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Paper 44
Date: January 15, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

QUALCOMM INCORPORATED,
Patent Owner.

IPR2018-01251
Patent 8,447,132 B1

Before TREVOR M. JEFFERSON, DANIEL J. GALLIGAN, and AARON W. MOORE, *Administrative Patent Judges.*

GALLIGAN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Denying-in-Part and Dismissing-in-Part Patent Owner's Motion to Exclude
35 U.S.C. § 318(a)

I. INTRODUCTION

In this *inter partes* review, Apple Inc. ("Petitioner") challenges the patentability of claims 1, 5–8, 11, and 14 of U.S. Patent No. 8,447,132 B1 ("the '132 patent," Ex. 1001), which is assigned to Qualcomm Incorporated ("Patent Owner").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision, issued pursuant to 35 U.S.C. § 318(a), addresses issues and arguments raised during the trial in this *inter partes* review. For the reasons discussed below, we determine that Petitioner has proven by a preponderance of the evidence that claims 1, 5–8, 11, and 14 of the '132 patent are unpatentable. *See* 35 U.S.C. § 316(e) ("In an inter partes review instituted under this chapter, the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.").

A. Procedural History

On June 26, 2018, Petitioner requested *inter partes* review of claims 1, 5–8, 11, and 14 of the '132 patent on the following grounds:

Claims Challenged	35 U.S.C. §[1]	References
1, 6	103(a)	Zhang,[2] Konoplev[3]
5, 7, 8	103(a)	Zhang, Konoplev, Nonaka[4]

[1] The Leahy-Smith America Invents Act ("AIA") included revisions to 35 U.S.C. §§ 102 and 103 that became effective after the filing of the application for the '132 patent. Therefore, we apply the pre-AIA versions of these sections.
[2] US 2010/0266207 A1, published Oct. 21, 2010 (Ex. 1008).
[3] US 8,265,410 B1, filed June 15, 2010, issued Sept. 11, 2012 (Ex. 1009).
[4] US 2008/0007634 A1, published Jan. 10, 2008 (Ex. 1005).

Claims Challenged	35 U.S.C. §[1]	References
11, 14	103(a)	Zhang, Konoplev, Nonaka, Gonzalez[5]

Paper 2 ("Pet."). Patent Owner filed a Preliminary Response. Paper 6 ("Prelim. Resp."). We instituted trial on all grounds of unpatentability. Paper 7 ("Dec. on Inst."), 17. In IPR2018-01250, Petitioner separately challenges claims 1, 5–8, and 13 of the '132 patent.

During the trial, Patent Owner filed a Response (Paper 27, "PO Resp."), Petitioner filed a Reply (Paper 29, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 34, "PO Sur-reply").

Patent Owner filed a Motion to Exclude Exhibit 1010 (Paper 37), to which Petitioner filed an Opposition (Paper 38), and in support of which Patent Owner filed a Reply (Paper 40).

A combined oral hearing for this *inter partes* review and for IPR2018-01250 was held on October 10, 2019, a transcript of which appears in the record. Paper 43 ("Tr.").

B. The '132 Patent and Illustrative Claim

The '132 patent, titled "Dynamic Range Correction Based on Image Content," has a filing date of December 6, 2010, and it claims priority to Provisional Patent Application 61/285,063 ("the '132 Provisional Application"), which was filed on December 9, 2009. Ex. 1001, codes (22), (54), (60), 1:4–6.

The '132 patent generally relates to techniques for improving images. Ex. 1001, 1:19–39, 2:7–17. One example given in the '132 patent is directed to improving the visibility of a face in an image. Ex. 1001, 2:7–17. The

[5] Rafael C. Gonzalez & Richard E. Woods, *Digital Image Processing* (3d ed. 2008) ("Gonzalez") (Ex. 1010).

'132 patent explains that, when a digital picture is taken of a person in a dark part of a room with a bright window in the background, "the image sensor may not be able to acquire both the details of the bright view coming through the window and the details of the person's face." Ex. 1001, 1:28–33. According to the '132 patent, conventional methods for improving the image, such as adjusting the exposure time or using dynamic range compression/enhancement methods, "still tend to produce images that lack details which are important to the end user." Ex. 1001, 1:35–39. To address this purported problem, the '132 patent discloses the following:

> [T]he technique introduced here includes a method and apparatus for dynamic range correction based on image content. Known prior techniques of dynamic range correction do not take into consideration or use the content of an image, at least to the extent such content has semantic significance (meaning) to a human viewer. For example, such methods do not consider or apply the principle that showing the details of certain types of objects depicted in an image often should have higher priority than the rest of the image. As a more specific example, in many instances showing the details of a person's face in the foreground of an image should be given higher priority than showing the details of a view in the background of the image. The technique introduced here considers and applies this principle in performing dynamic range correction.

Ex. 1001, 2:36–50.

Of the challenged claims, claim 1 is the only independent claim and is reproduced below.

> 1. A method comprising:
>
> determining whether a first portion of digital image data represents a physical object of a predetermined type;
>
> determining a correction to apply to the first portion of the digital image data, based on a determination that the first portion of the digital image data represents a physical object of the

> predetermined type, wherein the determined correction is matched to the predetermined type;
>
> applying the determined correction to the first portion of the digital image data to enhance a visual characteristic of the first portion of the digital image data, by applying a first amount of the correction to the first portion of the digital image data; and
>
> applying a second amount of the correction to a second portion of the digital image data, wherein the first amount differs from the second amount, and wherein the first amount corresponds to a physical object of the predetermined type.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner's declarant, Dr. Alan Bovik,[6] offers the following assessment as to the level of ordinary skill in the art:

> A person of ordinary skill in the art as of the Critical Date[7] (a "POSITA") would have had a Bachelor of Science degree in computer science or a similar technical field together with 3-5 years of educational practicum or work experience in the field of computer vision and/or image processing.

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[6] Petitioner submitted the declaration of Dr. Larry Davis with its Petition, but, due to Dr. Davis's unavailability for deposition, Petitioner sought to enter a substitute declaration in the record. We held a call with the parties to discuss the issue. On the call, the parties agreed to a general framework for dealing with the situation. Paper 13. After the call, the parties met and conferred and emailed us with their proposed solution to allow Petitioner to serve and file a substitute declaration (Ex. 3001), and we authorized the parties to proceed as agreed (Paper 13). Petitioner filed Dr. Bovik's declaration as Exhibit 1017 and moved unopposed to expunge Dr. Davis's declaration. Paper 15. We granted Petitioner's unopposed motion and expunged Dr. Davis's declaration. Paper 22.

[7] Dr. Bovik identifies the Critical Date as December 9, 2009, the date of filing of the '132 Provisional Application, to which the '132 patent claims priority. Ex. 1003 ¶ 6.

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