

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BILLERUD AKTIEBOLAG (PUBL)

Petitioner,

v.

WESTROCK MWV, LLC.

Patent Owner

U.S. Patent No. 11,293,142 B2

Case No. IPR2023-01206

**PETITIONER'S OPPOSITION TO PATENT OWNER'S CONTINGENT
MOTION TO AMEND**

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I. INTRODUCTION

Petitioner Billerud Aktiebolag (Publ) (“Billerud”) respectfully opposes Patent Owner WestRock MWV, LLC’s (“WestRock”) contingent motion to amend (Paper 22). The proposed substitute claims (24, 25, 26, and 27 of the ‘142 Patent) violate 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121 because the substitute claims introduce new matter and violate the rules governing motions to under amend 37 C.F.R. §42.121(a)(2)(ii) and §42.121(b). The proposed substitute claims also are directed to subject matter not supported by the original disclosure of the subject patent as required under 35 U.S.C. §112(a) (written description). Further, the ‘142 Patent fails to provide a sufficient enabling disclosure under 35 U.S.C. §112 (a) (enablement) . Finally, the proposed substitute claims remain obvious over the prior art. Petitioner respectfully submits that WestRock’s motion to amend should be denied.

II. THE SUBSTITUTE CLAIMS VIOLATE THE RULES GOVERNING MOTIONS TO AMEND

WestRock's proposed substitute claims fail to meet the requirements of 35 U.S.C. §316(d) and 37 C.F.R. §42.121. A motion to amend must demonstrate: (1) the amendment proposes a reasonable number of substitute claims; (2) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter; (3) the amendment responds to a ground of unpatentability involved in the trial; and (4) the original disclosure sets forth written description support for each proposed claim. *See* 35 U.S.C. § 316(d)(1)(B), (d)(3); 37 C.F.R. §42.121; *Lectrosonics, Inc., v. Zaxcom*, IPR2018-01129, Paper 15 (precedential). WestRock has failed to demonstrate that its proposed substitute claims meet these requirements and its motion to amend should be denied.

A. The Substitute Claims Attempt To Introduce New Matter.

Patent owner seeks amended claims that are untethered to the specification. This is not permitted.

Any “motion [to amend] must set forth written description support for each proposed substitute claim as a whole, and not just the features added by the amendment” to satisfy 37 C.F.R. § 42.121(b)(1)-(2). *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, 2019 WL 1118864, at *3 (PTAB Feb. 25, 2019).

Section 42.121(b) requires that a motion to amend must identify: (i) the support in the original disclosure of the patent for each claim that is added or amended; and

(ii) the support in an earlier-filed disclosure for each claim for which benefit of the filing date of the earlier filed disclosure is sought.

To comply with this requirement, the proposed amended claims must have written description support without introducing new matter. *See* 37 C.F.R.

§ 42.121(a)(2)(ii). A motion to amend “may not ... introduce new matter.” 35 U.S.C. §316(d)(3); *see also* 37 C.F.R. §42.121(a)(2)(ii). Any claimed subject matter that lacks written description support in the original disclosure is “new matter” and violates 35 U.S.C. § 112, ¶1. *TurboCare Div. of Demag Delaval Turbomach. v. Gen. Elec. Co.*, 264 F.3d 1111, 1118 (Fed. Cir. 2001).

“[T]he hallmark of written description is disclosure” because the test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. *Knowles Electronics LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1356 (Fed. Cir. 2018) (quoting *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*)). The relevant inquiry is whether the original disclosure “reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad*, 598 F.3d at 1351. However, even with the testimony of one skilled in the art, mere “possibilities or probabilities that the recited element would be excluded” do not suffice. *Novartis Pharms. Corp. v. Accord Healthcare,*

Inc., 38 F.4th 1013, 1017 (Fed. Cir. 2022), cert. denied sub nom. *Novartis Pharms. Corp. v. HEC Pharm Co.*, 143 S. Ct. 1748, 215 L. Ed. 2d 649 (2023).

WestRock's substitute independent claim 24 and dependent claims 25, 26, and 27 lack written description support. The '142 Patent's specification fails to describe the negative limitation in substitute claim 24 that the counter roller is not heated to the elevated temperature. The '142 Patent's specification fails to describe the nip load from about 20 pli to about 90 pli in substitute claim 25. It further fails to describe the elevated temperatures in substitute claims 26 and 27 being at least 480°F and 400°F, respectfully. . All the foregoing are new matter outside the specification.

Moreover, supporting language is absent from provisional application U.S. Serial No. 62/846,278 (the “‘278 Application”), the '142 Patent's earliest priority application. The '278 Application is silent with regard to heating or not heating the counter roller to the elevated temperature (Ex. 2009). Further, the '278 application fails to disclose the elevated temperature being “at least 480°F” (Ex. 2009).

1. The silence in the disclosure is insufficient to support the negative limitation relating to the counter roller.

The '142 Patent's disclosure's failure to discuss or disclose heating the counter roller to the elevated temperature is insufficient under 35 U.S.C. §112 (a) to support a negative limitation in substitute claim 24 that the counter roller is not heated to the elevated temperature. The written description requirement under 35

U.S.C. §112 (a) is to provide the public with full disclosure knowledge and notice of what a patent claim covers as well as does not cover. *Novartis Pharms. Corp.*, 38 F.4th at 1015. Support for negative limitations under 35 U.S.C. §112 (a) require sufficient disclosure in the specification as filed to indicate to a person of ordinary skill in the art that the inventors, at the time of the invention, possessed the invention, i.e., intended to exclude the element claimed. *Id.*; *Inphc Corp. v. Netlist, Inc.*, 805 F. 3d 1350, 116 USPQ2d 2006 (Fed. Cir. 2015).

A negative claim limitation may be adequately supported when the specification describes a reason to exclude the relevant claim limitation. *Id.* Possible reasons to exclude (i.e., a negative limitation) when disclosed in a specification include describing alternative features in the specification and supporting the negative limitation. A negative limitation also may be adequately supported in a specification when the patent owner describes a reason to exclude the relevant negative limitation. *Id.* (quoting *SANTARUS, Inc. v. Par Pharm., Inc.*, 694 F. 3d 1377, 1351, 104 USPQ 2d 1641, 1647 (Fed. Cir. 2012)).

The Federal Circuit referenced MPEP § 2173.05(i) (9th ed. Rev. 10.2019, June 2020), entitled “Negative Limitations” in *Novartis Pharma Corp. v. Accord Healthcare, Inc.*, 38 F.4th 1013, 1017 (Fed. Cir. 2022) (“The mere absence of a positive recitation is not a basis for an exclusion.”). The Federal Circuit stated

If it were, then every later-added negative limitation would be supported so long as the patent makes no mention of it.

While a negative limitation need not be recited in the specification *in haec verba*, there generally must be something in the specification that conveys to a skilled artisan that the inventor intended the exclusion, such as a discussion of advantages or alternatives. Consistent with our precedent in *Santarus*, *Inphi*, and *Nike*, the written description requirement cannot be met through simple disregard of the presence or absence of a limitation.

Id.

This is especially relevant to the present case, because nowhere in the ‘142 Patent is there any disclosure, discussion or mention of any alternatives, or advantages or disadvantages of heating the counter roller or not heating the counter roller to the elevated temperature, or heating the counter to any temperature.

Moreover, “elevated temperature” is not specifically defined in the ‘142 Patent. The proposed claim language does not state that the counter roller is unheated. If the elevated temperature is at least 250°F, for example, the counter roller may still be heated to 200°F, 240°F, and even 249°F – as long as it is not heated to the stated “elevated temperature.” That is, if the thermo-roller is heated to 250°F, the counter roller may be heated to *any* temperature below 250°F.¹ The specification is completely silent as to each of these variables.

¹ The breadth of the proposed claim is so overly broad that it also even encompasses heating the counter roller to any temperature above 250°F when “the elevated temperature” is 250°F. The only option that would be effectively excluded by the amendment is heating both the thermo roller and the counter roll to the exact same “elevated temperature.”

Accordingly, the ‘142 Patent fails to provide any sufficient written description to convey to a person of ordinary skill in the art that the counter roller should not be heated to whatever the elevated temperature is stated to be. This, of course, fails to rise to the standard of adequate written description.

WestRock’s Preliminary Response acknowledges the absence of any discussion of the specification regarding the counter roller’s temperature. WestRock identified various examples in the ‘142 Patent in which the thermo-roller is heated to the elevated temperature. Paper 13, p. 11. Conversely, WestRock admitted that the ‘142 Patent does not disclose heating the counter roller to the elevated temperature. *Id.* at 12. WestRock’s only support for disclosure is that the absence of discussion of the temperature of the counter roller, one could interpret the ‘142 Patent as supporting an interpretation that the counter roller is not heated to the elevated temperature. In other words, WestRock is relying solely on the mere implication that the failure to include the temperature of the counter roller is sufficient to support the negative limitation.

In its decision granting institution of this IPR, the Board considered WestRock’s interpretation of the disclosure in the ‘142 Patent and disagreed that claim 1 necessarily supports not heating the counter roller to the elevated temperature. In so doing, the Board considered that the embodiments and examples in the ‘142 Patent could infer that the counter roller in the hot-hard calendar is not

heated to an elevated temperature. However, an inference that the counter-rollers are not heated to the elevated temperature is insufficient to support the proposed negative claim limitations that the counter-rollers are not heated to the elevated temperature in accordance with the requirements of 35 U.S.C. § 112(a).

2. WestRock's Expert Testimony Exemplifies The Written Description Problems.

During his deposition, Mr. Klass, WestRock's expert, provided examples of the written description problems presented by the proposed claims. WestRock's counsel asked him if there is any indication in the following passage in *Papermaking* (p. 82), relied upon by WestRock, that the hard nip has only one heated roller:

A modern cartonboard line as a rule has one hot hard-nip precalender before the coating section, especially in Asia. High thermos roll temperatures (in some cases over 200 °C) result in bulk savings because of the temperature gradient.

Mr. Klass responded, "No." Ex. 1012, pp. 172-173.

WestRock's counsel also asked Mr. Klass if there is any indication as to whether the lower roll was heated in the following passage in Zakaib (Ex.2007, p.60), which is also relied upon by WestRock:

At a European coated folding boxboard mill, a single induction heating system was installed on the top roll of a single nip pre-coater calender.

Mr. Klass again answered, "No." Ex. 1012, pp. 174-176.

Finally, WestRock's counsel asked Klass about the following passage in Marley (Ex. 1015, p. 17), which is relied upon by WestRock:

For the 2008 rebuild, Andritz Küsters supplied a Prime Cal Hard calender [...] The calender has a working width of 4m and an operating speed of 700 mpm. The surface temperature of the heated roll is 300° C.

Specifically, WestRock's counsel asked Mr. Klass

Q. Do you have any understanding as to whether or not the nip that includes the heated roll has only one heated roll?

A. No.” (Ex. 1012, pp. 177-178)

Should Mr. Klass be correct in that Papermaking, Zakaib and Marley do not support that the counter roll is not heated, the ‘142 specification certainly fails to do so. That is, if WestRock's expert cannot determine the temperatures or heating status of the counter roll, it stands to reason that the ‘142 Patent does not reasonably convey that WestRock had possession of the proposed claimed subject matter.

3. Disclosure of specific ranges of nip load does not support a nip load from about “20 pli to about 90 pli”.

The ‘142 Patent discloses nip load in several separate manners: (1) in the “range from about 20 pli to about 350 pli” (Ex. 1001, col. 5, line 55-56); (2) “range from 20 pli to about 160 pli” (Ex. 1001, col. 5, lines 59-60); (3) “range from 30 pli

to about 140 pli” (Ex. 1001, col. 5, lines 61-62); (4) “about 140 pli” (Ex. 1001, col. 7, line 55); and (5) “about 90 pli” (Ex. 1001, col. 8, lines 27 and 64).

This is insufficient to support claiming a nip load in the range load from about “20 pli to about 90 pli” under 35 U.S.C. § 112 (a). *See generally Indivior UK Limited v. Dr. Reddy’s Laboratories S.A.*, 18 F.4th 1323 (Fed. Cir. 2021). For example, the Federal Circuit in *Indivior* concluded that disclosure in its subject patent specification of “at least 25 wt. %” and specific values of “48.2 wt % to about 58.6 %” were insufficient under 35 U.S.C. § 112 (a) to support a patent claim range of 40 wt % to 60 wt % . *Id.* at pp. 1326-1326.

Similarly in this case, the ‘142 Patent’s specification fails to provide a sufficient written description under 35 U.S.C. § 112 (a) to support the proposed substitute claim 25 and its purported limitation that the nip load is from about “20 pli to about 90 pli.” Merely disclosing various nip load ranges and a possible upper limit, e.g. 90 pli, is insufficient written support for a specific nip load ranging from about 20 pli to about 90 pli.

Moreover, disclosing specific endpoints such as a nip load of 20 pli and 90 pli is insufficient written description for claiming a nip load of about 20 pli to 90 pli. For example, in *Indivior*, the court found that disclosed values of “48.2 wt %” and “58.6 wt %” was insufficient written description support for a claimed range of “about 48.2 wt % to about 58.6 wt %” under 35 U.S.C. § 112 (a). *Id.* at 1329.

Similarly, separately disclosing nip load examples of (a) about 90 pli (Ex 1001, col. 8, line 27), (b) 20 pli to 350 pli (Ex 1001, col. 5, lines 56-57); (c) 20 pli to 160 pli (Ex 1001, col. 5, lines 59-60); and (d) 30 pli to 140 pli (Ex 1001, col. 5, lines 61-62) fails to provide written description support for claiming “about 20 pli to about 90 pli.” Therefore, the ‘142 Patent fails to provide written disclosure to support proposed substitute claim 25.

4. Disclosure of specific highest elevated temperature of 480° F does not support elevated temperature of “at least 480° F”.

The ‘142 Patent’s specification disclosure of a maximum elevated temperature value of about 480° F for the thermo-roller (Ex. 1001, col. 7, line 56) is insufficient to claim at least 480° F. Similar to the *Indivior* case, the ‘142 Patent’s specification disclosing heating a thermo-roller to an elevated temperature of “at least 400° F and an example of heating a thermo-roller to an elevated temperature of “about 480° F” does not support the substitute of claim 27’s “at least 480° F” elevated temperature.

III. THE SUBSTITUTE CLAIMS ARE NOT ENABLED.

WestRock’s motion to amend should also be denied because the proposed substitute claims are not enabled under 35 U.S.C. § 112(a). The specification must teach a person of ordinary skill in the art how to make and use the full scope of the claimed invention without undue experimentation. 35 U.S.C. § 112(a); *Alcon Research Ltd. v. Barr Labs., Inc.*, 745 F.3d 1180, 1188 (Fed. Cir. 2014). The

substitute claims require a negative limitation to not heat the counter roller to the elevated temperature, and heating the thermo-roller to at least 250°F, 400°F, or 480°F. However, the '142 Patent does not teach a person of ordinary skill in the art how to make and use the full scope of the purported invention without undue experimentation.

The '142 Patent fails to provide a sufficient enabling disclosure under 35 U.S.C. §112 (a) (enablement) to know what temperature the counter roller should be heated or at what temperature the counter roller should be. (Ex. 1001). A person of ordinary skill in the art would wonder whether the counter roller of claim 24 (and as applied to claims 25-27 as well) should be at ambient temperature, heated to a temperature less than the elevated temperature or even heated to a temperature over the elevated temperature. (Ex. 1001), as well as the effects on the paperboard for doing so.

IV. THE SUBSTITUTE CLAIMS ARE UNPATENTABLE OVER THE PRIOR ART.

WestRock's claim amendments fail to overcome the grounds of record. Proposed substitute claims 24-27 remain obvious over the prior art of Record, namely, *Fugitt* in view of *Papermaking*, *Gratton*, and *Zakaib*.

Proposed claim 24 differs from original claim 1 by stating that the “contact surface of only said ~~thereto-roller~~ thermo-roller is heated to an elevated temperature of at least 250°F [[.]], and wherein the counter roller is not heated to the elevated temperature, wherein said passing paperboard substrate through said hot-hard calender comprises applying a nip load to said paperboard substrate ranging from about 20 pli to about 500 pli.”

With respect to the limitation that the counter roller is not heated to the elevated temperature, it is first referred to

Zakaib (published in 1997), which was introduced by Patent Owner expert Charles Klass. It states that “Over the past ten years, extensive research and development in the application of induction heating systems on publication and board grade machines have been carried out. This work has resulted in the application of single (Figure 1) and tandem induction heating systems (Figure 2)...” (Ex. 2007, p. 58). Figure 1 is reproduced below, and shows a “typical” single induction heating system.

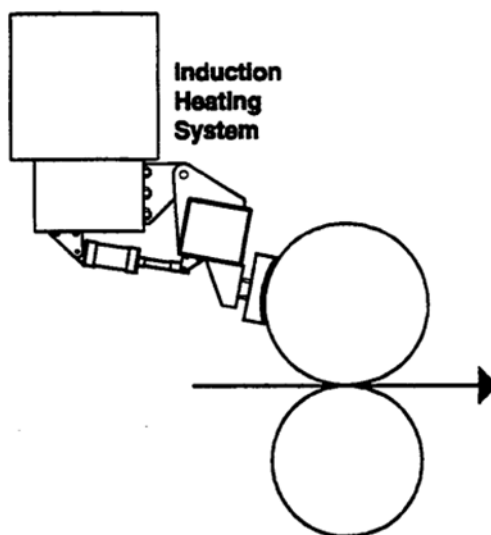


Figure 1: Typical single induction heating system application on a board machine with single nip calender

One of ordinary skill in the art would view this system as having one roll heated. *Zakaib* states that with external induction heating, it is advantageous to allow roll surface temperatures of up to 482°F. (*Id.*). Further, “Case-B” describes a single induction heating system installed on the top roll of a single nip pre-coated calender. (*Id.*, p. 60).

Further, Chapter 3 of Papermaking (Ex. 1005) is titled “Calender types”. Under the heading “Hard-nip calender” (section 3.1), it is stated that “hard-nip calenders are used for a variety of paper and board grades” (Ex. 1005, p. 35) and that “two-roll calenders are primarily used for calendering web that do not need heavy calendering: for pre-calendering before coating”. Under the heading “Hard-nip calender concepts” (section 3.1.2) it is then stated that “Almost all new hard-nip calenders are two-roll calenders. Most commonly, two-roll hard-nip calender is

composed of a heated cast-iron roll and a deflection compensated roll.” and that “The temperature gradient calender is a two-roll hard-nip calender with at least one of the rolls heated to high operating temperatures. ... High temperature produces better web surface quality , uniformity and smoothness and preserves bulk and strength properties. Heating up both nip rolls, however, is complicated because the other roll is a deflection-compensated roll.”(*Id.*, p. 38-39).

Hence one of ordinary skill in the art would find it obvious to only heat one of the rolls.

With respect to the nip load limitation (“ranging from about 20 pli to about 500 pli”), it is referred to section IV.A.2 and IV.B.2 (regarding claim 2) in the concurrent Petitioner’s Reply to the Patent Owner’s Response.

Proposed claim 25 further limits the nip load range to from about 20 pli to about ~~[[500]]~~ 90 pli.

Zotterman explains in his declaration that in his experience, 10-90 kN/m [57.1 – 513.9 pli] is common.” (Ex. 1009, ¶119). This is in line with the disclosure of prior art reference *Marley* (Ex. 1005, which was discussed during Klass’ deposition. Klass confirmed that Marley discloses a hot hard pre-calender in which the surface temperature of the heated roll is 300°C and the nip load is ranging from 10 N/mm [57.1 PLI] to 100 N/mm (Ex. 1012, p. 110 – 115).

The range in proposed claim 25 thus overlaps with the common range in the prior art and is therefore obvious.

Proposed claim 26 states that the elevated temperature of at least 480°F.

Proposed claim 27 states that the elevated temperature of at least 400°F.

With respect to these temperature limitations, Section 5.1.3 of *Papermaking* states that “Steam can be used up to 170°C [338°F] surface temperature. The hottest roll surface temperatures are reached with hot oil, which can reach over 220°C [428°F].” (Ex. 1005, p. 98.). Further, *Marley* (discussed above) shows that 300°C [572°F] was known in the art for pre-calendering before coating of paperboard. (Ex. 1015, p. 17).

In view of the above, substitute claims 24, 25, 26, and 27 are obvious over the prior art of Record.

V. CONCLUSION

Petitioner respectfully requests the Board deny WestRock’s contingent motion to amend.

Dated: September 11, 2024

Respectfully submitted,
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PROOF OF SERVICE OF THE PETITION

The undersigned certifies service pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(b) the undersigned hereby certifies that on September 11, 2024, a complete copy of the foregoing Opposition to Patent Owner's Motion to Amend was served in its entirety on Patent Owner's below-listed counsel of record via electronic mail at: Scott.Wofsy@lockelord.com.

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