

Citation: Raytheon Company (Re), 2021 CACP 53

Commissioner's Decision #1606

Décision du commissaire n°1606

Date: 2021-12-16

TOPIC: D-00 Division

F-00 Novelty

O-00 Obviousness

SUJET: D-00 Division

F-00 Nouveauté

O-00 Évidence

Application No. : 2,736,612

Demande n° 2 736 612

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,736,612 having been rejected under subsection 30(3) of the *Patent Rules* (SOR/96-423) as they read immediately before October 30, 2019, has consequently been reviewed in accordance with paragraph 199(3)(c) of the *Patent Rules* (SOR/2019-251). The recommendation of the Patent Appeal Board and the decision of the Commissioner are to refuse the application unless necessary amendments are made.

Agent for the Applicant:

**MARKS & CLERK**

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## INTRODUCTION

- [1] This recommendation concerns the review of rejected Canadian patent application number 2736612 (the instant application), which is entitled “SOLID STATE TRANSMITTER CIRCUIT” and is owned by Raytheon Company (the Applicant). A review of the rejected application has been conducted by the Patent Appeal Board (the Board) pursuant to paragraph 199(3)(c) of the Patent Rules (SOR/2019-251). As explained in more detail below, the Board’s recommendation is that the Commissioner of Patents refuse the application unless necessary amendments are made.

## BACKGROUND

### The Application

- [2] The instant application was received in the Canadian Patent Office on April 4, 2011. It was initially accorded the filing date of parent application no. 2474492, namely January 31, 2003. However, as will be seen below, its status as a divisional application, and therefore its actual filing date, is at issue.
- [3] The application relates generally to active combiner circuits for microwave transmitters. The application has 3 claims on file, which were received at the Patent Office on February 17, 2012.

### Prosecution History

- [4] On August 13, 2018, the Examiner issued a Final Action (FA) pursuant to subsection 30(4) of the *Patent Rules*, as they read immediately before October 30, 2019. The FA considered that the instant application not to be a proper divisional and consequently, its effective filing date was treated as the date it was received in the Patent Office, April 4, 2011. As such, the parent application CA 2474492 was considered prior art which anticipates the claims on file. Therefore, the FA considered the application to lack novelty and not to comply with paragraph 28.2(1)(a) of the *Patent Act*.
- [5] In a February 13, 2019 response to the FA (RFA), the Applicant submitted a set of proposed claims (proposed claim set-1).

- [6] Although the Examiner considered proposed claim set-1 to render the application a proper divisional, the Examiner considered proposed claim set-1 to be anticipated or obvious in view of the prior art and common general knowledge (CGK). Therefore, pursuant to paragraph 30(6)(c) of the *Patent Rules* as they read immediately before October 30, 2019, the application was forwarded to the Board for review on March 22, 2019 along with an explanation outlined in a Summary of Reasons.
- [7] In a letter dated March 22, 2019, the Board forwarded to the Applicant a copy of the Summary of Reasons.
- [8] In a letter dated June 25, 2019, the Applicant confirmed its interest in having the review proceed.
- [9] A Panel of the Patent Appeal Board comprising the undersigned reviewed the application on behalf of the Board under paragraph 199(3)(c) of the *Patent Rules*. In a preliminary review letter (PR letter) dated October 15, 2021, we set out our preliminary analysis of the issues with respect to the claims on file and proposed claim set-1. We also provided the Applicant with an opportunity to make oral and/or written submissions.
- [10] In a Response to the PR letter, the Applicant submitted proposed claim set-2 on November 2, 2021. An oral hearing was held by videoconference on November 26, 2021. At the hearing, the Panel noted an issue of possible ambiguity with respect to proposed claim set-2. The Applicant submitted proposed claim set-3 along with corresponding proposed amendments to the description on November 26, 2021.

## ISSUES

- [11] The issues to be considered in this review are:
- Do the claims on file render the application an improper divisional?
  - If the application is an improper divisional, are the claims on file anticipated and therefore contrary to paragraph 28.2(1)(a) of the *Patent Act*?; and
  - If the claims on file are anticipated, is proposed claim set-3 patentable?

## LEGAL PRINCIPLES AND OFFICE PRACTICE

### Purposive Construction

- [12] In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66 and *Whirlpool Corp v Camco Inc*, 2000 SCC 67, purposive construction is performed from the point of view of the person skilled in the art in light of the relevant CGK, considering the whole of the disclosure including the specification and drawings. In addition to interpreting the meaning of the terms of a claim, purposive construction distinguishes the essential elements of the claim from the non-essential elements. Whether or not an element is essential depends both on the intent expressed in or inferred from the claim, and on whether it would have been obvious to the skilled person that a variant has a material effect upon the way the invention works.

### Improper Divisional Status

- [13] Subsection 36(2.1) of the *Patent Act* sets out the conditions under which a patent application may be accorded divisional status when division is directed by the Patent Office:

(2.1) Where an application (the “original application”) describes and claims more than one invention, the applicant shall, on the direction of the Commissioner, limit the claims to one invention only, and any other invention disclosed may be made the subject of a divisional application, if the divisional application is filed before the issue of a patent on the original application.

- [14] From the above, for an application to have divisional status, its claims must be directed to another invention than that of the claims of the original application, with any such other invention having also been described in the original application. As specified in *The Manual of Patent Office Practices (MOPOP)*, §21.10 (revised November 2013),

The content of the specification and drawings of the purported divisional application are compared to that of the original application to determine if the claims of the divisional application are directed to a different invention than the claims of the parent...

...

If, at filing or during the course of prosecution, the claims in the purported divisional application are not directed to a different invention than those of the parent application, the later-filed application is not a proper divisional application within the meaning of section 36 of the *Patent Act*. Note that if the filing of a divisional application was “directed by the Patent Office”, the doctrine of double-patenting does not apply between the divisional and any of its parent or sibling applications.

### Anticipation/Lack of Novelty

- [15] Paragraph 28.2(1)(a) of the *Patent Act* sets out the requirement that the subject-matter of a claim must be novel in view of a disclosure by the applicant itself:

**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

**(a)** before the one-year period immediately preceding the filing date or, if the claim date is before that period, before the claim date by the applicant, or by a person who obtained knowledge, directly or indirectly, from the applicant, in such a manner that the subject-matter became available to the public in Canada or elsewhere;

- [16] There are two separate requirements in order to show that a prior art document anticipates a claimed invention: a single prior disclosure of the claimed subject-matter, and the single 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).

### Obviousness

- [17] 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 before the one-year period immediately preceding the filing date or, if the claim date is before that period, before the claim 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.

[18] 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?

## **ANALYSIS**

### Purposive Construction

[19] A purposive construction of the claims requires a definition of the person skilled in the art and the common general knowledge of such a person. As we wrote in the PR letter, we consider the skilled person to be a microwave circuit designer. We consider the skilled person to be familiar with waveguides and distributed solid state amplifiers as used in radar applications, as per paragraphs 0002-0004 of the description. We will make use of these definitions in our analysis.

### Improper Divisional Status

[20] The FA found that with respect to the claims on file, the instant application constituted an improper divisional. We agree. In the prosecution of the parent application CA 2474492, the office action of March 29, 2009 noted a lack of unity. The office action went on to note that the claims designated as group B lacked the inventive feature of group A:

...phase shifting circuitry distributed along said collector series feed waveguide for compensating phase tracking error between said divider series waveguide and said collector series waveguide.

[21] Claim 1 on file recites:

...phase compensating circuitry coupled between said divider feed signal line and ground and distributed along said divider feed signal line for compensating phase tracking error between said divider feed signal line and said collector feed signal line.

[22] As we wrote in the PR letter, purposively construed, the skilled person would consider phase compensating circuitry to be identical to phase shifting circuitry. The skilled person is aware that phase must be shifted for path length differences to be equalized in waveguides. The skilled person also knows that a waveguide is a form of signal line. Claim 1 on file also recites a signal injection circuit, but claim 6 of CA 2474492, also recites this feature, which is not considered to be another invention. Therefore, we consider that claim 1 on file, and the other claims which depend on it, are not directed to “a different invention” from the issued claims of CA 2474492. Therefore the instant application with these claims is not entitled to divisional status in accordance with subsection 36(2.1) of the *Patent Act*. As a result, the filing date of the instant application becomes the date it was received in the Patent Office, namely April 4, 2011. This conclusion is not, in and of itself, a defect in the instant application, but the allocation of the later filing date and lack of divisional status does mean that application CA 2474492 becomes applicable prior art under paragraph 28.2(1)(a) of the *Patent Act*, as discussed below.

#### Anticipation



[23] As we wrote in the PR letter, the laid-open date of D1 precedes the filing date of April 4, 2011 by several years. As the instant application with the claims on file is not considered to be a proper divisional of D1, D1 can be applied as prior art. Since all the claims on file are supported by the specification which derives from D1, the claims are necessarily anticipated by the specification of D1. Therefore, we conclude that the claims on file do not comply with paragraph 28.2(1)(a) of the *Patent Act*.

[24] In the Response to the PR Letter and at the hearing, the Applicant did not dispute our conclusions about improper divisional status and anticipation.

### **PROPOSED CLAIM SET-3**

[25] Proposed claim 1 reads:

A microwave combiner circuit comprising:  
a divider series feed signal line;  
a collector series feed signal line;  
a signal injection circuit connected between an input of said divider series feed signal line and an input of said collector series feed signal line, said signal injection circuit configured to inject a phase matched signal into said collector series feed signal line; and  
a plurality of solid state amplifier coupler circuits connected between said divider feed signal line and said collector feed signal line, each solid state amplifier coupler circuit coupling into said collector feed signal line an amplified version of a signal coupled from said divider feed signal line;  
wherein said signal injection circuit comprises:  
a directional coupler connected to said input of said divider series feed signal line;  
a solid state amplifier coupled to an output of said directional coupler; and an inductive phase matching circuit coupled between an output of said solid state amplifier and said input of said collector series feed signal line.

### **Improper Divisional**

[26] Proposed claim 1 and its dependent claims do not recite a distributed phase compensating feature, which was considered the inventive feature of the parent application. Rather, claim 1 recites a particular topology of signal injector circuit

in which an inductive phase shifting element is connected to the output of the signal injection amplifier. Therefore, we conclude that this amendment would render the application a proper divisional.

#### Anticipation/Obviousness

- [27] As the proposed claims would render the application a proper divisional, it would have the benefit of the filing date of the parent application. Therefore, there would no longer be any issue of anticipation by the parent application.
- [28] In our evaluation of proposed claim set-1 in the PR letter, we noted the following prior art documents:
- |     |                |             |                   |
|-----|----------------|-------------|-------------------|
| D2: | US 5136256     | Salzberg    | August 4, 1992    |
| D3: | US 20010019289 | Takei et al | September 6, 2001 |
- [29] In the PR letter, we considered an issue of obviousness of proposed claim set-1. We found the independent claim which recited a signal injector circuit to be obvious in view of D2 and CGK, and we noted that amending the claim to recite a phase shifter on the amplifier output, but not an inductive phase shifter, might raise an issue of obviousness with respect to reference of interest D3.
- [30] In our view, claim 1 of proposed claim set-3 would be non-obvious. Proposed claim 1 recites the phase shifting element connected to the *output* of the signal injection amplifier, which differs from the case in D2 in which a phase shifter is connected to the *input* of the amplifier. Further, proposed claim 1 recites the phase shifting element is *inductive*, which differs from the case in D3. In our search, we did not find any prior art in the same field which has both of these features in a distributed microwave amplifier topology.
- [31] The dependent claims of proposed claim set-3 would be non-obvious as they depend on proposed independent claim 1.
- [32] We therefore conclude that proposed claim set-3 would comply with section 28.3 of the *Patent Act* as well as all other requirements of the *Patent Act* and *Patent Rules*.
- [33] In its November 26 submission, the Applicant also proposed amendments to

pages 2 and 3 of the description to align the summary of the invention with proposed claim set-3. The amended description would clarify to the reader the distinction from the parent application and would comply with the *Patent Act* and *Patent Rules*.

[34] For the reasons set out above, we recommend that the Applicant be notified, in accordance with subsection 86(11) of the *Patent Rules*, that the following amendments are necessary for compliance of the application with the *Patent Act* and *Patent Rules*:

- the deletion of the claims on file;
- the insertion of claims corresponding to proposed claim set-3 of November 26, 2021; and
- the substitution of the description pages proposed on November 26, 2021.

Howard Sandler

Member

Liang Ji

Member

Mehdi Ghayour

Member

## DECISION OF THE COMMISSIONER

[35] I concur with the conclusion and recommendation of the Board. In accordance with subsection 86(11) of the *Patent Rules*, I hereby notify the Applicant that the following amendments and only the following amendments must be made in accordance with paragraph 200(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 the claims on file;
- the insertion of claims corresponding to proposed claim set-3 of November 26, 2021; and
- the substitution of the description pages proposed November 26, 2021.

Virginie Ethier  
Assistant Commissioner of Patents

Dated at Gatineau, Quebec

This 16<sup>th</sup> day of December 2021