Commissioner’s Decision #1441

Décision du commissaire #1441

TOPICS: O00 Obviousness

B22 Not Supported by Disclosure

SUJETS: O00 Évidence

B22 Non appuyée par la divulgation

Application No: 2,754,149

Demande no: 2 754 149

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,754,149, 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 to refuse the application.

Agent for the Applicant

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INTRODUCTION

[1] This recommendation concerns the review of rejected Canadian patent application number 2,754,149, which is entitled "OPTICAL SPLITTER MODULE FOR FIBER OPTIC LOCAL CONVERGENCE POINTS, WITH IMPROVED SPLICE DENSITY" and is owned by Corning Cable Systems LLC. ("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 refuse the application.

[2] This recommendation and Commissioner's Decision are being released concurrently with the recommendation and Commissioner's Decision for Canadian patent application number 2,679,996, which is the parent application of the instant application.

BACKGROUND

The Application

[3] Patent application 2,754,149 ("the instant application") was filed in Canada on March 10, 2008 and was laid open to the public on September 18, 2008.

[4] The instant application relates to optical fiber splitter modules that are used in Local Convergence Points ("LCPs") found in Multiple Dwelling Units ("MDUs") such as office buildings and condominium complexes. The LCPs act as a distribution point where a signal supplied from a distribution cable of a service provider supplying access to a network is split into multiple signals by means of a splitter module inside the LCP. The LCP is basically a box containing the splitter module and optical fibers. By means of the splitter module, the distribution cable is split into multiple cables that carry the signal to service subscribers found in each dwelling of a MDU.

[5] The instant application focuses on the splitter module inside the LCP. In the instant application, "bend performance optical fibers" are used which are capable of being bent to a smaller radius than other prior art optical fibers, while avoiding a significant loss in signal quality as a result of the bending. Due to their capabilities, these bend performance optical fibers can be accommodated in a smaller space, thus the size of the module can be reduced and the number of fibers that can be accommodated within the module can be increased.

[6] More particularly, the instant application focuses on the increase in the number of fibers within a given space (i.e., split density) that would result from using bend performance optical fibers.

Prosecution History

[7] On November 15, 2013, 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 the claims pending at the time of the FA would have been obvious and therefore non-compliant with section 28.3 of the *Patent Act* and that these claims are not fully supported by the description and therefore non-compliant with section 84 of the *Patent Rules*.

[8] In a May 14, 2014 response to the FA ("R-FA"), the Applicant submitted the claims on file ("amended claims"), arguments in favor of non-obviousness as well as arguments in favor of support for the claimed invention. The Applicant also contended that the issuance of the FA was premature.

[9] 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 May 22, 2015 along with an explanation outlined in a Summary of Reasons ("SOR").

[10] The SOR indicated that the amended claims submitted in the R-FA were "proposed" and that such an amendment shall be considered not to have been made because the rejection has not been withdrawn by the Examiner, in accordance with paragraph 30(6)(*b*) of the *Patent Rules*. However, as the Panel clarified in the preliminary review letter dated December 9, 2016 ("PR letter"), because the FA was issued prior to the coming-into-force date of the *Rules Amending the Patent Rules*, SOR 2013-212, pursuant to section 10 of the *Rules Amending the Patent Rules*, present paragraph 30(6)(*b*) of the *Patent Rules* does not apply to the instant application and as such the amendments submitted with the R-FA are considered to have been made. Therefore, the amended claims submitted with the R-FA are the "claims on file" that are subject to the present review.

[11] The SOR set out the position that the amended claims (now the claims on file) were defective due to both obviousness and lack of support.

[12] In a letter dated July 27, 2015, 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.

[13] The present panel ("the Panel") was formed to review the instant application under paragraph 30(6)(*c*) of the *Patent Rules*.

[14] In a written communication dated October 27, 2015, the Applicant requested that an oral hearing be scheduled.

[15] In the PR letter, the Panel set out its preliminary analysis of the issues of obviousness and lack of support. With respect to lack of support, the Panel indicated that, in our preliminary view, the claims on file are supported by the description. The Panel also addressed the procedural issue raised by the Applicant relating to the issuance of the FA.

[16] Due to the close relationship between the instant application and the parent application number 2,679,996, the Panel (common to the reviews of both applications) proposed in the PR letter a single oral hearing that would address both reviews.

[17] After an extension of time was granted to make submissions and attend an oral hearing, the Applicant provided written submissions on February 16, 2017 addressing the preliminary analysis of the Panel in the PR letter ("R-PR").

[18] An oral hearing was held on April 27, 2017.

ISSUES

[19] The substantive issues to be resolved are whether:

- Claims 1-12 on file would have been obvious; and
- Claims 1-12 on file are fully supported by the description.

[20] Before assessing the substantive issues, we assess the procedural issue raised by the Applicant in its R-FA, which is whether the issuance of the FA was premature or not.

LEGAL PRINCIPLES AND OFFICE PRACTICE

Procedural Issue: Issuance of a Final Action

[21] Subsection 30(3) of the *Patent Rules* sets out the conditions under which an examiner may reject a patent application:

> **(3)** Where an applicant has replied in good faith to a requisition referred to in subsection (2) within the time provided but the examiner has reasonable grounds to believe that the application still does not comply with the Act or these Rules in respect of one or more of the defects referred to in the requisition and that the applicant will not amend the application to comply with the Act and these Rules, the examiner may reject the application.

[22] The decision as to whether or not to issue a Final Action is discussed in the *Manual of Patent Office Practice* [*MOPOP*], §21.02 (revised December 2013):

> As will be seen later in the chapter, an applicant's ability to amend the application after it has been rejected may be limited. Consequently, although an application can, in principle, be rejected as soon as an impasse occurs with respect to a single defect, in practice a rejection will usually not occur if the examiner considers that continued correspondence with the applicant is serving to resolve other substantive defects.

Claim Construction

[23] 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 *MOPOP*, §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.

Obviousness

[24] 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.

[25] In *Apotex Inc v Sanofi-Synthelabo Canada Inc*, 2008 SCC 61 at para. 67 [*Sanofi*], 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?

[26] Factors which may be relevant at step (4) of the *Sanofi* assessment are set out in *Novopharm Ltd. v. Janssen-Ortho Inc.*, 2007 FCA 217 at paragraph 25 [*Novopharm*]. These include the motivation at the time of the alleged invention and the commercial success which may accompany the invention's reception by consumers.

[27] At the hearing for the instant application, the Applicant pointed to *Re Application for Patent of Evans Products Co. (Now Patent no. 1,164,274)* (1983), 2 CPR (3d) 569 at 574 [*Evans Products*], citing *Electrolier Mfg Co v Dominion Mfrs Ltd*, [1934] 3 DLR 657 at 661, [1934] SCR 436 at 441 for the point that simplicity does not make an invention a "workshop improvement." The Applicant also pointed to *Diversified Products Corp v*

Tye-Sil Corp (1991), 35 CPR (3d) 350 at 365 [*Diversified*] for the principle that only a "scintilla of invention" is required to establish inventive ingenuity.

[28] In the present case, the Applicant asserts in the R-FA that the test for obviousness set out in *Beloit Canada Ltd v Valmet Oy* (1986), 8 CPR (3d) 289 [*Beloit*] has not been satisfied:

> The test for obviousness is not to ask what competent inventors did or would have done to solve the problem. Inventors are by definition inventive. The classical touchstone for obviousness is the technician skilled in the art but having no scintilla of inventiveness or imagination; a paragon of deduction and dexterity, wholly devoid of intuition; a triumph of the left hemisphere over the right. The question to be asked is whether this mythical creature (the man in the Clapham omnibus of patent law) would, in the light of the state of the art and of common general knowledge as at the claimed date of invention, have come directly and without difficulty to the solution taught by the patent. It is a very difficult test to satisfy.

Lack of Support

[29] 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."

ANALYSIS

Procedural Issue: Issuance of a Final Action

[30] In the PR letter, we set out our preliminary view that the issuance of the FA in this case was compliant with subsection 30(3) of the *Patent Rules*.

[31] In the R-PR, the Applicant again questioned the issuance of a FA after a new prior art reference (D2 – Cheng, discussed later in detail under obviousness) was cited by an examiner in a requisition under subsection 30(2) of the *Patent Rules*. As we noted in the PR letter, subsection 30(3) of the *Patent Rules* only requires that at a minimum "one or

more of the defects referred to in the requisition" still be present after an Applicant's response thereto, in order to issue a Final Action:

> In the present case, the defect presented in the Final Action was still one of obviousness and the prior art document D2 had been applied in the previous requisition. Further, while the Applicant did amend the application in response to the Final Action, the amendments were to add an opening in the housing of claim 1, modify the claim dependencies of claims 5-10 and add dependent claim 12 relating to the presence of a slack loop in the input or output fibers. These amendments do not appear to have altered the scope of previously pending claims 1-11 to the point where the rationale for the defect identified by the Examiner would have significantly shifted. Therefore, it is the Panel's preliminary view that the minimum requirements of Subsection 30(3) have been met.

[32] Further, in the present case there is no record of any "other substantive defects" that could have been resolved through continued correspondence prior to the issuance of the FA, in accordance with the guidance provided in *MOPOP*, §21.02, cited above. The defect relating to lack of support had previously been raised by the Examiner and addressed by the Applicant, with the Applicant's arguments failing to convince the Examiner that the defect had been overcome.

[33] In the R-PR, the Applicant contends that it was willing to amend the instant application to obtain an allowance and points to the amendment of the claims in the R-FA.

[34] As we stated in the PR letter, the amendments of the claims made in the R-FA "do not appear to have altered the scope of previously pending claims 1-11 to the point where the rationale for the defect identified by the Examiner would have significantly shifted." The Applicant asserted in the R-PR that the Panel has created a "significantly shifted" requirement for subsection 30(3) of the *Patent Rules* in light of the above quotation. However, this language was used merely to evaluate whether the amendments made in the R-FA would have lead the Examiner to "believe that the application still does not comply with the Act or these Rules in respect of one or more of the defects referred to in the requisition and that the applicant will not amend the application to comply with the Act and these Rules" (subsection 30(3) of the *Patent Rules*). From our reading of the

SOR, after considering the amendment of the claims made in the R-FA, the Examiner was still not convinced by the Applicant that the claims were allowable.

[35] It was therefore reasonable for the Examiner to conclude that the Applicant would not amend the application to make it compliant with the *Patent Act* and *Patent Rules* and to therefore issue a Final Action.

Claim Construction

[36] In the R-PR, the Applicant did not dispute the characterization of the person skilled in the art or the relevant CGK of that person, as they were set out in the PR letter:

> *The person skilled in the art*
>
> In the Final Action at page 2, the Examiner characterized the person skilled in the art as "an optical/telecommunications engineer or team involved with the design of network components including fiber optic modules." This characterization was not disputed by the Applicant in the response to the Final Action dated May 14, 2014 and in our view, is an appropriate characterization of the skilled person.
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> *The relevant common general knowledge*
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> Also in the Final Action at page 2, the Examiner stated that the skilled person:
>
> > would be familiar with and understand, optical module and component designs and performance specifically with the technologies available with regard to the type of optical fibers utilized. More specifically, one skilled in the art would be versed with optical splitters employing a housing having a volume to house the fibers. One skilled in the art would understand the nature of optical splitters to split ft6ibers into a plurality of fibers. Furthermore, one skilled in the art would be well versed in fiber technologies such as "bend performance optical fibers" and the advantages of use therein.
>
> This characterization of the skilled person's CGK was also not disputed by the Applicant and so we accept it for the purposes of this review. In addition to the above points of CGK, the Panel notes the following points of prior CGK as set out in the Background section of the application:
>
> - conventional Local Convergence Points ("LCPs") were large and expensive and difficult to install and transport; and

- there was a recognized need for LCPs that are cost-effective and relatively small in size and that can be installed and maintained by relatively unskilled technicians.

[37] With respect to the determination of essential/non-essential elements, as we stated in the PR letter at page 3:

> In the present case, we have not undertaken a determination as to which claimed elements are essential and which are not, as the result of our analysis under anticipation obviousness would not be affected by the omission of any non-essential elements. Even considering all the elements of the claims, we are of the preliminary opinion (below) that claims 1-12 on file would have been obvious. However, the Panel does wish to clarify the meaning of the expression "bend performance optical fiber" used in each claim. To do so, we first consider the skilled person and their CGK.

[38] In the R-PR, the Applicant questioned the panel's construction of the term "bend performance optical fiber", which we address below.

Bend Performance Optical Fiber

[39] In light of concerns during the prosecution of the instant application regarding the scope of the term "bend performance optical fiber", the Panel undertook to construe this term in the PR letter:

> Having reviewed the specification, while specific examples of "bend performance fibers" have been disclosed, we take the term to denote a fiber which possesses bend resistance properties such that it is suitable for use in an optical splitter module as claimed, with properties, such as split density, specified in some dependent claims, imposing further practical limitations on the type of fiber used. Since the claims specify no performance parameters of the fibers used, their scope encompasses any fiber which would minimally function while constrained by the physical parameters set out in the claims.

[40] In the R-PR, the Applicant suggested that there was an inconsistency in the Panel's view that the relevant CGK of the person skilled in the art included knowledge of "bend performance optical fiber", while at the same time undertaking a construction of the term from the point of view of such a person.

[41] In our view, there is no inconsistency since construction (in addition to being used to distinguish essential from non-essential elements) is an exercise in determining how the person skilled in the art, equipped with the relevant CGK, would have understood a term on the relevant date. The person skilled in the art's CGK informs the construction exercise.

[42] Moreover, given the generality of the term "bend performance optical fiber" used in the claims, it was necessary to review the rest of the specification to determine if there were any specific properties that the skilled person would associate with this term in this case.

[43] As noted in the PR letter, paragraphs [0037] to [0043] of the instant application disclose examples of optical fiber which may be used in some embodiments of the invention, but these embodiments are not limiting. We also note that the properties disclosed for the proposed fibers do not appear in the claims on file at all.

[44] In light of the above, in our view, the skilled person would interpret "bend performance optical fiber" as proposed in the PR letter.

Obviousness

[45] We used the four-step approach as stated in *Sanofi* in order to determine whether the subject-matter of the claims is obvious or not.

(1) (a) Identify the notional "person skilled in the art"

[46] The person skilled in the art has been set out above under Claim Construction at paragraph [36].

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

[47] The relevant CGK has also been identified under Claim Construction at paragraph [36].

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

[48] In the PR letter, the Panel set out the inventive concept of independent claim 1 as it was set out in the FA:

> Utilizing bend performance fibers within a miniaturized optical splitter housing in order to achieve a high split density and split count. The applicant claims a split density between 4 and 10 splits per cubic inch of volume in claim 1.

[49] This view was not disputed by the Applicant and we therefore apply it in our analysis.

[50] Dependent claims 2-12 represent refinements of the above inventive concept and relate to features such as number of fiber splits, split density and the use of a slack loop.

(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

[51] The following prior art documents were applied in the analysis set out in the PR letter:

D2:	CN 1300607 C	CHENG	February 14, 2007
Corning®SMF-28e® Optical Fiber Product Information			January 2005 ("*Corning*")

[52] The *Corning* document was introduced and applied by the Panel in the PR letter:

> In reviewing the prosecution of the co-pending CA patent application no. 2,679,996, which is proposed to be reviewed at the same time as the present application, particularly the response to the Final Action, the Panel noted at page 14 the illustration of an optical splitter module and the identification of an optical fiber designated as SMF-28e fiber. Having been made aware of this fiber by the Applicant in the co-pending application, the Panel undertook to verify its

> properties. In so doing, we have identified the [*Corning*] product information sheet, available online at: http://www.princetel.com/datasheets/SMF28e.pdf

[53] The relevance of D2 and *Corning* was discussed in the PR letter as follows:

> D2: CN 1300607 C
>
> D2 relates to a bend insensitive optical fiber and method of making the same. The optical fiber comprises a core and cladding region with the cladding region divided into five layers. The optical fiber bending performance is described as: in the case of 5 loops of 20 mm diameter, the induced loss is not more than 0.005 dB at a wavelength of 1550nm. This puts the performance parameters of the bend performance fibers disclosed in D2 in the same category as the examples of bend performance fibers disclosed in the present application.
>
> The Corning®SMF-28e® Optical Fiber
>
> The product information sheet for this fiber, which is marketed by the Applicant, discloses that it is "optimized for metropolitan and access networks that support all broadband applications." The performance specifications indicate that for a mandrel diameter of 32mm, the induced loss at 1550nm is less than or equal to 0.05 dB/turn, which puts its bend performance also in the same category as the examples of bend performance fibers disclosed in the present application.

[54] The PR letter also identified points relating to LCPs and splitter modules that are set out in the specification of the instant application as being part of the prior art, as reproduced below. The Panel noted that such statements are binding on the Applicant (*Shire Biochem Inc v Canada (Minister of Health)*, 2008 FC 538 at paragraph [25] [*Shire*]):

> At para. [0012], it is disclosed that in the prior art, the number of cable assembly optical fibers, splitters and receptacles is typically dictated by the number of subscriber termination points to be provided within the Multiple Dwelling Unit ("MDU").
>
> At para. [0017] of the present application, prior art LCPs are described as generally having a width of 13.5 inches, as height of 15.5 inches and a depth of 5.5 inches along the exterior, while providing 48 receptacles for subscriber optical fibers. As disclosed at page 13, this results in a density of receptacles per unit volume of about 0.042 receptacles per cubic inch.
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> At para. [0023], prior art fiber distribution terminals ("FDTs") are described as having a housing similar or larger in size compared to LCP housings.

> At para. [0028], it is disclosed that prior art splice tray assemblies generally define dimensions of 3.94 inches in width, 9.34 inches in height and 0.4 inches in depth, while providing 24 splice holders, the density of splice holders per unit volume then being about 1.63 single splices per cubic inch, with about 3.26 mass fusion splices per cubic inch.
>
> At para. [0030], it is disclosed that prior art splitter modules have general dimensions of 3.07 inches in width, 4.85 inches in length and 0.92 inches in depth, while providing 32 output fiber splits. The density of optical fiber splits per unit volume becomes about 2.34 splits per cubic inch.
>
> At para. [0032], it is disclosed that prior art routing guides generally define an outer diameter of 2.5 inches and a height of 0.56 inches, being able to store 323 inches of 900µm optical fiber. The length per unit volume is then about 6.12 inches of 900µm diameter optical fiber per cubic inch.

[55] In the R-PR, the Applicant questioned the introduction by the Panel of the *Corning* prior art reference. The Applicant was notified in the PR letter of the use of the additional reference and its relevance to the assessment of obviousness, as well as given an opportunity to respond to the preliminary analysis using this reference, both in writing and by means of the oral hearing.

[56] The Applicant also contended in the R-PR that the use of prior art statements taken from the instant application could not form a proper foundation for obviousness of the claims and that since the instant application seeks to improve upon such prior art devices, it teaches away from them.

[57] As noted above with respect to *Shire*, facts admitted to be prior art are applicable in assessing the validity of claims. Further, the statements taken from the specification do not teach away from the claims. These are simply statements relating to the properties of predecessor versions of the claimed optical splitter module and associated components.

[58] The difference between the state of the art and the inventive concept, in our view, is as stated in the PR letter:

> What the state of the art does not disclose is the use of "bend performance optical fibers" in a prior art optical splitter module, with the corresponding

> reduction in space required for the module and the corresponding increase in optical signal split density, both due to the benefits which flow from using a bend performance optical fiber with reduced signal loss at reduced bend radii.

[59] The Applicant did not dispute our view above in its R-PR and so we apply it in our analysis.

(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?

[60] In the PR letter, we set out our preliminary opinion as to the obviousness of claims 1-12 on file:

> At the claim date of this application, as noted at step *(1)(b)*, it was part of the skilled person's CGK that problems existed with the prior art LCPs that used optical splitter modules, namely, they were large and expensive and difficult to install and transport when used in high density subscriber settings. The skilled person was aware of the need for units which were smaller and more cost-effective. In light of this need, there existed a motivation to find a way of reducing the unit size.
>
> In the Panel's preliminary view, the use of a bend performance optical fiber was an obvious solution in light of the fact that such fibers and their advantages were known at the time, for example, from documents such as D2 and the Corning®SMF-28e® Optical Fiber product information sheet. In searching for a way to reduce the size of an optical splitter module and being aware of the bend performance fibers of the prior art, in our preliminary opinion, the skilled person would have immediately recognized that due to the reduced signal loss at reduced bend radii, less area would have been needed to accommodate the bend performance optical fibers in the splitter module. Also, because of the reduced signal loss at reduced bend radii, more fibers could be fit into the smaller space. The properties of the prior art bend performance fibers are precisely what provides for the ability to use them in smaller spaces, as suggested by, for example, D2, which refers to the miniaturization of optical devices as requiring optical fiber with a small signal loss at relatively small bending radii (see discussion of the Background Art in D2). This discussion is a pretext for the bend performance optical fiber disclosed in D2.
>
> Claims 1-12 set out no performance parameters for the bend performance fibers and in that regard represent a mere choice on the part of the user as to split density, etc., dependent on operational parameters (e.g., number of subscribers). Since there is no requirement in these claims that performance not be affected, it is our preliminary opinion that such choices would have been obvious ones.

> Further, since the use in an optical splitter module of bend performance fibers with performance parameters similar to those disclosed would have been obvious, the ability to increase the optical fiber split density (or number of splits *per se*, as in some claims) without significant signal loss, is a natural result. With regard to dependent claim 9, this merely specifies an optical splitter module with dimensions smaller than the admitted prior art splitter, with again, no limits on performance.
>
> With respect to new dependent claim 12, we note that the present description at para. [0029] discloses that with the use of the mircostructured bend performance fibers, a slack loop as illustrated in the prior art splitter module 256, shown in Figure 13D, is not required. Therefore, it is not apparent why the use of a known slack loop in such a device would lend inventive ingenuity to the claims.
>
> In view of the above analysis, it is our preliminary view that the skilled person would have come directly and without difficulty to the solution set out in the claims, in accordance with the criteria set out in *Beloit Canada Ltd v Valmet Oy* (1986), 8 CPR (3d) 289, cited by the Applicant in the response to the Final Action.

[61] In its R-PR, the Applicant made submissions in relation to several factors that it considered relevant to the obviousness assessment, which we consider below.

Motivation

[62] The Applicant, in our view, set out three points in relation to the issue of motivation.

[63] Firstly, in the R-PR, the Applicant questioned the conclusion that "there existed a motivation to find a way of reducing the unit size" and pointed to a lack of any physical evidence to support this conclusion.

[64] Secondly, at the hearing and in the R-PR, the Applicant further contended that there would have been no motivation to make the splitter module smaller or to increase the split density since the skilled person would have been more driven by the desire for reliability. According to the Applicant, use of a bend performance optical fiber in a conventional splitter module would have provided more reliable connections, due to the increase bend resistance of the fiber, and the person skilled in the art would not have wanted to affect this performance by reducing the size of the splitter module. The

Applicant pointed to a document, "*An Overview of Macrobending and Microbending* of Optical Fibers" WP1212, Corning Incorporated, John A. Jay, December 2010, to support this point.

[65] Thirdly, at the hearing the Applicant further contended that in light of *Sanofi*, the motivation necessary to justify a finding of obviousness must be very specific and that the motivation arrived at by the Panel is not specific enough.

[66] With respect to the first point, as we have already noted under step *(3)* above, prior art admissions are binding on the Applicant. The recognition of a motivation to reduce the unit size comes from the admitted recognition of a need for "LCPs that are cost effective, are relatively small in size, and may be installed and maintained by relatively unskilled technicians" (instant application at paragraph [0004]). Further, as noted in the PR letter, prior art document D2 (in the Background Art discussion therein) discusses a desire for miniaturization of optical devices that requires optical fibers with a small signal loss at small bend radii, which discussion is a pretext for the description of the bend performance optical fiber of D2.

[67] With respect to the second point, we have reviewed the publication pointed to by the Applicant and are unable to conclude that it supports the Applicant's position. In our view, while this publication does discuss the effects of bending on optical fiber performance, namely signal attenuation, it does not reveal that a skilled person would have been so concerned with signal attenuation that, even when using bend performance optical fiber (which is more resistant to signal attenuation resulting from bending), he/she would not have considered reducing the size of a component such as the splitter module or increasing the split density of the fibers in the module. We also note that the instant application discloses that persons skilled in the art were more concerned with cost effectiveness, size reduction and ease of installation and maintenance. Thus, in our view, a path towards the inventive concept of the claims was more likely than a path towards maintaining the split density of the conventional splitter module while improving its reliability.

[68] With respect to Applicant's third point, the Federal Court recently considered general versus specific motivation in the *Sanofi* framework (*AstraZeneca Canada Inc v Mylan Pharmaceuticals ULC*, 2017 FC 142 at paragraphs 152-152) and expressed the view that such labels may not be helpful in such a factual assessment, stating that "the measure to be taken is one of difference or degree, not kind."

[69] In our view, the record indicates that the skilled person was motivated to seek equipment size reductions and cost effectiveness, which would have been evident advantages of using the known bend performance optical fiber. In our view, this motivation was sufficient to arrive at the increase in split density and the reduction in splitter module size of the claims. We see no evidence of motivation to the contrary.

[70] In our view, this factor weighs in favor of the obviousness of the claims.

Unexpected Difficulties and Hurdles and Design Considerations

[71] In the R-PR, the Applicant submitted that the claimed invention would not have been obvious because during its development there were "unexpected difficulties and hurdles which had to be overcome to arrive at the claimed invention, requiring testing and experimentation."

[72] The Applicant also set out a series of design considerations (in the R-PR and submitted to the Panel at the hearing) that, in its view, had to have been taken into account in arriving at the claimed invention and that should be found in the prior art to justify any finding of obviousness.

[73] In the present case, claim 1 for example specifies an optical splitter module that has a higher split density than the conventional module. In our view, there are no difficulties or hurdles to overcome in arriving at such a result, especially in light of the fact that claim 1 places no limitation on the performance parameters of the fibers used in such a splitter

module. It is only in the description of the instant application that specific bend performance parameters are specified and the values therein are in line with the prior art fibers disclosed by D2 and the *Corning* reference. Simply increasing the split density would not have presented any unexpected difficulties to the person skilled in the art. Likewise, using known bend performance optical fiber and decreasing the size of the splitter module would not have presented any unexpected difficulties since bend performance optical fibers are designed to accommodate tighter bends so that it may be used in more compact arrangements (see for example, the Background Discussion in D2).

[74] With respect to the design considerations set out by the Applicant, in our view, these are general design considerations to be taken into account in producing any practical embodiment of an optical splitter module, whether it be the module of the instant application or the prior art. This level of detail is, however, beyond the scope of what is necessary to be found in a prior art document to show obviousness in this case. Given claim 1 on file, the question is whether it would have been obvious to arrive at a splitter module that has a higher split density than a conventional module, when using bend performance optical fiber, which itself, as per the prior art, allows for smaller bend radii and a more compact arrangement.

[75] In our view, the Applicant's submissions on these points do not weigh in favor of the non-obviousness of the claims.

Commercial Success

[76] In the R-PR, the Applicant contends that:

> Applicant notes that the invention has had great success, allowing Corning to remain "an industry-leading supplier of FTTH product solutions with over 10 years and in excess of 25 million homes passed (HP)". Fiber splitters are a fundamental component of such systems, and continuous technical advancements allow Corning to maintain this position in the market:
>
> > https://www.corning.com/worldwide/en/products/communication-networks/applications/fiber-to-the-home. html

> With regard to specific numbers, Applicant notes that even early in the deployment of the invention, GEN Ill splitters had been implemented in 'thousands' of fiber cabinets:
>
> http://www.lightwaveonline.com/articles/2007/10/corning-cable-systems-debuts-new-1x64-splitter-module-53441432.html
>
> Applicant submits that the commercial success of the invention speaks to the value and non-obviousness of the claimed invention.

[77] Upon review of the references cited above by the Applicant, the Panel notes that the first reference is a general discussion of fiber optic splitters and is not specific to the claimed splitter, which has a higher split density and uses bend performance optical fiber. The second reference does refer to an optical splitter of an increased split density but is related to the public release of a new 1x64 optical splitter and does not speak to any subsequent commercial success.

[78] In light of the above, this factor does not weigh in favor of the non-obviousness of the claims.

Workshop Improvements and "Scintilla of Invention"

[79] At the hearing, the Applicant submitted that the simplicity of the alleged invention should not lead to a conclusion that it would have been obvious. In the Applicant's view, the alleged invention does not represent a "workshop improvement."

[80] The Applicant pointed to *Evans Products*, for the point that simplicity does not negate the possibility of inventive ingenuity. We note however, that in *Evans Products* evidence was presented showing industry recognition and acceptance of the invention, which in that case indicated that it was not obvious to persons skilled in the art. No such evidence is of record in this case.

[81] The Applicant also referred to the principle that only a "scintilla of invention" is required to support a patent, as discussed in *Diversified*:

> It is well-established that a mere "scintilla of invention" is sufficient to support the validity of a patent. As Tomlin J. (as he then was) said in Samuel Parkes & Co. v. Cocker Bros. (1929), 46 R.P.C. 241 at p. 248 (C.A.), approved by Rinfret J. in Uhlemann Optical, supra, at p. 105.
>
> > Nobody, however, has told me, and I do not suppose anybody ever will tell me, what is the precise characteristic or quality the presence of which distinguishes invention from a workshop improvement. Day is day, and night is night, but who shall tell where day ends or night begins?... The truth is that, when once it had been found, as I find here, that the problem had waited solution for many years, and that the device is in fact novel and superior to what had gone before, and has been widely used, and used in preference to alternative devices, it is, I think, practically impossible to say that there is not present that scintilla of invention necessary to support the Patent.

[82] While we appreciate that the requirement for inventive ingenuity to be present may be small, in this case there is no evidence of a problem awaiting solution for many years, nor is there any evidence of widespread industry use of the invention and its preference in relation to other products.

[83] The above cases do not aid the Applicant's position that the claims are non-obvious.

Conclusions on Obviousness of Claims on File

[84] In light of the prior art splitter modules, the known bend performance optical fibers with their known properties and the motivation of the person skilled in the art to address issues such as cost-effectiveness and size reduction, it is our view that the skilled person "would …have come directly and without difficultly to the solution taught by the patent" (*Beloit*).

[85] Having considered the record before us, including the Applicant's submissions in the R-FA, the R-PR and at the hearing, it is our view that claims 1-12 on file would have been obvious and therefore non-compliant with section 28.3 of the *Patent Act*.

Lack of Support

[84] We stated in the PR letter that it was our preliminary view that the claims on file are fully supported by the description:

> It is the preliminary opinion of the Panel that the claims are supported by the description. We are of the opinion that the skilled person would be able to produce an optical splitter module which would conform to the requirements set out in the claims.

[85] The Applicant acknowledged the above in the R-PR. We conclude that the claims on file are fully supported by the description and therefore compliant with section 84 of the *Patent Rules*.

CONCLUSIONS

[86] We have determined that claims 1-12 on file would have been obvious and therefore non-compliant with section 28.3 of the *Patent Act*. We have also determined that claims 1-12 on file are fully supported by the description and therefore compliant with section 84 of the *Patent Rules*.

RECOMMENDATION OF THE BOARD

[87] In view of the above, the Panel recommends that the application be refused on the basis that the claims on file, namely claims 1-12, would have been obvious and therefore non-compliant with section 28.3 of the *Patent Act*.

Stephen MacNeil	Mark Couture	Liang Ji
Member	Member	Member

DECISION

[88] I concur with the conclusions and recommendation of the Patent Appeal Board that the application be refused on the ground that claims 1-12 on file would have been obvious and therefore non-compliant with section 28.3 of the *Patent Act*.

[89] Therefore, in accordance with section 40 of the *Patent Act*, I refuse to grant a patent on this application. Under section 41 of the *Patent Act*, the Applicant has six months within which to appeal my decision to the Federal Court of Canada.

Johanne Bélisle
Commissioner of Patents

Dated at Gatineau, Quebec,
this 16th day of February, 2018