that are subject to exclusion. "If the accused products are not imported with the accused software and/or functionalities, they cannot serve as the basis for a finding of violation of section 337 and should not be subject to an exclusion order." *Certain Digital Media Devices, Including Televisions, Blu-Ray Disc Players, Home Theater Systems, Tablets and Mobile Phones, Components Thereof and Associated Software*, Inv. No. 337-TA-882, Recommended Determination (July 16, 2014) at 3 (citing *Certain Products Containing Interactive Program*

Guide and Parental Control Technology, Inv. No. 337-TA-845, Initial Determination at 39 (July 2, 2013), *aff'd in relevant part*, Comm'n Op. at 12-15 (Dec. 11, 2013).

B. Cease and Desist Order

The Commission may, in *lieu* of or in addition to an exclusion order, issue a cease and desist order ("CDO") directing persons found to have violated section 337 "to cease and desist from engaging in the unfair methods or acts involved." 19 U.S.C. § 1337(f)(1). Cease and desist orders "are generally issued when there is a 'commercially significant' amount of infringing, imported product in the United States that could be sold by an infringing respondent thereby resulting in evasion of the remedy provided by the exclusion order." *Optoelectronic Devices,* Comm'n Op. at 36. The Commission has found inventories to be commercially significant based on the absolute value of the inventory or based on a comparison between the quantity of inventory and the volume of the infringing product that has been sold or imported. *Id.* at 36-37.

As shown below, Diebold has demonstrated the existence of significant levels of inventory for the products accused under the '616 patent.

Product	Inventory (1/31/2016)	Value in Inventory	Qty. Imported/Sold in 2015	Amount in Local Currency (U.S.) for Qty. Imported/Sold in 2015	Average Product Cost	Ratio Inventory to Sales
[redacted]						

See CIB at 231; CX-1649C). Even if only the products held to infringe in this initial determination are counted (MX5600, MX5600R, and MX5600T), the total amount of inventory is over [redacted]. *See* CIB at 231, CX-1649C. Nautilus argues that this inventory is not significant because Nautilus does not compete in Diebold's market, but Nautilus presents no legal support for this argument; nor would this fact necessarily justify permitting Nautilus to continue to market its products in violation of Diebold's intellectual property rights. Rather, the Commission balances the rights of the intellectual proper owner against the potential disruption to commerce to decide the proper scope of a LEO. *See Certain Baseband Processor Chips & Chipsets, Transmitter, & Receiver (Radio) Chips, Power Control Chips, & Prod. Containing Same, Including Cellular Tel. Handsets*, Inv. No. 337-TA-543, Comm'n Op., 2011 WL 6121182 at * 16 (Oct. 1, 2011) ("We believe that such a remedy provides effective protection to the intellectual property owner, promotes innovation without being unduly disruptive to legitimate commerce, and appropriately balances the competing public interests at stake.")

The inventory of products accused under the '010 patent also exceeds [redacted] in total, according to Diebold. Diebold presents the following data on existing inventory regarding the '010 patent.

Product	Inventory (1/31/2016)	Value in Inventory	Qty. Imported/Sold in 2015	Amount in Local Currency (U.S.) for Qty. Imported/Sold in 2015	Average Product Cost	Ratio Inventory to Sales
[redacted]						

CIB 232; CX-1649C. Nautilus says it no longer imports ATMs with a BCA and has only [redacted] such ATMs in the United States. *See* RX-1516C (Vander Veen RWS) at Q&A.100-101.

Nautilus says these units are not sold but are used to replace items under "warranty or service contracts for Nautilus Hyosung customers who previously purchased an ATM." *Id.* at 100.

The Commission's standard for finding commercial significance is whether a product "could" be sold by an infringing respondent, not whether it will be sold. *Optoelectronic Devices* at 36. Nothing in the record indicates that the products that are accused under the '010 patent could not be sold. Although the amount of inventory accused under this patent is relatively small, it is not insignificant.

The commercial significance of the inventory of products accused under the '631 patent is undisputed.

Product	Inventory (1/31/2016)	Value in Inventory	Qty. Imported/ Sold in 2015	Amount in Local U.S. Currency (U.S.) for Qty. Imported/Sold in 2015	Average Product Cost	Ratio Inventory to Sales
[redacted]						

See CIB 233; CX-1649C. Nautilus argues, however, that some of the accused products "may simply not have the allegedly infringing software installed." *See* RX-1516C (Vander Veen RWS) at Q&A.103. As discussed above in the context of infringement, this initial determination

finds it more likely than not that the products accused under the '631 patent do have infringing software installed. Accordingly, Diebold has carried its burden in this respect and Nautilus would need to present evidence showing that specific items in its inventory were not programmed with infringing software in order to justify non-imposition of a CDO. Nautilus has not attempted to make such a showing and its arguments are therefore rejected.

C. Bonding

If the Commission decides to enter remedial orders, the affected articles still are entitled to entry under bond during the 60-day Presidential review period. 19 U.S.C. § 1337(j)(3). Commission Rule 210.50(a)(3) specifies that the amount of a bond must be "sufficient to protect the complainant from any injury." 19 C.F.R. § 210.50(a)(3). The Commission has set the bond based on the price difference between the infringing imports and the domestic industry products or on a reasonable royalty the respondent would otherwise pay to the complainant. *See Certain Inject Ink Supplies And Components Thereof*, Inv. No. 337-TA-691, Comm'n Op., 2011 WL 7464367, at *16 (Nov. 1, 2011).

Diebold argues that a bond set at 100% of the value of the imported infringing products is necessary because there is no reliable way to calculate price information for its products or Nautilus's. Diebold maintains that the domestic and infringing products have numerous features that cause the price of each product to vary significantly, citing *Marine Sonar*, Comm'n Op. at 86-89 (granting 100% bond where prices significantly across the product line). Diebold points to features that can result in different prices, *e.g.*, "deposit automation, screen size, weather rating," and says that other factors also can influence price, "such as the identity of a customer, quantity purchased, location of machines, any service contracts that accompany the sale." CIB at 235, citing CX-1873C (Hoover DWS) at Q&A.22; CX-1682C (Kim Dep. Tr.) at 20:1-21:12, 121:22-

122:1. Moreover, Diebold says, ATMs vary in price from unit to unit. *See* CIB at 235-237. Diebold says that lost revenue from service contracts must also be taken into account in determining an appropriate bond. Nautilus rejects the allegation that Diebold is injured by loss of service to consumers who may buy Nautilus ATMs. Given the significance of service revenue in this industry, however, it is credible that Diebold's loss would include some amount of lost revenue for service in addition to lost sales. *See* CX-1875C (Rogers WS) at Q&A.67.

With respect to the '631 patent, Nautilus also argues that a bond rate should be at most [redacted] based on "Diebold's own price approximations." RIB at 249; *see* RX-1516C (Vander Veen RWS) at Q&A.71; RX-0010C. Nautilus notes that Mr. Hoover, Diebold's principal product manager for global product management branch transformation solutions, *see* CX-1873C (Hoover DWS) at Q&A.2, was able to estimate prices for the purpose of his domestic industry analysis and argues that the same calculations should be used for the purpose of computing an appropriate bond. RIB at 250, citing CX-1873C (Hoover DWS) at Q&A.22-24 (discussing average revenue per product calculations). But these estimates do not substitute for reliable evidence of the price differential between Diebold and Nautilus products.

Nautilus argues that no bond should be imposed for the importation of products accused under the '010 and '616 patents for the same reasons discussed and rejected above, that these products do not compete with Diebold's ATMs. I am unpersuaded that a complainant who has established infringement must also prove that the infringing products compete directly with domestic products in order to obtain a bond. Nautilus cites no persuasive authority in support of this argument. In *Certain Rubber Antidegradants, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-533, Comm'n Op. at 40 (July 21, 2006), the Commission declined to impose a 100% bond where the complainant argued it had "no burden of proof with

respect to bonding and that the simple existence of a violation should be sufficient to support a 100 percent bond." *See* RRB at 106. Here, as discussed above, Diebold has presented adequate evidence to support a 100% bond. Moreover, Diebold's Mr. Hoover testified that his company competes with Nautilus and has lost market share to Nautilus in recent years. CX-1873C (Hoover DWS) at Q&A.26-31.

I do not agree that Diebold "fails to meet its burden on bond." RIB at 250. Diebold has presented reliable evidence that the cost of its ATMs and Nautilus's varies too much to establish a bond that reflects those prices. In these circumstances, a 100% bond is appropriate. *Certain Crawler Cranes and Components Thereof,* Inv. No. 337-TA-887, Comm'n Op. at 74-75 (May 6, 2015) (imposing 100% bond where the price of competing products could not be reliably compared).

VIII. CONCLUSIONS OF LAW

Based on the foregoing, and the record as a whole, it is my Final Initial Determination that there is a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importation, and/or the sale within the United States after importation of certain ATMs, ATM modules, components thereof, and products containing same. This determination is based on the following conclusions of law:

1. The Commission has subject matter jurisdiction over this investigation, *in personam* jurisdiction over the Nautilus Hyosung respondents, and *in rem* jurisdiction over the accused Nautilus Hyosung ATMs and ATM modules.

2. There has been an importation into the United States, sale for importation, or sale within the United States after importation of the accused Nautilus Hyosung ATMs and ATM modules.

3. The Nautilus Hyosung Halo, Halo II, MX5200, and MX5600 series ATMs do not infringe claims 1, 6-8, 10, or 16 of the '616 patent.

4. The Nautilus Hyosung Halo, MX5200, and MX5600 series ATMs do not infringe claim 5 of the '616 patent.

5. The Nautilus Hyosung MX5600 ATM infringes claims 26 and 27 of the '616 patent.

6. The Nautilus Hyosung Halo, Halo II, MX5000, MX5200, and MX5300 series ATMs do not infringe claims 26 or 27 of the '616 patent.

7. The Nautilus Hyosung ATMs containing BCA modules do not infringe claims 1, 13, 14, 19, 20, or 24-26 of the '010 patent.

8. The BCA modules in certain Nautilus Hyosung ATMs infringe claims 1-7 and 18-20 of the '631 patent.

9. The CCIM modules in certain Nautilus Hyosung ATMs infringe claims 1-2 and 18-20 of the '631 patent.

10. Pursuant to Order No. 23, certain Nautilus Hyosung cash and check acceptor modules do not infringe claims 1-7 or 18-20 of the '631 patent.

11. Claims 1, 5-8, 10, 16, 26, and 27 of the '616 patent have not been shown to be invalid.

12. Claim 1 of the '010 patent is invalid as anticipated.

13. Claims 13, 14, 19, 20, and 24-26 of the '010 patent have not been shown to be invalid.

14. Claims 1-7 and 18-20 of the '631 patent have not been shown to be invalid.

15. The Diebold Opteva 500, Opteva 520, Opteva 522, Opteva 560, and Opteva 720 series ATMs practice claims 1, 5-8, 10, 16, 26, and 27 of the '616 patent.

16. The Diebold Opteva 720, Opteva 740, Opteva 750, Opteva 760, Opteva 858, and Opteva 878 ATMs that contain IDM5 depository modules practice claims 1, 13, 14, 19, 20, and 24-26 of the '010 patent.

17. The IDMbd depository modules in certain Diebold 3700, Diebold 7700, Diebold 7780, Diebold 7790, Opteva 720, Opteva 720r, Opteva 740, Opteva 750, Opteva 760, Opteva 828, Opteva 858, Opteva 868, and Opteva 878 ATMs practice claims 1-7 and 18-20 of the '631 patent.

18. A domestic industry has been shown to exist in the United States as required by subsection (a)(2) of section 337 with respect to certain of the Diebold ATMs that practice claims of the '616 patent.

19. A domestic industry has not been shown to exist in the United States as required by subsection (a)(2) of section 337 with respect to any of the Diebold ATMs that practice claims of the '010 patent.

20. A domestic industry has been shown to exist in the United States as required by subsection (a)(2) of section 337 with respect to the Diebold IDMbd depository module that practices claims of the '631 patent.

I hereby certify the record in this investigation to the Commission with my final initial determination. Pursuant to Commission Rule 210.38, the record further comprises the Complaint and exhibits thereto filed with the Secretary, the *Markman* order, and the exhibits attached to the parties' summary determination motions and the responses thereto. 19 C.F.R. § 210.38(a).

Pursuant to Commission Rule 210.42(c), this initial determination shall become the determination of the Commission 45 days after the service thereof, unless a party files a petition

for review pursuant to Commission Rule 210.43(a), the Commission orders its own review pursuant to Commission Rule 210.44, or the Commission changes the effective date of the initial determination. 19 C.F.R. § 210.42(h)(6).

Within ten (10) days of the date of this Initial Determination, each party shall submit to the Administrative Law Judge a statement as to whether or not it seeks to have any portion of this document deleted from the public version. *See* 19 C.F.R. § 210.5(f). A party seeking to have a portion of the order deleted from the public version thereof must attach to its submission a copy of the order with red brackets indicating the portion(s) asserted to contain confidential business information.[35] The parties' submissions under this subsection need not be filed with the Commission Secretary but shall be submitted by paper copy to the Administrative Law Judge and by e-mail to the Administrative Law Judge's attorney advisor.

SO ORDERED.

Dee Lord
Administrative Law Judge

[35] To avoid depriving the public of the basis for understanding the result and reasoning underlying the decision, redactions should be limited. Parties who submit excessive redactions may be required to provide an additional written statement, supported by declarations from individuals with personal knowledge, justifying each proposed redaction and specifically explaining why the information sought to be redacted meets the definition for confidential business information set forth in Commission Rule 201.6(a). 19 C.F.R. § 201.6(a).

CERTAIN AUTOMATED TELLER MACHINES, ATM MODULES, COMPONENTS THEREOF, AND PRODUCTS CONTAINING THE SAME

Inv. No. 337-TA-972

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **INITIAL DETERMINATION** has been served by hand upon the following parties as indicated on **February 1, 2017.**

Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainants Diebold, Incorporated and Diebold Self-Service Systems:

Adam D. Swain, Esq.
ALSTON & BIRD LLP
950 F Street NW
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☐ Via Hand Delivery
☒ Via Express Delivery
☐ Via First Class Mail
☐ Other:_____

On Behalf of Respondents Nautilus Hyosung Inc., Nautilus Hyosung America Inc., and HS Global Inc.:

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☒ Via Express Delivery
☐ Via First Class Mail
☐ Other:_____