

Commissioner's Decision #1458

Décision du commissaire #1458

TOPICS: B00 Ambiguity or Indefiniteness
 B22 Not supported by Disclosure
 F00 Novelty
 O00 Obviousness

SUJETS: B00 Caractère ambigu ou indéfini
 B22 Non appuyée par la divulgation
 F00 Nouveauté
 JO00 Évidence

Application No: 2,509,497

Demande no: 2 509 497

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,509,497 having been rejected under subsection 30(3) of the *Patent Rules* (SOR/96-423), has consequently been reviewed in accordance with paragraph 30(6)(c) of the *Patent Rules*. The recommendation of the Board and the decision of the Commissioner are that the application be amended and thereafter allowed.

Agent for the Applicant

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INTRODUCTION

- [1] This recommendation concerns the review of rejected Canadian patent application number 2,509,497, which is entitled “METHOD OF FABRICATING A BELT AND A BELT USED TO MAKE BULK TISSUE AND TOWEL, AND NONWOVEN ARTICLES AND FABRICS” and is owned by ALBANY INTERNATIONAL CORP. (“the Applicant”). A review of the rejected application has been conducted by the Patent Appeal Board (“the Board”) pursuant to paragraph 30(6)(c) of the *Patent Rules*. As explained in more detail below, our recommendation is that the Commissioner of Patents inform the Applicant that a specific amendment to the application is required for compliance with the *Patent Act* and *Patent Rules*.

BACKGROUND

The Application

- [2] Patent application 2,509,497 (“the instant application”) was filed in Canada on July 30, 2003 under the provisions of the *Patent Cooperation Treaty* and was laid open to the public on July 22, 2004.
- [3] The instant application relates to a method of manufacturing a belt for use in the production of bulk tissue and towel, such as facial tissue, bath tissue and paper towelling. Such belts are typically formed by coating a substrate with a predetermined pattern of resinous material, which pattern is then imprinted upon a partially formed paper web during the paper manufacturing process. The instant application proposes a new method of depositing the resinous coating on the substrate by means of droplet deposition, which is similar to the deposition method used in 3-D printing applications. The instant application also relates to the belt that is the product of the droplet deposition process.

Prosecution History

- [4] On June 25, 2015, a Final Action (“FA”) was written pursuant to subsection 30(4) of the *Patent Rules*. The FA stated that the instant application is defective on the grounds that, of claims 1-49 on file at the time of the FA (“claims on file”), claims 28-49, which are in the form of product-by-process claims, lacked novelty and are therefore non-compliant with paragraph 28.2(1)(b) of the *Patent Act*, would have been obvious and therefore non-compliant with section 28.3 of the *Patent Act*, and lacked clarity (were indefinite) and are therefore non-compliant with subsection 27(4) of the *Patent Act*. The FA also stated that claim 28 on file lacked support in the description and is therefore non-compliant with section 84 of the *Patent Rules*. The FA further stated that claims 1-27 on file, which are directed to the process of manufacture of the belt, are patentable.
- [5] In a December 15, 2015 response to the FA (“R-FA”), the Applicant proposed amendments to claim 28 on file to address the indefiniteness and lack of support defects. The Applicant also provided written submissions in support of the novelty and non-obviousness of claims 28-49 on file.
- [6] As the Examiner considered the application not to comply with the *Patent Act* and *Patent Rules*, pursuant to paragraph 30(6)(c) of the *Patent Rules*, the application was forwarded to the Board for review on February 1, 2016 along with an explanation outlined in a Summary of Reasons (“SOR”). The SOR set out the position that claims 28-49 on file were still considered to be defective due to a lack of novelty and obviousness, as well as lack of clarity (indefiniteness). The SOR indicated that the proposed amendments to claim 28 overcame the lack of support defect, but that the proposed claims did not overcome the other defects.
- [7] In a letter dated February 2, 2016, the Board forwarded to the Applicant a copy of the SOR and offered the Applicant the opportunity to make further submissions and/or attend an oral hearing.

- [8] In a letter dated May 2, 2016, the Applicant requested that an oral hearing be scheduled and provided written submissions in favor of the patentability of claims 28-49 on file and the claims proposed in the R-FA. The letter attached a statement sworn by Dr. David Rosen, Ph.D., before the European Patent Office with respect to a corresponding European patent application.
- [9] The present panel (“the Panel”) was formed to review the instant application under paragraph 30(6)(c) of the *Patent Rules*.
- [10] In a preliminary review letter (“PR letter”) dated September 15, 2017, the Panel set out its preliminary analysis of the issues with respect to claims 28-49 on file as well as the proposed claims submitted with the R-FA. The Panel indicated that only claims 28-49 were the subject of the present review, claims 1-27 having already been identified as being patentable.
- [11] The Panel’s preliminary analysis indicated that claims 28-49 on file lacked novelty and would have been obvious, but that they were not defective as lacking clarity (being indefinite). The analysis also indicated that claim 28 on file did not lack support in the description. The proposed claims submitted with the R-FA did not overcome the novelty or obviousness defects.
- [12] The Panel also proposed an oral hearing date and time and offered the Applicant the opportunity to make further written submissions in advance of the oral hearing.
- [13] Written submissions in response to the PR letter (“R-PR”) were provided on November 2, 2017 by the Applicant in advance of the oral hearing. The Applicant disagreed with the Panel’s preliminary views as to the lack of novelty and obviousness of claims 28-49 on file, but provided proposed claims 28-49 (“second set of proposed claims”), as well as arguments in favor of the patentability of the claims. The Applicant also re-submitted the sworn statement of Dr. Rosen.

[14] An oral hearing was held on November 16, 2017.

[15] In light of questions posed by the Panel during the oral hearing, the Applicant's patent agent requested additional time in order to consult with the Applicant and make further submissions to address the Panel's questions.

[16] Post-hearing written supplemental submissions addressing the Panel's questions ("Post-hearing submissions") were received on December 15, 2017.

ISSUES

[17] The issues to be resolved by the present review are whether:

- Claims 28-49 lack novelty;
- Claims 28-49 would have been obvious;
- Claims 28-49 lack clarity (are indefinite); and
- Claim 28 lacks support in the description.

[18] If the claims on file are considered defective, we may turn to the second set of proposed claims 28-49 and consider whether they constitute amendments necessary for compliance with the Act and Rules.

LEGAL PRINCIPLES AND OFFICE PRACTICE

Claim Construction

[19] In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66, essential elements are identified through a purposive construction of the claims done by considering the whole of the disclosure, including the specification and drawings (see also *Whirlpool Corp v Camco Inc*, 2000 SCC 67 at paragraphs 49(f) and (g) and 52). In accordance with the *Manual of Patent Office Practice*, §13.05 (revised June 2015), the first step of purposive

claim construction is to identify the person skilled in the art and their relevant common general knowledge (“CGK”). The next step is to identify the problem addressed by the inventors and the solution put forth in the application. Essential elements can then be identified as those required to achieve the disclosed solution as claimed.

Novelty

- [20] Paragraph 28.2(1)(b) of the *Patent Act* sets out the requirement that the subject-matter of a claim must not have been disclosed by a third party before the claim date:

28.2 (1) The subject-matter defined by a claim in an application for a patent in Canada (the “pending application”) must not have been disclosed

...

(b) before the claim date by a person not mentioned in paragraph (a) in such a manner that the subject-matter became available to the public in Canada or elsewhere.

- [21] There are two separate requirements in order to show that a prior art document anticipates a claimed invention: a prior disclosure of the claimed subject-matter and the prior disclosure must enable the claimed subject-matter to be practised by a person skilled in the art (*Apotex Inc v Sanofi Synthelabo Canada Inc*, 2008 SCC 61 [*Sanofi*] at paragraphs 24-29).

- [22] “Prior disclosure” means that the prior art must disclose subject-matter which, if performed, would necessarily result in infringement of the patent. The person skilled in the art looking at the disclosure is “taken to be trying to understand what the author of the description [in the prior patent] meant” (*Sanofi* at paragraph 32). At this stage, there is no room for trial and error or experimentation by the skilled person. The prior art is simply read “for the purposes of understanding it”: *Sanofi* at paragraph 25, citing *Synthon B.V. v SmithKline Beecham plc*, [2006] 1 All ER 685, [2005] UKHL 59.

- [23] “Enablement” means that the person skilled in the art would have been able to perform the invention without undue burden. The person skilled in the art is assumed to be willing to make trial and error experiments to get it to work: *Sanofi*, at paragraphs 26-27.
- [24] With respect to a product claimed in terms of the process by which it is produced (a product-by-process claim), in accordance with *Hoffman-LaRoche Ltd v Canada (Commissioner of Patents)* (1955), 23 CPR 1 at 3 (SCC) (“*Hoffman-LaRoche*”), a product, which is itself known, may not be made patentable by its dependence on a patentable process. It must be considered whether the product claimed is patentable, regardless of how it was made. The Federal Court has indicated that this is a question of validity, not claims construction (*Bayer Inc v Cobalt Pharmaceuticals Co*, 2013 FC 573 at paragraph 21).

Obviousness

- [25] The *Patent Act* requires that the subject matter of a claim not be obvious to a person skilled in the art. Section 28.3 of the *Patent Act* provides:

28.3 The subject matter defined by a claim in an application for a patent in Canada must be subject matter that would not have been obvious on the claim date to a person skilled in the art or science to which it pertains, having regard to

- (a) information disclosed more than one year before the filing date by the applicant, or by a person who obtained knowledge, directly or indirectly, from the applicant in such a manner that the information became available to the public in Canada or elsewhere; and
- (b) information disclosed before the claim date by a person not mentioned in paragraph (a) in such a manner that the information became available to the public in Canada or elsewhere.

- [26] In *Sanofi* at paragraph 67, the Supreme Court of Canada stated that it is useful in an obviousness inquiry to use the following four-step approach:

- (1) (a) Identify the notional "person skilled in the art";
- (b) Identify the relevant common general knowledge of that person;
- (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
- (3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;
- (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

[27] In a product-by-process claim, the product itself must also be non-obvious, independent of the process by which it is produced (*Hoffman-LaRoche, supra*).

Lack of Clarity (Indefiniteness)

[28] Subsection 27(4) of the *Patent Act* states:

(4) The specification must end with a claim or claims defining distinctly and in explicit terms the subject-matter of the invention for which an exclusive privilege or property is claimed.

[29] In *Minerals Separation North American Corp v Noranda Mines Ltd*, [1947] Ex CR 306, 12 CPR 99 at 146, the Court emphasized the obligation of an applicant to make clear in the claims the ambit of the monopoly sought and the requirement that the terms used in the claims be clear and precise:

By his claims the inventor puts fences around the fields of his monopoly and warns the public against trespassing on his property. His fences must be clearly placed in order to give the necessary warning and he must not fence in any property that is not his own. The terms of a claim must be free from avoidable ambiguity or obscurity and must not be flexible; they must be clear and precise so that the public will be able to know not only where it must not trespass but also where it may safely go.

Lack of Support

[30] Section 84 of the *Patent Rules* states that "The claims shall be clear and concise and shall be fully supported by the description independently of any document referred to in the description." The courts have provided little judicial interpretation of section 84 of the *Patent Rules* or any of its predecessor equivalents.

ANALYSIS

Claim Construction

The person skilled in the art

[31] In the PR letter, the person skilled in the art was characterized as being:

a person skilled in the art of bulk paper manufacturing of nonwoven articles and fabrics, particularly the manufacture of bulk tissue and paper towels.

[32] The Applicant has not disputed the above characterization in any subsequent communications and we therefore adopt it for the purposes of our analyses.

The relevant common general knowledge

[33] In the PR letter, the relevant CGK was set out as including:

- Knowledge of traditional methods of manufacturing disposable paper products such as facial tissue, bath tissue and paper toweling
- Knowledge of the basic steps of such methods, such as:
 - Formation of an embryonic paper web in a forming section;
 - Transfer of the web to a through-air-drying ("TAD") fabric by an air flow;
 - Drying by means of heated air through the TAD fabric;
 - Passage of the dried fabric through a Yankee dryer;
 - Subsequent removal from the Yankee dryer by means of a doctor blade with foreshortening of the web to increase its bulk; and

- Winding of the web onto rolls for subsequent packaging and shipment.
- Knowledge of commonly known variability in the above-described process
- Knowledge of the use of TAD fabric that was historically woven from monofilament yarns in wave patterns creating knuckles at the yarn crossover points
- Knowledge of the use of knuckles to imprint and densify the portions of a paper web impacted by them
- Knowledge of how to enhance densification by abrading or sanding the paper contacting sections of a TAD fabric to provide knuckles with flat surfaces, which increases the contact area between the paper web and a Yankee dryer
- Knowledge of prior attempts to improve upon the above processes that focussed primarily on particular weave patterns of the TAD fabric
- Knowledge of development through the 1980's of TAD belts comprising a woven base fabric with a polymeric material in preselected areas creating a macroscopically non-planer patterned continuous network surface. The patterned coating was produced by coating a foraminous woven element with a liquid photosensitive resin that was covered with a mask of a defined pattern. The resin was then exposed to radiation which causes the resin exposed through the mask to cure, while other portions do not. The uncured resin is then removed by washing. Such TAD belts can also be used to produce discrete (non-continuous) and semi-continuous networks of polymeric resin material.

[34] The Applicant has not disputed the above in any subsequent communications and we therefore adopt it for the purposes of our analyses.

[35] As noted in the PR letter, in the present case, there are no issues on the record of any debate as to the meaning of any terms in the claims, nor does the Panel see any issues in that regard. With respect to the determination of essential/non-essential elements, we stated in the PR letter that:

[c]onsidering all of the claimed features of the product itself, independent of the process by which it is made, as we have below in assessing the validity of the claims under novelty and obviousness in accordance with *Hoffman-LaRoche, supra*, we are of the preliminary opinion that they lack novelty and would have been obvious in view of the prior art. We have therefore not undertaken a construction of the claims, as the outcome is not affected by the omission of any non-essential elements.

[36] Likewise, below we have concluded that even considering all the claimed features of the product, claims 28-49 lack novelty and would have been obvious. We therefore have not

undertaken an assessment of which elements are essential, since the outcome would not be affected by the omission of any non-essential elements.

Novelty

[37] In the PR letter we identified the following prior art documents that were applied in the FA and by the Panel in assessing the novelty of claims 28-49 on file:

D1:	US6358594B1 Ampulski	Published: March 19, 2002
D2:	US6099781A Ampulski	Published: August 8, 2000
D3:	US4514345A Johnson et al.	Published: April 30, 1985
D4:	US6117270A Trokhan	Published: September 12, 2000

[38] Claim 28 on file was taken as representative of the claimed subject-matter and is set out below:

28. A belt for use in the production of bulk tissue and towel, and of nonwoven articles and fabrics, said belt comprising:

a base substrate; characterized in that an x, y and z dimensionally controlled pattern of polymeric resin material deposits, said deposits comprising a plurality of droplets of polymeric resin material wherein said belt is made in a manner comprising the steps of:

- a) providing a base substrate for the belt;
- b) depositing polymeric resin material onto said base substrate in the form of droplets having a nominal diameter of 10 μ (10 microns) to 100 μ (100 microns) so as to control the x, y, z dimensions of the material deposited to create a predetermined pattern of deposits within and on said base substrate, wherein each deposit comprises a plurality of droplets of polymeric resin material, and wherein said plurality of droplets from said deposits with controlled geometries in said x, y, z dimensions; and
- c) at least partially setting said polymeric resin material.

[39] In accordance with *Hoffmann-LaRoche*, the product in this case, a belt, must be novel and is not rendered novel simply by defining it in terms of the novel process used for its production. The belt itself, considered in terms of its structural features, must be assessed against those known in the prior art. In the PR letter, we identified the following structural features of claim 28 on file that must be considered in view of the prior art in assessing novelty:

- A belt for use in the production of bulk tissue and towel, and of nonwoven articles and fabrics, said belt comprising:
 - A base substrate
 - A polymeric resin material which has been formed on the base substrate in a predetermined x, y and z dimensionally controlled pattern.

[40] In essence, the belt produced comprises a predetermined continuous pattern of polymeric resin material formed on a base substrate.

[41] In the R-FA, the R-PR and at the hearing, the Applicant focussed on the feature that the deposits are formed by the deposit of droplets having a nominal diameter of 10 μ to 100 μ , as specified in the claims, and that the fact that the deposits are formed by such droplets means that the structure formed is distinguishable from the prior art.

[42] However, it is not evident to the Panel how the final structure would actually differ based on the process of droplet deposition. In accordance with *Hoffman-LaRoche*, the product itself must be distinguishable from the prior art independent of the process by which it is formed. In our view, for the assessment of novelty, the process steps are relevant to the novelty of the product in as much as they impart distinguishing structural features to the product. It is our view that upon completion of the droplet deposition process, the structure would not be distinguishable given that the process will result in a continuous structure, absent any evident droplet form, as was the case with the CGK belt formation methods discussed above.

[43] At the hearing the Applicant presented examples of prior art products that resulted from prior art 3-D printing methods. However, the Applicant was unable to provide an example of a product produced by its method for comparison, either at the hearing or as part of the Post-hearing submissions.

- [44] In light of the above, it is our view that, although the droplet size used in the belt fabrication process may be a feature that distinguishes the process over those already known, it is not a feature that serves to distinguish the belt itself from those of the prior art.

Novelty in view of D1

- [45] In the PR letter, we indicated that it was our preliminary view that claims 28-49 are novel in view of prior art document D1, stating:

The belt disclosed by D1 is formed by an extruded resinous bead of material and as the Applicant points out above, when these beads cross-over each other to form patterns such as those shown in Figure 10 of D1 the beads form “super-knuckles” 160 (see for example Figure 13 of D1). In our preliminary view, in such an embodiment there is a clear structural distinction between the two extruded beads and therefore a structural distinction between such an embodiment and claim 28 on file, where a pattern would have been formed by the claimed droplet deposition method with no discernable distinction between any resin levels over the pattern cross-section.

We note that claims 28-49 do not specify any specific pattern and that prior art document D1 discloses both continuous and semi-continuous patterns formed by the extrusion method. Without cross-over points it is not clear that these patterns would be distinguishable from an equivalent pattern formed using the droplet deposition method of the instant application. However, we have taken note of the statement of Dr. David Rosen, Ph.D, sworn before the European Patent Office and submitted with the R-SOR.

Dr. Rosen states that a belt formed by droplet deposition produces a smoother surface with fewer irregularities in comparison with one produced with extruded beads. In light of this statement, it is our preliminary view that the person skilled in the art would perceive a structural difference between patterns formed by droplet deposition and those formed by extrusion such in D1. Therefore it is our preliminary view that the product of claim 28 is not disclosed by prior art document D1 and is therefore not anticipated by this reference. Likewise, claims 29-49, which depend directly or indirectly on claim 28, are also not anticipated.

- [46] The Applicant acknowledged this assessment in the R-PR.

- [47] In light of the above, we conclude that claims 28-49 on file are novel in view of prior art document D1.

Novelty in view of D2

[48] In the PR letter, we indicated that it was our preliminary view that claims 28-49 lack novelty in view of prior art document D2, stating:

The Applicant's submissions focussed on the method by which the belt of claim 28 was formed as distinguishing over prior art document D2. D2 discloses a belt with a patterned polymeric resin, the pattern formed by applying a layer of flowable fluid resinous material to reinforcing structure 40. A molding member 70 applied against the layer of resin is then used to form a predetermined pattern in the fluid resin, where "[v]irtually an unlimited number of shapes and their permutations of the molding pockets 72 having differential depths may be used in the present invention" (see col. 14, lines 24-26). Unlike prior art document D1, the process of D2 uses no overlapping beads of extruded material and in our view, would therefore not form embodiments with any evident distinguishing layers of resin at joints between pattern voids. D2 also discloses the use of flowable photosensitive resins to form such patterns, which are cured using photosensitive masks and would also form a continuous resin structure with no evident bead layers.

With respect to the statement of Dr. Rosen as to the different surface texture produced by droplet deposition in comparison with extrusion, this statement is not applicable to prior art document D2, which does not use an extrusion method. It is therefore our preliminary view that the person skilled in the art would not perceive a difference in the belt structures produced by D2 compared with the product of claim 28.

We note that the FA omitted claims 40 and 42 from the list of claims that are anticipated by D2. In our preliminary view, claim 40, which claims two separate deposits of different polymeric material cannot distinguish over D2 as this implies a structural separation between the materials, which is part of the prior art. Further, it is evident that D2 discloses the formation of three-dimensional structures on the molded polymeric resin layer.

We further note that the Applicant has not asserted any specific features of the dependent claims that would distinguish the claims over D2.

With respect to enablement, in our preliminary view, D2 sufficiently discloses the process of forming the belts such that a person skilled in the art can produce them.

[49] In the R-PR, the Applicant asserted that:

D2 discloses a belt with a pattern formed by depositing resin through a patterned molding surface that is similar to a stencil. The ability to control the physical dimensions of D2's resinous material is limited by this stencil

system that is used to deposit resin onto the belt. In other words, D2 does not disclose and one of skill in the art would recognize that the process of D2 could not result in the formation of a belt with a predetermined pattern of deposits within and/or on said base substrate, wherein each deposit comprises a plurality of droplets formed on said base substrate, and wherein each droplet is in a shape of a drop and has a nominal diameter of 10 μ (10 microns) to 100 μ (100 microns).

- [50] As noted earlier, the fact that the belt is formed by the deposit of drops of a certain size does not distinguish the final product from the products produced by prior art fabrication methods.
- [51] Although the Applicant contends that the person skilled in the art would recognize that the claimed belt could not result from the process disclosed in D2, there is no evidence on the record to support this contention. The sworn statement of Dr. Rosen only relates to a comparison of the claimed belt with prior art extrusion methods, not the molding process of D2.
- [52] At the hearing, the Applicant asserted that in general, in comparison to prior art belt fabrication methods, the droplet deposition process of the instant application produces more consistent, predictable surface textures with a reduced likelihood of inconsistencies between belts. However, the Applicant was not able to produce any examples or other supporting evidence to substantiate the assertion. The Applicant did provide, with the Post-hearing submissions, images depicting the droplet deposition process and associated resin “dots” and continuous lines formed on a woven fabric substrate. However, in our view it is unclear how these final structures can be distinguished from those produced by prior art methods.
- [53] The Applicant also provided at the hearing a copy of a research paper previously submitted as part of a voluntary submission of prior art on July 15, 2008, namely, W.W. Carr et al., “*Textile ink jet: drop formation and surface interaction*”, National Textile Center Annual Report, November 2005. While the paper provides some general background information on textile droplet deposition and issues related to it, it is of no assistance in assessing the claims of the instant application against the prior art.

[54] At the hearing, the Panel inquired as to whether the Applicant had invented any special apparatus that was required to perform the process set out in the claims. If so, this may have pointed to a conclusion that the process of the instant application was not before possible or enabled, and that therefore the product itself could not lack novelty. The Applicant, in the Post-hearing submissions, confirmed that it had not obtained any patent protection on the equipment setup used to carry out the claimed process. This leads us to conclude that the prior art does indeed enable the skilled person to produce a belt having the features claimed.

[55] In light of the above considerations, we conclude that claims 28-49 on file lack novelty in view of prior art document D2 and are therefore non-compliant with paragraph 28.2(1)(b) of the *Patent Act*.

Novelty in view of D3 or D4

[56] We indicated in the PR letter that it was our preliminary view that claims 28-49 on file lack novelty in view of either of prior art documents D3 or D4, stating:

Both D3 and D4 disclose the preparation of a belt used in the production of a paper web, as in D1 and D2. Both disclose the creation of a polymeric resin pattern on a foraminous member by means of a photosensitive resin, as disclosed in D2. Both disclose the formation of various pattern arrangements by means of the use of photosensitive resin, including D4, which discloses the formation of various complicated patterns produced by such a method (see Figures 1-14 of D4). As is the case with D2, the use of the methods disclosed in D3 and D4 would, in our view, and as stated in the FA at pages 3-4, produce a belt with a polymeric resin patterned coating with no evident layers across its cross-section, as would also be produced by the droplet deposition method of the instant application.

With respect to D3 the FA omitted claims 34, 40 and 42 as being anticipated by D3. In our preliminary view, for the reasons given above with respect to D2, claims 40 and 42 would also be anticipated. With respect to claim 34 on file, in our preliminary view D3 discloses a variety of patterns and would direct the skilled person towards a semicontinuous pattern as one of that variety.

With respect to D4 the FA omitted claims 39-41 and 48-49 as being anticipated by D4. In our preliminary view, the use of polymeric photosensitive resin as

disclosed in D4 is encompassed by the list of polymeric resin materials of claim 39, which includes photopolymer compositions. Claim 40 is in our preliminary view anticipated by D4 for the same reasons given above with respect to D2. Claim 41 specifies a monoplaner surface that is also anticipated by D4, which discloses many variations on surface arrangements for the polymeric coating (see col.7, line 34 to col. 9, line25). Claims 48 and 49 relate to the yarns used to produce the base substrate. D4 discloses that “[t]he reinforcing element 14 is typically woven, as is well known in the art” (see col. 4, lines 56-57) and incorporates by reference other patent documents for the manner of constructing a typical reinforcing element (i.e., base substrate). What was “well known in the art” is understood as including the CGK set out above under Claim Construction, and therefore D4 inherently discloses the use of the claimed yarns.

With respect to the statement of Dr. Rosen as to the different surface texture produced by droplet deposition in comparison with extrusion, this statement is not applicable to prior art documents D3 and D4, which does not use an extrusion method. It is therefore our preliminary view that the person skilled in the art would not perceive a difference in the belt structures produced by D3 and D4 compared with the product of claim 28.

We note that the Applicant has not asserted any specific features of the dependent claims that would distinguish the claims over D3 or D4.

With respect to enablement, in our preliminary view, D3 and D4 sufficiently disclose the process of forming the belts such that a person skilled in the art can produce them.

[57] The Applicant’s submissions in the R-PR and at the hearing with respect to the applicability of prior art documents D3 and D4 are very similar to those with respect to D1 and D2, the Applicant contending that the belt of the claims on file could not have been formed by the processes disclosed in D3 and D4. The other considerations discussed above in relation to D2 (at paragraphs [49] to [53]) were equally asserted in relation to D3 and D4.

[58] Having already considered the Applicant’s submissions in the context of prior art document D2, which apply equally to D3 and D4, it is our conclusion that claims 28-49 on file also lack novelty in view of either of prior art documents D3 and D4 and therefore are non-compliant with paragraph 28.2(1)(b) of the *Patent Act*.

Conclusions on Novelty of Claims 28-49 on file

[59] In summary, we conclude that:

- Claims 28-49 on file are novel in view of prior art document D1; and
- Claims 28-49 on file lack novelty in view of any of prior art documents D2, D3 or D4.

Obviousness

(1)(a) Identify the notional “person skilled in the art”

[60] The person skilled in the art has been set out above under Claim Construction at paragraph [31].

(1)(b) Identify the relevant common general knowledge of that person

[61] The relevant CGK has been identified above under Claim Construction at paragraph [33].

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it

[62] In the PR letter, the Panel agreed with the inventive concept of claim 28 on file as stated in the FA:

[w]e agree with the inventive concept of claim 28 on file as identified in the FA as “a papermaking fabric [i.e., belt] comprising a base substrate and deposits of polymeric resin material.” We would add that the resin is deposited in a predetermined x, y and z dimensionally controlled pattern.

[63] The Applicant did not directly dispute the above inventive concept, however, as noted above in the assessment of novelty, the Applicant asserted that the fact that the belt is formed by the deposition of droplets of a given size should be taken into account in comparing the claims with the prior art. For the same reasons indicated under Novelty, the

process by which the belt is produced is taken into account, but only to the extent that it produces a distinguishable final product.

[64] We therefore take the inventive concept of representative claim 28 on file to be that identified in the PR letter.

(3) Identify what if any differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed

Differences with respect to D1

[65] In the PR letter, with respect to prior art document D1, we stated that:

In light of our analysis of novelty above, the inventive concept of claim 28 differs from prior art document D1 in that the product of claim 28 has a smoother surface with fewer irregularities.

[66] The above difference was not disputed by the Applicant.

Differences with respect to D2-D4

[67] In the PR letter, with respect to prior art documents D2-D4, we stated:

Taking into account the submissions by the Applicant in the R-SOR, particularly those in relation to the statement of David Rosen, Ph.D. sworn before the European Patent Office, our assessment of novelty, above, indicates that no differences exist between the claimed-subject matter and the disclosures of each of prior art documents D2-D4. We will nonetheless assess, as a question of obviousness, possible qualitative differences in the surfaces of the cured polymeric resins between the prior art products and those claimed.

[68] We conclude, based on the novelty assessment above, that the same result applies here. As such, for the sake of completeness, we will assess below any possible differences between the product of the claims on file and those of prior art documents D2-D4.

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

Obviousness in view of D1

[69] In the PR letter, we set out our preliminary view that claims 28-49 would have been obvious in view of the optional finishing steps of belt fabrication disclosed in D1:

It is our preliminary view that the belt of claims 28 with a smoother surface and fewer irregularities would have been obvious to the person skilled in the art in view of D1.

Though prior art document D1 discloses the formation of a papermaking belt using an extruded bead of material, this document also contemplates finishing steps such as sanding (see col. 18, lines 43-47 of D1). In our preliminary view, it would have been obvious to the person skilled in the art that such steps would have provided for a belt with a smoother surface and fewer irregularities, depending on the requirements of the user with respect to belt finish and the corresponding final paper product.

As the Applicant has not asserted any specific features of the dependent claims that would distinguish the claims over D1, we are also of the preliminary view that these claims would have been obvious in view of D1 as well.

[70] In the R-PR, the Applicant contended that the extrusion process disclosed in D1 lacked the ability to precisely control the physical dimensions of the resulting beads of polymeric resinous material and that the droplet deposition process produced “smoother surfaces, and more accurate features”, also pointing to the statement by Dr. Rosen that such extrusion processes “will not form a microscopically smooth surface.”

[71] As discussed at the hearing, it may not always be desirable to produce a microscopically smooth surface for the belt surface. In our view, the person skilled in the art would appreciate that the surface texture desired will depend on the paper product that is to be produced with the belt.

[72] As noted in the PR letter, quoted above, D1 discloses finishing steps such as sanding, which would produce a smoother surface, depending on the desired surface texture. In the R-PR, the Applicant contended that “sanding (or finishing by any other known means) a product by any one of the distinguishable methods disclosed in the teachings [of] D1 to D4 will still not produce a papermaking belt that is comprised of a plurality of droplets formed on a base substrate.” As we have already stated, in our view the finished belt product does not possess a structure formed of droplets where a droplet structure is identifiable after formation of the belt. Therefore it would have been obvious to the skilled person, depending on the desired belt surface texture, to use a finishing step such as sanding to achieve such texture, which would produce a belt with the structural features of claim 28 on file.

[73] We further note that dependent claim 46 on file also contemplates a finishing step such as that of the prior art by specifying an abrading step for the belt produced in claim 28, which step provides “a smooth, macroscopically monoplanar surface.”

[74] We therefore conclude that claims 28-49 would have been obvious in view of prior art document D1 and are therefore non-compliant with section 28.3 of the *Patent Act*.

Obviousness in view of D2-D4

[75] In the PR letter, we set out our preliminary view that claims 29-49 on file would have been obvious, stating that:

In our preliminary view, in light of any of the prior art documents D2-D4, the product of claims 28-49 on file, independent of the method by which it is produced, would have been obvious to the person skilled in the art. In his statement Dr. Rosen submits that a belt formed by droplet deposition produces a smoother surface with fewer irregularities in comparison with one produced with extruded beads. Although his submission in that respect does not seem to be applicable to the belts produced by the non-extruded methods of prior art documents D2-D4, even if there were potential differences with respect to the surface texture between the belts of prior art documents D2-D4 and that of claims 28-49, in our view, the person skilled in the art would view the production of a belt which differed only in quality of workmanship as obvious.

The surface texture of a belt produced by the prior art methods would vary as well and in our view the skilled person would have been well aware that depending on the control parameters of the production methods of prior art documents D2-D4 a smoother or less smooth surface would be produced.

[76] The Applicant did not make any submission in relation to obviousness in respect of prior art documents D2-D4 that are different from those already considered above in relation to novelty or obviousness in relation to prior art document D1.

[77] We therefore conclude that claims 28-49 would have been obvious in view of any of prior art documents D2 to D4 and are therefore non-compliant with section 28.3 of the *Patent Act*.

Conclusions on Obviousness of Claims on File

[78] Having considered the record before us including the Applicant's submissions in the R-PR, at the hearing and in the Post-hearing submissions, we conclude that claims 28-49 on file would have been obvious and therefore non-compliant with section 28.3 of the *Patent Act*.

Lack of Clarity

[79] In the PR letter, we set out our preliminary opinion that contrary to the position taken in the FA, it was our view that claims 28-49 are clear and compliant with subsection 27(4) of the *Patent Act*:

There is nothing inherently incorrect in attempting to claim a product in terms of the process by which it is made (see *Manual of Patent Office Practice*, §11.08.01 (rev'd January 28, 2016), however the product itself must be defined explicitly and be distinguished from all other products as being new, independent of the process by which it is produced (*Hoffman-LaRoche, supra*). In the present case, we see nothing unclear in the manner in which the product of claims 28-49 is claimed. However, as set about above, without the process limitations it is our preliminary view that the product itself was known and/or would have been obvious.

[80] The Applicant made no submission in respect of the above.

[81] We therefore conclude that claims 28-49 on file are clear and therefore compliant with subsection 27(4) of the *Patent Act*.

Lack of Support

[82] In the PR letter, we set out our preliminary opinion that contrary to the position taken in the FA, it was our view that claim 28 is supported by the description and therefore compliant with section 84 of the *Patent Rules*:

The FA also contended that claim 28 on file was not fully supported by the description and was therefore non-compliant with section 84 of the *Patent Rules* because it referred to “said deposits comprising a plurality of droplets of polymeric resin material.” The FA contended that once the droplets were deposited, there was no longer a “droplet” per se, since it is thereafter incorporated into the continuous polymeric coating as part of the droplet deposition process. In our preliminary view, the passage referred to in the FA from claim 28 on file is supported by the description in that the deposits are comprised of droplets of polymeric resin material, even though the droplets once deposited can no longer be distinguished from one another.

[83] The Applicant made no submission in respect of the above.

[84] We therefore conclude that claim 28 is supported by the description and therefore compliant with section 84 of the *Patent Rules*.

Proposed Claims

[85] In the R-PR, the Applicant submitted a second set of proposed claims 28-49 for the Panel’s consideration. These claims differ from the claims on file in that they are written in product *per se* form, with the process steps of the claims on file having been removed. This modification has not however altered the structural features of the final product that must be considered in assessing the novelty and obviousness of the proposed claims. The Applicant makes the same points in relation to the second set of proposed claims as have been made in respect of the claims on file, e.g., that the product of the proposed claims is

distinguishable by the fact that it is formed by the deposit of droplets of resin of a specific size range.

[86] Since the second set of proposed claims specify no additional structural features of the final fabricated belt that would distinguish it from those produced by the prior art processes, the second set of proposed claims 28-49 do not overcome the lack of novelty and obviousness defects of the claims on file.

[87] In light of the above, we conclude that the second set of proposed claims 28-49 would not overcome the lack of novelty and obviousness defects and therefore the introduction of these claims does not constitute a specific amendment that is “necessary” pursuant to subsection 30(6.3) of the *Patent Rules*.

CONCLUSIONS

[88] We have determined that claims 28-49 on file:

- Lack novelty and are therefore non-compliant with paragraph 28.2(1)(b) of the *Patent Act*;
- Would have been obvious and are therefore non-compliant with section 28.3 of the *Patent Act*; and
- Are clear and therefore compliant with subsection 27(4) of the *Patent Act*.

[89] We have also determined that claim 28 on file is supported by the description and therefore compliant with section 84 of the *Patent Rules*.

[90] We have further determined that the second set of proposed claims 28-49 would not overcome the lack of novelty and obviousness defects and therefore the introduction of these claims does not constitute a specific amendment that is “necessary” pursuant to subsection 30(6.3) of the *Patent Rules*.

[91] In light of the above, we are of the view that only claims 1-27 on file are compliant with the *Patent Act* and *Patent Rules* and may be granted with the application.

RECOMMENDATION OF THE BOARD

[92] In view of the above, the Panel recommends that the Applicant be notified, in accordance with subsection 30(6.3) of the *Patent Rules*, that a specific amendment is “necessary” for compliance with the *Patent Act* and *Patent Rules*, namely:

- The deletion of claims 28-49 on file from the application.

Stephen MacNeil
Member

Marcel Brisebois
Member

Ed MacLaurin
Member

DECISION

[93] I concur with the conclusions and recommendation of the Patent Appeal Board. In accordance with subsection 30(6.3) of the *Patent Rules*, I hereby notify the Applicant that the following amendment, and only this amendment, must be made in accordance with paragraph 31(b) of the *Patent Rules* within three (3) months of the date of this decision, failing which I intend to refuse the application:

- The deletion of claims 28-49 on file from the application.

Johanne Bélisle
Commissioner of Patents

Dated at Gatineau, Quebec,
this 30th day of July, 2018