UNITED STATES PATENT AND TRADEMARK OFFICE

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14/635,280	03/02/2015	David Oldcorn	AMD-140400-US-NP	9346

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EXAMINER
WANG, YI

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PTOL-90A (Rev. 04/07)

UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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Ex parte DAVID OLDCORN, CHRIS BRENNAN, MICHAEL MANTOR,
and LAYLA A. MAH
_____

Appeal 2018-000700
Application 14/635,280
Technology Center 2600
_____

Before JOHN A. EVANS, MATTHEW J. McNEILL, and SCOTT E. BAIN,
Administrative Patent Judges.

McNEILL, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's
rejection of claims 1–17, which are all the claims pending in this application.
An oral hearing was held October 1, 2019, and a transcript of that hearing
was made of record on October 23, 2019. We have jurisdiction under 35
U.S.C. § 6(b).

We affirm.

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[1] We use the word "Appellant" to refer to "applicant" as defined in
37 C.F.R. § 1.42. Appellant identifies the real party in interest as Advanced
Micro Devices, Inc. Appeal Br. 3.

STATEMENT OF THE CASE

Introduction

Appellant's application relates to an asynchronous display shader on a shared shader core with multiple input queues. Spec. ¶ 1. Claim 1 illustrates the appealed subject matter and reads as follows:

> 1.   A method for performing display shading for computer graphics, comprising:
>
> receiving, by a display shader, frame data from a memory, wherein the frame data includes at least a portion of a rendered frame;
>
> receiving, by the display shader, parameters for modifying the frame data;
>
> applying, by the display shader, the parameters to the frame data to create a modified frame;
>
> updating, by the display shader, the at least a portion of the rendered frame stored in the memory based on the modified frame; and
>
> displaying the modified frame.

The Examiner's Rejections

Claims 1–8 and 10–16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hartog (US 2014/0022263 A1; Jan. 23, 2014), Willaert (US 2014/0139541 A1; May 22, 2014), and Heirich (US 2009/0219288 A1; Sept. 3, 2009). Final Act. 5–12.

Claims 9 and 17 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hartog, Willaert, Heirich, and Sadowski (US 2013/0145107 A1; June 6, 2013). Final Act. 12–14.

ANALYSIS

Appellant argues the Examiner erred in rejecting claim 1 as obvious over Hartog, Willaert, and Heirich. Appeal Br. 11–22. In particular, Appellant argues the proposed combination does not teach or suggest "updating, by the display shader, the at least a portion of the rendered frame stored in the memory based on the modified frame," as recited in claim 1. *See id.* at 15–22. According to Appellant, Hartog is silent regarding the claimed "updating." Appellant argues Willaert does not cure this deficiency because Willaert teaches a method where images from a microscope are received from a first buffer, modified according to user input, and finally stored in a second buffer. *Id.* at 18. Appellant argues the use of a double buffer where image data moves from one to the other does not teach "updating, by the display shader, the at least a portion of the rendered frame stored in the memory based on the modified frame." *Id.*, Reply Br. 5–6.

The Examiner finds Willaert teaches retrieving image data from frame buffer 18, updating the image data with different parameters according to the rotation of a knob by a user, and saving the modified data to frame buffer 24. Ans. 14 (citing Willaert ¶¶ 130–132). The Examiner finds Willaert does not explicitly teach frame buffer 18 (the originator of the frame data) and frame buffer 24 (the destination for the updated frame data) are in the same memory, but relies on Heirich for teaching that two or more buffers may be stored in a single memory. Ans. 15 (citing Heirich ¶ 37).

Appellant has not persuaded us of Examiner error. Claim 1 recites "updating, by the display shader, the at least a portion of the rendered frame stored *in the memory* based on the modified frame" (emphasis added). Appellant's argument is unpersuasive because it is not commensurate with

the scope of the claims. In particular, Appellant argues Willaert does not teach updating frame data in a single buffer, but claim 1 does not recite updating frame data stored *in the buffer*, instead reciting updating frame data stored *in the memory*. Willaert's teaching of two separate buffers in combination with Heirich's teaching that two or more buffers may be in a single memory teaches or suggests this limitation.

To the extent Appellant is arguing that the use of the term "updating" in the limitation requires that the data is not in any way moved during an update, Appellant has not provided any persuasive reasoning for such a narrow construction of the term "updating."

Appellant also argues the Examiner erred because an ordinarily skilled artisan would not have been motivated to combine Hartog and Willaert because Willaert is non-analogous art to the present invention. *See* Appeal Br. 11–15. In particular, Appellant argues Willaert is related to "an optical microscope digital image processing emulator," which is a different field of endeavor than the claimed invention, which is directed to "providing an asynchronous display shader on a shared shader core with multiple input queues." *Id.* at 12. Appellant argues that Willaert's teaching of using a GPU shader is not analogous to the present invention because Willaert's use of the GPU shader is limited to performing microscope emulation. *Id.* at 14. According to Appellant, an ordinarily skilled artisan would not have been commended to look to an optical microscope emulation system when considering the problem of providing an asynchronous display shader on a shared shader core with multiple input queues. *Id.* at 14–15.

Appellant has not persuaded us of Examiner error. The Examiner finds, and we agree, the present invention is directed to "a method for

performing display shading for computer graphics." Ans. 13 (quoting the preamble of claim 1). The Examiner finds Willaert is directed to "a method of preparing image data for a display or a method of operating a display." Ans. 13 (quoting Willaert ¶ 11). Willaert addresses prior art deficiencies in brightness modulation, color filters, and calibration precision. *See* Willaert ¶ 7. Willaert further teaches that "[p]rofessionals looking at images, whether medical specialists doing digital diagnosis, or prepress specialists retouching photographs, or video post-processing specialists, need to be able to review images in the smallest details of the data spectrum." *Id.* ¶ 8. Thus, although Willaert teaches improved image processing in the context of an optical microscope digital image processing emulator, Appellant has not persuaded us of Examiner error in the finding that an ordinarily skilled artisan would have recognized that these teachings relate, more generally, to display methods and devices and display shaders. *See* Ans. 13. Accordingly, we are not persuaded of Examiner error in the Examiner's finding that Willaert is in the same field of endeavor as the claimed invention.

For these reasons, we sustain the Examiner's obviousness rejection of claim 1. We also sustain the Examiner's obviousness rejection of independent claims 6, 10, and 14, which Appellant argues are patentable for the same reasons. *See* Appeal Br. 22. We also sustain the Examiner's obviousness rejections of dependent claims 2–5, 7–9, 11–13, and 15–17, for which Appellant provides no separate arguments. *See id.*

CONCLUSION

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1–8, 10–16	103	Hartog, Willaert, Heirich	1–8, 10–16	

9, 17	103	Hartog, Willaert, Heirich, Sadowski	9, 17	
Overall Outcome			1–17	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

<u>AFFIRMED</u>

6