

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FINISAR CORP.,
Petitioner,

v.

THOMAS SWAN & CO. LTD.,
Patent Owner.

Case IPR2014-00465
Patent 8,335,033 B2

Before SALLY C. MEDLEY, MICHELLE R. OSINSKI, and
BARBARA A. PARVIS, *Administrative Patent Judges*.

PARVIS, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Finisar Corp. (“Petitioner”) filed a corrected Petition (Paper 5, “Pet.”) requesting an *inter partes* review of claims 1, 2, 4, 5, 17–19, 22–31, 56, 58, 60–68, 70–76, 78, and 89–91 of U.S. Patent No. 8,335,033 B2 (Ex. 1001, “the ’033 patent”). Thomas Swan & Co. Ltd. (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Upon consideration of the Petition and Preliminary Response, we determine that Petitioner has established a reasonable likelihood that it would prevail in showing the unpatentability of claims 1, 29, 60, 66, 71–73, 76, and 91 of the ’033 patent. Accordingly, pursuant to 35 U.S.C. § 314, we institute an *inter partes* review as to claims 1, 29, 60, 66, 71–73, 76, and 91 of the ’033 patent. We, however, do not institute an *inter partes* review of claims 2, 4, 5, 17–19, 22–28, 30, 31, 56, 58, 61–65, 67, 68, 70, 74, 75, 78, 89, and 90 of the ’033 patent.

A. *Related Matters*

The parties represent that the ’033 patent is the subject of a district court proceeding in *Thomas Swan & Co. v. Finisar Corp.*, No. 2:13-cv-178 (E.D. Tex.). Pet. 4; Patent Owner’s Mandatory Notices under 37 C.F.R. § 42.8, Paper 7, 2.

Petitioner filed additional Petitions for *inter partes* review of three other patents related to the ’033 patent, namely U.S. Patent Nos. 7,145,710;

7,664,395; and 8,089,683. Pet. 4; Prelim. Resp. 4; *see* IPR2014-00460 (Paper 2, Paper 5); IPR2014-00461 (Paper 1, Paper 5); IPR2014-00462 (Paper 1, Paper 5).

B. The '033 Patent

The '033 patent is directed to a method of operating an optical device comprising a spatial light modulator (SLM). Ex. 1001, 2:53–56. Figure 28 of the '033 patent is reproduced below.

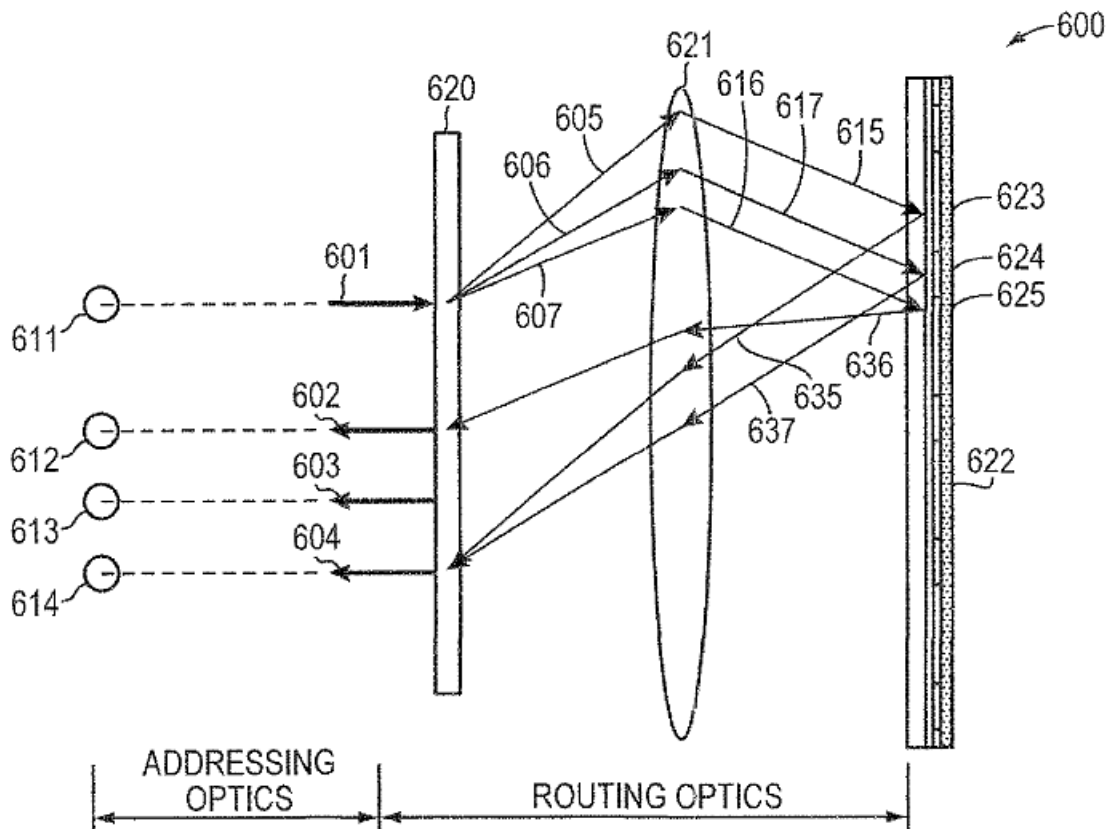


FIG. 28

Figure 28 of the '033 patent illustrates wavelength routing and selection device 600.

As shown in Figure 28, wavelength routing and selection device 600 receives input beam 601 through input port 611. Ex. 1001, 42:9–11. Grating 620 separates input beam 601 into single wavelength emergent beams 605, 606, and 607, each angularly offset by a different amount, and incident on lens 621. *Id.* at 42:20–23. Lens 621 refracts single wavelength emergent beams 605, 606, and 607 so that they emerge as mutually parallel beams 615, 616, and 617. *Id.* at 42:23–24. Each of beams 615, 616, and 617 is incident upon respective group 623, 624, and 625 of pixels on SLM 622. *Id.* at 42:24–26.

Each of respective group 623, 624, and 625 of pixels on SLM 622 displays a respective hologram, which provides a different deviation from the specular direction, resulting in reflected beams 635, 636 and 637. *Id.* at 42:26–29. Reflected beams 635, 636, and 637 are incident upon lens 621 and routed back to grating 620. *Id.* at 42:29–30.

C. Illustrative Claim

Claims 1, 60, 63, 66, 71–73, 76, and 91 are the independent claims challenged by Petitioner. Claim 1 is illustrative and is reproduced below:

1. An optical processor having a reflective SLM, a dispersion device and a focussing device, wherein the SLM has an array of controllable elements, wherein the processor is configured such that light from a common point on the dispersion device is spatially distributed over at least part of the SLM, and wherein *the processor is configured such that the controllable elements display different holograms at chosen locations of the SLM where said light is incident*, for controlling directions at which light from respective said locations emerges.

Ex. 1001, 60:5-14 (emphasis added).

D. Prior Art Relied Upon

Stephen T. Warr, Free-Space Switching for Optical Fibre Networks (July 1996) (Ph.D. dissertation, University of Cambridge) (on file with Cambridge University Library) (“Warr Thesis,” Ex. 1005).

Kim L. Tan, Dynamic Holography Using Ferroelectric Liquid Crystal on Silicon Spatial Light Modulators (Feb. 1999) (Ph.D. dissertation, University of Cambridge) (on file with Cambridge University Library) (“Tan Thesis,” Ex. 1006).

Michael C. Parker, Dynamic Holograms for Wavelength Division Multiplexing (Nov. 1996) (Ph.D. dissertation, University of Cambridge) (on file with Cambridge University Library) (“Parker Thesis,” Ex. 1007).

Crossland et al., US 2001/0050787 A1 (published Dec. 13, 2001) (“Crossland,” Ex. 1008).

E. Alleged Grounds of Unpatentability

The information presented in the Petition sets forth Petitioner’s contentions of unpatentability of claims 1, 2, 4, 5, 17–19, 22–31, 56, 58, 60–62, 63–68, 70–75, 76, 78, and 89–91 of the ’033 patent based on the following specific grounds.

Claims Challenged	Basis	References
1, 2, 4, 5, 17–19, 22–30, 56, 58, 60, 61, 63–68, 70–74, 76, 78, 89, 90	§ 103	Parker Thesis, Warr Thesis, and Tan Thesis
31, 62, 75, 91	§ 103	Parker Thesis, Warr Thesis, Tan Thesis, and Crossland

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