

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Oh et al.
U.S. Patent No.: 11,410,355 Attorney Docket No.: 57721-0002IP1
Issue Date: August 9, 2022
App. Serial No.: 16 / 925,878
Filing Date: July 10, 2020
Title: METHOD AND APPARATUS FOR CREATING DIGITAL
CLOTHING

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**PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT
NO. 11,410,355 PURSUANT TO 35 U.S.C. §§ 311-319, 37 C.F.R. § 42**

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LIST OF EXHIBITS

LINGDI-1001	U.S. Patent No. 11,410,355
LINGDI-1002	U.S. Patent No. 11,410,355 File History
LINGDI-1003	Declaration of Dan Perreault
LINGDI-1004	EZBRUSH, <i>trace pattern</i> video (May 16, 2012), available at https://www.youtube.com/watch?v=dRWJZab0tLA (“EZBRUSH”)
LINGDI-1005	<i>Corel DESIGNER Tutorial – Drawing With Precision</i> (2013) (“Corel”)
LINGDI-1006	U.S. Patent No. 6,346,943 to Thoemmes et al. (“Thoemmes”)
LINGDI-1007	TUKATECH, <i>Manually Adjust CAD Pattern Grading CAD Pattern Making Tutorial TUKAtip - TUKAdesign</i> video (Sept. 23, 2013), available at https://www.youtube.com/watch?v=hR3TcYDPjMU (“TUKATECH”)
LINGDI-1008	Japanese Patent Pub. No. JP2005-309874 A
LINGDI-1009	Certified English Translation of Japanese Patent Pub. No. JP2005-309874 A (“Niterra”)
LINGDI-1010	Declaration of Kathryn Talbot
LINGDI-1011	Affidavit of Nathaniel E. Frank-White of the Internet Archive (aka WayBack Machine)
LINGDI-1012	Screen capture of the archived version of Exhibit LINGDI-1005 captured by the Internet Archive on January 24, 2014, available at https://web.archive.org/web/20140124231010/https://produc

t.corel.com/help/Designer/540224261/Main/EN/Tutorials/design_2.pdf

- LINGDI-1013 Screen capture of the archived version of the front page of the Corel website captured by the Internet Archive on January 24, 2014, *available at* <https://web.archive.org/web/20140124131143/http://www.corel.com/corel/>
- LINGDI-1014 Screen capture of current CorelDRAW search feature captured on March 18, 2024, *available at* <https://www.coreldraw.com/en/support/>
- LINGDI-1015 Screen capture of search results for search of “Designer visual drawing aids” on CorelDRAW website captured on March 18, 2024, *available at* <https://www.coreldraw.com/en/support/>
- LINGDI-1016 USPTO, First Inventor to File (FITF) Comprehensive Training presentation, *available at* https://www.uspto.gov/sites/default/files/aia_implementation/fitf_comprehensive_training_prior_art_under_aia.pdf
- LINGDI-1017 Complaint from *CLO Virtual Fashion Inc. v. Zhejiang Lingdi Digital Tech. Co. LTD. (D/B/A/ Linctex)*, Case No. 2:23-cv-00274-JRG-RSP (E.D. Tex. June 14, 2023)
- LINGDI-1018 Waiver of Service from *CLO Virtual Fashion Inc. v. Zhejiang Lingdi Digital Tech. Co. LTD. (D/B/A/ Linctex)*, Case No. 2:23-cv-00274-JRG-RSP (E.D. Tex.) (Filed Sept. 1, 2023)
- LINGDI-1019 Petitioner’s *Sotera* stipulation

LISTING OF CLAIMS

Claim 1	
[1.pre]	A method of creating digital clothing executable by a computing device storing digital clothing patterns for draping simulation, the method comprising:
[1.1]	setting a first selected segment to be sewn on a first segment on a pattern; and
[1.2]	setting a second selected segment comprising: setting a starting point of the second selected segment on a second segment
[1.3]	wherein the second selected segment is sewn to the first selected segment,
[1.4]	determining a present point on the second segment based on a current cursor position,
[1.5]	moving the present point to a candidate ending point on the second segment, in response to the difference between the present point and the candidate ending point being less than a reference value, wherein the candidate ending point is determined to make a second length of the second selected segment substantially equal to a first length of the first selected segment,
[1.6]	selecting the present point as an ending point of the second selected segment, in response to a user input, and
[1.7]	setting as the second selected segment, a section of the second segment between the starting point and the ending point,
[1.8]	wherein, when the second length is substantially equal to the first length, at least one of the first length, the second length and a difference value between the first length and the second length is displayed in a first color, and wherein, when the second length is substantially different from the first length, at least one of the first length, the second length and the difference value is displayed in a second color, the second color being different from the first color.

Claim 2	
[2]	The method of claim 1, wherein the first and second segments comprise any one or any combination of any two or more of a straight line, a curved line, a multi-branch line, and shapes that include polygons and circles.
Claim 3	
[3]	The method of claim 1, wherein the setting of the second selected segment further comprises: calculating either one or both of the length of the first selected segment and the length of the second selected segment.
Claim 4	
[4]	The method of claim 1, further comprising displaying a warning sign, in response to the difference value being greater than a third reference value.
Claim 5	
[5]	A non-transitory computer-readable storage medium storing instructions that, when executed by a processor, cause the processor to perform the method of claim 4.
Claim 6	
[6.pre]	An apparatus for creating digital clothing, the apparatus comprising: a memory storing digital clothing patterns for draping simulation; and at least one processor configured to:
[6.1]	set a first selected segment to be sewn on a first segment on a pattern; and
[6.2]	set a second selected segment by: setting a starting point of a second selected segment on a second segment,
[6.3]	wherein the second selected segment is sewn to the first selected segment,

[6.4]	determine a present point on the second segment based on a current cursor position,
[6.5]	move the present point to a candidate ending point on the second segment, in response to the difference between the present point and the candidate ending point being less than a reference value, wherein the candidate ending point is determined to make a second length of the second selected segment substantially equal to a first length of the first selected segment,
[6.6]	select the present point as an ending point of the second selected segment, in response to a user input, and
[6.7]	set as the second selected segment, a section of the second segment between the starting point and the ending point,
[6.8]	wherein, when the second length is substantially equal to the first length, at least one of the first length, the second length and a difference value between the first length and the second length is displayed in a first color, and wherein, when the second length is substantially different from the first length, at least one of the first length, the second length and the difference value is displayed in a second color, the second color being different from the first color.
Claim 7	
[7]	The apparatus of claim 6, wherein the first and second segments comprise any one or any combination of any two or more of a straight line, a curved line, a multi-branch line, and shapes that include polygons and circles.
Claim 8	
[8]	The apparatus of claim 6, further comprising: a length display configured to calculate either one or both of the length of the first selected segment and the length of the second selected segment.

Claim 9	
[9]	The apparatus of claim 6, wherein the second selected segment setter is further configured to: display a warning sign, in response to the difference value being greater than a third reference value.

I. INTRODUCTION

Zhejiang Lingdi Digital Technology Co., Ltd. (“Lingdi” or “Petitioner”) petitions for IPR of claims 1-9 (“Challenged Claims”) of U.S. Patent No. 11,410,355 (“the ’355 patent”). As explained in this petition, there exists a reasonable likelihood that Petitioner will prevail with respect to at least one of the Challenged Claims.

The Challenged Claims are unpatentable based on teachings set forth in at least the publications presented in this petition. Petitioner respectfully submits that an IPR should be instituted, and that the Challenged Claims should be canceled as unpatentable.

II. REQUIREMENTS FOR IPR UNDER 37 C.F.R. § 42.104

A. Grounds for Standing Under 37 C.F.R. § 42.104(a)

Lingdi certifies that the ’355 patent is available for IPR. The present petition is being filed within one year of service of a complaint against Lingdi in *CLO Virtual Fashion Inc. v. Zhejiang Lingdi Digital Technology Co., Ltd. d/b/a Lintex*, 2-23-cv-00274 (EDTX). See LINGDI-1018 (waiver of service filed on September 1, 2023); LINGDI-1017 (complaint filed on June 14, 2023). Petitioner is not barred or estopped from requesting this review challenging the Challenged Claims on the below-identified grounds.

B. Challenge Under 37 C.F.R. § 42.104(b) and Relief Requested

Petitioner requests an IPR of the Challenged Claims on the grounds set forth in the table shown below, and requests that each of the Challenged Claims be found unpatentable. An explanation of how these claims are unpatentable under the statutory grounds identified below is provided in the form of detailed description and claim charts that follow, indicating where each element can be found in the cited prior art, and the relevance of that prior art. Additional explanation and support for each ground of rejection is set forth in the Declaration of Dan Perrault (LINGDI-1003), referenced throughout this Petition.

Ground	Claims	Basis for Rejection (35 U.S.C. § 103)
1	1-9	EZBRUSH in view of Corel, Thoemmes, and Niterra
2	3, 8	EZBRUSH in view of Corel, Thoemmes, Niterra, and TUKATECH

None of these references were cited during prosecution of the '355 patent.

III. THE CITED REFERENCES ARE PRIOR ART PUBLICATIONS

EZBRUSH (published May 16, 2012), Corel (published 2013), Thommes (issued Feb. 12, 2002), TUKATECH (published Sept. 23, 2013), and Niterra (published Nov. 4, 2005) all qualify as prior art under post-AIA 35 U.S.C. §102(a)(1) as patents or printed publications published prior to April 27, 2015 (the

earliest possible priority date of the '355 patent).

EZBRUSH and TUKATECH both qualify as printed publication prior art as videos published to the popular video sharing website YouTube. The MPEP states that “[a]n electronic publication, including an online database or Internet publication (e.g., discussion group, forum, *digital video*, or social media post), is considered to be a ‘printed publication’ within the meaning of 35 U.S.C. 102(a)(1).” MPEP § 2128(II)(A). The USPTO’s “First Inventor to File (FITF) Comprehensive Training” materials similarly state that “a YouTube video...may also qualify as a printed publication under AIA.” LINGDI-1016, 15.

Federal courts have similarly held that such YouTube “videos meet the definition” of “a printed publication.” *HVLPO2, LLC v. Oxygen Frog, LLC*, 2018 U.S. Dist. LEXIS 245874, *1-2 Case No. 4:16cv336-MW/CAS (N.D. Fla., May 28, 2018). With respect to YouTube specifically, at least one federal court has found that

A familiar user would know that you don't need to search for a particular channel to watch the videos uploaded on it. For example, if you want to watch a video of a cat skateboarding, you can search ‘cat skateboarding’; you don't need to know that it might have been ‘CatLady83’ who uploaded the video you end up watching.

Id., *3. The ability to search for a video based on the title, specific subject matter, or other keywords “does not exceed the reasonable diligence” that the law expects

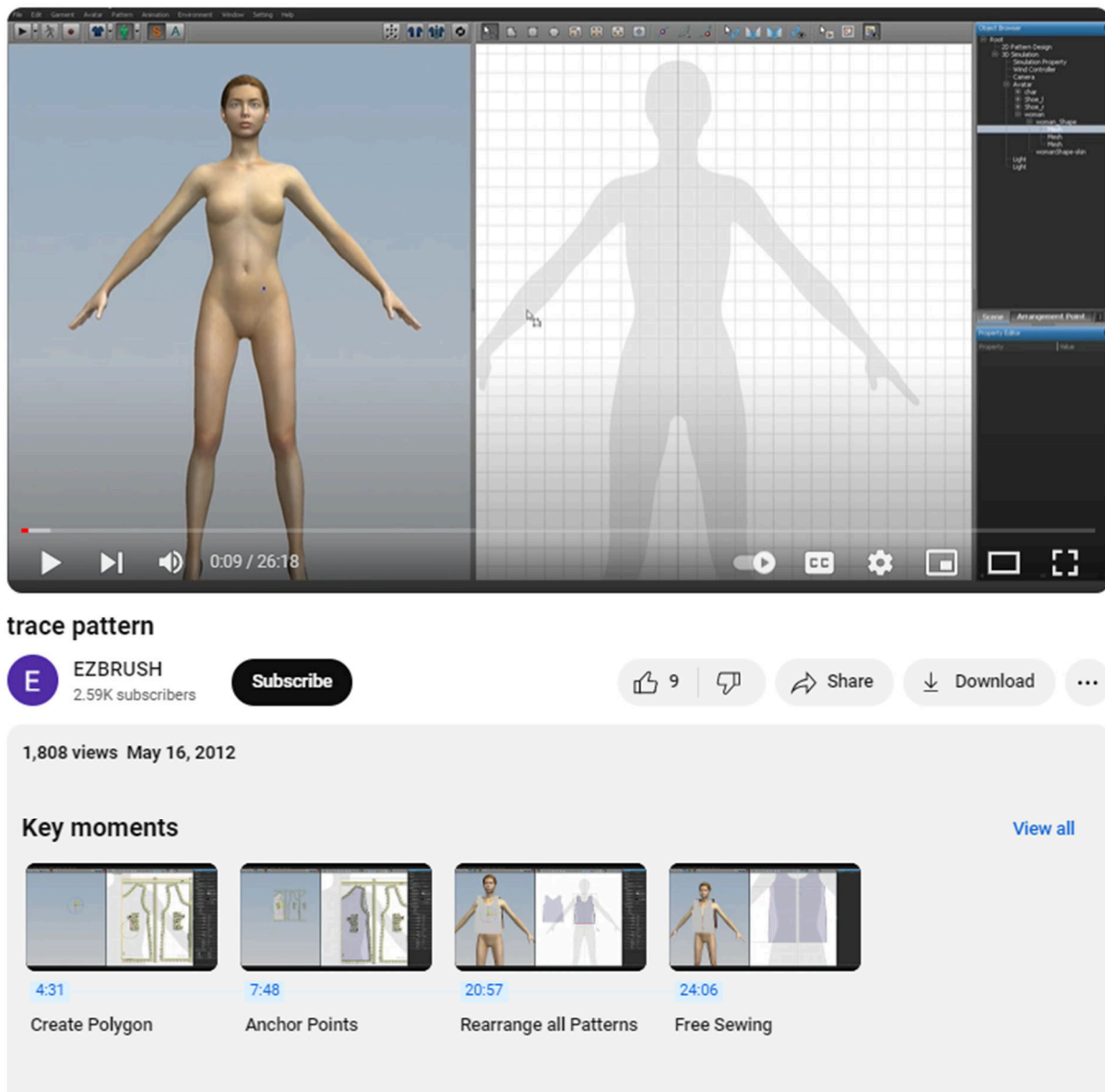
of a hypothetical prior-art subject.” *Id.*, *3-4. Thus “someone interested and ordinarily skilled in the pertinent art, exercising reasonable diligence, would have been able to locate” the EZBRUSH and TUKATECH references as of their publication dates on YouTube. *Id.*

Likewise, the Board has similarly concluded that YouTube videos qualify as printed publication prior art as of the publication date identified on the YouTube page for that video. For example, the PTAB has held that the publication date listed on YouTube for a particular video indicates the date when that video “was available to the public.” *Mission Integrated Tech. LLC, v. Joshua Clemente*, IPR2023-01285, Paper 16 at 19, 22-23 (PTAB Feb. 23, 2024); *see also K/S HIMPP v. Bragi GmbH*, IPR2023-00901, Paper 14 at 15 (PTAB Nov. 13, 2023); *Danxiao Inf. Tech. LTD v. Shenzhen Svakom Tech. Co. LTD*, PGR2022-00050, Paper 36 at 6-7 (PTAB Jan. 19, 2024).

Additionally, EZBRUSH and TUKATECH qualify as prior art as of the dates listed on their respective YouTube pages because YouTube videos are published by a “well-known, reputable compiler and publisher.” *Ericsson Inc. v. Intell. Ventures I LLC*, IPR2014-00527, Paper 41 at 10-11 (PTAB May 18, 2015); *see also VidStream LLC v. Twitter, Inc.*, 981 F.3d 1060, 1065-66 (Fed. Cir. 2020) (“When there is an established publisher there is a presumption of public accessibility as of the publication date.”).

Furthermore, in numerous cases, Google Custodians of Record —the entity that maintains the YouTube database—have given sworn testimony that “[a]s explained on YouTube’s support website, the date listed under a video is the date it was published and, if the video was posted publicly, that is the date on which it became available to anyone for viewing.” *See, e.g., London Luxury LLC v. E&E Co., Ltd.*, PGR2021-00083, Ex. 1013; *see also* Ex. 1014 at 1 (“When you make a video public on YouTube, the date on the watch page is based on Pacific Standard Time (PST). If you want a certain date to show beneath your video, upload your video on that date.”); Ex. 1015.

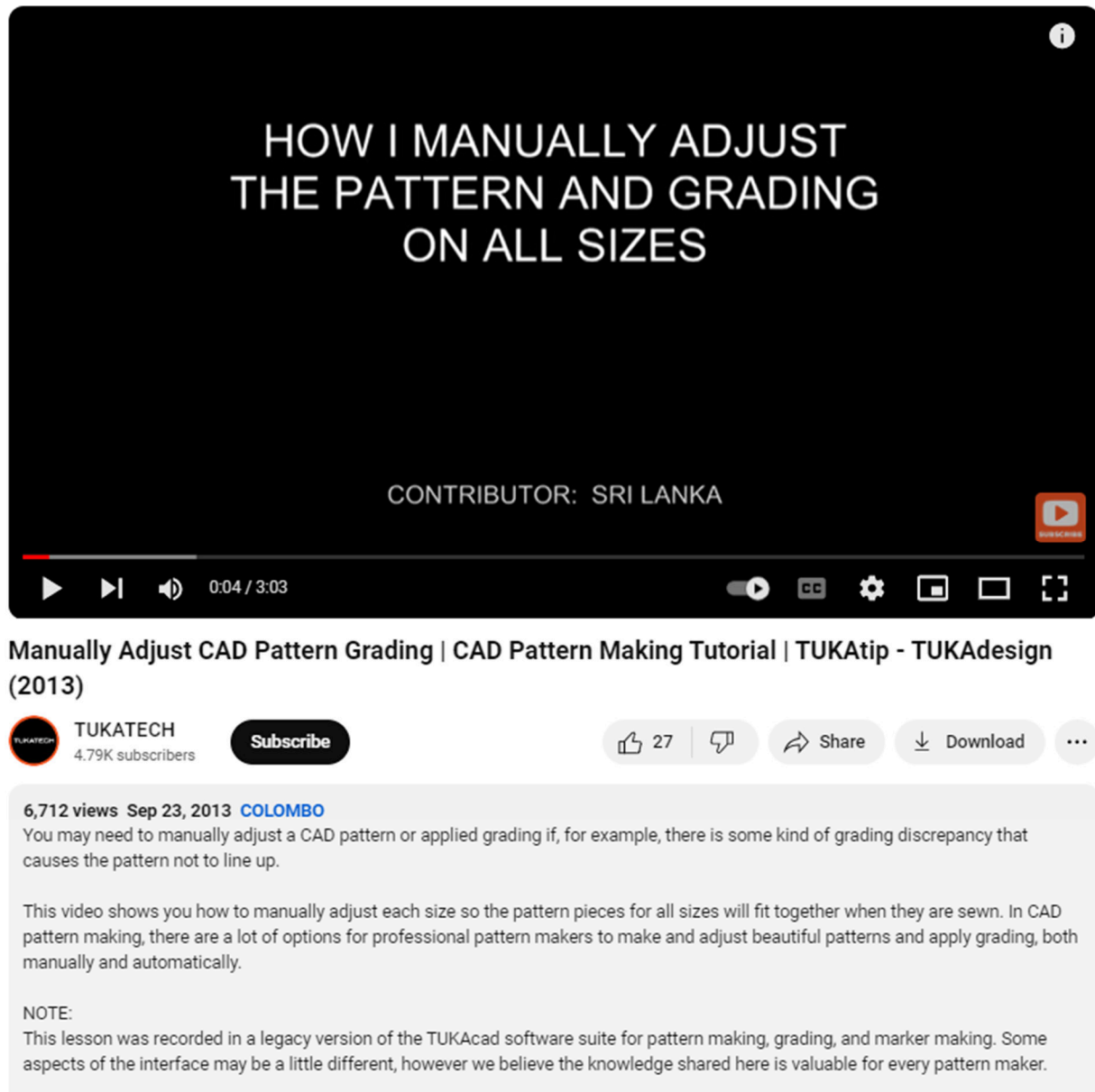
And here, specifically, expert testimony from Kathryn Talbot confirms that EZBRUSH and TUKATECH qualified as printed publications since 2012 and 2013, respectively. Ms. Talbot’s testimony confirms that “Exhibit LINGDI-1004 is a true and correct copy, in MP4 format, of the video located at the URL <https://www.youtube.com/watch?v=dRWJZab0tLA>” (LINGDI-1010, ¶¶14-15) and that this video was “accessible at the same URL on May 16, 2012.” LINGDI-1010, ¶¶13, 18, 20-23. The YouTube page that hosts EZBRUSH confirms this May 16, 2012 publication date:



LINGDI-1010, Appendix B.

Similarly, with respect to TUKATECH, Ms. Talbot testifies, “Exhibit LINGDI-1007 is a true and correct copy, in MP4 format, of the video located at the URL <https://www.youtube.com/watch?v=hR3TcYDPjMU>.” LINGDI-1010, ¶¶16-17. Additionally, TUKATECH (LINGDI-1007) was “accessible at the same URL

on September 23, 2013.” LINGDI-1010, ¶¶13, 19-22, 24. The YouTube page that hosts TUKATECH confirms this September 23, 2013 publication date:



LINGDI-1010, Appendix C. And, indeed, the Internet Archive (aka, Wayback Machine) capture of the YouTube page that hosts TUKATECH further confirms

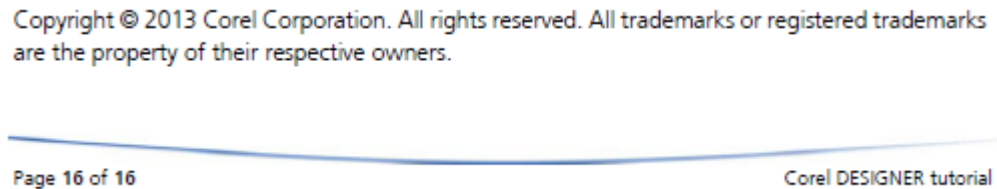
that TUKATECH qualifies as prior art by at least the April 26, 2014¹ date on which it was archived by the Internet Archive. LINGDI-1010, ¶¶26, 16-17, Appendix D; LINGDI-1011, ¶¶1-6, Exhibit A.

Additionally, testimony of Mr. Dan Perreault confirms that a person of ordinary skill and other interested members of the public would have been able to find both EZBRUSH and TUKATECH through the exercise of reasonable diligence, such as by performing keyword searches using YouTube’s search functionality and browsing pages dedicated to the relevant technology. LINGDI-1010, ¶¶13, 21, 25, 27; LINGDI-1003, ¶¶26-28; *see also HVLPO2*, 2018 U.S. Dist. LEXIS 245874, *3-4. As Mr. Perrault testifies, “persons of ordinary skill in the art during the relevant time frame would have been well-aware of YouTube and would have turned to YouTube to find information on the latest developments in design and drawing software, including clothing design software,” such as by “performing keyword searches or viewing the channels of users that regularly

¹ The Internet Archive does not generally capture web pages on the day that they are first publicly available but rather employs web crawlers to periodically capture webpages at various points in time. The fact that TUKATECH was not captured by the Internet Archive until April 26, 2014 does not negate Ms. Talbot’s testimony that this video was publicly available as of September 23, 2013.

publish videos related to design software. Indeed, I conducted such YouTube searches myself when researching the latest design software developments during the relevant time frame.” LINGDI-1003, ¶26.

Next, turning to the Corel publication (LINGDI-1005), the evidence of record also establishes that it was publicly available from a popular source site prior to the earliest possible priority date of the '355 patent. First, Corel includes a copyright notice of 2013, which evidences its date of publication:

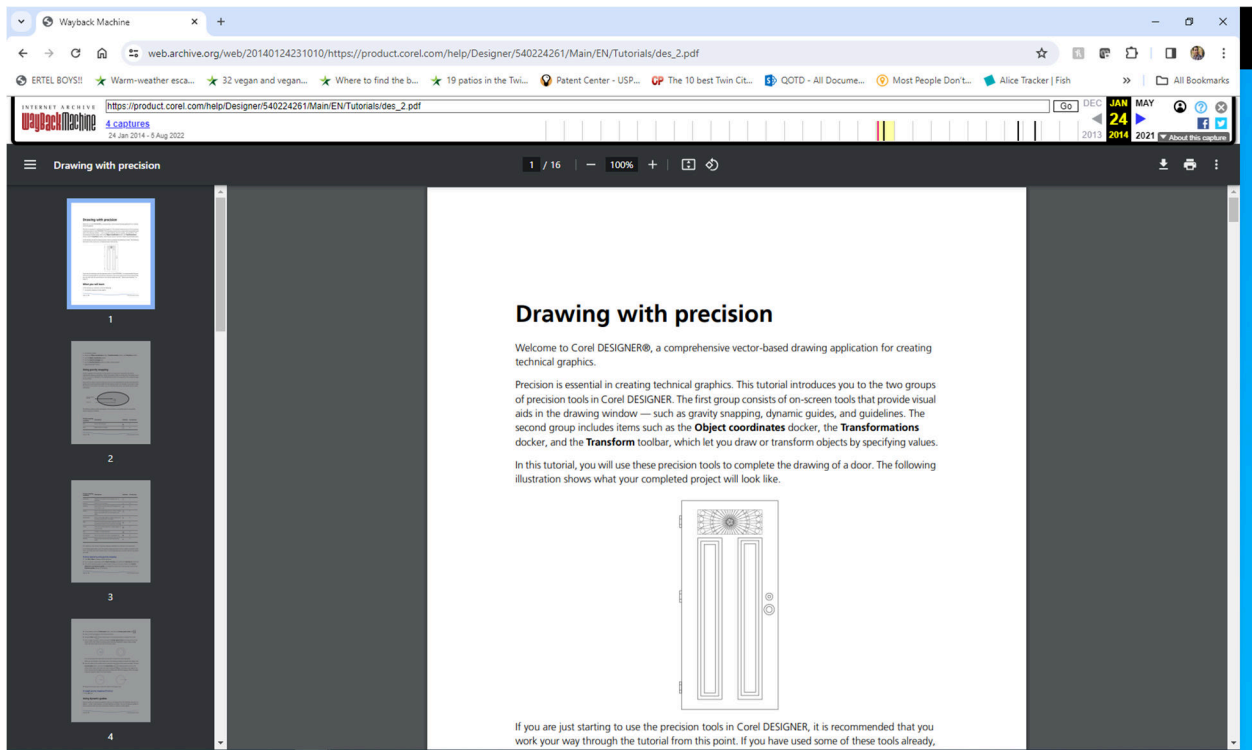


LINGDI-1005, 16; *Ford Motor Co. v. Cruise Control Techs. LLC*, IPR2014-00291, Paper 44 at 8 (PTAB June 29, 2015) (citing Joseph S. Dubin, *The Universal Copyright Convention*, 42 Cal. L. Rev. 89, 103 (1954)) (“a copyright notice bearing the symbol ‘©’ provides some evidence of a date of publication . . . [because] such markings generally indicate the ‘first year of publication.’”).

Second, the affidavit of Nathaniel Frank-White, Records Request Processor for the Internet Archive (aka “Wayback Machine”), verifies that Corel was publicly available from the popular source site (corel.com) at least as early as January 24, 2014. LINGDI-1011, ¶¶5, 7; *see also* MPEP § 2128(II)(E) (“Prior art obtained via the Wayback Machine[®] sets forth a *prima facie* case that the art was

publicly accessible at the date and time provided in the time stamp.”); *Valve Corp. v. Ironburg Inventions Ltd.*, 8 F.4th 1364, 1374-75 (Fed. Cir. 2021) (“District courts have taken judicial notice of the contents of webpages available through the Wayback Machine ‘as facts that can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.’”) (quoting [*Erickson v. Neb. Mach. Co.*, U.S. Dist. LEXIS 87417, 2015 WL 4089849, at *1 n.1 \(N.D. Cal. July 6, 2015\)](#)). Specifically, Mr. Frank-White explains how to determine the date that a particular page was archived by the Internet Archive based on the URL, stating that “[t]he Internet Archive assigns a URL on its site to the archived files in the format [http://web.archive.org/web/\[Year in yyyy\]\[Month in mm\]\[Day in dd\]\[Time code in hh:mm:ss\]/\[Archived URL\]](http://web.archive.org/web/[Year in yyyy][Month in mm][Day in dd][Time code in hh:mm:ss]/[Archived URL]) aka an ‘extended URL’.” LINGDI-1011, ¶5. Mr. Frank-White then identifies the Internet Archive URL for the archived PDF attached to his affidavit as Exhibit B (which is an archived copy of LINGDI-1005):

https://web.archive.org/web/20140124231010/https://product.corel.com/help/Designer/540224261/Main/EN/Tutorials/des_2.pdf. *Id.*, ¶7, Exhibit B Using the date determination technique described by Mr. Frank-White, it is revealed that this archive of LINGDI-1005 was captured on January 24, 2014 (2014-01-24). This is confirmed by the screen capture of the Internet Archive page for LINGDI-1005 of January 24, 2014:

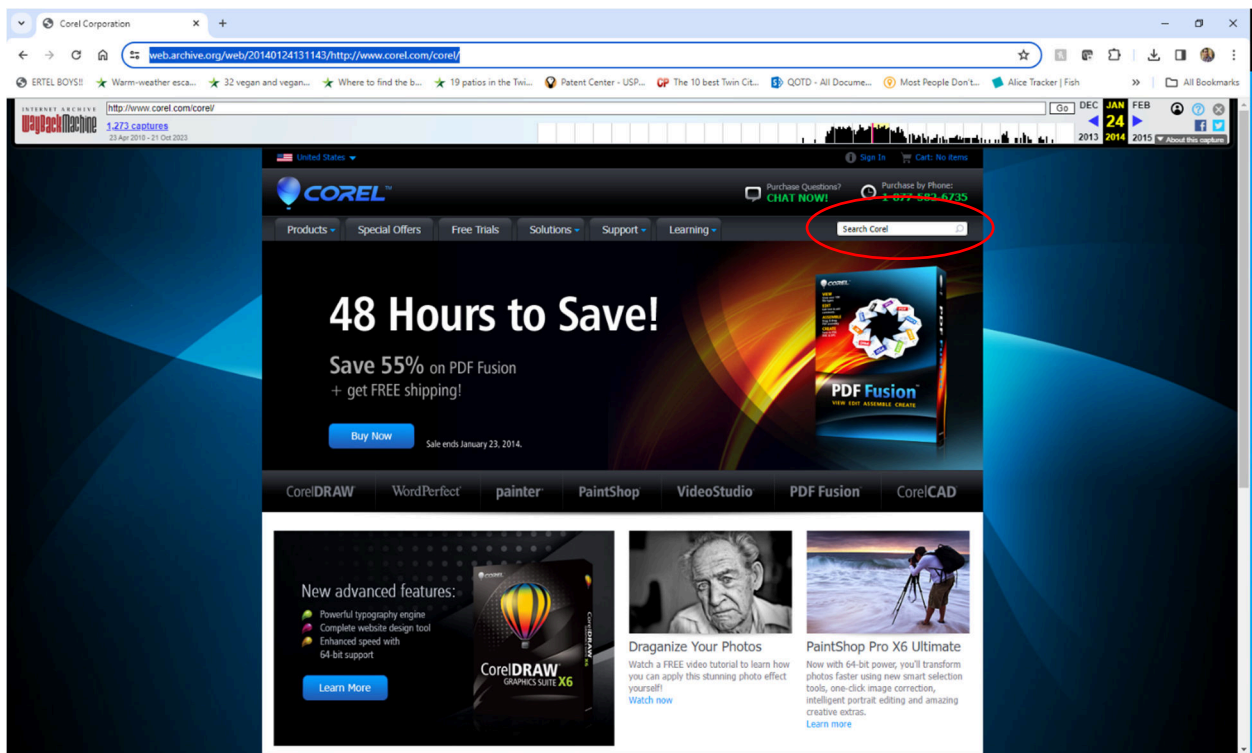


LINGDI-1012. The above archive URL further indicates that the original URL was hosted by the Corel website.

Furthermore, a person of ordinary skill and other interested members of the public would have been able to locate Corel through reasonable diligence. As Mr. Perreault testifies, Corel was (and still is) a popular developer of design and drawing software, and therefore, a person of ordinary skill in the art would have known at that time to look to the Corel website to learn about new developments in design and drawing software. LINGDI-1003, ¶29. For example, a person of ordinary skill in the art would have used the “search” functionality at the Corel website itself to search for publications like LINGDI-1005 using predictable keywords such as “drawing,” “snapping,” “guides,” or “precision.” Indeed, such

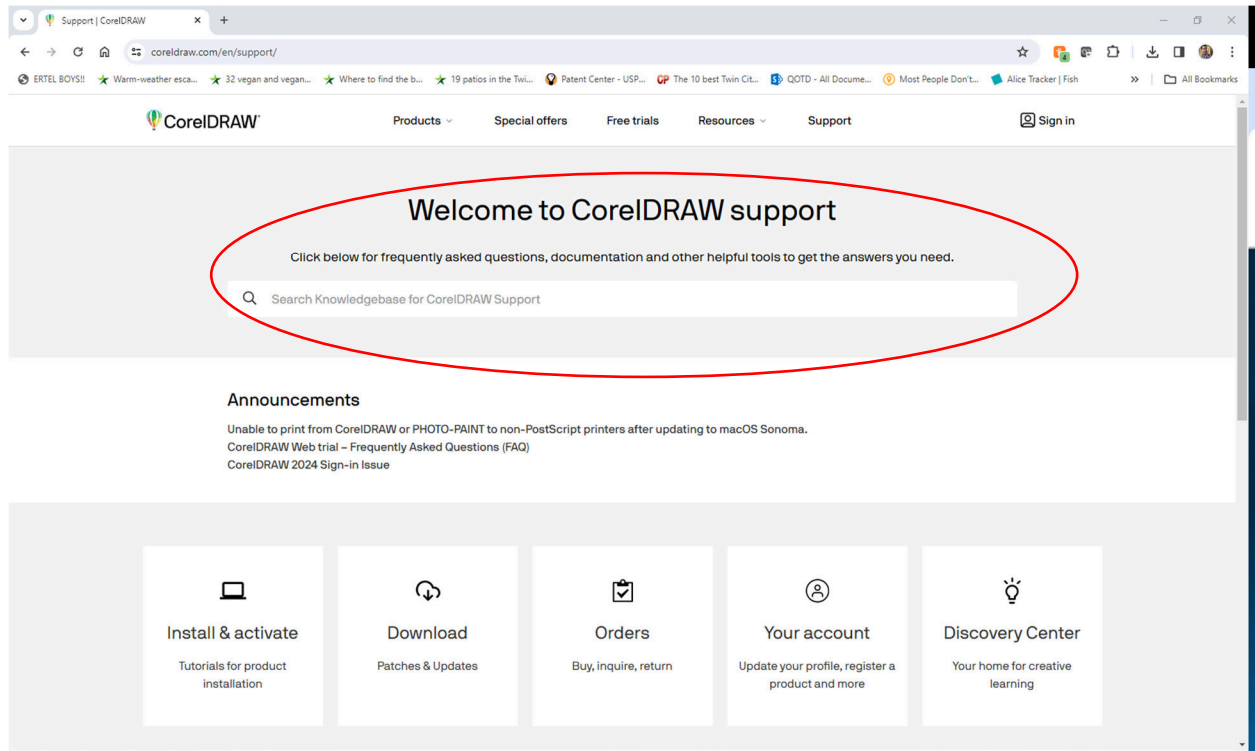
persons of ordinary skill specifically interested in learning techniques for using the popular Corel DESIGNER software would have been able to readily locate LINGDI-1005 by searching for “DESIGNER” and other relevant terms. LINGDI-1003, ¶¶29.

And further evidence corroborates this testimony. In one example, an archived version of the Corel website front page from the same day that LINGDI-1005 was archived (January 24, 2014) shows that the website included a “search” function for searching the Corel website. LINGDI-1011, ¶¶6, Exhibit A; LINGDI-1003, ¶¶29.

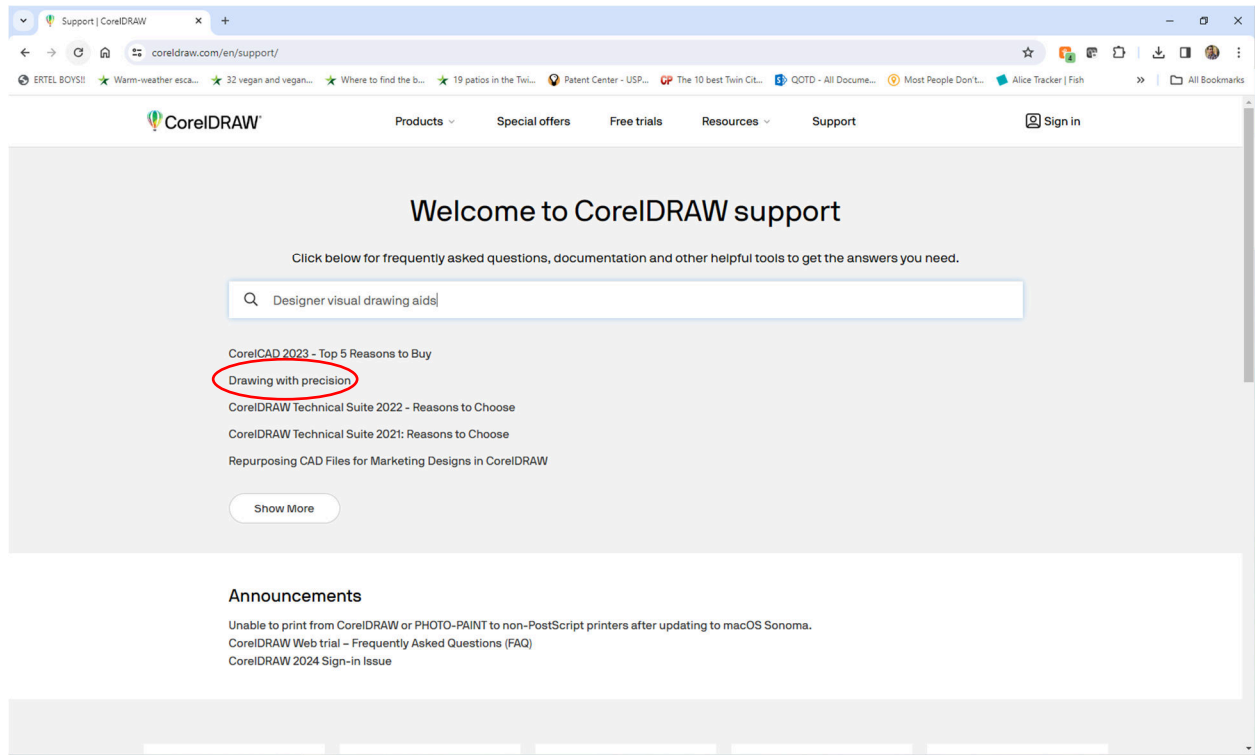


LINGDI-1013 (annotated with red oval); LINGDI-1011, Exhibit A. This is consistent with the present day Corel website, which includes a similar search

function for inputting keywords:



LINGDI-1014 (annotated with red oval); LINGDI-1003, ¶29. And the evidence here confirms that using this “search” function to search based on keywords “designer visual drawing aids” shows that LINGDI-1005 (“Drawing with precision”) is returned as the second result:



LINGDI-1015 (annotated with red oval); LINGDI-1003, ¶29.

Therefore, as Mr. Perreault testifies, interested persons would have known to look to the Corel website to find information on its popular products and developments in design and drawing software and would have employed reasonable diligence with keyword searching at the “search” functionality to do so—all of which would have predictably led to locating LINGDI-1005 back in 2014. LINGDI-1003, ¶29.

IV. SUMMARY OF THE '355 PATENT

A. Brief Description

The '355 patent “relates to computer simulation technology that processes 2D clothing patterns and thus creates digital clothing” which allows a user “to

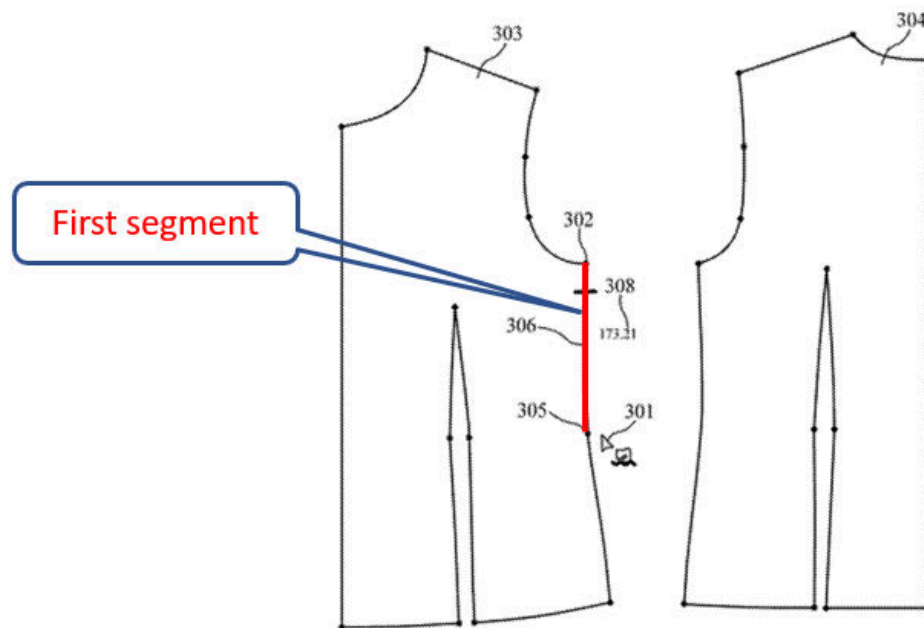
easily adjust a length of another segment to be sewn the same as a length of a selected segment on a pattern when free-sewing.” LINGDI-1001, 1:15-20, Abstract; LINGDI-1003, ¶¶31-37. The ’355 patent does not purport to describe a pioneering innovation for such creation of digital clothing, but instead alleges a nuanced change to a user interface display in a then-common Computer Aided Design (CAD) software. LINGDI-1001, cover page (citing to Patent Owner’s own “Marvelous Designer” software manual from 2014); 1:30-65 (“during free sewing”).

As described in the background section, such traditional CAD software would provide user interface options such as “segment sewing” and “free sewing” for purposes of digitally “sewing each of the different two patterns.” LINGDI-1001, 1:30-42; *see also* LINGDI-1004, 23:40-24:51; LINGDI-1003, ¶32. The ’355 patent describes that “[s]egment is sewing the two selected segments among the segments that are separated by dots; and free sewing is sewing two segments with the adjusted length that a user wants by freely adjusting each length of the two segments to be sewn.” LINGDI-1001, 1:30-34. Mr. Perrault explains that segment sewing is sewing of two selected, full segments of existing patterns while free sewing allows the user to specify how much of each segment is to be sewn to the corresponding segment by allowing the user to select the length for each sewing segment. LINGDI-1003, ¶32.

The '355 patent describes that “in the case of free sewing, if a user adjusts the two segments to be the same, accuracy is required when adjusting the length of another segment to be the same as the length of the first selected segment.”

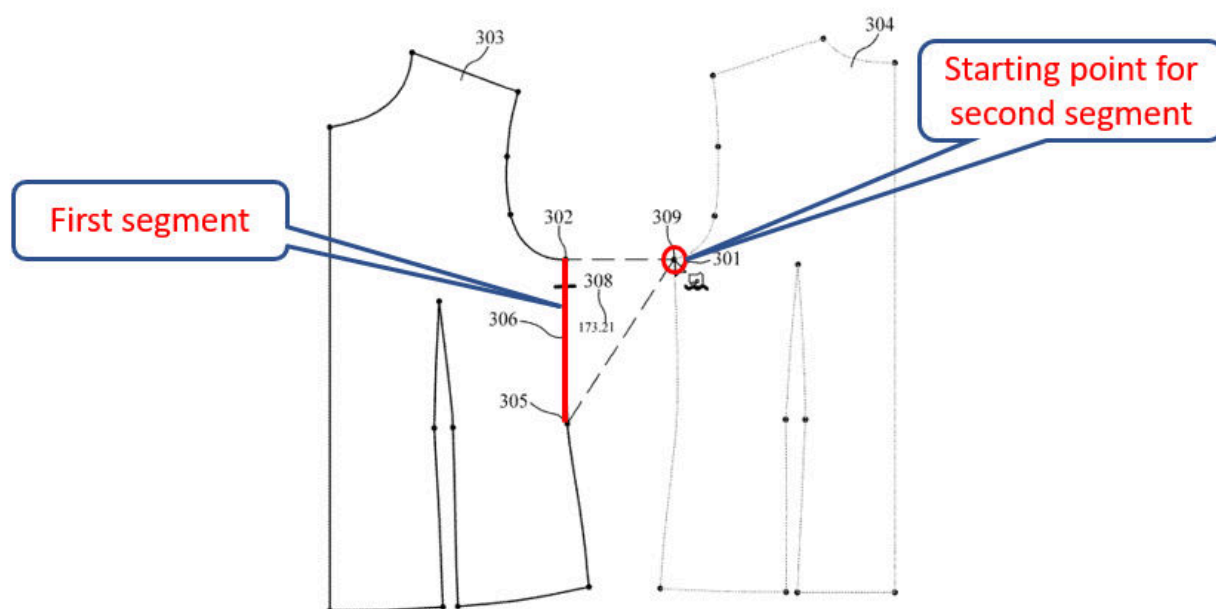
LINGDI-1001, 1:38-42. As such, the '355 patent purports to describe a user interface to assist the user in selecting two segments of substantially the same lengths when free sewing. LINGDI-1003, ¶¶31-32.

FIG. 4 of the '355 patent shows “two patterns 303 and 304 to be sewn” with the user selecting “a first selected segment 306” on pattern 303, the segment 306 having a starting point 302 and an ending point 305:



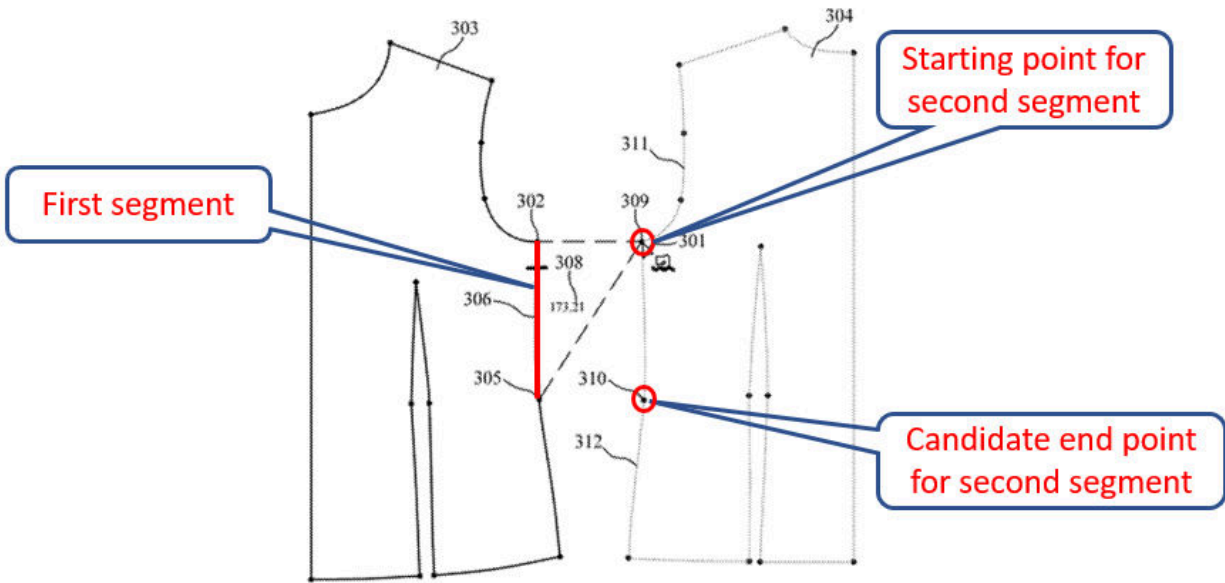
LINGDI-1001, FIG. 4 (annotated), 8:17-22.

FIG. 5 shows the cursor 301 positioned at a point 309 to select a starting point for a second segment on pattern 304:



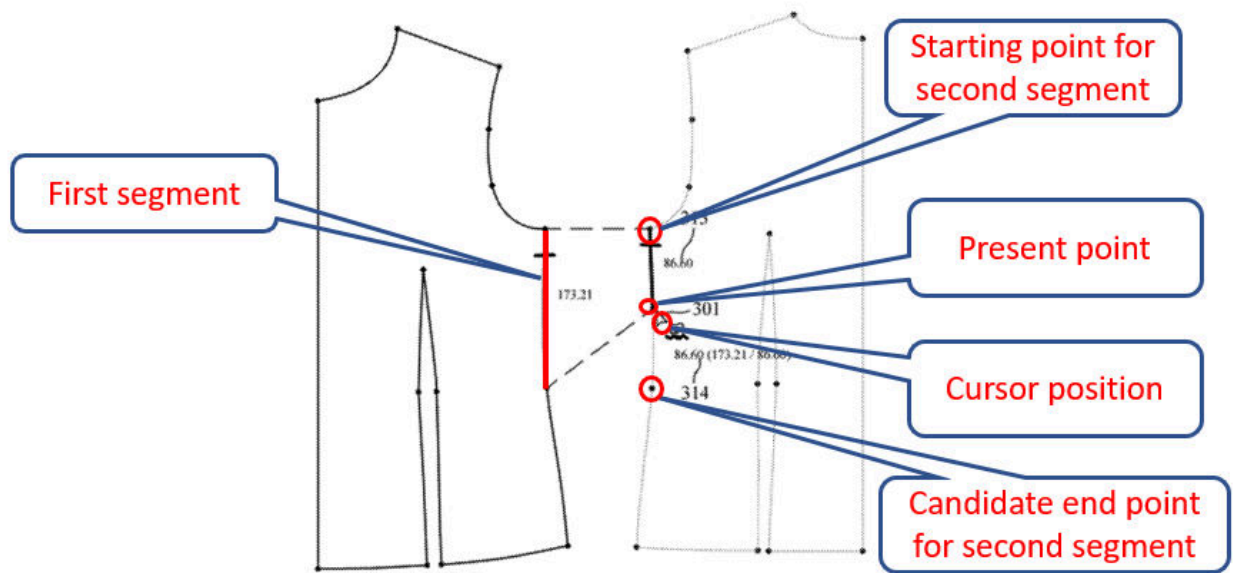
LINGDI-1001, FIG. 5 (annotated), 8:45-51.

In FIG. 6, the system displays a “candidate 310 for the ending point of the second selected segment” to “make[] the second selected segment the same as the length of the first selected segment.”



LINGDI-1001, FIG. 6 (annotated), 9:4-20.

FIG. 8 shows a current cursor position and a present point that is “a point that is on the second segment that is the closest in distance to the current cursor position.” It also shows “a difference value 314 between a length of a first selected segment and the length of a line” between the starting point 309 and the present point:



LINGDI-1001, FIG. 8 (annotated), 9:59-10:4.

The '355 patent also describes moving the present point to the candidate ending point so that the segments are substantially equal in length, describing that “[t]he cursor position mover 231 moves the position of the cursor to the position of the determined candidate for the ending point and displays it [sic] the difference between the current cursor position and the determined candidate for the ending point is lower than a reference value.” LINGDI-1001, 13:22-28.

B. Summary of the Prosecution History

The Application that led to the '355 patent was filed on July 10, 2020 with 17 claims. LINGDI-1001, cover page (22); LINGDI -1002, 32-37. The office issued three office actions rejecting the claims over U.S. Publication 2004/0049309 (Gardner), U.S. Publication 2011/0298897 (Sareen), and U.S. Publication

2014/0135971 (Park). LINGDI-1002, 133-146, 177-182, 230-246. After each office action, the applicant amended the claims. LINGDI-1002, 161-174, 195-216. In a response dated September 14, 2021, the applicant amended claims 1-5 significantly from their original form, canceled claims 6-20, and added new claims 21-26. LINGDI-1002, 259-268; LINGDI-1003, ¶38.

In an office action dated October 4, 2021, the office rejected claims 1-4 and 21-25 over Gardner, Park, Sareen, and AutoCAD Architecture 2011 User's Guide, and indicated that claims 5 and 26 included allowable subject matter. LINGDI-1002, 273-286. In response, the applicant amended independent claims 1 and 22 to include the allowable subject matter of corresponding dependent claims 5 and 26. LINGDI-1002, 303-311. The office subsequently allowed the claims. LINGDI-1002, 327-336; LINGDI-1003, ¶39.

However, the subject matter indicated as allowable by the office—"when the second length is substantially equal to the first length, at least one of the first length, the second length and a difference value between the first length and the second length is displayed in a first color," and "when the second length is substantially different from the first length, at least one of the first length, the second length and the difference value is displayed in a second color, the second color being different from the first color"—was a well-known feature of computer-aided design (CAD) systems before the '355 patent. LINGDI-1003, ¶40. For

example, as discussed in more detail below, Niterra discloses a CAD system that provides an equal length indicator for two lines, where the color of the length indicator is used to inform the operator that the amount of length deviation between the two lines has deviated from an acceptable value. LINGDI-1009, [0069].

C. Level of Ordinary Skill

A person of ordinary skill in the art as of the Critical Date (“POSITA”) would have had a minimum of a bachelor’s degree in an engineering, computer science, graphic design, or a related field plus 2-3 years of work and/or research experience in the field of computer aided design (CAD) software. LINGDI-1003, ¶23. Graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education. *Id.*

D. Claim Construction

All claim terms should be construed according to the *Phillips* standard. *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); 37 C.F.R. §42.100. Given the noticeable overlap between the preferred embodiment of the ’335 patent and the predictable combinations articulated in Grounds 1-2 here, Petitioner submits that no claim terms need be construed to resolve issues pertinent to obviousness. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); *Google Inc. v. Intellectual Ventures II LLC*, 701 Fed. Appx. 946, 956

(Fed. Cir. 2017) (stating the claim terms at issue “do not require construction” for purposes of “resolv[ing] the parties’ patentability arguments”); LINGDI-1003, ¶¶21-22, 41.

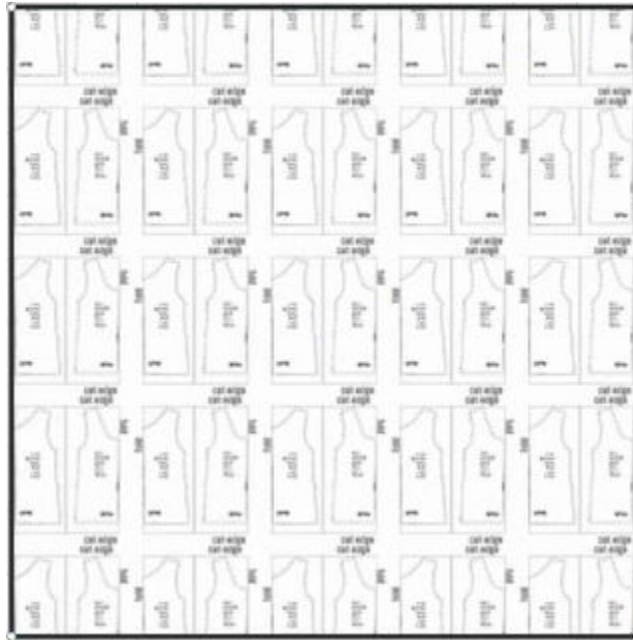
V. DETAILED EXPLANATION OF IPR GROUNDS

This petition shows how the primary references above, alone or in combination with other references, disclose the limitations of the Challenged Claims, thereby invalidating claims 1-9 of the ’355 patent. As articulated below, this petition shows a reasonable likelihood that Petitioner will prevail with respect to claims 1-9 of the ’355 patent. LINGDI-1003, ¶¶43-113.

A. GROUND 1—Claims 1-9 are rendered obvious by EZBRUSH in view of Corel, Thoemmes, and Niterra

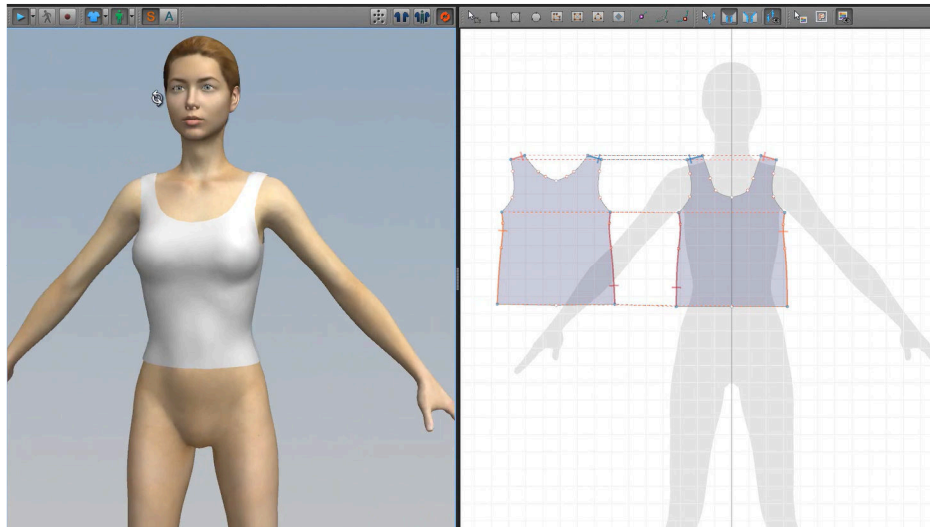
1. EZBRUSH

EZBRUSH is a YouTube video showing various features of “Marvelous Designer 2”—Patent Owner’s commercial software product—as it was widely known in May 2012. LINGDI-1004, 0:16-0:25 (using “Marvelous Designer 2” software); LINGDI-1003, ¶¶44-46. EZBRUSH shows a user creating a shirt pattern by tracing a shirt pattern in an image file stored on the computer. LINGDI-1004, 0:00-20:00. The software allows a user to select patterns from a stored image file of patterns:



LINGDI-1004, 1:16-1:45; LINGDI-1003, ¶¶44 (“The express description of using ‘Marvelous Designer 2’ and the opening of a file folder for selecting stored files plainly demonstrates what a POSITA would have already known from Marvelous Designer 2 and other digital clothing software systems—users were able to open and save files of clothing patterns and draped digital clothing.”).

During the EZBRUSH demonstration, after the user creates the front and back of the shirt, EZBRUSH shows sewing the front and back together and simulating draping of the shirt on an avatar.



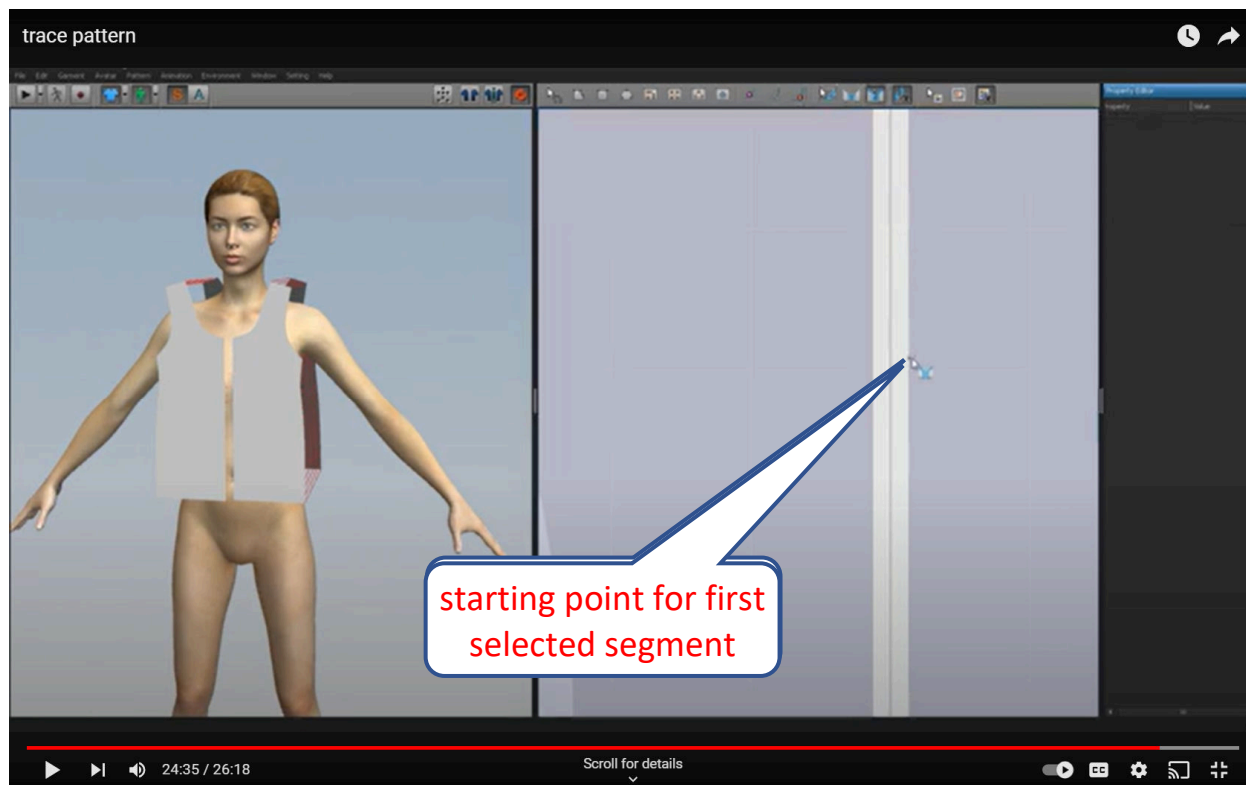
LINGDI-1004, 20:00-20:50.

EZBRUSH also shows an example of “free sewing” two selected segments of the shirt pattern. LINGDI-1004, 24:00-24:50.

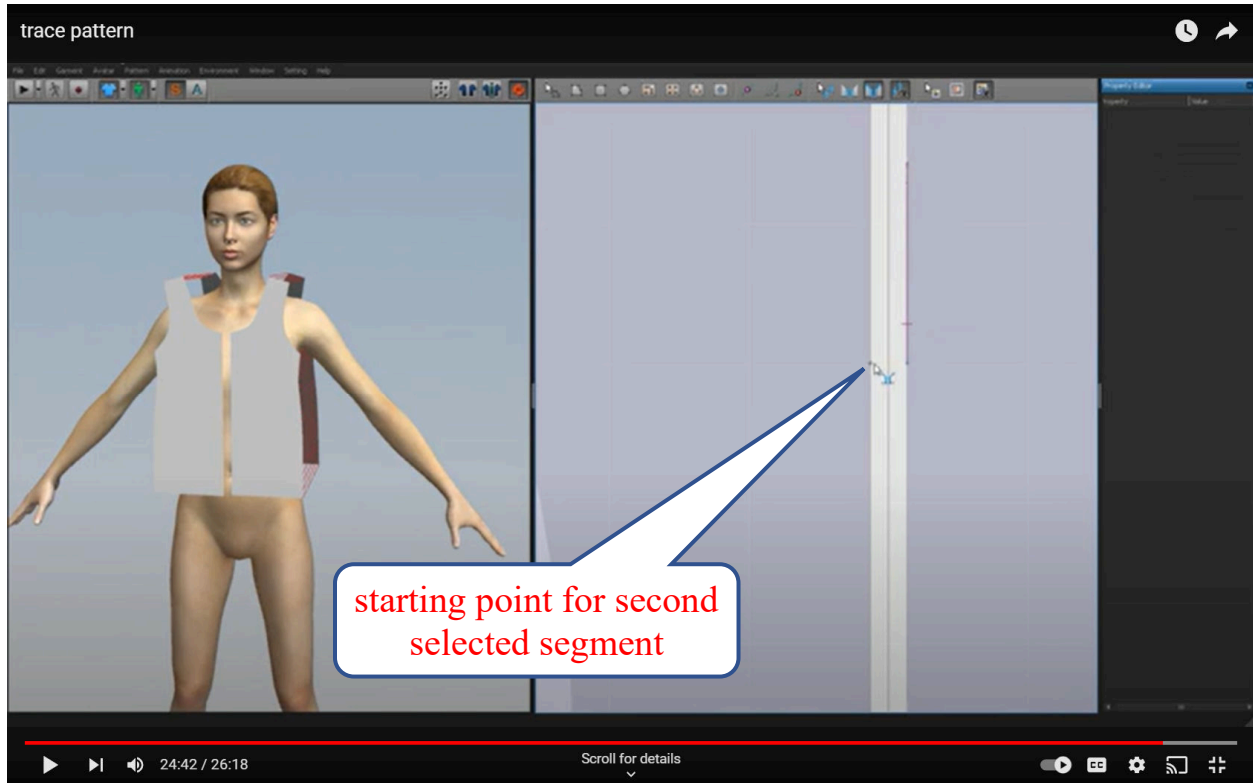
LINGDI-1004, 24:08 (with transcript of audio as available at
<https://www.youtube.com/watch?v=dRWJZab0tLA>).

The still screenshots below show the user moving a cursor to set a first

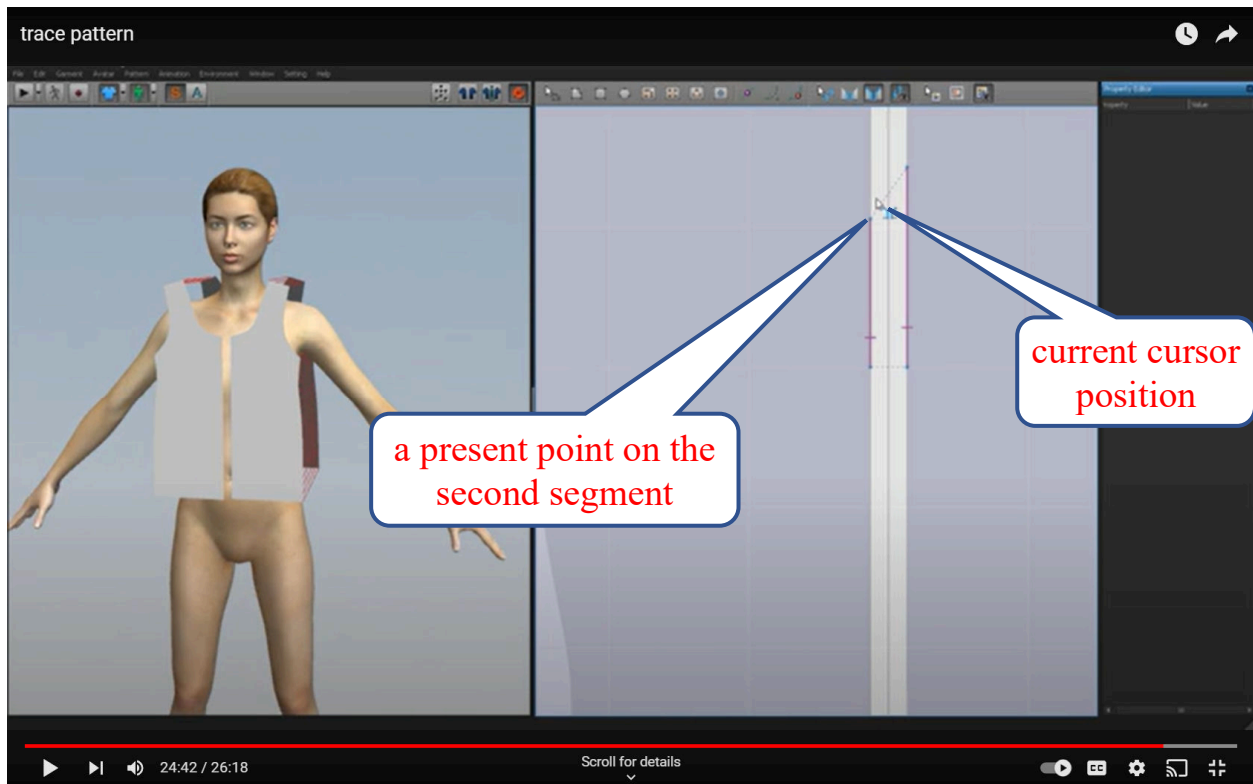
selected segment on a first segment on the right half of the shirt front:



LINGDI-1004, 24:35-24:40 (annotated). The still screenshot below shows the user moving the cursor to set a starting point of a second selected segment on a second segment of the left half of the shirt front:

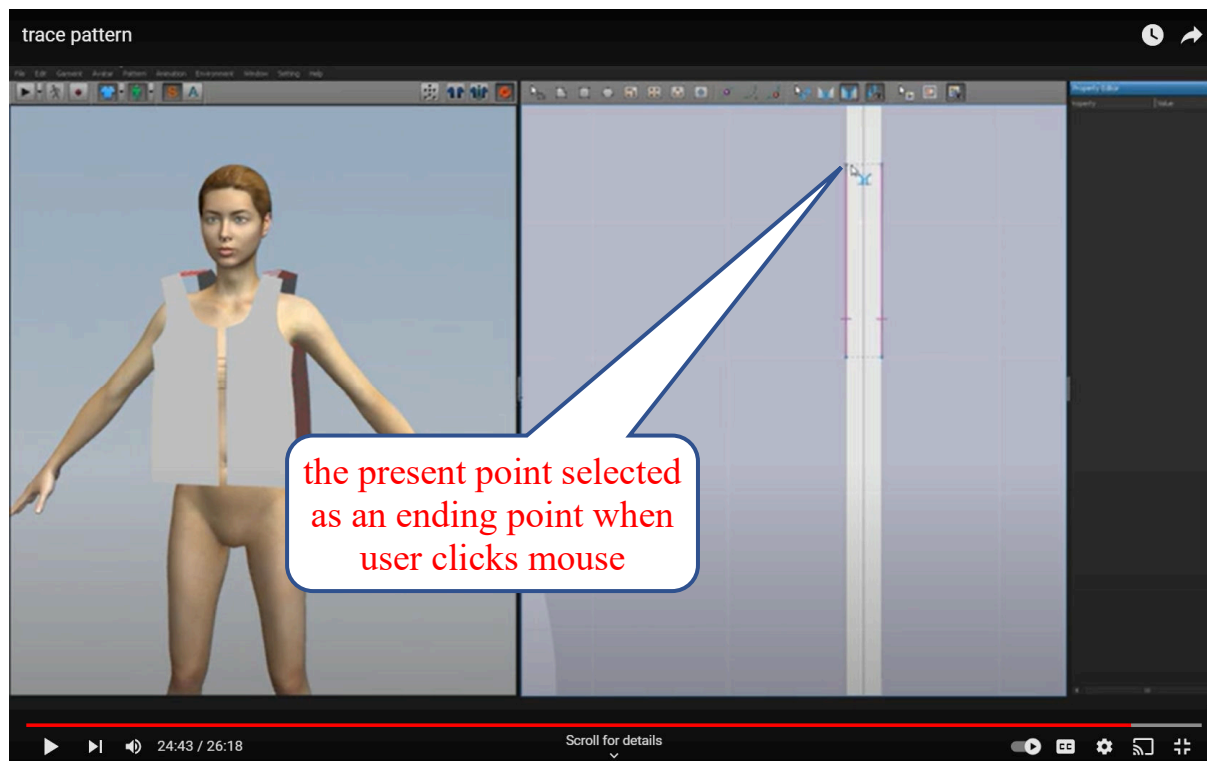


LINGDI-1004, 24:42 (annotated). As the user moves the cursor along the second segment, a present point on the second segment is determined based on the current cursor position:



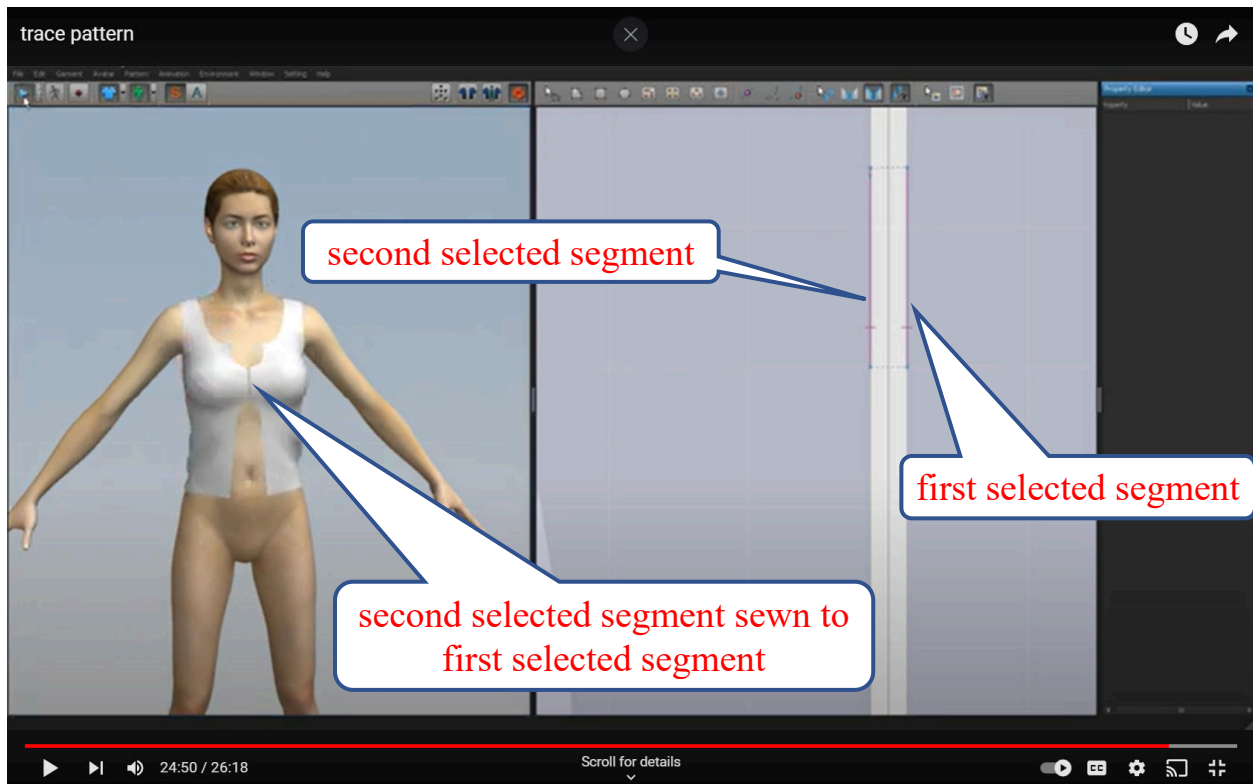
LINGDI-1004, 24:42 (annotated). As shown in the above screenshot from EZBRUSH, the present point is a point along the selected segment (in this case, the edge of the clothing pattern on the left) that tracks a location of the cursor. As shown in the EZBRUSH video, the movement of the present point lags slightly behind movement of the cursor but tracks to the closest point along the selected segment to the cursor, once the present point catches up to the location of the cursor. LINGDI-1004, 24:15-24:45; LINGDI-1003, ¶¶46.

When the user clicks the mouse, the present point on the second segment is selected as an ending point of the second selected segment:



LINGDI-1004, 24:43 (annotated).

The section of the second segment between the starting point and the ending point is set as the second selected segment to be sewn to the first selected segment:



LINGDI-1004, 24:50 (annotated).

2. Corel

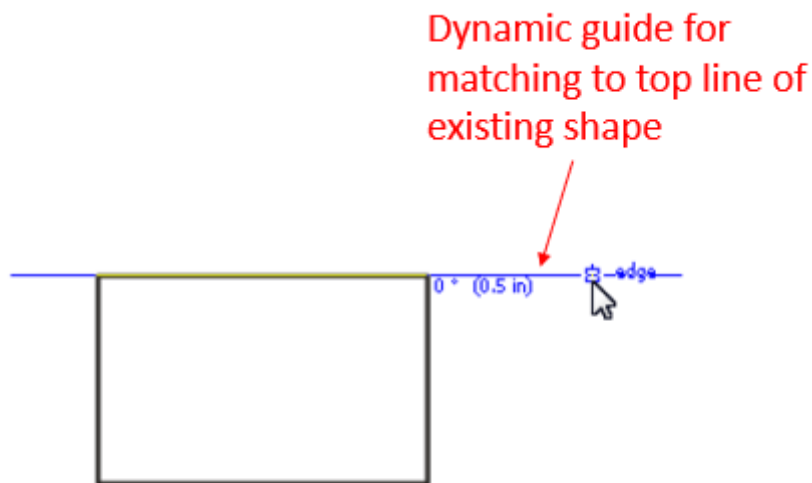
Corel is a tutorial publication for the then-popular Corel DESIGNER software, “a comprehensive vector-based drawing application for creating technical graphics.” LINGDI-1005, 1; LINGDI-1003, ¶¶47-49. Corel explains that “[p]recision is essential in creating technical graphics” and describes “two groups of precision tools” including “on-screen tools that provide visual aids in the drawing window — such as gravity snapping, dynamic guides, and guidelines.” *Id.* Corel describes that “[g]ravity snapping is the attraction of the pointer to a snap point” such that “[w]hen the pointer is close to a snap point, the gravity source of

the snap point is highlighted” to “identif[y] the snap point as the snapping target.”

Id., 2.

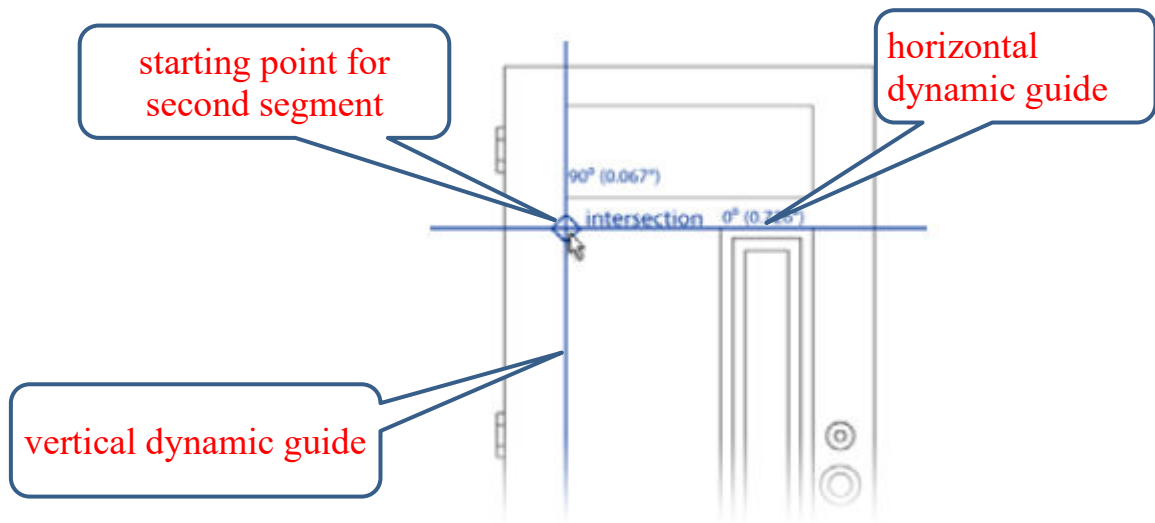
Corel also describes displaying “dynamic guides to ensure precision when you draw and position objects in relation to other objects.” LINGDI-1005, 4.

“Dynamic guides contain invisible divisions, called ticks, to which the pointer is attracted.” *Id.*, 5. This publication shows that Corel DESIGNER allowed a user to select a segment of a shape to cause the software to display a dynamic guide:



LINGDI-1005, 6.

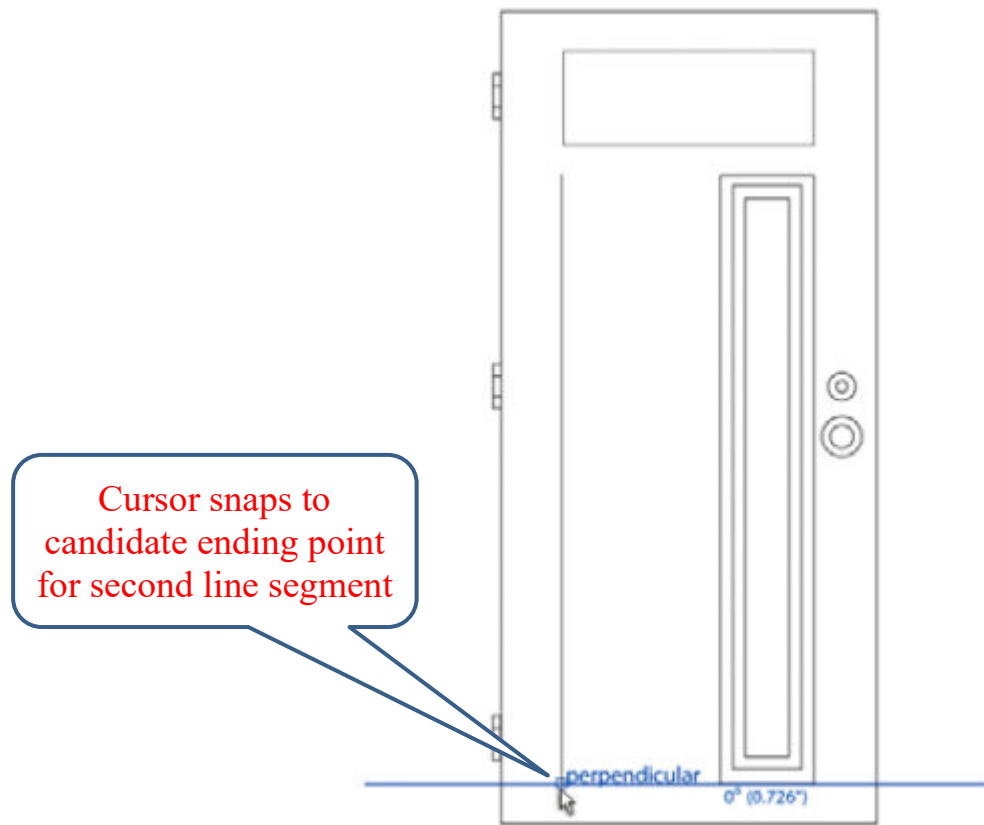
Corel describes an example where dynamic guides and gravity snapping are advantageously utilized to allow a user to draw a line segment that matches the length of an already existing, selected segment. Specifically, the user selects an upper segment of a rectangle to cause the software “to display a horizontal dynamic guide” and a vertical dynamic guide.



LINGDI-1005, 11 (annotated).

As shown in the figure above, although the cursor is not located at the precise intersection of the horizontal and vertical dynamic guides, the user can click to cause the starting point of the line segment to snap to the intersection of the dynamic guides. LINGDI-1005, 11; LINGDI-1003, ¶¶48-49. The user can then select a bottom of the already existing rectangle to cause the software to display a new horizontal dynamic guide. LINGDI-1005, 11. The user then “[c]ontinue[s] to move the pointer along the dynamic guide until the perpendicular snap point is displayed and the line becomes straight” to allow the user to draw a line segment that is equal in length to the identified vertical segment of the existing rectangle.

Id.



LINGDI-1005, 11 (annotated).

3. Thoemmes

Thoemmes is a patent describing “a computer-aided drafting tool for drawing lines” including drawing lines “at pre-settable distances from pick points on the existing linear entity.” LINGDI-1006, 1:23-29; LINGDI-1003, ¶¶50-53. Similar to EZBRUSH and Corel, Thoemmes describes “the ability to snap lines, and shapes” in a manner beyond snapping to “a fixed (x,y) Cartesian coordinate frame” as described in prior art systems to “allow[] the user to draw new lines with specific, pre-defined geometrical relationships with existing, lines.” *Id.*, 1:38-57.

Thoemmes describes that a new line can be “snapped to a pre-set line based upon the distance between the cursor and the pre-set line...depending upon the distance between the cursor and the first pick point” on the line. *Id.*, 1:67-2:10.

Thoemmes describes an example in which a user selects “a first pick point 308” along an already existing line and the software displays a “snap line 314” at a preset angle from the first line on which the pick point 308 is located:

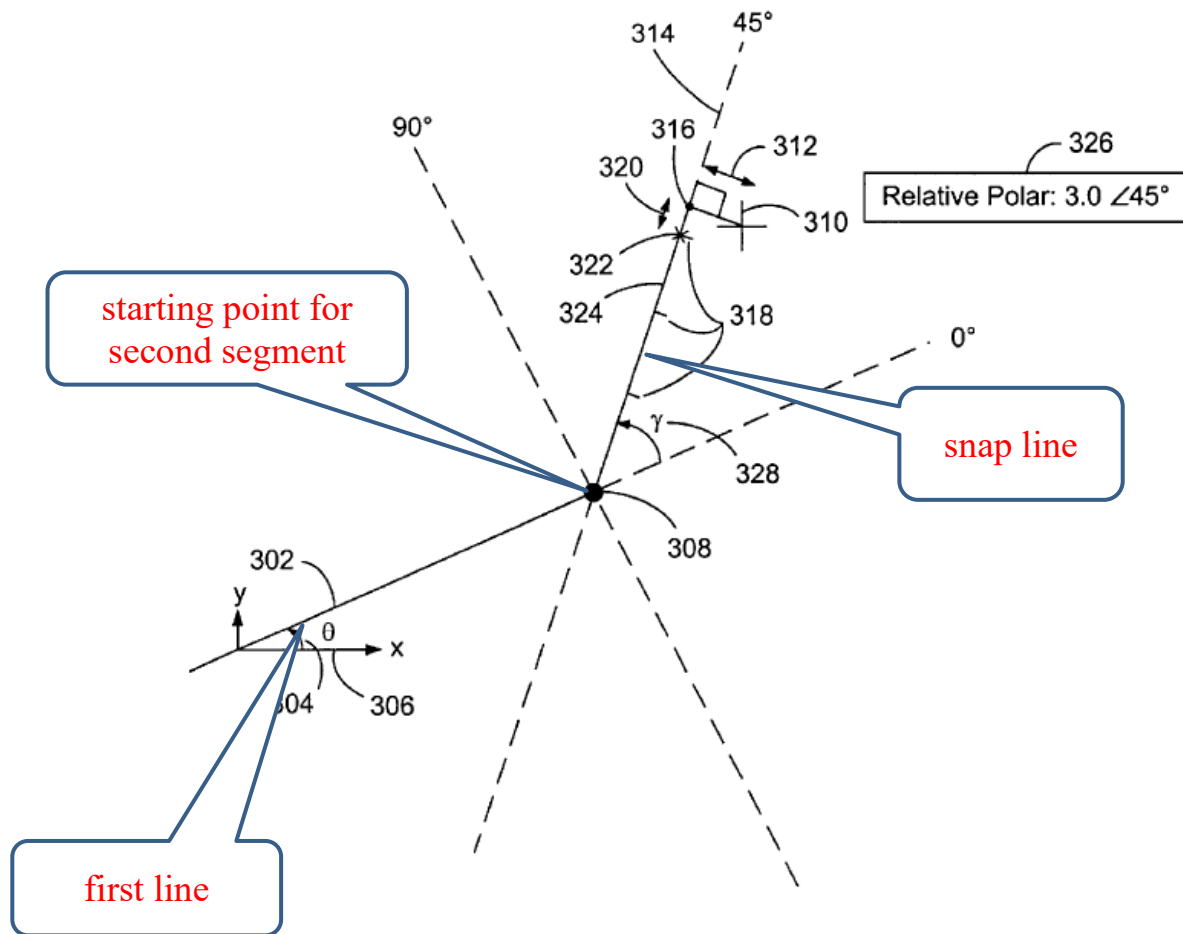


FIG. 3

LINGDI-1006, FIG. 3 (annotated), 3:46-53, 4:22-25, 4:48-52; LINGDI-1003, ¶51.

Thoemmes describes that “extension line 324 extends from the first pick point 308 at a pre-settable angle.” LINGDI-1006, 4:8-11. “[T]he relative snap tool also allows the user to snap to one of a plurality of pre-settable extension line lengths” which can be based on “determining a reference point 316 on the extension or snap line 314 that is nearest the position of the first cursor 310.” *Id.*, 4:15-25. “If the distance 312 between the first cursor 310 and the snap line 314 is less than a snap distance, an extension line 324 is defined from the snap line 314.” *Id.*, 4:48-56.

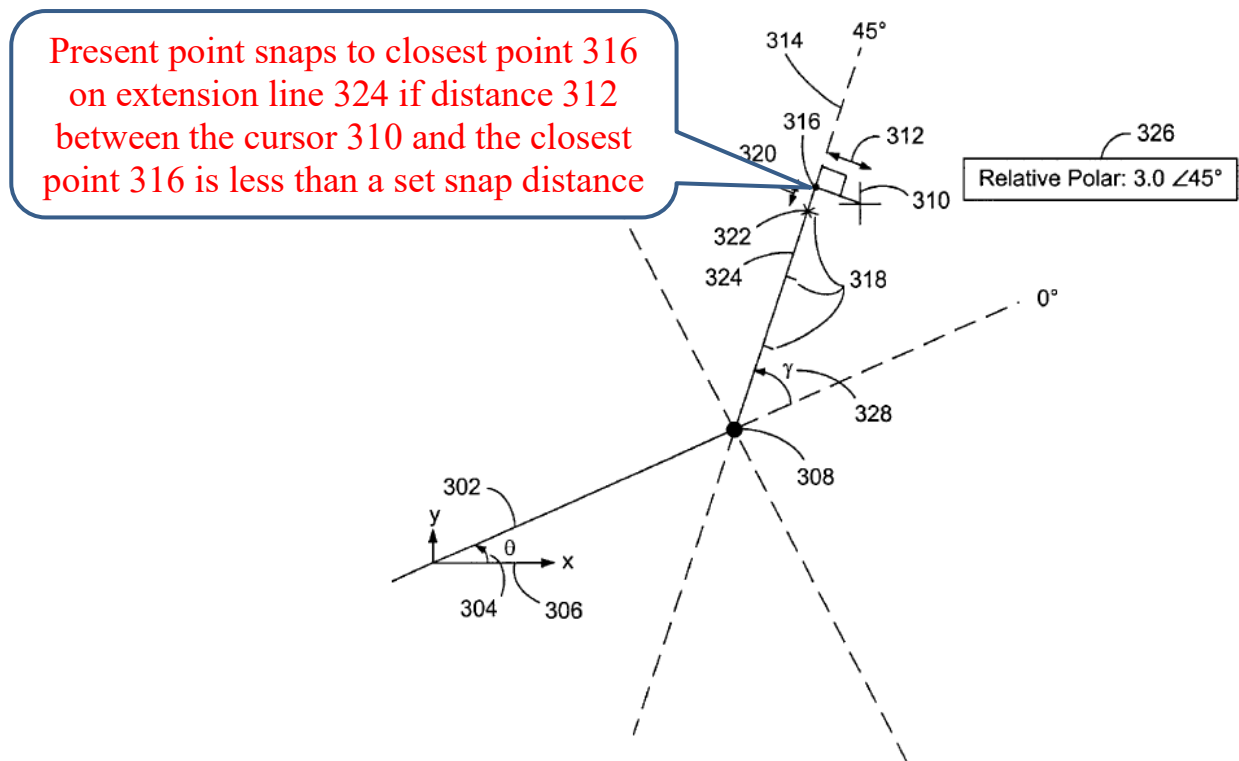


FIG. 3

LINGDI-1006, FIG. 3 (annotated); LINGDI-1003, ¶52.

As shown in FIG. 3, several snap points 318 are displayed at set intervals along the extension line 324. *Id.*, 4:15-32. If “the reference point 316 is within an extension line snap distance 320 from one of the plurality of pre-settable distances 318” the selected endpoint of the second line “is placed in this position along the extension line 324.” *Id.*

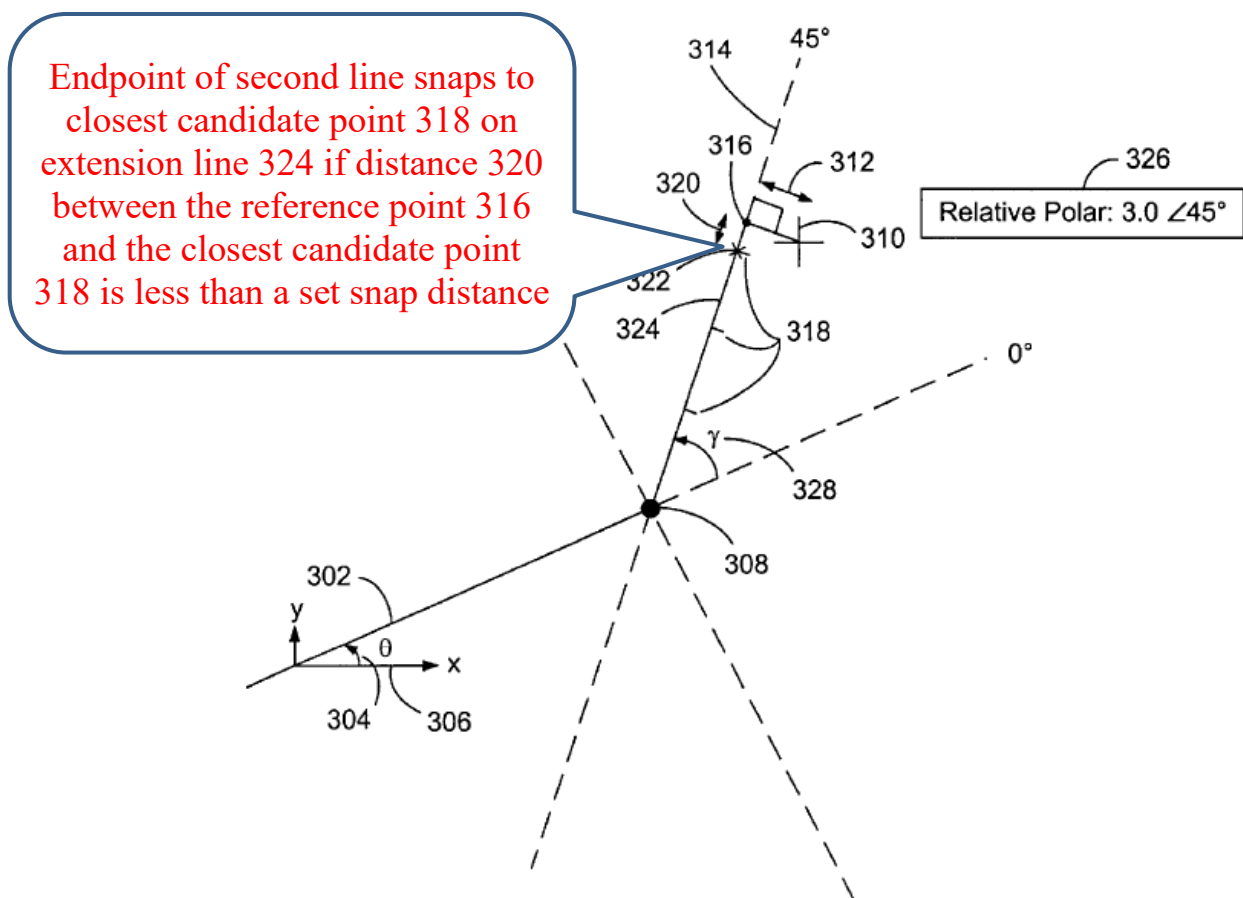


FIG. 3

LINGDI-1006, FIG. 3 (annotated); LINGDI-1003, ¶53.

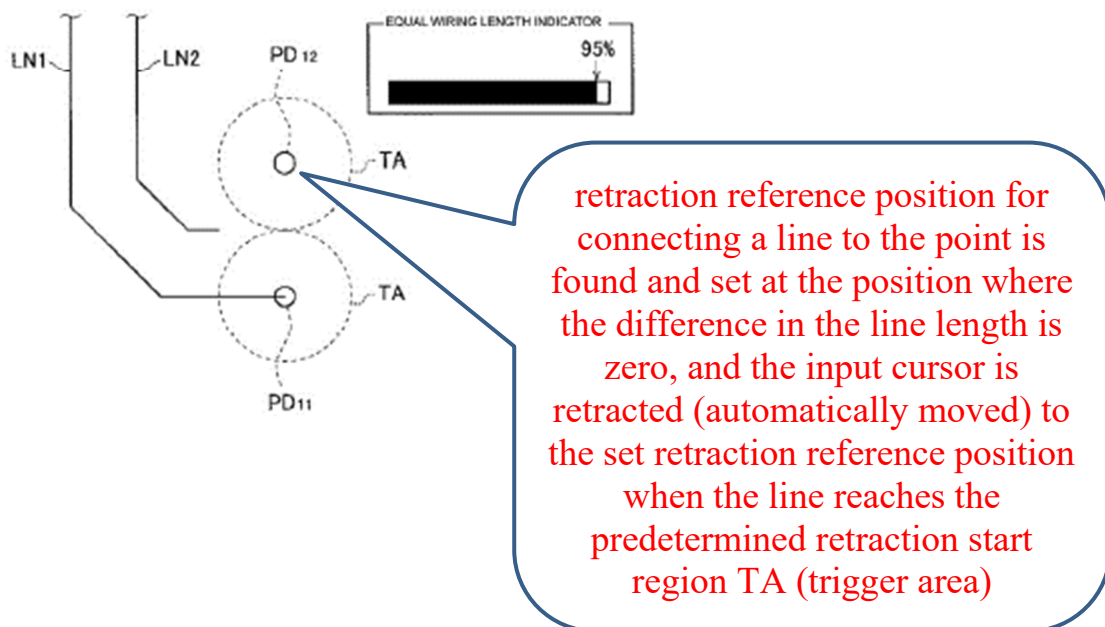
4. Niterra

Niterra relates to “design systems using computer drafting processes, so-called computer-aided design (CAD) systems.” LINGDI-1009, [0002]; LINGDI-1003, ¶¶54-56. While Niterra’s CAD system is for “designing electronic circuit boards including differential wiring,” Niterra describes “a draw-type graphics software similar to a known CAD system” where “the drafting work proceeds by individually inputting the shapes” and general concepts relevant to other CAD systems where “it is important to make the difference in length between two [lines] as small as possible.” LINGDI-1009, [0029], [0005]-[0006], [0040]; LINGDI-1003, ¶54.

For example, Niterra teaches a “retraction process” that includes “a process of extending and connecting” a line to a point and that “retracting to [a point] should be performed so that the amount of [line] length deviation is within a set range (preferably so that the [line] lengths are equal).” LINGDI-1009, [0012], [0008]. Niterra teaches that for each pair of lines, “the difference in [line] length of the portion already drafted is calculated, the retraction reference position used as the reference position for connecting each [line] to the [point] is found and set at the position where the difference in the [line] length is zero, and the input cursor is retracted (automatically moved) to the set retraction reference position.” LINGDI-1009, [0015], [0065]. Niterra teaches that “the retraction process may be started

when [a line] reaches the predetermined retraction start region TA (trigger area)” defined as “the region of radius R” from the point which is to be connected to the line. LINGDI-1009, [0060], [0063]. Niterra teaches that this “configuration prevents large amount of [line] length deviation due to input errors, or the like, and thus enables accurate drafting” and “is expected to dramatically shorten the design period,” and thereby, the line “length can very easily be made uniform.” LINGDI-1009, [0008], [0015], [0068].

FIG. 29



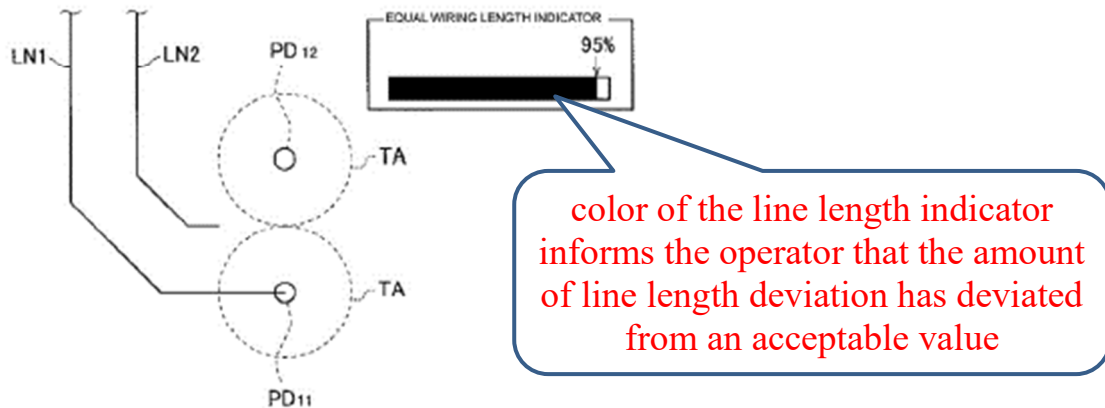
LINGDI-1009, FIG. 29 (annotated); LINGDI-1003, ¶55.

Niterra further teaches generating and outputting line “length deviation

information related to the difference in length of the two [lines].” LINGDI-1009.

[0016]. Niterra teaches that the length of two lines “can be expressed by an equal [line] length indicator or as a percentage” and that “the pattern or color of the [line] length indicator displayed on the monitor, or a combination of the two, may be used to inform the operator that the amount of [line] length deviation has deviated from an acceptable value.” LINGDI-1009, [0069]. “Furthermore, a determination is made as to whether the calculated amount of [line] length deviation and the [line] length deviation rate are within the preset tolerance range and a warning (error indication) can be displayed.” LINGDI-1009, [0072]. Niterra teaches that in this manner, “the differences in length can easily be compared.” LINGDI-1009. [0016].

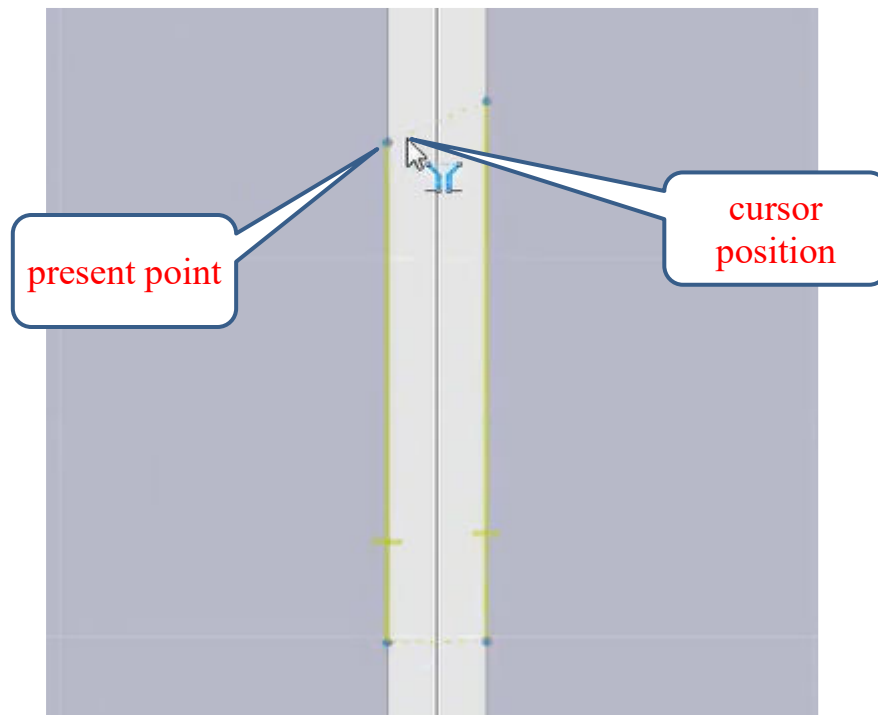
FIG. 29



LINGDI-1009, FIG. 29 (annotated); LINGDI-1003, ¶56.

5. Combination of EZBRUSH with Corel, Thiemmes, and Niterra

As discussed above, EZBRUSH discloses software for creating virtual clothing designs that includes features for manually sewing together segments of garment patterns using “free sewing.” LINGDI-1004, 24:00-24:50. EZBRUSH also shows snapping to a present point along an existing segment of a garment pattern based on a current cursor position even when the cursor is not located precisely on the segment:



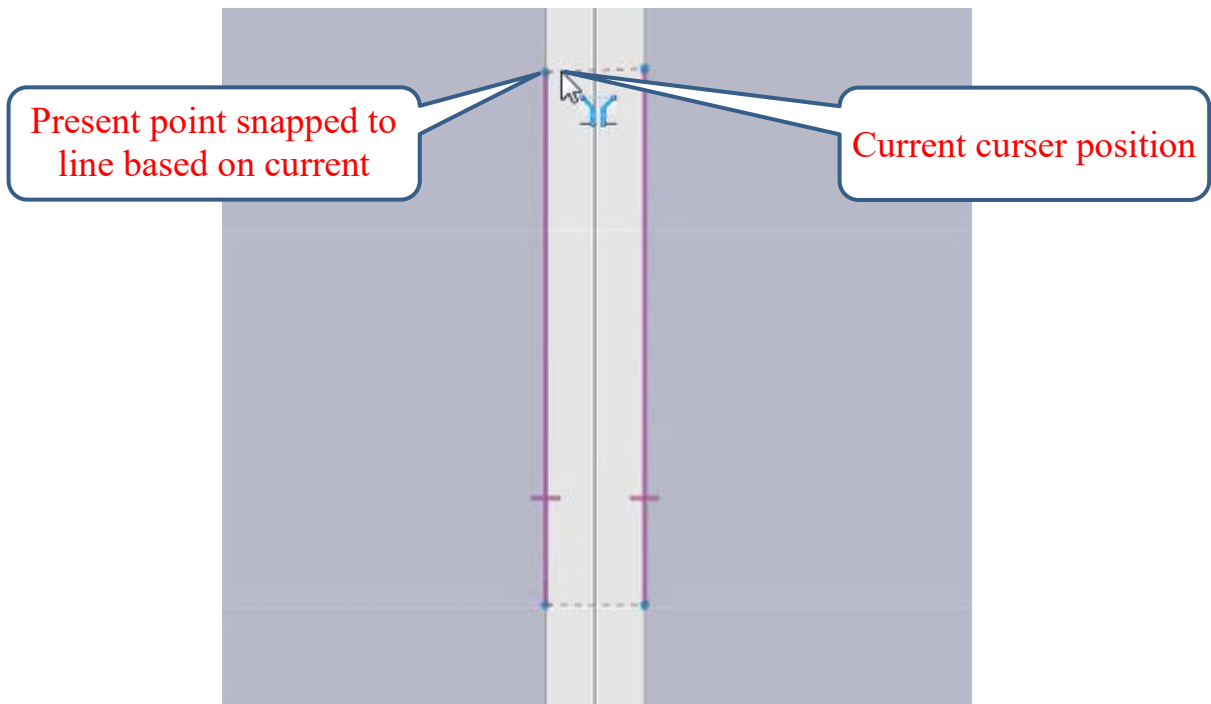
LINGDI-1004, 24:25; LINGDI-1003, ¶57.

Multiple reasons (including the twelve articulated below) would have prompted a POSITA to modify EZBRUSH's CAD system so as to implement conventional user interface improvements as suggested by Corel, Thoemmes, and Niterra. LINGDI-1003, ¶¶58-71. Such modifications would have led to predictable results. Indeed, pertinent to the suggestions from Corel, a POSITA would have been prompted to modify EZBRUSH's CAD system in accordance with Corel's beneficial suggestions for using dynamic guides and for implementing gravity snapping (e.g., including the convenient display of candidate snap points for making a second selected segment equal in length to a first selected segment). LINGDI-1003, ¶58. And pertinent to the suggestions from Thoemmes, a POSITA

would have been motivated to further modify EZBRUSH in light of Thoemmes' suggestion for how to implement intuitive and improved snapping (e.g., based on the cursor being within a "snapping distance" threshold of an identified segment and to advantageously snap a present point to a candidate end point for the segment to achieve a desired, pre-specified length for the segment). *Id.* Lastly, pertinent to suggestions from Niterra, a POSITA would have been motivated to further modify EZBRUSH in light of Niterra's suggestion to helpfully display a retraction reference position for making a second segment equal in length to a first identified segment and segment length deviation information indicating a difference value between the lengths of two selected segments, including changing the color of the indicator to inform the user that the amount of length deviation has deviated from an acceptable value. *Id.*

Articulated Reasons for modifications based on Corel and Thoemmes

First, a POSITA would have applied the suggestions of Corel and Thoemmes to EZBRUSH's CAD system to supplement the snapping functionally shown in EZBRUSH, thereby achieving a rapid and precise tracking/point selection for users. LINGDI-1003, ¶59. As discussed above, EZBRUSH shows several examples of a present point along a second selected line segment that is "snapped" to the selected segment even when the cursor is not precisely over the segment:



LINGDI-1004, 24:34-24:44.

EZBRUSH, by itself, does not provide surplus details regarding the underlying cursor actions in the above-depicted snapping action, but long before the late time frame leading up to April 2015, other publications amply provided details on how to implement such snapping functionality in a manner that achieves rapid and precise point selection along a line segment. LINGDI-1003, ¶59. Corel and Thoenmes are both examples of such publications. Indeed, Corel plainly suggests an underlying motivation for improving user interfaces of CAD systems—“[p]recision is essential in creating technical graphics.” LINGDI-1005, 1; LINGDI-1003, ¶59. Implementing EZBRUSH to include the additional details regarding how to implement snapping (as suggested by Corel and Thoenmes

(described above)) would have beneficially achieved precise and predictive point selection along a line segment within the CAD user interface—an especially pertinent improvement for the free sewing functionality demonstrated by EZBRUSH. LINGDI-1003, ¶59.

Second, a POSITA would have been motivated to implement Corel and Thoemmes’ suggested improvements for snapping functionality in EZBRUSH’s CAD system to increase user convenience and efficiency within the CAD interface. Such snapping functionality would have allowed the user to select points along an existing line segment (e.g., the edges of patterns) without having to precisely align the cursor with the line segment. LINGDI-1003, ¶60. By snapping to a line segment when the cursor is within a threshold distance of the line segment (as taught by Thoemmes), the user can more quickly select start and end points along the line segment and thereby complete design tasks with more rapidity and less fatigue. LINGDI-1003, ¶60.

Third, a POSITA would have been motivated to modify EZBRUSH’s CAD system in a manner that implements Corel’s suggestions (for using dynamic guides and for displaying a candidate endpoint for making a second segment equal in length to a first identified segment) to advantageously snap to the predictive point selection along an edge of EZBRUSH’s garment pattern that will avoid inadvertent errors/bunching in the digital clothing. LINGDI-1003, ¶61. For example, a

POSITA would have known that when sewing two garment patterns together during EZBRUSH's free sewing functionality, it would have been desirable to select the sewing segments to be equal in length to allow for a clean, smooth seam and prevent bunching or unintended stretching of the material. LINGDI-1003, ¶61. This implementation of Corel's suggested improvements would advantageously provide a snapping action toward selection of such equal length sewing segments. LINGDI-1003, ¶61.

Fourth, a POSITA would have been further motivated to modify the EZBRUSH-Corel combination in a manner that implements Thoemmes's suggestions (for snapping the cursor to a reference point along a line and then snapping the reference point to a candidate endpoint at a predesignated distance from the starting point of the line) so that the user would more easily select the candidate end point when making the selected segments equal in length. LINGDI-1003, ¶62. Such a predictable improvement would have allowed the user to accurately and promptly select the displayed suggested candidate endpoint without having to tediously/perfectly align the cursor with the displayed suggested candidate endpoint. LINGDI-1003, ¶62.

Fifth, EZBRUSH does not, by itself, fully describe how the "snapping" cursor action is achieved, yet both Corel and Thoemmes detail the conventional practice of doing so in a user interface for CAD systems (where point selection

along a line segment is an oft-repeated user action). LINGDI-1003, ¶63. The law is clear in such circumstances. *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380 (Fed. Cir. 2023) (“[I]f there’s a known technique to address a known problem using prior art elements according to their established functions, then there is a motivation to combine.”). Here, EZBRUSH, Corel, and Thoemmes are all directed toward CAD systems, and a POSITA would have recognized that applying the suggestions of Corel and Thoemmes to EZBRUSH’s CAD system would have led to predictable and advantageous results with a reasonable expectation of success without significantly altering or hindering the functions performed by EZBRUSH’s systems. LINGDI-1003, ¶63.

Articulated Reasons for further modification based on Niterra

A POSITA would have known that when digitally “sewing” two garment patterns together using the resulting CAD system (EZBRUSH as modified by Corel and Thoemmes (detailed above)), it would have been desirable to select the sewing segments to be equal in length when seeking a clean, smooth seam that prevents bunching or unintended stretching of the material. LINGDI-1003, ¶64. Niterra suggests the conventional practice in CAD systems for providing onscreen alerts regarding length difference information, including alerts to users where “it is important to make the difference in length between two [lines] as small as possible.” LINGDI-1009, [0029], [0005]-[0006], [0040]. A POSITA would have

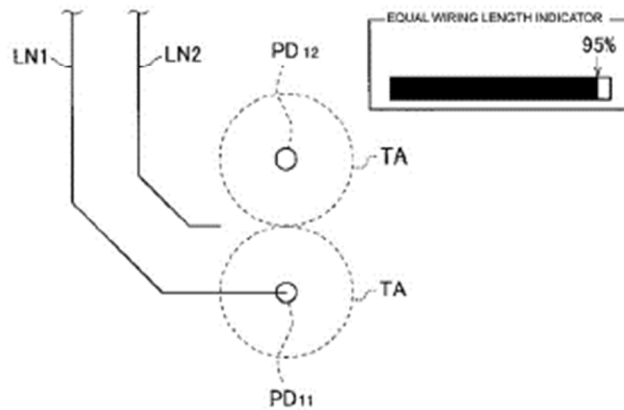
been motivated to implement Niterra's suggestions (e.g., to display an equal line length indicator and "to inform the operator that the amount of [line] length deviation" between two indicated line segments "has deviated from an acceptable value") in the resulting CAD system (detailed above) for purposes of achieving known benefits articulated below. LINGDI-1009, [0069]; LINGDI-1003, ¶64. In doing so, the CAD system of EZBRUSH (as modified by Corel and Thoemmes) would have predictably included Niterra's suggestion for determining "whether the calculated amount of [line] length deviation...[is] within the present tolerance range" and if the deviation in line length of the two lines is outside of the tolerance range to issue "a warning (error indication)." LINGDI-1009, [0072]; LINGDI-1003, ¶64. For example, Niterra discloses that "the *pattern or color of the [line] length indicator displayed on the monitor*, or a combination of the two, may be used to *inform the operator that the amount of wiring length deviation has deviated from an acceptable value*. In this manner, the operator can easily perform drafting by manual input." LINGDI-1009, [0069].

Multiple reasons would have prompted a POSITA to modify the CAD system of EZBRUSH (as modified by Corel and Thoemmes) to further include Niterra's suggested improvements. LINGDI-1003, ¶¶65-71. First, such a modification would have provided a convenient, automated, real-time indication of whether the difference in length of two indicated lines is within an acceptable

range or outside of an acceptable range. LINGDI-1003, ¶65. Niterra would have further enhanced the CAD system by providing a visual, conspicuous onscreen warning when two selected segments have a length difference that varies outside of an acceptable range. *Id.*; LINGDI-1009, [0069]-[0072]. In the resulting combination that implements Niterra's suggested improvements, the CAD software would make such a determination and alert the user to a potentially unacceptable length difference between the two segments. LINGDI-1003, ¶65.

Second, such a modification would have provided more dimensional information for the user to allow for both greater precision and more prompt decision-making at the onscreen site of the selected objects. LINGDI-1003, ¶66. For example, applying Niterra's suggestion for the equal length indicator to the CAD system of EZBRUSH would have provided an additional visual, easily digestible indicator of the ratio between the segment lengths in both bar graph and numeral form:

FIG. 29



LINGDI-1009, FIG. 29, [0069], [0073].

Similarly, changing “the pattern or color of the wiring length indicator displayed on the monitor” to indicate the line “length deviation has deviated from an acceptable value” would have provided additional useful information to the user when designing clothing using the resulting software. *Id.*; LINGDI-1003, ¶66. Such additional information would have predictably improved the overall user experience of the CAD system and aided in creating precise seams by selecting sewing segments of equal or nearly equal length. LINGDI-1003, ¶66. For example, based on this additional information, “[i]f the line length deviation rate or parallel line rate deviates from the preset tolerance range,” this allows for such errors to be quickly “corrected manually or automatically.” LINGDI-1009, [0073].

Third, such a modification would have eliminated “the need to check the wiring lengths on a graph or the like.” LINGDI-1009, [0068]. This would have improved the user experience in multiple ways, including “significantly reducing the time required for drafting.” *Id.*; LINGDI-1003, ¶67. For example, “[i]f a warning is issued along with the [line] length deviation rate, time and effort can be saved when making drafting corrections.” LINGDI-1009, [0073].

Fourth, such a modification would have provided additionally “reliabl[e] guarantees” for achieving “equal [line] lengths” thereby improving “the quality” and precision of the resulting decision. LINGDI-1009, [0068]; LINGDI-1003, ¶68.

Fifth, by showing the line length ratio (and corresponding warnings), the user would have the ability for “equal-length [line drawing to] be performed so that the operator can specify the amount of [line] length deviation” where line segments of near equal, but not exactly equal length, are desired by the particular user of the clothing design software. LINGDI-1009, [0069] (“performed to facilitate equal-length drafting”); LINGDI-1003, ¶69.

Sixth, such a modification would have allowed for greater user control by allowing the user to set a specific “allowable amount of [line] length deviation” that is tailored to the specific design scenario. LINGDI-1009, [0071]; LINGDI-1003, ¶70. This modification would have therefore prevented design errors by alerting the user to length differences out of the identified range, so that the user

can correct such errors in a timely fashion.

Seventh, a POSITA would have been prompted to modify the garment design software of EZBRUSH (as modified by Corel and Thoemmes) based on the further teachings of Niterra because doing so would merely apply known techniques to a known system ready for improvement to yield predictable results. LINGDI-1003, ¶71. Indeed, “when a patent ‘simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR*, 550 U.S. at 417. Here, EZBRUSH, Corel, Thoemmes, and Niterra are all directed toward CAD systems, and a POSITA would have recognized that applying the suggestions of Niterra to EZBRUSH’s CAD system would have led to predictable results with a reasonable expectation of success without significantly altering or hindering the functions performed by EZBRUSH’s software. LINGDI-1003, ¶71.

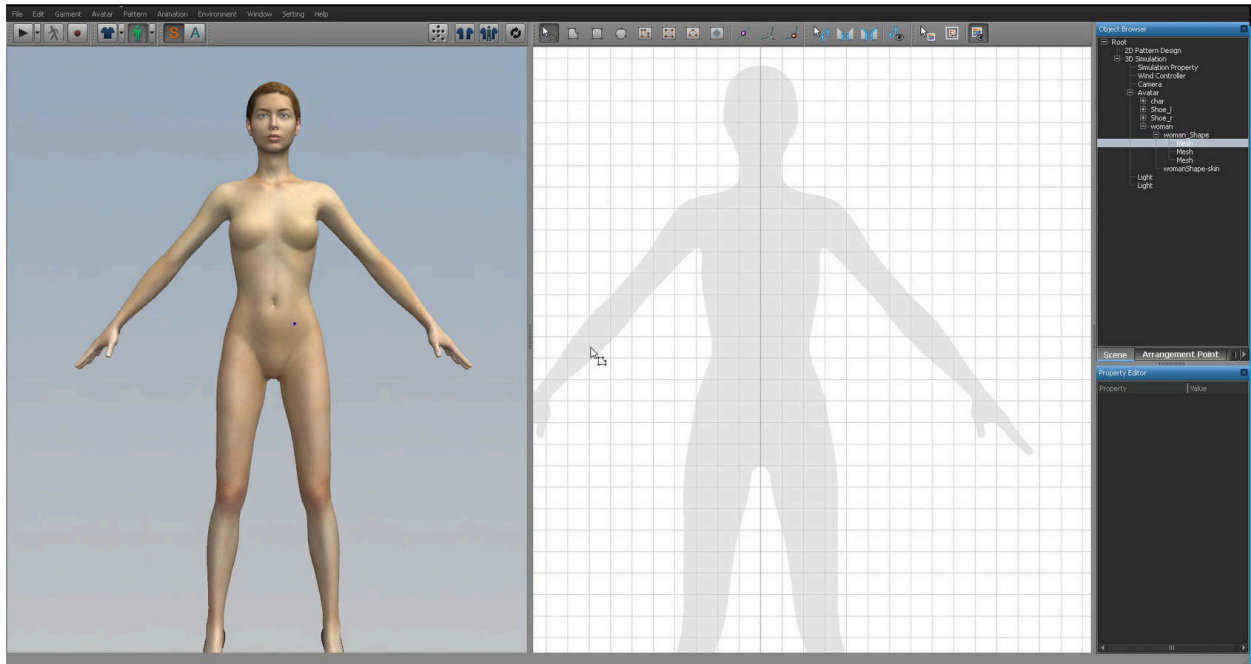
6. Application of EZBRUSH, Corel, Thoemmes, and Niterra to claims 1-9

(a) Claim 1

[1.pre] A method of creating digital clothing executable by a computing device storing digital clothing patterns for draping simulation, the method comprising:

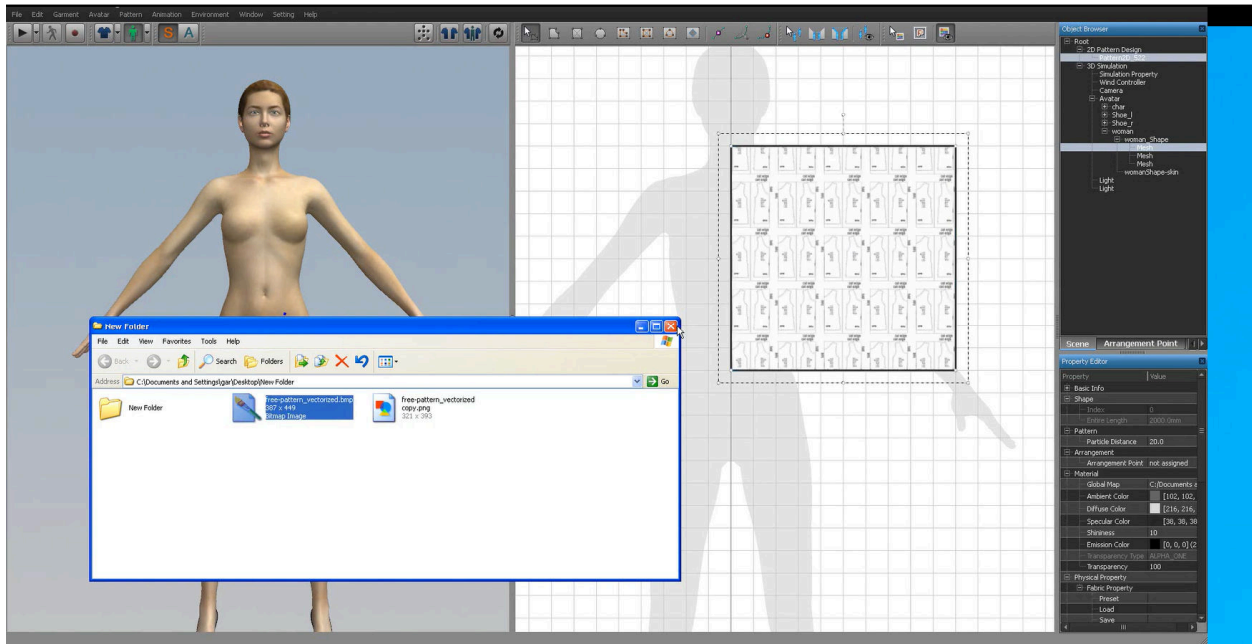
Petitioner notes that the recitation of purpose or intended use in the preamble (“of creating ...”) is not a limitation under the law. *Arctic Cat Inc. v. GEP Power*

Prods., 919 F.3d 1320, 1328-1330 (Fed. Cir. 2019). Regardless, EZBRUSH teaches the method recited in the preamble. LINGDI-1004, 0:16-0:25 (using “Marvelous Designer 2” computer software); LINGDI-1003, ¶¶72-73. Indeed, the Marvelous Designer 2 software demonstrated in EZBRUSH creates digital clothing in both 3D space and 2D space in the computer’s onscreen interface. LINGDI-1004, 0:00-20:00 (“we’re going to do a shirt”); LINGDI-1003, ¶72 (“The express description of using ‘Marvelous Designer 2’ and the digital clothing patterns upon the onscreen interface amply demonstrated that the Marvelous Designer 2 software was executed in its classic manner—on a computing device storing digital clothing patterns for draping simulation.”). The prior art Marvelous Designer 2 onscreen interface is displayed throughout the EZBRUSH demonstration:

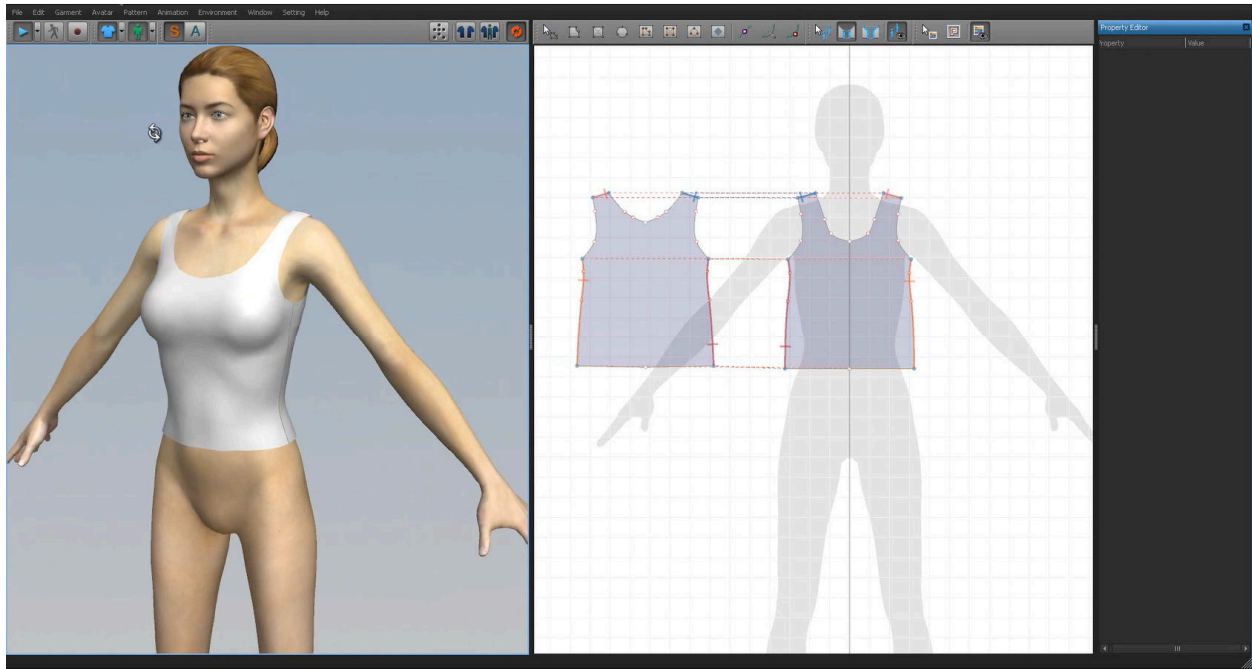


LINGDI-1004, 0:00.

EZBRUSH shows the conventional option within Marvelous Designer 2 in which the user selects an image file of patterns stored in a folder of the computer device for purposes of generating an editable pattern:



LINGDI-1004, 1:16-1:45; 4:20-54 (showing the “back” pattern and “front” pattern); 9:45-11:41 (“front side next”). EZBRUSH shows that the 2D patterns (depicted on the right side of the interface) also provides draped digital clothing (depicted on the left side of the interface):



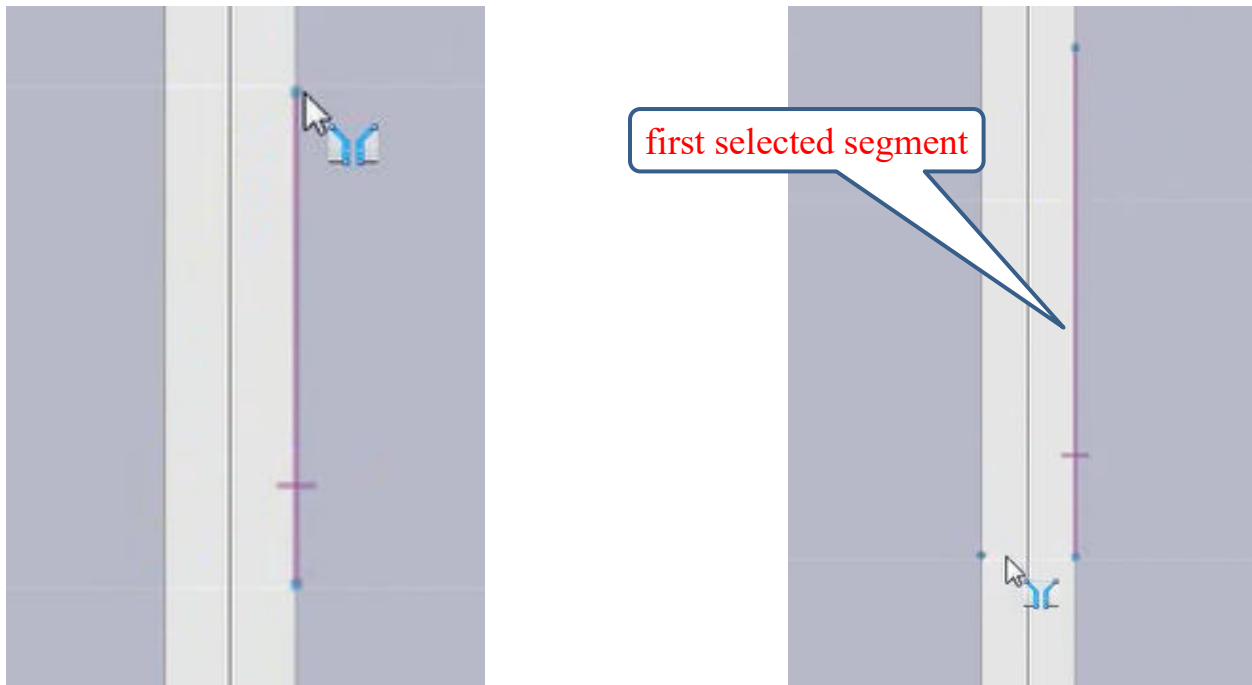
LINGDI-1004, 20:40-50.

Here, a POSITA would have recognized that, in order to display the pattern pieces and draped clothing as shown in EZBRUSH, the computer executing the Marvelous Designer 2 software would have stored the patterns/draped digital clothing in a random access memory (RAM), display memory, or other memory of that computer. LINGDI-1003, ¶73. Based upon the demonstration in EZBRUSH and the state of the art for CAD systems before the relatively late time frame in April 2015, a POSITA would have recognized that the “Marvelous Designer 2” software demonstrated by EZBRUSH was “executable” on the computing device mentioned in the recitation of intended use in the preamble. LINGDI-1003, ¶73 (“In fact, a POSITA would have readily recognized that the installation and

operation of ‘Marvelous Designer 2’ on the computer of the EZBRUSH demonstration teaches that the method was executed on the recited computing device”).

[1.1] setting a first selected segment to be sewn on a first segment on a pattern; and

EZBRUSH selecting a first selected segment by inputting the first selected segment to be sewn on a first segment on a pattern:



LINGDI-1004, 24:00-24:42; LINGDI-1003, ¶74.

EZBRUSH also demonstrates that this first segment is selected for the purposes of sewing. The narrator states that he’s going to “finish sewing this off” and describes the selected tool as “free sewing.” LINGDI-1004, 23:38-24:10.

After selecting the first and second segments, the left panel shows that the selected

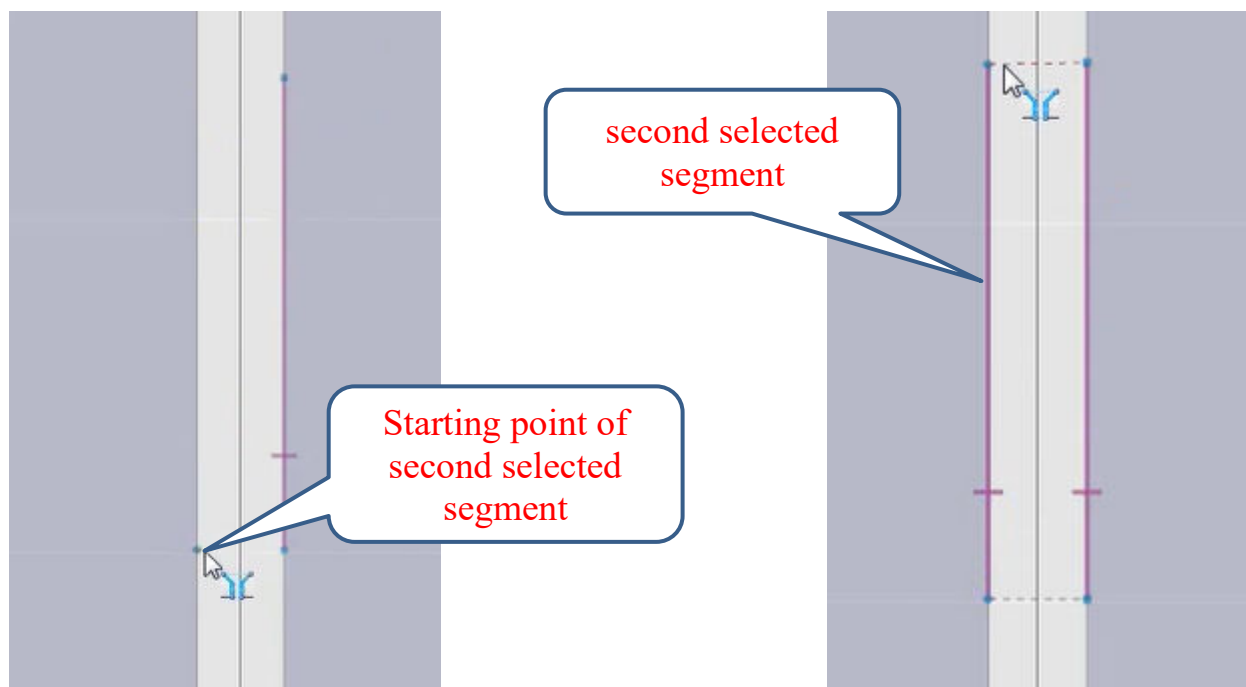
segments are sewn together to create the garment:



LINGDI-1004, 24:46-24:50. A POSITA would have recognized that the first selected segment is on a first segment on a pattern. LINGDI-1003, ¶74.

[1.2] setting a second selected segment comprising: setting a starting point of the second selected segment on a second segment

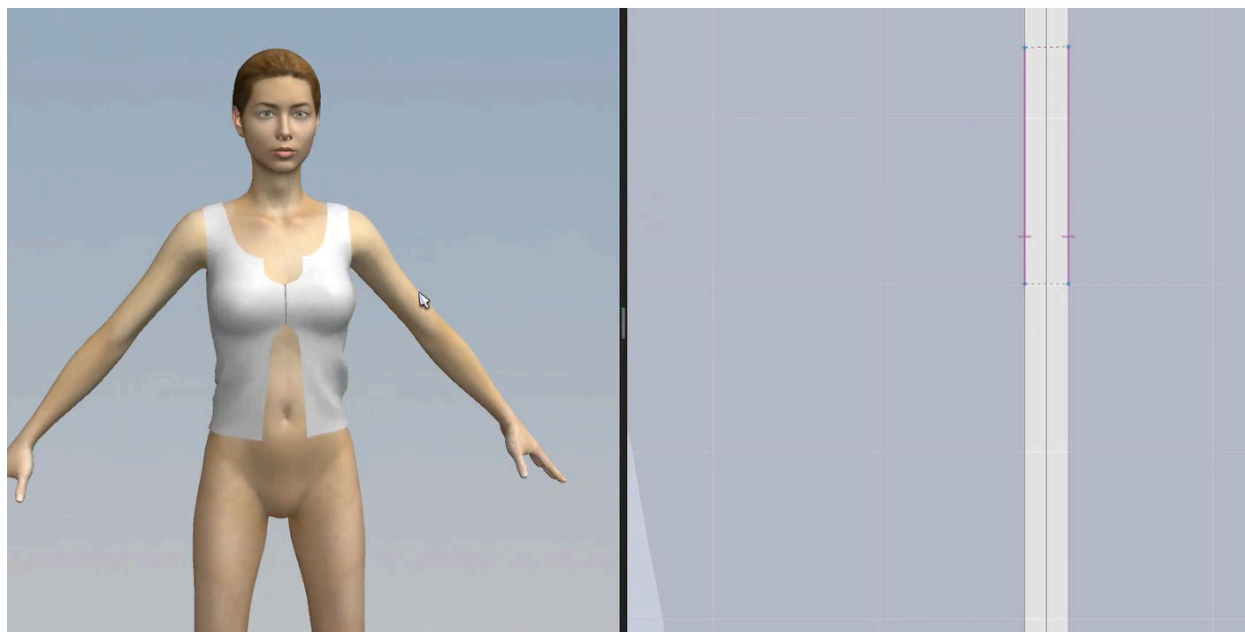
EZBRUSH shows the user setting a selected second segment by setting a starting point of the second selected segment on a corresponding segment of the adjacent pattern:



LINGDI-1004, 20:40-20:43; LINGDI-1003, ¶75.

[1.3] wherein the second selected segment is sewn to the first selected segment,

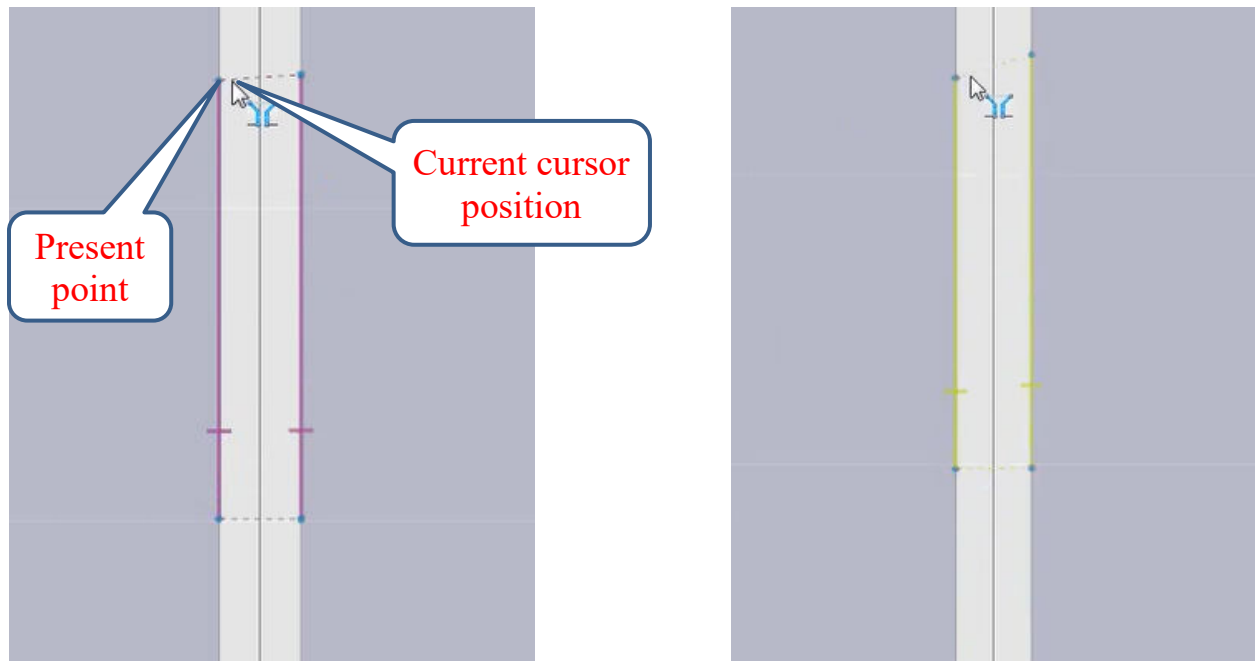
EZBRUSH shows that the first and second selected segments are sewn together to create the garment:



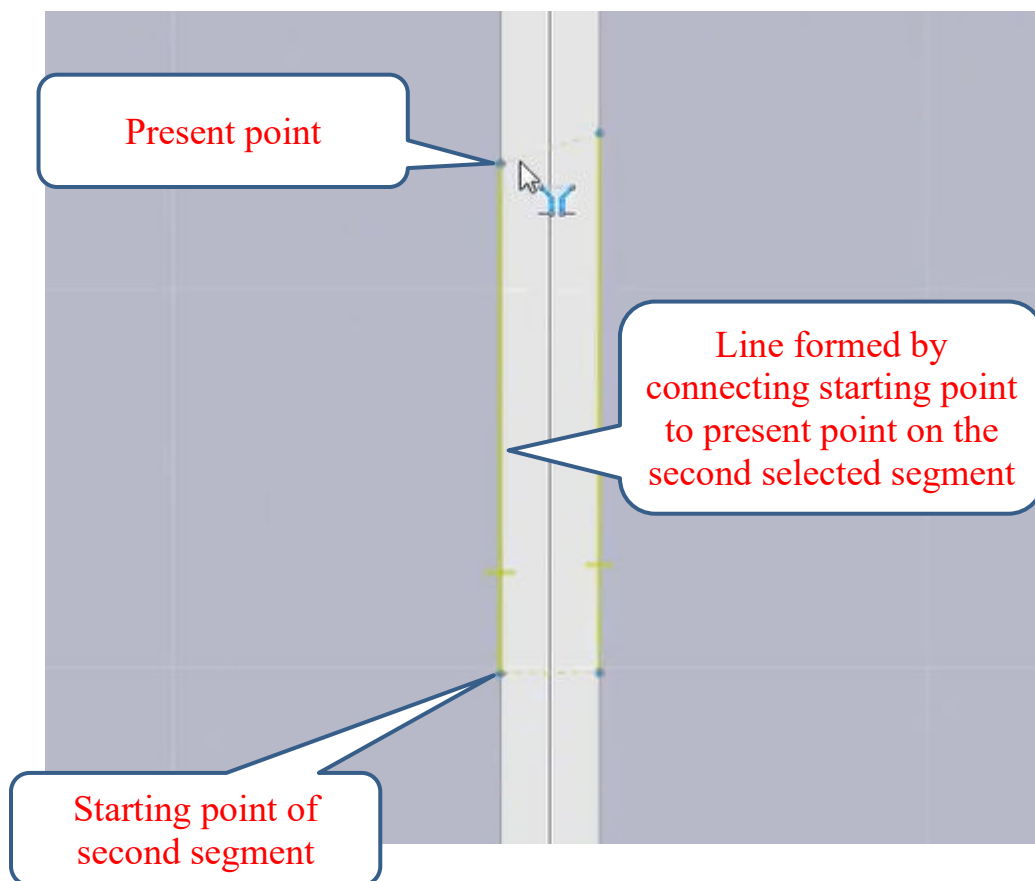
LINGDI-1004, 24:46-24:50, *see also* 23:38-24:45 (“free sewing”). LINGDI-1003,
¶76.

[1.4] determining a present point on the second segment based on a current cursor position,

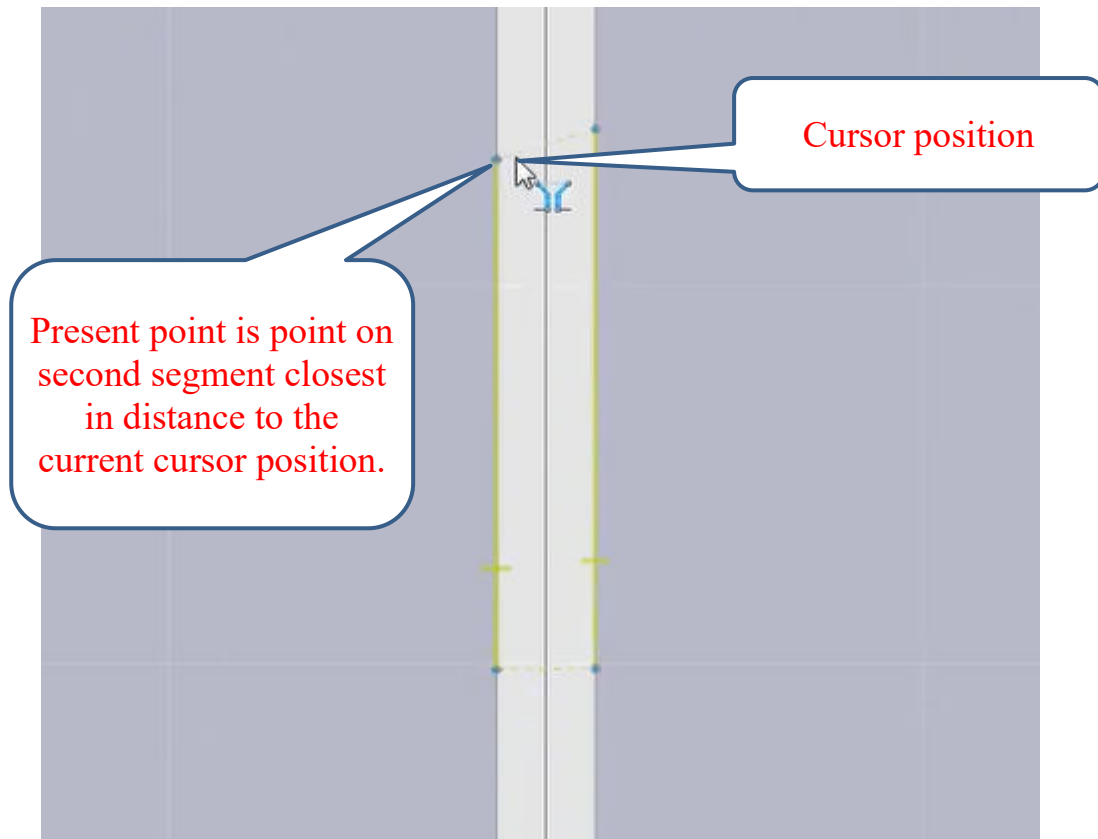
EZBRUSH shows a present point on the second segment based on a position for the cursor after selection of the starting point for the second segment and subsequent user movement of the cursor:



LINGDI-1004, 24:20-24:45. A POSITA would have recognized that this display of a present point indicates that the software determines the present point based on a current cursor position. LINGDI-1003, ¶77. For example, EZBRUSH shows that as the user moves the cursor away from the identified starting point of the second selected segment, the software displays a present point on the second selected segment and connects the starting point to the present point:



LINGDI-1004, 24:20-30; LINGDI-1003, ¶77. A POSITA would have further recognized that the present point is not at the precise point of the cursor but rather is a point on the second segment that is closest in distance to the current cursor position.



LINGDI-1004, 24:20-30; LINGDI-1003, ¶77.

Furthermore, in the combination, Corel discloses determining “[w]hen the pointer is close to a snap point.” LINGDI-1005, 2. A POSITA would have recognized that making such a determination (proximity of the cursor to a snap point) predictably included determining a snap point based on a current cursor position. LINGDI-1003, ¶78.

As discussed in Section V.A.5, *supra*, a POSITA would have been motivated to further modify the EZBRUSH-Corel combination in light of Thoemmes’ suggestion for how to implement intuitive and improved snapping (e.g., based on the cursor being within a “snapping distance” threshold of an

identified segment). LINGDI-1003, ¶79. In accordance with Thoemmes's suggested improvement for the predictable combination discussed above, the present point identified along a selected segment is the point on the selected segment closest in distance to the current cursor position. Specifically, Thoemmes discloses that "determining a reference point 316 on the extension or snap line 314 that is nearest the position of the first cursor 310." LINGDI-1006, 4:15-25.

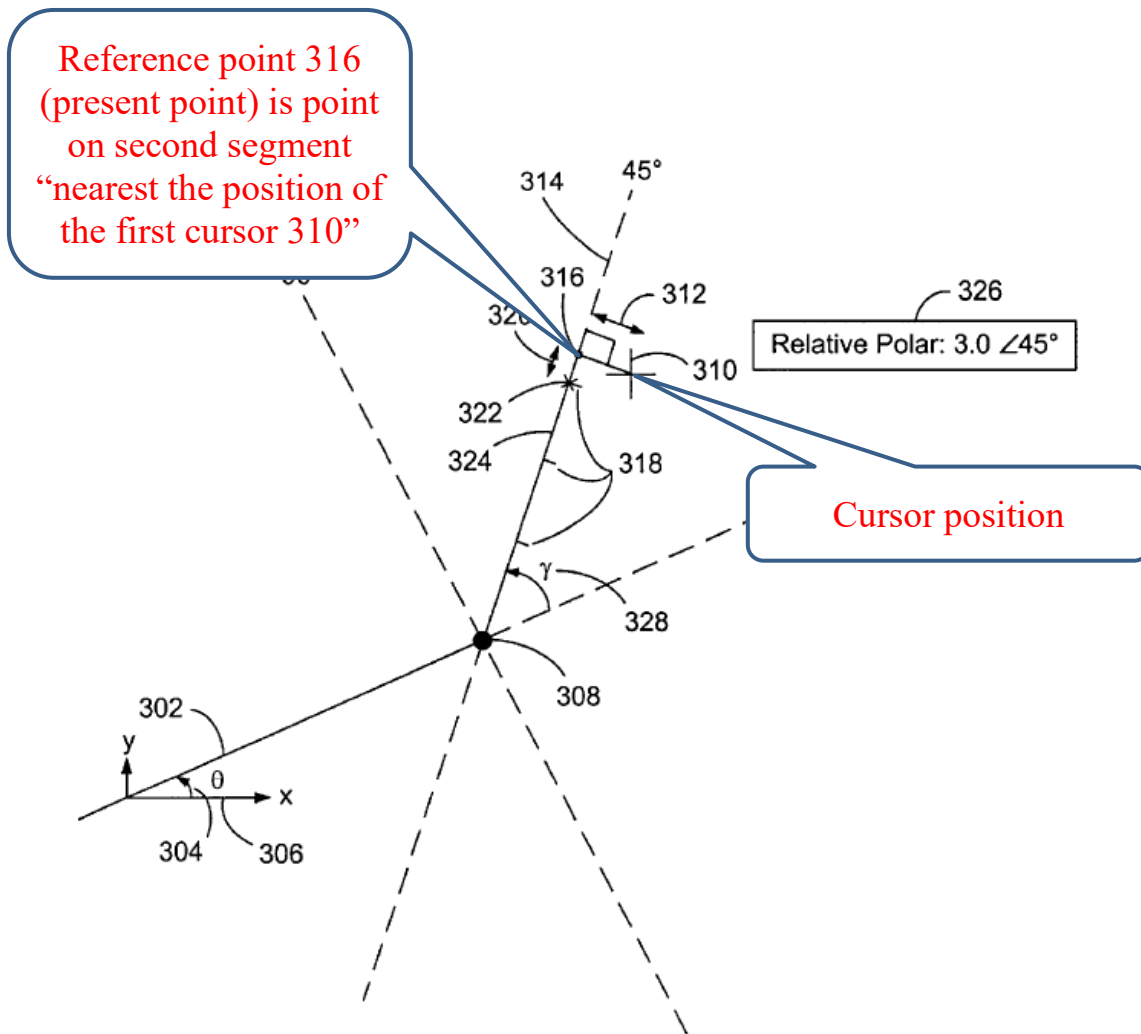


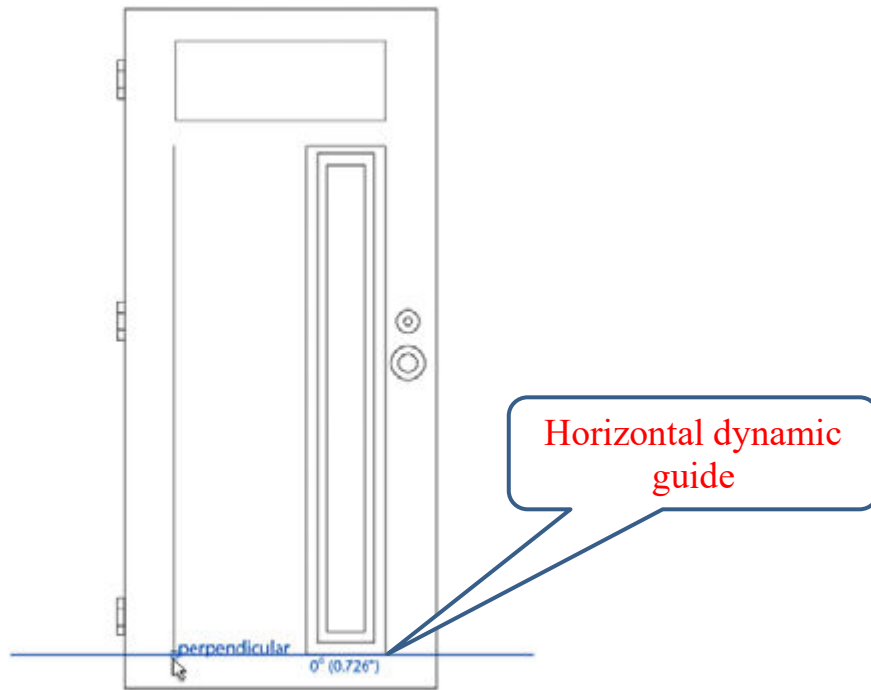
FIG. 3

LINGDI-1006, FIG. 3, 4:15-25. The predictable combination therefore provides determining a present point on the second segment based on a current cursor position. LINGDI-1003, ¶79.

[1.5] moving the present point to a candidate ending point on the second segment, in response to the difference between the present point and the candidate ending point being less than a reference value, wherein the candidate ending point is determined to make a

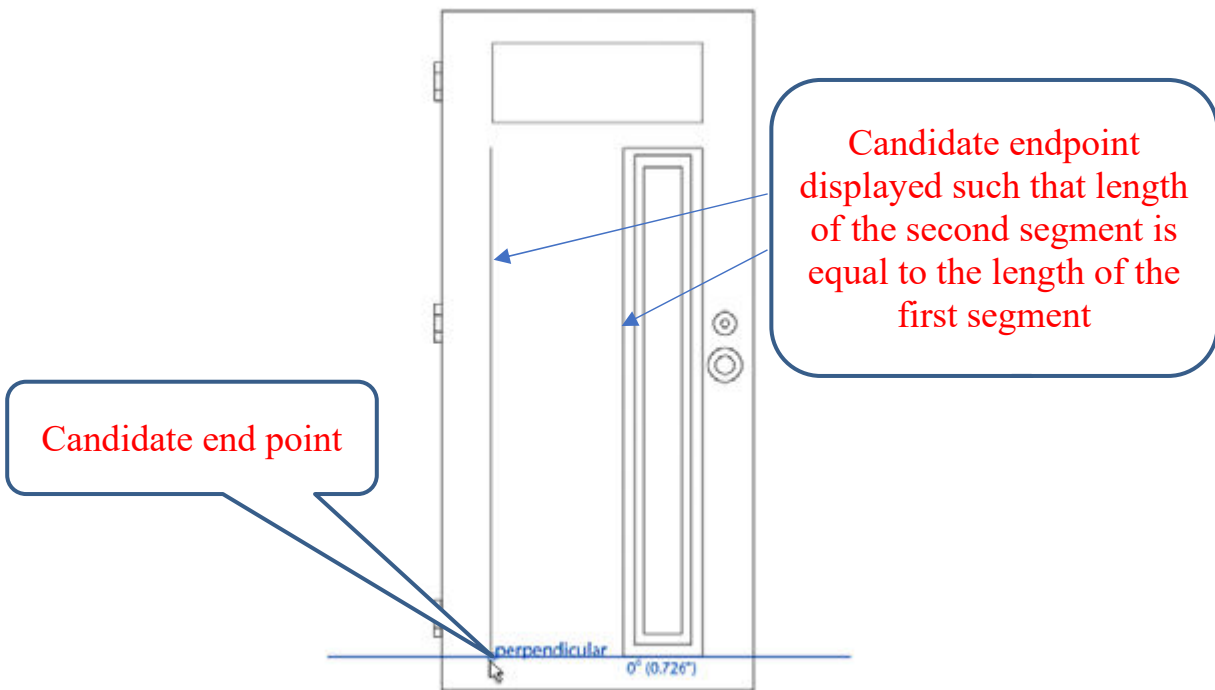
second length of the second selected segment substantially equal to a first length of the first selected segment,

As discussed in Section V.A.5, *supra*, a POSITA would have been motivated to modify EZBRUSH's CAD system in a manner that implements Corel's suggestion (for displaying a candidate ending point for a second segment to make the length of the second segment equal to a length of a first identified segment) to achieve known benefits for the user. LINGDI-1003, ¶80. Corel describes displaying "dynamic guides to ensure precision when you draw and position objects in relation to other objects." LINGID-1005, 4. Corel further describes displaying a "horizontal dynamic guide" based on an existing identified line segment that helps the user to draw a parallel line of equal length:



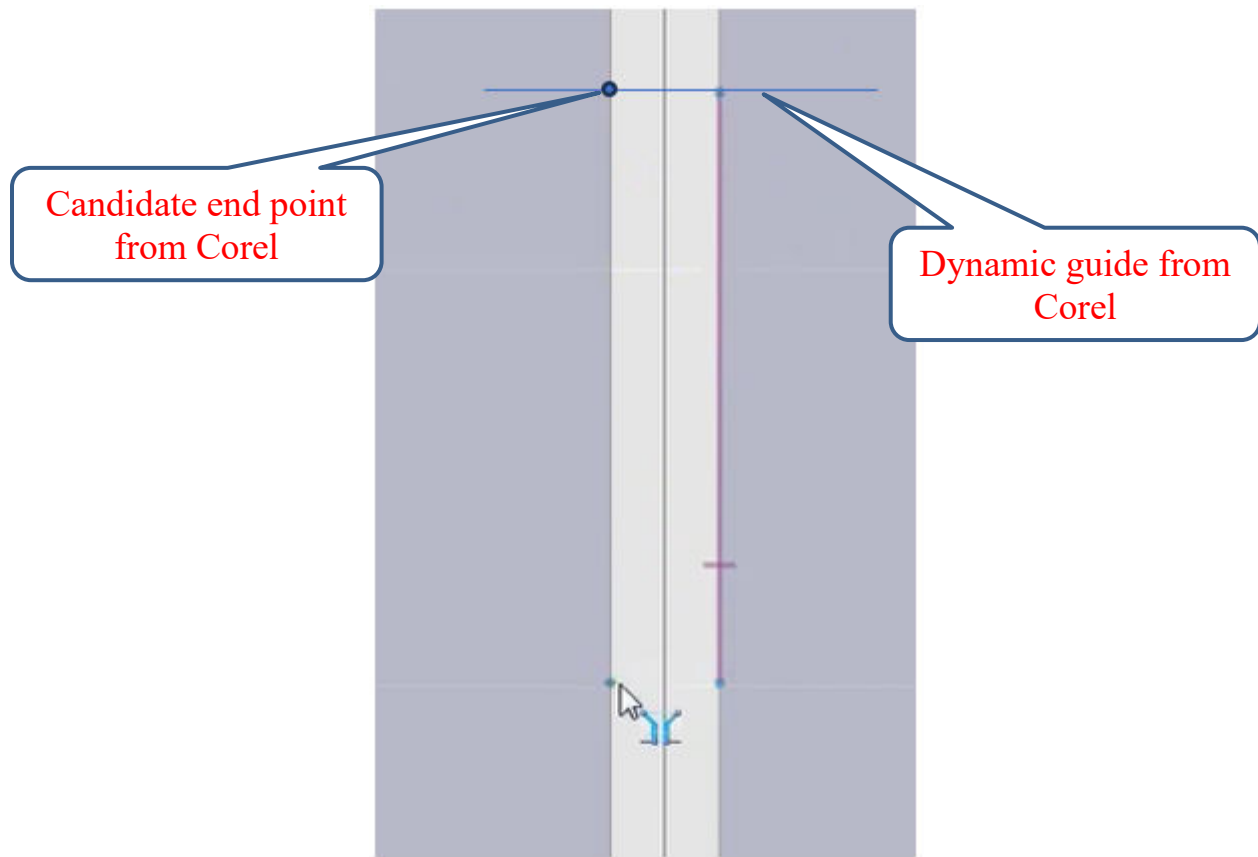
LINGDI-1005, 11 (annotated).

Corel further discloses that as the user “move[s] the pointer along the dynamic guide...the perpendicular snap point is displayed.” *Id.* A POSITA would have recognized that this perpendicular snap point, which causes the line segment to be equal in length to a corresponding side of an identified, existing rectangle, is an example of a candidate ending point for the second selected segment. LINGDI-1003, ¶80.



LINGDI-1005, 11 (annotated). Corel describes this type of candidate endpoint as an “intersection” type “[g]ravity-snapping candidate” at the geometric intersection of the second line segment with the guideline. *Id.*, 3.

In applying Corel’s suggestion to the CAD system of EZBRUSH, the resulting system would have predictably included the horizontal dynamic guide (suggested by Corel) based on the end point of the first segment and displayed the recommended snap point (candidate end point) along the horizontal dynamic guide where it intersects with the second segment:



LINGDI-1004, 20:40-20:50 (modified based on Corel); LINGDI-1003, ¶81

The predictable combination (detailed above) would likewise provide for moving the present point to the candidate ending point on the second segment, in response to the difference between the present point and the candidate ending point being less than a reference value. LINGDI-1003, ¶82. For example, Thoemmes teaches that, after determining the reference point 316 by identifying the point on “extension or snap line 314 that is nearest the position of the first cursor 310,” a determination is made “as to when the reference point 316 *is within an extension line snap distance 320* from one of a plurality of pre-settable distances 318 from

the first pick point.” LINGDI-1006, 4:15-32. A POSITA would have recognized that the candidate end point along the dynamic guide line (from the EZBRUSH system as modified by Corel, described above) is an example of the pre-set snapping point like that of Thoemmes. LINGDI-1003, ¶82; LINGDI-1005, 11. Thoemmes goes on to describe that if “the reference point 316 is within an extension line snap distance” from a pre-designated snapping point, “the second cursor 322 is placed in this position along the extension line 324. LINGDI-1006, 4:25-32.

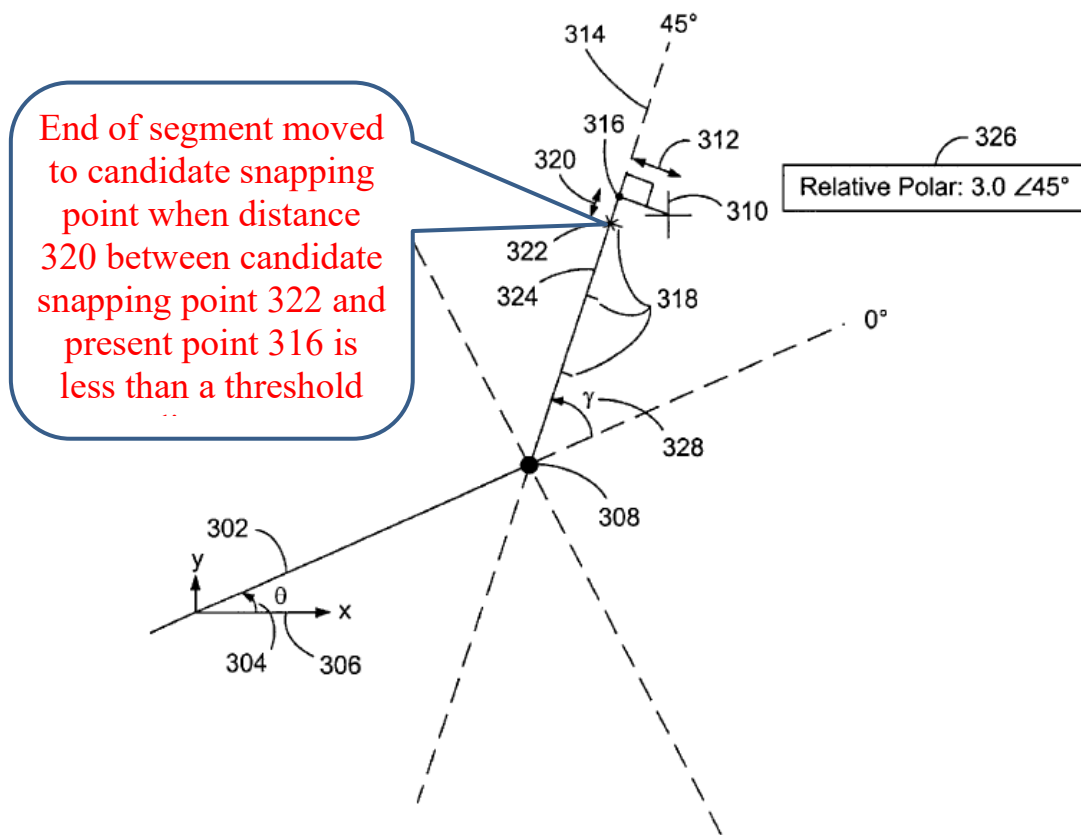
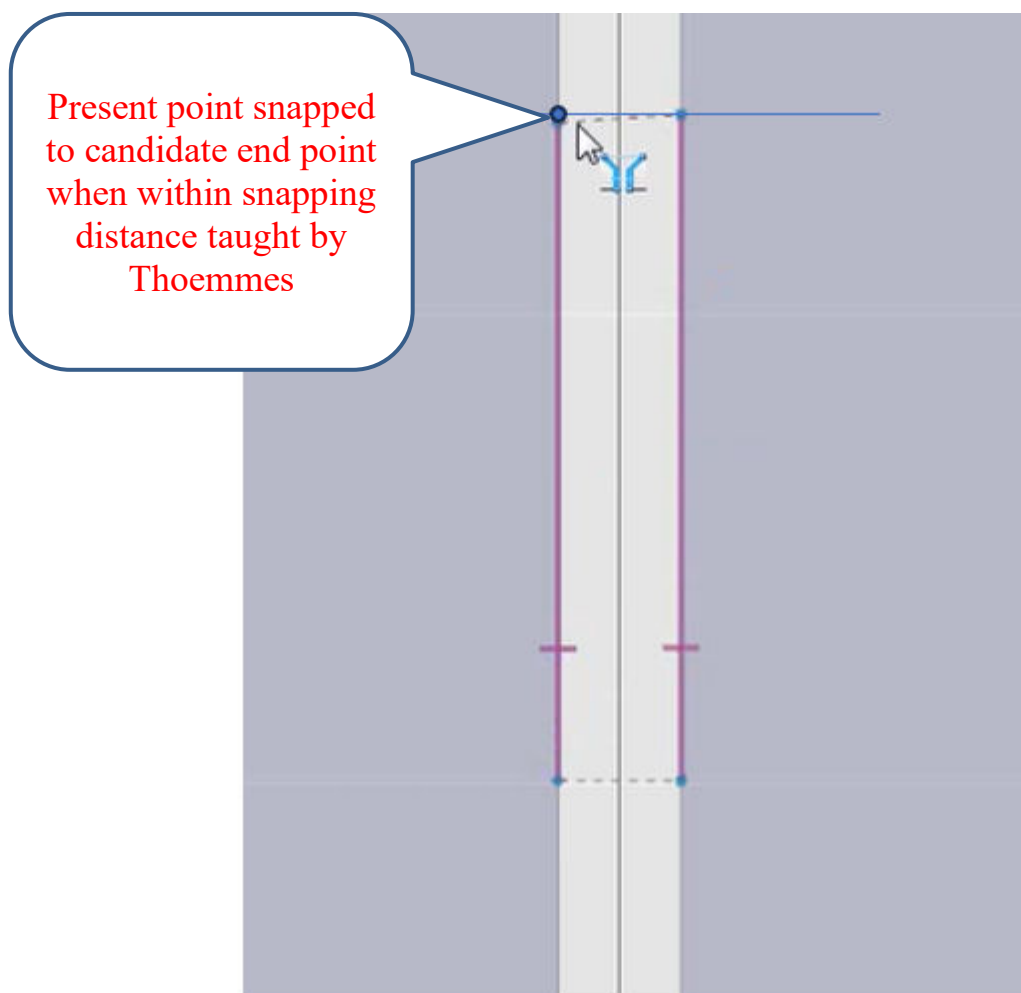


FIG. 3

LINGDI-1006, FIG. 3; LINGDI-1003, ¶82.

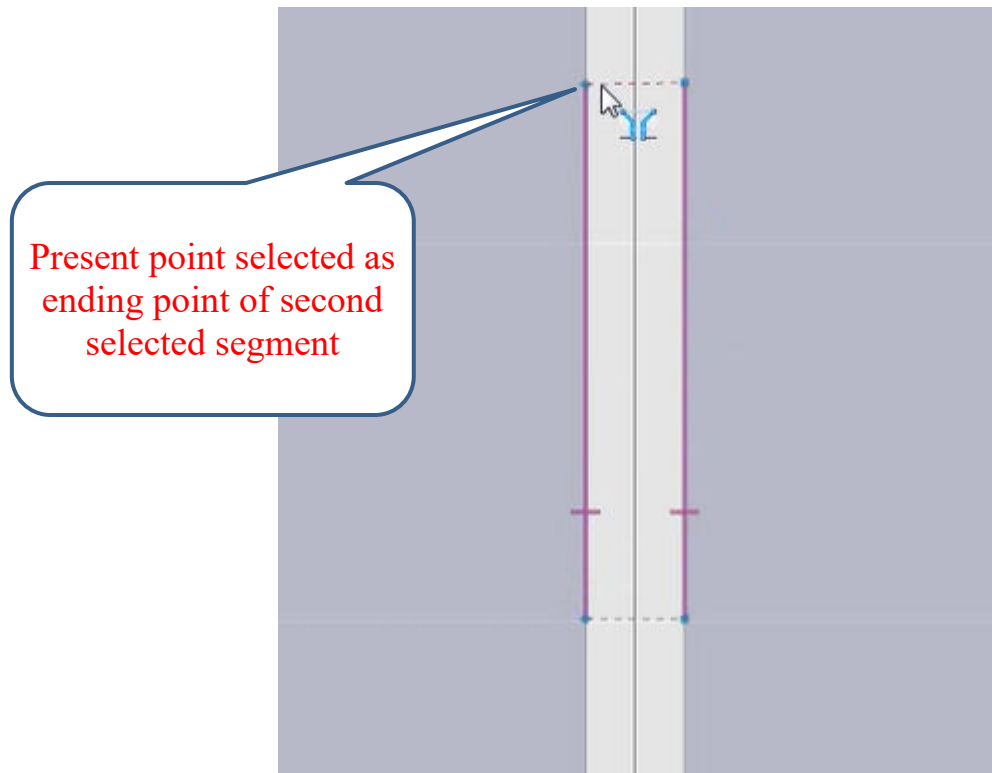
In applying this suggestion of Thoemmes to the EZBRUSH CAD system (as predictably modified by Corel), a POSITA would have implemented the resulting CAD system user interface to snap the present point to the candidate end point when the distance between the present point and the candidate end point is within the snap distance threshold:



LINGDI-1004, 24:20-24:45; LINGDI-1006, 15-32; LINGDI-1003, ¶83.

[1.6] selecting the present point as an ending point of the second selected segment, in response to a user input, and

EZBRUSH shows that the user selects the present point as the ending point of the second selected segment.



LINGDI-1004, 24:40-24:50.

The audio at this section of EZBRUSH includes audible clicking sounds when the user selects the points for each segment, which a POSITA would have recognized as user input in the form of pressing of a button on a mouse or other cursor controlling device. LINGDI-1004, 24:40-24:50; LINGDI-1003, ¶84.

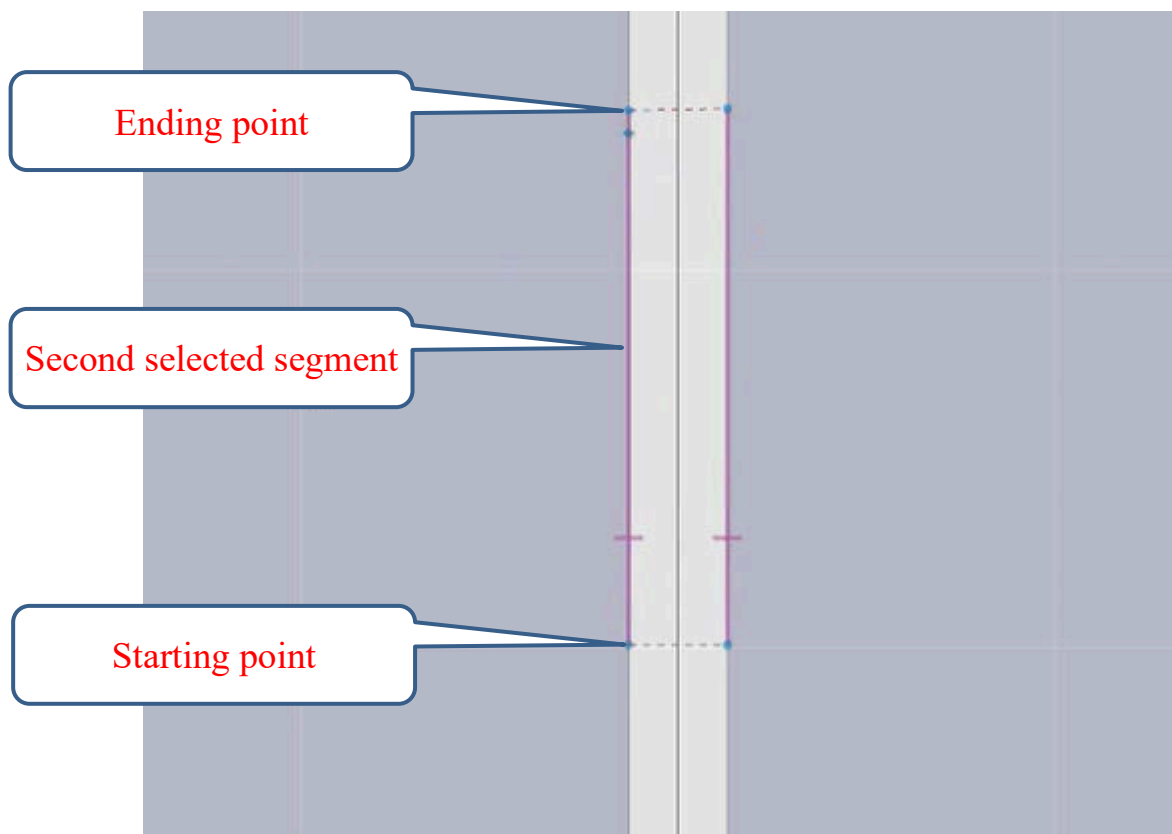
Similarly, Corel confirms that the user selects the candidate end point as the end point of the second segment when the present point snaps to the candidate endpoint, describing that the user “[c]ontinue[s] to move the pointer along the dynamic guide until the perpendicular snap point is displayed and the line becomes straight. ***Release the mouse button to place the second point of the rectangle.***”

LINGDI-1005, 11; LINGDI-1003, ¶85.

Thoemmes further confirms that the user provides user input to select the present point (now located at the candidate end point) as an ending point of the second segment, stating that when “the reference point 316 is within an extension line snap distance 320” from a candidate end point, “the second cursor 322 is placed in this position along the extension line 324.” LINGDI-1006, 4:25-32, *see also* 3:49-53 (describing selecting a point by “depressing a mouse button.”), 4:20-22 (“The user may then select a button on the mouse 116 to define the length of the extension line 324.”). Accordingly, the predictable combination (described above) would provide this element. LINGDI-1003, ¶85.

[1.7] setting as the second selected segment, a section of the second segment between the starting point and the ending point,

EZBRUSH shows that the software sets a section of the second segment between the starting point and the ending point as the second selected segment:



LINGDI-1004, 2:30-2:45; LINGDI-1003, ¶86. The software then digitally “sews” together the two panels along the selected segments:



LINGDI-1004, 24:46-24:50.

[1.8] wherein, when the second length is substantially equal to the first length, at least one of the first length, the second length and a difference value between the first length and the second length is displayed in a first color, and wherein, when the second length is substantially different from the first length, at least one of the first length, the second length and the difference value is displayed in a second color, the second color being different from the first color.²

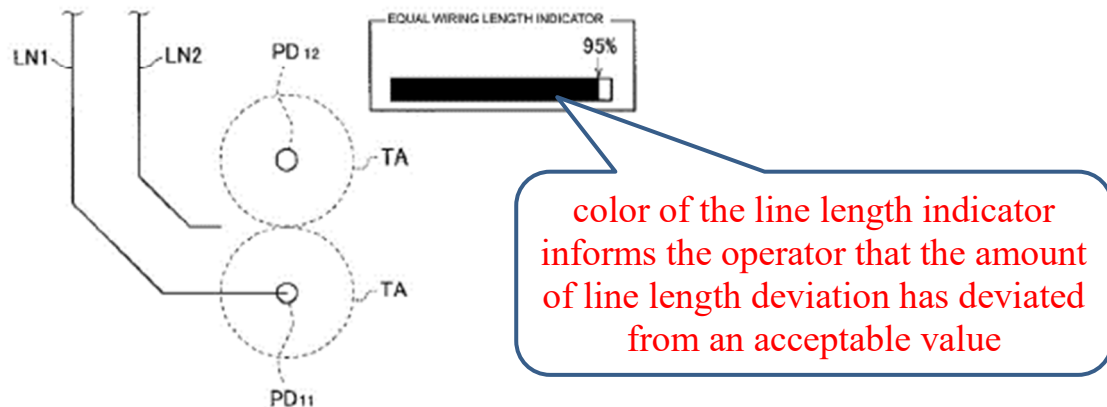
² Unlike the “at least one of” phrase in *SuperGuide Corp. v. DirectTV Enters., Inc.*, 358 F.3d 870 (Fed. Cir. 2004), which concerned a list of categories of many possible values, the ’355 patent specification describes the list in Element [1.8] as individual parameters having only one value. LINGDI-1001, 6:63-7:26, 9:29-10:57, FIGS. 7-9. Therefore, the claim language only makes sense if it is disjunctive. *Hewlett-Packard Co. v. MPHJ Tech. Invs., LLC*, IPR2013-00309,

As discussed in Sections V.A.4-V.A.5 (overview of Niterra and description of predictable combination), *supra*, a POSITA would have been motivated to apply Niterra’s suggested improvements (to display an equal line length indicator and “to inform the operator that the amount of [line] length deviation” between two indicated line segments “has deviated from an acceptable value”) to the predictable combination of EZBRUSH, Corel, and Thoemmes. LINGDI-1009, [0072]; LINGDI-1003, ¶87. Niterra goes on to describe generating and outputting line “length deviation information related to the difference in length of the two [lines].” LINGDI-1009. [0016]. Niterra teaches that the length of two lines “can be expressed by an equal [line] length indicator or as a percentage” and that “the pattern or color of the [line] length indicator displayed on the monitor, or a combination of the two, may be used to inform the operator that the amount of [line] length deviation has deviated from an acceptable value.” LINGDI-1009, [0069]. The line length indicator of Niterra includes a difference value in the form of a ratio of the line lengths and a “Equal Wiring Length Indicator,” which changes

Paper 9, 8 (PTAB 2013); *Daifuku Co., Ltd. v. Murata Machinery, Ltd.*, IPR2015-00083, Paper 63, 4-5 (PTAB 2016); *Apple Inc. v. Evolved Wireless LLC*, No. IPR2016-01177, Paper 27, 8-10 (PTAB 2017); *Apple Inc. v. CPC Patent Technologies PTY. LTD.*, No. IPR2022-00602, Paper 31, 24-25 (PTAB 2023).

color according to the value of the ratio:

FIG. 29



LINGDI-1009, FIG. 29 (annotated). A POSITA would have recognized that the displayed ratio between the two line lengths is an example of a “difference value” between the lengths of the first and second segment and therefore satisfies this recitation of element [1.8]. LINGDI-1003, ¶87.

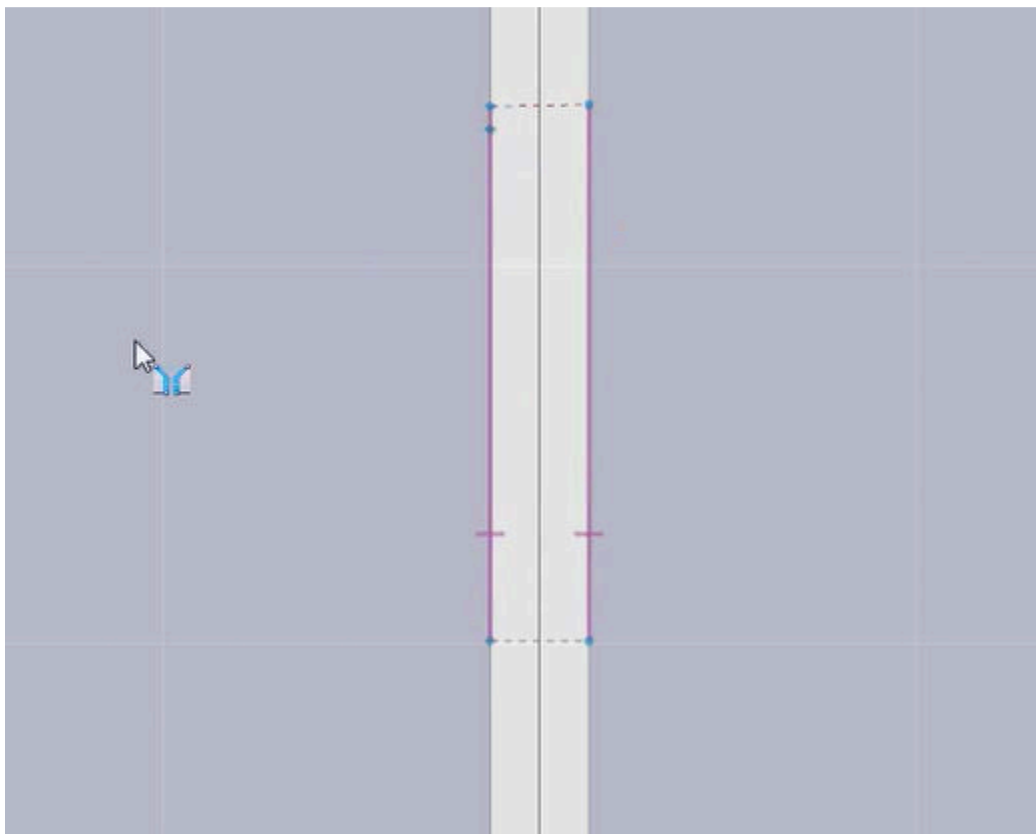
In applying Niterra’s suggestion to the CAD system of EZBRUSH, the resulting system would have predictably included a line length indicator (suggested by Niterra) that displays a line length deviation (a difference value between the first length and the second length) in a first color when the second length is substantially equal to the first length and in a second color when the second length is substantially different from the first length (deviated from an acceptable value).

LINGDI-1003, ¶88.

(b) Claim 2

[2] The method of claim 1, wherein the first and second segments comprise any one or any combination of any two or more of a straight line, a curved line, a multi-branch line, and shapes that include polygons and circles.

EZBRUSH shows that the first and second segments are straight lines:



LINGDI-1004, 2:30-2:45; LINGDI-1003, ¶89.

(c) Claim 3

[3] The method of claim 1, wherein the setting of the second selected segment further comprises: calculating either one or both of the length of the first selected segment and the length of the second selected segment.

As discussed in Sections V.A.4-V.A.5 (overview of Niterra and description of predictable combination) and in Element [1.8], *supra*, a POSITA would have been motivated to apply Niterra's suggested improvements (to display an equal line length indicator and "to inform the operator that the amount of [line] length deviation" between two indicated line segments "has deviated from an acceptable value") in the EZBRUSH CAD system (as modified by Corel and Thoemmes), which would have provided the calculation of the lengths of both selected segments to display the difference value between the lengths. LINGDI-1009, [0072]; LINGDI-1003, ¶90.

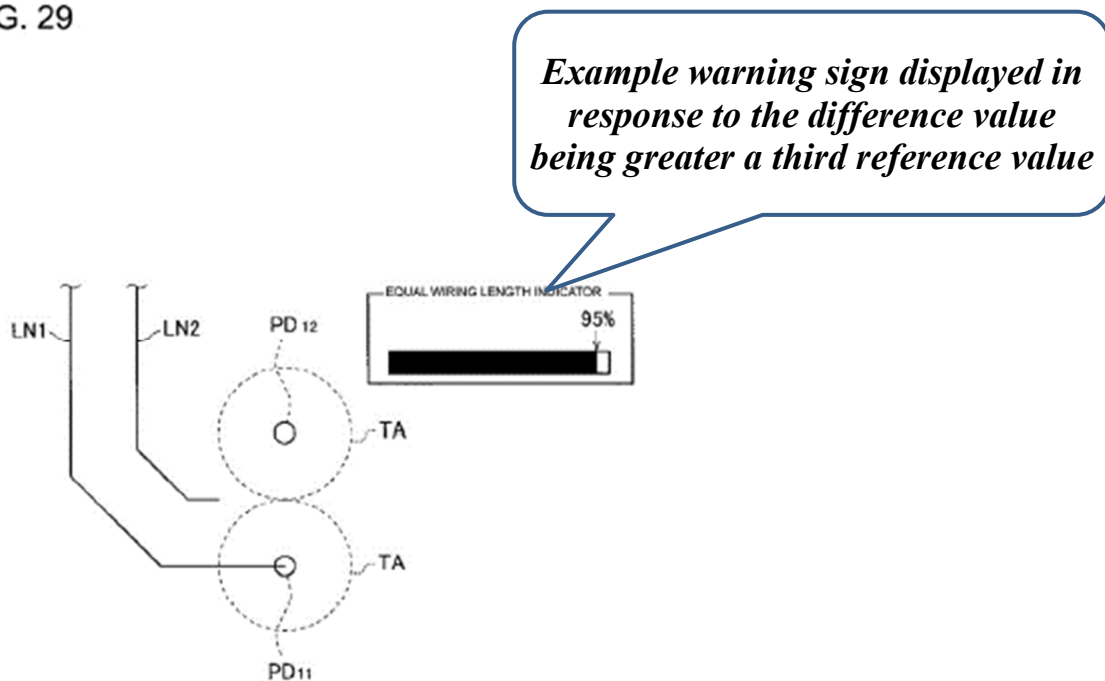
(d) Claim 4

[4] The method of claim 1, further comprising displaying a warning sign, in response to the difference value being greater than a third reference value.

As discussed in Sections V.A.4-V.A.5 (overview of Niterra and description of predictable combination), *supra*, a POSITA would have been motivated to apply Niterra's suggested improvements (to display "a warning (error indication)" if "a determination is made as to whether the calculated amount of [line] length deviation" between the first and second segments is outside of "the preset tolerance range") to the predictable combination of EZBRUSH, Corel, and Thoemmes. LINGDI-1009, [0072]; LINGDI-1003, ¶91. Niterra goes on to describe that "as in the case of the [line] length deviation...a warning may be displayed." LINGDI-

1009, [0073] (“If a warning is issued along with the wiring length deviation rate, time and effort can be saved when making drafting corrections”). In yet another example, Niterra describes “issuing a warning or the like when drafting is performed in a manner that the amount of [line] length deviation deviates from the preset range.” LINGDI-1009, [0013], *see also* [0069] (“the pattern or color of the wiring length indicator displayed on the monitor, or a combination of the two, may be used to inform the operator that the amount of wiring length deviation has deviated from an acceptable value.”).

FIG. 29



LINGDI-1009, FIG. 29 (annotated), [0069], [0073].

(e) Claim 5

[5] A non-transitory computer-readable storage medium storing instructions that, when executed by a processor, cause the processor to perform the method of claim 4.

As detailed above, EZBRUSH teaches a method of creating digital clothing using “Marvelous Designer 2” computer software. LINGDI-1004, 0:16-0:25. As demonstrated in EZBRUSH, the Marvelous Designer 2 software can be used for creating digital clothing in both 3D space and 2D space in the computer’s onscreen interface. LINGDI-1004, 0:00-20:00 (“we’re going to do a shirt”); LINGDI-1003, ¶92 (“The express description of using ‘Marvelous Designer 2’ and the digital clothing patterns upon the onscreen interface amply demonstrated that the Marvelous Designer 2 software was executed by a computing device having a processor and memory.”). A POSITA would have recognized that EZBRUSH disclosed the use of “Marvelous Designer 2” software instructions on a storage medium that is executed by a processor to perform the disclosed processes. LINGDI-1003, ¶92.

Alternatively, even if EZBRUSH did not expressly disclose such features (which it does), the predictable combination of EZBRUSH, Corel, Thoemmes, and Niterra would have provided such a storage medium and processor for the resulting CAD system. Indeed, Thoemmes suggests the use of “an exemplary computer system 100 that could be used to implement” CAD software, which includes both a

“processor” and “memory”:

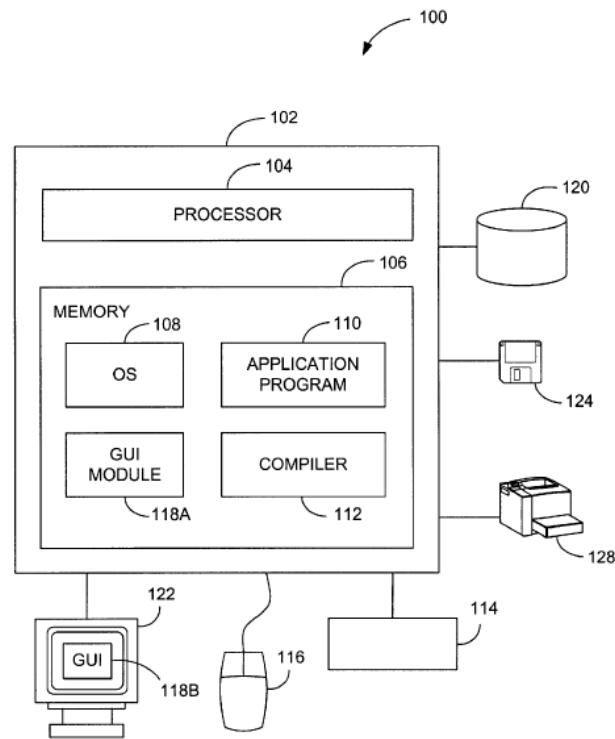


FIG. 1

LINGDI-1006, 2:52-63; FIG. 1; LINGDI-1003, ¶93.

Thoemmes’s computer includes “a compiler 112 which allows an application program 110 written in a programming language...to be translated into processor 104 readable code.” *Id.*, 2:52-3:32. “[I]nstructions implementing the operating system 108, the computer program 110, and the compiler 112 are tangibly embodied in a computer-readable medium” such as a hard drive or CD-ROM. *Id.* “[T]he computer program 110 [is] comprised of instructions which, when read and executed by the computer 102, causes the computer 102 to perform

the steps necessary” to execute the software. *Id.* As such, in order to execute to the method of the CAD system in the predictable combination (detailed above), the resulting CAD system would have included computer memory and a processor as suggested by Thoemme. LINGDI-1003, ¶94.

(f) Claim 6

[6.pre] An apparatus for creating digital clothing, the apparatus comprising: a memory storing digital clothing patterns for draping simulation; and at least one processor configured to:

Supra, Elements [1.pre] and [5]; LINGDI-1003, ¶95.

[6.1] set a first selected segment to be sewn on a first segment on a pattern; and

Supra, Element [1.1]; LINGDI-1003, ¶96.

[6.2] set a second selected segment by: set a starting point of a second selected segment on a second segment

Supra, Element [1.2]; LINGDI-1003, ¶97.

[6.3] wherein the second selected segment is sewn to the first selected segment,

Supra, Element [1.3]; LINGDI-1003, ¶98.

[6.4] determine a present point on the second segment based on a current cursor position,

Supra, Element [1.4]; LINGDI-1003, ¶99.

[6.5] move the present point to a candidate ending point on the second segment, in response to the difference between the present point and the candidate ending point being less than a reference value, wherein the candidate ending point is determined to make a second length of

the second selected segment substantially equal to a first length of the first selected segment,

Supra, Element [1.5]; LINGDI-1003, ¶100.

[6.6] select the present point as an ending point of the second selected segment, in response to a user input, and

Supra, Element [1.6]; LINGDI-1003, ¶101.

[6.7] set as the second selected segment, a section of the second segment between the starting point and the ending point,

Supra, Element [1.7]; LINGDI-1003, ¶102.

[6.8] wherein, when the second length is substantially equal to the first length, at least one of the first length, the second length and a difference value between the first length and the second length is displayed in a first color, and wherein, when the second length is substantially different from the first length, at least one of the first length, the second length and the difference value is displayed in a second color, the second color being different from the first color.

Supra, Element [1.8]; LINGDI-1003, ¶103.

(g) Claim 7

[7] The apparatus of claim 6, wherein the first and second segments comprise any one or any combination of any two or more of a straight line, a curved line, a multi-branch line, and shapes that include polygons and circles.

Supra, claim 2; LINGDI-1003, ¶104.

(h) Claim 8

[8] The apparatus of claim 6, further comprising: a length display configured to calculate either one or both of the length of the first selected segment and the length of the second selected segment.

Supra, claim 3; LINGDI-1003, ¶105.

(i) Claim 9

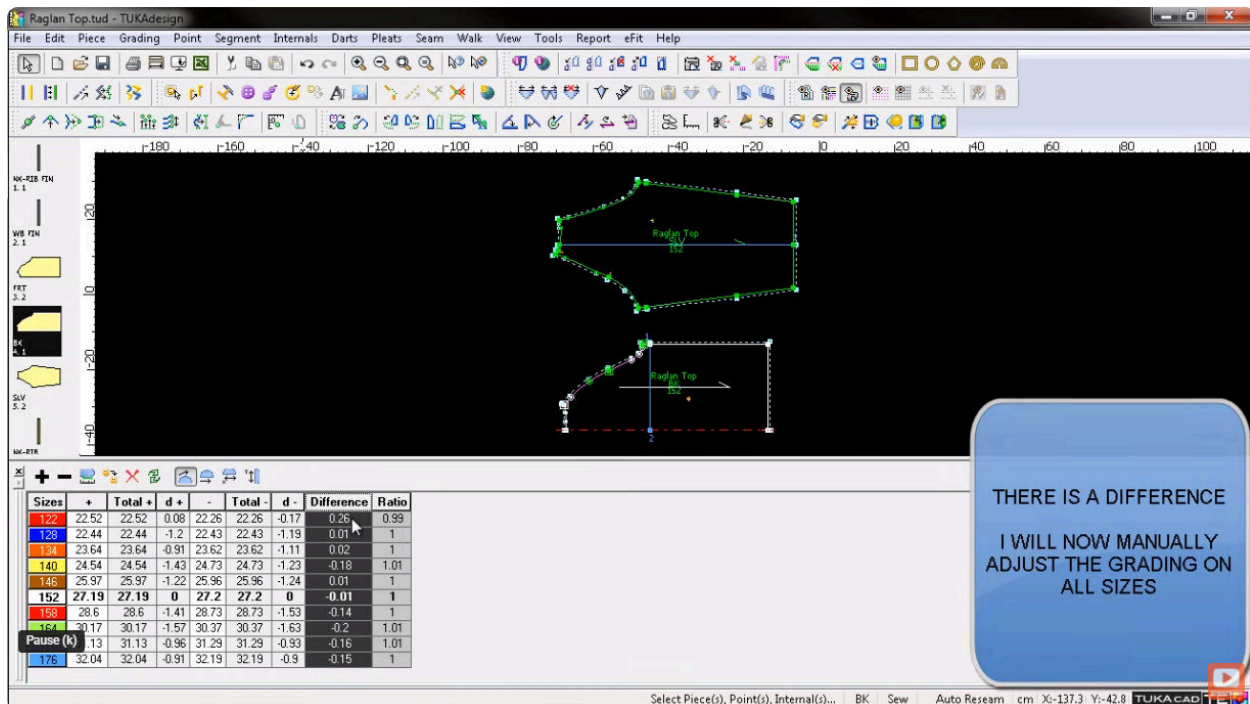
[9] The apparatus of claim 6, wherein the second selected segment setter is further configured to: display a warning sign, in response to the difference value being greater than a third reference value.

Supra, claim 4; LINGDI-1003, ¶106.

B. GROUND 2—Claims 3 and 8 are rendered obvious by EZBRUSH, Corel, Thoemmes, Niterra, and TUKATECH

1. TUKATECH

TUKATECH is a YouTube video showing various features of the then-popular TUKAcad software suite for pattern making, grading, and marker making. LINGDI-1007; LINGDI-1003, ¶¶108-109. TUKATECH demonstrates a conventional practice in such digital clothing design software that allows a user to compare the length of two different segments from different patterns when designing a garment. *Id.*, 0:10-0:30; LINGDI-1003, ¶108.



Id. Displaying the length difference between the line segments allows the user to manually adjust the segments for all sizes. *Id.*

After manually adjusting the lengths, the difference value for each size for the design is reduced to near zero:

Sizes	+	Total +	d +	-	Total -	d -	Difference	Ratio
122	22.25	22.25	-0.17	22.26	22.26	-0.17	-0.01	1
128	22.42	22.42	-1.19	22.43	22.43	-1.19	-0.01	1
134	23.61	23.61	-1.11	23.62	23.62	-1.11	-0.01	1
140	24.72	24.72	-1.23	24.73	24.73	-1.23	-0.01	1
146	25.95	25.95	-1.24	25.96	25.96	-1.24	-0.01	1
152	27.19	27.19	0	27.2	27.2	0	-0.01	1
158	28.72	28.72	-1.53	28.73	28.73	-1.53	-0.01	1
164	30.36	30.36	-1.64	30.37	30.37	-1.63	-0.01	1
170	31.28	31.28	-0.92	31.29	31.29	-0.93	-0.01	1
176	32.18	32.18	-0.9	32.19	32.19	-0.9	-0.01	1

Id., 2:54-3:00; LINGDI-1003, ¶109.

2. Combination of EZBRUSH with Corel, Thoenmes, Niterra, and TUKATECH

A POSITA would have been motivated to implement TUKATECH's suggestion to helpfully display a difference value between the lengths of two selected segments in the resulting CAD system (detailed above in Ground 1) for purposes of achieving known benefits articulated below. LINGDI-1003, ¶¶110-112. Multiple reasons would have prompted a POSITA to modify the CAD system of EZBRUSH (as modified by Corel, Thoenmes, and Niterra in Ground 1) to further include TUKATECH's suggested improvements. *Id.*

First, a POSITA would have been motivated to further modify EZBRUSH to implement TUKATECH's suggested improvement (for providing an onscreen comparison of the lengths of two selected line segments) so as to provide more pertinent information for the user and to achieve rapidly informed decision-making by the user during length selection. LINGDI-1003, ¶111. For example, this suggested functionality would have provided onscreen confirmation to the user that the two selected line segments are intentionally equal in length after selecting the candidate endpoint—a feature particularly helpful when the user is seeking a clean, smooth seam. *Id.* In another example, showing such length comparison information also would have allowed the user to more accurately choose unequal segment lengths (where the user is seeking a pleated or ruffled effect at the seam).

Id. Moreover, the evidence here confirms that this relatively straightforward modification suggested by TUKATECH is consistent with and further enhances the above-described modifications related to the snapping functionality (suggested by Corel and Thoenmes). *Id.*

Second, a POSITA would have been prompted to modify the garment design software of EZBRUSH based on TUKATECH's suggested techniques because doing so would merely apply known techniques to a known system ready for improvement to yield predictable results. LINGDI-1003, ¶112. Indeed, "when a patent 'simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.'" *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). Here, EZBRUSH and TUKATECH are both directed toward CAD systems, and a POSITA would have recognized that applying the suggested user interface improvement from TUKATECH to EZBRUSH's CAD system would have led to predictable and helpful results with a reasonable expectation of success without significantly altering or hindering the functions performed by EZBRUSH's system. LINGDI-1003, ¶112.

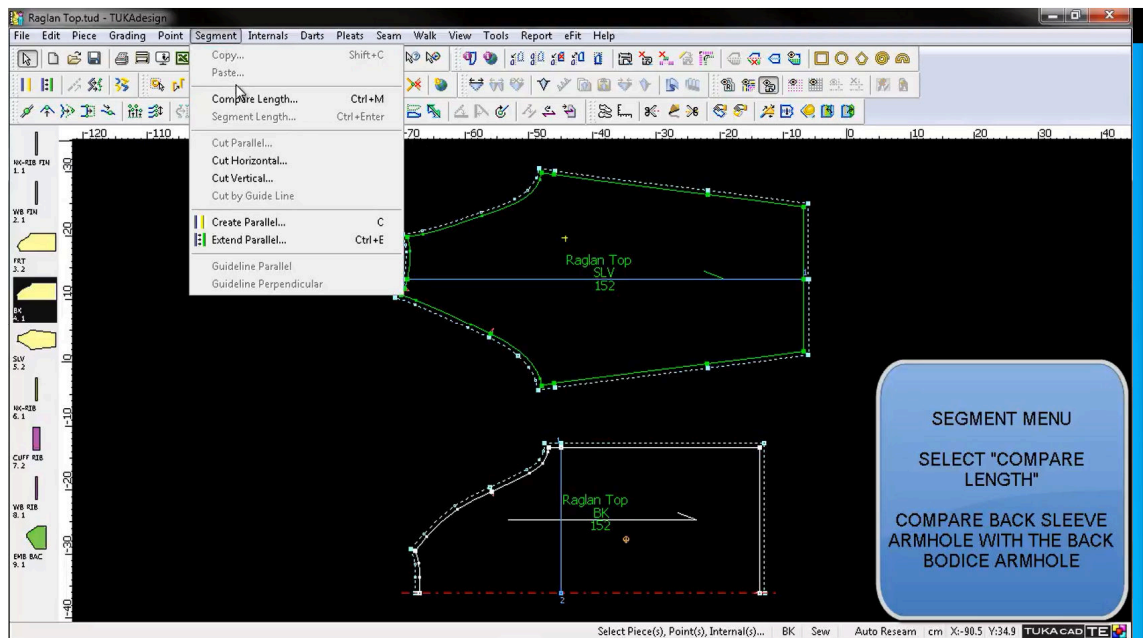
**1. Application of EZBRUSH, Corel, Thoemmes, Niterra,
and TUKATECH to claims 3 and 8**

(a) Claims 3 and 8

[3] The method of claim 1, wherein the setting of the second selected segment further comprises: calculating either one or both of the length of the first selected segment and the length of the second selected segment.

[8] The apparatus of claim 6, further comprising: a length display configured to calculate either one or both of the length of the first selected segment and the length of the second selected segment.

To the extent that the EZBRUSH, Corel, Thoemmes, Niterra combination of Ground 1 is believed to not fully disclose all aspects of claims 3 and 8 and/or to the extent that claim 8 requires a length display that displays either one or both of the length of the first selected and the length of the second selected segment, as described in Section V.B.2, *supra*, a POSITA would have been motivated to implement TUKATECH's suggestion (e.g., to helpfully display a difference value between the lengths of two selected segments) in the EZBRUSH CAD system (as modified by Corel, Thoemmes, and Niterra) to achieve known and predictable benefits. LINGDI-1003, ¶113. Indeed, TUKATECH plainly illustrates the convenience of presenting such length comparison information to a user during the digital clothing design of a shirt (much like the example in EZBRUSH):

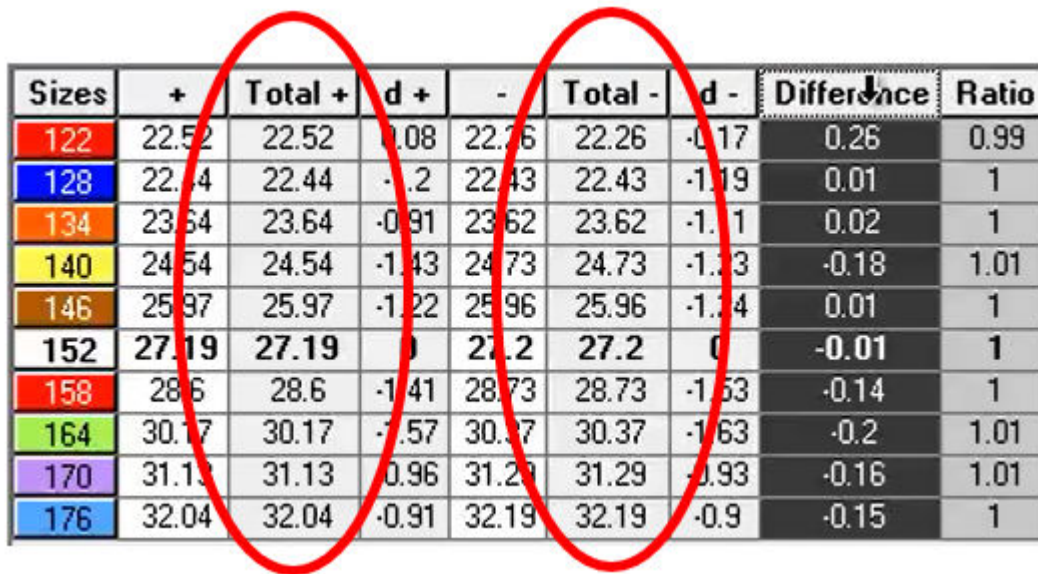


Sizes	+	Total +	d +	-	Total -	d -	Difference	Ratio
122	22.52	22.52	0.08	22.26	22.26	-0.17	0.26	0.99
128	22.44	22.44	-1.2	22.43	22.43	-1.19	0.01	1
134	23.64	23.64	-0.91	23.62	23.62	-1.1	0.02	1
140	24.54	24.54	-1.43	24.73	24.73	-1.2	-0.18	1.01
146	25.97	25.97	-1.22	25.96	25.96	-1.2	0.01	1
152	27.19	27.19	0	27.2	27.2	0	-0.01	1
158	28.6	28.6	-1.41	28.73	28.73	-1.5	-0.14	1
164	30.17	30.17	-1.57	30.37	30.37	-1.63	-0.2	1.01
170	31.13	31.13	-0.96	31.29	31.29	-0.93	-0.16	1.01
176	32.04	32.04	-0.91	32.19	32.19	-0.9	-0.15	1

LINGDI-1007, 0:11 and 0:10-0:30.³ The evidence here confirms that including

³ TUKATECH shows an implementation in which the length difference between the selected segments is different for each possible size for the garment. A POSITA would have recognized that this teaching of TUKATECH was equally applicable to designs in which there is only a single size and therefore only a single length difference between the two selected segments, as described in the '355 patent specification. LINGDI-1003, ¶113.

this suggested improvement in the predictable combination would have provided the calculation, as required by claims 3 and 8, and display of both selected segments and the differences between the lengths as disclosed by TUKATECH.



Sizes	+	Total +	d +	-	Total -	d -	Difference	Ratio
122	22.52	22.52	-0.08	22.76	22.26	-0.17	0.26	0.99
128	22.74	22.44	-0.2	22.43	22.43	-1.19	0.01	1
134	23.64	23.64	-0.91	23.62	23.62	-1.1	0.02	1
140	24.54	24.54	-1.43	24.73	24.73	-1.23	-0.18	1.01
146	25.97	25.97	-1.22	25.96	25.96	-1.24	0.01	1
152	27.19	27.19	0	27.2	27.2	0	-0.01	1
158	28.6	28.6	-1.41	28.73	28.73	-1.53	-0.14	1
164	30.17	30.17	-1.57	30.37	30.37	-1.63	-0.2	1.01
170	31.13	31.13	-0.96	31.29	31.29	-0.93	-0.16	1.01
176	32.04	32.04	-0.91	32.19	32.19	-0.9	-0.15	1

LINGDI-1007, 0:10-0:30; LINGDI-1003, ¶113.

VI. DISCRETIONARY DENIAL IS NOT WARRANTED

In *Apple Inc. v. Fintiv, Inc.*, the Board enumerated six factors that it will assess in determining whether to exercise discretion to deny institution under §314(a) based on co-pending litigation. IPR2020-00019, Paper 11 at 2-3 (PTAB “precedential” Mar. 20, 2020). The USPTO issued updated discretionary denial guidance in view of the *Fintiv* factors and confirmed that “the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.”

See June 21, 2022 Memorandum to Members of the PTAB, 3 (available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621.pdf). Here, Petitioner has eliminated any risk of duplicated effort by voluntarily presenting a *Sotera* stipulation to Patent Owner. LINGDI-1019; *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020). For at least this reason, and considering the compelling merits of the above-detailed Grounds, discretionarily denial is unwarranted and would be unjust.

VII. PAYMENT OF FEES – 37 C.F.R. §42.103

Petitioner authorizes the Patent and Trademark Office to charge any fees to Deposit Account No. 06-1050.

VIII. CONCLUSION

The cited prior art references identified in this Petition contain pertinent technological teachings (both cited and uncited), either explicitly or inherently disclosed, which were not previously considered in the manner presented herein, or relied upon on the record during original examination of the '355 patent. In sum, these references provide new, non-cumulative technological teachings which indicate a reasonable likelihood of success as to Petitioner's assertion that the Challenged Claims of the '355 patent are not patentable pursuant to the grounds presented in this Petition. Accordingly, Petitioner respectfully requests institution

of an IPR for those claims of the '355 patent for each of the grounds presented herein.

IX. MANDATORY NOTICES UNDER 37 C.F.R § 42.8(a)(1)

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

Zhejiang Lingdi Digital Technology Co., Ltd. is the petitioner and the real party-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

Petitioner is not aware of any disclaimers, reexamination certificates or petitions for inter partes review for the '355 Patent. The '355 patent is the subject of civil action: *CLO Virtual Fashion Inc. v. Zhejiang Lingdi Digital Technology Co., Ltd. d/b/a Linctex*, 2-23-cv-00274 (EDTX), filed June 14, 2023. LINGDI-1017.

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

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D. Service Information

Please address all correspondence and service to the address listed above.

Petitioner consents to electronic service by email at IPR57721-0002IP1@fr.com.

Respectfully submitted,

Dated: May 30, 2024

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for *Inter Partes* Review totals 11,694 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated: May 30, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on May 30, 2024, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided via USPS Priority Express Mail, to the Patent Owner by serving the correspondence address of record as follows:

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