UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY CORPORATION OF AMERICA
Petitioner

Patent No. 7,612,843
Issue Date: Nov. 3, 2009
Title: STRUCTURE AND DRIVE SCHEME FOR LIGHT EMITTING DEVICE MATRIX AS DISPLAY LIGHT SOURCE

EXPERT DECLARATION OF RICHARD A. FLASCK

No. IPR2014-01268

I, Richard A. Flasck, do hereby make the following declaration:

1. I am the Founder and Chief Executive Officer (CEO) of RAF Electronics Corp. and have served in that capacity since 1989. During my time at RAF Electronics, I developed and patented liquid crystal on silicon (LCOS) microdisplay technology and light emitting diode (LED) based solid state lighting (SSL) technology. I am an expert in several technology areas related to image display systems, including semiconductor integrated circuits (ICs), active matrix liquid crystal displays (AMLCDs), thin films, optics, video electronics, and the layout and driving of LED arrays.
2. I was also the Co-Founder of Diablo Optics, Inc. in 2002 and served as the Chief Operating Officer (COO) from 2002-2007. During my time at Diablo Optics, I developed, produced, and commercialized key optical components for high-definition televisions (HDTVs).
3. I also served as the President and COO of Alien Technology Corp. (1997-1999); the Founder and CEO of Alphasil, Inc. (1982-1989); and as a scientist and manager at Energy Conversion Devices, Inc. (1970-1982).
4. I served as the Co-Chairman of SPIE/IS&T Symposium on Electronic Imaging in 1991 and 1992.

5. I am a named inventor on twenty-five U.S. and foreign patents on a wide variety of technologies including image display systems. I have published several technical papers and made presentations in various technology areas including HDTV projectors, liquid crystal light valve design, and flat panel display devices.

6. A listing of my education, work history, and publications is in my curriculum vitae. *See* Sony-1005.

7. I submit this declaration in support of the Petition for *Inter Partes* Review of U.S. Pat. No. 7,612,843 (the "'843 Patent"), No. IPR2014-01268.

8. I have reviewed the '843 Patent which was filed on May 25, 2007, and its claims, as well as U.S. Provisional Application No. 60/767,534 (the "'843 Patent Provisional Application"), which was filed on May 25, 2006, to which the '843 Patent claims priority.

The '843 Patent

9. The '843 Patent generally describes image display systems that use a matrix of LEDs and a matrix of light valves (*e.g.*, liquid crystal display (LCD) pixels). The LEDs emit light towards the LCD pixels, which modulate the light emitted by the LEDs to form an image to be displayed. The '843 Patent also describes control circuitry to perform control operations on the LED and LCD matrices.

10. I understand that the focus of this *Inter Partes* Review is the subject matter of claims 14, 18-20, and 25-26 of the '843 Patent. In general, claim 14 describes an image display device that includes a two-dimensional array of image elements and a control circuit that sequentially (1) sets a section of the image elements to an off or dimming state and (2) applies image data to the section of image elements. Furthermore, claim 14 requires that the duration of the off state in operation (1) must be less than or equal to 10 milliseconds. Claims 18 and 19 describe different types of image elements, such as light emitting elements and light valves, respectively. Claim 20 describes that the display device includes a two-dimensional array of lighting elements and a two-dimensional array of light valves. Claim 25 describes that the lighting elements of claim 20 include a plurality of light emitting devices. Claim 26 describes that the lighting elements of claim 20 are light emitting diodes connected in a series configuration.

11. In the 2006-2007 time frame, a person with ordinary skill in the art with respect to the technology disclosed by the '843 patent would have a Bachelor of Science degree in Physics or Electrical Engineering, and two to three years of industry experience in the area of image display systems.

12. Based upon my experience and education, I consider myself to be a person of at least ordinary skill in the field of technology disclosed by the '843 Patent.

The '843 Patent Provisional Application

13. I have read and reviewed the '843 Patent Provisional Application. The '843 Patent Provisional Application does not describe, either explicitly or inherently, setting a section of image elements to an off-state for 10 milliseconds or less as required by claim 14 of the '843 Patent.

14. In addition, the '843 Patent Provisional Application is missing material that was included in the later filed '843 Patent. For example, figures 15 and 16 of the '843 Patent (and their related description) were not included in the '843 Patent Provisional Application.

15. Furthermore, the only specific reference to a 10 millisecond time period in the '843 Patent appears in the claims (for example, in issued claims 14 and 40). The claims included in the '843 Patent Provisional Application do not contain this language and I found no other explicit references to a 10 millisecond time period related to an off state of image elements.

16. I also did not find any description in the '843 Patent Provisional Application that inherently shows setting a section of image elements to an off-state for 10 milliseconds or less. In my view, one of ordinary skill in the art would not read the '843 Patent Provisional Application to describe anything that necessitates that the off state be within 10 milliseconds.

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