

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

XILINX, INC.
Petitioner

v.

INTELLECTUAL VENTURES I LLC
Patent Owner

Case IPR2013-00029
Patent 5,632,545

Before SALLY C. MEDLEY, KARL D. EASTHOM, and
JUSTIN T. ARBES, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

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

I. BACKGROUND

Petitioner Xilinx, Inc. (“Xilinx”) filed a Petition (Paper 2) (“Pet.”) seeking *inter partes* review of claims 1-3 of U.S. Patent No. 5,632,545 (“the ’545 patent”) pursuant to 35 U.S.C. §§ 311-319. On March 12, 2013, the Board granted the Petition and instituted an *inter partes* review of all claims on two grounds of unpatentability (Paper 11) (“Dec. on Inst.”).

Subsequent to institution, Patent Owner Intellectual Ventures I LLC (“IV”) filed a Patent Owner Response (Paper 22) (“PO Resp.”), and Xilinx filed a Reply (Paper 27) (“Pet. Reply”). Along with its Patent Owner Response, IV filed a Motion to Amend (Paper 23) (“Mot. to Amend”), proposing substitute claim 4 if the Board determines claim 2 to be unpatentable, and substitute claim 5 if the Board determines claim 3 to be unpatentable. Xilinx filed an Opposition to the Motion to Amend (Paper 26) (“Pet. Opp.”), and IV filed a Reply (Paper 33) (“PO Reply”).

IV also filed a Motion to Exclude (Paper 35) (“Mot. to Exclude”) certain testimony of Xilinx’s declarant, A. Bruce Buckman, Ph.D. Xilinx filed an Opposition to the Motion to Exclude (Paper 42) (“Exclude Opp.”), and IV filed a Reply (Paper 43) (“Exclude Reply”).

An oral hearing was held on December 9, 2013, and a transcript of the hearing is included in the record (Paper 48) (“Tr.”).

The Board has jurisdiction under 35 U.S.C. § 6(c). This final written decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons that follow, we determine that Xilinx has shown by a preponderance of the evidence that claims 1-3 of the ’545 patent are unpatentable, and we deny IV’s Motion to Amend.

A. The '545 Patent

The '545 patent relates to a “color video projector system” having “separate light sources for producing separate beams of light which are passed each first through color filters to provide separate color beams before being processed by video-controlled light shutter matrices and then combined into a single beam projectable to provide a full-color video display with superimposed color spots.” Ex. 1001, Abstract. The patent describes how prior art video projector systems, such as color Liquid Crystal Display (LCD) projectors, were expensive and had difficulty providing adequate light levels. *Id.* at col. 1, ll. 9-19. Later systems based on “active matrix color LCD’s (AM-LCD’s)” were less expensive, but still had limited brightness and resolution. *Id.* at col. 1, ll. 20-31. The '545 patent addresses these problems by “pre-coloring” the input light and “using a triple monochrome LCD structure instead of a color AM-LCD.” *Id.* at col. 2, ll. 1-12. The resulting arrangement, according to the '545 patent, provides better light output because less light is absorbed than in a color AM-LCD, and results in better resolution due to the superposition of color spots on the display. *Id.* It also is less expensive because monochrome LCDs are less expensive than color LCDs, and precise alignment of the components is less critical than with a color AM-LCD. *Id.*

Figure 1, the sole figure of the '545 patent, is reproduced below.

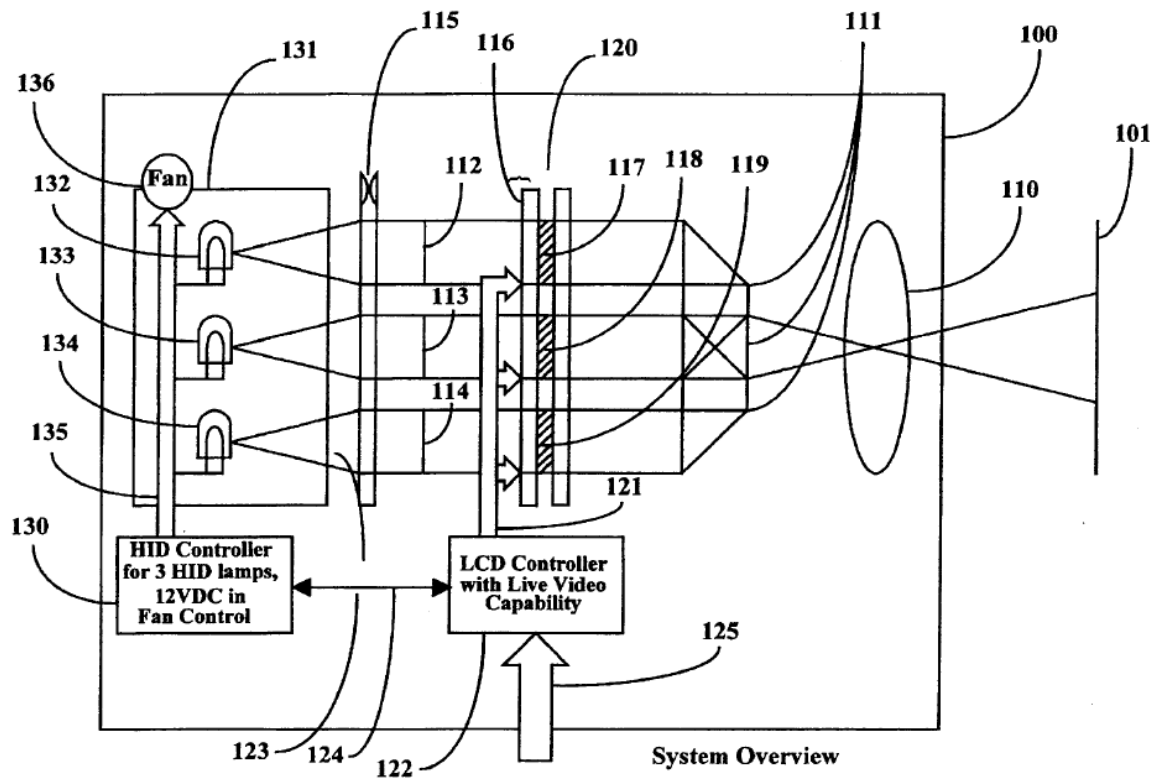


Fig. 1

Figure 1 depicts a video projector system comprising, *inter alia*, (A) lamps 132-134, which emit light; (B) condenser lens system 115, which focuses the three light beams emitted by the lamps; (C) red/green/blue filters 112-114, through which the respective light beams pass; (D) monochrome LCD arrays 117-119 in LCD unit 120; (E) controller 122, which controls the arrays; and (F) mirror and prism system 111, which combines the separate beams into a single beam for projection onto surface 101. *Id.* at col. 2, l. 50-col. 3, l. 22.

B. Exemplary Claim

Claim 1 of the '545 patent is the only independent claim:

1. A video projector system comprising:
 - individual light sources, one each for each color to be projected, adapted to provide each a separate light beam;
 - a lens system in the path of the separate light beams, adapted for focusing the beams;
 - a number of individual color filters equal to the number of beams, in the colors to be projected, and placed one each in each beam path;
 - a light-shutter matrix system comprising a number of equivalent switching matrices equal to the number of beams and placed one each in the beam paths;
 - a video controller adapted for controlling the light-shutter matrices; and
 - an optical combination system adapted for combining the several beams into a single composite beam for projection on a surface to provide a video display;
- wherein each beam passes through a color filter before being processed by a light-switching matrix.

C. Prior Art

The pending grounds of unpatentability in this *inter partes* review are based on the following prior art:

1. U.S. Patent No. 5,108,172, issued Apr. 28, 1992 (“Flasck”) (Ex. 1002);
2. U.S. Patent No. 5,264,951, issued Nov. 23, 1993 (“Takanashi”) (Ex. 1003); and
3. U.S. Patent No. 5,287,131, issued Feb. 15, 1994 (“Lee”) (Ex. 1004).

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