

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE, INC.  
Petitioner,

v.

IMMERVISION, INC.,  
Patent Owner

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Case IPR2023-00471  
Patent 6,844,990

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**PETITIONER'S REPLY TO PATENT OWNER'S  
PRELIMINARY RESPONSE**

## I. THE PETITION SHOULD NOT BE DENIED UNDER § 325(D)

### *A. ImmerVision's Assertion of No Showing of Error Disregards the Petition's Detailed Analysis of Material Error*

ImmerVision's assertion that the Petition made "no attempt to show any material error by the Office" (POPR, 17) is belied by the Petition's multi-page §325(d) analysis, providing a detailed walkthrough of the '990 Patent's reexamination to demonstrate how the Examiner overlooked Shiota's pertinent teachings—particularly as they would be understood by a POSITA. Petition, 73-79. Indeed, the Petition identified evidence of ImmerVision directing the Examiner to a subset of Shiota's disclosure on image transformation, and ImmerVision's failure to identify or even address during prosecution other teachings in Shiota that are more relevant to claim 27's feature of using size L of the image for correcting image non-linearity. *Id.*

As the Petition explains, the '990's prosecution did not reference ¶ 23 of Shiota (shown below; annotated), which provides that (1) image size (referred to as image circle diameter) differs according to the image pickup device's size, and (2) the image transformation operations assume the image's size as 1 and perform "magnification adjustment" in "actual[] use" where the image and image pickup device may have different sizes. Petition, 50-51, 77-78. Petitioner highlights the significance of this unrecognized disclosure, offering expert testimony explaining how a POSITA reading this

**[0023]** A plane image (fisheye image) obtained through the fisheye lens is expressed by a (p, q) coordinate system as shown in Fig. 1. It is assumed that the (p, q) coordinate system is parallel to the (X, Y) plane and has the origin on the Z axis. In a position on an image pickup face (for example, position of a pixel on a CCD image pickup device), the image circle diameter differs according to the size of the image pickup device and the focal distance of the fisheye lens. Consequently, it is assumed that a fisheye image is projected in a circle of radius 1 of an image of an object positioning at 90 degrees (Z = 0) from the front of the lens. At the time of actual use, magnification adjustment is performed.

disclosure in the context of ¶¶ 24-26 (describing that the parameters for image transformation are “obtained from” the “magnification of the image”) would have understood that the ¶ 23 reference to “magnification adjustment” during image transformation accounts for the image pickup device’s actual size (i.e., image disk)—and by extension, the image’s actual size. Petition, 50-51, 77-78; APPLE-1003, ¶¶205-207. The Petition expressly pointed out that the reexamination does not address these teachings in Shiota, and that the Office was without access to evidence of how a POSITA would have understood the unattended-to Shiota teachings. *Id.*

Given this detailed presentation of evidence and upon demonstrating the reexamination record’s silence in considering the same, the Petition concluded that “[h]ad this evidence been properly put forth and considered by the Office, the Office would not have reached its erroneous finding of patentability of claim 27.” Petition, 78. Indeed, the Petition’s provided evidence presents a “compelling case on the merits” that supports the conclusion “that the Office erred in a manner material to patentability,” which is only underscored by ImmerVision’s lack of reasoned technical arguments to the contrary (other than a conclusory, two-sentence long attorney argument regarding Shiota’s magnification adjustment teachings (*see* POPR, 9)). *See Vizio, Inc. v. Maxell, Ltd.*, IPR2022-01458, Paper 8 at 64-67 (PTAB Apr. 11, 2023).

***B. ImmerVision Mischaracterizes the Reexamination Record to Incorrectly Suggest that the Examiner Considered Shiota’s Pertinent Teachings***

ImmerVision cobbles together independent portions of the reexamination record to next advance its misleading narrative that “[t]here is no evidence the examiner skipped over the identified paragraphs in Shiota, particularly when the description *around it* was explicitly under review for the feature at issue here (size L of the obtained image as a factor in correcting non-linearity).” POPR, 19 (emphasis added). To support this conclusion, ImmerVision constructs two listings of Shiota’s paragraphs from distinct portions of the reexamination proceeding: (1) citations by Examiner when contending that claim 27 is allowable (¶¶ 1, 22, 28-41); and (2) citations by ImmerVision in its detailed explanation of pertinency filing (¶¶ 24, 30-35, 37-42). POPR, 19; APPLE-1011, 323, 117-118. As explained below, these citations leave out important detail—which when viewed in proper context—leads to the reasonable inference that the Examiner *did not* actually consider or rely upon the Petitioner’s disclosures in ¶ 23 of Shiota for the above-recited claim 27 feature, and that she similarly did not consider related disclosures in ¶¶ 24-26 for this same feature (added in a separate paper than the one in which reference was made to ¶ 24).

*First*, ImmerVision contends that it “highlighted Shiota’s paragraphs” 24, 30-35, 37, 42, and 49, in the “detailed explanation of pertinency” in the reexamination request. POPR, 19; APPLE-1011, 117-118. ImmerVision, however, omits that these paragraphs were cited in a claim chart provided *with respect to claim 10* (in its unamended form)—*not claim 27*—and that claim 10 did not recite the relevant claim

27 feature of “correcting the non-linearity of the initial image” *using the “size L of the obtained image.”* It is also irrefutable that ImmerVision did not identify ¶¶ 23, 25, and 26 of Shiota. Even the relied-upon quote in ¶ 24 of Shiota only states that, for image transformation, the “projecting position on the image pickup face” of a point on a “plane image is obtained” (APPLE-1011, 117)—but does not mention Shiota’s relevant teaching of “magnification adjustment” that accounts for actual size of images and image pickup devices.

*Second*, notably absent from the POPR are Shiota’s paragraphs that ImmerVision itself identified to advocate for claim 27’s allowability. Specifically, ImmerVision submitted a preliminary amendment separate from its reexamination request, in which it added claim 27, cited to ¶¶ 33-41 in Shiota, and argued that Shiota does not disclose the relevant claim 27 feature because it purportedly does “not utilize[]” the “size of the image disk” to correct the image. APPLE-1011, 250, 238-252; Petition, 77. ImmerVision did not identify ¶¶ 23-26 in Shiota, or address its teachings of “magnification adjustment” during image transformation that accounts for differing size of images and image pickup devices in actual use. ImmerVision also does not dispute that these teachings are absent from Shiota’s ¶¶ 33-41 that it identified.

*Third*, the Examiner explicitly identified Shiota’s paragraphs that she considered in finding claim 27 allowable—but **did not** include ¶¶ 23-26 in Shiota or the associated subject matter that is relied upon in Petition for the claim feature at issue.

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