

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KARL STORZ ENDOSCOPY-AMERICA, INC.,
Petitioner,

v.

NOVADAQ TECHNOLOGIES, INC.,
Patent Owner.

Case IPR2015-01847
Patent 7,420,151 B2

Before MICHAEL W. KIM, JENNIFER S. BISK, and
DANIEL N. FISHMAN, *Administrative Patent Judges*.

FISHMAN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Karl Storz Endoscopy-America, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) for *inter partes* review of claims 1–17 of U.S. Patent No. 7,420,151 B2 (Ex. 1001) (“the ’151 patent”) pursuant to 35 U.S.C. §§ 311–319. Novadaq Technologies, Inc. (“Patent Owner”) filed a Patent Owner’s Preliminary Response (Paper 6, “Prelim. Resp.”). On March 10, 2016, based on the record before us at the time, we instituted an *inter partes* review of all claims (1–17) (Paper 7, “Dec.”). We instituted the review on the following challenges to the claims:

References	Basis	Claims challenged
Yabe ¹	§ 103(a)	1–17
Krauter ²	§ 102(b)	1, 7, 10, 12, 14

Dec. 22.

After we instituted this review, Patent Owner filed a Patent Owner Response (Paper 11, “PO Resp.”)³ and Petitioner filed a Reply (Paper 15, “Pet. Reply”). Petitioner relies on the Declaration (Ex. 1011) and Rebuttal

¹ U.S. Patent No. 4,885,634; Dec. 5, 1989. Ex. 1007 (“Yabe”).

² U.S. Patent No. 6,147,705; Nov. 14, 2000. Ex. 1004 (“Krauter”).

³ We observe that Patent Owner’s Response does not comply with 37 C.F.R. § 42.24(d) by failing to “include a certification stating the number of words in the paper.” Petitioner did not object to this error by Patent Owner. Pursuant to our authority under 37 C.F.R. § 42.5(b), we hereby waive this violation of our rule requiring certification of the word count in Patent Owner’s Response. We advise Patent Owner, however, to adhere to our rules in any further filings in this, or other matters before the Board.

Declaration of Erhan Gunday (Ex. 1018). Patent Owner relies on the Declaration of Bruno Jaggi (Ex. 2001).

Patent Owner filed Observations on the Cross Examination of Reply Witness (Paper 25) to which Petitioner responded (Paper 27). We have considered the remarks of both parties in these papers in our analysis to follow.

Oral hearing was conducted on December 6, 2016. The record contains a transcript of the hearing (Paper 34, “Tr.”)

We have jurisdiction under 35 U.S.C. § 6. The evidentiary standard is a preponderance of the evidence. *See* 35 U.S.C. § 316(e); *see also* 37 C.F.R. § 42.1(d). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons expressed below, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 1–17 are unpatentable.

B. The '151 patent

According to the '151 patent, medical imaging devices for viewing internal body tissue typically illuminate subject tissue with broadband (i.e., white) light and present an image of the illuminated tissue on a display monitor device. Ex. 1001, 1:20–28. Later medical developments recognized a benefit of viewing internal body tissue using short wavelength (e.g., blue and green) illumination of the tissue to, *inter alia*, better highlight blood and blood vessel structures. *Id.* at 1:29–43. The '151 patent indicates prior known medical imaging devices recognized the benefit of utilizing both broadband (e.g., white) illumination and short wavelength (e.g., blue

and green) illumination for a physician, and suggests prior medical imaging devices provide such a capability as a broadband spectrum illumination source with associated movable filters. *Id.* at 1:44–59.

The '151 patent discloses and claims a medical imaging device that uses a single light source for a full spectrum white light imaging mode as well as for short wavelength imaging mode, “but does not to [sic] require the incorporation and movement of filters in the light source to produce the light for the two different imaging modes.” *Id.* at 1:66–2:2. Light reflected from a single light source is sensed by a color image sensor, which may be, for example, “an RGB [(red, blue, and green)] type image sensor having a number of pixels that are covered with a mosaic filter that passes light in the red, green, or blue spectral bands,” (*Id.* at 3:41–44) or, for example, “a complimentary color filter mosaic such as a CMYG (cyan, magenta, yellow, and green)” (*Id.* at 4:45–47). An image processor of the '151 patent reduces a contribution of red illumination, thereby generating a short wavelength false image, by calculating values for display pixels stored in a memory based on sensed values of the color image sensor. *See id.* at 4:8–12, 6:60–7:3, 7:63–66.

Figure 1 of the '151 patent is reproduced below.

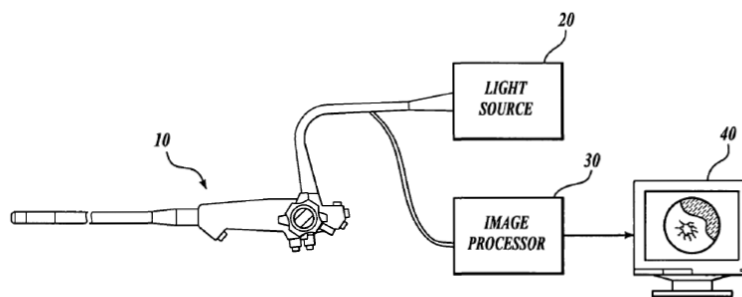


Fig. 1.

Figure 1 of the '151 patent, reproduced above, discloses an exemplary imaging system in which the subject matter of the '151 patent may be employed. Light source 20 illuminates body tissue through scope 10 and reflected light from the illuminated tissue is returned to image processor 30 for presentation on display 40. See Ex. 1001, 3:14–29.

Figure 2C of the '151 patent shows an exemplary embodiment of processing performed within the image processor of Figure 1.

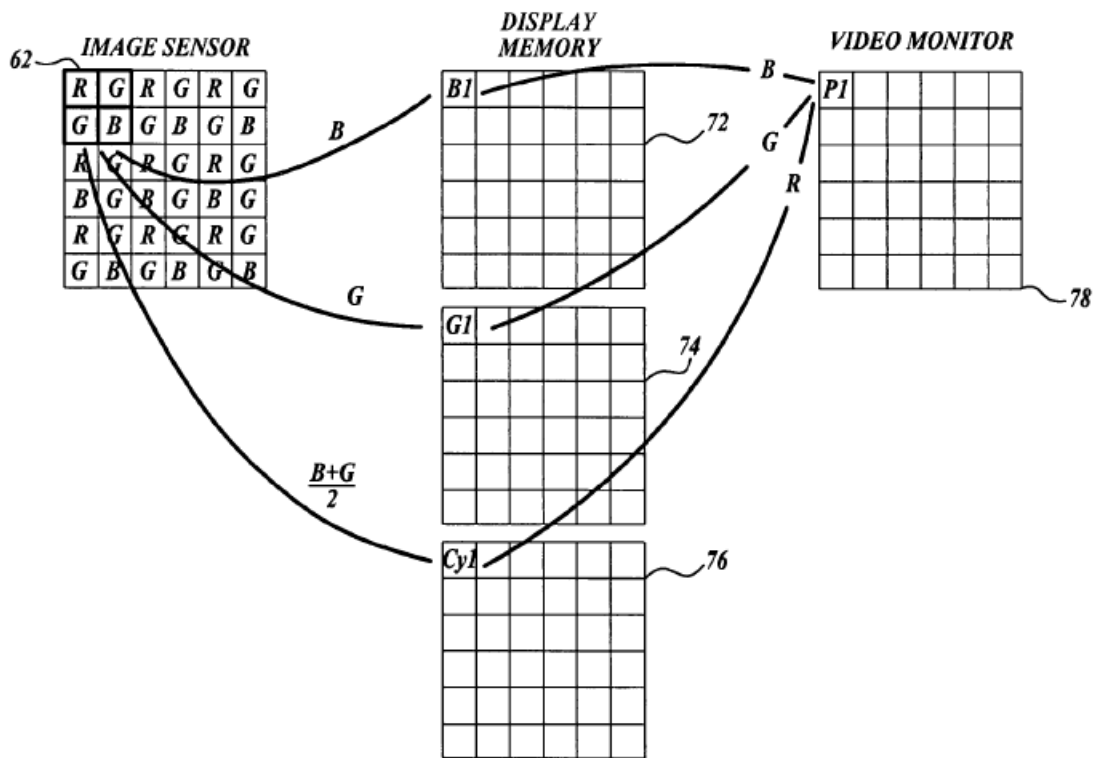


Fig.2C.

Figure 2C of the '151 patent, reproduced above, shows RGB color image sensor 62 producing RGB signal values used by the image processor to determine (e.g., “calculate”) display pixel values (*B1*, *G1*, *Cy1*) in memory 72, 74, 76 for presentation on display 78 as a pixel with reduced red

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